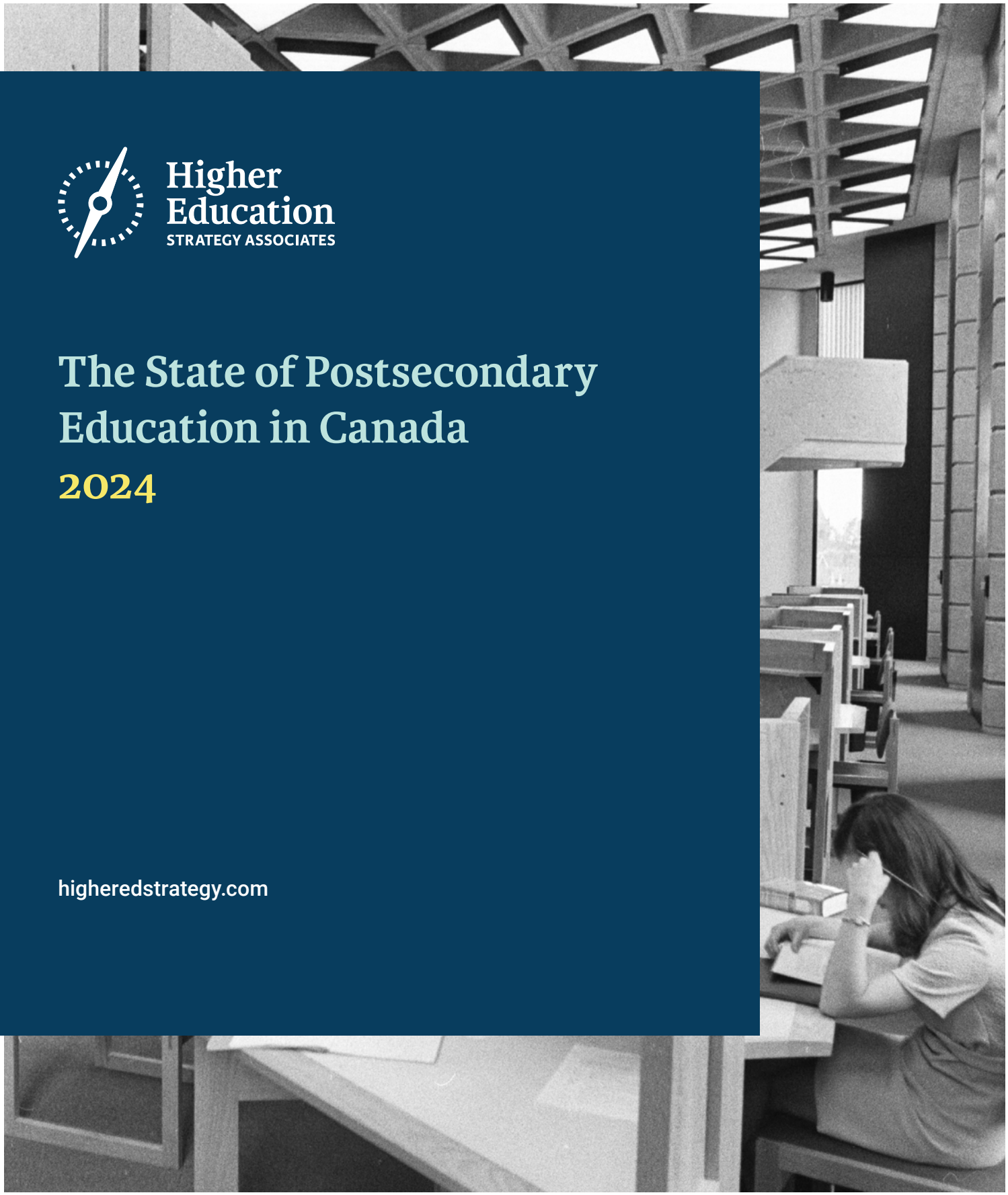

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The State of Postsecondary Education in Canada

2024

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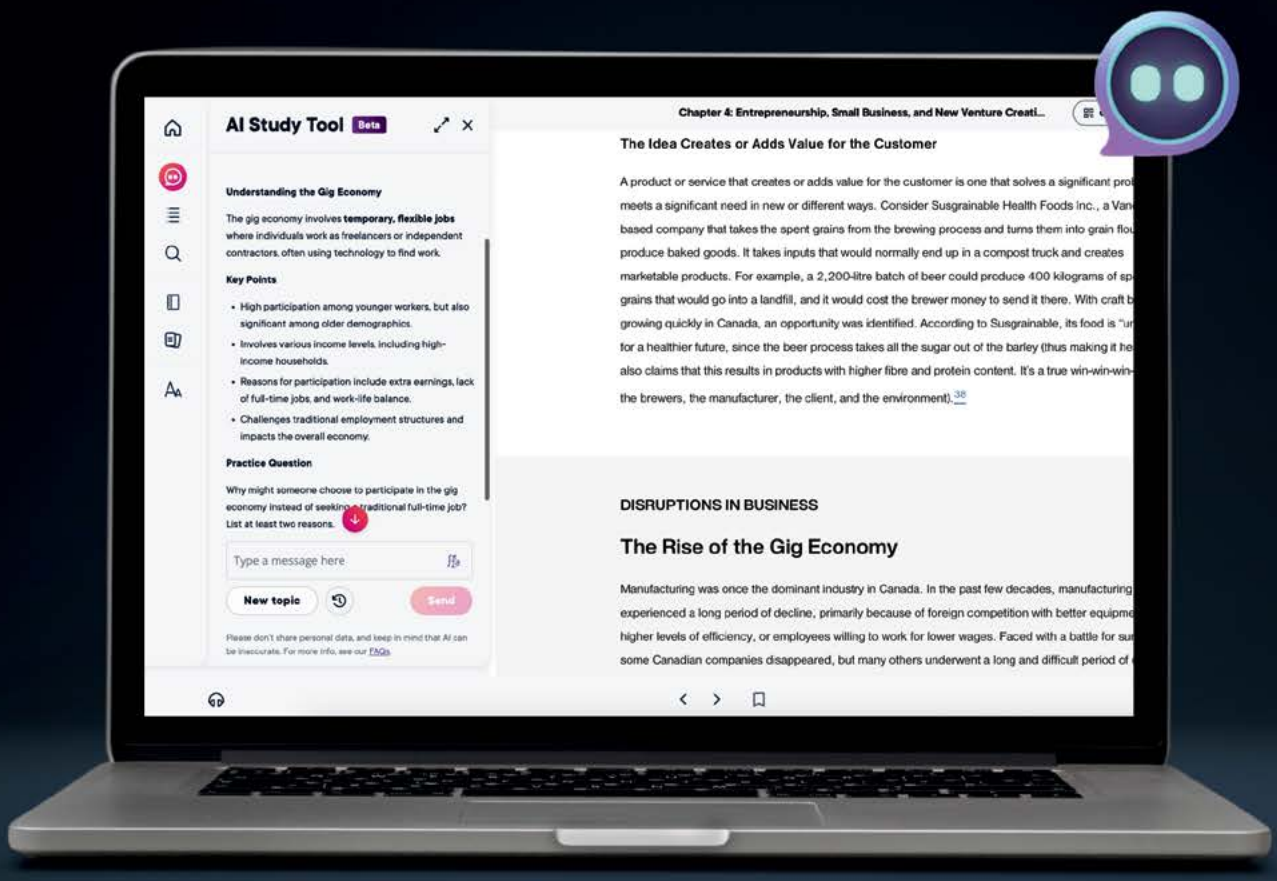

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About This Series

Despite having one of the world's more advanced and high-quality systems of higher education, Canada has never been blessed with easily available, up-to-date and easily digestible data on its postsecondary sector. The purpose of Higher Education Strategy Associates' annual State of Postsecondary Education in Canada series is to change that — permanently.

Canada's national higher education data challenges partially stem from the decentralized nature of our federal system. But the bigger reason is that Canadian governments and statistical agencies simply do not care about producing high-quality data on education the way some other countries do. Our data on community colleges is weak. Though our data on institutional finances is as good as any in the world, data on employees (in particular non-academic ones) is scant, comprehensive data on student assistance is essentially non-existent, and data on students and graduates take an inordinately long time to appear (data on international students, for instance, routinely take three to four times as long to appear in Canada as they do in the US, the UK, or Australia).

This series is not the first attempt to present this kind of data on a national basis. Others have, over the years, done notable and salutary work trying to fill the myriad gaps. For instance, until 2016, the Canadian Association of University Teachers (CAUT), published an invaluable annual "almanac." However, after a brief attempt to keep the almanac updated in a set of online tables, it has essentially ceased to exist. Universities Canada put together some good publications on the state of the system, but has largely ceased to do so, and in any event never included the colleges and polytechnics. The Council of Ministers of Education, Canada (CMEC) has an irregularly-published system of "Education Indicators" but not many of these indicators relate to postsecondary education and in any event are largely tabular and provide very little in the way of information to interpret the data. Statistics Canada produces a great deal of data on education - not always in a particularly timely manner - but does very little to help people interpret the system as a whole (though some of its analysts, such as Marc Frenette regularly produce excellent studies on student and graduate outcomes.

And so Higher Education Strategy Associates decided in 2018 to produce an annual publication called "The State of Postsecondary Education in Canada", modelled on a set of publications produced by Andrew Norton and his colleagues at the Grattan Institute in Melbourne entitled "Mapping Australian Higher Education". This 2024 edition updates data from the previous editions, including detailing trends in student and staff numbers, how the system is financed, and graduate outcomes. This year sees the inclusion of additional data on student diversity and institutional staffing.

We hope that by putting all this information in a handy and convenient format, and by providing some accompanying narrative, that we can help improve the quality of public dialogue on postsecondary education policy issues. As always, comments or suggestions about how to improve the publication for future years will be gratefully received. Email us at info@higheredstrategy.com.

Happy Reading.

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Introduction

For the past few years, commentators on Canadian postsecondary education (including those at Higher Education Strategy Associates) have focused substantially on the phenomenon of international students in Canadian universities and colleges and the way in which international student fees have kept institutional coffers full. The federal government's January 2024 decision to substantially curtail the influx of international students means that this era is, to a substantial degree, over. It is therefore perhaps time to move the focus away from this topic to see what Canadian postsecondary looks like when they are not able to rely on resources made available by policy that encourages a large number of international students to choose Canada for their postsecondary studies.

Let us start by considering full-time equivalent domestic enrolments in Canadian universities and colleges over the past decade. Overall, enrolment is down by 3.5%, but the numbers at colleges and universities tell different stories. Domestic enrolments are up 2.6% at universities, but they are down by 13.6% at colleges, where enrolments now sit at their lowest level since 2003. The decline in college enrolment is most pronounced in non-Polytechnic institutions outside Quebec, which is to say institutions that are primarily located outside of large cities.

Naturally, this pattern differs by province. East of the Ottawa River what we see is a pattern of universal decline in both the university and college sector. New Brunswick has seen double-digit declines in domestic enrolment in both universities (-16%) and colleges (-20%). College of the North Atlantic in Newfoundland has undergone a remarkable drop of 40% in domestic students. But west of the Ottawa River, there are bright spots. Domestic enrolments at Ontario universities have risen by 5% since 2012, but college enrolments have crashed by 27%. Similarly, Manitoba, Saskatchewan and British Columbia have seen rises in one sector and declines in another. Alberta is the only province in the country where enrolments are up in both sectors.

Figure 1: Domestic Enrolment, Full-Time Equivalent Basis, 2012-13 to 2022-23

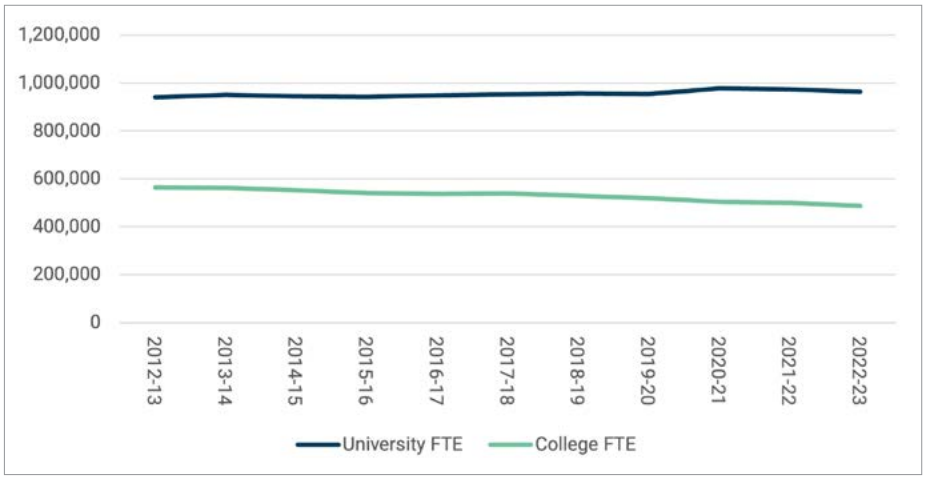
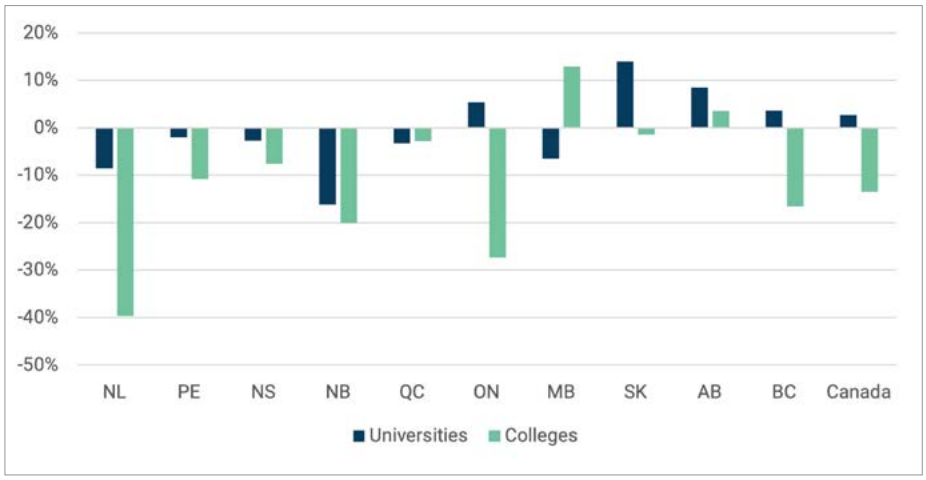


Figure 2: Change in Domestic Enrolment by Province and Sector, 2012-13 to 2022-23



Nationally, a portion of this enrolment weakness can be laid at the feet of a declining youth population: the number of Canadians aged 18-21 declined by about 1.2% between 2012 and 2022. But that still leaves a substantial chunk of declining students unaccounted for. Figure 3 shows estimated domestic gross participation rates[1] by province from 2012 and 2022. In six of ten provinces, the participation rate fell. In Newfoundland, the decline was an extraordinary 12%. But in others, notably Saskatchewan and Quebec, it rose substantially (in Quebec's case, it was a matter of enrolments staying stable even as the relevant age cohort fell in size by close to 15%).

It is difficult to know what to make of this data because the patterns are not consistent across the country. In theory, with youth population numbers set to increase substantially over the period 2022-2032, we could see very large increases in enrolments – on the order of 15% east of the Ottawa River, and ranging from 15% in Ontario to around 35% in Alberta on the other side of it.

But is the system actually prepared for this wave of new domestic students?

Figure 4 shows university operating income per domestic FTE student from 2006 to the present day. Provincial government support for universities peaked in 2007 and has since fallen by about 15%. For several years, this decline was offset by rising tuition fees; however, for the past few years, tuition fees have been falling in real terms. As a result, total domestic operating income per domestic student is down 9% from its all-time high in 2007 and 6% from when national tuition levels were at their height in 2019.

When the last big wave of new students hit higher education in the late 1990s (when the front wave of the so-called "baby-boom echo" graduated from secondary school), universities and colleges were given large increases in public funding and were also allowed to raise tuition. There is no sign whatsoever that something similar is about to unfold this time out. The allure of foreign

Figure 3: Gross Participation Rates, by Province, 2012 vs 2022

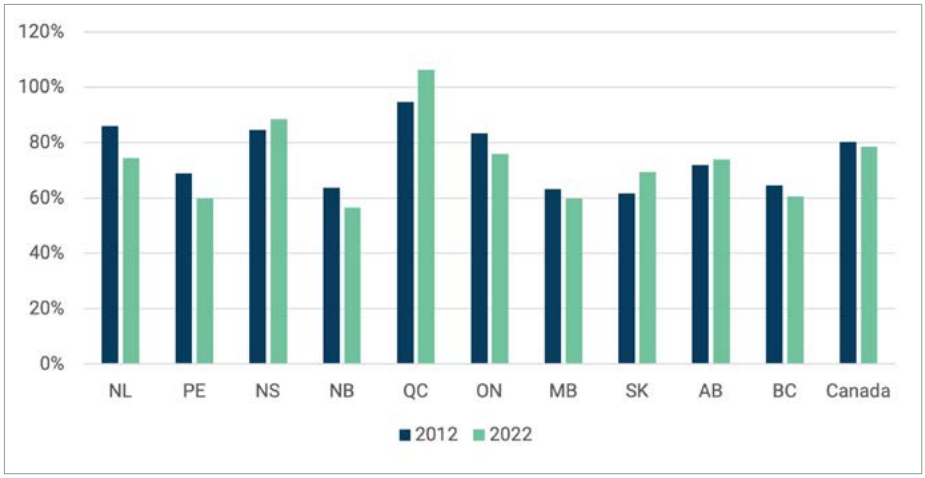
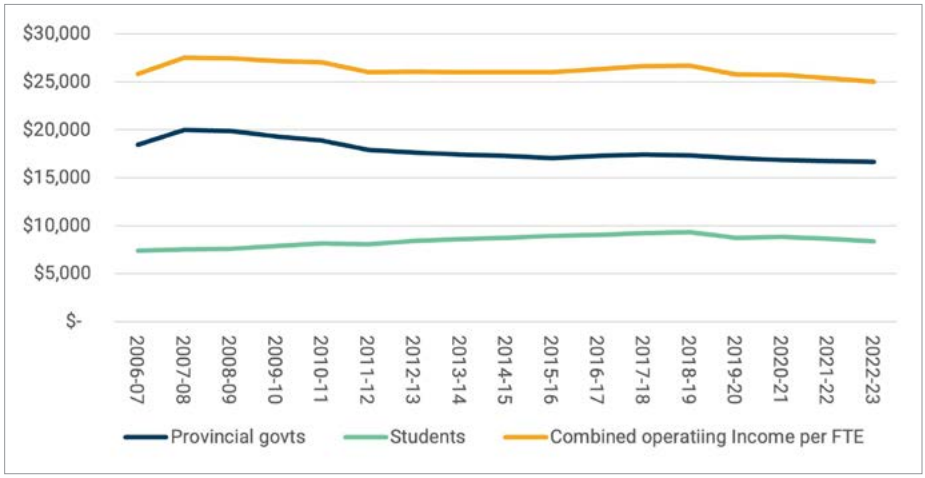


Figure 4: Operating Income per FTE Domestic Student by Source, Canadian Universities, 2006-07 to 2022-23, in $2022



student dollars is, in this context, pretty clear. And while some have speculated about whether international students are taking spaces away from domestic students, it is worth asking the question: will universities be able to handle the influx of domestic students without the income that international students provided? If not, and institutions close their doors to new students because they can no longer sensibly accommodate growth in student numbers, as many effectively did in the mid-1990s, it seems likely that access to education will become a much more salient political issue in the coming years than it has been in quite some time.

Enrolments trends are far from the only active dynamic in postsecondary in Canada. It would be inappropriate, for instance, to provide a summary of the current state of Canadian postsecondary education without looking at research. Chapters 4 and 7 of this volume provide overview of public expenditures and outputs in research, but figure 5, below, puts total expenditures by the federal government – which is the country's overwhelmingly dominant source of external funds for university research – into long-term perspective.

Despite a widespread perception that the Trudeau government is friendlier to

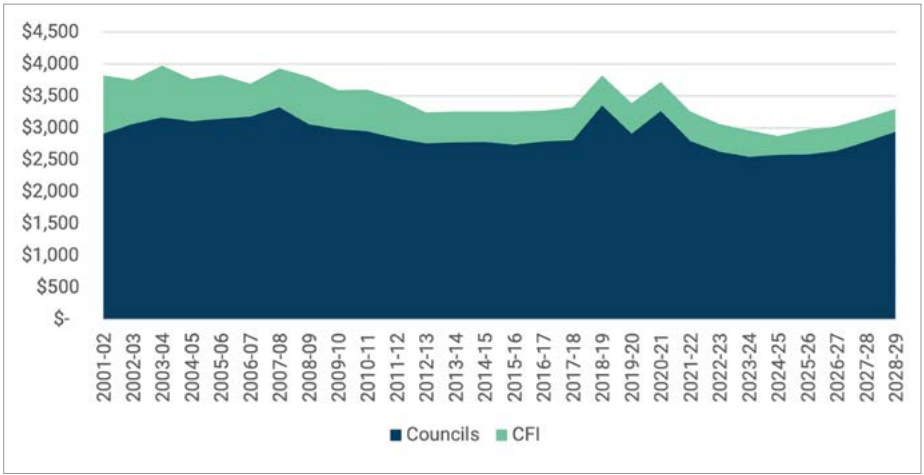
1 Technically, Full-time equivalent domestic enrolment in both colleges and universities divided by total population aged 18-21.

research than its Conservative predecessor, the plain fact is that it has allowed inflation to erode science budgets. New investments from a much-vaunted five-year investment program announced in 2018 were entirely eaten away in real terms within of the new investments coming to an end. A major set of new research investments were announced in Budget 2024, but 88% of the new investments are slated to come after the next federal election. If the Liberals win, these commitments are safe; but if a tax-cutting Conservative government comes to power there is no guarantee it will view these commitments as binding. Meanwhile, total research funding for 2024-25 is actually down somewhat. It's now at its lowest level in over 25 years in inflation-adjusted dollars because of a major government clawback of unused (carried-forward) funds at the Canada Foundation for Innovation.

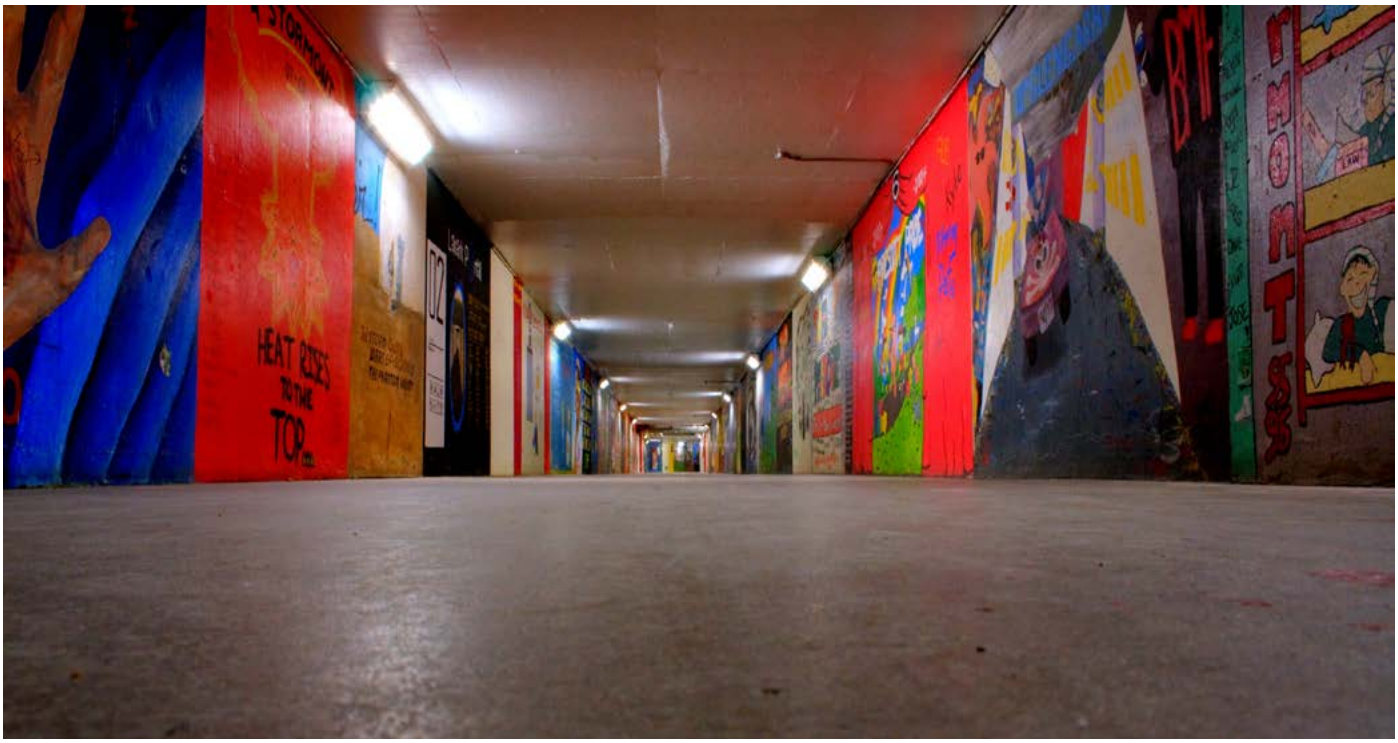
In summary, then, when we look up from the issue of international students and the income they do or do not bring to the Canadian postsecondary sector, the picture is not encouraging. It is one of stagnant or declining domestic enrolments, along with stagnant or declining per-student funding. A demographic bulge may be about to bring a new wave of students to Canadian institutions, but there is little sign that governments are interested in either providing the additional support or allowing institutions to meet the extra costs associated with this: neither funding rises nor rises in domestic tuition levels seem to be on the horizon. This will leave institutions a choice between denying access to part of this new youth cohort or teaching them with significantly fewer resources per student. And all the while, Canada's scientific research capacity is eroding because the federal government seems unable or unwilling even to keep investments rising with inflation.

It is not condition red, exactly. But it is flashing a rather deep shade of yellow.

Figure 5: Historical and Projected Institutional Income from Tri-Councils and the Canadian Foundation for Innovation, 2001-02 to 2028-29, in Millions, in $2023



Carleton University, Tunnels



1.

CHAPTER ONE

Learners

KEY POINTS

- COVID led to a slowing of university enrolment growth and a slight decline in college enrolment growth. For 2022-23, total enrolment in public universities and colleges is estimated at 2.22 million. Apprenticeship enrolments add another 423,000 to the total.
- There have been ongoing increases in engineering and the sciences at universities, particularly since 2008-09. The rates of growth in business and health have declined significantly in the past five years. The humanities continue to remain in significant decline. Between 2011-12 and 2021-22, enrolment in the humanities fell by 32%, while social sciences and business both increased by 14%, health by 23%, engineering by 38% and science by 46%.
- Nearly half of students are part of a visible minority, and Canada is one of the very few countries in the world where visible minorities have higher rates of postsecondary participation than non-visible minorities.
- Women still make up a significant majority of students in both universities and colleges, but they remain hugely underrepresented in the fields of Engineering and Technology.
- International students accounted for 18.1% of students at the university level and 24.5% of college enrolments. In Ontario, the international share in colleges has now risen to 40% of the total.

CHAPTER ONE

Learners

University of Saskatchewan, Gordon Oakes Red Bear Student Centre

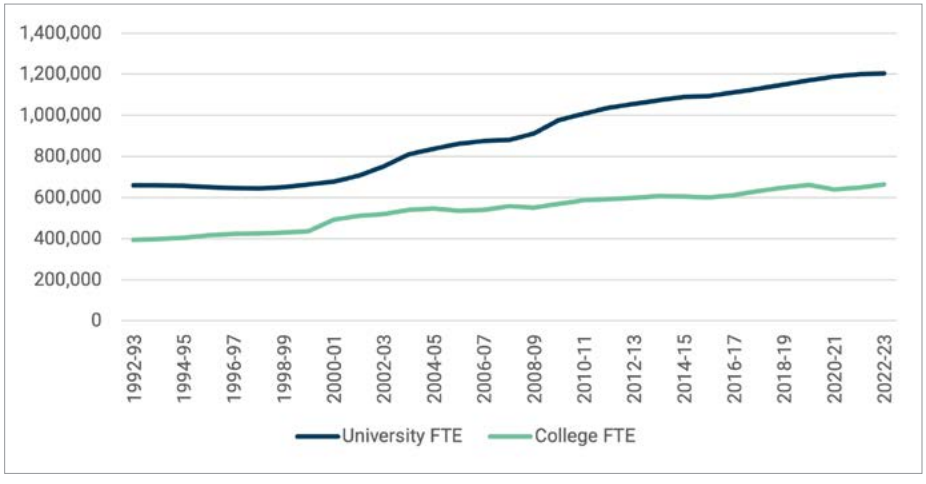
As of 2022, roughly 2.6 million individuals are enrolled in Canada's universities, colleges, or registered apprenticeship programs. This represents between 6 and 7% of the entire population, a figure that is larger than the population of the four Atlantic provinces put together, or the combined workforces of the construction and manufacturing industries. This chapter provides a high-level overview of where these students are and what they study.

1.1 ENROLMENT TRENDS IN POSTSECONDARY EDUCATION

Enrolments in universities and colleges have been rising steadily in Canada since the turn of the century. Throughout the 1990s, total enrolment (full-time and part-time) remained relatively flat, hovering between 1.3 and 1.4 million students. After 1999, numbers began to increase until they reached 2 million in 2011-2012, at which point growth slowed until around 2016 when a surge in international student enrolment began pushing numbers up. In 2021-22, the last year for which Statistics Canada provides complete enrolment data, the reported total headcount enrolment was nearing 2.2 million. Based on institutional and provincial data, which was available for over 90% of the country, that total increased slightly to just over 2.22 million in 2022-23, with colleges accounting for roughly three-quarters of the growth.

Figure 1.1 shows changes in full-time equivalent (FTE) enrolment in Canada's universities and colleges.[1] As of 2022-23, there were just over 1.86 million FTE students in Canadian PSE institutions, with a little over one-third enrolled in colleges and just under two-thirds in universities. Since the turn of the century, enrolments have been growing more quickly in universities than in colleges, though this is partly due to the conversion of several institutions in Alberta and British Columbia from college to university status.

Figure 1.1: Full-time Equivalent Enrolments by Sector, 1992-93 to 2022-23



1 The term "full-time equivalent" (FTE) in Canada is a mathematical approximation equal to full-time students plus [part-time students/3.5]; it does not mean actual full-load equivalents based on credits taken.

Canadian provinces differ vastly in population size, and so too do their provincial systems of higher education. However, the relationship between the size of the population of a province and the number of students enrolled in its higher education institutions is not as proportional as one might expect. For example, Manitoba's population is 75% larger than New Brunswick's, yet New Brunswick's postsecondary system is about 10% larger than Manitoba's. Ontario has the country's largest university system, making up roughly 43% of total seats (compared to just 38% of the country's population). Quebec, with just 22% of the population, has over 30% of the college students, due mainly to the CEGEP system's status as a pre-requisite to university study (see Appendix A for more on this system).

Table 1.1: Full-time Equivalent Enrolments by Sector and Province, 2022-23

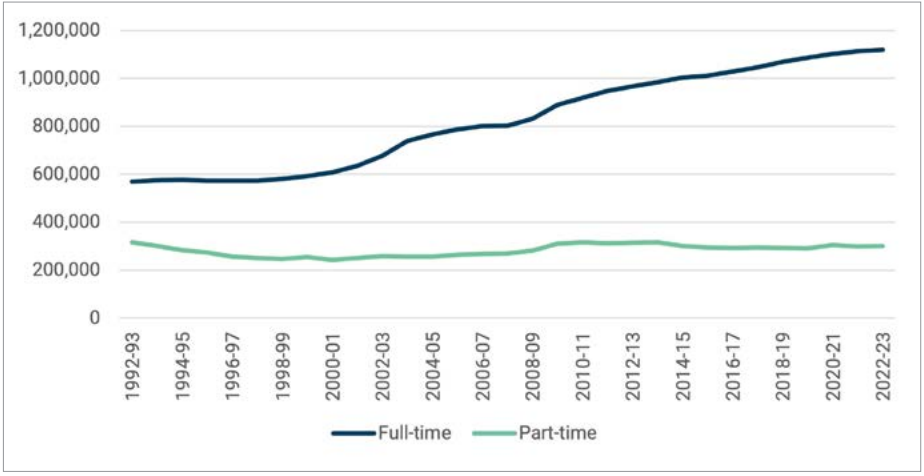
	Universities	Colleges	Total
Newfoundland & Labrador	16,201	4,777	20,978
Prince Edward Island	5,055	2,364	7,419
Nova Scotia	44,459	8,940	53,398
New Brunswick	18,077	8,055	26,132
Quebec	244,343	203,223	447,566
Ontario	517,383	286,579	803,962
Manitoba	41,054	13,857	54,911
Saskatchewan	36,647	12,331	48,978
Alberta	133,939	59,530	193,469
British Columbia	146,642	62,843	209,485
Territories	855	1,213	2,068
Canada	1,204,656	663,711	1,868,367

1.2 ENROLMENT TRENDS IN UNIVERSITIES

Turning specifically to university students, the first decades of the 21st century look very different than the last decade of the 20th. In the late 1990s, full-time enrolment was essentially flat. Part-time enrolment declined somewhat during the same period, following a period of expansion in the 1980s when professions such as nursing and teaching began retroactively requiring practitioners to hold bachelor's degrees, which they mainly attained through part-time study. Stagnant full-time enrolments during the 1990s were partly a product of demographics, but they were also the result of repeated provincial cuts to university grants, which led to capacity issues and a reluctance on the part of institutions to admit more students.

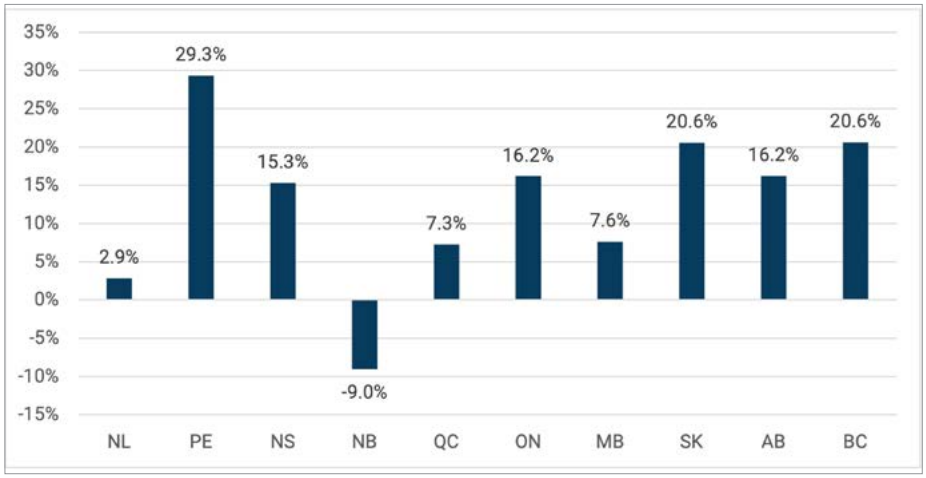
From about 2000 onward, growth resumed so that by 2021-22, full-time enrolments were 82% higher than they were in 2000-01. In part, this increase was due to shifts in the population profile: by the late 1990s, the children of the baby boomers (the so-called "baby boom echo") started to flood into postsecondary education. In addition, demand for higher education increased due to technological change. Accommodating those twin pressures — higher demand and a growing youth cohort — required some extraordinary measures. Two events stand out: the first was the Ontario government's decision to end the system of Ontario Academic Credit (which, in practice, was a 13th grade of high school) in 2002, creating a "double-cohort." To attenuate the stress this would put on institutions, funding was granted to enlarge its universities, not only to accommodate the one-time system growth, but to permanently expand capacity as well. The second was the decision of the provinces of Alberta and British Columbia to expand their postsecondary systems, in part by transforming some community colleges into universities.

Figure 1.2: Full- and Part-Time Students in Canadian Universities, 1992-93 to 2022-23



However, growth in university enrolments this decade has not been universal. Demographic challenges have led to limited growth in Newfoundland and Labrador, Quebec and Manitoba, while New Brunswick has seen an outright decline in enrolments. Nova Scotia and Prince Edward Island would likely have seen similar levels of low growth had not both been unexpectedly successful at raising enrolments by attracting international students. Further west, British Columbia and Saskatchewan saw increases of over 20% while growth in Alberta and Ontario has been on the order of 16%.

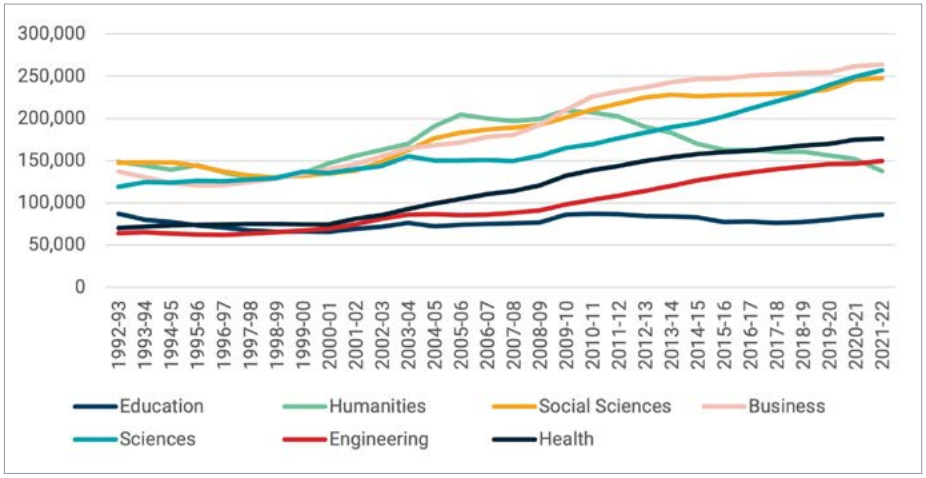
Figure 1.3: Change in FTE University Enrolments by Province, 2012-13 to 2022-23



1.2.1 Fields of study

Figure 1.4 looks at changes in university enrolments by field of study. In the 1990s, when total enrolment was declining due to reductions in the number of part-time students, business, science, humanities, and social sciences all experienced an enrolment decline. Starting at the end of the 1990s, nearly all fields of study began to grow at roughly similar rates. The exception was education. Fewer teachers were needed because of the falling birth rates during the late 80s and early 90s. Universities adapted by limiting enrolments to teacher training programs. This trend of growing enrolment in most fields of study continued until 2010 or so, when humanities numbers began falling while most other fields grew. Between 2011-12 and 2021-22, enrolment in the humanities fell by 32%, while social sciences and business both increased by 14%, health by 23%, engineering by 38% and science by 46%.

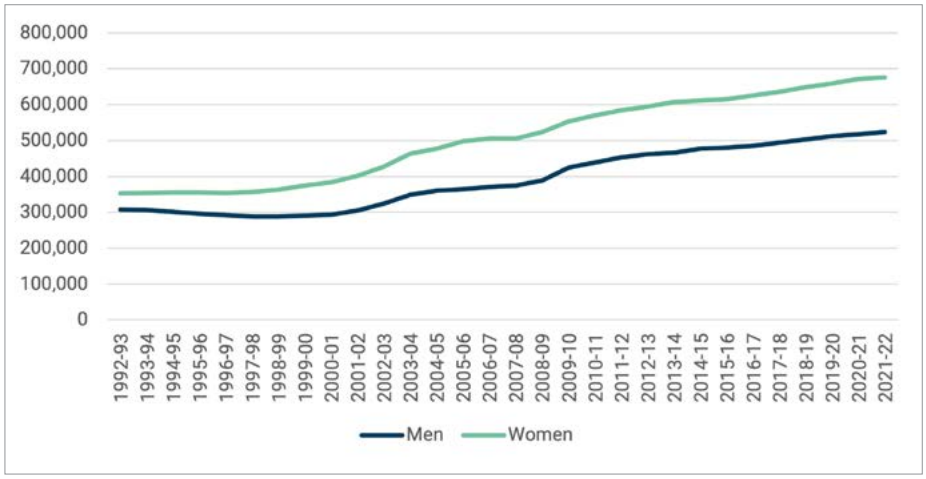
Figure 1.4: University Enrolments by Major Field of Study, 1992-93 to 2021-22



1.2.2 Student demographics

Figure 1.5 shows the evolution of enrolments by gender since 1992. As in most countries around the world, university enrolments in Canada tilts towards women and has done so for decades. In 1992-1993, women made up 53% of the student body. By 2000, they made up 57% of the student body, a level that has been maintained with only slight variations ever since. The internationalization of the

Figure 1.5: Full-Time University Enrolment, by Gender, 1992-93 to 2021-22



University of Guelph, South Residence, 1969

student body is one of the things contributing to the plateauing of women's participation rates, as foreign students tend to be disproportionately male.

The distribution of women across fields is uneven. In health and education, women make up between 70-75% of all full-time university enrolments. In what are usually called "arts" disciplines—that is, social sciences and humanities—women usually make up about two-thirds of all enrolment. Business and sciences are more evenly split between men and women, while in engineering, men account for close to three-quarters of all enrolment, a figure that has changed remarkably little over the past three decades. Figure 1.6 shows women's share of full-time university enrolments in 2021-22.

Canada does not systematically collect administrative data on the social composition of the Canadian student population, but data on this is still available from several sources. With respect to ethnicity, the longest-standing source of data comes from the Canadian Undergraduate Survey Consortium (CUSC). The Consortium's data is somewhat inconsistent because the list of participating institutions changes from one survey cycle to the next, but in general it is the best source of long-term on the Canadian student body.

In both the 2019 and 2022 cycles of the Consortium's first-year university student surveys, 44% described themselves as being a "visible minority", which is more than triple the number of those who did in 2001. Even if we exclude all those who say they are international students – not all of whom are visible minorities – the 2022 figure is still 30% (the 2019 figure was an even higher 35%). Partly, this change reflects the country's changing ethnic composition, but it also reflects the fact that visible minorities are more likely to go to school than other Canadians. According to the 2021 census, 33% of Canadians aged 15-24 identified as a visible minority; with somewhere between 30-44% of domestic students claiming the same. This suggests that visible minority students are slightly overrepresented in Canadian universities. Very few other countries can say anything similar; normally, minority populations are less likely to attend university.

Figure 1.6: Women's Share of Full-Time Enrolments, by Field of Study, Canadian Universities, 2021-22

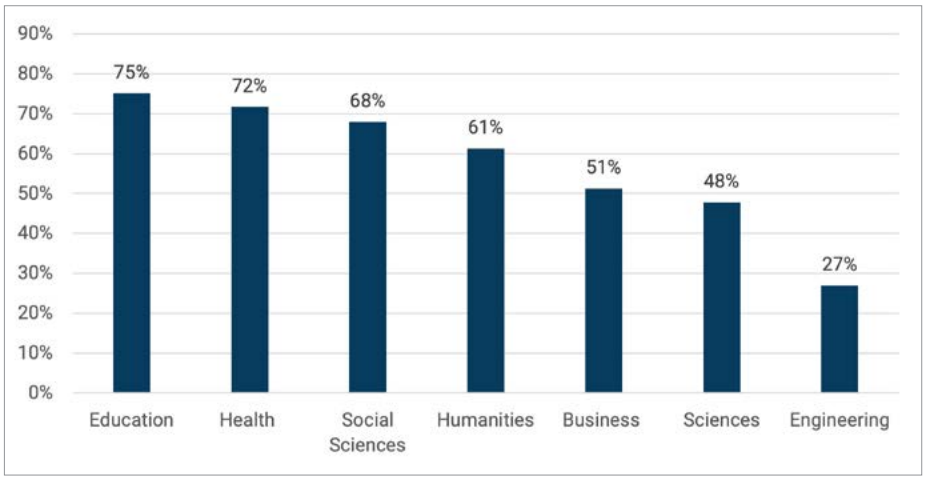
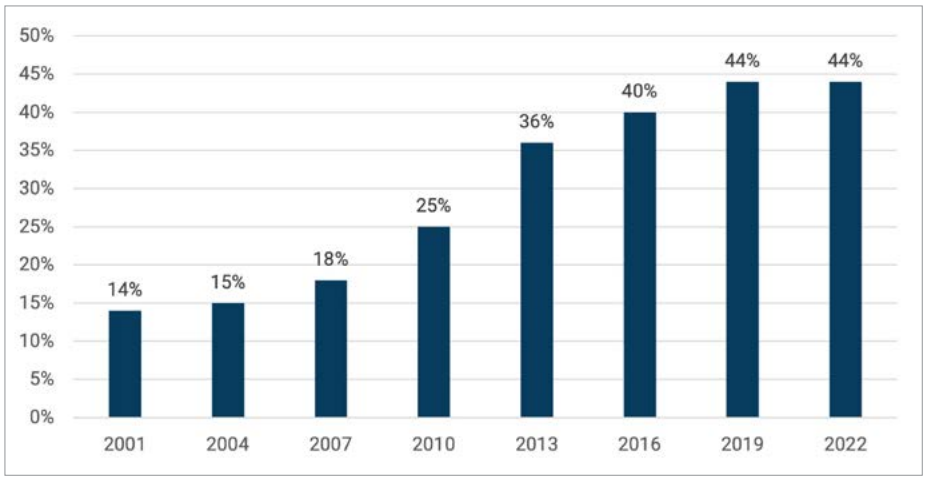


Figure 1.7: First-Year University Students by Visible-Minority Status, 2001 to 2022



Data from the 2021 census allows us to consider in more detail the ethnic composition of both the university and college student populations, shown right in Figure 1.8. Six out of ten college students and 54% of university students are considered not to be visible minorities (what in the United States would likely be termed "white" though this is not accepted Canadian nomenclature). South Asian students make up about 13% of students in both sectors. Blacks make up 6% of the university population and 7% of the college population; for Indigenous Canadians make up 3% and 4% of the two sectors, as do Filipino students, while Arab and other visible minorities make up 9% of the population in both sectors. The one very anomalous ethnic group is Chinese Canadians, who make up 11% of the university population but only 3% of the college population.

Another way to consider data on students by ethnicity is to show the rates at which they participate in postsecondary education. Figure 1.9 shows the proportion of 15-24-year-old high-school graduates enrolled in each postsecondary sector, by ethnicity. Youth of Chinese backgrounds had the highest levels of postsecondary participation at over 70%. Korean, Arab, Japanese and West Asian (i.e. Turkish and Iranian) youth all recorded participation rates of 60% or higher. The lowest participation rates are for individuals with Indigenous identity at about 34% (though this is in some ways inflated because secondary school completion rates for this population are so low). The non-visible minority – that is to say "white" – participation rates are on the low side, at 50%, which is 9% lower than for visible minorities as a whole. This makes Canada one of the very few countries in the world where visible minorities have higher rates of participation than non-visible minorities.

Figure 1.8: Shares of Enrolment by Ethnicity and Sector, Canada, 2021 (15-24 year-old)

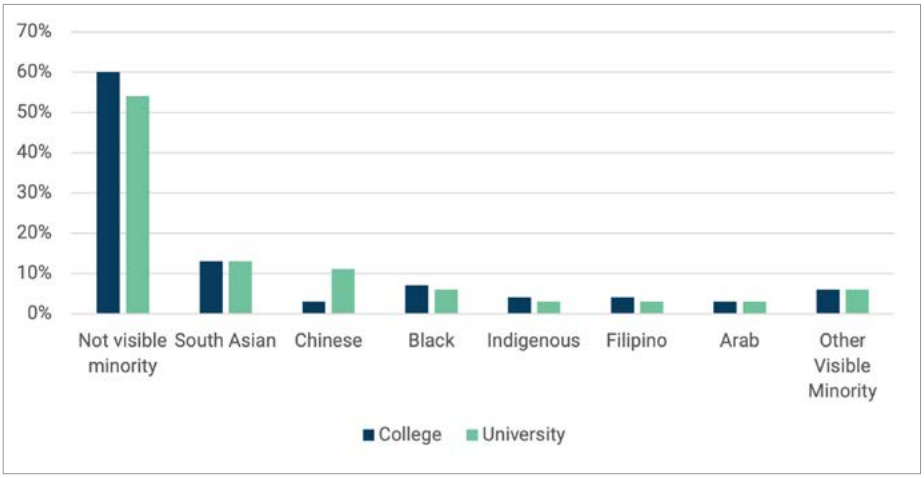
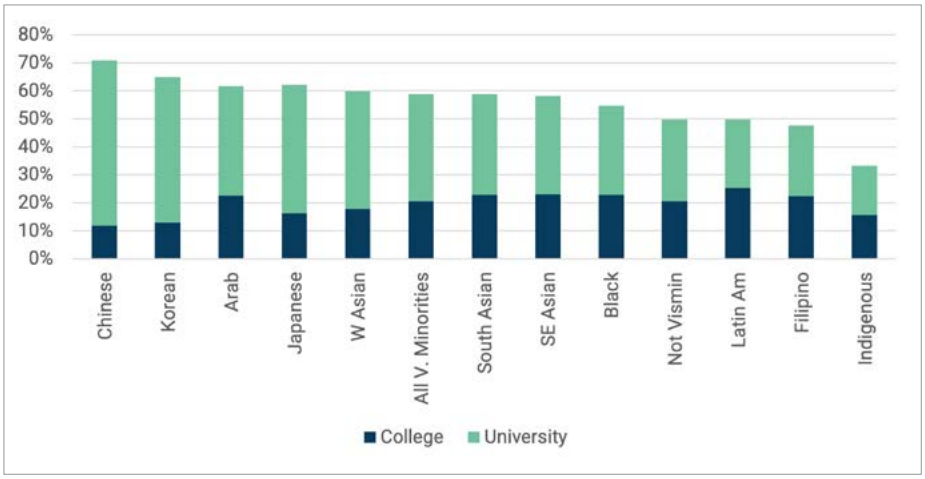


Figure 1.9: Participation rates of 15–24-year-old high school graduates by Ethnicity and Sector



University of British Columbia, Brock Hall Lounge, 1960

Acadia University, Garden Room

Figure 1.10: Participation rates of 15–24-year-old high school graduates by Indigenous Status and Sector

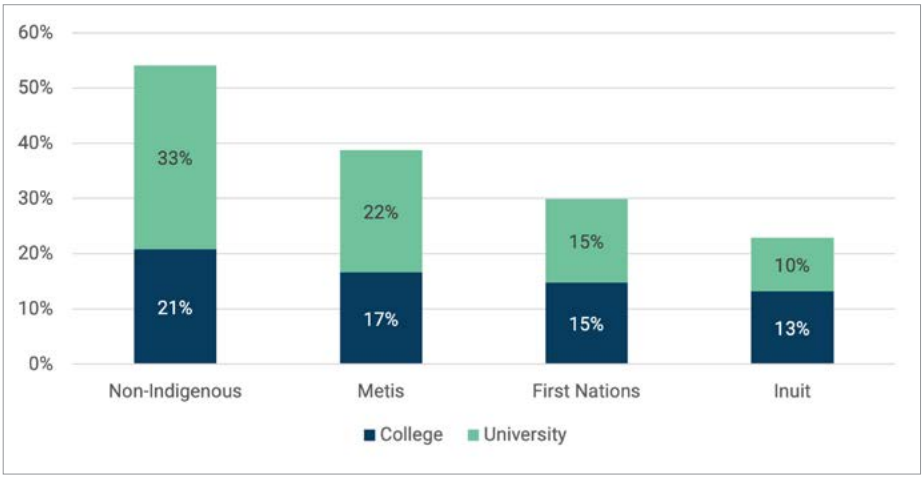
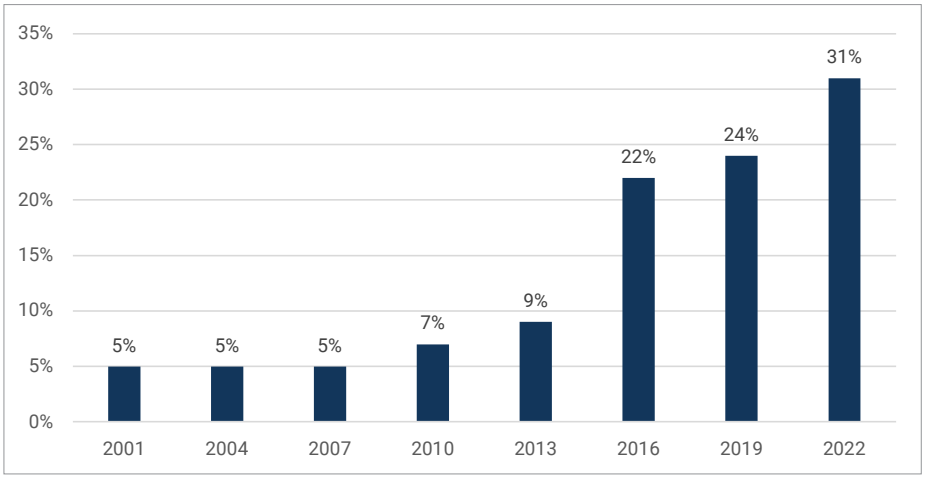


Figure 1.11: First-Year University Students Reporting Disability, 2011-2022



Participation rates among Indigenous peoples can be further broken down into rated for First Nations, Métis and Inuit. As Figure 1.10 shows, the non-Indigenous population 15-24 years old with secondary school diplomas have an overall participation rate of about 54%, with a 60-40 split in favour of university enrolment. For Métis youth, the participation rate is 39%, with a smaller proportion in university. Among First Nations, it is 30 percent, equally split between the two sectors, whereas among Inuit populations, it is a very low 23% with a bias towards college.

With respect to students with disabilities, our best source of data is again the Canadian Undergraduate Survey Consortium. Between 2001 and 2013, the percentage of students reporting disabilities increased from 5 to 9%. It is impossible to determine whether this increase is the result of more students with disabilities were accessing education or because of a reduced stigma in disclosing disabilities (or both). In 2016, the wording of this question changed to explicitly include mental health issues and the proportion of self-reporting students shot up to 22%. By 2024, students reporting disabilities had reached 35%. Two-thirds these students in 2024 indicated that they had a mental health issue (up from about half in 2019).

With respect to participation by sexuality, the 2019 American College Health Association's National College Health Assessment Survey, which was administered in 56 Canadian postsecondary institutions, reported that 83.2% of respondents declared themselves heterosexual, whereas 8.3% declared they were bisexual, and the remainder (10.5%) declaring themselves lesbian, gay, asexual, pansexual, queer, questioning or some "other" sexual identity (the 2022 version of the survey, which had a much smaller sample of institutions, had the proportions at 73.4%, 12.4% and 14.2%, respectively). These results are substantially higher than Statistics Canada estimates of the general population, based on the Canada Community Health Survey, which suggest that 10.5% of the Canadian population aged 15-24 is LGBTQ2S+. This may imply one or a combination of things: that LGBTQ2S+ youth are much more likely to attend universities and colleges, that some type of sample response bias may exist, or both.

Finally, a 2024 release from StatisticCanada estimates that 0.64% of domestic students in Canadian postsecondary institutions are transgender or non-binary. The percentage rises with the level of education: in college programs the figure is 0.6% while in doctoral programs it is 1.27%. It also varies by field of study, with Arts and Humanities at 1.34% while in Business and Administration it is 0.33%.

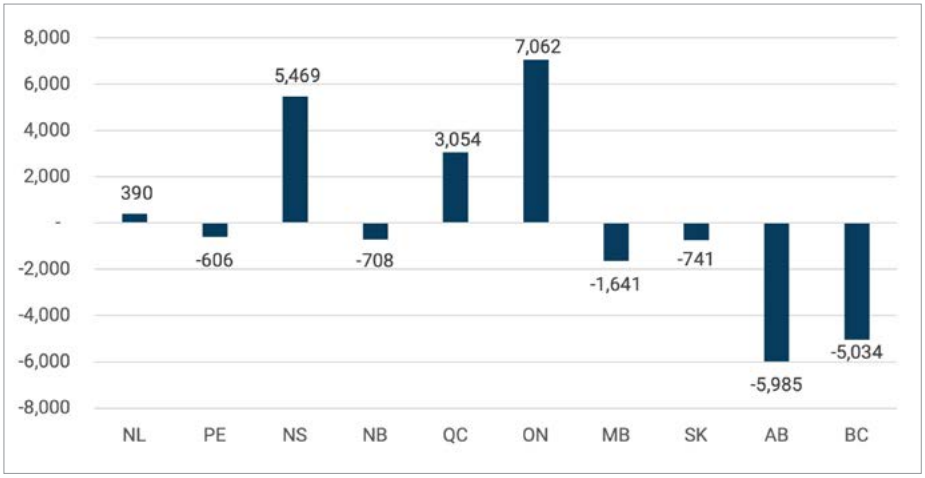
University of Alberta, HUB Residence

1.2.3 Inter-provincial student mobility

The proportion of Canadian university students who move provinces to study is relatively low, roughly 8.5%, a rise of about two percentage points since the early 1990s. Generally speaking, movement into and out of provinces is inversely correlated with size. In the three Maritime provinces, over one in four Canadian students is from another province (in Nova Scotia, much of this inflow is from Ontario; in New Brunswick and Prince Edward Island it tends to come from the other Maritime provinces). Conversely, in Ontario and Quebec, the proportion of out-of-province students is closer to one in twenty.

Figure 1.12 shows the net inflow of domestic students (i.e., excluding international students) across all ten provinces. In absolute terms, the largest net recipient of students is Ontario, with 5,775 more students arriving than departing to other provinces. In relative terms Nova Scotia is by far the largest importer. Conversely, Alberta is the largest net loser in terms of student numbers, sending nearly 14,000 students to other provinces (mainly British Columbia and Ontario) while only attracting a little over 8,000. In relative terms, Prince Edward Island is the largest net exporter of domestic students, losing a net 650 students to other provinces (mainly Nova Scotia).

Figure 1.12: Net Inflows of Undergraduate Students from other Canadian provinces, by Province, 2020-21



1.3 ENROLMENT TRENDS IN COLLEGES

College enrolment has increased substantially over the past two decades, at rates roughly similar to those seen at universities. However, data collection on the college side is less reliable and Statistics Canada has changed the way it counts vocational education students, so some of the increases – particularly in the mid-late 2000s - may represent statistical artifacts rather than real change. Nevertheless, the increase on the college side is even more significant considering that many tens of thousands of college students were removed from the college count in Alberta and British Columbia when several institutions changed status from college to university.

Figure 1.13: Full- and Part-Time College Enrolment, from 1992-93 to 2022-23

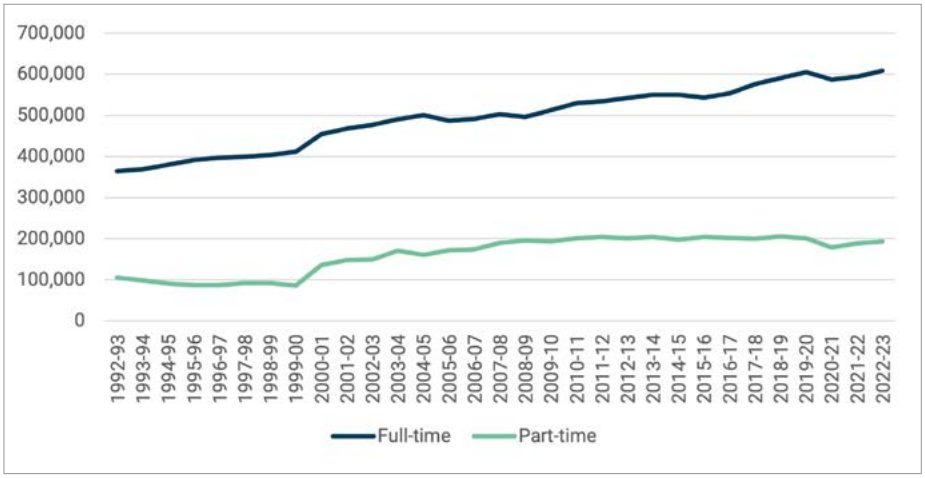


Figure 1.14 shows changes in college enrolments by province over the past ten years. The most stunning changes have been in Newfoundland and Labrador as well as in the three territories, all of which have seen significant declines in enrolment. In the former, the culprit seems to be related to overall population decline, particularly outside the Avalon Peninsula. In the latter three, the decline is concentrated on the part-time side, where numbers declined by roughly 90% between 2019-20 and 2020-21, which likely indicates a change in reporting practices (and, perhaps, that earlier figures were inflated). However, more than offsetting these declines were increases of 15% or more in Prince Edward Island, Ontario, Manitoba, Saskatchewan and Alberta; for the most part, these increases have been due to international students rather than domestic ones. Elsewhere, rates of growth and decline have been more modest. New Brunswick and British Columbia have seen gains of 5% and 7% respectively; Quebec has been essentially stable; and Nova Scotia has seen a decline of about 7%.

Figure 1.15 shows enrolments in colleges by field of study. As in universities, "business" studies are the largest single category, and some of the most important long-term growth has come in engineering and health. One element of this figure, which may surprise people who are used to thinking of colleges as technically-oriented, is the large (albeit declining) proportion of enrolments in the humanities. That is due in no small part to the unique nature of Quebec colleges: a very large proportion of those students headed to university in that province (via the CEGEP system) are enrolled in programs commonly considered to be part of the "humanities".

Figure 1.16 shows college enrolments by gender. As in the university sector (see figure 1.5, above), women make up the majority of enrolments in the Canadian college sector. However, the pattern of change over time is somewhat different. Unlike the university sector, from 1992-93 to the present day, the proportion of college enrolments made up by women has stayed in a very narrow band from 53-55%.

Figure 1.14: Change in FTE College Enrolments, by Province and Territories, 2012-13 to 2022-23

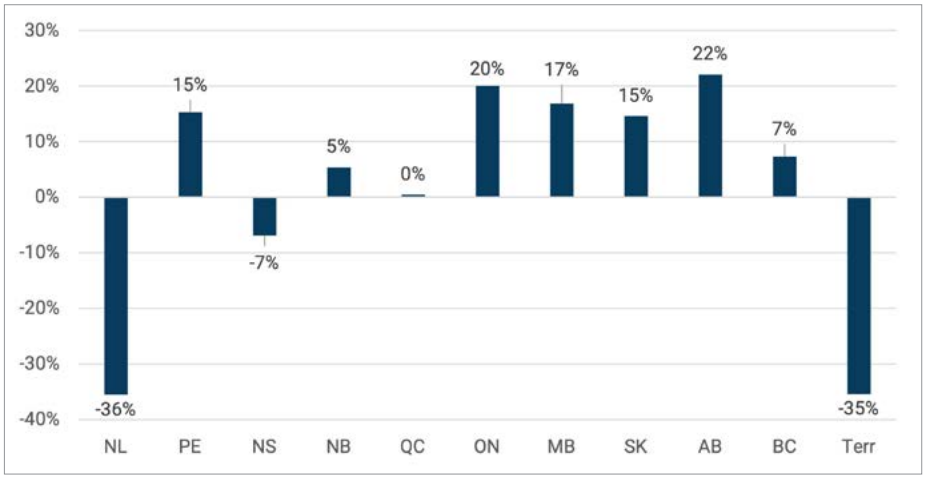


Figure 1.15: College Enrolments by Major Field of Study, 1992-93 to 2021-22

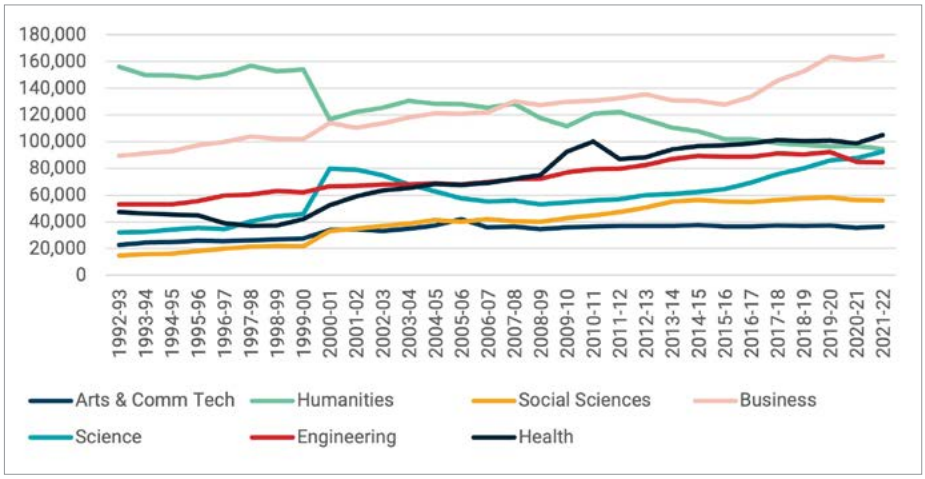
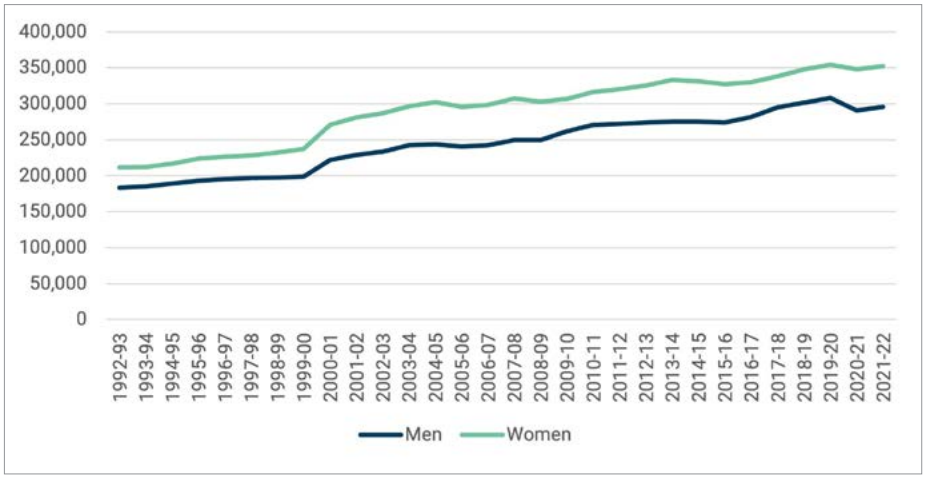
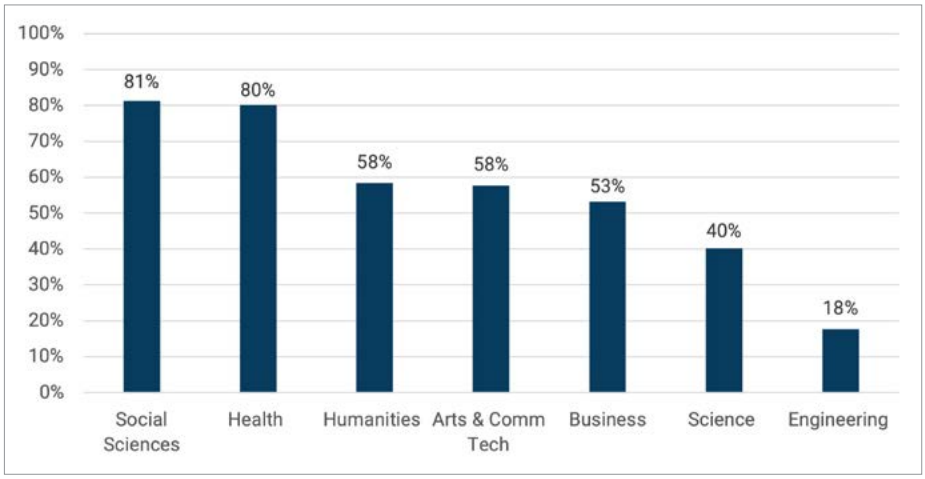


Figure 1.16: Full-Time College Enrolment, by Gender, 1992-93 to 2021-22



As figure 1.17 shows, enrolments by field of study are more polarized in terms of gender in the college sector than they are in univerities (see above, figure 1.6). Fully 80% of students in the fields of heath and social sciences are women, wheras in the fields of engineering and Technology only 18% are women. However, science, humanities, arts & communications technology, and business are all much closer to gender parity.

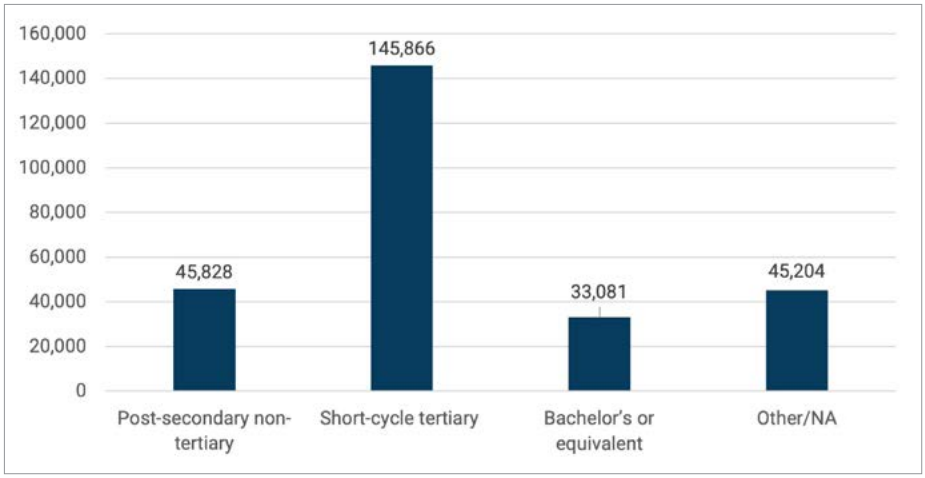
Figure 1.17: Full-Time Women's College Enrolment, by Field of Study, 2021-22



University of Regina, Archer Library, 1973

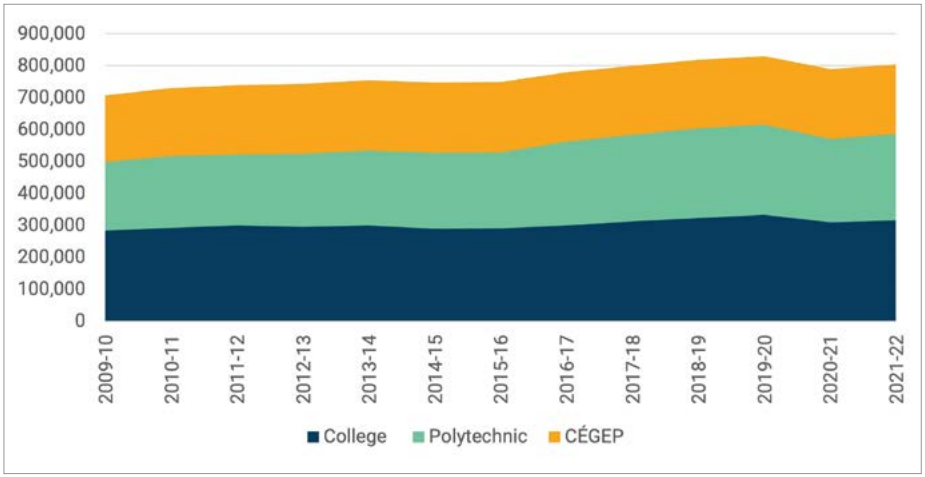
Because Polytechnics (see What is a Polytechnic, APPENDIX A) are not an official category of institution, we have no official count of students at these institutions as an independent category. However, based on their submissions to Statistics Canada, these 13 institutions reported a headcount enrolment of 224,775 postsecondary students, plus another roughly 45,000 students who are not studying at a postsecondary level (classified as "upper-secondary" or "not applicable" by Statistics Canada). Polytechnics educate students at a variety of levels. In addition to "postsecondary non-tertiary" — what the United Nations Education, Scientific and Cultural Organization (UNESCO) calls the International Standard Classification of Education (ISCED) Level 4 and "short-cycle tertiary" (ISCED Level 5) — they also teach about 33,000 students, or 14% of postsecondary students enrolled in Polytechnics, at the bachelor's level or above. Something like 95% of these enrolments would be considered college enrolments by Statistics Canada, while only 5% (mainly from Kwantlen Polytechnic University in British Columbia) would be counted as university students.

Figure 1.18: Polytechnic Enrolments by Level of Education, 2021-22



As noted in Appendix A (below), Canada broadly has three kinds of college-level institutions. The first kind are the Collège d'enseignement général et professionnel (CEGEPs), which exist only in Quebec, and provide both direct training for the labour market and a 2-year bridge between secondary school and university. Second are the Polytechnics described above, and third are the more traditional community colleges, which offer a variety of vocationally-oriented non-degree programming, and remain the dominant form of college in the Atlantic as well as much of rural and small-town Canada from Ontario to the Pacific.

Figure 1.19: Polytechnics, CÉGEP's & Colleges – Student Enrolment, 2009-10 to 2021-22

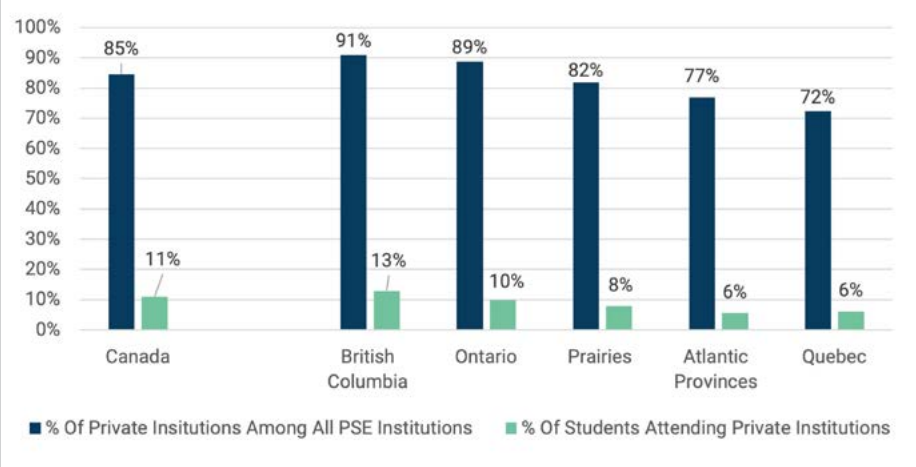


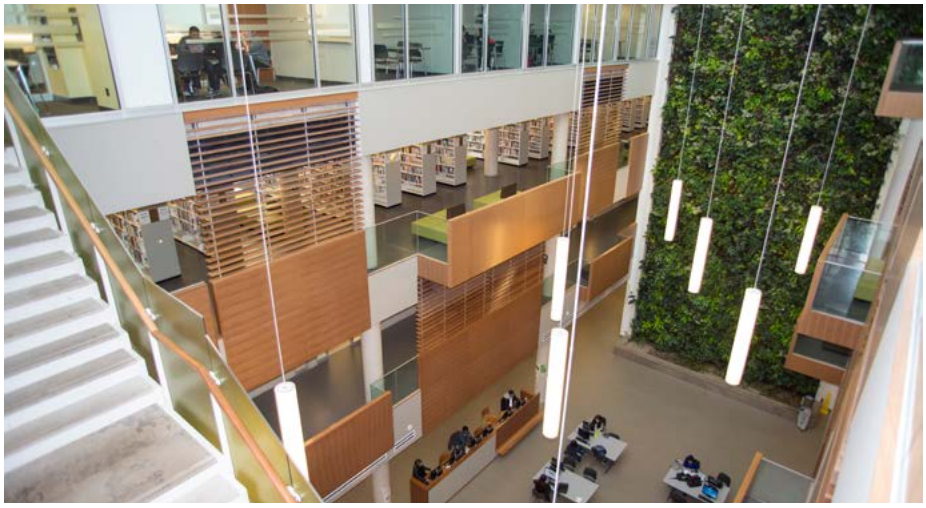
1.4 PRIVATE POSTSECONDARY EDUCATION

While higher education in Canada is mostly provided through publicly-funded institutions, particularly at the bachelor's level, the country has a very large private sector as well (see Appendix A Non-Standard Universities and Private Vocational Colleges). Most of this sector consists of what are called Private Vocational Colleges, which mostly provide programs at the certificate level (that is, of a year's length or less).

Statistics on these institutions and their students are hard to come by because they are not required to report information to Statistics Canada and to the extent they provide data to provincial governments, the data tends not to be public. However, in spring 2023 Statistics Canada published some data on the sector using both the agency's own Business Register and tax filing data. According to this new research, there are thousands of such institutions across the country; as figure 1.20 shows, roughly 85% of all postsecondary institutions in the country are private. However, these institutions are typically very small, such that these thousands of institutions have a collective enrolment that only makes up about 11% of the national student body.

Figure 1.20: Percentage of Private PSE Institutions & Students Attending Private Institutions in Canada, by Province, 2020





Centennial College, Library

1.5 APPRENTICESHIP ENROLMENTS

Apprentices are considered postsecondary learners, but they are not necessarily enrolled in postsecondary institutions. Their enrolment as apprentices merely means that they have a contract with an employer in which both sides agree the apprentice will follow a particular course of learning and will periodically attend in-class training (see Apprenticeships, APPENDIX A). Apprentice numbers were very low in the mid-1990s, reflecting a roughly 15-year trough in commodity prices and a generally weak Canadian economy. However, from the late-90s onward, the national economy grew more rapidly, inducing an expansion of employment in construction and necessitating the creation of many new apprentice positions. The decade-long run-up in commodity prices also created new demand for apprentices, particularly in Western Canada, in trades related to construction and resource extraction. The result was a rise in the number of apprentices, from 175,000 in 1997 to a peak of approximately 470,000 in 2013.

Despite recent challenges in natural resource sectors of the economy, the decline in apprentice numbers was relatively small, falling by 19% to 381,000 in 2020, though almost a quarter of this was due to Ontario eliminating a tax loophole that made it profitable to classify phone-centre workers as "user-support technician" apprentices. Since 2020, apprentice numbers have made a significant comeback, rising by over 11%, thanks mainly to jumps in construction trades in Quebec and Ontario. Table 1.2 shows how the top ten apprenticeship trades have changed in Canada over the past decade. The top four trades, which now make up almost 50% of all apprenticeship registrations, have stayed constant over the past decade: below that, the popularity of various trades seems to fluctuate a bit.

Figure 1.21: Apprenticeship Enrolments: 1995 to 2022

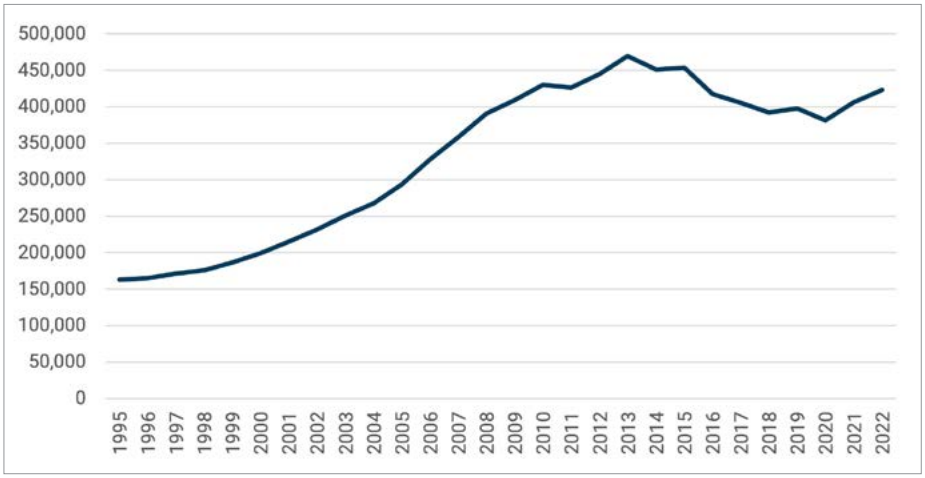
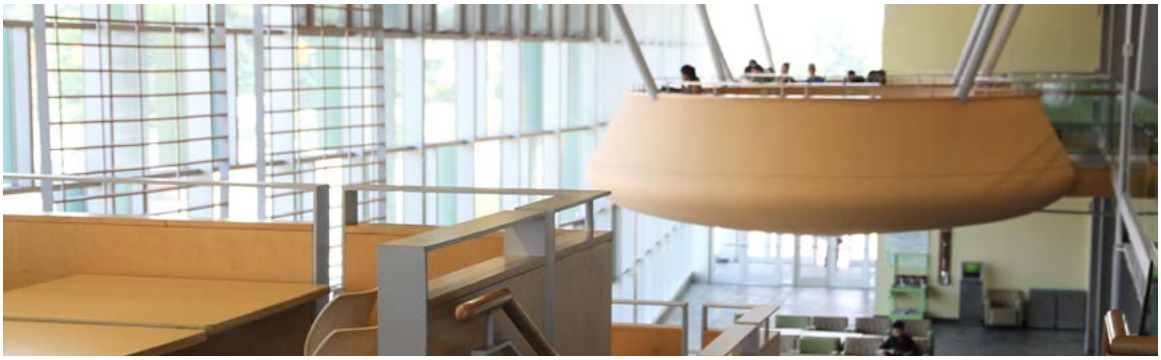


Table 1.2: Top Ten Major Trade Groups in Canada, 2012 vs 2022

2012		2022	
Electricians	67,023	Electricians	72,228
Carpenters	49,218	Carpenters	52,677
Plumbers, pipefitters and steamfitters	45,774	Plumbers, pipefitters and steamfitters	46,767
Automotive service	41,826	Automotive service	40,302
User support technicians	26,484	Food service	20,178
Food service	20,856	Interior finishing	17,766
Hairstylists and estheticians	19,395	Heavy duty equipment mechanics	15,126
Welders	18,741	Heavy equipment and crane operators	14,004
Interior finishing	18,114	Millwrights	13,827
Heavy duty equipment mechanics	13,917	Hairstylists and estheticians	12,927



Algonquin College, Study Pods

Coast Mountain College, Wii Gyemsiga Siwilaawksat Student Building

1.6 INTERNATIONAL STUDENTS

Since about 2000, the number of international students at the postsecondary level in Canada has increased dramatically, from just under 40,000 in the late 1990s to over 450,000 in 2022-23. This rise was at first gradual, but became rapid from 2009 onwards. There are several reasons for this growth: international students bring diversity to classrooms across the country and (marginally) because their presence burnishes institutions' standings in world rankings, which regard the presence of international students as an indicator of quality. However, the main reason is that international students pay much higher tuition fees than domestic students and are thus seen as a way to offset stagnant government funding. In 2022-23, international students made up 18% of all university enrolments and 24% of all college enrolments. In recent years, growth has been most rapid in Ontario's college sector, where international student numbers almost tripled between 2016-17 and 2022-23.

As with the general student population, international students are not distributed equally across the country. At the university level, international students are a bigger part of the student body in the Atlantic provinces than they are elsewhere; at the college level, it is the reverse, with international enrolments lower in the five eastern provinces but much higher west of there, especially in Ontario, which accounts for just over 70% of all international college students in Canada. Figure 1.23 shows international students as a percentage of the student body by sector, both regionally and nationally.

Figure 1.22: International Enrolments by Sector, Canada, 1992-93 to 2022-23

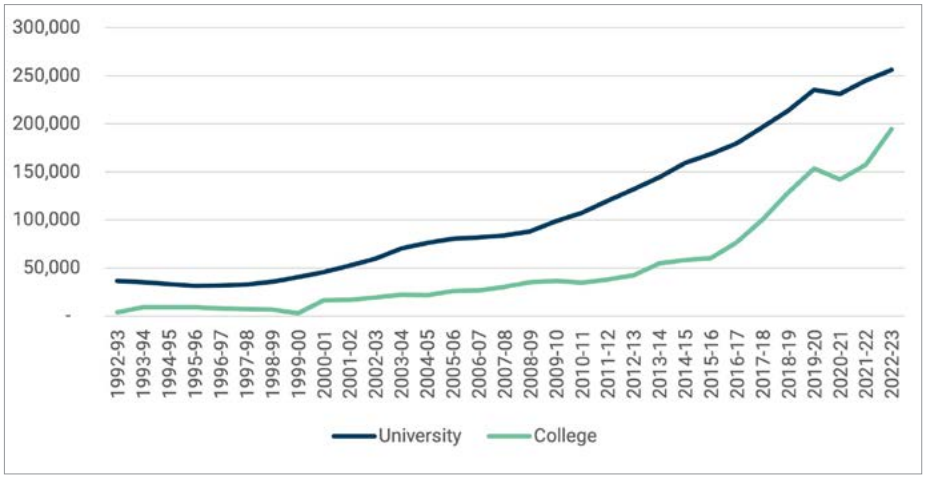
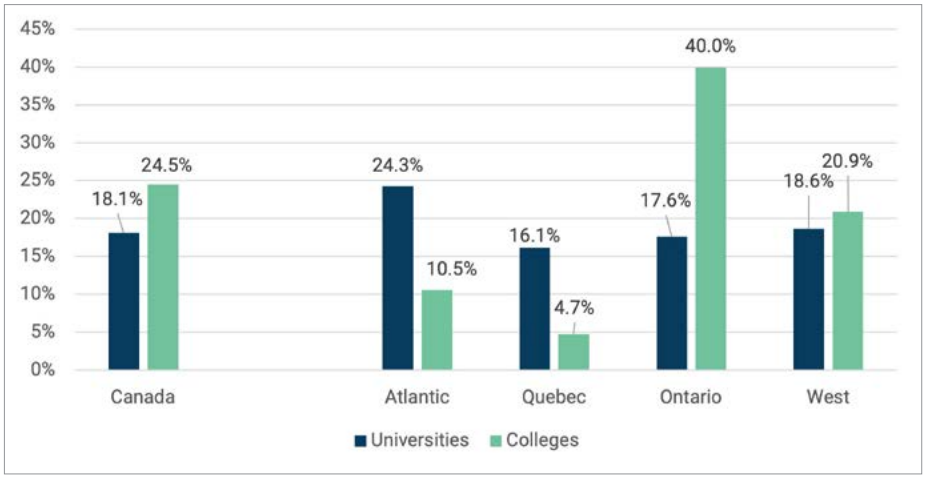


Figure 1.23: International Students as a Percentage of Total Student Body, by Region and Sector, 2022-23



Figures 1.24 and 1.25 show the distribution of international students by field of study for universities and colleges, respectively. As with domestic students, science and business are the two most popular fields among international students at universities. Engineering is a substantially more popular field among international students than it is among domestic ones (18% of all international enrolments), while social sciences, humanities, health care and education are less popular. That said, in absolute terms, international students have been a net positive for humanities enrolments, unlike enrolment from domestic students, international student enrolment in humanities has actually increased in the past decade. At the college level, it is an entirely different story, where nearly 50% of all students enrolled in business programs.

Figure 1.24: International Students, by Major Field of Study, Canadian Universities 1992-93 to 2021-22

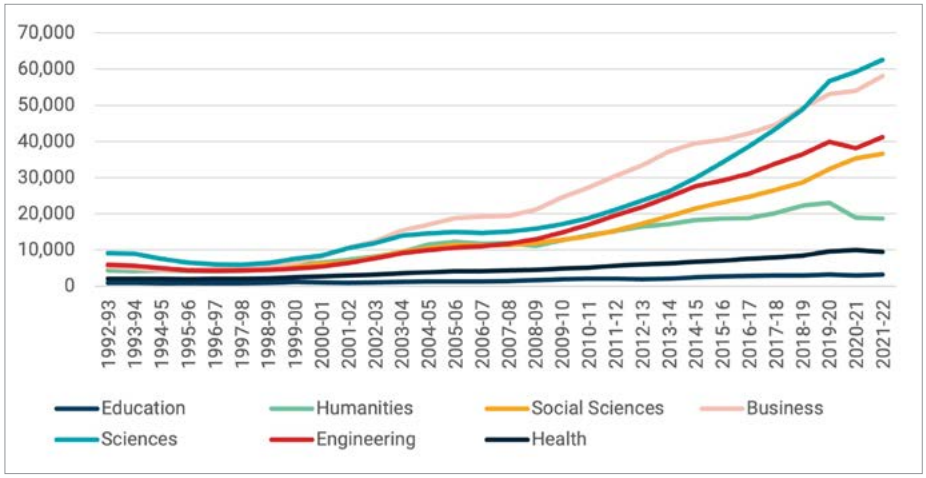
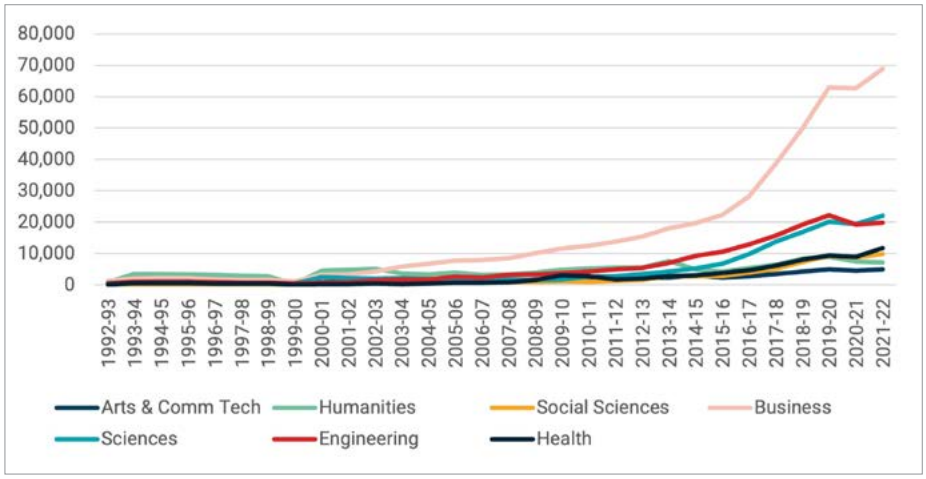


Figure 1.25: International Students, by Major Field of Study, Canadian Colleges, 1992-93 to 2021-22



1.7 CANADA IN INTERNATIONAL PERSPECTIVE

A perennial question about the postsecondary education system in Canada is how it fares in comparison to systems in other countries. This question is far harder to answer than one might think since national systems contain different types of institutions and offer degrees of various lengths. Most comparative questions can therefore only be answered imperfectly; nevertheless, some basic comparisons are possible.

Among the most often-asked questions when comparing different national systems concerns the size of the overall systems and the number of students they contain. Ideally, one would do this by looking at "net enrolment ratios", which is a way of dividing the number of students in "typical" attendance in a tertiary education[2] program (e.g., domestic students enrolled in such programs between the ages of 18-21) and divide it by the total number of the country's inhabitants in the same age range. This is difficult to do internationally because most countries do not make available sufficiently detailed data on the age distribution of their student body to

2 Tertiary education means ISCED level 5 and above, according to the United Nations Educational, Scientific and Cultural Organization's classification system. Roughly half of all postsecondary students at Canadian colleges are considered to be in tertiary programs, while the remainder are considered "postsecondary non-tertiary".

Pg 18: Cape Breton University (Xavier College), Speech Lab, 1968
Above: Yukon University, 500 Building

allow for a net enrolment count. So, most international comparisons rely on the "Gross Enrolment Ratio", which is total tertiary enrolment (which in Canada includes all university programs and roughly half of programs offered by colleges), divided by the number of people in a relevant four-year age bracket. Figure 1.26 shows this data for Canada and seven comparator countries: Australia, France, Germany, Japan, South Korea, the United Kingdom, and the United States. Canada's figure is 78%, which is close to the median among these countries. Note that of the four countries below Canada in the rankings, three offer undergraduate degrees of only three years in length (this is also true of Australia, but its figures are boosted both by the very large number of international students enrolled there and by the fact that unlike Canada, nearly all its college-level courses are defined as "tertiary" rather than "postsecondary non-tertiary).

Another way to look at participation in tertiary education is to look at the shares of population who are i) engaged in education ii) employed, or iii) Not Employed, in Education or in Training (NEET), a set of figures tracked by many but not all OECD countries. Figure 1.24 shows the percentages of youth aged 18-24 in education, employment or in NEET for Canada and four other G7 countries. Because the denominator of 18-24 covers seven age-years rather than just the four in figure 1.26, the percentages in education are significantly smaller in this comparison. Figure 1.27 shows a variety of patterns of education/employment/NEET across these countries, and there does not appear to be a stable pattern across these three categories.

Figure 1.26: Gross Enrolment Ratios in Tertiary Education, select OECD Countries, 2022 (or most recent year)

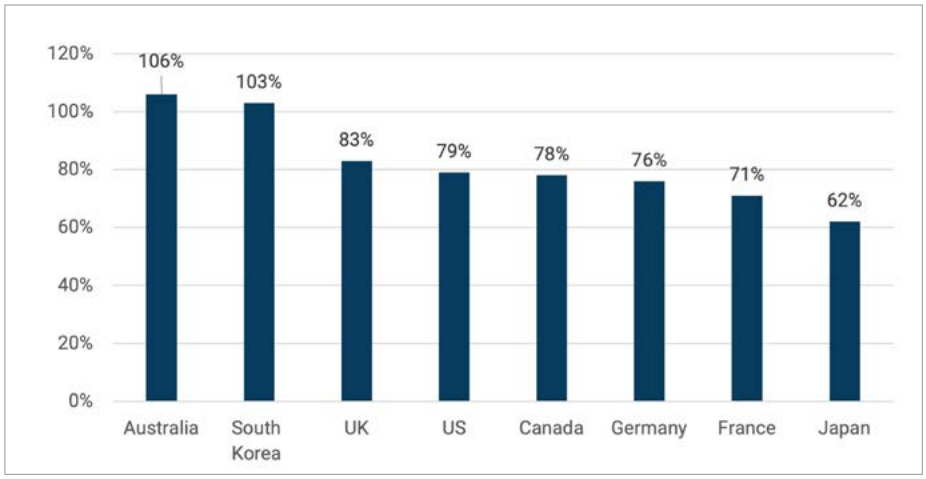
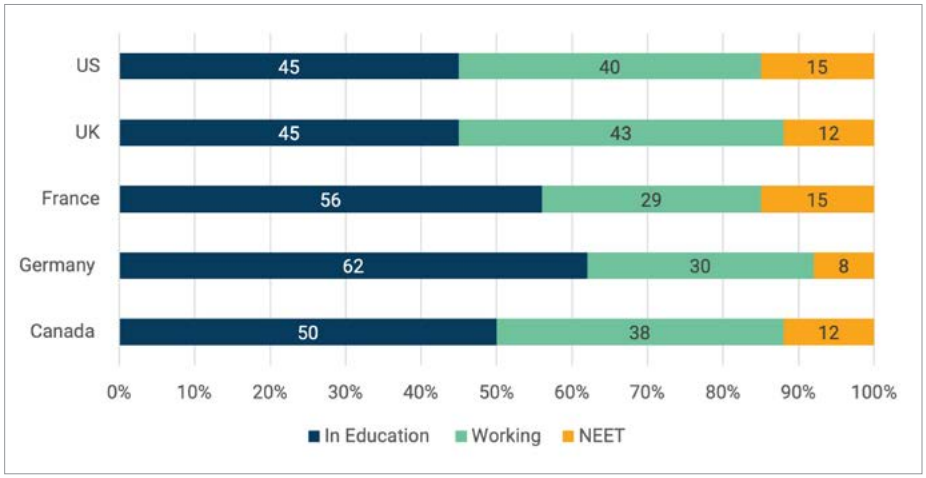


Figure 1.27: Proportions of Youth Aged 18-24 year-old in School, in Employment or NEET, Selected OECD Countries, 2022



One of the remarkable features of the Canadian system is the high proportion of students enrolled in non-university institutions. This is partly a function of Quebec's unique CEGEP system, and partially because of the strong tradition of professional and vocational education carried out in institutions right across the country (see APPENDIX A, What is a College?). As figure 1.28 shows, over 24% of Canadian tertiary-level students are enrolled in "non-universities", the second-highest rate among the selected countries. The US, Korea, and Japan, all of which have somewhat similar "junior" or "community" college systems, also have relatively high enrolment rates (over 20%) in these types of institutions. The number is much lower in Europe where these types of institutions are relatively unknown: Germany has very few students in institutions of these types, which may seem strange given their vaunted technical education system. This is partly because its apprenticeship arrangements are considered a part of the secondary education system rather than postsecondary, and partly because their *Fachhochschule* – institutions that are sometimes compared to community colleges on the grounds that they are not universities (and which educate roughly a third of all German tertiary students) – are closer to universities since all of the credentials they distribute are bachelor's degrees.

Another useful international comparison considers the distribution of students by subject area, trackable via data collected by the OECD on new entrants to tertiary education. As figure 1.29 shows, in 2021, science students – that is, enrolments in STEM and Health disciplines combined – ranged from 32% of the total in the US to 47% in South Korea (Canada was not far behind at 45%). Arts and Social Sciences were most prominent in France and the United States; Business and law were most prominent in France, Japan and the United Kingdom.

Figure 1.28: Proportion of Postsecondary Students Studying in Institutions Predominantly Offering Programs Below Bachelor-level, Selected OECD Countries, 2020

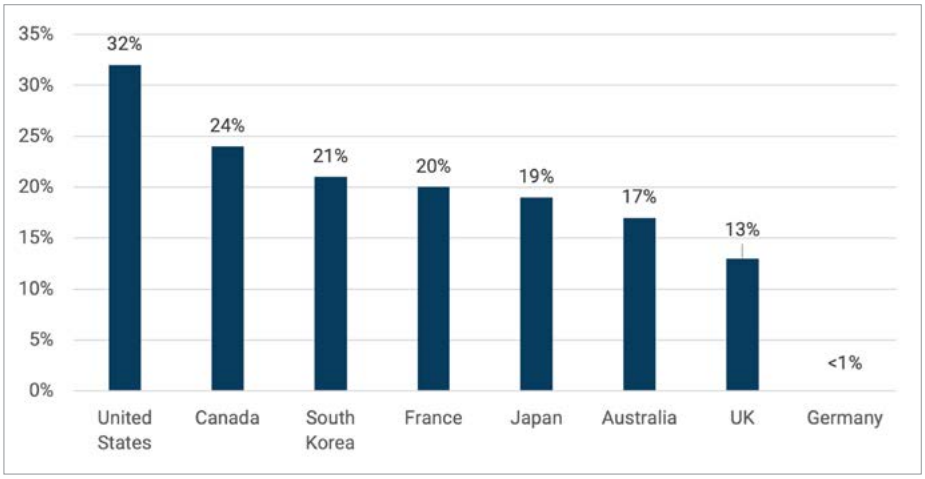
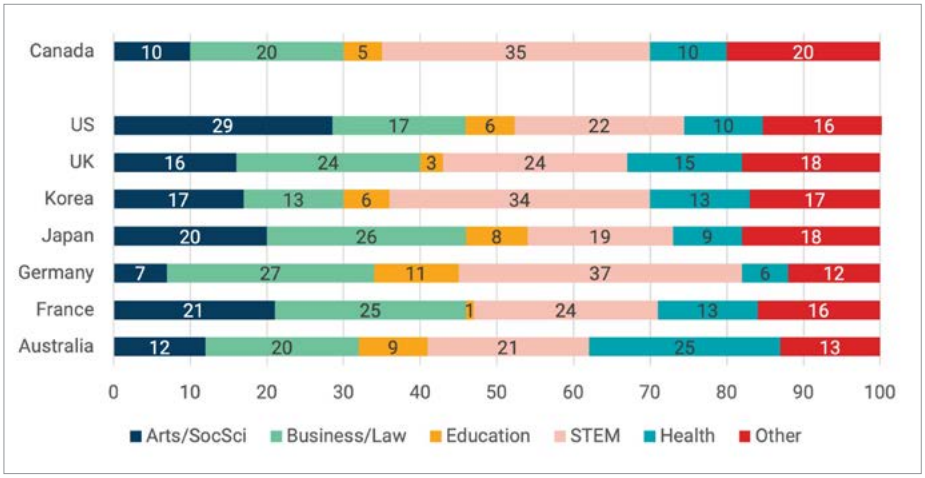


Figure 1.29: Distribution of New Entrants by Field of Study, Selected OECD Countries, 2021[3]



McGill University, Peter Redpath Library, 1893

3 US data is for 2019.

The final international comparison concerns apprenticeships. These are extraordinarily difficult to compare multilaterally because of the vast differences in how these programs are defined and delivered. Nevertheless, a comparison between Canada and Germany is instructive, mainly because of the way that Germany's "dual system" of education is so often credited with German success in manufacturing.

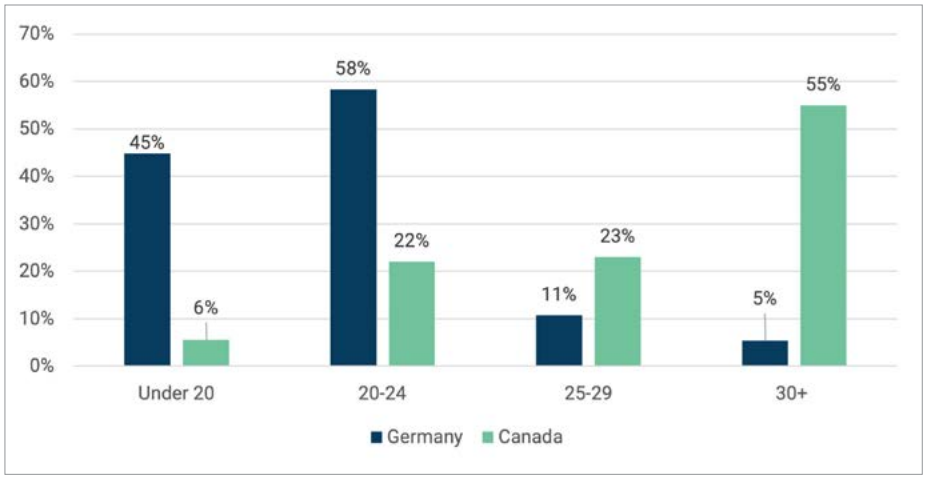
Table 1.3: Share of Apprentices by Occupational Grouping, Canada vs. Germany 2021

Canada		Germany	
Electricians	64,872	Automotive Mechanics	63,195
Carpenters	44,691	Office Clerks	57,282
Plumbers, pipefitters and steamfitters	42,204	Retail Clerks	46,935
Automotive service	35,825	IT Specialists	44,448
Food service	19,137	Medical Assistants	44,115
Interior finishing	16,719	Electricians	42,303
Heavy duty equipment mechanics	12,831	Industrial Sals	40,527
Heavy equipment and crane operators	12,252	HVAC Mechanics	39,390
Millwrights	11,904	Retail Sales	36,207
Hairstylists and estheticians	11,802	Industrial Mechanics	35,988

First Nations University of Canada, Atrium

Yet, a closer look at the patterns of apprenticeship registrations in the two countries suggests this credit may be misplaced. One of the distinguishing features of Canadian apprenticeships is the way they are focussed on very traditional trades, particularly the construction trades. As table 1.3 shows, eight out of the top ten trades in Canada — accounting for roughly 60% of all apprentices — are related to the construction or automotive industries (or what in Canada tend to be called the "skilled trades"). In contrast, over half of the top trades in Germany are in white-collar occupations, such as retail sales, industrial sales, office clerks, and medical assistant.

Figure 1.30: Age Distribution of Apprentices in Canada and Germany, 2022



Canada has approximately 50% more apprentice electricians than Germany, despite Germany's considerably larger population. That said, apprenticeships in Germany last only half as long, so the number of people qualifying from their apprenticeships may be more or less the same. And, as figure 1.30 shows, apprenticeships in Germany are targeted at young people starting their careers, which is hardly the case in Canada. So, the German apprenticeship system is much different from our own and that its success may be due as much to i) its ability to transcend the skilled trades as much as it is to excel in them ii) the fact that for the most it considers apprenticeships to be part of secondary education rather than postsecondary.

2.

CHAPTER TWO

Staff

KEY POINTS

- Academic staff numbers at Canadian universities have been increasing slowly since 2015, more or less keeping pace with the increase in student numbers for the first time since the 1990s.
- Approximately 43% of tenured or tenure-track academic staff are women, and approximately 21% have a racialized background.
- The average age of full-time academic staff in universities has risen significantly over the past twenty years. In 2020, over a quarter of all full-time academic staff were over 60 years of age, while only 17% were under 40.
- On the college side, there is some evidence that part-time academic staff are playing an increasingly important role.
- In total, colleges and universities employ roughly 420,000 people at any given time, or roughly 2% of the total labour force. Slightly less than half are permanent salaried staff.

CHAPTER TWO

Staff

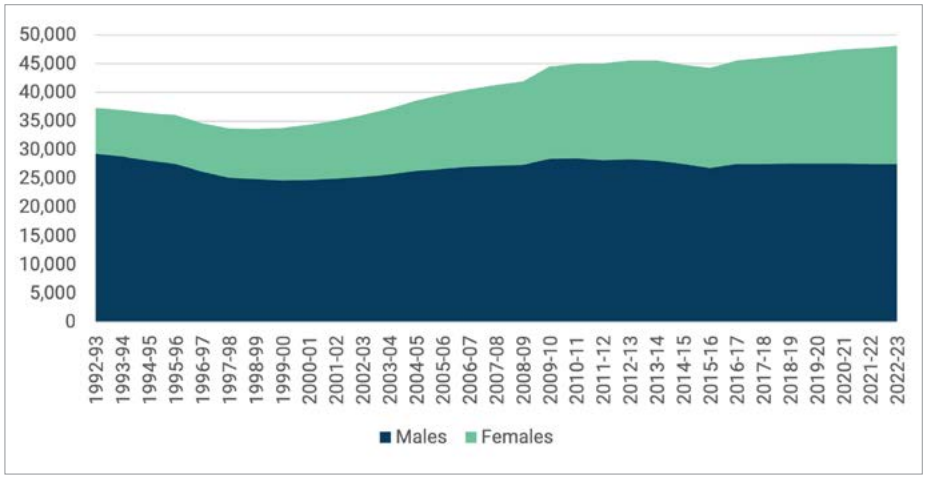
University of Saskatchewan, Airplane Room

Canadian postsecondary education staff information is mostly comprised of data from university-level institutions. Statistics Canada does not survey colleges on their academic staff numbers, and it asks no questions at all in either sector about non-academic staff. Peak bodies, such as Universities Canada or Colleges and Institutes Canada, also do not collect this data, although Universities Canada has recently conducted interesting work on staff numbers with respect to equity, diversity, and inclusion. For the most part, individual institutions do not provide this information on their own. The main reason for this is that Canadian governments are uninterested in these issues and have therefore not made institutional reporting on these topics a part of their accountability frameworks. Data has remained scarce throughout the years we have produced *The State of Postsecondary Education in Canada*. This lack of data means our examination of data on staff is less comprehensive than our analysis of data on students.

2.1 STAFF AT UNIVERSITIES

Figure 2.1 shows the number of "ranked" academic staff in Canada, meaning those who are tenured or on the tenure-track[1], by sex for the period 1992-93 to 2022-23 based on administrative data from Statistics Canada's University and College Academic Staff System (UCASS). The number of such individuals reached an all-time high of 48,102 in 2022-23, an increase of 43% from the nadir-point of 1998-99, when universities were in the midst of multi-year hiring-freezes due to budget cuts. Of interest here is the breakdown by sex: though Canada is nowhere near parity in its professoriate (the ratio is roughly 57-43 male-to-female), the growth in the number of female professors over the past two decades has been much stronger than for males. Since 2001-02, the number of female professors has more than doubled, while for males, it has increased by just ten percent.

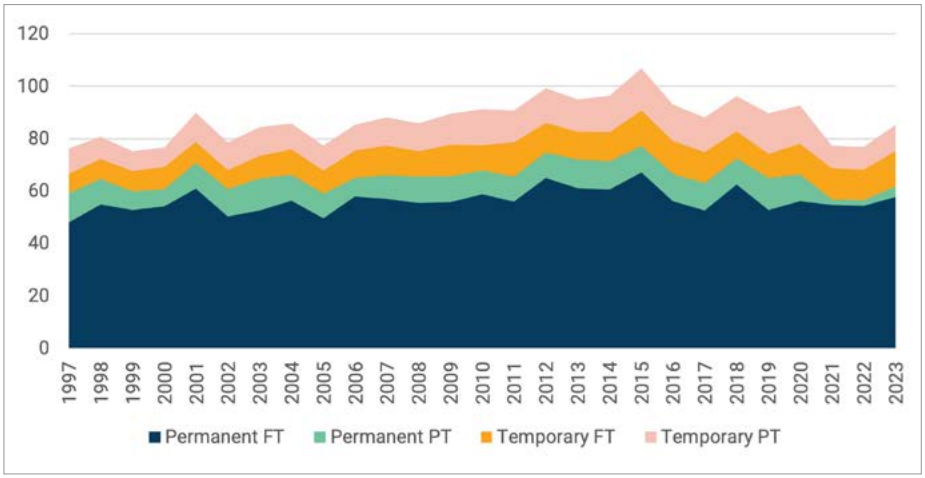
Figure 2.1: Total Tenured and Tenure-Track Academic Staff Numbers by Sex, Canada, 1992-93 to 2022-23



Statistics Canada's Labour Force Survey provides some additional data because it measures everyone who claims teaching in universities as their main job, even if it is not permanent or full-time. It is, however, necessarily less accurate than UCASS precisely because it is a survey. Data from the Labour Force

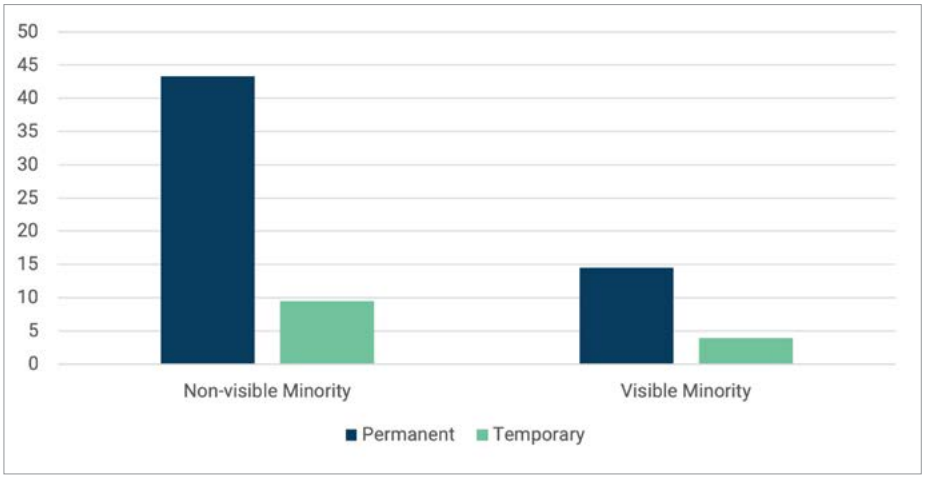
1 These academic staff, with only a few exceptions, hold the rank of assistant, associate, or full professor.

Figure 2.2: Number of Labour Force Survey Respondents Indicating their Primary Occupation is Teaching in a University, by Intensity and Security, Canada, in Thousands, 1997 to 2023



Survey from 1997 to the present is shown right in Figure 2.2. In this data source, "permanent full-time" instructors should be close to equivalent to tenure/tenure-track professors in 2.1, but in fact it shows a very different picture historically, with higher absolute levels and very little evidence of an uptick in hiring between 1998 and 2008. Of particular interest here is the fact that "permanent full-time" makes up about 70% of those who see university teaching as their primary jobs: this suggests that casual academic staff are probably for the most fully employed in other fields and view teaching as a side-job.

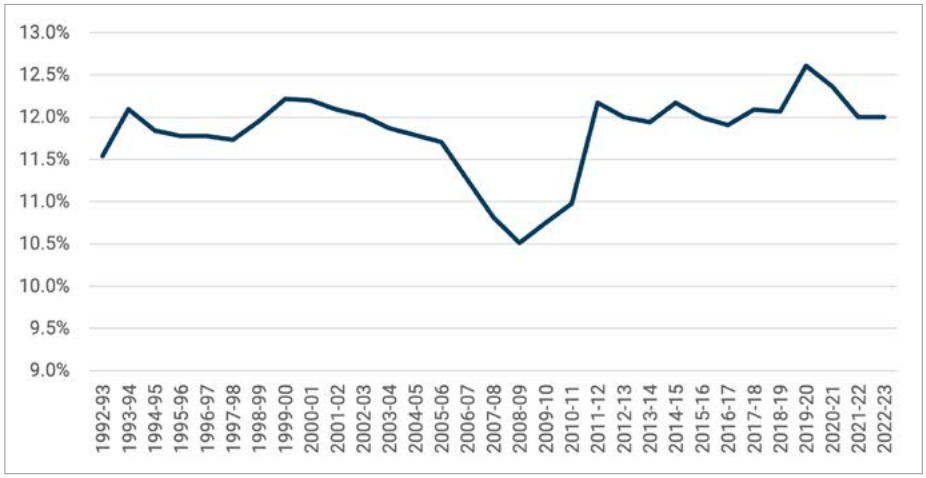
Figure 2.3: Full-Time University Professors by Visible Minority Status and Position Permanency, in Thousands, 2023



While time series data from administrative data on faculty is available by sex (see 2.1 above), it is not available for other major equity categories. However, a 2022 Universities Canada report drew on census data to reveal that 20.9% of full-time academic staff belonged to a racially marginalized group (compared to 22.3% of the general population) and 1.3% identified as Indigenous (compared to 4.9% of the population). Data from the Labour Force Survey in 2023, shown right in figure 2.3, suggests that among full-time academics, roughly 26% identify as "visible minority", of which roughly 80% are in permanent positions, more or less the same as for the non-visible minority population.

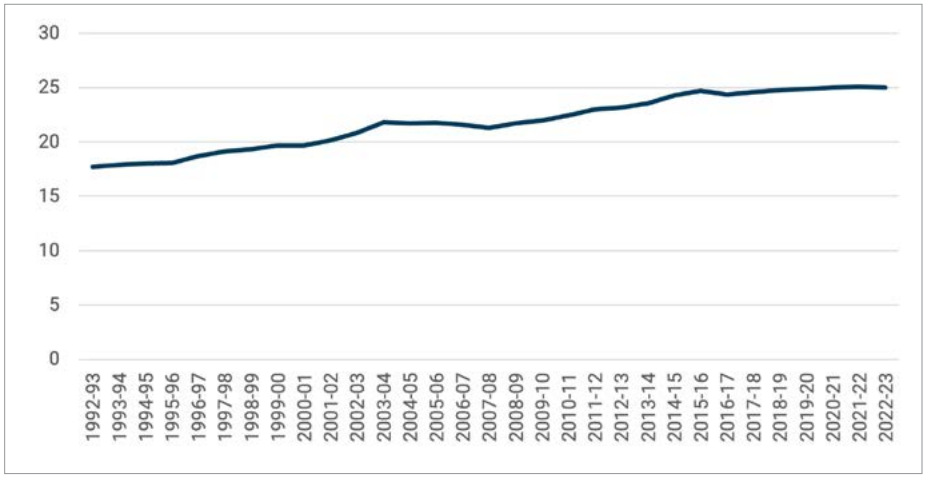
Mount Royal University, Aviation

Figure 2.4: Proportion of Faculty in Senior Administrative Roles, 1992-93 to 2022-23



The data from Figure 2.1 includes counts of both teaching faculty and tenured faculty who do not teach because they are in "Senior Administrative Roles", a category that, according to Statistics Canada, includes both individuals in administration but also those in charge of laboratories. A common concern about higher education is that "senior administration" numbers are constantly growing, and as a result the increase in faculty numbers portrayed above might just be masking a growth in administration. Figure 2.4 indicates that this does not appear to be the case: the percentage of total staff in such positions has remained more or less constant over the past three decades at 12% (the exception being a few years around 2008, which roughly coincides with the period when six different former colleges in Alberta and British Columbia changed institutional status and became included in university statistics).

Figure 2.5: Ratio of FTE Students to Full-Time Tenured and Tenure-Track Academic Staff, 1992-93 to 2022-23



While the last two decades have seen a significant increase in faculty numbers, this increase has not kept pace with the large increase in student numbers shown in the previous chapter. The ratio of FTE university students to faculty has risen by nearly 50% over the past 25 years, from 17.7:1 to 25:1. This does not necessarily mean that class sizes have increased by 50%, as there are a number of confounding factors involved. Notably, the use of sessional staff, which tends to reduce class size averages, seems to have become more frequent (though high-quality data on the issue is scarce) over the past two decades. Conversely, at many institutions faculty teaching loads, as measured in classes taught per semester, are lower than they were 20 years ago because research and publication expectations have increased, which ceteris paribus raises the average class size.

George Brown College, Centre for Hospitality and Culinary Arts

Figure 2.6: Full-Time Tenured and Tenure Track Academic Staff by Broad Field of Study, Canada, 2021-22

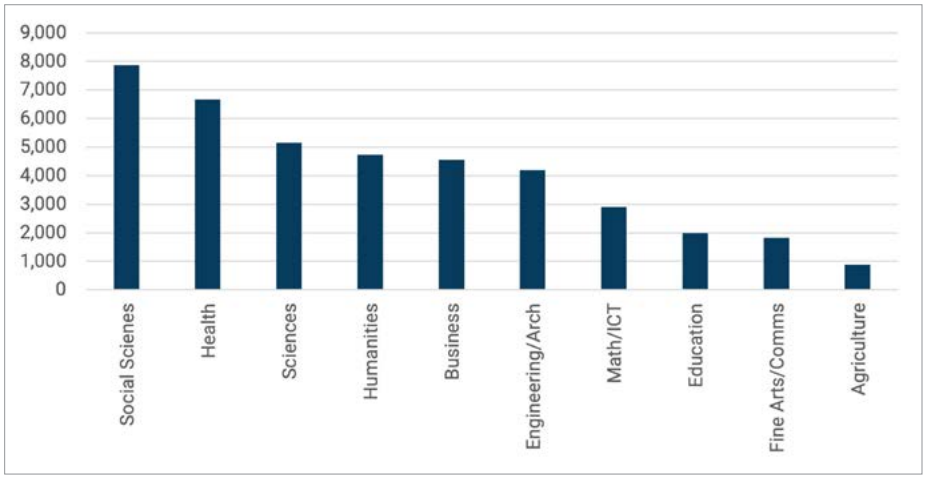
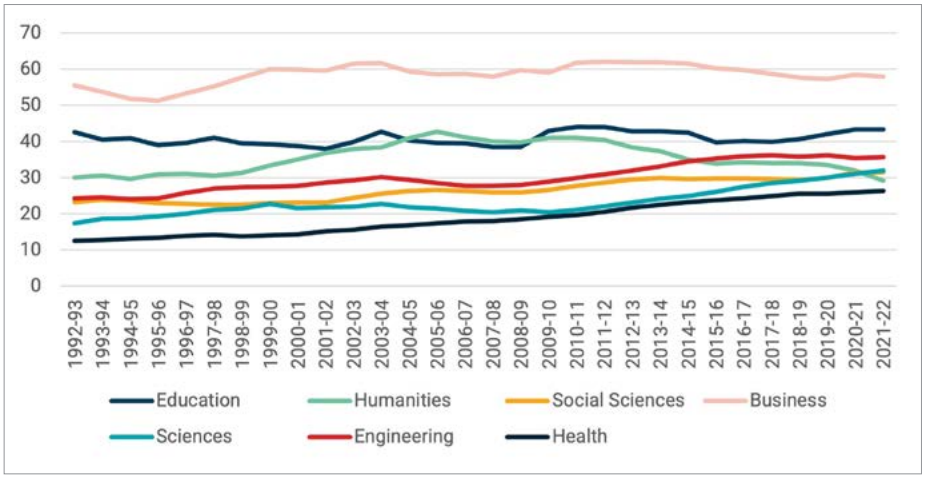


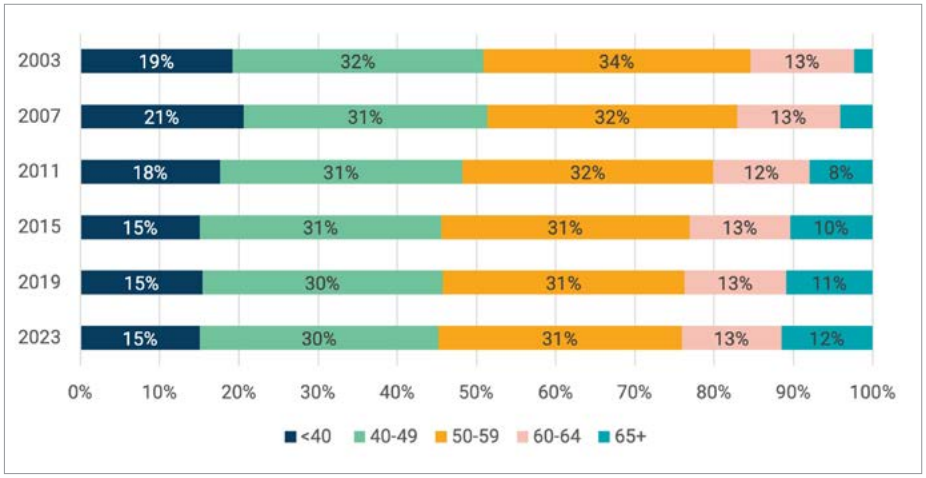
Figure 2.6 shows the distribution of professors by broad field of study. Social Sciences are by far the largest field in terms of the raw numbers of professors, with just under 7,900 professors. Health is next at 6,650; Education, Fine Arts and Agriculture are the three smallest fields. Figure 2.7 shows changes in student-teacher ratios from 1992-93 to 2021-22. Student-teacher ratios in Business and Education have always been high and have remained broadly consistent over time. Most other fields – including Humanities up until the mid-2000s – have seen rising student-faculty ratios (though this does not necessarily mean rising class sizes as sessional lecturers can be employed to reduce these). The two fields that are changing the fastest are humanities, where ratios are falling because enrolments have dropped faster than faculty positions in the past fifteen years, and health, which has seen student-faculty ratios more than double in the past three decades

Figure 2.7: Ratio of Enrolled Students to Full-Time Tenure and Tenure-Tracked Academic Staff, by Broad Field of Study, Canada, 1992-93 to 2021-22



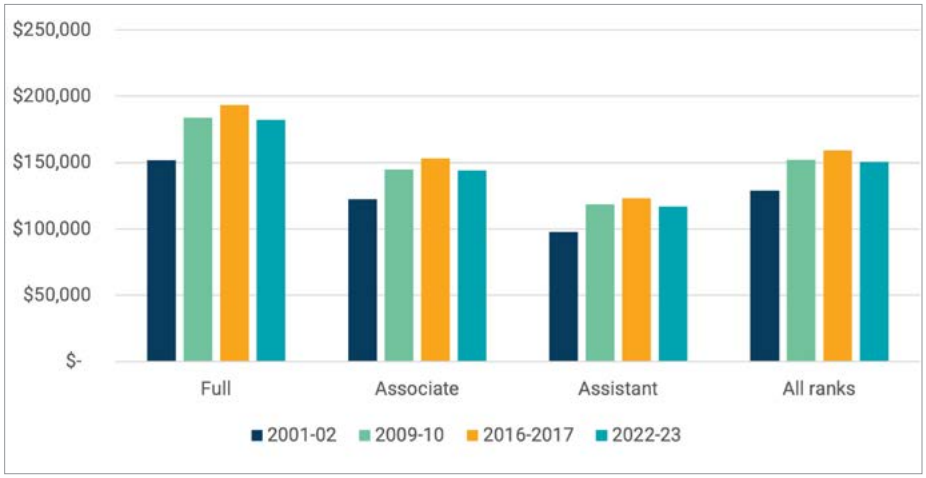
The abolition of mandatory retirement at the age of 65 in the early 2000s led to a significant increase in the average age of the professoriate over the past decade and a half. Whereas just 30 professors (less than 1%) of all academic staff were over 65 in 2000, by 2023 that figure had risen to over 5,000 (12%). Over a quarter of Canadian academic staff are over the age of 60, while only 15% are under the age of 40. Figure 2.8 shows the change in the age composition of full-time academic staff since 2003.

Figure 2.8: Age Composition of Tenured and Tenure-Track Staff, Canada, 2002-03 to 2022-23



The effects of an aging professoriate can be seen in the changes in average pay levels. Because pay in academia is seniority-driven, a disproportionate amount of salary pays aging staff, significantly reducing the amount of funds available for faculty renewal. Figure 2.9 compares salaries from 2022-23 with those of 2001-02, 2009-10 and 2016-17. Over that 21-year period, average professorial salaries have increased by 22% overall, from $119,904 to $150,456 (in constant $2023 dollars).

Figure 2.9: Average Professorial Salary by Rank, 2001-02 to 2022-23, in $2023

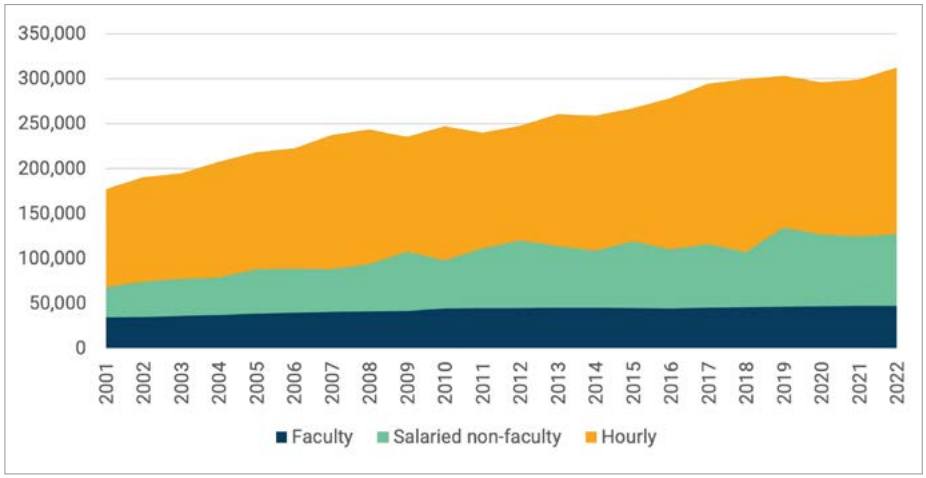


However, nearly all of that growth occurred prior to 2009: since then, average salary growth has largely been in line with inflation and has even fallen somewhat behind during the COVID years.

Marine Institute, Memorial University of Newfoundland (College of Fisheries), Classroom

There are no national or provincial counts available for non-academic support staff at Canadian universities using administrative data. There is, however, data from the national Survey of Employment, Payroll and Hours (SEPH), which permits at least an estimation of total university employment over time. It is much less accurate and more volatile than the data on academic staff because it comes from a survey of about 1% of all the employers in Canada. Many campuses and major employers are, by design, permanently part of the sample, but smaller institutions are not and are rotated in and out of the sample. What this survey tells us is that in an average month in 2022, universities collectively employed about 300,000 Canadians. A little over 60% of these employers were casual in the sense of being paid by the hour, while the remaining 40% were paid on a salaried basis. If we subtract the total number of ranked academics (from the University and College Academic Staff survey, shown in the above figure 2.1.) from the estimate of salaried employees produced by the Survey of Employment, Payroll and Hours, it would seem that there are approximately 80,000 non-academic employees at Canadian universities. Note that according to these two data sources, the number of permanent non-academic staff has increased much more quickly than the number of academic staff – almost three times as quickly, in fact, although most of this growth happened prior to about 2011. Overall, total staff numbers have since 2001 risen almost exactly in line with student number growth.

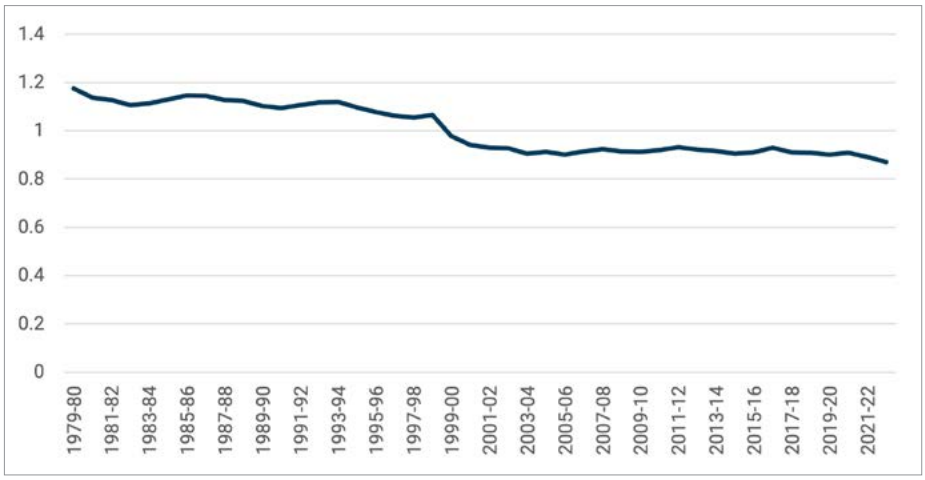
Figure 2.10: Total Staff by Status, Canadian Universities, 2001-2022



Bishop's University, Centennial Theatre

Another way of looking at changes in staff composition is to look at changes in total wage payouts to different groups, which can be done using Statistics Canada's Financial Information of Universities and Colleges (FIUC) survey. Figure 2.11 tracks changes in the ratio of aggregate salary expenditures on full-time academics to those for non-academics (which is roughly equivalent to the "salaried non-faculty" and "hourly" groups indicated in figure 2.10 above, but excluding teaching assistants and sessional faculty). These data, shown right in figure 2.11, tell a slightly different picture: in the 1980s and 1990s, spending gradually shifted towards non-academic staff (the major drop around 1999 is due to a methodological change). Since the early 2000s, however, there has been very little change in the balance of spending on academic and non-academic salaries. This would seem to contradict the finding in 2.10 that one group is growing much faster than the other. However, the two stories could still be reconciled if average wage growth for non-academics was much slower than it was for academics.

Figure 2.11: Ratio of Full-time Academic Salaries to Non-Academic Salaries, All Canadian Universities, 1979-80 to 2022-23

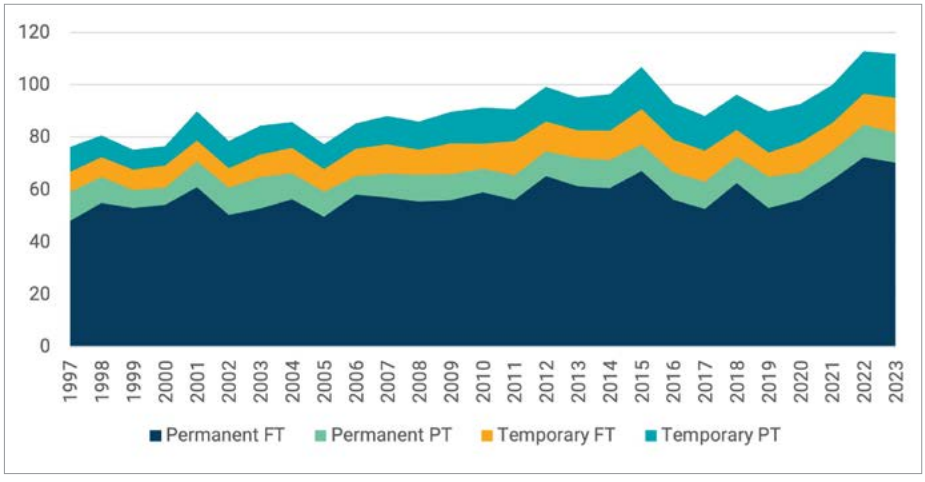


2.2 STAFF AT COLLEGES

Unlike the situation in universities, Statistics Canada does not collect administrative data about academic staff at community colleges in Canada. Some data can be collected through the Labour Force Survey. Due to small sample sizes (colleges employ less than 0.5% of the Canadian labour force), the data is choppy and subject to significant error margins on a year-to-year basis. However, if a multi-year perspective is adopted, this data can be useful.

Figure 2.12, like figure 2.2 above, shows the results of survey data asking individuals to indicate their occupation (college teacher) and their job intensity and security. The data suggest that there are about 100,000 individuals who consider teaching at a college or other vocational institution to be their main occupational identity, and that of these, somewhere around 70,000 individuals are full-time permanent instructors, with the remainder having contracts that are part-time, temporary, or both. Note that the wording of the question in the Labour Force Survey suggests that this data includes individuals teaching at private vocational colleges in addition to employees of public community colleges.

Figure 2.12: Number of Labour Force Survey Respondents Indicating their Primary Occupation is Teaching in a College, by Intensity and Security, Canada, in Thousands, 1997 to 2023



The picture becomes more complicated if one looks at the one province where good administrative data is available (in this case from Colleges Ontario). Figure 2.13 shows that there have been increases in the numbers of both full- and part-time instructors at Ontario colleges over the past decade. Contrary to the picture seen in the Statistics Data, growth has been significantly more pronounced among part-timers than full-timers, particularly in the past couple of years. This does not necessarily mean one source of data or the other is incorrect; it might be the case that the rise in part-time staff is coming exclusively or nearly from individuals who have full-time jobs outside the college sector, which would not be picked up by the Labour-Force Survey data.

As with university instructors, data from the Labour Force Survey can be used to look at ethnicity data at a very high level for full-time instructors at colleges and other vocational institutions. Roughly 20% of permanent and 25% of temporary instructors at these institutions identified as visible minorities. This is a very slightly lower percentage than those who identify as such in universities.

Figure 2.13: Full- and Part-time Academic Staff, Ontario Colleges, 2006-07 to 2023-24

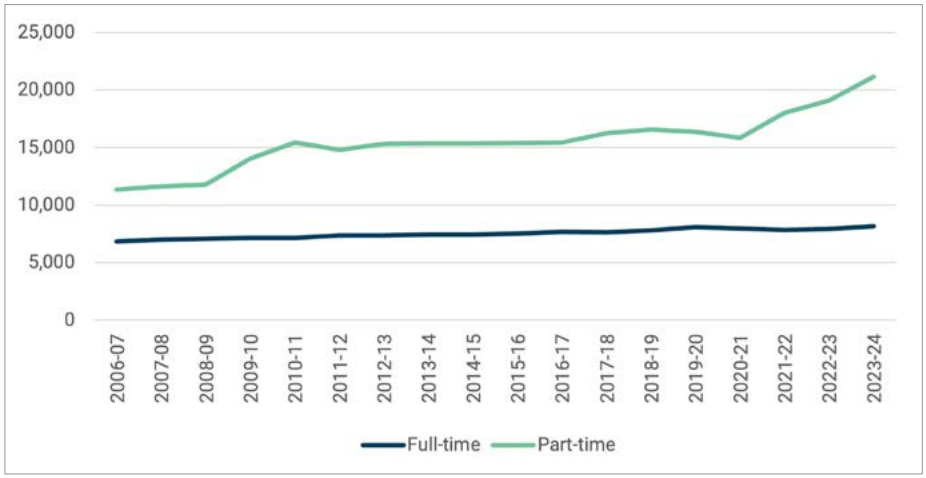
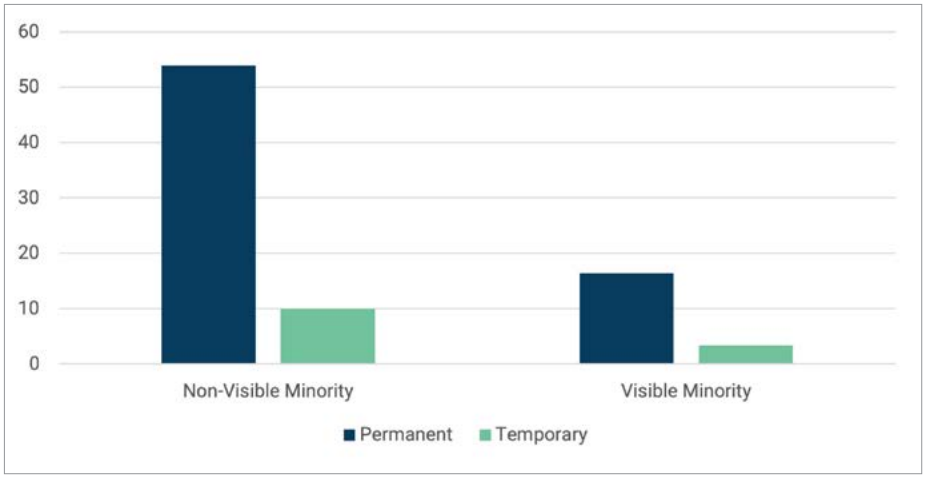


Figure 2.14: Full-Time College/Vocational Instructors by Visible Minority Status and Position Permanency, in Thousands, 2023



University of Ottawa, Atelier CoFab | Arts Makerspace

Top Left: University of New Brunswick, Engineering Students, 1962
Above: Emily Carr University of Art + Design, Painting Studio

With respect to total employment, there is no national administrative database, but as with universities, it is possible to use the SEPH to get a sense of trends. As with universities, SEPH data suggests that more than 50% of total employment is employed on an hourly basis (this likely includes any academic staff who are employed part-time). If the SEPH data shown right in figure 2.15 is broadly correct, then it would suggest both that non-academic staff numbers are significantly lower in the college sector than in the university sector, even accounting for differences in enrolments, and that employment in the sector has been broadly stable over the past ten to fifteen years. However, this picture is not exactly congruent with the data from the Labour Force Survey shown in 2.12, above. In fact, if both were literally true, there would be almost no employees at colleges except for those with teaching duties, which is evidently not the case. The true picture likely lies somewhere between the two estimates.

Finally, at least in a single province, the Colleges Ontario Environment Scan provides us with a slightly more disaggregated look at non-academic staff, which allows us to look at not just academic staff number, but also to distinguish between "administrative" and "support" staff (a useful distinction between the group of white-collar administrators and managers and the group of other employees). Figure 2.16 shows that the numbers of both full-time support staff and administrative staff have grown a bit more quickly than the number of full-time academic staff over the past ten years. In particular, administrative positions have grown from 12% to 19% of the total full-time workforce while academic staff have fallen from 45% to under 40%.

Figure 2.15: Total Staff by Status, Canadian Colleges, 2001-2022

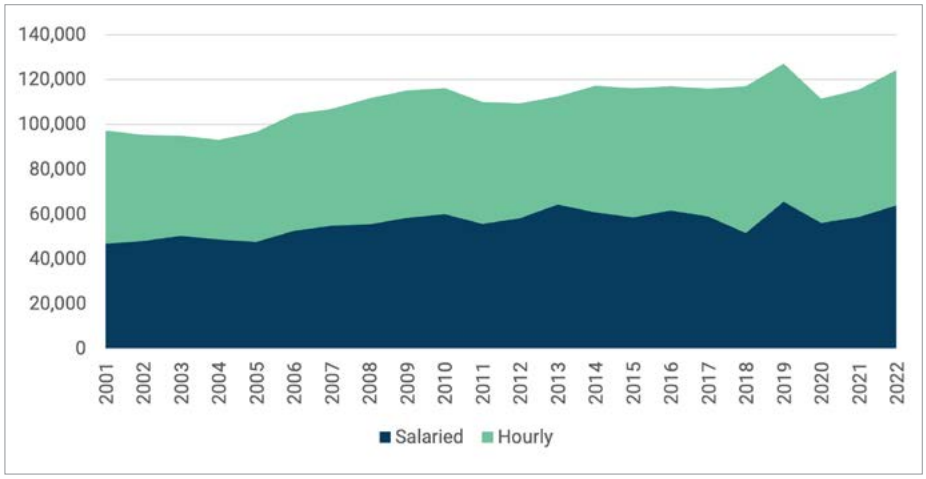
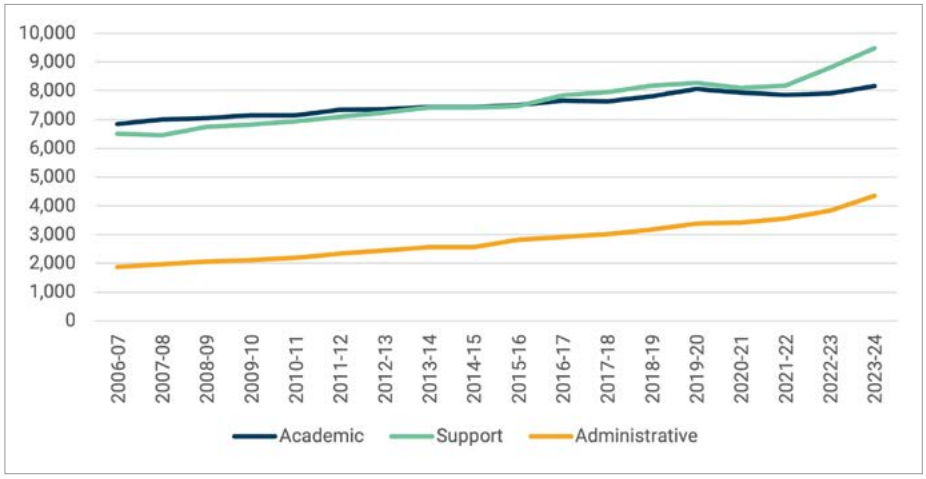


Figure 2.16: Full-time Academic, Support and Administrative Staff, Ontario Colleges, 2006-07 to 2023-24



3.

CHAPTER THREE

Institutional Income & Expenditures

KEY POINTS

- Total income for postsecondary education institutions in Canada in 2022-23 was $62.9 billion, a rise of over 74% in real terms since 2001-02.
- Expenditures on PSE institution amount to roughly 2.4% of Canada's GDP.
- Increases in real income from public sources have been almost non-existent since the Great Recession; most of the growth has come from fee income, which have doubled since 2007-08.
- 100% of all new operating spending in Canadian higher education since 2008 have come from international tuition fees.
- Funding for tertiary education in Canada is somewhat above the norm for OECD countries.
- Expenditure patterns at both universities and colleges show little variation over time.

CHAPTER THREE

Institutional Income & Expenditures

University of Calgary, MacKimmie Complex

Public postsecondary education in Canada is a $60 billion a year industry. In terms of Gross Domestic Product, higher education makes up approximately 2.4% of the national economy. This chapter provides a portrait of how this significant sector of the national economy generates and spends its money.

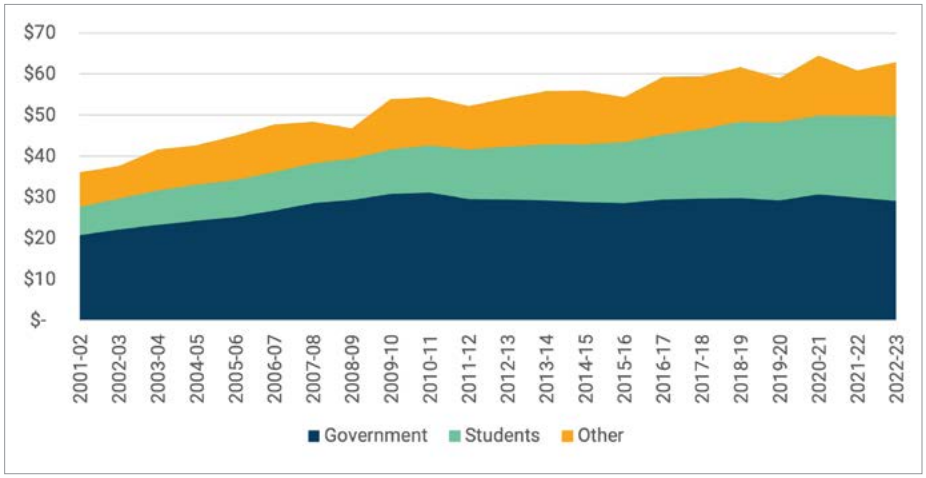
3.1 INCOME TRENDS FOR PSE INSTITUTIONS

From 2001-02 to 2022-23, overall institutional income rose by 74% in real terms, from $36.1 billion to $62.9 billion (all figures in constant $2022). Until the financial crisis of 2008-09, revenues from all three main sources — governments, students, and other self-generated income — increased at similar rates of about 5% per year after inflation. This changed after the 2008 financial crisis: income from government sources has stagnated, while income from students has steadily increased, mainly due to increases in international student numbers.

Self-generated income tends to be more volatile than income from government or students, mainly because endowment returns are a major part of this category. Some years, such as 2016-17 and 2020-21, look very good because they were particularly good years for equities, which form a small but significant part of these "other" revenues. The fall in total income in 2019-20 was due entirely to the pandemic-related collapse in the equity market just before the end of the fiscal year in March 2020; similarly, 2021-22 saw a contraction of nearly $4 billion in institutional income from these sources, part of a $6 billion year-on-year decline in total real income that was also driven by higher levels of inflation. This contraction represented the biggest single-year drop in Canadian history for institutional income.

The importance of government as a source of income for institutions has been declining since 2008. 2016 was the first year since the early 1950s during which income from non-government sources was larger than income from government ones. By 2022-23, just 46.3% of total institutional income came from the federal and provincial governments.

Figure 3.1: Total Income by Source, Public PSE Institutions, Canada, in Billions ($2022), 2001-02 to 2022-23



The main change in institutional income since 2008 has been the gradually increasing reliance on tuition fees. Since 2007-08, tuition fee income has more than doubled at Canadian universities and colleges, from $9.6 billion to $20.6 billion. However, as figure 3.2 shows, this is not primarily due to increases in domestic fees; rather it has to do with the vast inflow of international students over the past decade. Since 2007-2008, aggregate institutional revenue from domestic tuition fees has increased by 23% (but is actually down 12% since its peak in 2018-19), whereas revenue from international fees has increased by 554%. Effectively, international student fees have accounted for 100% of all increased operating spending since about 2010.

Canada's higher education system is among the world's best funded. In 2016, public and private expenditures on tertiary institutions amounted to 2.4% of gross domestic product. This was not only higher than the United States' 2.2% but nearly twice as high as Germany and more than 50% higher than the OECD average. But as figure 3.3 shows, Canada is moving further from a Western European model of a largely publicly-funded system towards the model of other anglophone countries where postsecondary education may be mostly publicly owned but is "publicly-aided" rather than "publicly-financed."

Within Canada, data on university expenditures (see figure 3.4) are available back to the late 1970s. The pattern of revenue growth is somewhat cyclical. There was an expansion of income from all sources during the 1980s, followed by nearly a decade of stagnation in the 1990s during which total income fell, mainly because of large real cuts to government expenditures. Then, from about 1998 to 2009, there were robust increases in revenue from all different sources, followed by another bout of stagnation in government expenditures following the 2008 recession. The difference between the 1990s and the 2010s, however, is that universities have been able to keep their overall income rising, even as revenues from government declined slightly. This is partly due to better income generation and stock-market returns, but it is also due to significant new tuition revenues, mainly from international students.

Figure 3.2: Total Fee Income by Source, Public PSE Institutions, Canada, in Billions ($2022), 2007-08 to 2022-23

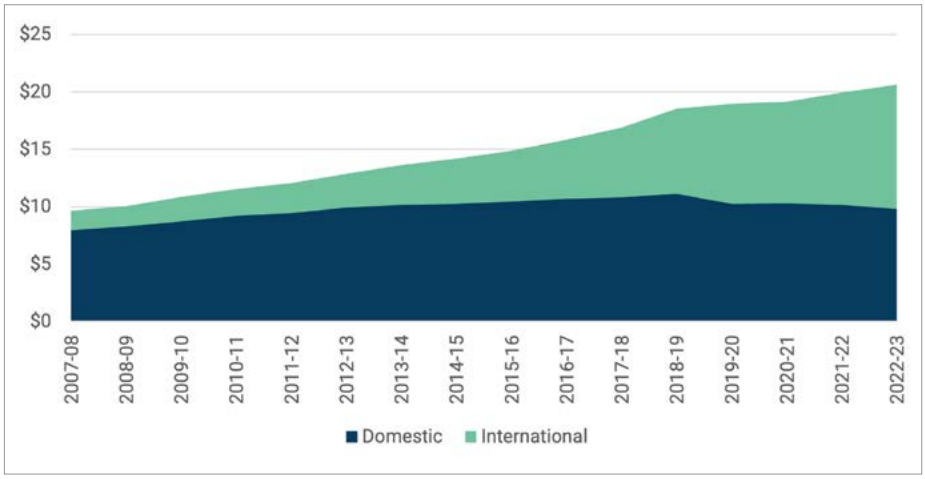


Figure 3.3: Tertiary Institutions' Income by Source, as a Percentage of Gross Domestic Product, Canada and Selected OECD Countries, Most Recent Years

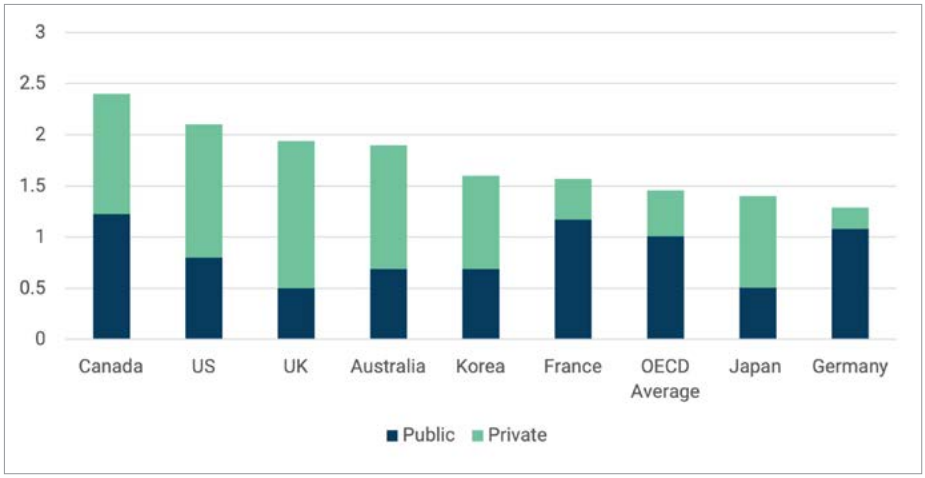


Figure 3.4: Total Income by Source for Universities, Canada, in Billions ($2022), 1979-90 to 2022-23

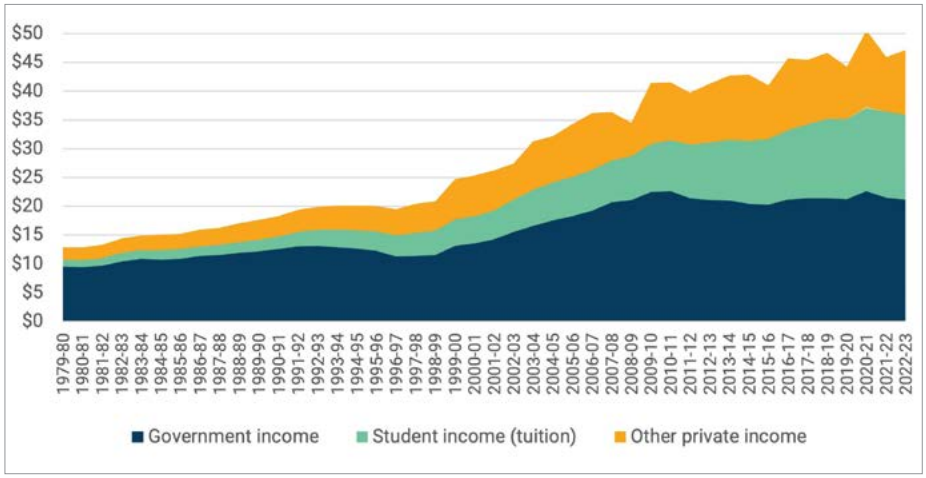


Figure 3.5 puts the major trends of the last decade and a half into starker relief. In real terms, income from public sources was rising sharply prior to the recession — roughly 6% per year after inflation, in line with the growth of income from student fees. After 2009-10, however, government revenue went into a long, gentle decline in real terms before recovering slightly after 2015-16 and then receiving a one-time lift during the COVID year of 2020-21. Meanwhile, revenue from student fees has grown at about 6% per year continuously through to 2021-2022, resulting in a cumulative 110% increase in real fee revenue over fourteen years. However, in 2022-23, high inflation eroded the value of fee income, such that it actually declined in real terms.

Figure 3.5: Real Change in Government and Student Fee University Income, Canada, 2006-07 to 2022-23 (2006-07 = 100)

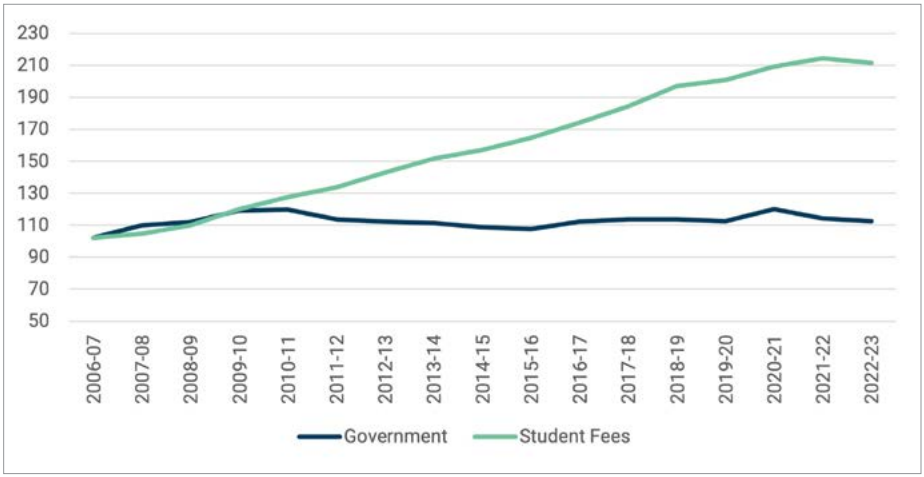
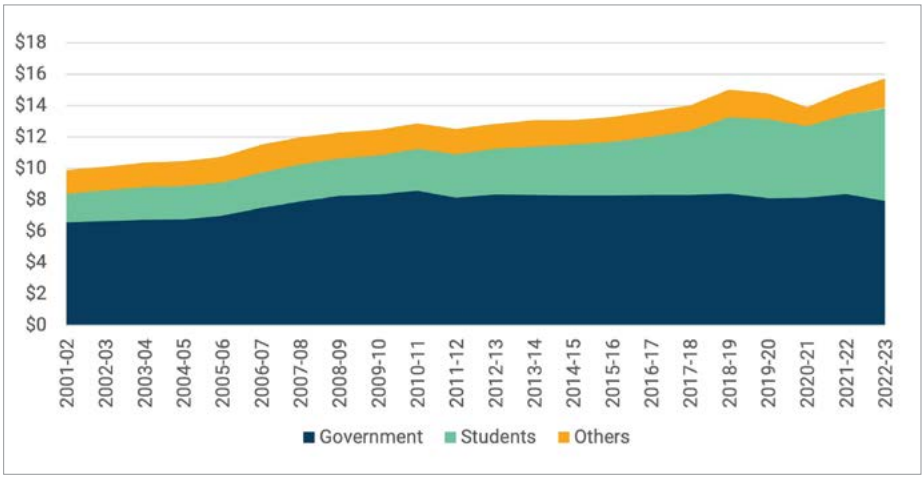


Figure 3.6 shows total college income by source since 2001-02. Trends in the college sector appear somewhat similar to those of universities, in that total institutional income has continued to rise over the past decade even as income from governments has stagnated. However, the composition of the income is somewhat different. The biggest difference is that revenues from self-generated income make up just 12% of the total in colleges compared to around 24% in universities. Revenues from government and students make up around 51% and 37% of total revenue in colleges, respectively, compared to 45% and 31% for universities.

Figure 3.6: Total Income by Source for Colleges, Canada, in Billions ($2022), 2001-02 to 2022-23



Northern Lights College, Trades Training Centre

McGill University Health Centre

3.2 EXPENDITURE PATTERNS FOR PSE INSTITUTIONS

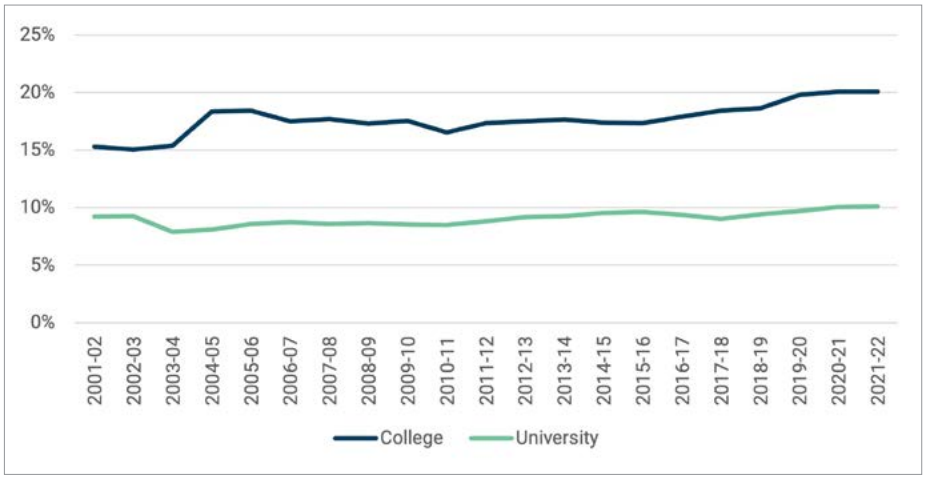
Because institutions tend to spend all the money that they can raise, overall total expenditure trends closely follow total income trends. It is not especially interesting to track expenditure trends over time since they show more or less identical patterns as revenues. However, examining changes in specific areas of expenditures can reveal useful patterns, and although it is not possible to do this in an especially detailed way because of the way Statistics Canada uses different definitions to track spending in the two sectors, with some aggregation of categories, it is possible to make some very broad categorizations. Table 3.1 considers total expenditures of universities and colleges by "fund." Overall, the two systems look fairly similar. Expenditures on teaching and research collectively make up 59% of the budget in universities in 2021-22 and 51% in colleges; however, there is a difference here in the sense that nearly a third of this budget goes on research in universities while in colleges the equivalent is only 2%. Physical plant is 7% and 9% of total expenditures, respectively, while student services are 6% and 10%. In 2021-22, capital represented 8% of expenditures in both universities and colleges[1].

One perennial topic of conversation in Canadian higher education is the alleged tendency toward ever-increasing expenditures on administration. Statistics Canada data on college and university finances allows us to chart this trend over time in both sectors. Figure 3.7 shows that spending on administration, (which includes spending on information and communications technologies[2]) is higher for colleges than universities. This seems to be mostly a function of institutional size: colleges are on average smaller than universities, and therefore are not able to benefit from economies of scale, particularly on the administrative side. The figure also shows that administration spending has remained reasonably steady as a percentage of total expenditures over a period of 20 years. This does not mean that absolute administration costs are not increasing; in both sectors they have more than doubled, in nominal terms, since the turn of the century. Rather, their rate of growth is substantially proportionate to the growth of overall institutional spending. However, for the past three years for which data was available, Admin/ICT expenditures rose as a proportion of total expenditures, particularly on the college side. Perhaps this is due to COVID: time will tell.

Table 3.1: Distribution of Total Expenditures by Fund, Colleges and Universities, 2021-22

	College	University
Instruction & Research	51%	59%
Admin + ICT	20%	11%
Physical Plant	9%	7%
Student Services	10%	6%
Capital	8%	8%
Other	2%	9%

Figure 3.7: Expenditures on Administration & ICT as a Percentage of Total Spending, Universities vs Colleges, 2001-02 to 2021-22



1 University totals in this comparison are lower overall because about 10% of their total expenditures are not categorizable using the definitions employed by colleges.

2 For colleges, the term "administration" includes all Information technology costs as well as the costs of central administration, and seems to include a number of other miscellaneous items. In order to keep the figures for the two sectors as consistent as possible, Figure 3.7 includes on the university side spending both for "administration and academic support" and "computing and communications". Spending on "administration" alone is approximately 25% than what is shown here.

Examining institutional expenditures by type, rather than by fund (on the right in table 3.2), reveals that the two sectors also look similar on metrics like wages, benefits, and utilities. Even the limited differences often come down to categorization decisions as much as anything: some "supplies" are higher in colleges, whereas "furniture and equipment" expenditures are higher in universities, but if we combine them as "non-wage expenditures on physical goods not classified as capital" then the two come out looking more or less the same. Perhaps the most significant differences are in library acquisitions and in expenditures on financial aid, both of which are much larger expenses at universities than at colleges. However, given that approximately 75% of university expenditures on scholarships are spent on graduate students, there is arguably not much difference between aid spending at colleges and spending on undergraduates at universities.

Table 3.2: Distribution of Spending by Type, Universities and Colleges, 2021-22

	College	University
Academic Wages	31.1%	28.0%
Other wages	22.2%	23.4%
Benefits	10.5%	10.2%
Library acquisitions	0.2%	1.0%
Supplies	6.8%	8.4%
Utilities	1.4%	1.6%
Financial Aid	1.2%	6.9%
Fees and services	9.7%	5.3%
Equipment	2.8%	4.6%
Buildings & Land	5.5%	7.6%
Debt service	1.0%	1.3%
Other	7.5%	1.8%

Left: York University, The Rob and Cheryl McEwen Graduate Study and Research Building
Below: Humber College, Barrett Centre for Technology Innovation

Wages have nearly doubled in nominal terms at both universities and colleges over the past fifteen years. However, as a proportion of total institutional expenditures they are remarkably stable, as figures 3.8 and 3.9 show. Thus, while wages are the main driver of expenditure growth, they are not disproportionate drivers of such growth. And it is not just that wages are stable overall, but the components of the wage budget (i.e. spending on academics vs. spending on non-academics) are also stable. To the very limited extent that there is any upward pressure on compensation as a percentage of total expenditure, it seems to be coming from benefits (and specifically, the cost of pensions) rather than wages.

While figures 3.8 and 3.9 distinguish between spending on academic and non-academic staff, they do not shed light on the persistent debate within higher education, referred to in the previous chapter, of "academic casualization"; that is, the alleged tendency of universities and colleges to hire fewer full-time staff and more part-time staff. This debate was considered in CHAPTER 2; however, we can shed more light on this phenomenon (in the university sector) by disaggregating the proportion of academic wages going to staff who are tenure-track (technically, "possessing academic rank") and those who are not. A similar analysis cannot be done with respect to colleges because of the structure of the college finance survey does not permit such a disaggregation.

Figure 3.10 shows the proportion of total academic wages going to faculty who are without academic rank (which is roughly equivalent to wages going to "sessional" or "adjunct" professors) from 2001-02 to 2022-23. As the data show, this percentage fell gently but consistently between 2004 and 2018 from around 27% to approximately 25% of total wages, since which time it has levelled itself out. This does not mean that total expenditure on non-tenure track staffing is shrinking; it simply means it is growing less quickly than expenditures on tenure-track staff.

Figure 3.8: Wages as a Percentage of Total Budget, Colleges, 2001-02 to 2021-22

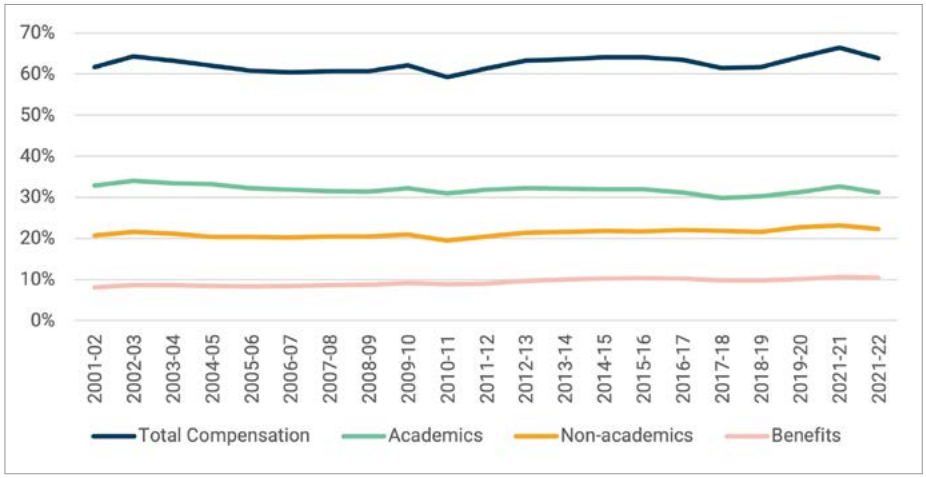


Figure 3.9: Wages as a Percentage of Total Budget, Universities, 2001-02 to 2021-22

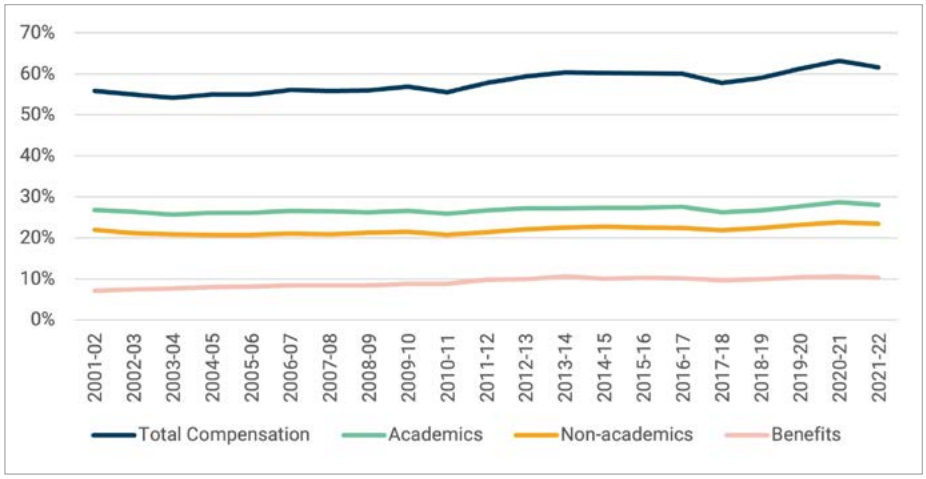
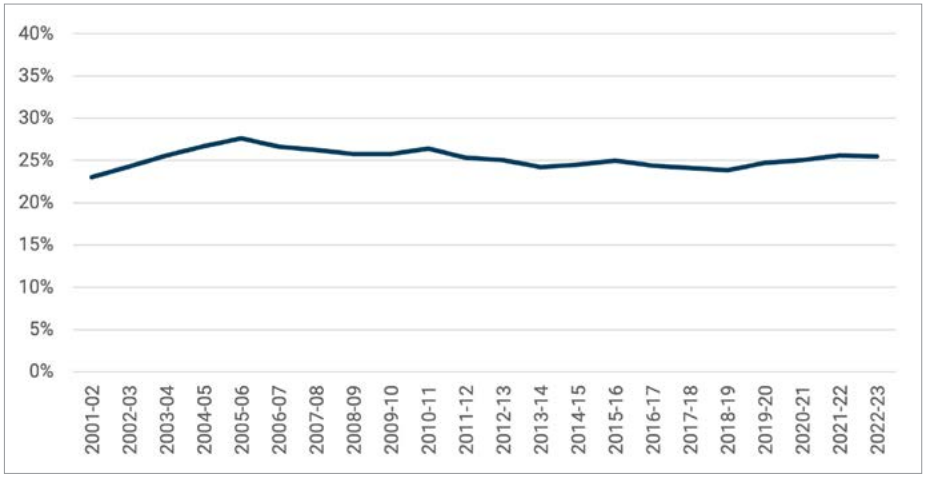


Figure 3.10: Percentage of Aggregate Academic Wages Going to Non-tenure Track Staff, 2000-01 to 2022-23



4.

CHAPTER FOUR

Government Expenditures

KEY POINTS

- Nationally, provincial government transfers to institutions have stayed nearly constant in real dollars since 2010.
- There are large swings in provincial transfer averages. Over the past 5 years, increases of 10% or more (in real dollars) have taken place in Prince Edward Island and Quebec, declines of a similar magnitude have taken place in Newfoundland and Labrador, Ontario, and Alberta.
- Provincial transfers per student are on average down 24% since 2008-09; 14% per student if international students are excluded.
- Federal allocations to provinces for postsecondary education are increasing over time; the federal contribution now equals 20% of provincial spending on higher education, up from 14% fifteen years ago.

CHAPTER FOUR

Government Expenditures

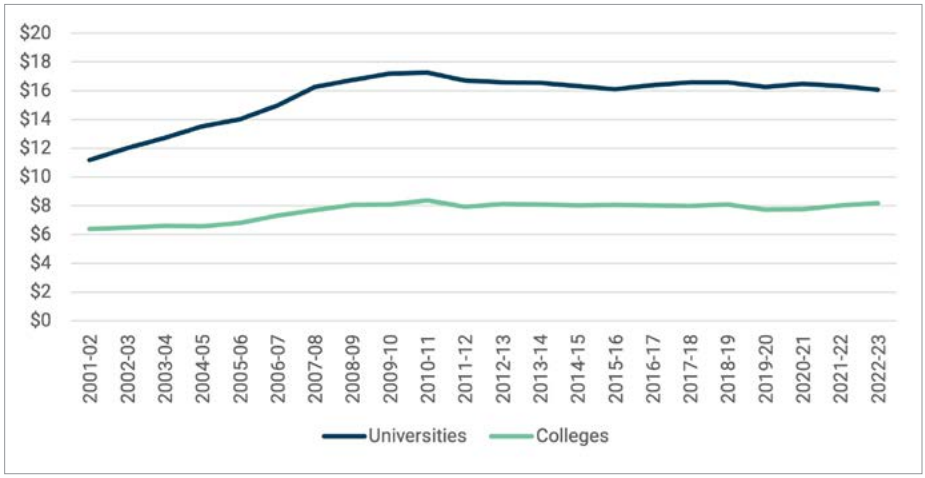
McGill University, Redpath Museum

As previous chapters have demonstrated, institutional reliance on governments as a source of income is decreasing. Still, grants from government—particularly operating grants from the provinces—remain the largest single source of funding in the postsecondary sector. This chapter details these expenditures at both the provincial and federal levels. The main story is simple: during the first decade of the century, government expenditures increased at a substantial rate, both at the federal and provincial levels. In the aftermath of the global financial crisis of 2008- 09, expenditures began to fall in real terms for over a decade. The arrival of COVID saw a major, if temporary, rise in federal funding, but no significant change in provincial transfers; the arrival of a period of significant inflation has reduced the real value of transfers from both sources.

4.1 PROVINCIAL EXPENDITURES ON POSTSECONDARY EDUCATION

Two Statistics Canada surveys—the Financial Information of Universities Surveys (FINUNI) and the Financial Information of Community Colleges and Vocational Schools (FINCOL)—provide information on PSE institutions' sources of funding up to 2022-23 and 2021-22, respectively. Individual colleges' financial statements for 2022-23 were used to bring the two sectors' financial up to the same level of recency for this chapter (see Appendix B for details). Figure 4.1 shows a massive increase – over 50% – in funding for universities between 2001-02 and 2009-10, fuelled partly by the rise in enrollments in the sector. The growth in college income in the 00s was more muted, but this is mainly because in 2007 and 2008, several institutions in Alberta and British Columbia converted from college status to university status; without this shift, the two sectors' patterns would appear more similar. Since 2009-10, there has been effectively no change in government transfers to either type of institution.

Figure 4.1: Provincial Government Transfers to Institutions by Type of Institution, in Billions ($2022), 2001-02 to 2022-23



As is usually the case in Canada, expenditures vary significantly across time and jurisdiction. Figure 4.2 shows that nationally, provincial transfers to institutions in 2022-23 were 1% below where they were both five and ten years' previously (in constant 2022 dollars). However, this consistency at the national level belies major provincial swings. Newfoundland and Labrador, Alberta, and Ontario have all seen double-digit percentage point declines in transfers to institutions over the past decade, but these have been mostly offset by a 19% increase in transfers in the province of Quebec, most of which has occurred since 2016. This vividly illustrates that understanding Canadian higher education requires looking beyond national figures, because national trends rarely play out in a synchronous way across the country.

Along with the variation across provinces, one of the most important things to understand about Canadian higher education finance is the extent to which spending patterns in Ontario, the largest province, are out of line with those in the rest of the country. In fact, as figure 4.3 shows, Ontario's per-FTE student expenditure drags down the national average so far that every other jurisdiction in the country is technically "above average" when it comes to per-student expenditures. Costs in the territories are exceptionally high because of the expense of offering a relatively comprehensive suite of programs across thinly-populated territories.

As might be expected, expenditures on the college and university sectors vary somewhat. As figure 4.4 shows, total

Figure 4.2: Changes in Provincial Transfers to Institutions by Province over Five and Ten Years, 2012-13 to 2022-23, in $2022

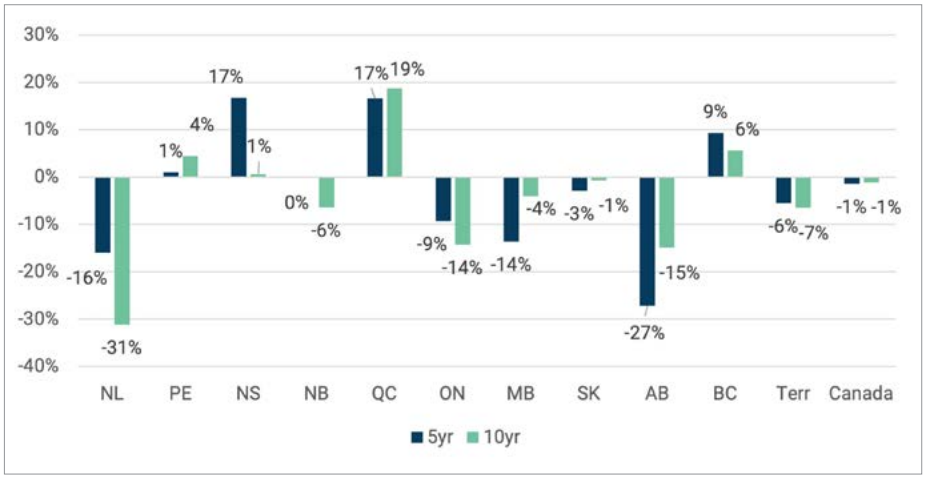
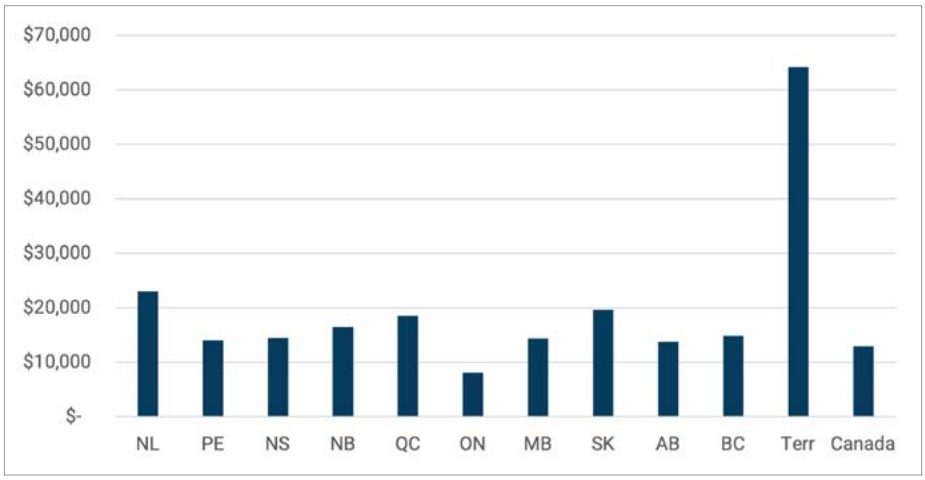


Figure 4.3: Provincial Expenditures per FTE Student, 2022-23



University of British Columbia, Museum of Anthropologie

provincial government expenditures on universities are somewhat higher nationally than they are in colleges ($13,324 per student for universities and $12,314 for colleges). This is by no means universal, however: in the three maritime provinces and the three prairies' provinces, colleges receive more money than universities on a per-FTE basis. The very high figure for per-student expenditures in Newfoundland and Labrador can be explained by two funding anomalies at Memorial university; namely, that it hosts a very expensive technical institute (the Marine Institute) and because the province chooses to run a substantial chunk of health care costs for the province's Eastern Region through the university and its teaching hospitals. Absent these two factors, per-student costs in Newfoundland and Labrador are similar to institutions elsewhere in the country.

Another way to look at expenditure data is to track provincial expenditures per student over time. Figure 4.5 shows this calculation both per-FTE student and per-domestic FTE student, to account for the effects of the growth in international student numbers, since in many parts of the country international students are excluded from provincial funding formulas. Per-student funding hit a high of $16,950 ($18,110 per domestic student) in 2008-09 (both figures are in constant 2022 dollars). In the decade since then, spending per FTE student fell by 24% (14% per domestic student). However, recall that figure 4.1 showed relatively constant total transfers over time. This decline in per-student funding is therefore not primarily a result of a significant decline in total funding; rather, it is a result of expenditures remaining more or less constant while enrollments increased.

Figure 4.4: Provincial Expenditures per FTE Student by Sector, 2022-23

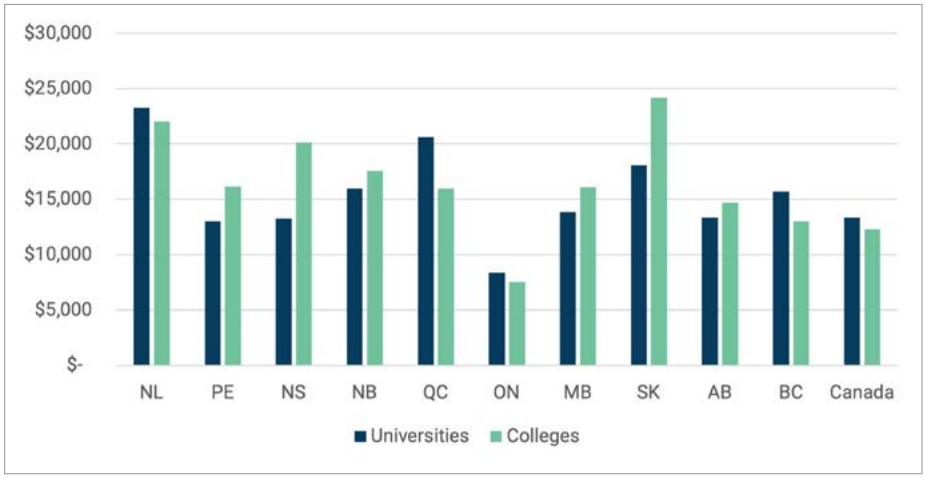
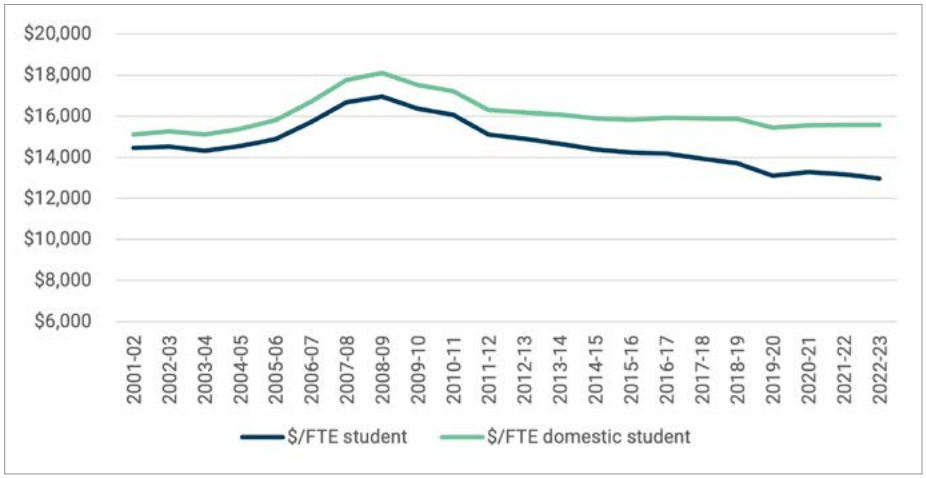


Figure 4.5: Total Provincial Funding per Full-Time Student, 2001-02 to 2022-23, in $2022



Algoma University, Reclaiming Shingwauk Hall Exhibit

How Funding is Distributed to Institutions

In all provinces, the government of the day decides the overall amount of funding that will go to the sector. How that money is divided among institutions is a more complicated matter.

In three provinces – Quebec, Ontario, and Saskatchewan – core funding is primarily distributed by an enrolment-weighted funding formula. That is to say, the amount of funding an institution receives is mostly based on the number of students it has in different types of programs. The three provinces use different weights for different subjects and levels, but generally the algorithms privilege clinical programs over laboratory programs and laboratory programs over lecture-based programs.

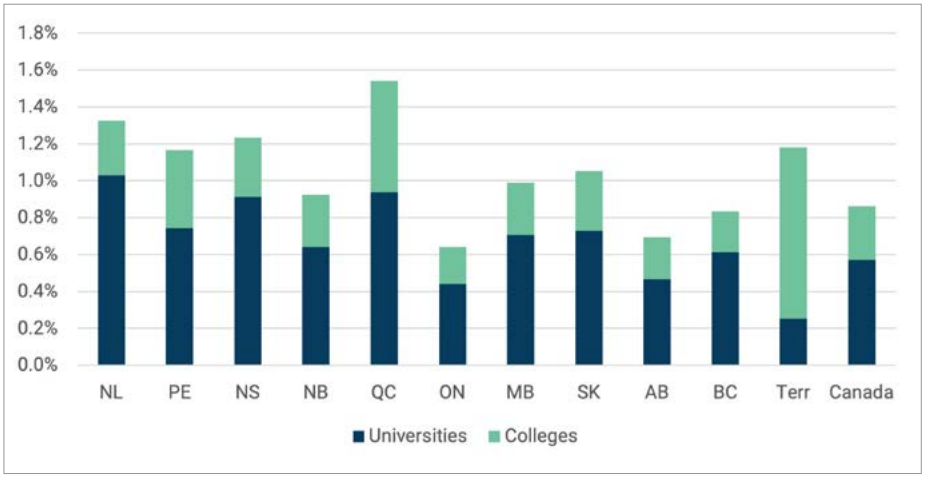
In the other seven provinces, funding is largely historically-driven: that is to say, what a school receives in any given year for core funding is largely a function of what it received the previous year, with some adjustments for new programs or new government initiatives. These changes are spread equally across institutions in the province, so that unlike in an enrolment-weighted system, there is less room for institutional shares of government funding to change over time.

Not all governments with historically-weighted formulas describe themselves this way. On occasion, New Brunswick and Nova Scotia will refer to their "funding formulas" as being enrolment-based even though neither has based funding on current enrolments for over a decade (at one point in the past, some or all of their funding was enrolment-weighted, and those calculations constitute the historic base for determining annual increases or decreases). British Columbia has a system in which institutions are notionally paid for a pre-determined allocation of seats, but there is no mathematical link between the number and type of seats and an institution's financial allocation. One partial exception is Alberta, which has used a historically-driven model for about two decades. However, in 2019 and 2020, two large sets of cuts were imposed on the postsecondary education system. The first, a mid-year cut, was based on financial reserves (i.e., which institutions were best able to survive a sudden decline in revenues). The second, a multi-year reduction, was based on the degree to which costs at that institution were considered to be above those at peer institutions elsewhere in the country.

Only two provinces – Ontario and Alberta – now use performance funding (that is, funding based on outputs rather than inputs). In 2019, both Ontario and Alberta announced plans for vastly expanded performance-based funding schemes that would eventually put up to 60% and 40% (respectively) of core funding "at risk", and which could be reclaimed by achieving a set of targets around graduate employment, research output and other such measures; however an analysis of the program guidelines in Ontario suggests that the amount of funding actually at risk will be less than 1%.

There are limitations to using per-student expenditures as a method of comparing provincial commitment to a sector. For one thing, they tend to reflect attendance patterns, not a province's ability to pay. A complementary way to compare provincial expenditures is to calculate higher education spending as a function of the provincial economy's size. Figure 4.6 shows provincial PSE expenditures as a percentage of provincial Gross Domestic Product. Nationally, this figure comes to about 0.9%, but it again varies substantially by province: in Quebec it is 1.5% of GDP, while in Ontario it is just 0.6%. The proportion going to colleges and universities is relatively close: in most provinces, the college share is between 25 and 33% of expenditures. The four exceptions are Newfoundland and Labrador (22%), Quebec with its very large CEGEP system (39%), Prince Edward Island (36%), and the three territories where the college figure is over 50%.

Figure 4.6: Provincial PSE Expenditures, by Sector, as a Percentage of Provincial GDP, 2022-23



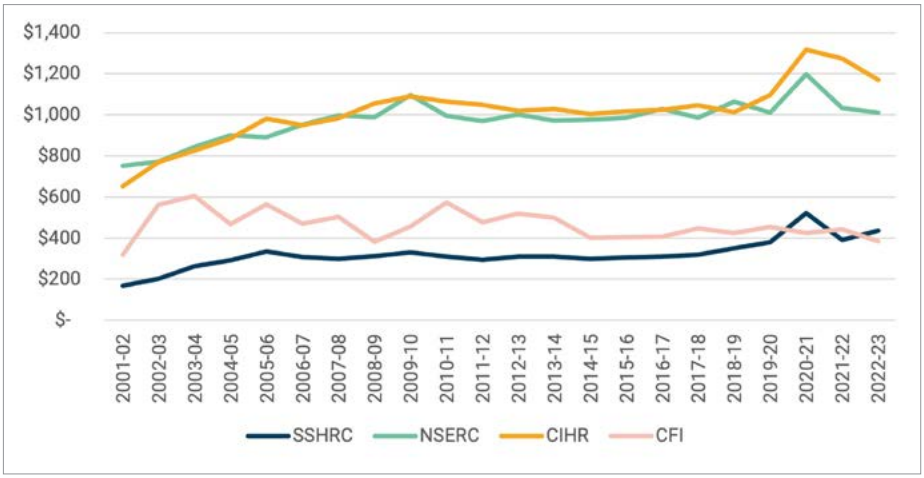
4.2 FEDERAL EXPENDITURES ON POSTSECONDARY EDUCATION

The Government of Canada essentially has four mechanisms for transferring money to postsecondary institutions. The first transfer mechanism is through the research granting councils: the Canadian Institutes for Health Research (CIHR), the Natural Science and Engineering Research Council (NSERC) and the Social Sciences and Humanities Research Council (SSHRC), which together are the largest source of federal dollars to most institutions. These three disciplinary-based councils are known collectively as "the Tri-Council" agencies. However, as of 2018, the Government of Canada now considers the Canada Foundation for Innovation (CFI), which disburses money for scientific infrastructure, to be a fourth granting council.

The second transfer mechanism is through a variety of other scientific agencies and government departments (e.g., Health Canada), which transfer at least some of their money to postsecondary institutions. The third mechanism is occasional large investments in capital spent on postsecondary institutions, such as the Knowledge Infrastructure Program (KIP) of 2009-10 and the Strategic Infrastructure Fund (SIF) of 2016-17. The fourth is an indirect method of transfers via funds included in the Canada Social Transfer that are, at least notionally, earmarked for funding postsecondary education.

The four granting councils provide a little under $3 billion in funding to Canadian institutions every year (more in the COVID year of 2020-21, but levels quickly returned to normal). Close to 99% of this funding goes to universities. This total expenditure figure rose very quickly in the first half of the 2000s, but then stalled for over a decade.

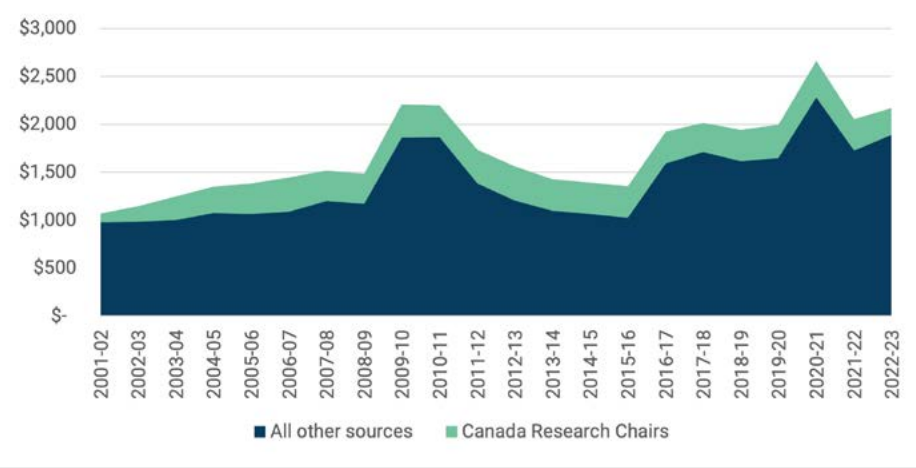
Figure 4.7: Research Granting Council Expenditures by Council, in Millions ($2022), 2001-02 to 2022-23



Recently, funding for the three disciplinary granting councils has ticked up and in 2022-23 stood at about $2.6 billion. This is mainly due to the increases in funding announced in the 2018 federal budget as a response to the Fundamental Science Review of 2017. In real terms CIHR expenditures in 2022-23 stand about 15-20% above its long-term average at $1.2 billion, respectively, while NSERC's funding remains relatively unchanged at around $1 billion. SSHRC funding in 2022-23 is also well above its long run average, but this is partly because the council manages a number of programs common to all three councils rather than because these fields of study are receiving an outsized increase in funding. Funding from CFI is more erratic, reflecting the fact that in much of the period covered in this graph, CFI did not yet receive annual funding allocations but instead received occasional endowment funding.

There are a variety of other federal sources of postsecondary funding which total a little over $2 billion. The largest single on-going source is the Canada Research Chairs program, which provides around $300 million annually to Canadian universities to support talented researchers. Other federal funds arrive through departmental budgets and allocations. For instance, Health Canada provides universities with roughly $60 million per year for various services; Employment and Social Development Canada provides about $30 million per year to colleges for various training programs. Research funds flow through various specialized science agencies such as Brain Canada and Genome Canada. Some money comes to PSE institutions through regional development agencies, mainly for infrastructure. Finally, the Government of Canada periodically spends large amounts of money on university and college infrastructure through one-time programs such as KIP (2009) and SIF (2016), which tend to appear during periods of economic downturn. These infrastructure programs are as much about Keynesian counter-cyclical support to the construction industry during economic downturns as they are about higher education. Nevertheless, programs like KIP and SIF have permitted significant renewal and expansion of facilities on Canadian campuses over the past decade. Though detailed breakdowns are not readily available, total amounts are captured through Statistics Canada surveys and amount to about $1 billion per year for most years, though this increases to $1.5 - $1.76 billion per year when major infrastructure drives are being undertaken, as seen below. In 2020-21, uncategorized federal spending increased by $600 million due to various COVID-related measures, before falling back again in 2021-22.

Figure 4.8: Direct Federal Funding to Postsecondary Institutions, Excluding Tri-Council Funding, 2001-02 to 2022-23, in $2022



University of British Columbia, Beaty Biodiversity Museum

A Short History of Federal Transfer Payments

While higher education is unquestionably a matter for provincial governments under the Canadian constitution, a variety of attempts have been made to try to rope the federal government and its taxation powers into supporting it.

Starting in 1957, the Government of Canada attempted a modest form of direct support to institutions. This was achieved through transferring a lump sum to a shell organization owned and managed by what is now Universities Canada, which then transferred the sums to individual institutions under its own formula. In 1967, this direct support was replaced by the Federal-Provincial Fiscal Arrangements Act, under which the Government of Canada agreed to split the costs of PSE 50/50 with the provinces, though in 1972 this support was amended by setting an overall growth cap of 15% per year on federal spending in this program. This program was not entirely run through cash transfers; a substantial portion of the federal contribution came through what are known as "tax points" (that is, a cession of tax room so that when federal tax rates decrease, provincial ones could equivalently increase).

In 1977, this arrangement was replaced with something called Established Programs Financing (EPF), which combined federal contributions for health and postsecondary education into a single transfer made up of a combination of cash and tax points. The cash transfer under EPF was initially tied to the rate of nominal GDP growth; later, total EPF was linked to GDP growth and the cash was calculated as a residual after tax points, meaning the cash portion as a proportion of the overall transfer began to shrink. Subsequently, the growth rate was reduced to GDP minus 2%, then to GDP minus 3% before being frozen altogether in 1990, all in the name of deficit-reduction. Since tax points continued to increase in value, and the cash transfer was a residual, the cash portion of EPF began to dwindle rapidly. It was expected that it would fall to zero in the early 2000s.

In 1995, the Government of Canada merged the EPF with another provincial transfer payment known as the Canada Assistance Plan (CAP) into a new program called the Canada Health and Social Transfer (CHST). This new, larger transfer was essentially one enormous block-grant of cash and tax points to the provinces, the only conditional element of which was that the provinces respect the Canada Health Act. The cash portion of the new CHST was set at just $12.5 billion, which was $6.5 billion less than what had been available under the combined CAP/EPF. But the 1995 budget also placed a floor under cash transfers, which put to rest the fears that cash payments would eventually dwindle to zero. As the economy recovered after 1996, the CHST cash payments grew. Over the next few years, as the economy improved, billions of new dollars were poured into the transfer, mostly for the purposes of shoring up the health system; though accountability arrangements were not formally changed, provinces agreed to publicly announce what they would do with any new monies received through the transfer. By 2004, the value of the cash transfer had risen to $22.3 billion.

In 2004, the CHST was split into a dedicated Canada Health Transfer (CHT) and a Canada Social Transfer (CST), with the latter designed to include spending for postsecondary education, social assistance, and childcare. The initial value was set at $8.3 billion. In 2007, the Government of Canada announced an $800 million increase to CST specifically for postsecondary education, though there was no way to directly tie this investment to specific actions by the provinces. Still, for the first time since the demise of EPF, it was possible to see the actual amount of cash transfer "designated" for PSE. Since then, 30.7% of the CST – which is now valued at over $14 billion – is deemed related to postsecondary education, meaning that federal transfers "in respect of" postsecondary education are currently just over $4.75 billion per year. This is equal to about 21% of provincial expenditures on postsecondary institutions, up from just 14% in 2007.

Finally, there is the matter of federal transfer payments to provinces for postsecondary education. Figure 4.9 shows the relative importance of the CST compared to other forms of federal expenditures. Because CST rises automatically in nominal dollars every year while other forms of funding have dropped off somewhat, the transfer is now a much more important part of the overall federal effort than it was even a decade ago (CST actually declined in real terms in 2022-23 because of higher-than-usual inflation). In normal years, over 50% of federal funds for PSE now go through the CST; the COVID year of 2020-21 was an obvious but presumably short-lived exception.

Thanks to the Government of Canada's clarification with respect to the division of CST funds from 2007-08 onwards, it is possible to look at the distribution of postsecondary funding in Canada between federal and provincial governments without fear of double-counting the federal transfer. This is shown right in figure 4.10. If we look at federal expenditures on research, infrastructure, and unconditional transfers versus provincial own-source expenditures (i.e., their expenditures net of CST), a nearly perfect 2.5:1 ratio of provincial to federal expenditure emerges. This is significantly changed from what was effectively a 3:1 ratio in 2007-08 prior to the introduction of the CST.

Figure 4.9: Federal Assistance to Postsecondary Institutions by Type, in Millions ($2022), 2007-08 to 2022-23

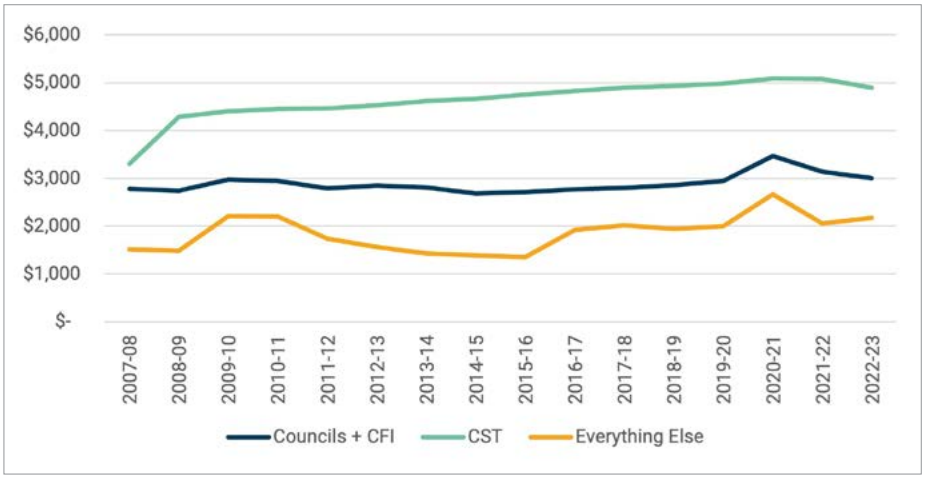
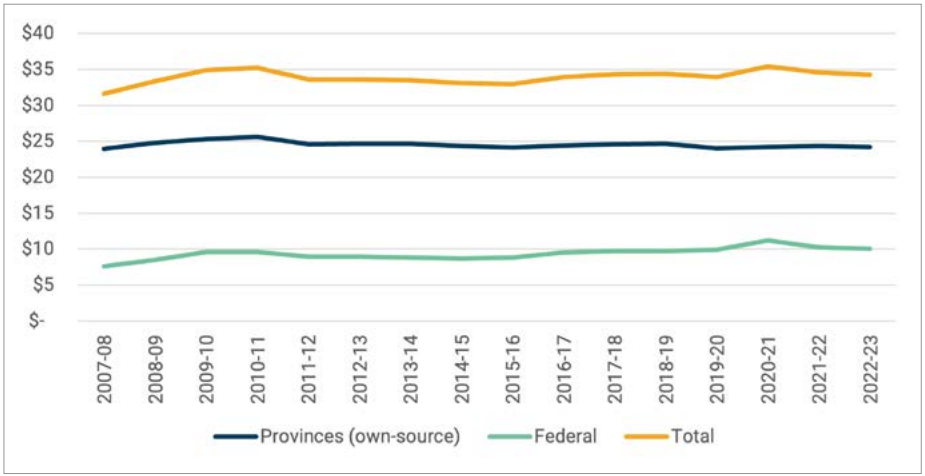


Figure 4.10: Federal and Provincial Own-Source Expenditures in Respect of PSE Institutions, Canada, 2007-08 to 2022-23, in $2022



University of Saskatchewan, Museum of Antiquities

5.

CHAPTER FIVE

Tuition & Student Aid

KEY POINTS

- National average domestic tuition has been falling in real terms for the last few years, partly due to inflation and partly due to a major shift in Ontario government policy.
- The gap between domestic and international student tuition fees continues to widen.
- Total need-based government aid (loans and grants) in Canada was $9.8 billion in 2022-23, with 51% of this coming in the form of grants.
- Total aid from all sources was at least $17.6 billion in 2022-23, roughly three times what it was in the early 1990s, after adjusting for inflation.
- Total non-repayable aid from all sources was approximately $12-13 billion. Given that aggregate domestic tuition fees are under $10 billion, this suggests that Canada has net-negative tuition fees on average.

CHAPTER FIVE

Tuition & Student Aid

Université Laval, PEPS

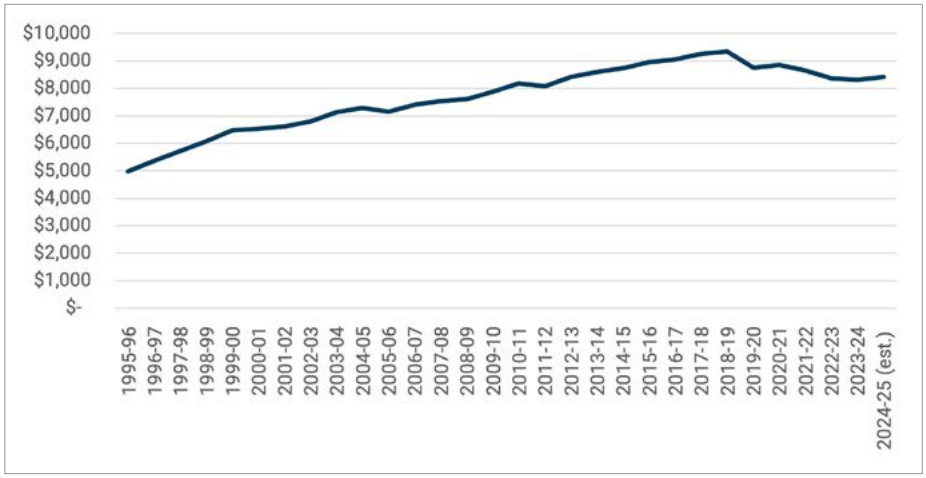
One of the most-watched elements of higher education policy relates to affordability. For the most part, the affordability debate focuses on the sticker price of tuition. However, this is only one part of the equation, because for all the billions of dollars institutions collect from tuition, Canadian governments and institutions also provide billions of dollars in subsidies and scholarships to offset that tuition. Examining these issues in a pan-Canadian context is challenging, because tuition and student aid policies vary across provinces. This chapter covers both tuition and student assistance, in order to provide as complete a picture of accessibility as possible.

5.1 TUITION

Tuition fees are subject to a great deal of tug-of-war between institutions and provincial governments. Generally, the institutions seek greater freedom to set fees in order to raise revenues; provinces seek greater control over institutional policy to limit negative headlines about the cost of education (though provinces often lack the concomitant desire to provide institutions with greater funding to compensate for lower tuition). This tug-of-war plays out differently across provinces and across time. Sometimes provinces impose tuition fee freezes, and in some narrowly defined cases, they permit fees to be de-regulated. Genuinely pan-Canadian trends in fee policies are few and far between. What unites Canadian provinces is the willingness to allow institutions to make up for falling government funding through international student tuition dollars.

Figure 5.1 shows domestic student tuition plus mandatory fees at Canadian universities, in real dollars, from 1995 to 2024 (the current year's data is an estimate based on various provincial and institutional fee announcements). In the 1990s, annual average increases in tuition were to the order of 5-7% per year, after inflation. After 2000 or so, once the era of significant austerity was over, increases in tuition began to moderate, and since that time, annual average increases in university fees have been very close to 2% per year after inflation. 2019-20 was an exceptional year due to the Ontario government's decision to cut all tuition by 10%, which led to a substantial decline in the national average. This cut was followed by three years during which fees were frozen because of the higher-than-usual inflation. After inflation, average undergraduate fees today are roughly where they were in 2011-12, although this change in the "national average" has been largely driven by events in Ontario.

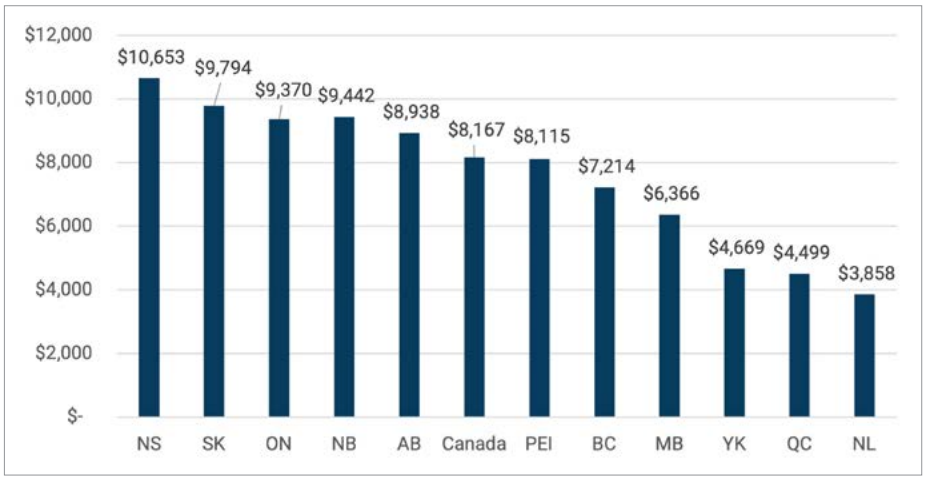
Figure 5.1: Average Domestic Undergraduate Tuition and Fees, Canada, 1995-96 to 2024-25 (est.), in $2024



There is no equivalent data for tuition fees at the college level, as Statistics Canada chooses not to survey institutions on this matter, and institutions prefer not to be overly transparent about it. The closest we can come to obtaining national college tuition figures is to look at revenue per full-time equivalent (FTE) student, which is available by combining data from FINCOL and PSIS. This is not ideal because it is impossible to accurately disaggregate revenue from different sources (international vs. domestic, credential- vs. non-credential courses), but nonetheless this measure does suggest that the two types of institutions are similarly reliant on fee income: at universities, the figure was $11,675 per FTE student per year in 2022-23, while at colleges, excluding CEGEPs (which are tuition-free for most students), the figure is around $10,738 per FTE student per year. What one should take from that is not that average college tuition is $10,738 per year (because this figure is driven substantially by international student enrolment and fees) but rather that the gap between university and college tuition in Canada outside Quebec likely averages somewhere between $1,000 and $2,000.

Undergraduate tuition and fees vary significantly by province. Quebec and Newfoundland and Labrador have very low tuition fees, both resulting from lengthy periods of tuition fee freezes over the last 40 years (although Newfoundland and Labrador began to depart from this model in 2022). Nova Scotia has the country's highest fees. However, Ontario, New Brunswick, and Saskatchewan are not far behind. Notably, participation rates in Canadian universities do not appear to be driven by fee levels. Ontario has the highest participation rate in the country, and Nova Scotia is still able to attract proportionately the largest number of out-of-province students of any province. Meanwhile, the lowest participation and attainment rates are found in the Western provinces.

Figure 5.2: Average Undergraduate Tuition and Mandatory Fees, by Province, 2023-24



University of Alberta, Universiade Pavilion (Butterdome)

Esports Arena, Durham College

Fees also vary considerably by field of study. Figure 5.3 shows the variation for first-entry university undergraduate programs, while figure 5.4 shows tuition for programs that are primarily second-entry university professional programs. Note that these figures include only tuition and not mandatory fees; this is because Statistics Canada produces data on average mandatory fees (which run to about $800 per year) but does not break them down by field of study. Figure 5.3 demonstrates that the median program price across three main fields of study in Canada (science, social science, and humanities) is in the low $6,000s, while the median for Business programs is just over $7,500. Even adding on the $900 or so from ancillary fees would only bring the median tuition fee to somewhere around $7,000, or about 10% lower than the national averages noted in figures 5.1 and 5.2.

The reason for this 10% gap is simple: A small number of professional programs — shown right in figure 5.4 — charge fees that are dramatically higher than the median: nearly $25,000 per year in dentistry, over $15,500 in medicine, and over $13,500 in law. Even with relatively small numbers of students, these fee levels push the overall average up significantly.

Figure 5.3: Average Tuition Fees, by Field of Study, First-Entry Undergraduate Programs, 2023-24

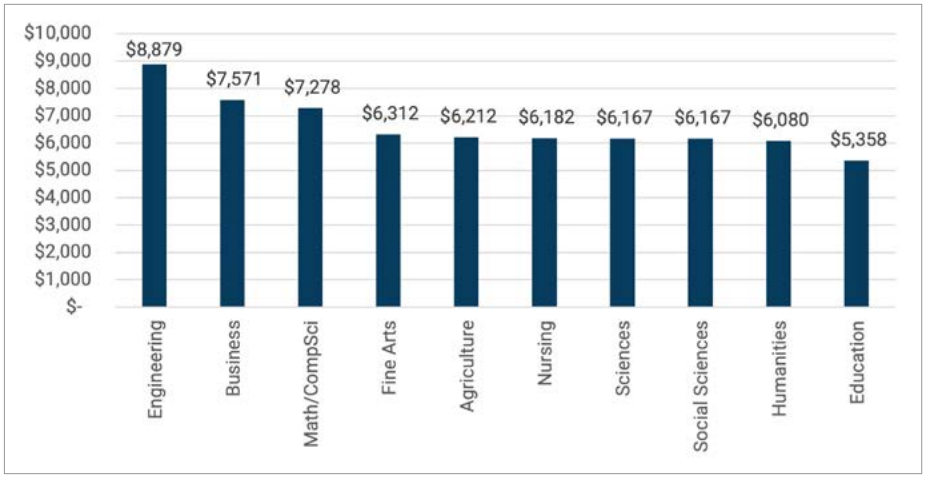
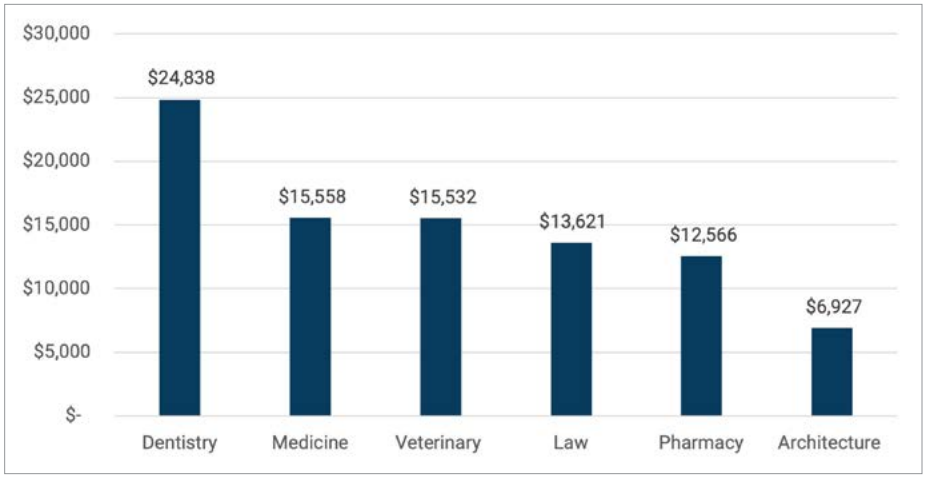
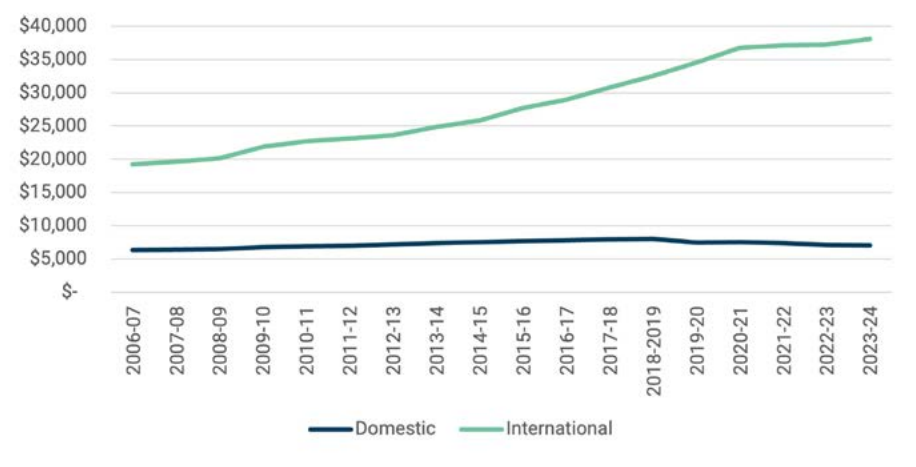


Figure 5.4: Average Tuition Fees, by Field of Study, Second-Entry Professional Undergraduate Programs, 2023-24



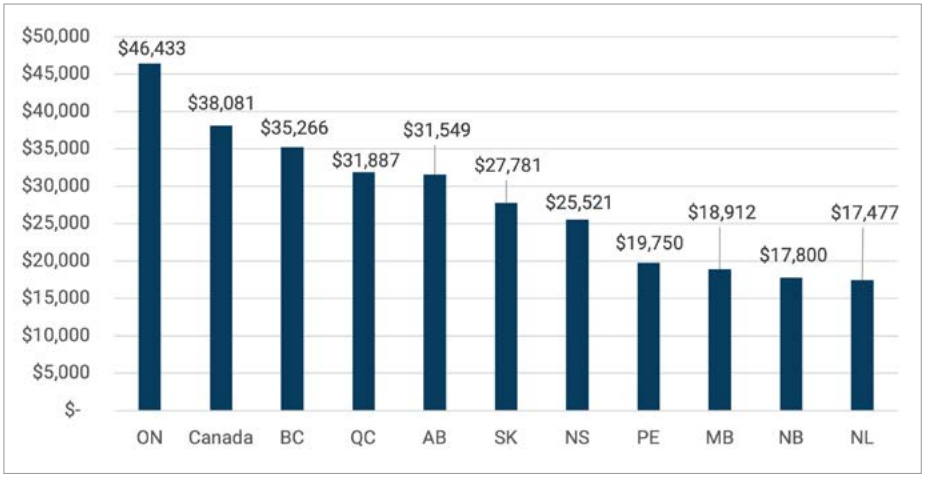
Domestic tuition fees are only part of the story, however. International student numbers have been steadily increasing (see chapter 1), and international student tuition dollars have become a vital source of funding for universities and colleges (see chapter 4). As figure 5.5 shows, the increasing funds are coming not just from larger numbers of students, but also from increased fees. Domestic undergraduate student tuition increased at roughly inflation plus 2% until quite recently before falling (due mainly to policy changes in Ontario), international undergraduate student tuition fees, on the other hand, have been rising at inflation plus 5%. The effect of compounding means those two numbers separate at an accelerated pace. In 2023-24, international student tuition averaged $38,081 per year, up from $19,264 (in inflation-adjusted dollars) in 2006-07. International fees are now approximately five times domestic fees whereas fifteen years ago they were just three times domestic fees. Notably, this rise in fees has gone in tandem with regular double-digit increases in international student numbers. There is no sign yet that Canadian institutions as a whole have been pricing themselves out of the market.

Figure 5.5: Domestic vs. International Student Tuition, Canadian Universities, 2006-07 to 2023-24, in $2023



As is usually the case in Canada, the picture for international undergraduate student fees varies by province. In the two provinces attracting the greatest number of international students, tuition fees are quite high: over $46,000 in Ontario and over $35,000 in British Columbia. In the rest of the country, international student fees are more modest. In four provinces, fees are under $20,000, and in Newfoundland and Labrador, they are a comparatively trifling $17,477. The reason for these gaps is unclear, but presumably provinces without a major metropolis feel they may have more difficulty attracting international students and price themselves accordingly. Intriguingly, universities outside of Ontario and British Columbia mostly seem to set their prices below the average operating cost per student. This is presumably why so many of them claim not to be making money from international students, despite the higher fees. The actual relevant metric here is not average student costs but marginal student costs, which can be quite low, meaning that even when charging low fees an institution is better off accepting more international students.

Figure 5.6: International Undergraduate Student Tuition by Province, Canadian Universities, 2023-24



5.2 STUDENT ASSISTANCE

Student aid in Canada comes in many different forms. The most prominent of these forms is need-based student assistance, or student loans and grants. However, there are several other very significant sources, including tax credits, education savings grants, institutional scholarships, and sundry other funds like federal graduate scholarships and support for Indigenous students. In this section, we look at each of these areas in turn.

5.2.1 Need-based Student Assistance

Student aid in Canada is difficult to summarize concisely. Student assistance, however, is an area of joint responsibility with the federal govern-

ment. Not only is there a national program – the Canada Student Financial Assistance Program (CSFAP), formerly the Canada Student Loans Program – but every province has its own student aid program. In nine provinces and one territory, these programs run alongside the federal program. Quebec, Nunavut, and the Northwest Territories have opted out of the CSFAP and receive compensation for this, which they use to fund their own standalone programs. In provinces where federal and provincial loan programs run side-by-side, the provincial government is the one that manages both programs, permitting them to integrate federal and provincial assistance in a relatively seamless fashion. As such, students only make a single application to the two programs (though the needs assessment processes for each program may be quite different). To a large extent, provinces treat the federal program as a base and use their own resources to build a program around it. Therefore, student programs can look very different from one province to another, given different provincial priorities and desires to invest in student aid.

Student loans are based on "assessed need". An applicant's costs of education (tuition, materials, books) and living (housing, food) are assessed, the latter according to a standardized allowance, to arrive at a total annual cost figure. Then the applicant's income and (in some cases) assets are assessed; if a student is considered a dependent, then their parents' income is also assessed, and if a student is married, then the spouse is assessed. This assessment leads to a determination of "resources" the student has available. Costs minus resources equals need, subject to a total assistance maximum. This maximum varies somewhat by province and student status, but in 2023-2024 it was at least equal to $500/week of study ($17,000 per academic year) for most students in most provinces, up from $350/week ($11,900) in the decade or so prior to that.

In contrast to loans, grants are usually based on income (both personal and family for applicants who are considered dependents) rather than need. This is the case for nearly all the federal grants, as well as those in Ontario, which is the source of over half of all provincial grants. Most other provincial grants are based either directly or indirectly on need, though a non-negligible portion of both provincial and federal assistance is also based on the presence of a disability.

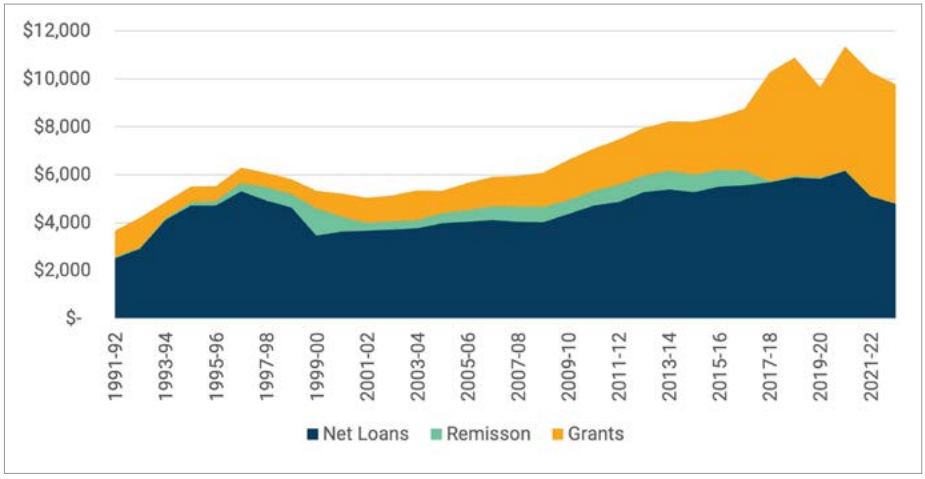
One peculiarity of the Canadian student aid system has been the tendency of provinces to deliver at least a portion of their non-repayable assistance (i.e. grants) in the form of forgivable loans. For example, prior to 2017 in Ontario, single students enrolled for two standard-length terms per academic year could borrow up to $11,400, of which $4,300 (that is, the entire provincial portion of the loan) could be forgiven if the student successfully completed the year. For the most part, these programs have been on the wane in most provinces, though it remains significant in Nova Scotia.

Actual figures on loans and grants in Canada are difficult to gather. Federal data is, at best, two years out of date by the time an annual report is released. Apart from Alberta, Quebec, and Saskatchewan, most provinces do not publicly release data on the amounts of loans and grants they deliver. Through to about 2010, provincial governments did publicly release some loan/grant statistics via an annual survey run by the Canada Millennium Scholarship Foundation, so reasonably good data is available until the start of this decade. Since then, it has been more difficult to obtain data. For the past several years, Higher Education Strategy Associates has used freedom of information requests to update pre-2010 data to the year 2022-23.

Figure 5.7 shows the total need-based assistance issued by type in Canada over the past 29 years, in constant 2022 dollars. Net loans — that is, total loans minus loan remission — are shown to avoid double-counting. Student loans reached a peak during the recession in the mid-1990s when tuition fees were rising quickly, before fading away due to a combination of lower need (as students began to earn more income in the post-96 recovery) and a tightening of student loan criteria to exclude more students at private vocational colleges. From about 2000 onwards, the total amount of student aid provided by Canadian governments, both federal and provincial, increased by about 4% per year on average after inflation. It then increased very substantially in 2017-18 due to changes both in the federal program and in the province of Ontario, which in both cases involved eliminating tax credits and converting them to grants. In the final year for which data is available, 2022-23 total government need-based aid was roughly $9.8 billion, of which 49% came in the form of loans. Of the remaining half, roughly 99% was delivered in grants and the rest through various forms of provincial loan forgiveness.

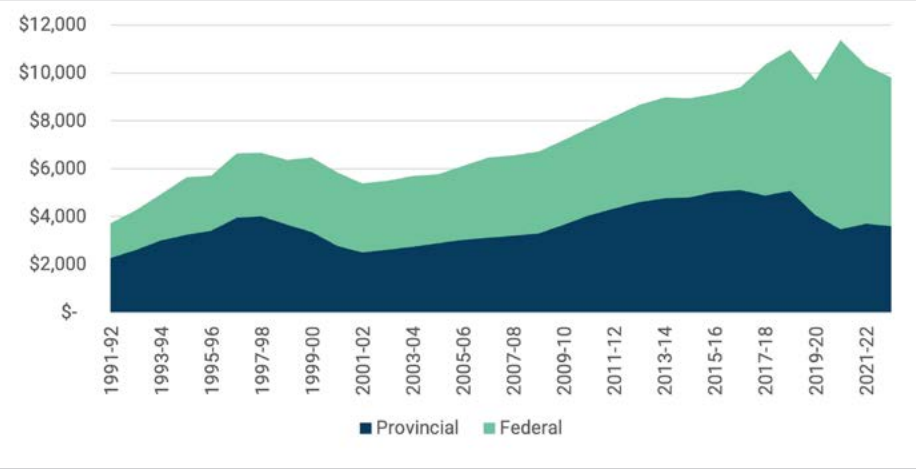
There have been shifts over time in the sources of student aid, shown on page 57 in figure 5.8. In the mid-1990s, most

Figure 5.7: Total Annual Loans and Grants Issued, Canada, 1992-93 to 2022-23, in Millions, in $2022



of the aid provided came from provincial governments. After 2000, and the creation of the Canada Millennium Scholarship Foundation, the balance shifted and an increasing proportion of funds began to be provided either directly or indirectly by the federal government. In the early 2010s, provincial funding grew substantially — thanks mainly to Ontario — and it was provinces who again provided over 50% of support to students between 2012 and 2016. However, since the election of the Trudeau government and perhaps more pertinently of the Ford government in Ontario, the pendulum swung back again, and by 2022-23 the federal government provided nearly two-thirds of all student aid in Canada.

Figure 5.8: Total Annual Need-Based Student Aid by Source, Canada, 1992-93 to 2022-23, in Millions, in $2022



Education Tax Credits in Canada: A Short Explainer

Tax-based assistance for postsecondary education in Canada predates the student loan system. The Diefenbaker government introduced the first tax deductions for education in the late 1950s as an alternative to student aid. The tax deductions were for tuition plus a set monthly allowance and could be used either by a student or passed on to another family member. From then until 1996, there were only minimal changes: the value of the allowance went up somewhat, and the deductions were turned into credits (thus mostly eliminating the regressive aspect of the associated tax expenditure) as part of a major reform of taxation carried out by the Mulroney Government in 1987.

In 1996, the Government of Canada increased the value of the education credit from $60 per month to $80 per month. In 1997, it increased it again to $120 and then to $200 per month for 1998; it also allowed part-time students to enjoy partial access to the credit and incorporated mandatory ancillary fees within the ambit of the tuition tax credit. Another change allowed students to carry-forward any unused amounts of tax credits to future years, which was very beneficial for students who did not have enough income to be liable for tax. In 2000, the monthly amount doubled to $400 per month, with a concomitant increase for part-time students. In 2006, the Government of Canada created a new Textbook Tax Credit worth $65 per month, which worked precisely the same way the education credit did.

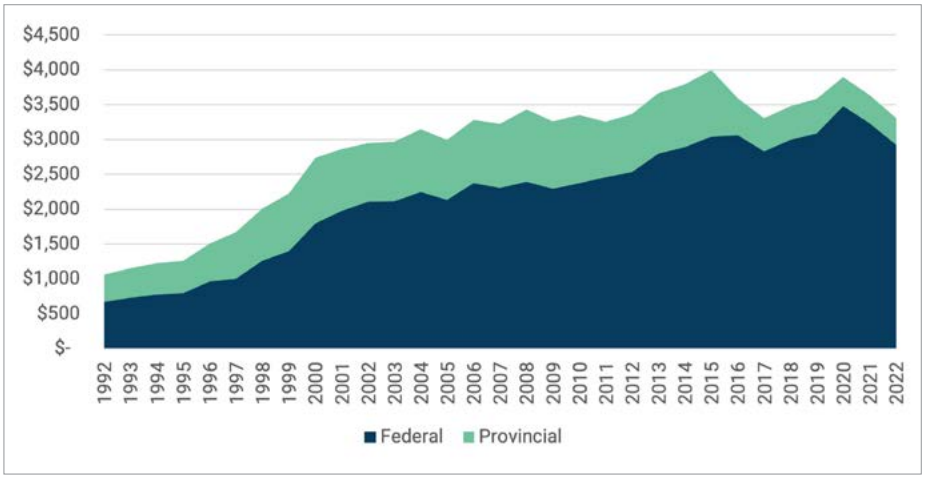
Until 2000, provincial taxes were calculated as a function of federal taxes. Therefore, whenever a federal tax credit was implemented, implicitly the credit reduced one's provincial tax payable as well. In 2000, the country moved from a TONT (tax-on-tax) system to a TONI (tax-on-income) one, under which provinces were given a great deal more freedom over the way taxes were calculated (e.g. they could have different rates at different income bands) and how tax concessions could be created (e.g. they could design their own tax credits), provided they all agreed to let Ottawa both collect the taxes and define "income". A majority of provinces froze tuition tax credits at the level they were at prior to the 2000 budget (i.e. $200 per month), and some chose to mirror the federal government's $400 rate. Alberta and Ontario decided to do the federal government one better by matching the $400 credit rate and then indexing the rate to inflation.

In 2015, the federal Liberals came to power with a plan to move away from tax credits as a funding mechanism. In the 2016 budget, the government eliminated the education amount and textbook tax credits, leaving only the tuition tax deduction. The money was used to pay for an increase in student grants. Ontario and New Brunswick followed suit by getting rid of their education and tuition tax credits later in starting in 2017 and similarly re-investing the proceeds in student grants and create what were effectively "targeted free tuition" programs. In 2019, after changes of government in both provinces, these new programs were eliminated; in New Brunswick, this resulted in a re-instatement of the tuition tax credit, whereas in Ontario it did not. Other provinces that have eliminated tuition and education tax credits include Alberta (2020) and Saskatchewan (2017). Quebec eliminated its education credit, but not its tuition credit, in 2012.

5.2.2 Non-need-based student assistance

While need-based assistance provides targeted aid to students with low-income and/or high-need, there are billions of dollars in other forms of aid sent to students and their families without means testing. The most important of these forms of aid are tax credits. As figure 5.9 shows, the value of these credits rose from just over $1 billion in 1992-93 to nearly $4 billion in 2015-16 in constant 2022 dollars. Major policy changes in the federal and Ontario programs reduced total tax credits by almost $500 million in 2017-18, with most of this being turned into grants: currently, the total annual value of tax credits is estimated to be $3.3 billion, with over 85% of this coming from the Government of Canada.

Figure 5.9: Total Value of Education and Tuition Tax Credits by Source, Canada, 1992 to 2022, in Millions, in $2022

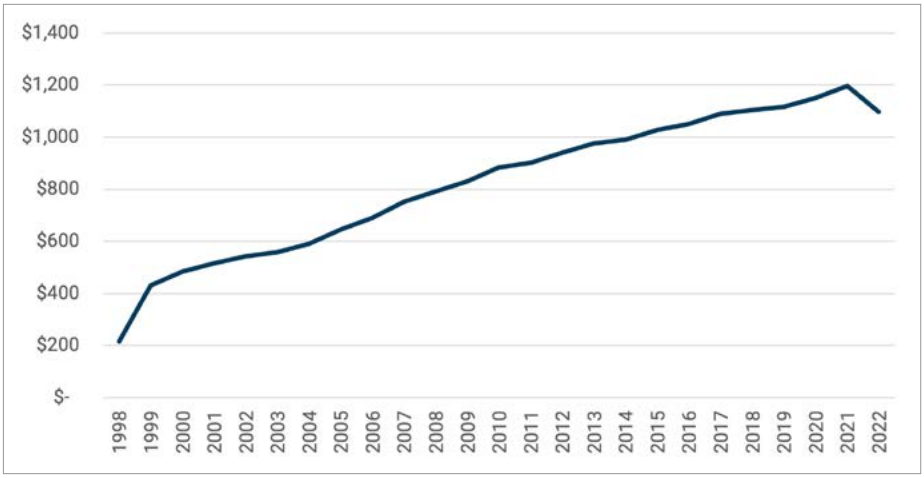


The other important government transfer program for postsecondary education is Education Savings Grants. Since 1971, Canada has had the Registered Education Savings Plan – that is, a savings account in which growth was not taxed. In 1998, the Government of Canada introduced a savings matching scheme, where it would contribute 20 cents for every dollar contributed to a RESP, up to an annual maximum of $400 (later increased to $500). This program, called the Canada Education Saving Grant, was very popular, and uptake rose rapidly (see figure 5.10). The one major change to the program came in 2004, when the government decided to address the complaint that CESGs were mostly a regressive give-away to wealthier families. First, the matching rate was increased for lower-income parents, up to 40% (this was known as the A-CESG). Second, a new program called the Canada Learning Bond was introduced. This program adds money to children's RESPs automatically if their parents' income is less than $49,020 per year (the threshold amount adjusts upward if the family has more than three children). The first year this occurs, the child's account receives $500; in every subsequent year this occurs until the child turns 18, another $100 is added. Until 2024, parents needed to open an account in order for the transfer to occur, and since many did not, the program had only a mediocre take-up rate.

The CESG has been successful beyond the wildest dreams of its creators. In its first few years of operation, it was expected to cost $300 million per year or so; today, thanks to high participation rates in the program, the amount is over $1 billion. In 2022, 3.1 million RESP accounts received CESG and/or A-CESG payments. That is to say that 54.8% of all Canadians under 18 received some kind of CESG payment in 2021, while another million or so have a RESP in their name that did not receive a contribution that year. In the same year, 493,300 current students used money from their RESPs to pay for their education, totalling $5.1 billion.

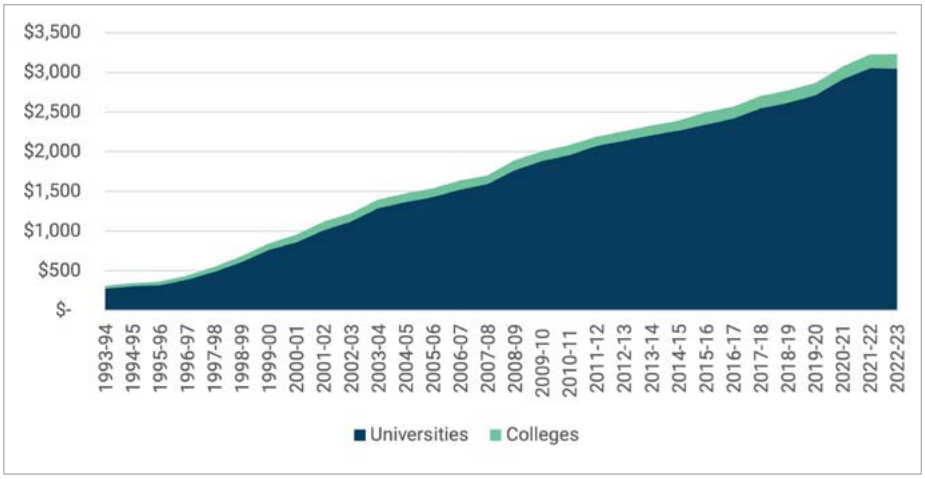
The final major source of funding for students is institutions themselves, which provide roughly $3.2 billion per year in scholarship and bursary funding to students. The overwhelming majority of this money (95%) comes from universities rather than colleges, in part because they have greater fundraising resources and in part because financial

Figure 5.10: Total Canada Education Savings Grants Payments, 1998 to 2022, in Millions, in $2022



aid is a more important part of the enrolment management process at universities. Scholarships are perhaps the fastest-growing element of university expenditures in Canada, having increased more than ten-fold since 1992-93. Total university expenditure on scholarships is now over $2,500 per FTE student. Institutions provide very little in the way of breakdown with respect to how this money is spent, specifically whether the money is awarded based on need or merit, and whether funds are supporting undergraduates or graduate students. Surveys conducted in the 2000s suggested that only about 25% of funds were going to undergraduates, and those funds were split on roughly a 50/50 basis between merit and need-based aid. This implies that the bulk of the funding – 75% of it – is supporting graduate students, and that therefore institutional aid spending is probably something like $650 per student annually at the undergraduate level and $7,250 per student annually at the graduate level.

Figure 5.11: Total Institutional Scholarships by Institutional Type, Canada, 1993-94 to 2022-23, in Millions, in $2022



Toronto Metropolitan University, Devonian Skate Pond

5.3 TOTAL STUDENT AID

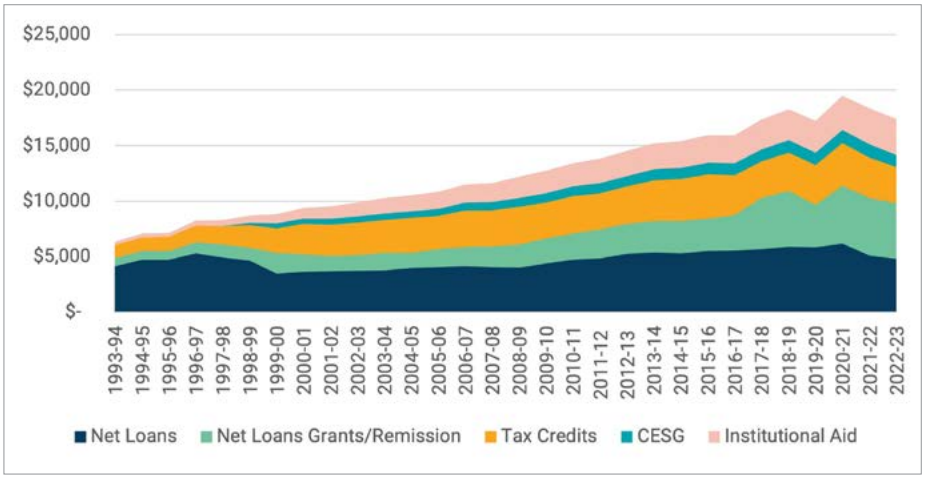
The preceding sections have looked at the four major sources of assistance: need-based student aid, tax credits, education savings grants, and institutional scholarships. These are not the only sources of student aid expenditures in Canada. Among the other sources of aid are the Government of Canada payments to First Nations and Inuit students through the Postsecondary Student Support Program (PSSSP), roughly amounting to $350 million per year, and scholarships for graduate students through the three traditional granting councils, which are roughly $200-$250 million per year (these sums are included in government expenditures in chapter 4, however). There are also sundry provincial merit programs, which once accounted for nearly $137 million per year but have declined significantly over the past few years. Provincial graduate tax credits – which provided tax rebates to PSE graduates who stayed in a particular province – were quite popular about a decade ago and accounted for nearly $100 million per year at their height, but as of 2021-22 only Saskatchewan and Nova Scotia maintain such programs (although the recently re-elected UCP government in Alberta has promised to introduce something similar in its next mandate). Quebec and Saskatchewan also have small programs that top-up contributions to Canada Education Savings Grants. In total, these various sources of aid add up to over $1 billion/year.

Additionally, in the summer of 2020, the federal government created the one-time Canada Emergency Student Benefit to provide financial supports to students who were having difficulty finding employment, a subsidy that in the end worked out to be slightly under $3 billion.

Figure 5.12 aggregates the four major sources of aid (excluding the programs noted in the preceding paragraph above) to provide a near-complete picture of how student assistance has increased over the past two decades. It contains a number of important data points. First, the total amount of money given to individual Canadians has roughly tripled over the past twenty-seven years, even after accounting for inflation. What was a $6.4 billion/year student aid system in

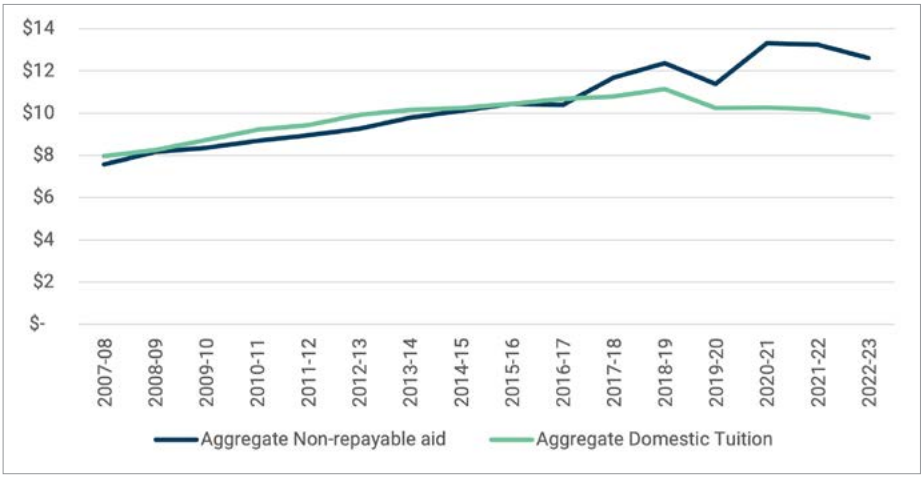
1993-94 is now a $17.5 billion/year one. Second, the system is less loan-based than it used to be. In the mid-1990s, loans made up two-thirds of all student aid; by 2022-23 that figure had fallen to just 27.4%. Since the mid-90s, government grants have increased more than six-fold after inflation, while institutional grants have increased nine-fold. Meanwhile, tax credits have increased more than doubled after inflation, and education savings grants have gone from zero to over $1.1 billion per year. All of this represents a sea change in the way postsecondary education is financed.

Figure 5.12: Total Student Financial Assistance by Type, Selected years, 1993-94 to 2022-2023, in Millions, in $2022



The total amount of non-repayable assistance - that is, total assistance minus loans - was over $12.6 billion in 2022-23: If recurring money from the additional sources not covered by figure 5.12 is included, it increases to over $13 billion. As noted in chapter 3, the total amount of tuition paid by domestic students was about $9.8 billion in 2022-23. Since very little student assistance is available to international students, it is possible to say that the total amount of non-repayable assistance given to Canadians each year is higher than the total amount of tuition fees paid by Canadian students. Or, put another way, Canada likely has net-negative tuition for domestic students once various forms of student assistance are taken into consideration. This does not mean that every student receives more in assistance than they pay in tuition, but it does mean that on average, per-student subsidies exceed per-student fees. As figure 5.13 shows, this gap between non-repayable aid and aggregate domestic tuition fees has in fact been growing for several years.

Figure 5.13: Aggregate Non-Repayable Aid vs Aggregate Domestic Tuition fees, 2007-08 to 2022-23, in Billions, in $2022



5.4 STUDENT DEBT AT GRADUATION

The effect of all this extra financial aid is most easily seen in student debt statistics. In the late 1990s, prior to all these major increases, there was considerable concern that Canadian students would soon be carrying debt loads resembling students from US four-year private institutions (which, at the time, were in the neighbourhood of $45,000 CAD in today's dollars). Average student debt loads in Canada did increase sharply in the 1990s, but since that time they have remained very constant and, by some measures, have decreased.

We have two data sources for looking at student debt over time. The first is the National Graduates Survey (NGS), which surveys every fifth (formerly fourth) graduating class three (formerly two) years after graduation. Despite the capricious survey timetable, it remains the country's most thorough examination of graduate debt because of the large sample, which is drawn from the entire graduate cohort of both universities and colleges. The drawback is that the data can be outdated by the time it is published. This is an ongoing issue: at the time of writing in the summer of 2024, the most recent observation is from the graduating class of 2020.

The second is the Canadian University Survey Consortium's (CUSC) triennial survey of graduating students. These have the benefit of being published almost immediately, but the drawbacks

University of British Columbia, Aquatic Centre

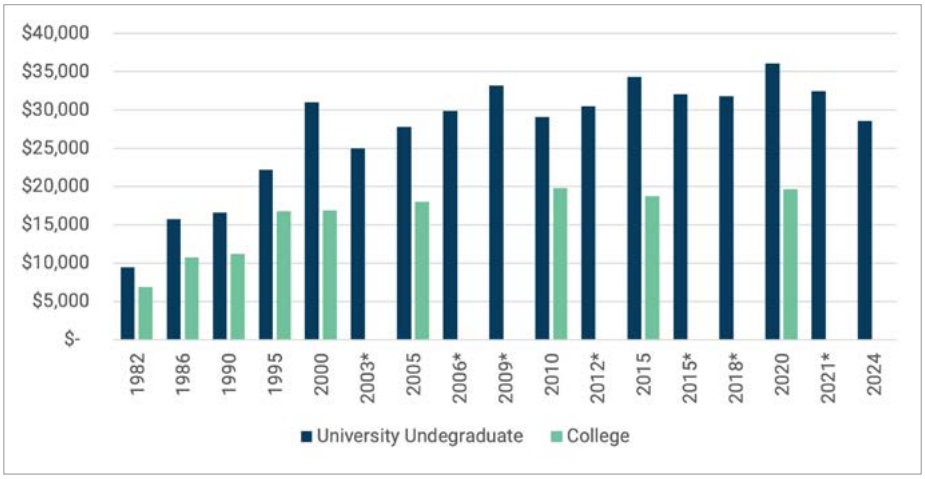
are a somewhat inconsistent sample (consortium members are not entirely standardized from iteration to iteration), the exclusion colleges, and low participation from Quebec. The lack of Quebec figures tends to raise national estimates of debt because of lower average debt levels in that province. Both the NGS and CUSC sources are included in figure 5.14 (CUSC data is indicated with an asterisk). Here, the most recent evidence is from the graduating class of 2024.

Figure 5.14 shows average student debt among those students who incurred debt. Evidence from various surveys suggests that the majority of Canadian college and undergraduate students do not incur any debt at all during their studies. The percentage of students with government debt seems to range between 30-35% for college students and 40-45% for university students; the percentage of students reporting any debt is about ten percentage points higher.

In terms of debt trends, we see a significant run-up in student debt levels in the 1990s, but a flattening out in real terms since 2000. Of the nine national surveys that have been undertaken since 2006, the value of undergraduate debt has mostly moved around in a relatively narrow band between $30,000 and $35,000, with a mean value of just over $32,000. Thus, despite all the frequent platitudes about "ever-increasing student debt", the massive increase in student aid shown in figure 5.13 has in fact brought the student debt problem relatively under control, and since 2010, we have not seen any substantial increase in average student debt.

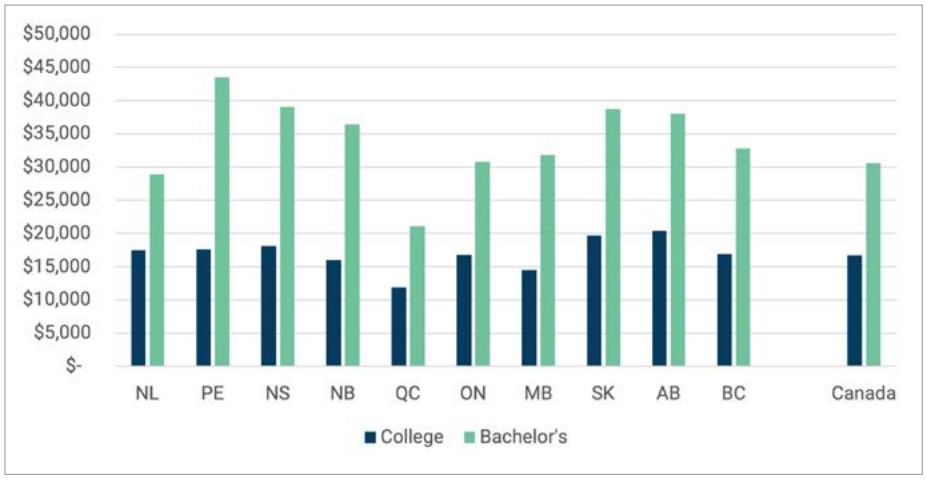
The last instance for which we have complete data on debt at graduation for both universities and colleges is the most recent National Graduates Survey, which covered the graduating class of 2020. Figure 5.15 takes the data from this survey to look at the variation of

Figure 5.14: Average Student Debt at Graduation for Those with Debt, University Undergraduates and Colleges, Selected Years, 1982-2024, in $2024



** Indicates result from the Canadian Undergraduate Survey Consortium*

Figure 5.15: Average Student Debt at Graduation, by Province, Universities and Colleges, 2020



average debt levels (among students who borrow) across the ten provinces. At the college level, debt is actually fairly consistent across the country, with students in most provinces having debt levels close to the national average of $16,700 (the exceptions are Manitoba and Quebec on the low side and Alberta on the high side). While the national average is about $30,000, the spread between provinces is quite wide. On the high side, Prince Edward Island students graduate with over $43,500 in debt, while in Quebec it is less than half that. In Nova Scotia, New Brunswick, Alberta, and Saskatchewan, debt is over $35,000.

6.

CHAPTER SIX

Graduation, Attainment, & Graduate Outcomes

KEY POINTS

- Canada has one of the highest postsecondary attainment rates in the world.
- Postsecondary attainment rates are rising over time, thanks to rising university completion rates.
- Completion rates at university are close to 75% on a six-year window; college completion rates are below 60%.
- Data from Ontario suggests that the overall employment picture for graduates has been improving for several years, but that the transition to "good" jobs is taking longer than it used to.
- Nationally, data indicate that average inflation-adjusted graduate salaries fell slightly between 2010 and 2020 in both universities and colleges. The drop in salaries was most pronounced in Alberta, Saskatchewan, and Newfoundland, the three provinces whose economies are most dependent on oil and gas.

CHAPTER SIX

Graduation, Attainment, & Graduate Outcomes

University of Toronto, Convocation Banquet, 1938

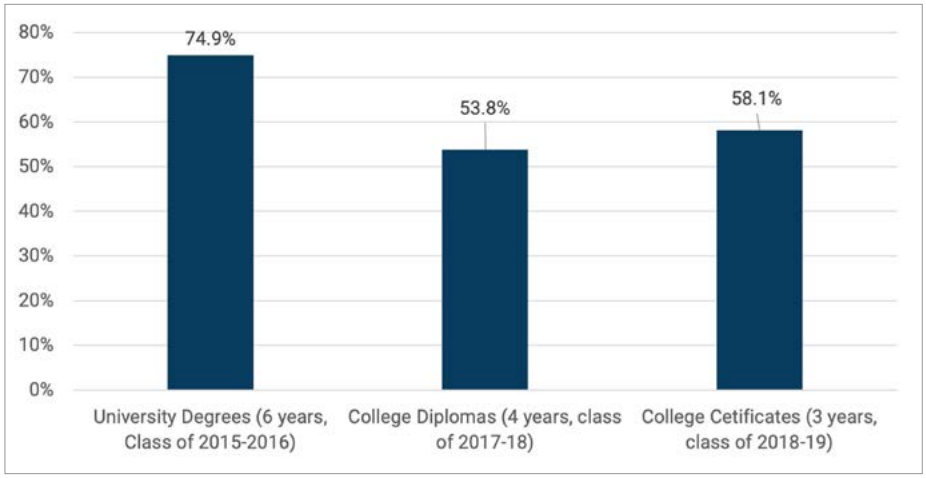
For most individuals, higher education is primarily a means of getting a degree and a better job. From the perspective of the state, it is a means for increasing people's participation in the economy. Employment is not the only rationale for higher education — there are certainly less utilitarian ones — but it is the primary one for the state and students alike. This section examines postsecondary education in terms of graduation rates, attainment rates, and labour market outcomes with respect to employability and incomes.

6.1 GRADUATION RATES

Graduation rates are among the hardest things to calculate in any country at a system-level. In theory, the calculation is relatively simple: what percentage of students who start a program receive a credential? But in practice, this is a difficult question to answer. A host of definitional problems and technical challenges are involved in tracking graduation rates. If a student switches from one program to another, does the completion still count? If they switch from one institution to another, does it count? Can the system track students across institutions so a student is not erroneously counted as a drop-out for moving from one institution to another? And then there is the function of time: how many years does one wait before ceasing to follow a student through the system? Five years? Seven?

Canadian data on graduation has improved significantly in recent years due to enhancements in the Post-Secondary Student Information System (PSIS). The best and most current data available on completion rates, shown on the right in figure 6.1, comes from a series of analyses done by Statistics Canada that look at cohorts that entered postsecondary education in the mid-to-late 2010s. For the most recent cohorts of students under 20 who have begun postsecondary education for whom outcomes can be tracked longitudinally, the 6-year graduation rate from four-year programs (i.e. undergraduate programs) was 75%, the four-year rate for college diplomas was 54%, and the three-year graduation rate for shorter postsecondary certificates was 58%. These might be an undercount, as they only include people who graduated with a qualification at the same level as the program in which they started (e.g. someone who started in an undergraduate program but switched to a diploma would be counted as a non-completer; similarly, it excludes anyone who switched provinces to study after starting a program). The rates of graduation for four-year programs have stayed roughly similar in recent years; but the rates for diplomas and certificates have fallen.

Figure 6.1: Completion Rates by Credential Type, Canada, Most Recent Cohorts



6.2 ATTAINMENT RATES

While graduation rates measure the percentage of students who complete their programs, attainment rates measure the percentage of citizens who have achieved a given level of education. A high level in one does not necessarily mean a high level in the other; even jurisdictions with low levels of access and completion might have quite high levels of attainment, due to immigration either from abroad or from other parts of the country.

Figure 6.2 shows the highest level of educational attainment among Canadians aged 25-64.[1] It shows a clear upward trend over time. In 2003, only 44% of working-aged Canadians had a postsecondary credential of some kind. By 2023, that figure had risen to 63%. Attainment at all postsecondary levels increased: working-aged Canadians with college credentials increased from 22 to 26%, those with bachelor's degrees from 15 to 25%, and those with graduate degrees from 7 to 12%. This degree of change is roughly what one would expect, as older workers with less education age out of the sample, they are replaced by younger, more educated ones.

Figure 6.3 provides a portrait of working-aged Canadians as a whole. However, a narrower examination of the attainment levels of younger Canadians, shown on the right in figure 6.4, demonstrates the accentuation of increasing university attendance. This figure looks specifically at credentials above the level of high-school: "Trades" (what Statistics Canada calls "post-secondary non-tertiary", which is not quite equivalent but close enough), "College" (which is equivalent to "short-cycle tertiary" in the previous graph), and "university" (combines the "bachelor's and "master's and above" categories in figure 6.3).

Figure 6.2: Educational Attainment Rates of Canadians Aged 25-64, Selected Years, 2003 to 2023

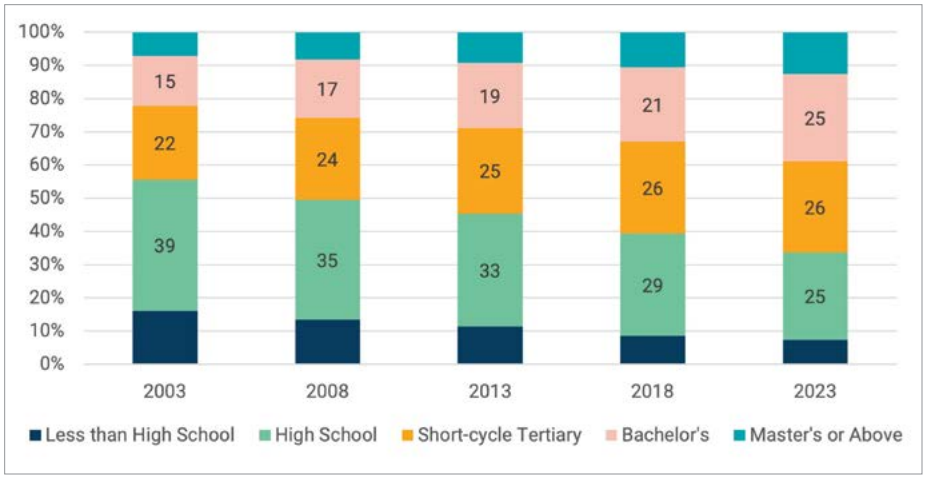
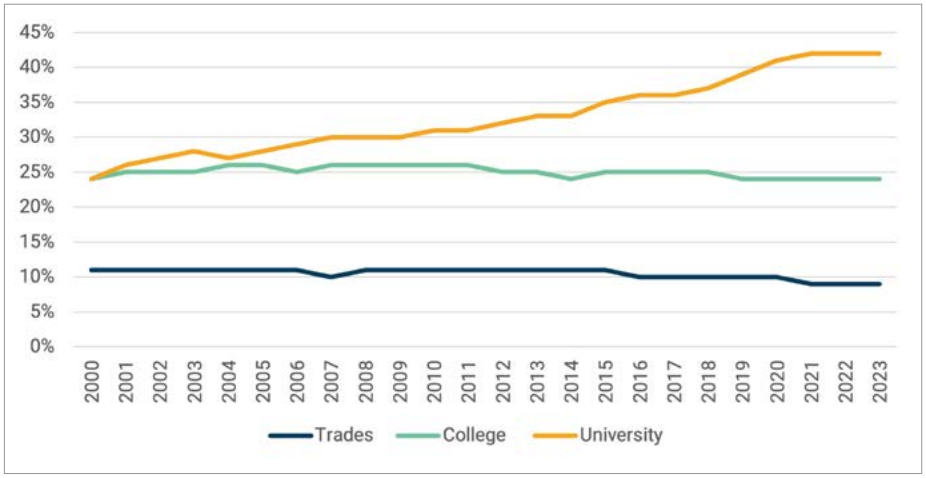


Figure 6.3: Educational Attainment Rates of Canadians Aged 25-34, 2000 to 2023



University of Manitoba, Convocation Procession, 1938

1 Statistics Canada assigns a hierarchy to credentials that places college certificates and diplomas "below" those of university credentials. Thus, even if an individual received a bachelor's degree and subsequently studied for and received a college diploma or certificate, their "highest" degree would still be a bachelor's. Many in the college sector understandably disagree with this stance; nevertheless, due to the data source, it is the only definition available, and it is therefore the one used in this report.

Among Canadians aged 25-34, the proportion of Canadians with trades and college credentials either stayed constant or fell slightly between 2000 and 2023. However, the percentage of people with bachelor's degrees or higher rose from 24% to 42%. A small amount of this increase is due to immigration; most of it has to do with increasing rates of university enrolment over the past three decades, as demonstrated back in Chapter 1.

Figure 6.4 shows the educational attainment of 25- to 34-year-olds by province. When it comes to some form of postsecondary attainment, most provinces cluster in a range of around 70-75%, though Quebec (80%), Alberta (68%) Manitoba (66%) and Saskatchewan (64%) are outliers. The specific combination of trades, college and university credentials varies from one province to another. Trades are particularly predominant in the mix of graduates in Quebec, Newfoundland and Labrador, and Saskatchewan, colleges in the Prince Edward Island and New Brunswick, and university degrees in British Columbia, Ontario, and Nova Scotia. Note that this does not necessarily say very much about the relative importance of each sector in each province; Alberta and British Columbia have comparatively small university systems but high university attainment rates due mainly to an influx of immigrants, either from other provinces or other countries.

Figure 6.4: Educational Attainment Rates of Canadians Aged 25-34, by Province, 2023

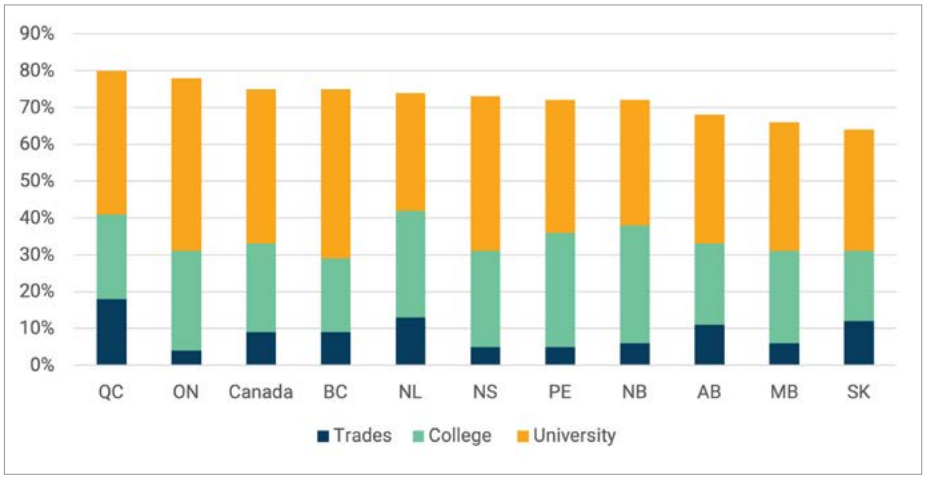
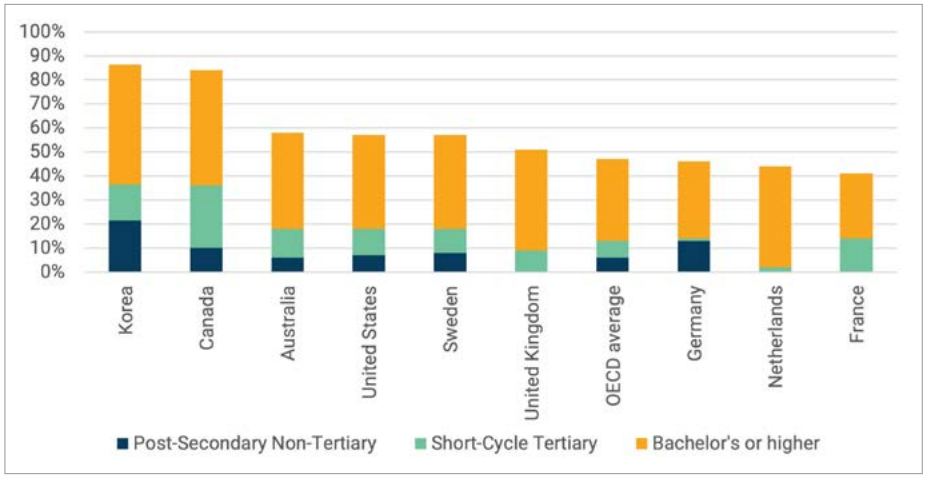


Figure 6.5: Educational Attainment Rates of Persons Aged 25-64, Selected OECD Countries, 2022



According to the Organization for Economic Co-operation and Development (OECD), Canada is among the world leaders in postsecondary education attainment, with 67% of 25 to 64-year-olds holding some kind of postsecondary credential, compared to an OECD average of 47% (note that this is slightly higher than the proportion reported by Statistics Canada itself, which is puzzling). Canada achieves this mainly by having the largest proportion of its population with some kind of sub-baccalaureate education. These are split between what are known as "post-secondary non-tertiary" and "short-cycle tertiary", which very roughly can be thought of as the split within community college programs between those training for blue-collar and white-collar occupations. At the level of bachelor's programs and above, Canada is much closer to the OECD average, with 41% of 25 to 64-year-olds having a bachelor's degree or higher. Across the OECD, the figure is 38%, and in most of Canada's major comparators, the figure is somewhere in the mid-40s. This is represented in figure 6.5.

6.3 LABOUR MARKET OUTCOMES

One of the key outcomes of higher education is graduate performance in the labour market. Of course, this is not the only purpose of higher education; but it is the primary one for both governments and students. Canada was one of the first countries to produce a high-quality national survey of graduates back in 1978, and it has continued with a similar survey format every four or five years until 2005. Unfortunately, the reporting format changed for the class of 2010—students were interviewed three years after graduation instead of two—meaning that we cannot accurately compare data from the last two surveys to the previous seven, which makes constructing useful time-series difficult. The 2020 survey can partially examine outcomes at the 2-year level because of data matching with other Statistics Canada databases through the Employment and Labour Market Longitudinal

Platform, but the time series is still broken. Meanwhile, annual or biennial surveys exist in British Columbia, Alberta, Ontario, and Quebec, and there is a similar joint effort in the Maritime provinces, but they all ask slightly different questions at different times and issue slightly different public reports. Thus, while we know a great deal about graduate employment in Canada, it is not always easy to summarize nationally because of difficulties in compilation and comparison.

Figure 6.6 shows employment rates among all Canadian graduates from the class of 2020, three years after graduation. The rates do not vary a great deal across sectors: at that distance from graduation, the employment rates for universities and colleges are almost identical, at about 90%, with the overwhelming majority in full-time employment. They also do not change very much over time: these results are virtually the same as the ones from 2010.

Provincial surveys usually report employment rates at shorter intervals than the 3 years used in the National Graduates Survey. Instead, they measure results at 6, 18, and/or 24 months, depending on the jurisdiction and level of education. These data cannot be aggregated to show a single natural picture, though they indicate similar general trends. Figure 6.7 uses data from Ontario, which contains about 40% of all university graduates, and presents reported employment rates 6 and 24 months after graduation. Transitions to the labour market seem to be taking longer now than they did twenty years ago. The rate of employment after six months dropped quite significantly for those classes that graduated into the recession of 2008-9 and took about seven years to recover. For employment rates after two years, however, the drop was not quite as precipitous and bounced back somewhat after that recession, though it never quite regained its earlier heights (the substantial drop at 2 years for the 2018 cohort and 6 months for the 2020 cohort reflects the impact of the COVID pandemic on new graduates). Similar patterns can be seen in most of the rest of the country, with the exception of Alberta, where the oil boom that lasted for most of the period from 2006-14

Figure 6.6: Employment Status by Level of Education Completed, Canada, Class of 2020, Three Years After Graduation

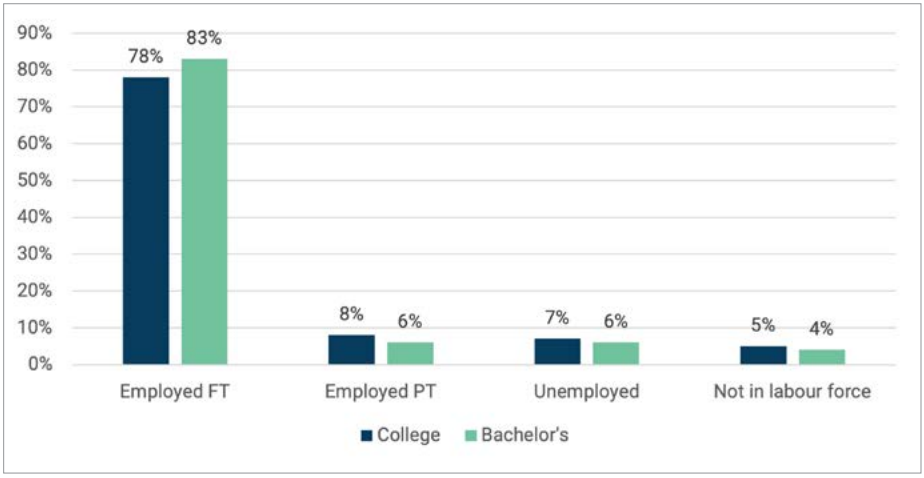
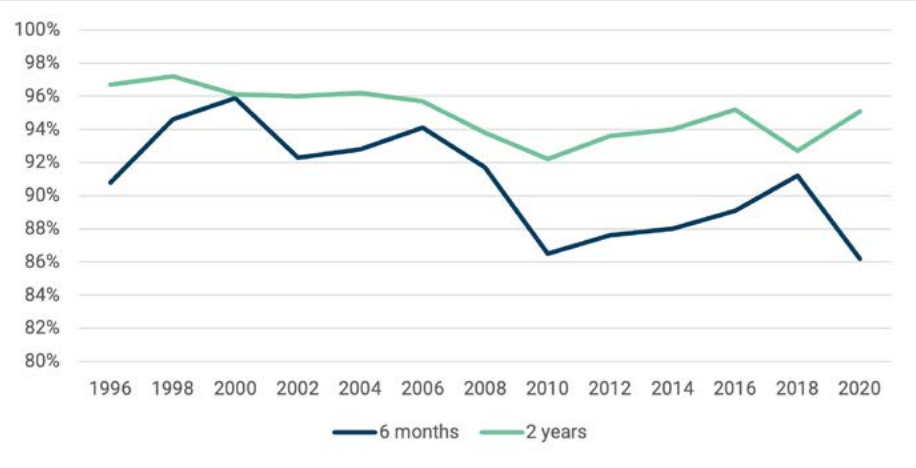


Figure 6.7: Employment Rates at Six Months and Two Years, Ontario Undergraduates, Graduating Classes of 1996 to 2020



produced quite a different set of outcomes, particularly for students graduating with college/polytechnic credentials that allowed them to work in the oil/gas and construction industries.

When it comes to graduate incomes, data collected by Statistics Canada shows that two and five years after graduation, the median bachelor's graduate has an annual income of $55,700 and $67,300, respectively, whereas for college diploma graduates, the equivalent figures are $44,500 and $50,100 (see figures 6.8 and 6.9, below). However, there are some significant provincial variations. Among bachelor's degree holders, graduates from the three "oil" provinces of Saskatchewan, Alberta, and Newfoundland and Labrador earned significantly more than graduates from other provinces; at the college level, Saskatchewan had far and away the best results, with the other two oil provinces and British Columbia not far behind. These differences are unlikely to be a reflection on the quality of institutions in various provinces; rather, they reflect the opportunities that were available to young graduates in different parts of the country in the mid-to-late 2010s. These can change over time: in the 1990s, Newfoundland and Labrador and Saskatchewan were below the national average, and Ontario was well above it. Given the long-term decline in oil prices since 2015, it would not be a surprise if the pattern of graduate salaries at the

provincial level were to change again once data from the back half of the decade becomes more available.

Figures 6.8 and 6.9 show how outcomes improve for graduates as they get further out from graduation. Figures 6.10 and 6.11 below are similar in appearance but show how median salaries three years after graduation have changed over time, in constant $2023, for bachelor's graduates and college graduates, respectively. As in the previous graphs, there is an evident gap in earnings between university and college graduates in all provinces. More interesting, perhaps, is the change in the pattern of earnings between 2010 and 2020. In both the college and university sectors, we see that when adjusted for inflation, average salaries have fallen slightly over the decade. This trend holds true with only a couple of exceptions across all provinces. However, the biggest proportionate falls in graduate income by far happen in the provinces whose economies are most dependent on hydrocarbons: Alberta, Saskatchewan, and Newfoundland and Labrador. To be clear, the relationship between falling salaries and falling oil/gas prices is more indirect than direct. The fall in incomes in these provinces was not so much a matter of falling employment in lucrative gas/petroleum industries leading as it is that in the early 2010s, general economic buoyancy in these provinces meant that wages across the board rose due to a scarcity of labour. That is to say, it was not just Engineering graduates that saw the benefit of a commodity supercycle, but Arts graduates as well: and the end of that cycle hit graduate earnings right across the spectrum.

Ontario's data also allows a more detailed look at graduates' incomes by field of study. Figure 6.12 shows that most fields of study saw some decline in real salaries for graduates between the classes of 2004 and 2014, with engineering and, to a lesser extent, business being the only exceptions. All the other major fields—education, humanities, physical sciences and social sciences—saw declines in graduate incomes of between 15 and 20% over that decade. The physical sciences are particularly interesting: Although some commentators claim that jobs in "STEM" (Science,

Figure 6.8: Median Graduate Incomes Two and Five Years After Graduation, Bachelor's Graduates, Class of 2017, in $2022

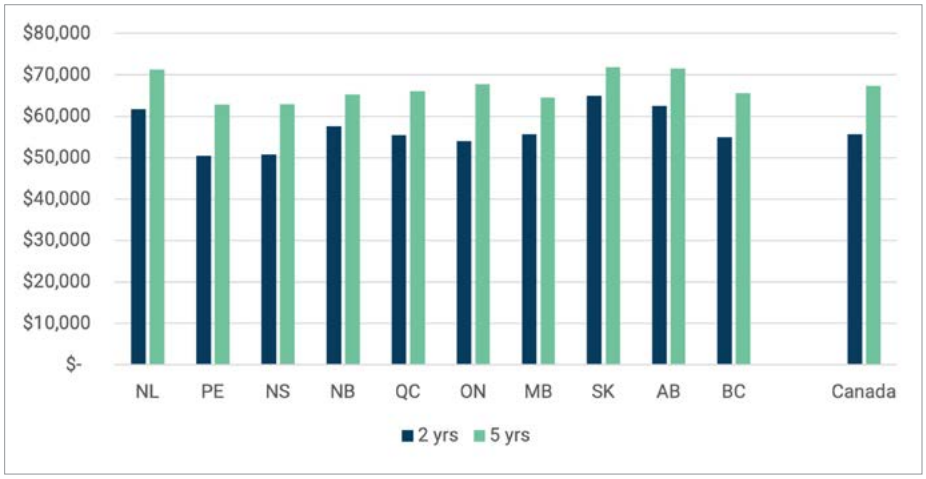


Figure 6.9: Median Graduate Incomes Two and Five Years After Graduation, College Diploma Graduates, Class of 2017, in $2022

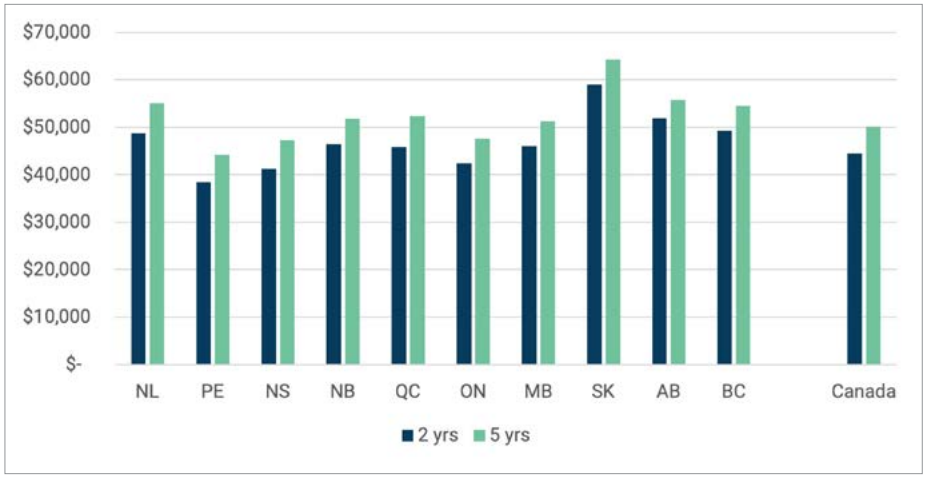
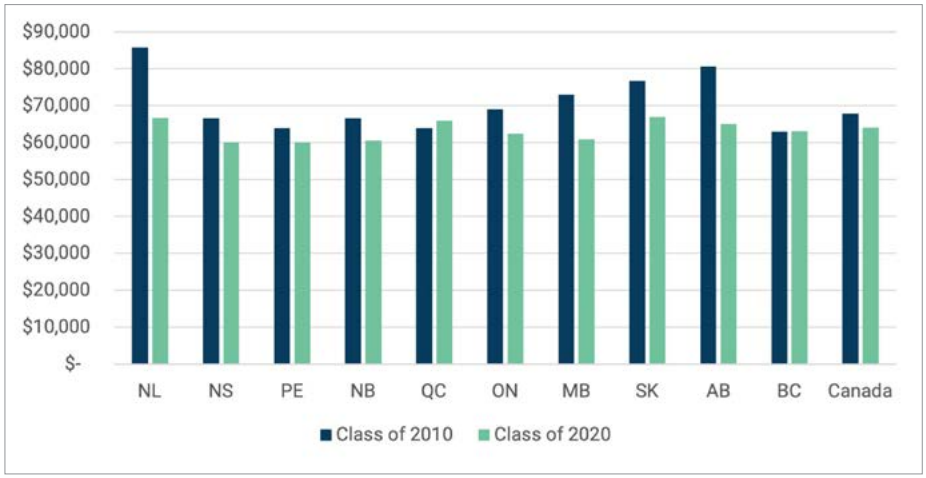


Figure 6.10: Median Salaries Three Years After Graduation, by Province of Study, Bachelor's Graduates, Classes of 2010 and 2020, in $2023



Technology, Engineering and Mathematics) are the ones that most obviously lead to high-paying jobs, this does not seem to be entirely true in Canada, at least with respect to science. The recovery in salaries in the latter half of the 2010s was enjoyed by all graduates, regardless of their field of study.

With respect to international comparisons of higher education outcomes, good apples-to-apples comparisons with respect to graduate outcomes across countries are challenging to find, because the labour market structure and the actual opportunities available to graduates differ across countries. As a result, the OECD has a different way of showing comparative graduate outcomes, which is tracking the "premiums" that university or college graduates have over upper secondary school graduates of the same age in terms of earned income.

Figure 6.13 shows the wage premiums for "short-cycle tertiary", "bachelor's," and "master's and above" among recent entrants to the labour market for selected OECD countries. Apart from France and Germany, short-cycle tertiary graduates tend to have very low wage premiums across the OECD. Returns to both bachelor's and graduate degrees are highest in Germany, France and the United States. This provides some rationale for the US practice of high university tuition fees, because they provide a method of capturing some of these eventual private returns. Similarly, the Swedish practice of charging low tuition fees makes sense given the very low financial returns to degrees. However, fee policy in the German system — high private benefits combined with no fees — challenges that rationale. Canada, as usual, is in the middle of the OECD pack: Our young graduates earn more than their non-graduate counterparts, but the wage premium to degree — particularly advanced degrees — is significantly smaller than it is in the United States. This may help account for persistent "brain drain" from Canada to US over the years.

Figure 6.11: Median Salaries Three Years After Graduation, by Province of Study, College Graduates, Classes of 2010 and 2020, in $2023

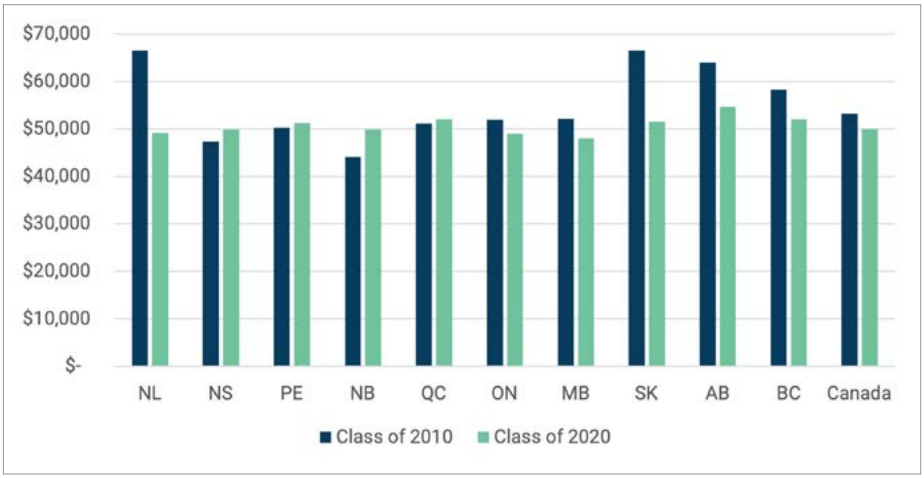


Figure 6.12: Graduate Salaries Two Years After Graduation, Ontario Undergraduates, Selected Fields of Study, Graduating Classes of 2001 to 2020, in $2022

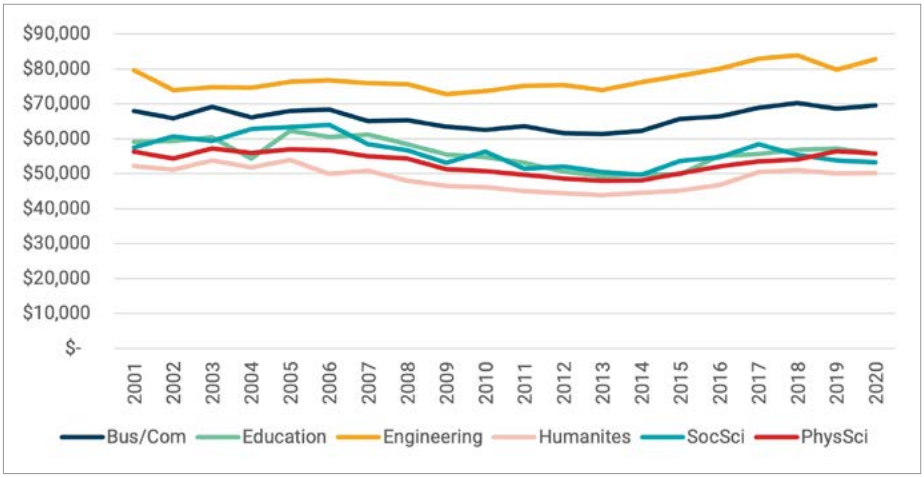
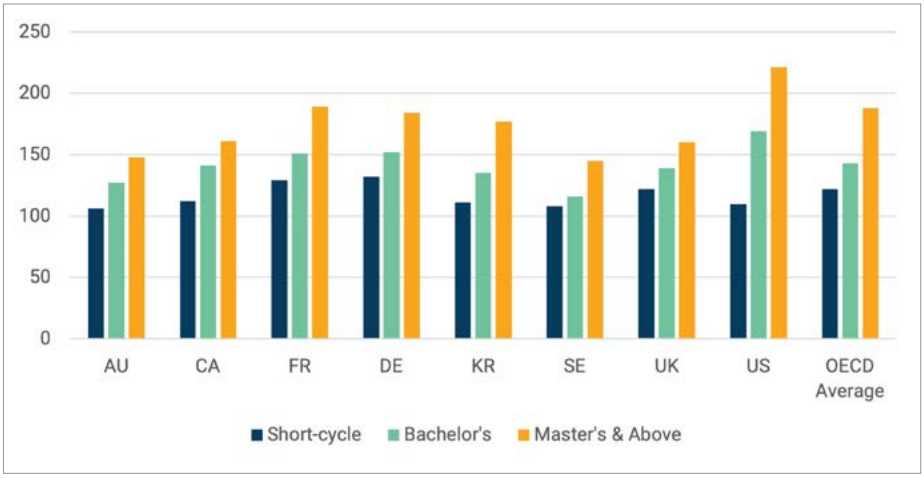


Figure 6.13: Salaries of Graduates aged 25-64, by Type of Credential, Selected OECD Countries (Salaries of Upper Secondary Graduates Aged 25-34 = 100), 2021



7.

CHAPTER SEVEN

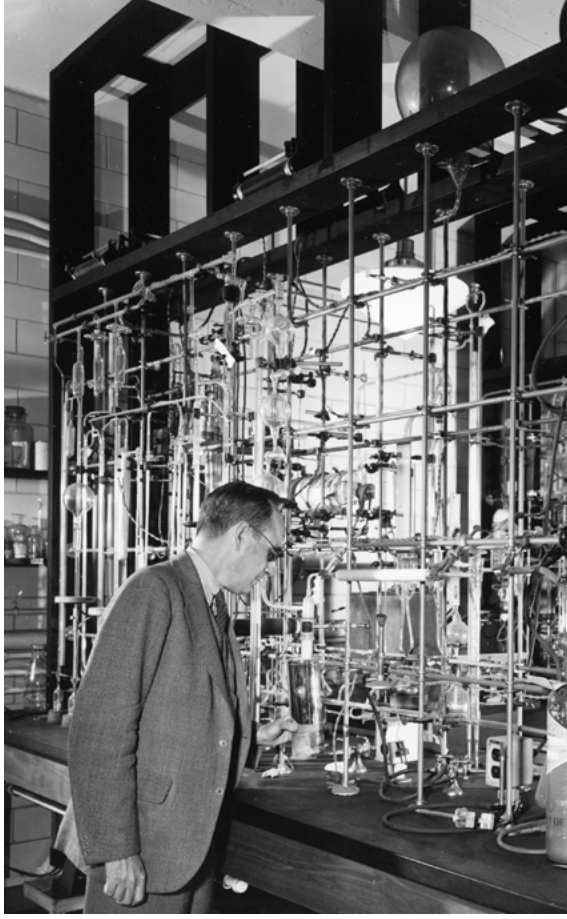
Research

KEY POINTS

- Canada has among the lowest levels of research and development spending in the OECD, and contrary to recent global trends, spending is continuing to decline.
- The proportion of research done in the higher education sector is among the highest in the OECD, which is primarily attributable to the weakness of Canada's business sector.
- Among Canadian universities, there is a clear institutional hierarchy of research intensity, with the University of Toronto at the top and the University of British Columbia and McGill University not far behind. Beyond that, several institutions can claim to be near the top depending on the field of study and metrics.
- Canadian colleges are also increasingly engaged in applied research, albeit on a much smaller scale than universities. Though polytechnics tend to be seen as the biggest players in this field, fewer than half of the top ten colleges by research income are members of Polytechnics Canada.

CHAPTER SEVEN

Research



University of Toronto, Lash Miller Chemistry Laboratories, 1963

Research and Development (R & D) is a key input into any country's system of innovation, which in turn is key to a country achieving certain levels of productivity and improved standards of living. Due to weak private-sector investment in R & D, Canada's system of innovation is unusually dependent on what happens in the higher education sector. This chapter looks at how Canada fares comparatively on an international scale with respect to research input and output, the areas of research in which Canada as a country excels, as well as the areas in which Canadian universities and colleges excel.

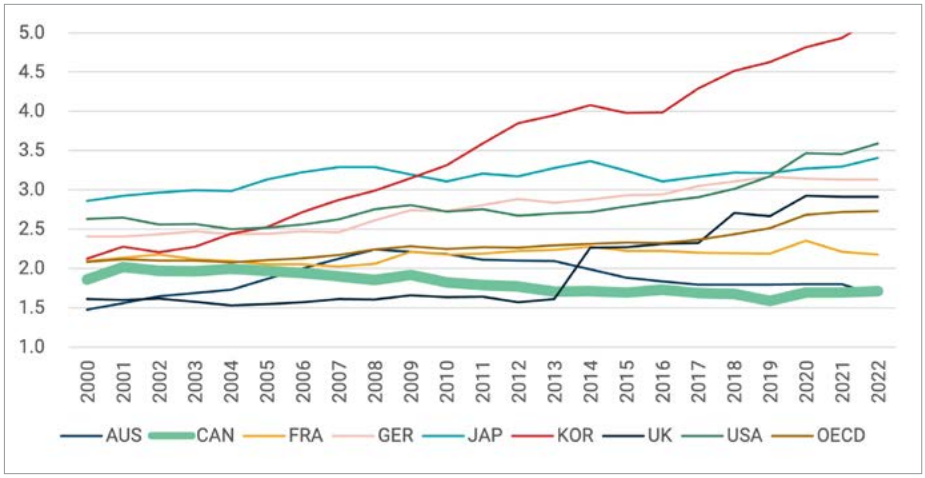
7.1 NATIONAL-LEVEL RESEARCH PERFORMANCE

Canada has never been a global leader in research and development (R&D): historically, it has underinvested in R&D in comparison to its global peers. A variety of explanations have been posited for this phenomenon. One theory—perhaps more persuasive in the 20th century heyday of manufacturing than in the 21st—posits that Canada is a "branch plant economy," where mainly US-headquartered companies are likely to choose to locate manufacturing and assembly operations rather than product development. Another theory, stretching back to staples history, locates the deficiency in Canada's resource-driven economy, which tends to have lower levels of R&D spending than does manufacturing. Still another reason contends that Canadian companies lack ambition; since business investment in R&D is to some degree correlated with firm size and industry position, the paucity of companies that are truly global or that even have pretensions to be so is a key factor here. None of these theories comprehensively explain Canada's lackluster performance, but all have some explanatory power.

In recent years, Canada has gone against the OECD-wide trend of rising R&D expenditures, further exacerbating historical patterns. Figure 7.1 shows R&D expenditures as a percentage of GDP in Canada and select OECD countries. It demonstrates vividly both how the country's R&D performance is below the OECD average and how it has eroded over time. In fact, Canada is one of only two countries in the OECD with over one million people that had lower R&D spending in 2020 than in 2000 (the other was Sweden, which spends roughly twice what Canada does on R&D as a percentage of GDP).

In developed countries, the bulk of expenditures on research & development come from the corporate sector, which in the parlance of international statistics is known as Business Expenditure on Research and Development, or BERD. But substantial amounts of research and

Figure 7.1: Research and Development Spending as a Percentage of Gross Domestic Product, Selected OECD Countries, 2021-2022



development take place in the higher education sector (Higher Education Expenditure on R&D (HERD)), as well as in the government sector (Government Expenditure on R&D (GovERD)). Figure 7.2 contrasts the overall size and composition of R&D spending in Canada to those of select OECD comparators. While it is clearly the case that Canada lags most of the rest of the OECD, both in overall spending and especially in BERD, it compares quite favourably to other countries with respect to HERD spending. Whether this is a good thing depends on one's point of view: it could indicate that Canada has a supportive ecosystem for funding research in the public sector, or it could indicate that the country is forced to spend more public money on research in public higher education institutions because BERD is so anemic.

The HERD data provides some context for why Canada performs well in research output as measured by total publications, a measure that mostly tracks research activity in the higher education sector, even while it lags other countries in total R & D expenditures. While not part of the most scientifically elite group of nations such as the USA, China, UK, and Germany, Canada's total publication output is reasonably competitive with Australia and France, the latter of which is a significantly larger country with much higher levels of absolute research expenditure. One of the reasons that Canada punches above its weight in scientific publications is the degree to which its scientists collaborate with colleagues in other countries. In 2020, nearly 60% of scientific publications with a Canadian author had an international co-author.

Figure 7.2: Research and Development Spending by Performing Sector, as a Percentage of Gross Domestic Product, Selected OECD Countries, 2022

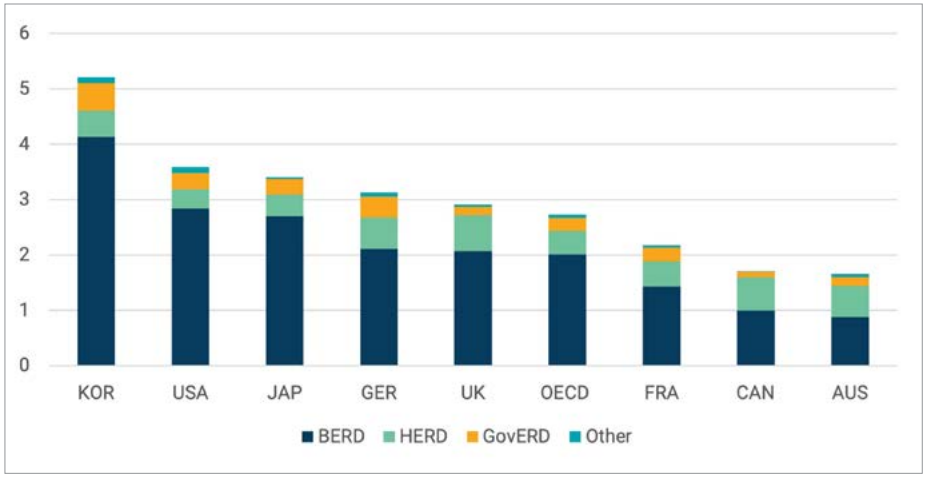
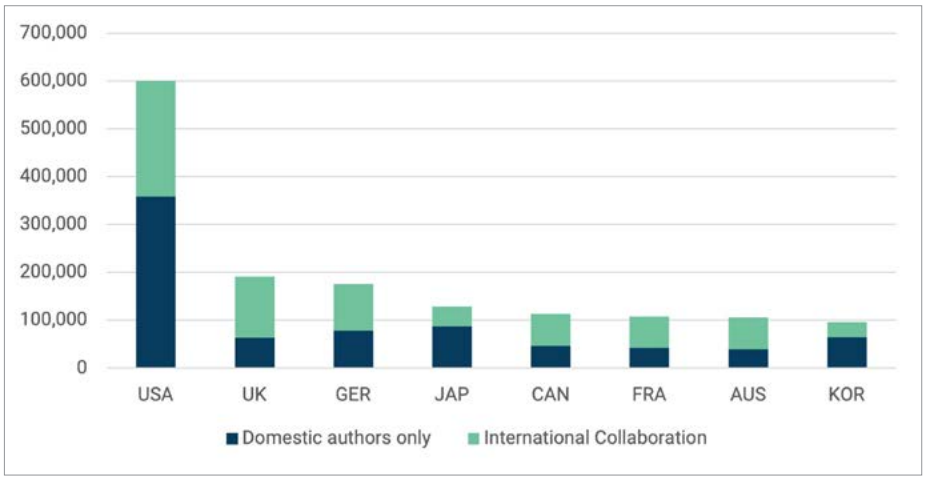


Figure 7.3: Total Scientific Publications, by Geography of Collaboration, Selected OECD Countries, 2022

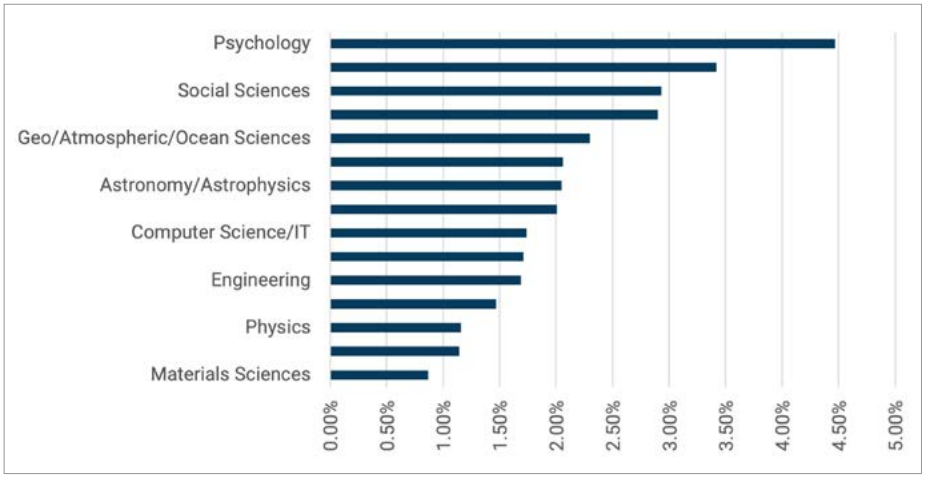


Bottom Left: Université de Montréal, Histology Laboratory, 1943
Below: University of Regina, Chemistry Lab, 1914

Memorial University of Newfoundland, Food Processing Technology Classroom

Overall, Canadian authors are responsible for approximately 2.1% of global scientific output, as measured by the fractional counting of publications. For a country that contains less than 0.5% of the global population and makes up only 1.2% of the global GDP, this can be seen as performing above average, at least insofar as academic research is concerned. But this overperformance does not occur equally across all areas of study. Canada's average is mostly pulled up by overperformance in just four fields: psychology, biological and biomedical sciences, health sciences, and social sciences (the last two being the two largest subfields in global science).

Figure 7.4: Canada's Share of Total Global Scientific Publications, by Field, 2022



7.2 ACADEMIC RESEARCH AT CANADIAN UNIVERSITIES

National higher education systems tend to stratify sharply based on research intensity. Every country has at least one or two "flagship institutions," or, in the case of more developed nations, larger groups of universities that dominate the national research enterprise. In Canada, this group is known as the "U15", a group of fifteen mostly quite large institutions that together account for roughly three-quarters of the sector's research expenditures. However, the U15 does not have objective membership criteria, and several inclusions and exclusions from this group appear to be based more on regional politics than anything else. Certainly, there are significant disparities in research performance within this group and the bottom three or four performers are a long way from the top of the group in terms of output.

There are multiple ways to measure research performance and intensity, but nearly all of them converge on the same insights: that Canada has an undisputed "top" university (the University of Toronto), a pair of very high-performing institutions that are not far behind (the University of British Columbia and McGill University) and then three more institutions that can be included in that group of "world-class" institutions (Alberta, Montreal, and McMaster). Table 7.1 shows how these six institutions were ranked for 2024 by the three major global ranking systems: the Academic (Shanghai) Ranking of World Universities, the Times Higher Education (THE) World Rankings and the QS World University Rankings.

Table 7.1: Top Canadian Universities According to Major Rankings Agencies, 2024

	SHANGHAI		TIMES HIGHER		QS	
	Canadian Rank	Global Rank	Canadian Rank	Global Rank	Canadian Rank	Global Rank
Toronto	1	26	1	21	1	21
UBC	2	47	2	41	3	34
McGill	3	74	3	49	2	30
McMaster	4-5	101-150	4	103	6	189
Alberta	4-5	101-150	5	109	4	111
Montreal	6-8	151-200	6	111	5	141

The Centre for Science and Technology Studies (in Dutch, CWTS) at Leiden University in the Netherlands publishes an annual world ranking of institutions that does valuable work in approaching an objective measure of research excellence. Its ranking, based solely on publication data, is an invaluable way of monitoring changes in publication patterns across different disciplines. Overall, Canadian universities do well on the measurements regarding quantities of scientific papers produced, in part because the major Canadian universities are somewhat larger on average than their counterparts in many other countries. The University of Toronto, for instance, is number 8 in the world for the production of scientific papers, lagging only Harvard, and a half-dozen Chinese universities (Zhejiang, Shanghai Jiao Tong, Sichuan, Central South, Sun Yat Sen and Huazhong University of Science and Technology); however, this is at least as much a product of its own large size (nearly 100,000 students) and its massive associated hospital partner network, as it is the university's research productivity.

The Leiden data also permits examination of article quality in the sense of knowing whether they are highly cited relative to other papers in the same academic field. Table 7.2 shows the percentage of papers making the top 10% of most-cited papers in the author's field at Canada's top fifteen most-cited institutions. The top three institutions here are the same as they are in Table 7.1, but after that the order becomes less familiar: four non-U15 members – Victoria, Memorial, Concordia, and York – make the list in place of Saskatchewan, Manitoba, Queen's and Laval.

Table 7.2: Top Fifteen Canadian Universities for Proportion of Papers Attaining Top-10% Field-adjusted Citations, 2019-2022 (minimum 250 papers in top 10%)

University	Papers in top 10% by field
Toronto	13.2%
McGill	12.9%
McMaster	12.9%
UBC	12.7%
Victoria	12.1%
Calgary	11.5%
Waterloo	11.5%
Memorial	11.1%
Concordia	11.0%
Ottawa	10.5%
Western	10.5%
Alberta	10.4%
Dalhousie	10.3%
York	10.2%
Montreal	10.0%

University of British Columbia, Bacteriology Laboratory, 1948

The Leiden data also enables the decomposition of institutional performance by broad scientific field. Table 7.3 shows this for Biomedical/Health Sciences, Life/Earth Sciences, Mathematics and Computer Science, Physical Sciences and Engineering, and Social Sciences and Humanities. No university makes the top five in all five areas, though Toronto does so in four categories while McGill and UBC make it in three, suggesting that getting to be a "top" university to some extent means having breadth of quality. Outside of these three, the list of top institutions becomes anything but consistent: no other institution makes the top five more than once. Some care should be taken in overinterpreting these results because measures of publication-based excellence can be skewed by the output of a very small number of researchers, particularly at smaller institutions: it is notable that in the mathematics and computer science category, the institutions with the highest average impact actually have very small outputs.

Table 7.3: Top Five Canadian Universities for Proportion of Papers Attaining top-10% Field-adjusted Citations, by Broad Scientific Field 2019-2022 (minimum 50 papers in specific field)

Biomedical / Health		Life / Earch Sciences		Mathematics / Computer Science		Physical Sciences / Engineering		Social Sciences & Humanities	
University	Top 10% papers	University	Top 10% papers	University	Top 10% papers	University	Top 10% papers	University	Top 10% papers
McMaster	14.6%	UBC	14.6%	Regina	18.1%	Toronto	14.7%	UBC	12.9%
McGill	13.3%	McGill	13.8%	Guelph	16.1%	Victoria	13.9%	Toronto	12.0%
Toronto	13.2%	Dalhousie	12.9%	Windsor	15.5%	INRS	13.4%	Western	11.7%
Calgary	12.7%	Toronto	12.5%	Memorial	14.7%	McGill	13.1%	Simon Fraser	11.0%
UBC	12.2%	Memorial	12.2%	ETS	14.4%	Waterloo	13.0%	York	10.9%

Table 7.4 presents the top institutions receiving grants from each of the three traditional granting councils. Here, a somewhat different pattern emerges because research funding is granted on a competitive basis to individuals or groups of researchers, and these researchers tend to cluster at larger and wealthier institutions; it is distributed on a more concentrated basis than operations funding. Indeed, the country's top three institutions (Toronto, UBC, and McGill) receive roughly 25% of all council funding. The percentage of total indicates how many of the total grants and awards each institution received—the value of the grants is not considered in these calculations.

In sum, when it comes to academic research, Canada has a definite hierarchy, with University of Toronto at the top, followed closely by the University of British Columbia and McGill. However, beyond that, research excellence is dispersed widely, and pockets of very high-class research can be found across many different institutions, even at some that do not meet traditional definitions of being "research intensive".

Table 7.4: Top Fifteen Institutional Recipients of Federal Research Grants, by Council, 2022-2023

SSHRC*		NSERC**		CIHR***	
Institution	% of total	Institution	% of total	Institution	% of total
Toronto	8.0	Toronto	8.2	Toronto	21.4
McGill	6.6	UBC	6.9	UBC	10.2
UBC	6.6	McGill	5.4	McGill	9.9
Montréal	4.8	Alberta	5.3	Montreal	6.7
York	4.4	Waterloo	5	Calgary	5.6
Ottawa	4.1	Calgary	3.7	McMaster	5.4
Dalhousie	3.9	Laval	3.4	Ottawa	4.8
Western	3.7	Western	3.2	Alberta	4.7
Laval	3.6	McMaster	2.9	Laval	3.6
UQ Montreal	3.6	Ottawa	2.9	Western	3.4
Alberta	3.5	Montreal	2.6	Manitoba	2.9
Carleton	3.2	Guelph	2.6	Dalhousie	2.3
SFU	3.1	Queen's	2.5	Queen's	1.6
Calgary	2.7	Sherbrooke	2.3	SFU	1.6
Queen's	2.7	Simon Fraser	2.3	Sherbrooke	1.6

**Includes Insight Grants and Insight Development Grants, for 2021-22.*

***Includes Discover Grants Program-Individual, Research Tools and Instruments Grants, and the Subatomic Physics Grants.*

****Includes both CIHR awards and grants. University of Toronto, includes University Health Network (UNH). McGill University, includes Research Institute of McGill.*

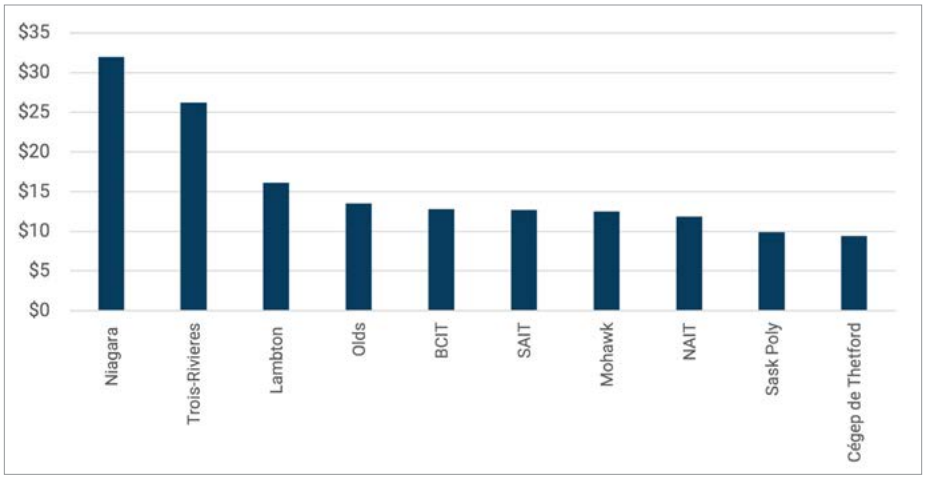
7.2.1 Colleges, Polytechnics and Applied Research

Over the past two decades, there has been increasing attention paid to the production of "applied research" at non-university higher education institutions (HEIs). This has, in part, entailed a re-definition of what the term "applied research" implies. Prior to the early 2000s, the term was usually used as a counterpoint to "pure" or "basic" research, with the latter implying research that was largely divorced from considerations of end-use. By this definition, there were large differences between academic disciplines: medicine and engineering, by their very nature, were more use-oriented and hence more "applied" than, say, astrophysics. However, as non-university HEIs began to use the term, it also changed meaning to simply mean research conducted outside universities and in collaboration with the private sector. In some instances, the term "applied research" has come to encompass certain types of innovative training methods.

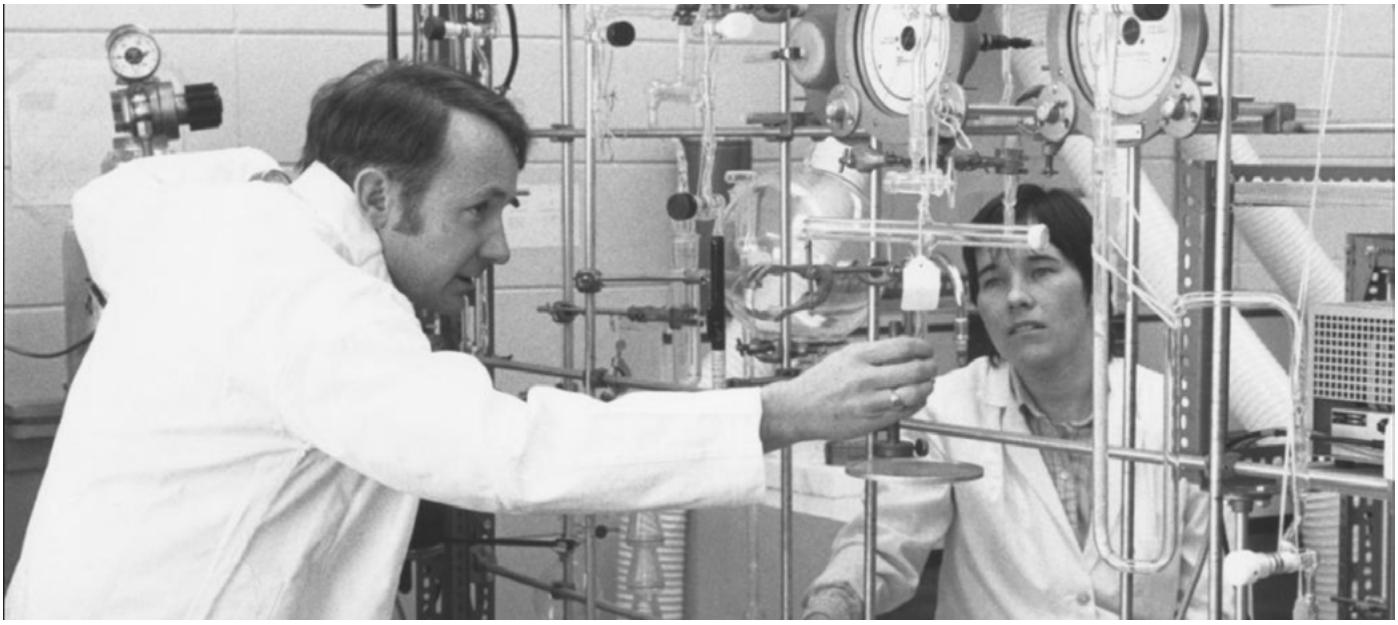
Many community colleges in Canada receive money for doing various kinds of applied research. This funding tends not to come from firms themselves but from governments that wish to support firms by giving them access to services available at college institutions. Much of this funding comes from the Government of Canada, but in Quebec the provincial government is also a major source of funds, providing more support than any other provincial government.

Figure 7.5 shows the top 10 colleges across Canada for research funding. The sums here are significantly smaller than the figures for research at the top 10 universities: the ratio of sponsored research income between Niagara (the college with the highest level of sponsored income) and its university equivalent, the University of Toronto, is about 1:80. But interestingly, only four of the ten institutions with the highest levels of sponsored research income are members of Polytechnics Canada, which identifies itself in part as a group of "research-intensive" colleges. This suggests that Polytechnics' unique value proposition may be less in the field of applied research than in developing new bachelor's degrees for areas not or inadequately covered by universities.

Figure 7.5: Top 10 Colleges for Sponsored Research, 2022-2023, in Millions



Université du Québec, Laboratory for the Analysis and Separation of Plant Essences, 1985



Appendices

APPENDIX A

Describing the Canadian Postsecondary Education System

Defining the Postsecondary Sectors

Traditionally, postsecondary education is thought of as consisting of organizations called "universities" and "community colleges", the former offering degrees and the latter offering diplomas and certificates. However, such a definition is too simplistic. New hybrid organizations, usually referred to as polytechnics, have evolved out of the college system to become a distinct part of the institutional landscape. The term "postsecondary" also includes a system of apprenticeships, which is quite unlike its European counterparts in both its structure and its target population. Additionally, a reasonably large private vocational school sector provides certifications, mostly for short training programs of less than 12 months' duration. This appendix provides a detailed overview of the sector's main components.

What is a University?

Most of the earliest universities in Canada were denominational institutions, designed to provide either religious education for future clerics or religiously-informed education for future primary/secondary school teachers. State funding for universities began in the nineteenth century, but regular recurring annual public expenditure did not arrive in most provinces until the Second World War. Formula funding in most provinces — that is, stable and predictable amounts given to universities based on objective characteristics like student numbers — dates only from the late 1960s or early 1970s.

Universities in Canada follow the global standard bachelor's – master's – doctorate progression. The typical length of a bachelor's degree program is four years except in Quebec, where it is three. Most professional programs (medicine, dentistry, law) are technically undergraduate programs but are usually considered "second-entry" bachelor's programs, to be started only after one's first bachelor program has finished. Quebec is a partial exception in that some spots in these programs are reserved for students entering directly from CEGEP (see below, What is a College?).

There is no standard definition of what constitutes a university in Canada. Each province has legislation defining the use of the term, but these vary considerably in their stringency. Membership in Universities Canada, the country's peak representative body for universities, is often seen as an "unofficial" form of national accreditation, though the organization itself distances itself from such claims.

Because of this definitional vagueness, it is difficult to come to a standard count of universities in Canada. Universities Canada currently has 96 members, but it excludes a number of institutions that call themselves universities, such as Tyndale University, International Business University, or Yukon University (see below, nonstandard universities). It also excludes an increasing number of foreign universities with operations in Canada such as Northeastern University or the City University of Seattle. It does, however, include a number of bodies that are federated with other institutions and that may not themselves actually offer degrees (e.g. Huron College at Western University, Trinity College at the University of Toronto). There is also the Université du Quebec system, which consists of ten separate postsecondary institutions, as well as a number of institutions, such as the University of New Brunswick, the University of British Columbia and the University of Toronto, which have multiple campuses but are not usually described as "systems". The most restrictive definition — provincially-funded institutions reporting to a single President and not in a federated arrangement with a larger institution — would produce a count of 64 institutions, but other definitions could produce counts of up to 120 or more.

Until the late 1980s, universities had a monopoly on the delivery of bachelor's degrees in Canada, and they still do in Quebec and the four Atlantic provinces. Over the past 30 years, the governments of British Columbia, Alberta, Saskatchewan, Manitoba, and Ontario have begun to allow some colleges to deliver degrees as well, sometimes to widen access to the four-year degree, and sometimes simply to promote more competition in the postsecondary sector. Some of these institutions have since become universities in their own right (e.g. Vancouver Island University, Mount Royal University); of the remain-

University of Prince Edward Island, Student Centre & Pub, 1970

der, a good number have begun to style themselves as "polytechnics" (see below). Universities do, however, maintain control over graduate education and basic research, though many colleges and polytechnics have over the past two decades carved out their own niches in applied research.

Canada has no official university typology. However, while Canadian universities come in a variety of shapes and sizes, they do tend to converge on a number of "types". Firstly, there are the large research universities with medical schools. There are fourteen of these, and they make up nearly all of what is known as the "U-15" group of universities (the fifteenth member, Waterloo, has neither a business school nor a medical school, but is included in the group because of its excellence in specific areas of technology). There are also a large number of small, non-research-intensive institutions, including a number of denominational universities (e.g. Redeemer), art schools (e.g. Nova Scotia College of Art and Design), the "Maple League" of Liberal Arts Colleges (Bishop's, Mount Allison, St. Francis Xavier and Acadia), or institutions that serve small cities and associated rural areas (e.g. University of Northern British Columbia, University of Prince Edward Island, Brandon University). In between, there are many institutions ranging in enrolment from about 5,000 to 50,000, which are usually given the label of "comprehensive" universities. The smaller ones (e.g., Windsor University) are mostly focussed on undergraduate instruction while the larger ones (e.g., Guelph, Simon Fraser) are, by some measures, more research-intensive than some members of the U-15.

By international standards, Canadian universities are relatively autonomous from governments. Though some of the country's older institutions, such as McGill and Queen's have governing boards that are entirely independent of provincial governments, most Canadian universities do have some government appointees on their boards, though they do not always constitute a majority. As a general rule, these governors tend not to "take direction" from government, and it is rare that a government tries to get its appointees to follow a particular line on a specific issue. For a variety of historical reasons, governments' inclination to try to control institutional actions through Board selection tends to grow as one goes further west across the country. However, provincial governments are typically more inclined to steer institutions through the power of the purse than by controlling actions directly through Board votes. At the same time however, over the past couple of decades, governments have become increasingly likely to try to alter institutional policy through direct confrontation.

Boards are mainly responsible for universities' financial affairs, as well as selecting Presidents and monitoring and evaluating their performance. Laval and Sherbrooke are the main exceptions in that their Presidents are elected through an electoral college of internal stakeholders rather than selected by a Board of Governors. In academic matters, universities are governed by bodies that are usually known as Senates (though sometimes by other names, such as Faculty Councils). Elected academics usually make up a majority on these bodies, though elected students and various administrators sitting ex-officio can take up a large proportion of seats. A very few universities have a "tricameral" system which also includes a third body made up of elected alumni (e.g. Saskatchewan, Queen's) or a second academic chamber (Université de Montréal); the University of Toronto is unique in having a unicameral system consisting of a singular Governing Council that acts as both Board and Senate, though in practice its committee system largely separates the academic and business functions in a way not dissimilar to bicameral institutions.

Non-Standard Universities

When the term "university" is used in Canada, it generally refers to stand-alone public institutions. But many institutions in Canada do not fit that definition and yet either use the term "university" themselves or are classified as such by others. Broadly, these exceptions fit into one of five categories:

Affiliated Colleges:

There are a large number of small, usually denominational, colleges that have federation agreements with larger, public institutions. The majority of these are in Ontario; in many cases, the colleges are older than the public institution with which they are affiliated. When Ontario finally agreed to publicly finance higher education on a large scale in the 1950s, it did so on the understanding it would not finance religious institutions, which at the time far outnumbered the non-denominational schools. For example, Laurentian University until very recently had federation agreements with Thornloe (Anglican), Huntingdon (United) and Sudbury (Catholic) Universities, and Assumption University is a federated body of the University of Windsor. Outside Ontario, we see similar arrangements at places like the University of Manitoba, which has St. Paul's (Catholic) and St. John's (Anglican) Colleges, and the University of Regina, which has two religious federated colleges (Campion and Luther) as well as an affiliation with the First Nations University of Canada. Occasionally, universities have minority-language associated colleges, such as Glendon College at York University or Campus St. Jean at the University of Alberta.

Stand-alone religious institutions:

While many religious institutions sought arrangements with public universities, others did not. Some of these have membership in Universities Canada, such as Trinity Western University in British Columbia, King's University in Alberta, and Canadian Mennonite University in Winnipeg. A few have degree-granting powers but stay outside Universities Canada, such as the St. Stephen's University in New Brunswick, Tyndale University in Toronto and Burman University in Alberta.

Private non-denominational universities:

There are very few of these. Quest University in British Columbia was perhaps the best known of this type, due to its rather unique "block" programming orientated around a single degree, but it has recently been liquidated. This group also includes the business-orientated University Canada West in Vancouver, the International Business University in Toronto, and Yorkville University.

Indigenous institutions:

Across Canada there are roughly 50 institutions, mostly in Western Canada, that provide postsecondary education specifically for Indigenous peoples. The funding arrangements for these institutions vary by province. With only one or two exceptions, they are not degree-granting institutions and to a considerable extent they serve as delivery platforms for programs established by mainstream institutions rather than providing programs of their own design.

Offshore institutions:

Canada has had a few foreign universities set up shop in Canada, but they often do not last very long. Charles Sturt University of Australia, for instance, offered teacher education programs at a campus in Brampton for about a decade before closing in 2016. Currently, the New York Institute of Technology and Farleigh Dickinson University both have campuses in Vancouver, while Northeastern University recently opened a campus in Toronto and Seattle City University has a campus in Edmonton. University Canada West and the new University of Niagara Falls are both owned by a privately-held British for-profit company called Global University Systems.

What is a College?

Vocational education in Canada has a long history, but most publicly-funded postsecondary vocational education dates from the 1960s. Colleges are the most heterogeneous part of the Canadian educational system: The institutions that go by this name vary significantly in nature from one end of the country to the other.

The "classic" form of community college delivers mostly vocational/trades programs to primarily mature (i.e. not direct-from high school) students in 2-year programs. At one point, this was the dominant form of community college in Saskatchewan, Manitoba, Ontario, and the four Atlantic provinces. Over time, as the economy has become more service-driven, the offerings of colleges have become white-collar oriented. They remain focused on professional education leading directly to careers, but increasingly, these careers are in health care, technology, and business. With a more professional orientation has come an increase in program length (Ontario college programs are now mostly three years) and, outside the Atlantic provinces, an increase in the provision of actual degrees as well. Over time, Ontario has drifted the most from the "classic" model of colleges, and the Atlantic colleges the least.

Alberta and British Columbia always had a slightly different model for community colleges, one much closer to the American model of "junior colleges". In these two provinces, community colleges were professionally-oriented like those in the other seven majority-anglophone provinces. However, in addition, they also had a university-transfer function. Both provinces initially were very cautious about expanding universities and so until the 1990s kept them concentrated to the major urban areas with students from outside the urban centres doing the first two years at regional colleges before transferring to the universities.[1] Since the turn of the century, both provinces have been expanding their university systems by transforming colleges into universities, and as a result the university-transfer aspect of colleges has eroded somewhat. Yet, because of the transfer mission, both Alberta and British Columbia have extensive inter-institutional credit-transfer arrangements not replicated elsewhere in the country.

Quebec's college system is quite different from those in the rest of the country. Quebec has only five years of secondary school compared to six in the rest of the country (with the result that the normal leaving age is 16 or 17 rather than 17 or 18). Students may then attend a College d'enseignement général et professionel (CEGEP) for two years. As in Alberta and British Columbia, there are two streams — a vocational/professional one that leads to the labour market, and a general one that ends with the awarding of a diplôme d'études collégiales (DEC), which is a necessary prerequisite to attend university. All university-bound students in Quebec must therefore attend college. This model made a great deal of sense 60 years ago when the province's small postsecondary system was mostly composed of Catholic "Collèges classique" offering education that was more rigorous than secondary education but less so than a full degree. During Quebec's Quiet Revolution of the 1960s, these religious colleges either became CEGEPs or in a few cases became the nuclei for campuses of the emerging Université du Québec system. The exception was Bishop's, which converted to university status. It is unlikely that anyone would adopt such a model today, because it is no longer clear that there is any demand for an intermediate non-vocational credential between secondary school and university. Nevertheless, Quebec's current system is so entrenched that it will almost certainly survive through inertia alone.

Left: Université de Sherbrooke, Le Sommet Lounge Bar
Below: Université de Montréal, Café Campus

1 The University of Athabasca is an exception to this rule.

Who Controls Degree-Granting Authority?

Universities, by definition, have authority to grant degrees. But in many parts of the country, so too do other organizations, including private institutions and community colleges. How did these bodies become degree-granting?

The power to authorize the granting of degrees rests with the various provincial ministers of advanced education. In nearly all provinces, there is enshrined in legislation a process by which institutions — be they community colleges or private institutions — can apply to offer degrees. Interested institutions must apply separately for each degree they wish to offer. Different processes exist for dedicated arms-length organizations to evaluate whether the institution has the financial and human resources to offer the degree. If this an institution is making a program request for the first time, there is usually a separate inquiry made into the suitability of the institution itself and its promoters, known as an "institutional review". Review is usually carried out by a body which is at least marginally arms-length from government. Ontario, British Columbia and Alberta have the Post-Secondary Education Quality Assessment Board, Degree Quality Assessment Board and Campus Alberta, respectively, while the Maritime provinces jointly employ the services of the Maritime Provinces Higher Education Council for the same purpose.

While these dedicated organizations evaluate proposals, their role is only advisory: provincial Ministers of Advanced Education retain the final power to decide the merits of any given proposal. In practice, the recommendations of the arms-length organizations are accepted in the majority of cases.

All told, there are over 200 public colleges across Canada. Colleges tend to be open-access, and they are more likely to be located in rural and remote parts of the country than are universities. Indigenous students are more likely to be found at colleges than at universities. Colleges also tend to be smaller than universities; there are only a dozen or so community colleges with more than 10,000 students.

From a governance perspective, colleges are under tighter government control than universities; in some provinces, colleges existed as departments within their provincial government until the early 1990s. Their Boards tend to contain more members directly appointed from government and they tend to have less freedom to independently innovate in their programming. In three provinces — Newfoundland and Labrador, Nova Scotia, and Saskatchewan — there are single institutions with multiple sites province wide. New Brunswick has one multi-site English-language college and one multi-site French-language college: Prince Edward Island has single-site English and French institutions. On the labour side, college employees tend to be unionized at the provincial rather than the institutional level, meaning there is sector-wide bargaining in colleges (unlike universities where bargaining occurs exclusively at the institutional level).

What is a polytechnic?

The term "polytechnic" has a number of uses around the world. In France, it refers to one specific elite Engineering school. In the United Kingdom (up until 1992), it referred to a kind of junior college, offering university-style programming, but not permitted to issue degrees. It meant something similar in New Zealand for a long time, though recently those polytechnics have come to have much more professional and technical foci as well. In Finland, polytechnics (technically "ammattikorkeakoulu") are also known as "Universities of Applied Sciences", and while they focus on practical and professionally-oriented education, they also engage in applied research and issue both bachelor's and master's degrees.

Except in Alberta, the term "polytechnic" does not have a specific legal meaning in Canada. Rather, as some Canadian community colleges — mainly the large ones from Ontario and the four western provinces — have become more professionally-oriented and technologically sophisticated, increased their involvement in applied research and begun teaching bachelor's level programs, there has

been a move on the part of some of these institutions to rebrand themselves with the term "polytechnic" and band together to lobby at the federal level under the banner "Polytechnics Canada". However, most Polytechnics Canada members also remain members of Colleges and Institutes Canada, the peak representative body for community colleges.

Prior to the widespread adoption of the term "Polytechnic" in the mid-00s, the last major institution to carry this label was Ryerson Polytechnic, which transformed into a university (Ryerson University, now Toronto Metropolitan University) in the early 1990s. For this reason, the move by some institutions to adopt the polytechnics moniker is seen in some quarters as evidence that these institutions are simply colleges that want to become universities. In one or two cases that is clearly true: Sheridan College, a Toronto-area member of Polytechnics Canada, was quite open in seeking university status in the early 2010s and Kwantlen Polytechnic University has already achieved it. Others, however, have turned down university status when it was offered to them (for example, the British Columbia Institute of Technology) and many major colleges, like Humber and Seneca, seem focused on forging an independent identity as Polytechnics in the liminal space between colleges and university.

Apprenticeships

Apprenticeships in Canada are a form of postsecondary education where learners combine periods in the workforce under the supervision of experienced tradespeople with periods of in-class study which occurs mainly, but not exclusively, in community colleges.

Technically, apprentices are not "students" and do not show up as such in college enrolment statistics. Rather, they are employees who have signed specific apprenticeship contracts with employers and who periodically attend technical classes held at colleges, or less often private vocational colleges or union training facilities. Apprenticeships are organized by trade, and most trades are of the traditional vocational variety, particularly those related to housing, construction, automobile, and food industries. In the last decade, there have been various attempts to bring apprenticeships to other, more service-oriented occupations (mainly: aestheticians, early childhood educators and IT service professionals), with mixed results. Though efforts have been made to increase apprenticeship options in secondary schools, apprentices in Canada tend to be in their mid-20s to mid-30s.

Apprentices pass through various "levels" before achieving certification as journeypersons. The number of levels, as well as the number of work hours and weeks of in-class training, may vary by level, trade, and province. Broadly speaking, most of the major trades have four levels that require one year each to complete. Within each level, apprentices are normally spending roughly 80% of their time in a workplace under the auspices of an experienced journeyperson and 20% in some kind of formal instructional space. Community colleges are the usual spot for such instruction, though increasingly unions are creating their own training spaces and being awarded and compensated for training spaces by governments keen to curry favour with organized labour. Finishing the final level and passing the relevant exams entitles the individual to a provincial trades certificate; to work outside the province, individuals must complete a second set of tests known as "Red Seal Exams".

The Canadian apprenticeship system is an international outlier for a variety of reasons. The first is that is considered part of the postsecondary system rather than a part of secondary education (hence the relatively advanced age of its apprentices). The second is the length of the programs, which are typically four years compared to two in most of Europe. The third is the release system for theoretical in-class training. Most national apprenticeship systems employ a day-release system which sees apprentices spend 3-4 days a week at work and 1-2 in class. This is not unknown in Canada, but more common is the "block release" system which sees apprentices work for 35-40 weeks at a time and then go to class for blocks of 8-12 weeks. The final difference is the relatively limited number of occupations for which apprenticeships are available: Canadian apprenticeships are mostly for blue-collar occupations and have seen relatively little expansion into areas such as banking, IT and office-work as has been the case in Europe.

Private Vocational Colleges

The final element of Canada's postsecondary education system is that comprised of private, mainly for-profit, vocational colleges. These resemble the private for-profit sector in the United States except that they focus almost exclusively on programs of one year or less rather than degree-level programming. They are quite common in certain fields which are not covered at community colleges, such as music production, aesthetician training, and dental assisting, but they also offer some relatively advanced IT training as well. Language schools are another large sector, though they mainly focus on students from outside Canada. Because they operate without subsidy, their programs tend to be significantly more expensive than those of community colleges; on the other hand, because they operate on a continuous-intake basis, they offer students more convenience than institutions whose only intakes are in September and January. There are several hundred of these institutions registered across Canada. Most are small, independent businesses, but a substantial portion of students are enrolled at large, multi-campus institutions such as triOS College or CDI College, which tend to have a business or IT focus.

In recent years, particularly in Ontario, the line between public and private colleges has been blurred substantially through the use of so-called Public-Private Partnership arrangements. These began in the 2010s when a few public colleges outside of the Greater Toronto Area signed deals with private colleges under which the former recruited international students, collected their tuition and then paid a low amount to a private provider to teach them in accordance

with the public institutions' curriculum. This is the arrangement which super-charged the recruitment of international students to Ontario colleges: suddenly an option existed in which colleges, regardless of geography, could gain from the desire of students, particularly from India, to get on a path to permanent residency while working and living in the GTA. These PPP arrangements were briefly banned by the Wynne government, but were brought back and greatly encouraged by the Ford government to the point where virtually all the non-Toronto-area colleges had these kinds of PPP arrangements. In January 2024, the Government of Canada, in a bid to reduce the number of non-permanent residents, made policy changes which effectively made it impossible for students attending PPP colleges to gain a pathway to permanent residency. This made these kinds of arrangements much less appealing and many PPP arrangements were terminated in the Spring of 2024.

Federalism and Postsecondary Education: Who Funds What?

A basic tension in the Canadian Confederation debates of the 1860s was how to create a system of representation by population, which also guaranteed to Catholic, francophone Quebec the ability to maintain control over cultural institutions — in particular educational ones. The eventual solution was a federal system with a national government elected through a rough representation by population, but with responsibility for education (among other things) vested firmly at the provincial level. This compromise is enshrined very specifically in s. 93 of the Canadian Constitution, which allocates responsibility for postsecondary institutions and their funding to the provinces. This in why Canada effectively has ten provincial systems of postsecondary education rather than a single national one.

Though operating funds - which includes both provincial government funding and tuition fees - are in effect exclusively the responsibility of provincial governments, the federal government contributes to the higher education sector in three ways: through transfer payments to provinces, support for scientific research, and various forms of student assistance.

The federal government transfers funds to provincial governments through equalization payments designed to allow poorer provinces to provide services at levels similar to richer ones and through per-capita payments via the Canada Health Transfer and the Canada Social Transfer. These transfer programs originated in the 1940s, when the federal government "borrowed" tax room from provinces to pay for the war effort, and they continued in the 1950s/60s when the government began to use these tax revenues to pay provinces for the development of what we now know as our social safety net. Roughly 30% of the Canada Social Transfer is theoretically allocated to postsecondary education; however, since there is no way to track federal funds once they are in provincial coffers, this allocation is purely notional. In total the $4 billion or so from this source would account for only about 7% of total institutional revenue in Canadian PSE. Further details about these arrangements may be found in Chapter 4.

Funding for scientific research at universities began during World War I, but it only became a major source of institutional funding during the 1970s. For many years, this funding was directed not to institutions, but to individual researchers (or groups thereof) through the granting councils. From the early 1990s onwards, however, there has been a gradual move towards funding research at an institutional level, first through the Network Centres of Excellence, then through the Canada Foundation for Innovation (which funds research infrastructure) and most recently through the Canada First Research Excellence Fund. Some provinces, most notably Quebec, also fund research separately but the main sources of funding lie in Ottawa. More details on the system of research may be found in Chapter 7.

Student assistance in Canada takes various forms, but both provinces and the federal government contribute to students' education through loans, grants, and tax credits. In addition, the federal government spends over $1 billion per year in educational savings incentives. More detail on this may be found in Chapter 5.

In addition to the above, there is also funding for capital, which tends to be erratic and comes in bursts, often in the form of "stimulus" programs in times of economic downturn. Increasingly, outside Quebec at least, provincial governments are relying on occasional federal government spending sprees to take care of capital funding, though institutional fund-raising is also rising in importance as a source of capital funds.

McMaster University, Phoenix Craft House and Grill (The Refectory)

APPENDIX B

Note on Sources

Most of the data used in this report is drawn from various Statistics Canada surveys, though some are developed from the author's calculations using figures from the databases noted below. In many cases, descriptions of how the data was acquired and calculated is provided in the chapter text.

CHAPTER 1

Student numbers up to 2021-22 are drawn from Statistics Canada's Postsecondary Student Information System (PSIS). Supplemental data is drawn from sources such as Colleges Ontario, Polytechnics Canada, and other organizations, as noted in the text. For universities, enrolment data has been supplemented for the 2022-23 years with data provided by institutions themselves, either on their own websites, or the websites of regional agencies (such as the Atlantic Association of Universities) or provincial governments, or through the annual Universities Canada survey of enrolment. Where multiple sources of data exist, the preference is institutional data > regional data > data from Universities Canada. To avoid large swings in data, the final two years are calculated using the reported percentage change in institutional enrolments, applied to the institution's 2018-19 Statistics Canada base. Enrolment data for colleges beyond 2021-22 are projections based on provincial-level data available from Quebec, Ontario, Alberta, and British Columbia, along with institutional data from the New Brunswick Community College and the College Communautaire de Nouveau-Brunswick, which together cover over 90% of national college enrolments. Other sources of student data include the Canadian Undergraduate Survey Consortium (CUSC)'s 2022 Survey of First-Year Students and the 2021 census. Data on Canadian apprentices are from Statistics Canada's Registered Apprentice Information System; comparative data for Germany is from the Statistische Bundesamt. Data from other OECD countries are from the OECD's Education at a Glance 2022 or 2023.

CHAPTER 2

Data on academic staff is mostly drawn from the University and College Academic Staff System (UCASS) survey for universities or from the Labour Force Survey. Data on total staff numbers are from Statistics Canada's Survey of Employment, Payroll and Hours (SEPH). Data on the composition of staff numbers in Ontario are from Colleges Ontario's annual Environmental Scan is used; our thanks to this organization for providing an advance look at the data for this year.

CHAPTER 3

Data on postsecondary finances are drawn mainly from Statistics Canada's Financial Information of Universities and Colleges (FIUC) survey and the Financial Information of Colleges (FINCOL) survey. Data is currently available up to 2022-23 for FIUC and 2021-22 for FINCOL. College financial data for 2022-23 is obtained by examining institutional-level financial statements and applying the difference between these years to the 2020-21 data. International comparative data is from the OECD's Education at a Glance 2023.

CHAPTER 4

Data in Chapter 4 comes from the most recent editions of FIUC and FINCOL, with per-student data calculated by using the sources listed for Chapter 1.

CHAPTER 5

Data on fees comes from Statistics Canada's Tuition and Living Accommodation Cost (TLAC) Survey. Data on loans and grants comes from a series of surveys and data requests conducted by Higher Education Strategy Associates and its predecessor organization Educational Policy Institute (Canada), as well as freedom of information requests conducted annually by HESA since 2018. Data on federal student assistance comes from the annual statistical report of the Canada Student Financial Assistance Program, and we thank the program for

advance access to the 2022-23 data. Data on federal tax expenditures comes from the annual federal review of tax expenditures. Provincial data is based mainly on a series of estimates based on provincial tax rates and Canada Revenue Agency data on tax filers and their use of credits. Data on the Canada Education Savings Grant (CESG) is from the CESG Annual Report. Data on institutional scholarship expenditures are drawn from FIUC and FINCOL. Data on student loan debt is taken either from Statistics Canada's National Graduate Survey or from CUSC's triennial survey of graduating students (the latest being 2024).

CHAPTER 6

Data on completion rates comes from Statistics Canada's Postsecondary Student Information System (PSIS). Data on educational attainment over time and across provinces comes from Statistics Canada's Labour Force Survey. National data on graduate employment rates and graduate income for Canada comes from various iterations of Statistics Canada's National Graduate Survey, the most recent being for the class of 2020. Data from Ontario comes from the Ontario University Graduate Survey and specifically from the annual publication produced by the Council on Ontario Universities (our thanks to COU for assistance in getting advance access to the class of 2020 data). International comparative data is from the OECD's Education at a Glance 2023.

CHAPTER 7

Data on national performance in expenditures on research and development expenditures is from the OECD's Main Science and Technology Indicators database and, in most cases, are up to date as of 2020. National-level data on scientific publications from the US National Science Foundation's Science and Engineering Indicators. Data on institutional performance with respect to publications comes from the Centre for Science and Technology Studies at Leiden University. Information on granting council funding is drawn from the reports on applications and grants issued by each the granting agencies (CIHR, NSERC, and SSRHC) and calculations drawing on the number of grants issued to researchers at universities. Data on applied research at Canadian colleges comes from Research Infosource's 2023 edition of "Top 50 research colleges".

PROVINCIAL PROFILES

These have the same sources as in the rest of the document. With respect to students, institutional finances and tuition fees, the data is from Statistics Canada; with respect to student financial aid data comes from annual surveys of provincial student aid offices conducted by HESA.

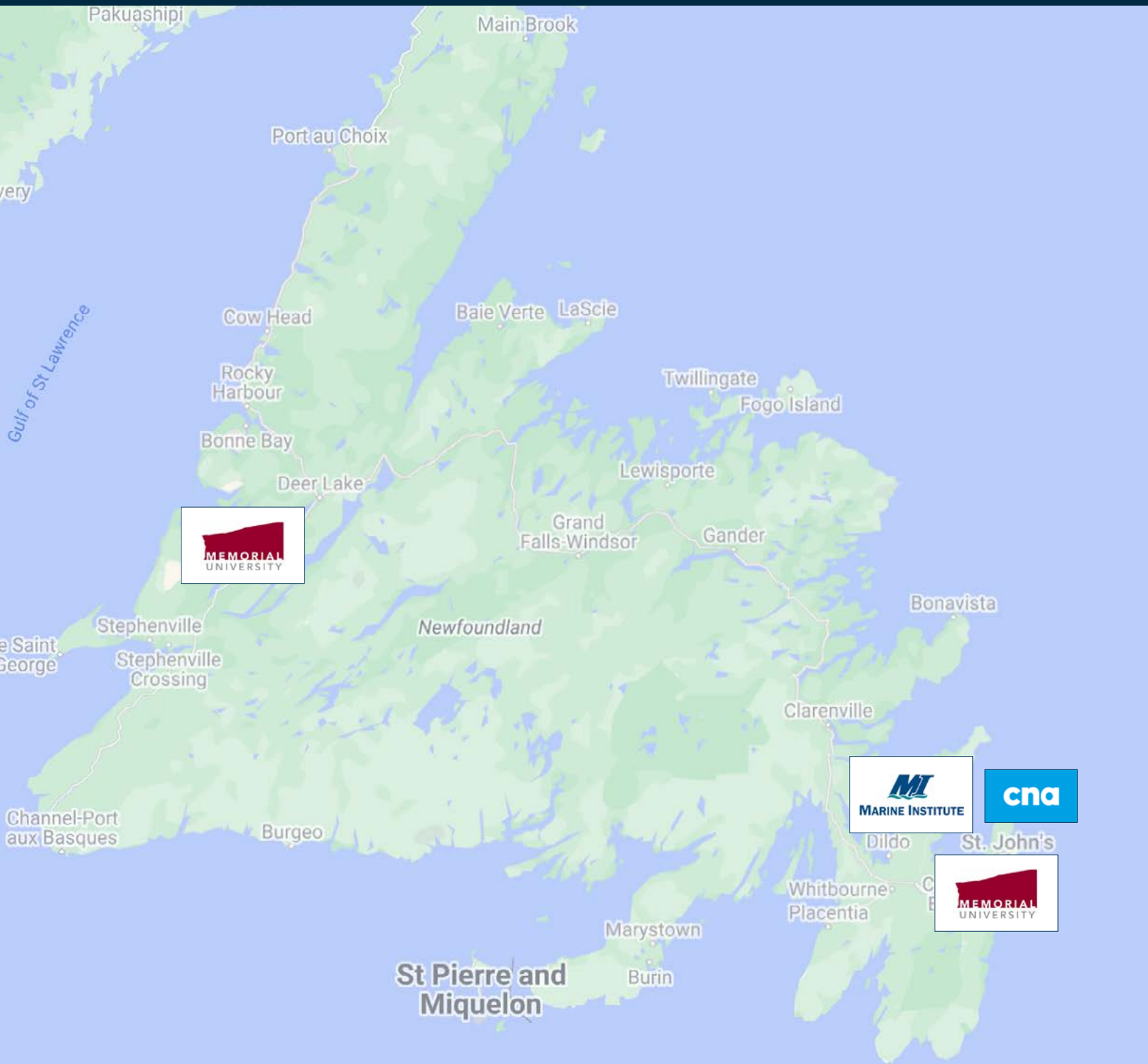
APPENDIX C

Provincial Profiles

- NEWFOUNDLAND & LABRADOR
- PRINCE EDWARD ISLAND
- NOVA SCOTIA
- NEW BRUNSWICK
- QUÉBEC
- ONTARIO
- MANITOBA
- SASKATCHEWAN
- ALBERTA
- BRITISH COLUMBIA

PROVINCIAL PROFILE

Newfoundland & Labrador



STUDENTS

Enrolments in Newfoundland and Labrador have lagged those in the rest of the country, which is mainly due to adverse demographics. Enrolments have fallen in absolute terms in the college sector. International students form a significant part of total enrollments in the university sector but not the college sector.

Figure NL1: Total Postsecondary Enrolments by Sector, Newfoundland and Labrador, 2000-01 to 2022-23

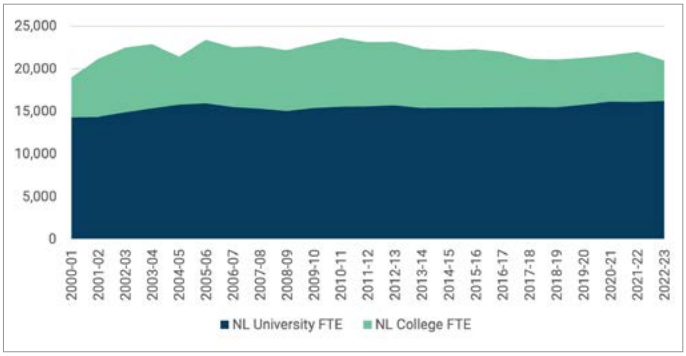


Figure NL2: Total Postsecondary Enrolments by Sector, Canada, 2000-01 to 2022-23

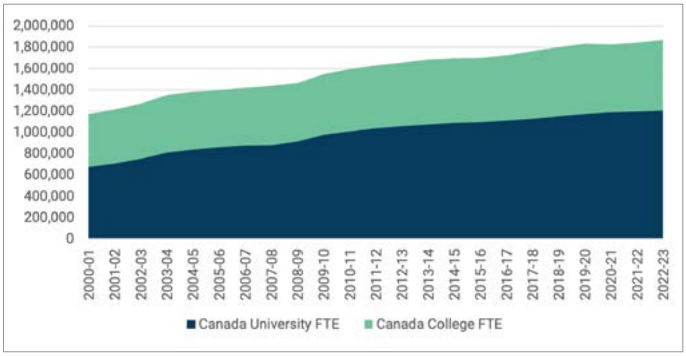


Figure NL3: International Students as a Percentage of Total College Enrolments, Canada vs. Newfoundland and Labrador, 2000-01 to 2021-22

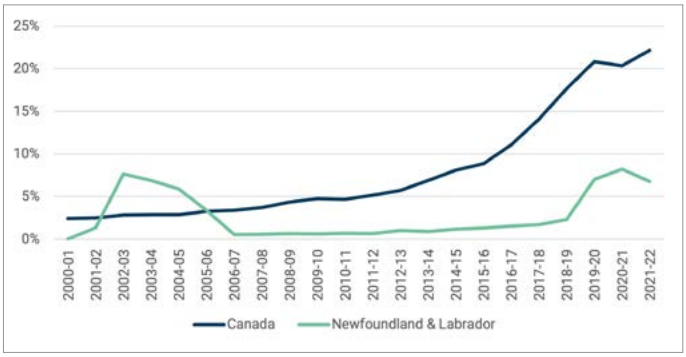
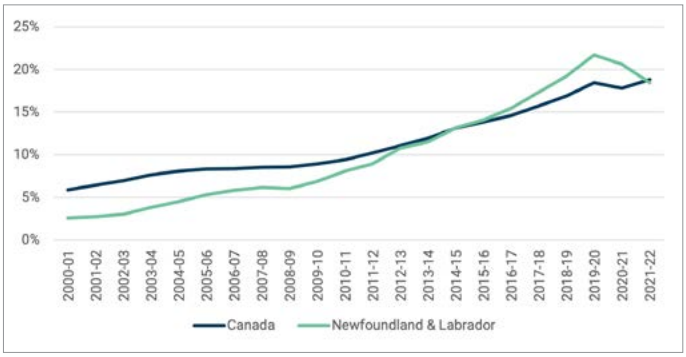


Figure NL4: International Students as a Percentage of Total University Enrolments, Canada vs. Newfoundland and Labrador, 2000-01 to 2021-22



INSTITUTIONAL INCOME

Powered by quickly rising oil revenues, government expenditures on postsecondary education more than doubled in real terms between 2001 and 2011, before tailing off thereafter. This permitted the province to freeze tuition fees and significantly increase total resources available to institutions.

Figure NL5: Total University and College Income by Source, Newfoundland and Labrador, 2001-02 to 2022-23, in $2022

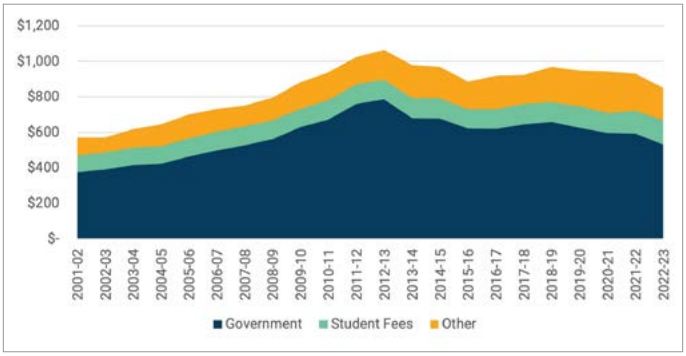
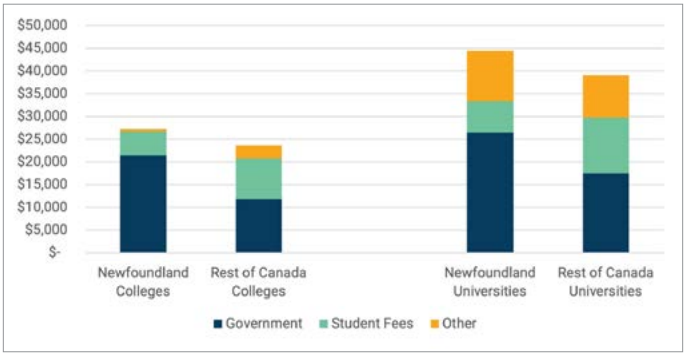


Figure NL6: Total Income Per Student, by Source and Type of Institution, Canada vs. Newfoundland and Labrador, 2022-23



TUITION AND STUDENT AID

Government policy has kept tuition fees well below those in the rest of Canada for over two decades. As in most of Canada, provincial student assistance is meeting a declining share of overall aid provided to students. Total student aid as a percentage of Gross Domestic Product has remained roughly constant over time, albeit at a lower level than the Canadian average (mainly due to lower tuition fees).

Figure NL7: University Undergraduate Tuition and Additional Fees, Canada vs. Newfoundland and Labrador, 2006-07 to 2023-24, in $2023

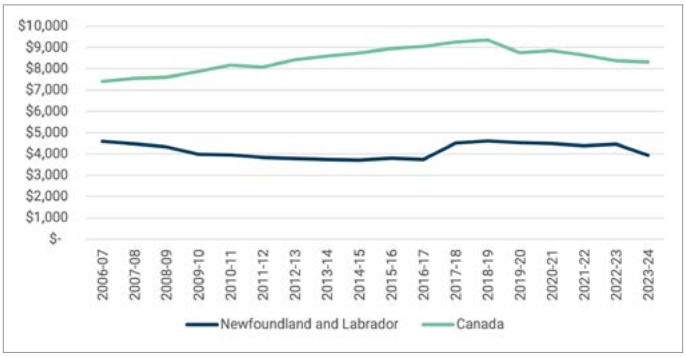


Figure NL8: Percentage of Total Financial Aid Supplied by the Province, by Type of Aid, 2011-12 to 2022-23

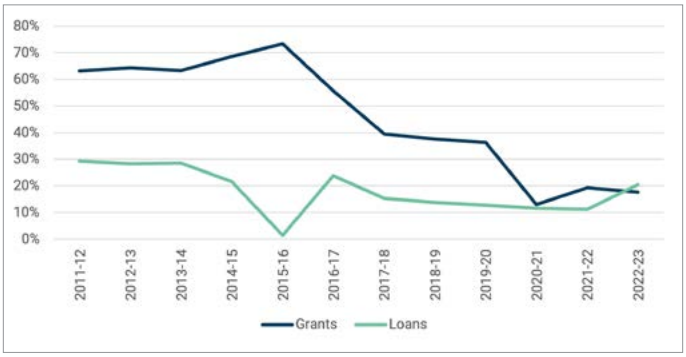


Figure NL9: Total Government Student Aid, by Type of Aid, as a Percentage of Gross Domestic Product, Newfoundland and Labrador, 2011-12 to 2022-23

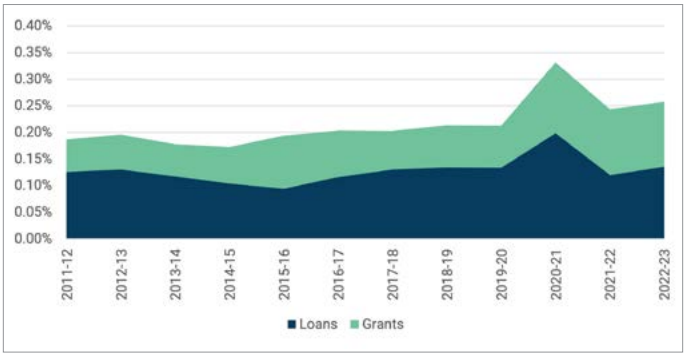
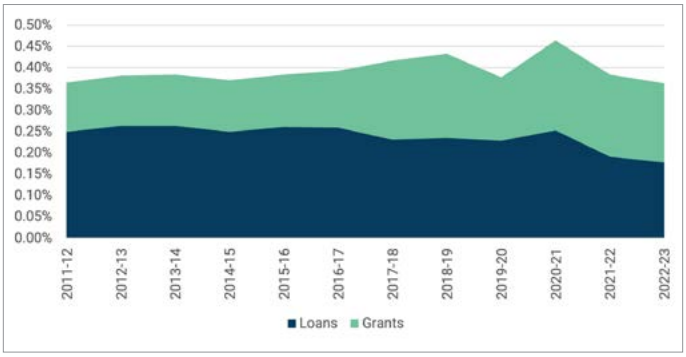
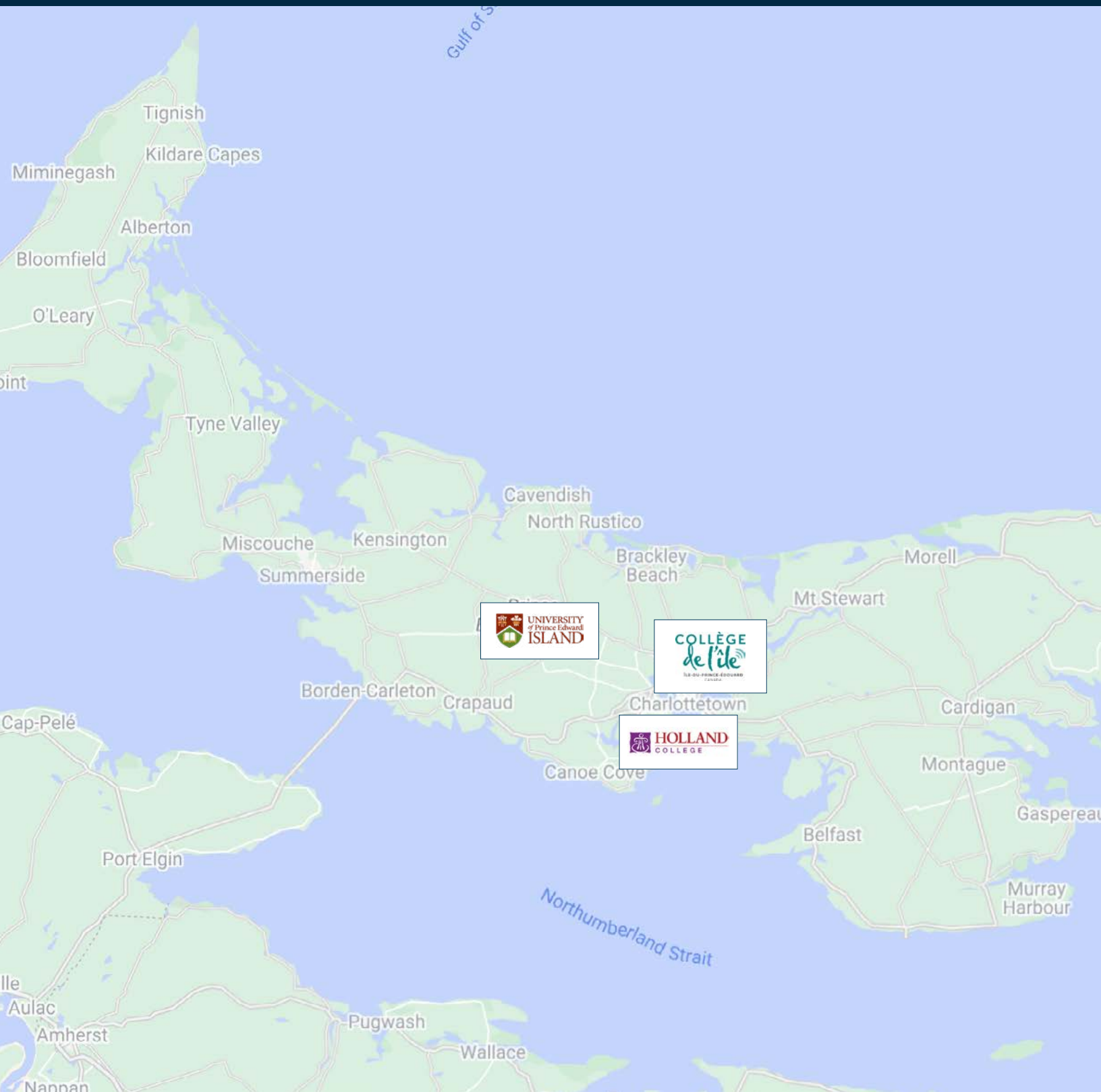


Figure NL10: Total Government Student Aid, by Type of Aid, as a Percentage of Gross Domestic Product, Canada, 2011-12 to 2022-23



PROVINCIAL PROFILE

Prince Edward Island



STUDENTS

Enrolments in Prince Edward Island have lagged behind the rest of the country for most of the past two decades; however, in recent years the rush of international students has allowed the province to catch up to the rest of the country in terms of enrolment growth, and it is the only Atlantic province to have done so.

Figure PE1: Total Postsecondary Enrolments by Sector, Prince Edward Island, 2000-01 to 2022-23

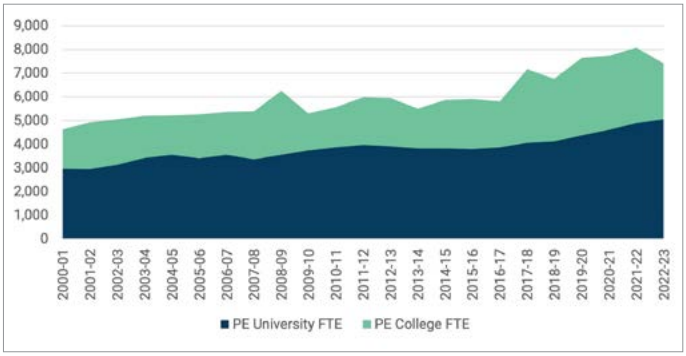


Figure PE2: Total Postsecondary Enrolments by Sector, Canada, 2000-01 to 2022-23

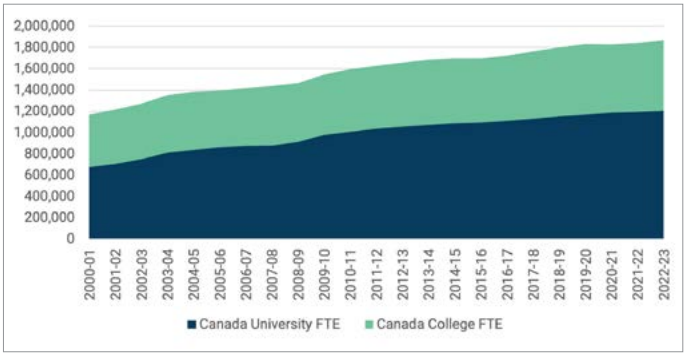


Figure PE3: International Student as a Percentage of Total College Enrolments, Canada vs. Prince Edward Island, 2000-01 to 2021-22

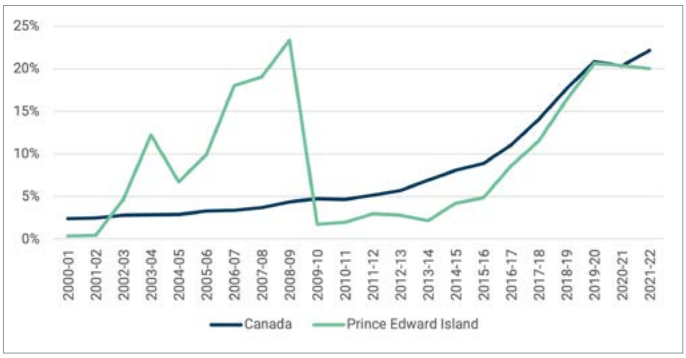
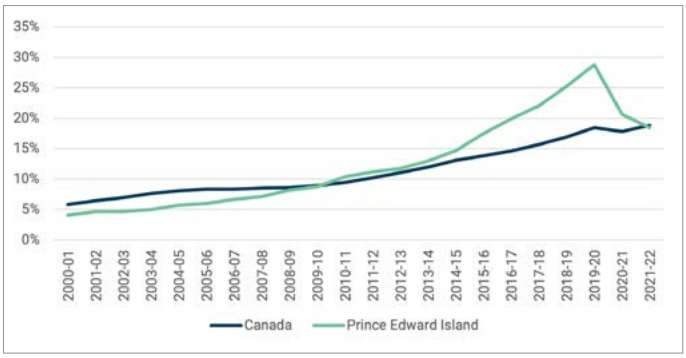


Figure PE4: International Student as a Percentage of Total University Enrolments, Canada vs. Prince Edward Island, 2000-01 to 2021-22



INSTITUTIONAL INCOME

PEI does not deviate much from the national pattern in terms of institutional funding. Per-student income patterns reflect the national average for universities and are slightly better in the college sector. Government support rose in the 2000s but then stagnated in the 2010s, and those funds were partially replaced with rising fee revenues from international students.

Figure PE5: Total University and College Income by Source, Prince Edward Island, 2001-02 to 2022-23 in Millions, in $2022

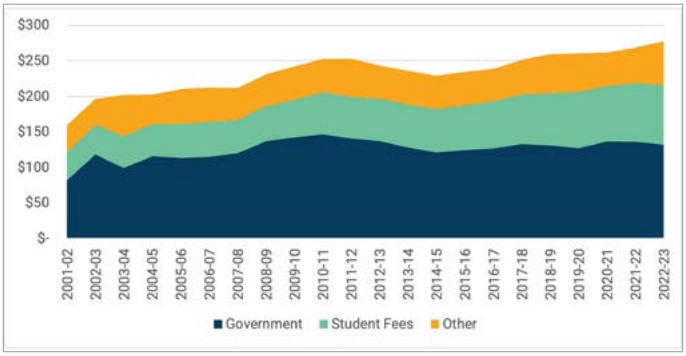
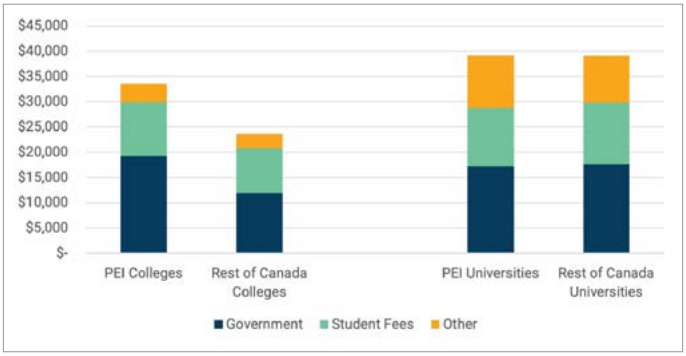


Figure PE6: Total Income Per FTE Student, by Source and Type of Institution, Canada vs. Prince Edward Island, 2022-23



TUITION AND STUDENT AID

Tuition fees in PEI have hugged the national average very closely for the past 20 years. Student aid has become less generous over the past 20 years in GDP terms, mainly as a result of a decrease in loans, but as of 2021 was still above the national average. The introduction of the Island Grant in 2018 strongly increased grant spending in the past few years, but now displays a more stagnate trend.

Figure PE7: University Undergraduate Tuition and Additional Fees, Canada vs. Prince Edward Island, 2006-07 to 2023-24, in $2023

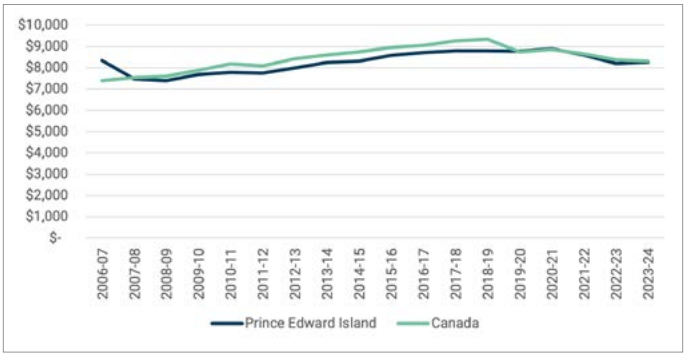


Figure PE8: Percentage of Total Financial Aid Supplied by the Province, by Type of Aid, 2011-12 to 2022-23

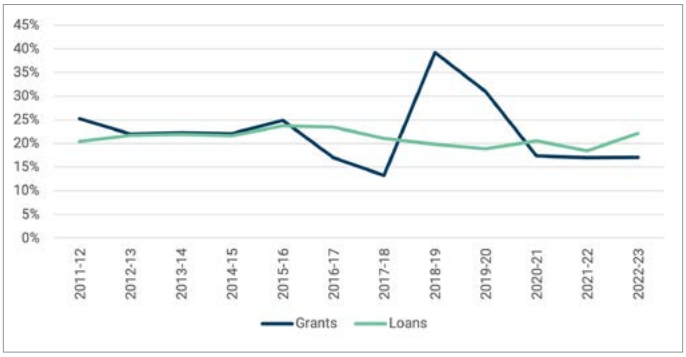


Figure PE9: Total Government Student Aid, by Type of Aid, as a Percentage of Gross Domestic Product, Prince Edward Island, 2011-12 to 2022-23

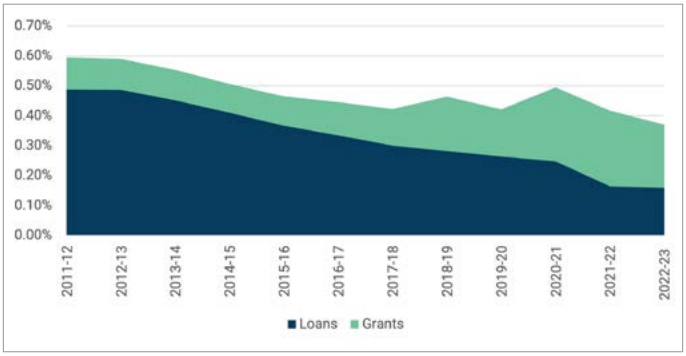
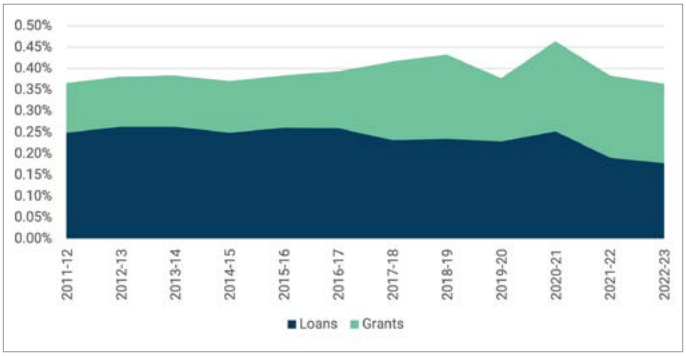
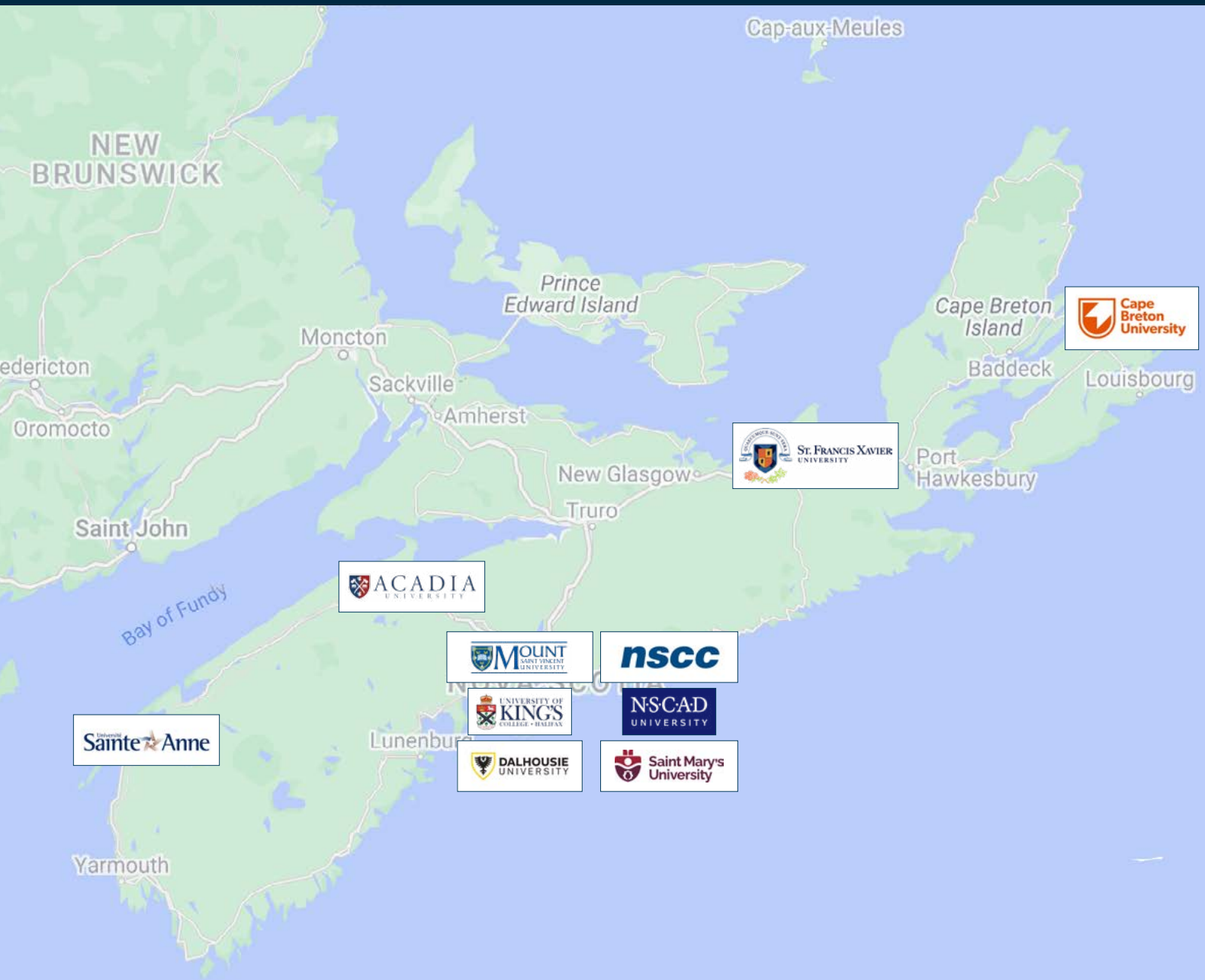


Figure PE10: Total Government Student Aid, by Type of Aid, as a Percentage of Gross Domestic Product, Canada, 2011-12 to 2022-23



PROVINCIAL PROFILE

Nova Scotia



STUDENTS

While enrolments in Nova Scotia have inched up slowly at both the university and college levels over the past two decades, the pace of growth is behind national trends. The province's university sector has long led the country in enrolling international students; the opposite is true in the college sector.

Figure NS1: Total Postsecondary Enrolments by Sector, Nova Scotia, 2000-01 to 2022-23

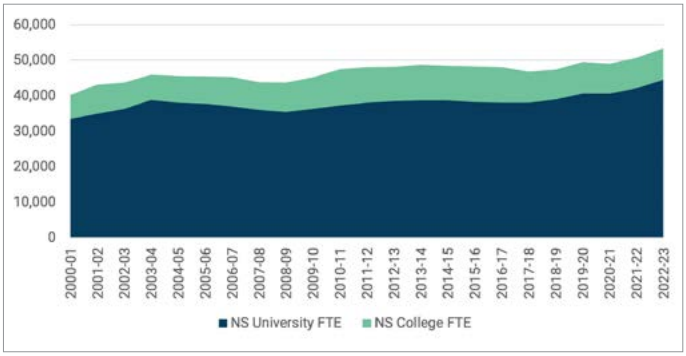


Figure NS2: Total Postsecondary Enrolments by Sector, Canada, 2000-01 to 2022-23

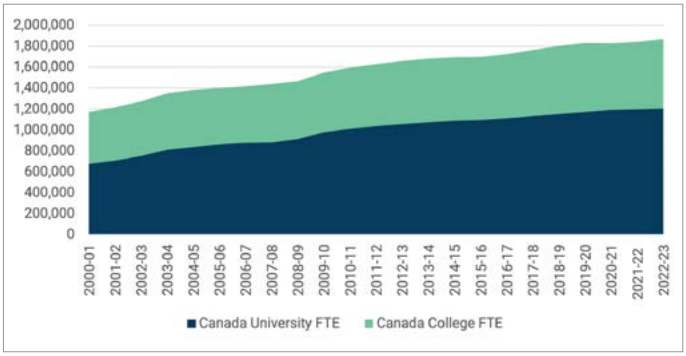


Figure NS3: International Students as a Percentage of Total College Enrolments, Canada vs. Nova Scotia, 2000-01 to 2021-22

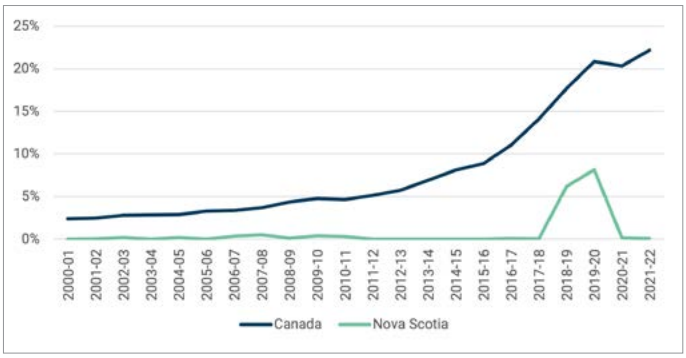
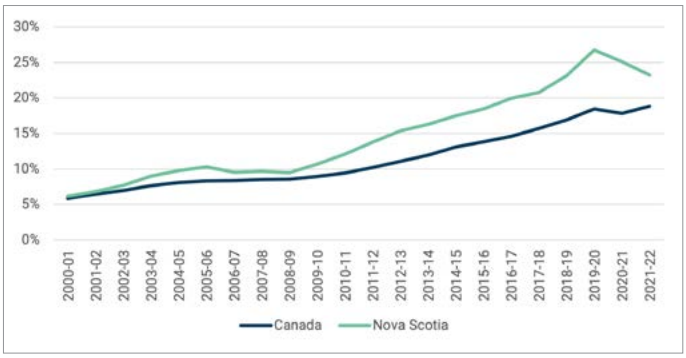


Figure NS4: International Students as a Percentage of Total University Enrolments, Canada vs. Nova Scotia, 2000-01 to 2021-22



INSTITUTIONAL INCOME

Nova Scotia universities have per-student income patterns only slightly above the rest of Canada, while Nova Scotia colleges are better-funded than the national average. As in most provinces, total government funding has stagnated since 2008, but Nova Scotian institutions have kept income growing through other means. Of total institutional funding in Nova Scotia, less than 45% now comes from governments.

Figure NS5: Total University and College Income by Source, Nova Scotia, 2001-02 to 2022-23 in Billions, in $2022

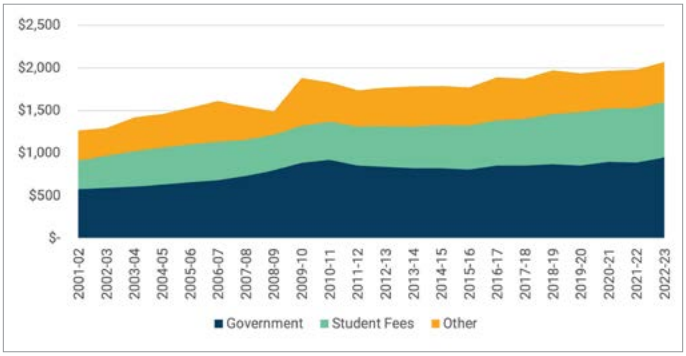
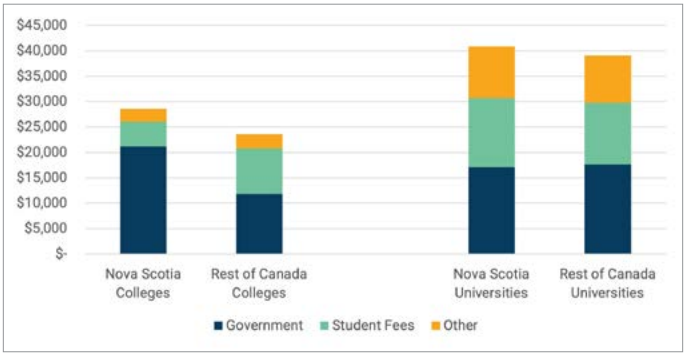


Figure NS6: Total Income Per FTE Student, by Source and Type of Institution, Canada vs. Nova Scotia, 2022-23



TUITION AND STUDENT AID

Undergraduate tuition fees in Nova Scotia are the highest in the country. Student aid in Nova Scotia is more loan-dependent than the national average, and more dependent on the federal government to deliver those loans.

Figure NS7: University Undergraduate Tuition and Additional Fees, Canada vs. Nova Scotia, 2006-07 to 2023-24, in $2023

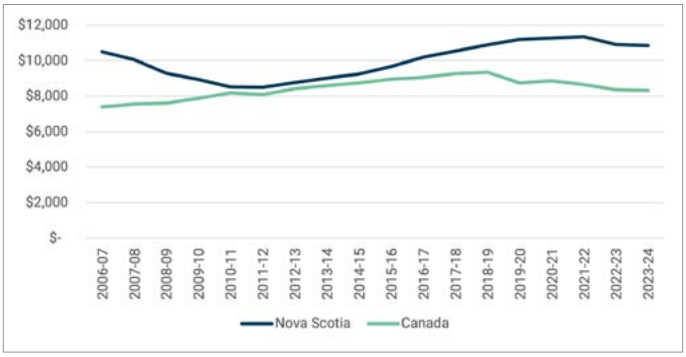


Figure NS8: Percentage of Total Financial Aid Supplied by the Province, by Type of Aid, 2011-12 to 2022-23

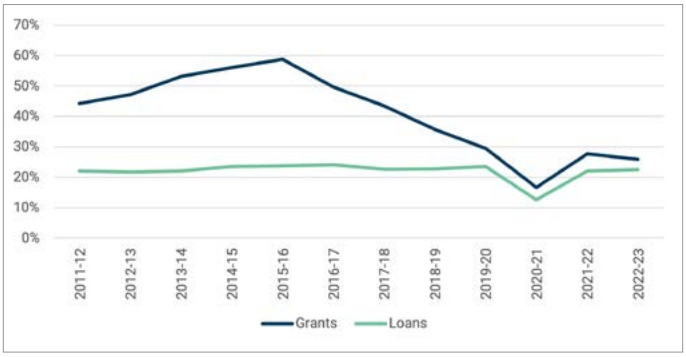


Figure NS9: Total Government Student Aid, by Type of Aid, as a Percentage of Gross Domestic Product, Nova Scotia, 2011-12 to 2022-23

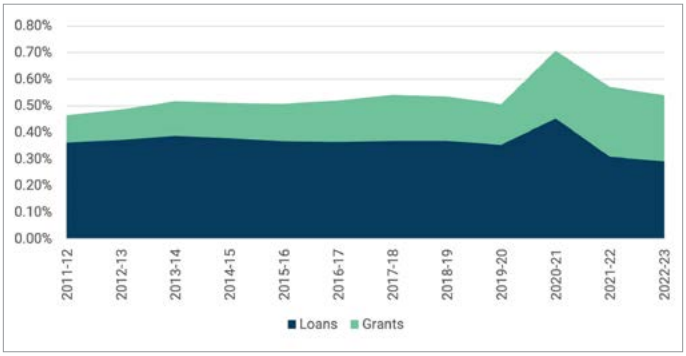
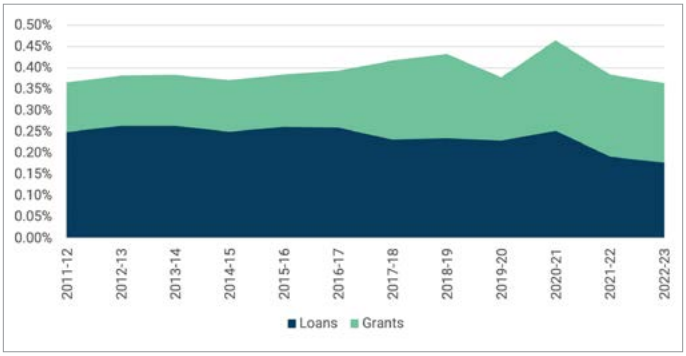
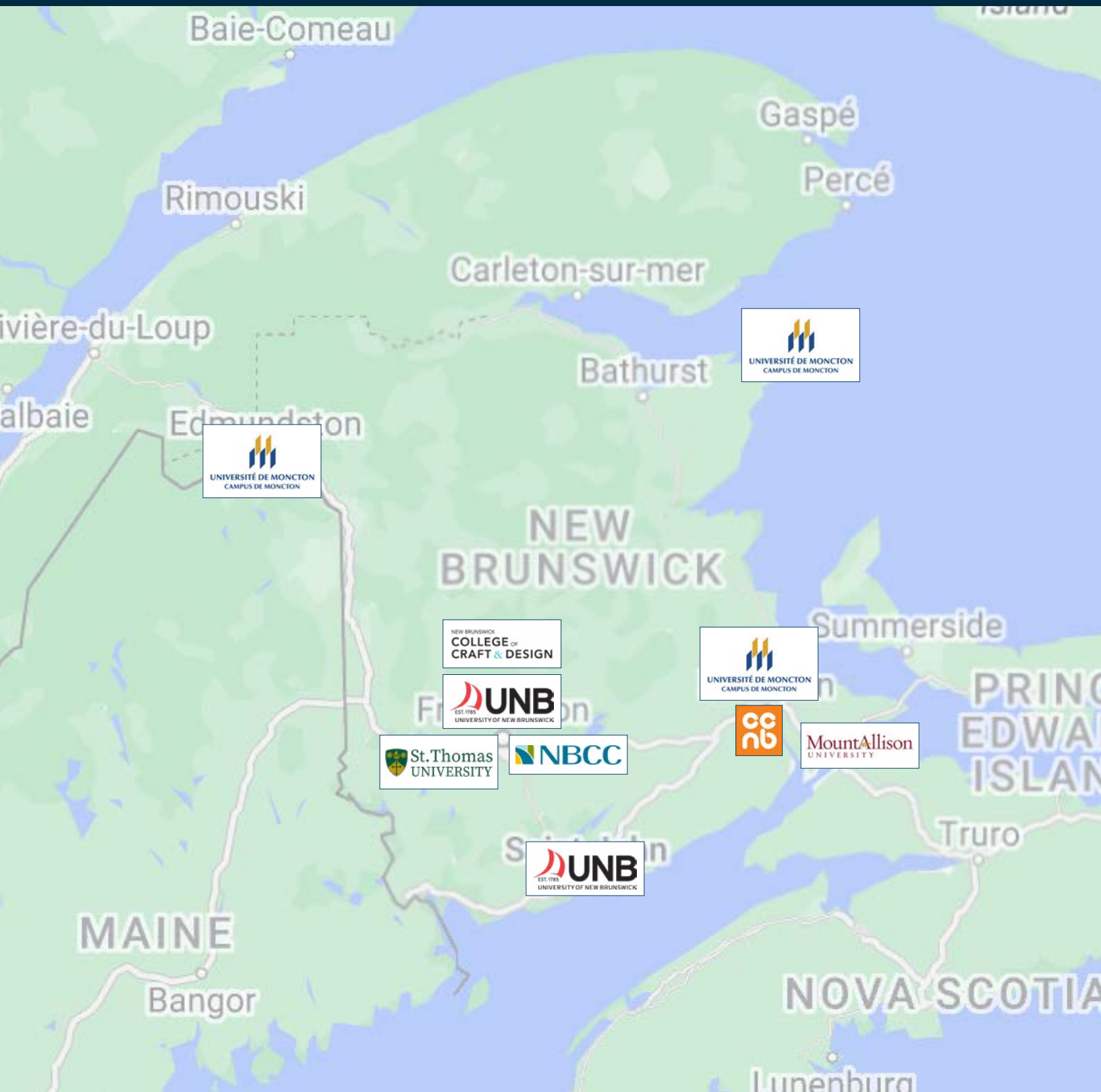


Figure NS10: Total Government Student Aid, by Type of Aid, as a Percentage of Gross Domestic Product, Canada, 2011-12 to 2022-23



PROVINCIAL PROFILE

New Brunswick



STUDENTS

New Brunswick is the only province in Canada which has seen large-scale enrolment declines over the past 20 years. For many years, the province's universities were leaders in recruiting international students, but these numbers have stagnated since the early 10s. The college sector, on the other hand, has outpaced the national average to recruit international students since 2019.

Figure NB1: Total Postsecondary Enrolments by Sector, New Brunswick, 2000-01 to 2022-23

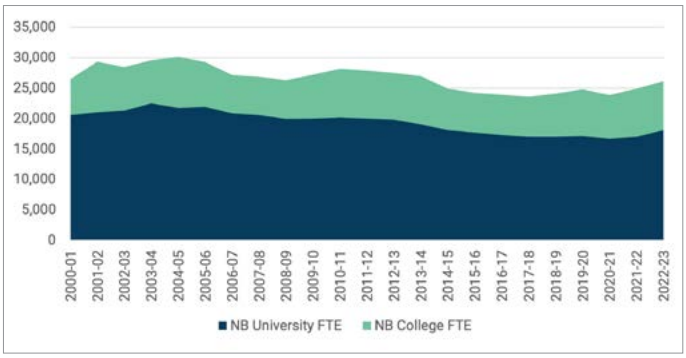


Figure NB2: Total Postsecondary Enrolments by Sector, Canada, 2000-01 to 2022-23

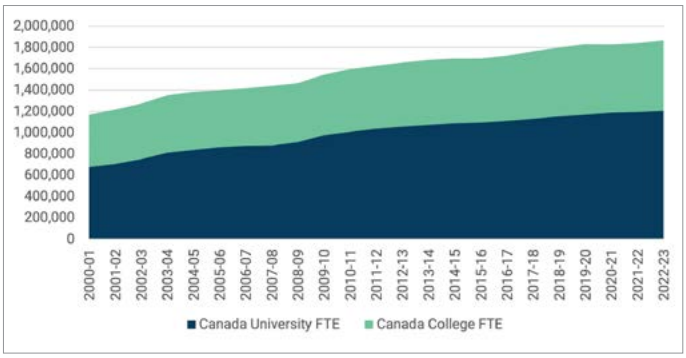


Figure NB3: International Students as a Percentage of Total College Enrolments, Canada vs. New Brunswick, 2000-01 to 2021-22

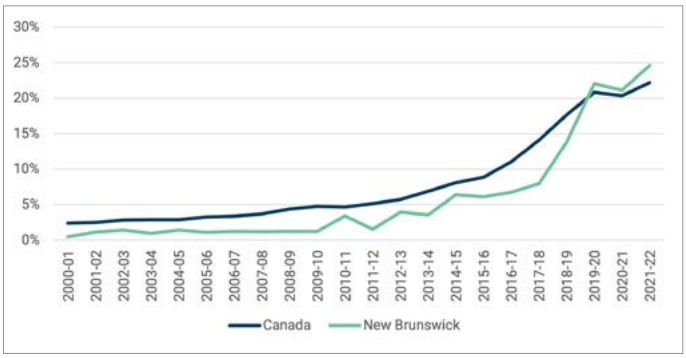
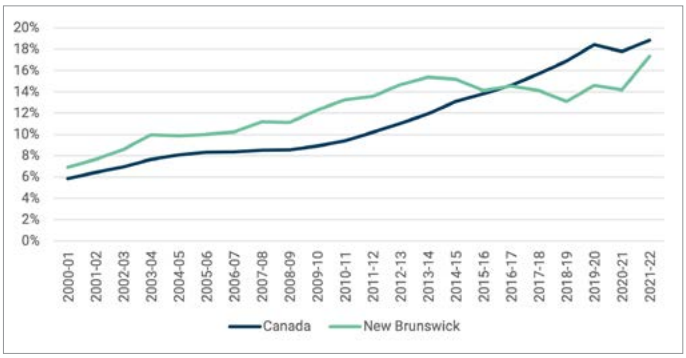


Figure NB4: International Students as a Percentage of Total University Enrolments, Canada vs. New Brunswick, 2000-01 to 2021-22



INSTITUTIONAL INCOME

Real total funding for New Brunswick universities is roughly where it was in the mid-2000s, both in composition and total amounts. However, because of enrolment declines, New Brunswick institutions are much better funded, on a per-student basis, than they were in the recent past.

Figure NB5: Total University and College Income by Source, New Brunswick, 2001-02 to 2022-23 in Billions, in $2022

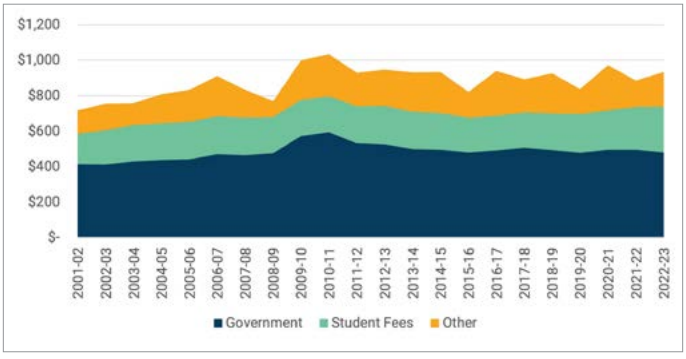
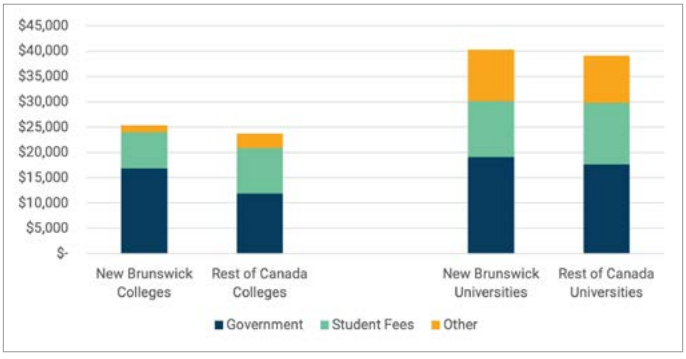


Figure NB6: Total Income Per FTE Student, by Source and Type of Institution, Canada vs. New Brunswick, 2022-23



TUITION AND STUDENT AID

New Brunswick's tuition fees and total student aid disbursements (in GDP terms) tend to hew closely to the national average. However, it is one of the few places in Canada where provincial student loans are increasing in importance relative to federal ones.

Figure NB7: University Undergraduate Tuition and Additional Fees, Canada vs. New Brunswick, 2006-07 to 2023-24, in $2023

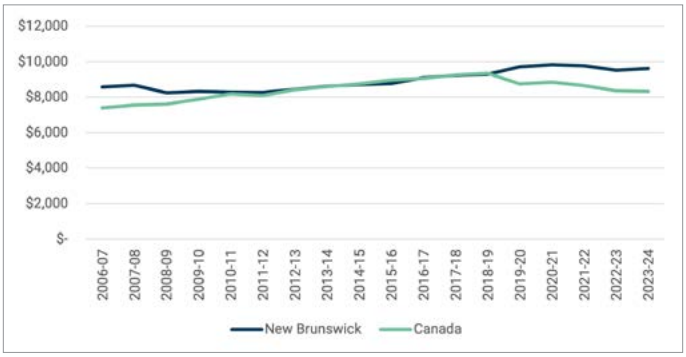


Figure NB8: Percentage of Total Financial Aid Supplied by the Province, by Type of Aid, 2011-12 to 2022-23

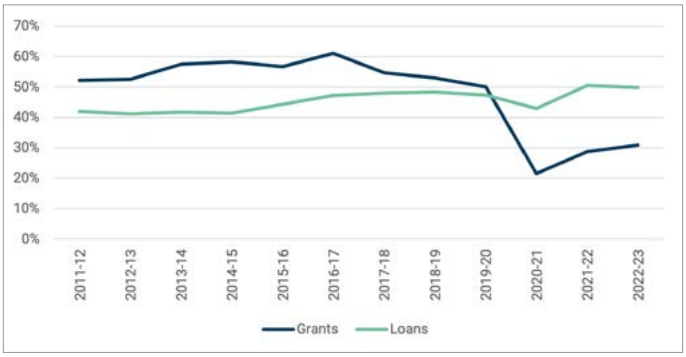


Figure NB9: Total Government Student Aid, by Type of Aid, as a Percentage of Gross Domestic Product, New Brunswick, 2011-12 to 2022-23

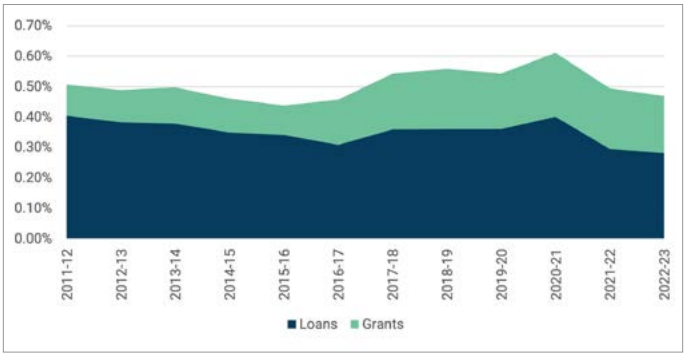
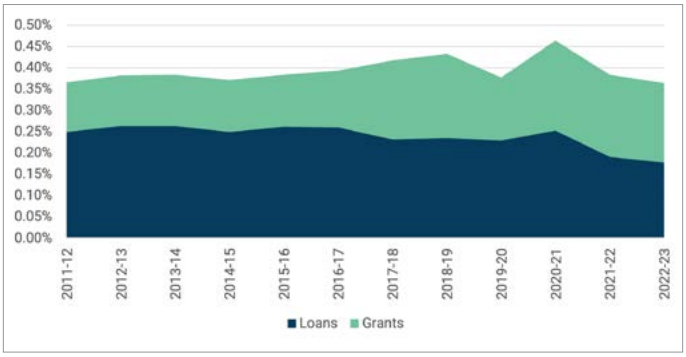
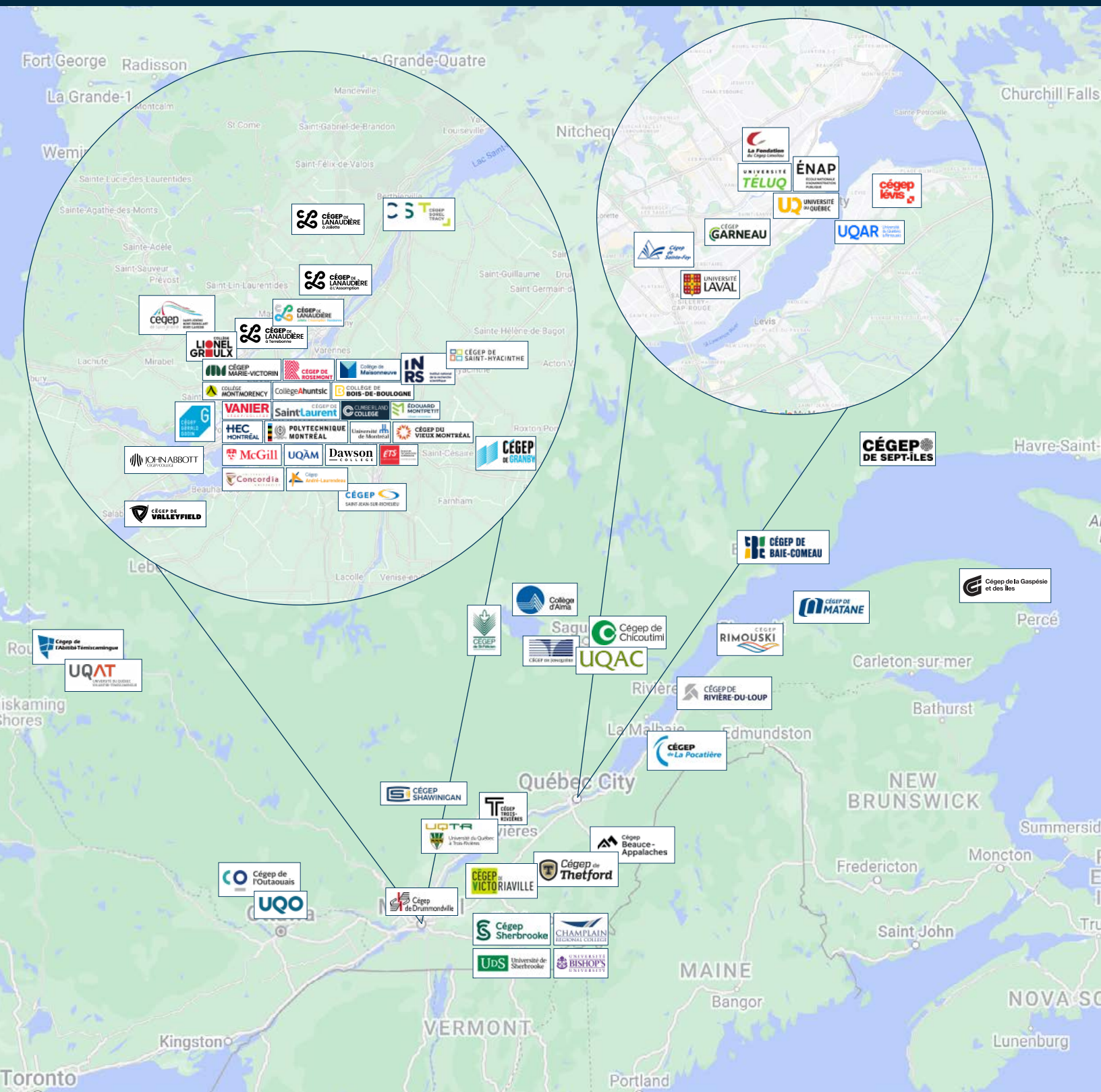


Figure NB10: Total Government Student Aid, by Type of Aid, as a Percentage of Gross Domestic Product, Canada, 2011-12 to 2022-23



PROVINCIAL PROFILE

Québec



STUDENTS

Due to its unique college system, total enrolments in Quebec tilt more heavily to the college side than in other provinces. Growth in total enrolments has been steady but remains behind the national trend. International students enroll in large numbers in the university system and resemble the national trend, but not in the college system.

Figure QC1: Total Postsecondary Enrolments by Sector, Quebec, 2000-01 to 2022-23

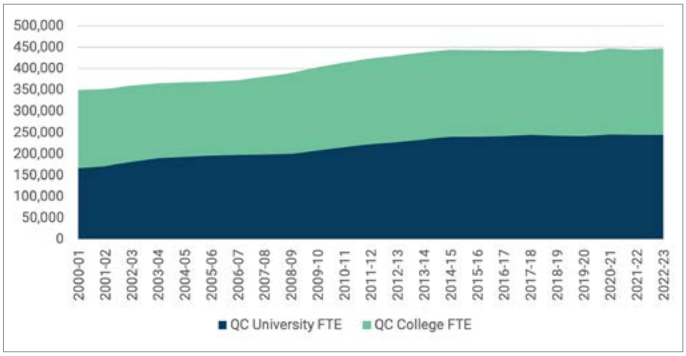


Figure QC2: Total Postsecondary Enrolments by Sector, Canada, 2000-01 to 2022-23

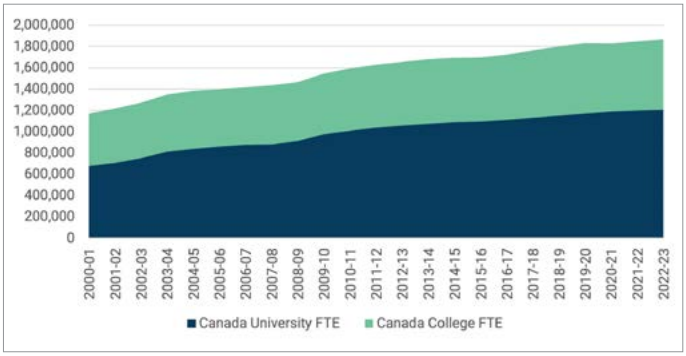


Figure QC3: International Students as a Percentage of Total College Enrolments, Canada vs. Quebec, 2000-01 to 2021-22

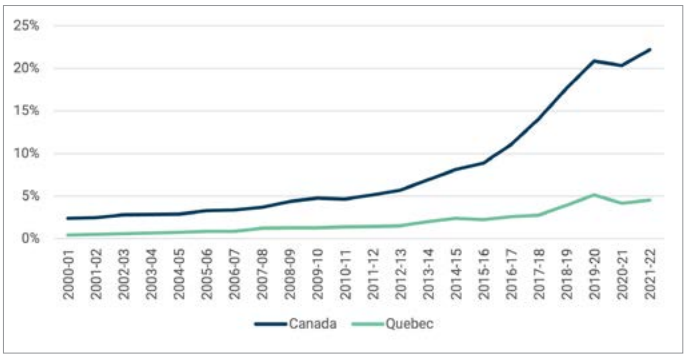
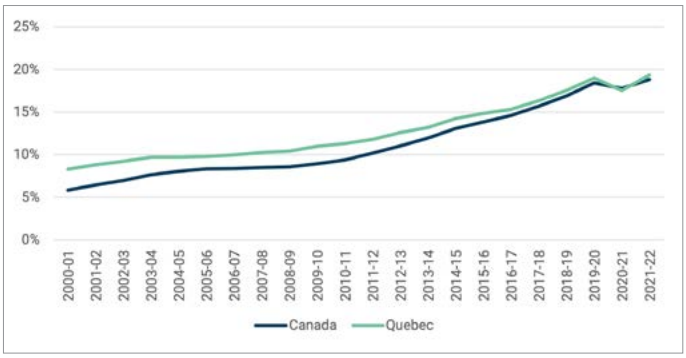


Figure QC4: International Students as a Percentage of Total University Enrolments, Canada vs. Quebec, 2000-01 to 2021-22



INSTITUTIONAL INCOME

Quebec universities and colleges are much more reliant on governments for revenue (70% of total) than the rest of the country. In part because of a reluctance to tap other revenue sources, both Quebec colleges and universities have lower total revenues per student than the rest of the country, despite very generous public support. However, unlike most of Canada, the Quebec system's total income has grown in recent years.

Figure QC5: Total University and College Income by Source, Quebec, 2001-02 to 2022-23 in Billions, in $2022

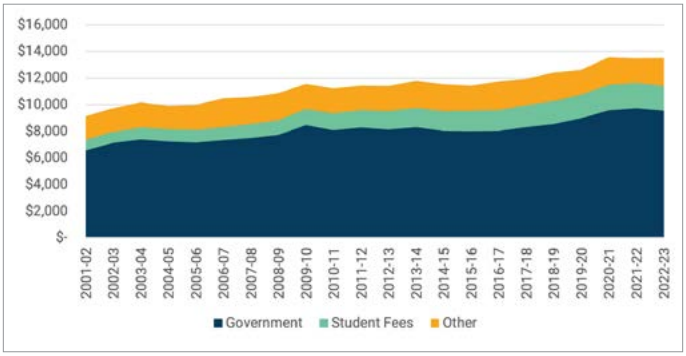
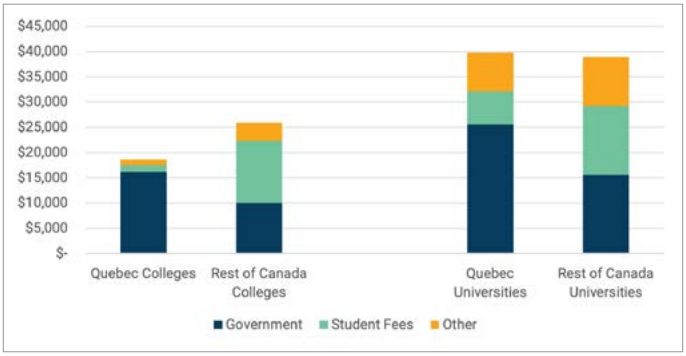


Figure QC6: Total Income Per FTE Student, by Source and Type of Institution, Canada vs. Quebec, 2022-23



TUITION AND STUDENT AID

Undergraduate tuition fees in Quebec typically remain at about half of what they are on average in the country. Lower fees mean there is less demand for student aid, which is, consequentially, smaller as a percentage of GDP than in other provinces. The student aid system is also less reliant on student loans than those in other parts of the country.

Figure QC7: University Undergraduate Tuition and Additional Fees, Canada vs. Québec, 2006-07 to 2023-24, in $2023

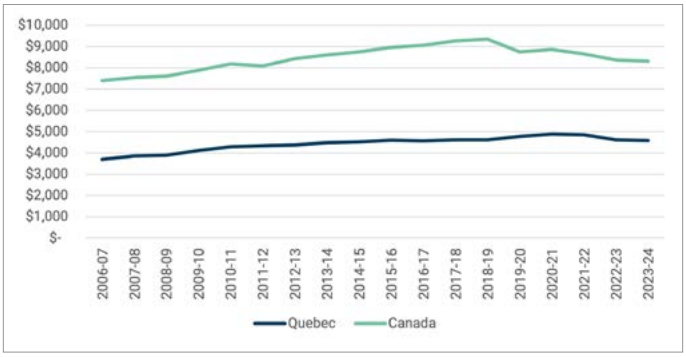


Figure QC8: Total Government Student Aid, by Type of Aid, as a Percentage of Gross Domestic Product, Quebec, 2011-12 to 2022-23

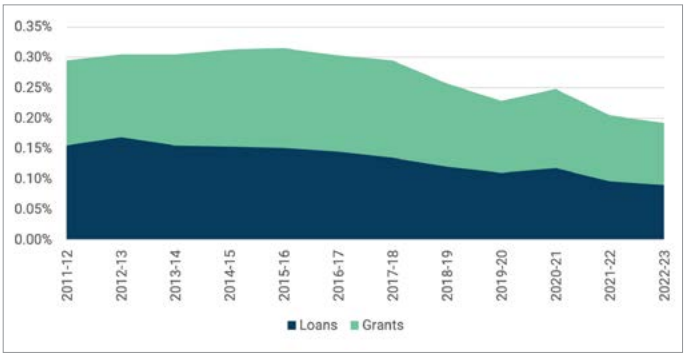
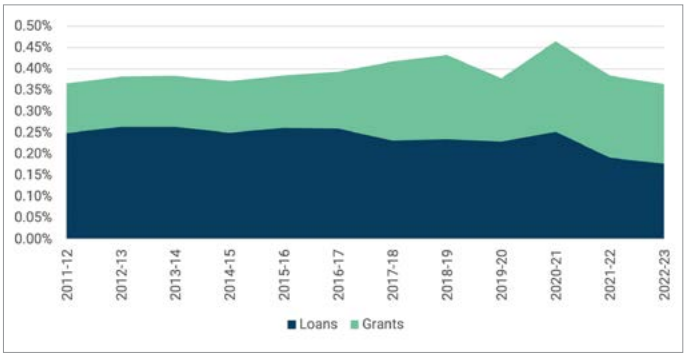
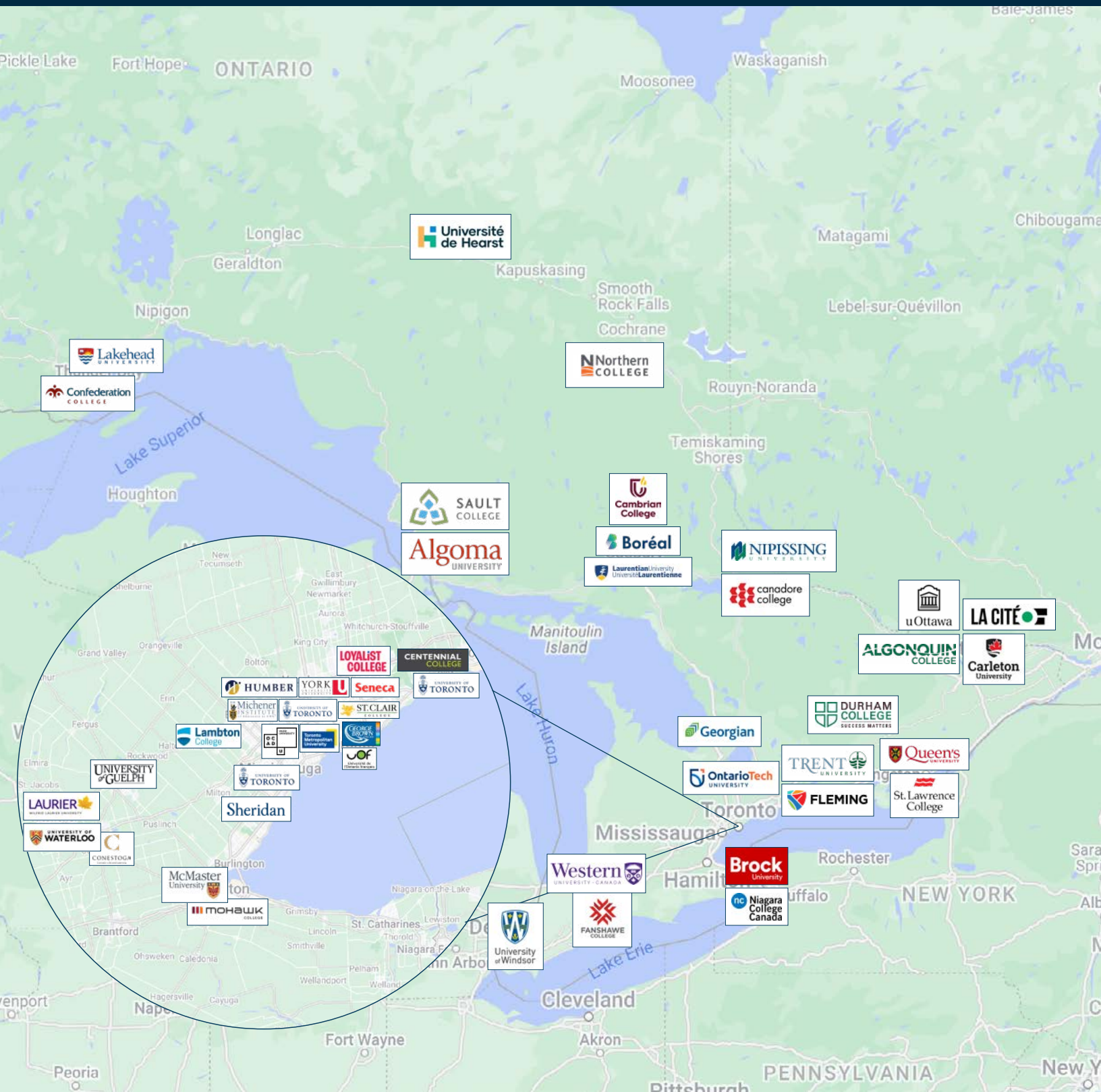


Figure QC9: Total Government Student Aid, by Type of Aid, as a Percentage of Gross Domestic Product, Canada, 2011-12 to 2022-23



PROVINCIAL PROFILE

Ontario



STUDENTS

Enrolments in Ontario colleges and universities have doubled in the last 22 years, a pace much faster than the national average. International student numbers in Ontario universities are modestly behind national trends; however, in the college sector international student numbers are well above national trends, with more than a third of all students in the system being from outside Canada in 2023.

Figure ON1: Total Postsecondary Enrolments by Sector, Ontario, 2000-01 to 2022-23

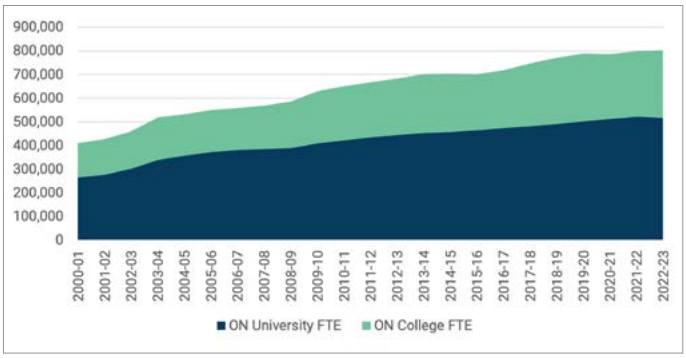


Figure ON2: Total Postsecondary Enrolments by Sector, Canada, 2000-01 to 2022-23

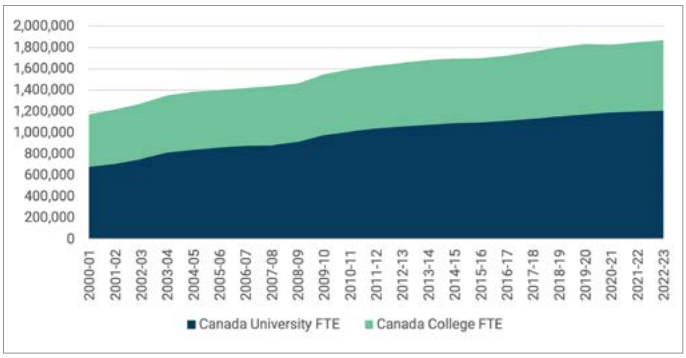


Figure ON3: International Students as a Percentage of Total College Enrolments, Canada vs. Ontario, 2000-01 to 2021-22

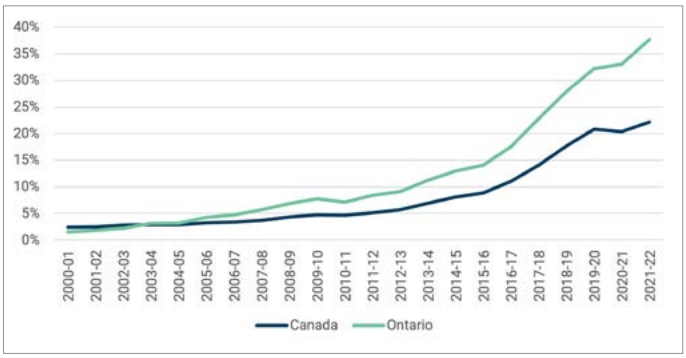
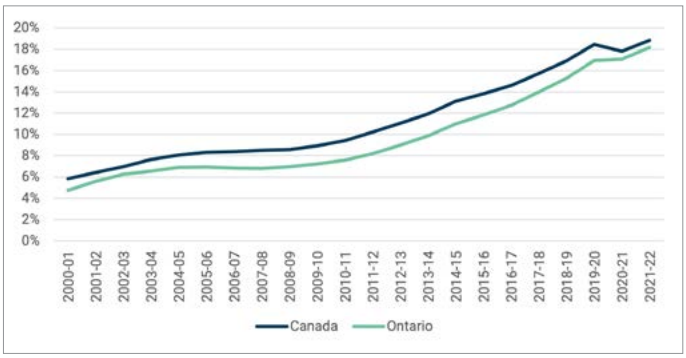


Figure ON4: International Students as a Percentage of Total University Enrolments, Canada vs. Ontario, 2000-01 to 2021-22



INSTITUTIONAL INCOME

Ontario institutions have posted strong total income growth since 2000, even as income from government has steadily declined since 2010. Income from non-government sources take up two thirds of the total income, which are the highest in the country. This permits institutions in Ontario to have per-student incomes close to the national average even though public funding is the weakest in the country by a considerable distance.

Figure ON5: Total University and College Income by Source, Ontario, 2001-02 to 2022-23 in Billions, in $2022

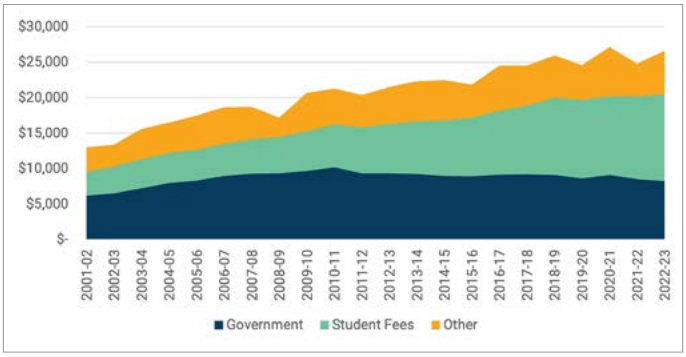
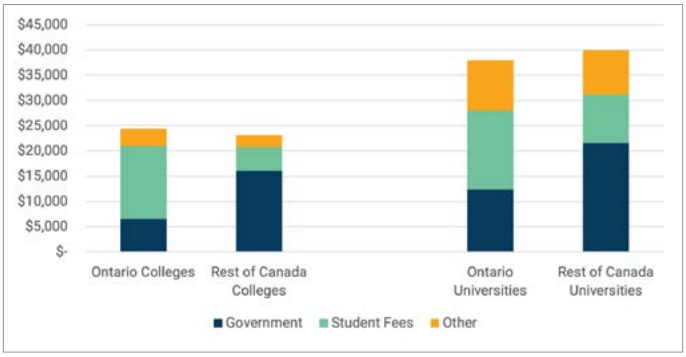


Figure ON6: Total Income Per FTE Student, by Source and Type of Institution, Canada vs. Ontario, 2022-23



TUITION AND STUDENT AID

Undergraduate tuition fees in Ontario were the highest in the country in 2018 but have fallen substantially in real terms. The student aid system is larger as a percentage of GDP than it is in most other provinces, precisely because it needs to cover higher tuition fees. The province has had a few major system changes in the last decade, becoming significantly more generous with grants under Premier Wynne (almost eliminating provincial loans at one point) and then less generous under Premier Ford.

Figure ON7: University Undergraduate Tuition and Additional Fees, Canada vs. Ontario, 2006-07 to 2023-24, in $2023

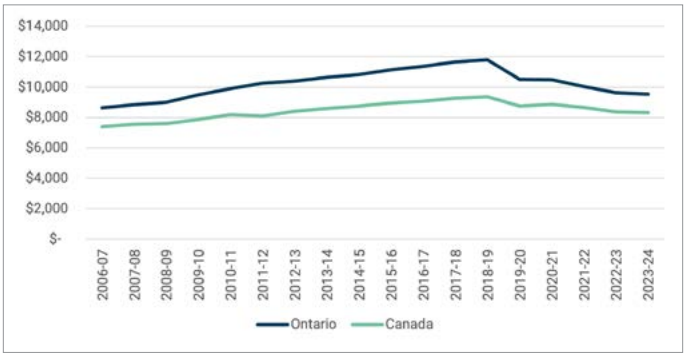


Figure ON8: Percentage of Total Financial Aid Supplied by the Province, by Type of Aid, 2011-12 to 2022-23

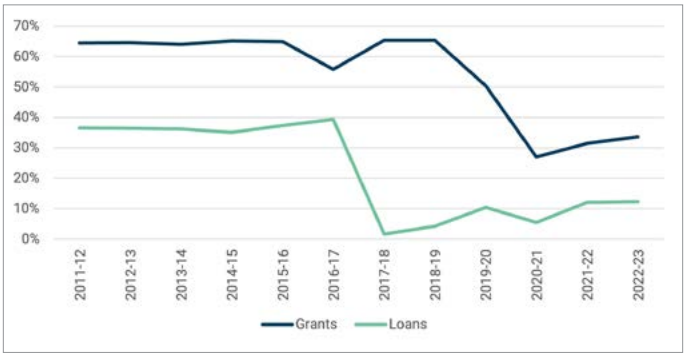


Figure ON9: Total Government Student Aid, by Type of Aid, as a Percentage of Gross Domestic Product, Ontario, 2011-12 to 2022-23

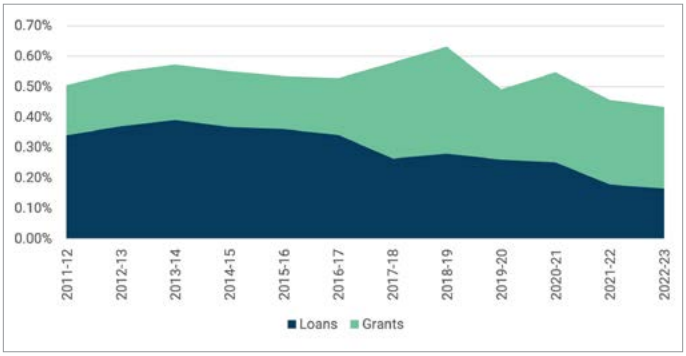
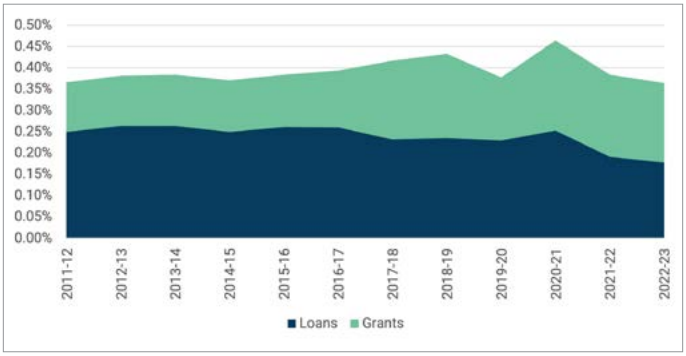
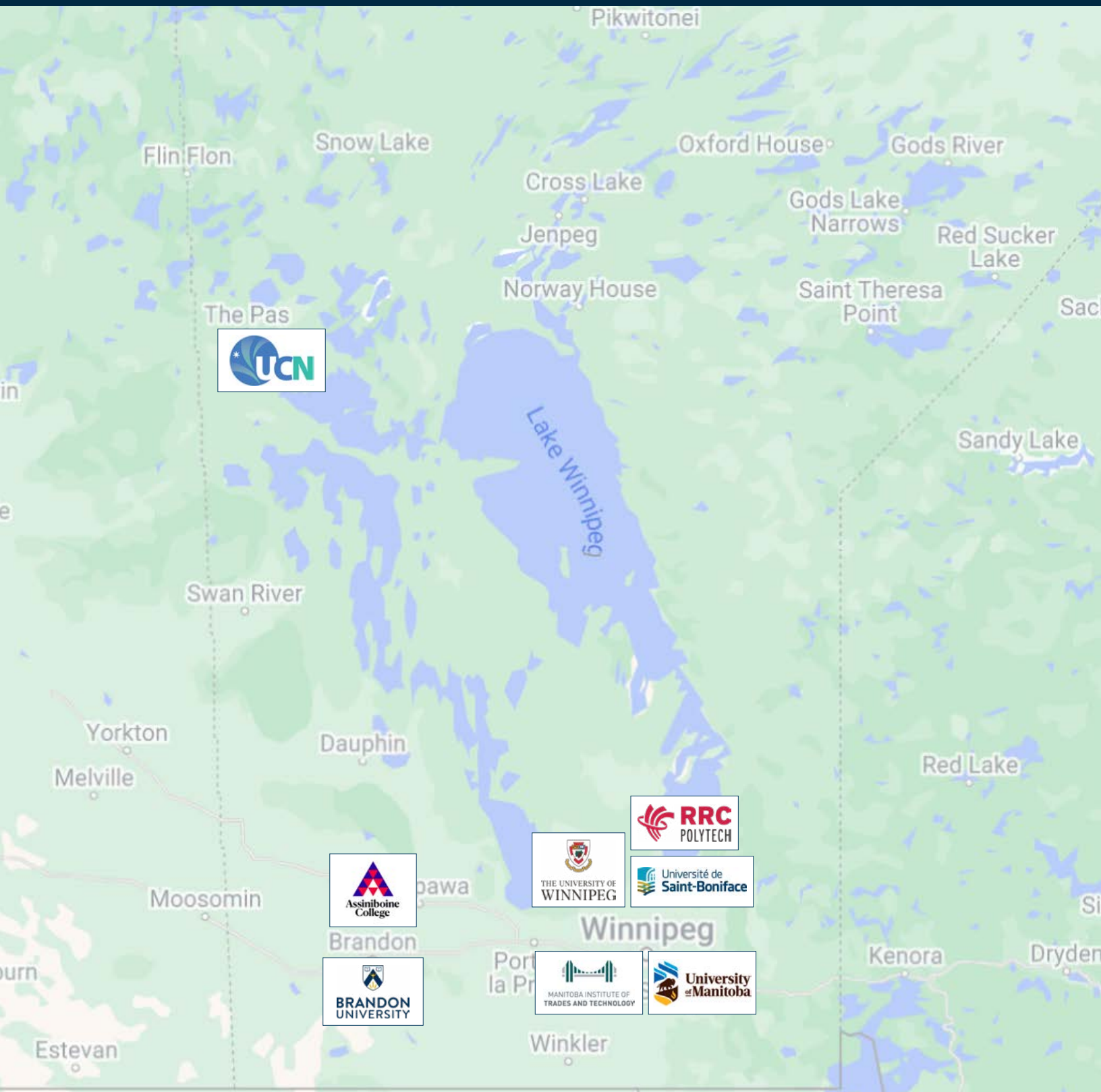


Figure ON10: Total Government Student Aid, by Type of Aid, as a Percentage of Gross Domestic Product, Canada, 2011-12 to 2022-23



PROVINCIAL PROFILE

Manitoba



STUDENTS

Enrolments in Manitoba postsecondary institutions have risen by over 50% over the past two decades. This growth excludes a major increase in recorded college enrolment that is mainly due to a change in methodology from Statistics Canada. International enrolment has also risen in recent years, in line with national trends.

Figure MB1: Total Postsecondary Enrolments by Sector, Manitoba, 2000-01 to 2022-23

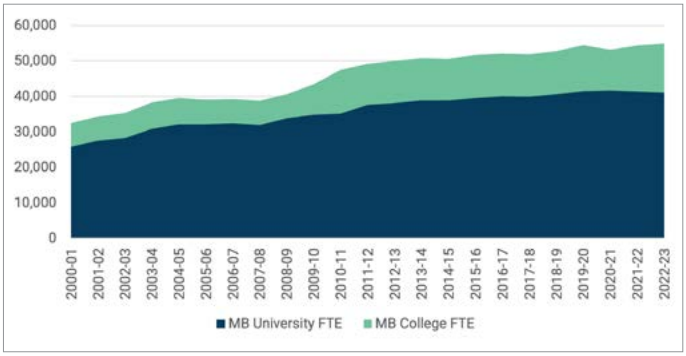


Figure MB2: Total Postsecondary Enrolments by Sector, Canada, 2000-01 to 2022-23

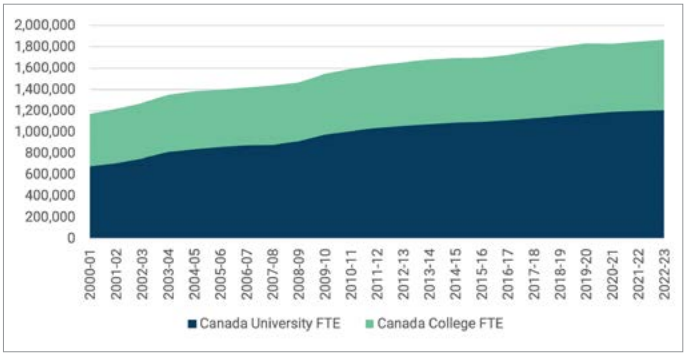


Figure MB3: International Students as a Percentage of Total College Enrolments, Canada vs. Manitoba, 2000-01 to 2021-22

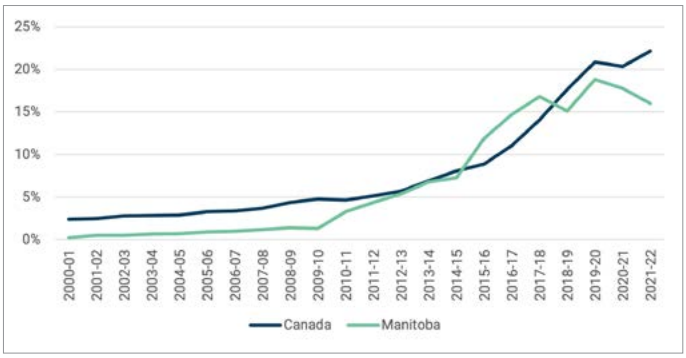
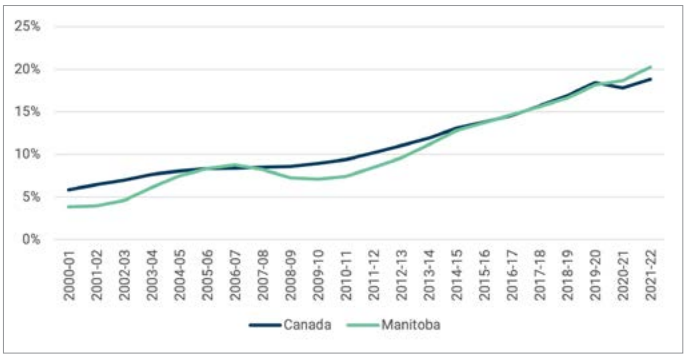


Figure MB4: International Students as a Percentage of Total University Enrolments, Canada vs. Manitoba, 2000-01 to 2021-22



INSTITUTIONAL INCOME

Following national trends, Manitoba postsecondary institutions saw stronger income growth in the 00s than in the 10s, mainly because provincial government expenditures ceased growing in real terms around 2011. Manitoba colleges have per-student income above the national average, while university per-student income is somewhat below the average. At the college level the gap is due to better per-student funding from government; at the university level it is because of lower than national average per-student fee revenue.

Figure MB5: Total University and College Income by Source, Manitoba, 2001-02 to 2022-23 in Billions, in $2022

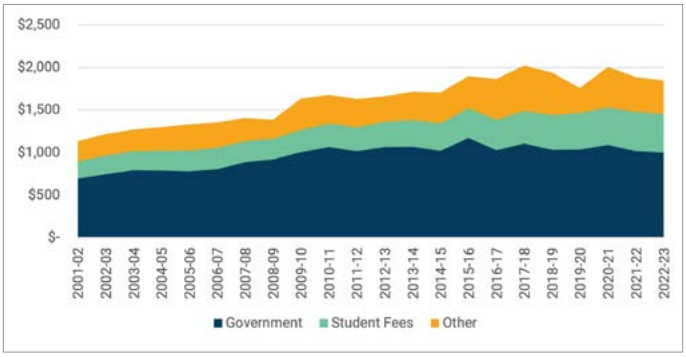
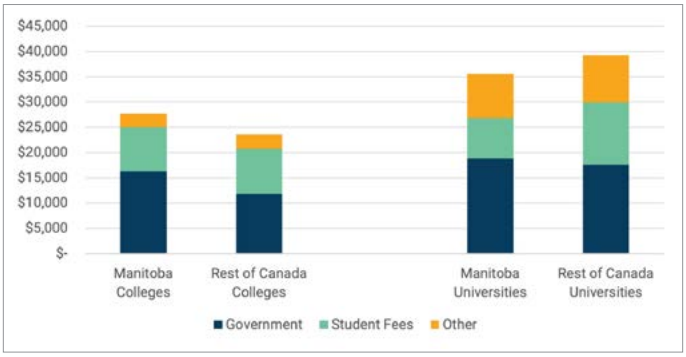


Figure MB6: Total Income Per FTE Student, by Source and Type of Institution, Canada vs. Manitoba, 2022-23



TUITION AND STUDENT AID

Manitoba's undergraduate tuition fees are among the lowest in the country. Manitoba student aid has a similar loan-grant mix to the rest of the country but has lower levels of expenditures both because tuition is moderate, and because most students live and study in Winnipeg, this reduces overall student costs and thus the amount aid is required.

Figure MB7: University Undergraduate Tuition and Additional Fees, Canada vs. Manitoba, 2006-07 to 2023-24, in $2023

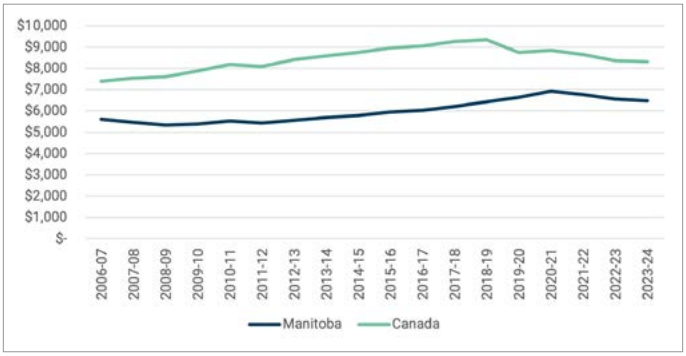


Figure MB8: Percentage of Total Financial Aid Supplied by the Province, by Type of Aid, 2011-12 to 2022-23

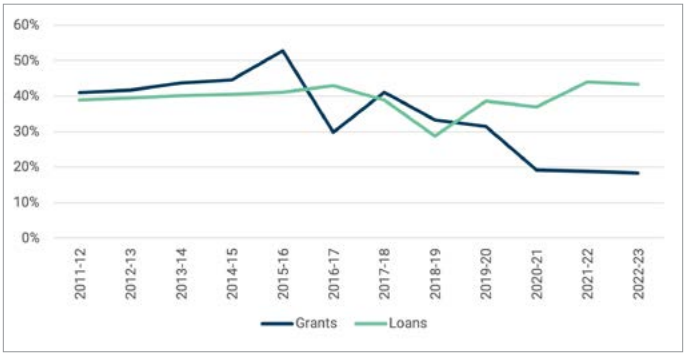


Figure MB9: Total Government Student Aid, by Type of Aid, as a Percentage of Gross Domestic Product, Manitoba, 2011-12 to 2022-23

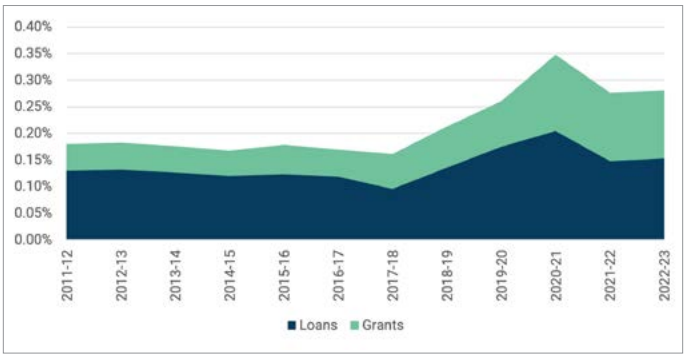
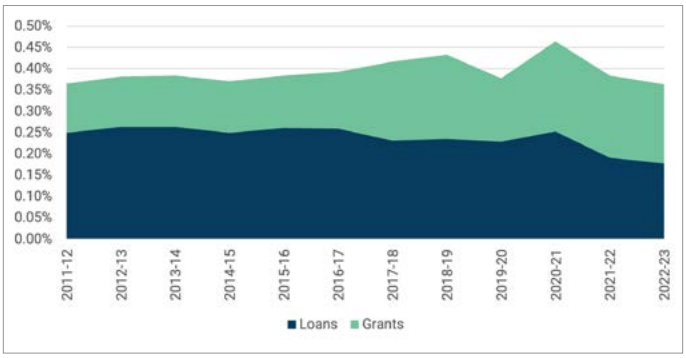
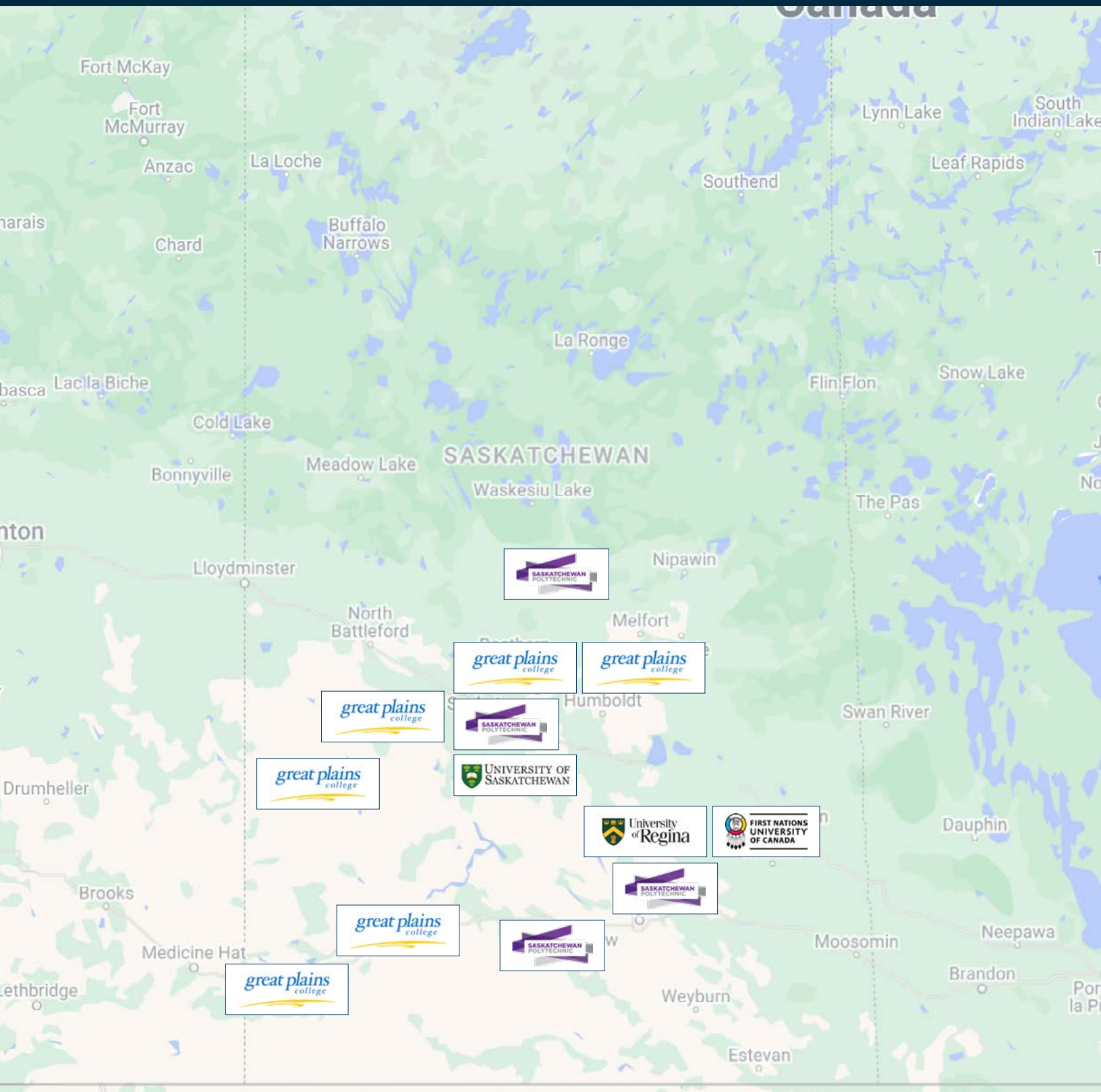


Figure MB10: Total Government Student Aid, by Type of Aid, as a Percentage of Gross Domestic Product, Canada, 2011-12 to 2022-23



PROVINCIAL PROFILE

Saskatchewan



STUDENTS

Enrolments in Saskatchewan have risen slowly over the past two decades, excluding the large jump in college enrolments in 2006 which are primarily the product of a methodological change at Statistics Canada. International enrolments are well behind the national average for colleges but closer to the average in the university sector.

Figure SK1: Total Postsecondary Enrolments by Sector, Saskatchewan, 2000-01 to 2022-23

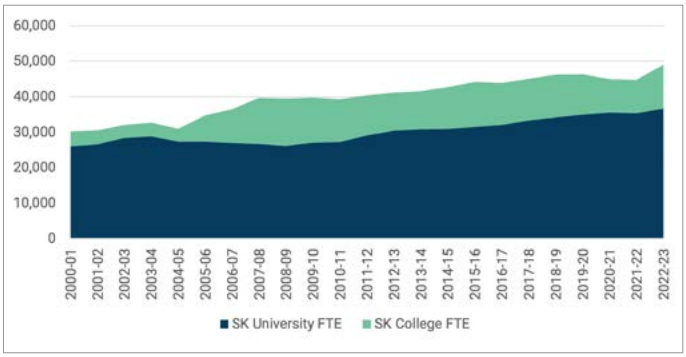


Figure SK2: Total Postsecondary Enrolments by Sector, Canada, 2000-01 to 2022-23

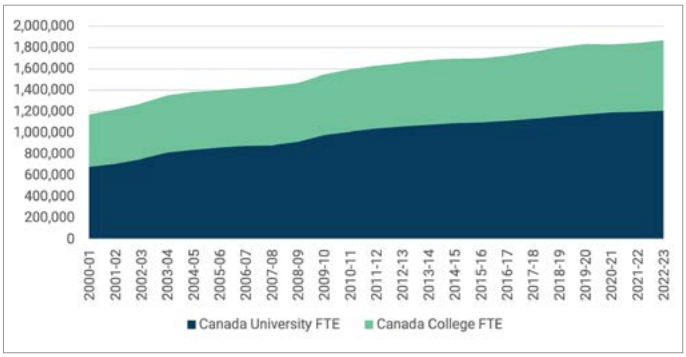


Figure SK3: International Students as a Percentage of Total College Enrolments, Canada vs. Saskatchewan, 2000-01 to 2021-22

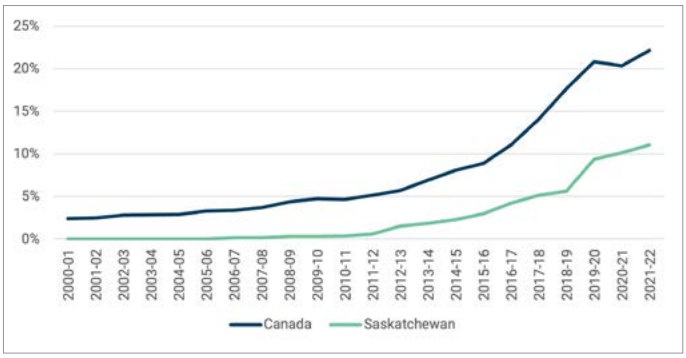
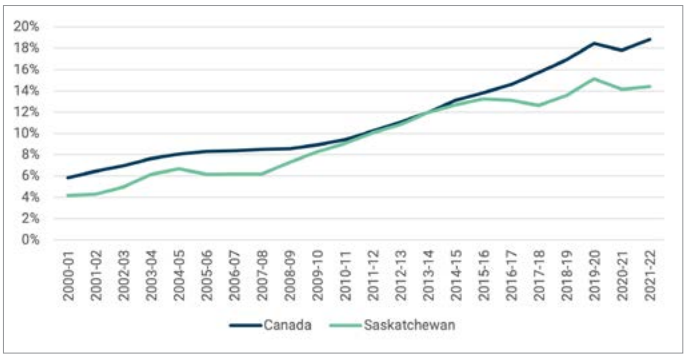


Figure SK4: International Students as a Percentage of Total University Enrolments, Canada vs. Saskatchewan, 2000-01 to 2021-22



INSTITUTIONAL INCOME

As in much of the country, Saskatchewan postsecondary institutions saw stronger income growth in the 00s than in the 10s, mainly because provincial government expenditures ceased growing in real terms around 2008. Both universities and colleges in Saskatchewan have above-average per-student revenues, which is almost entirely driven by above-average revenues from government.

Figure SK5: Total University and College Income by Source, Saskatchewan, 2001-02 to 2022-23 in Billions, in $2022

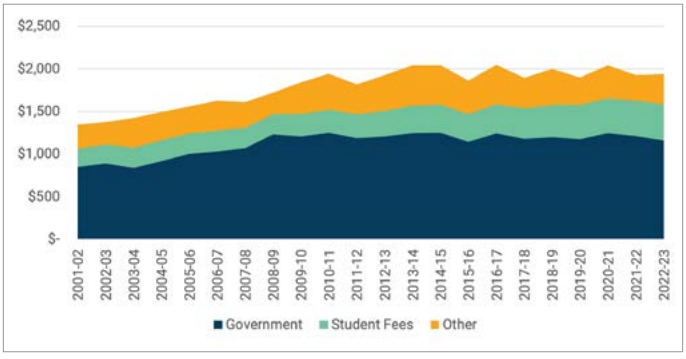
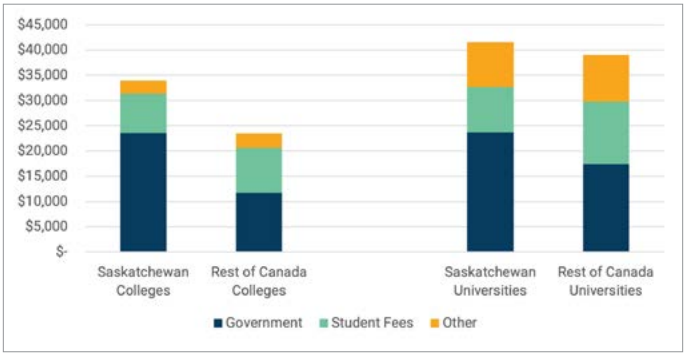


Figure SK6: Total Income Per FTE Student, by Source and Type of Institution, Canada vs. Saskatchewan, 2022-23



TUITION AND STUDENT AID

Undergraduate tuition fees in Saskatchewan are close to the national average. Student aid as a percentage of the economy has been rising in recent years, but this is more due to federal efforts than provincial ones, as provincial grant aid has eroded over time.

Figure SK7: University Undergraduate Tuition and Additional Fees, Canada vs. Saskatchewan, 2006-07 to 2023-24, in $2023

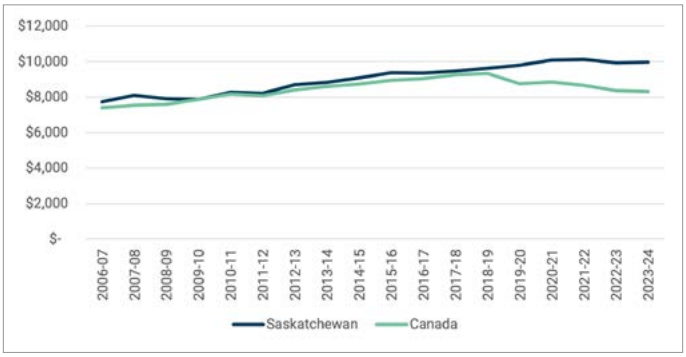


Figure SK8: Percentage of Total Financial Aid Supplied by the Province, by Type of Aid, 2011-12 to 2022-23

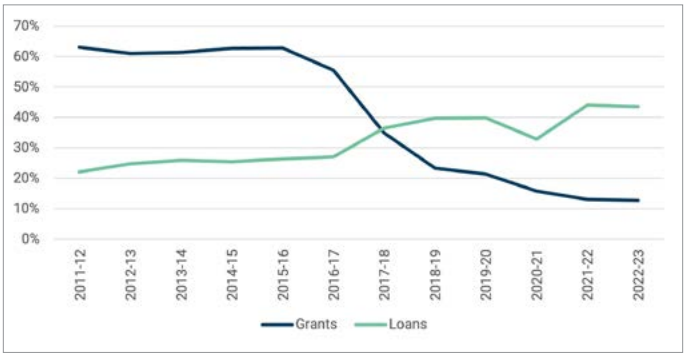


Figure SK9: Total Government Student Aid, by Type of Aid, as a Percentage of Gross Domestic Product, Saskatchewan, 2011-12 to 2022-23

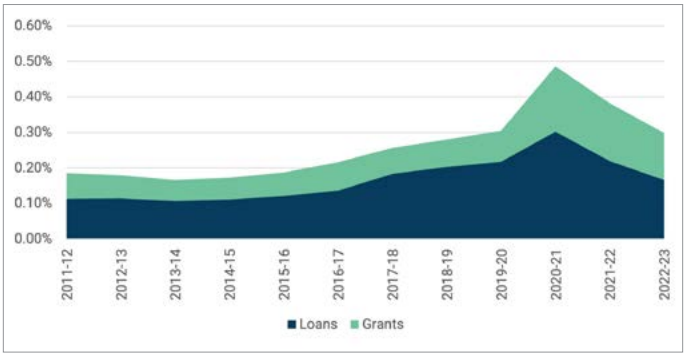
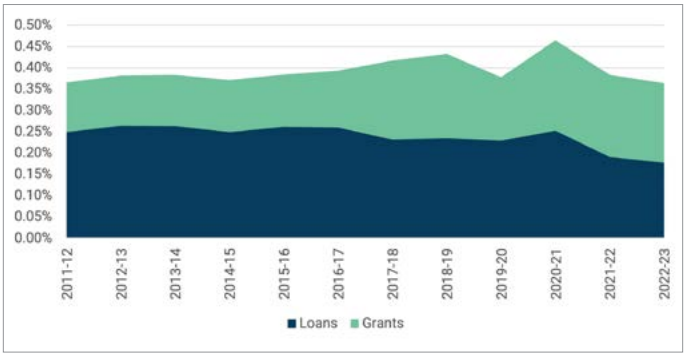
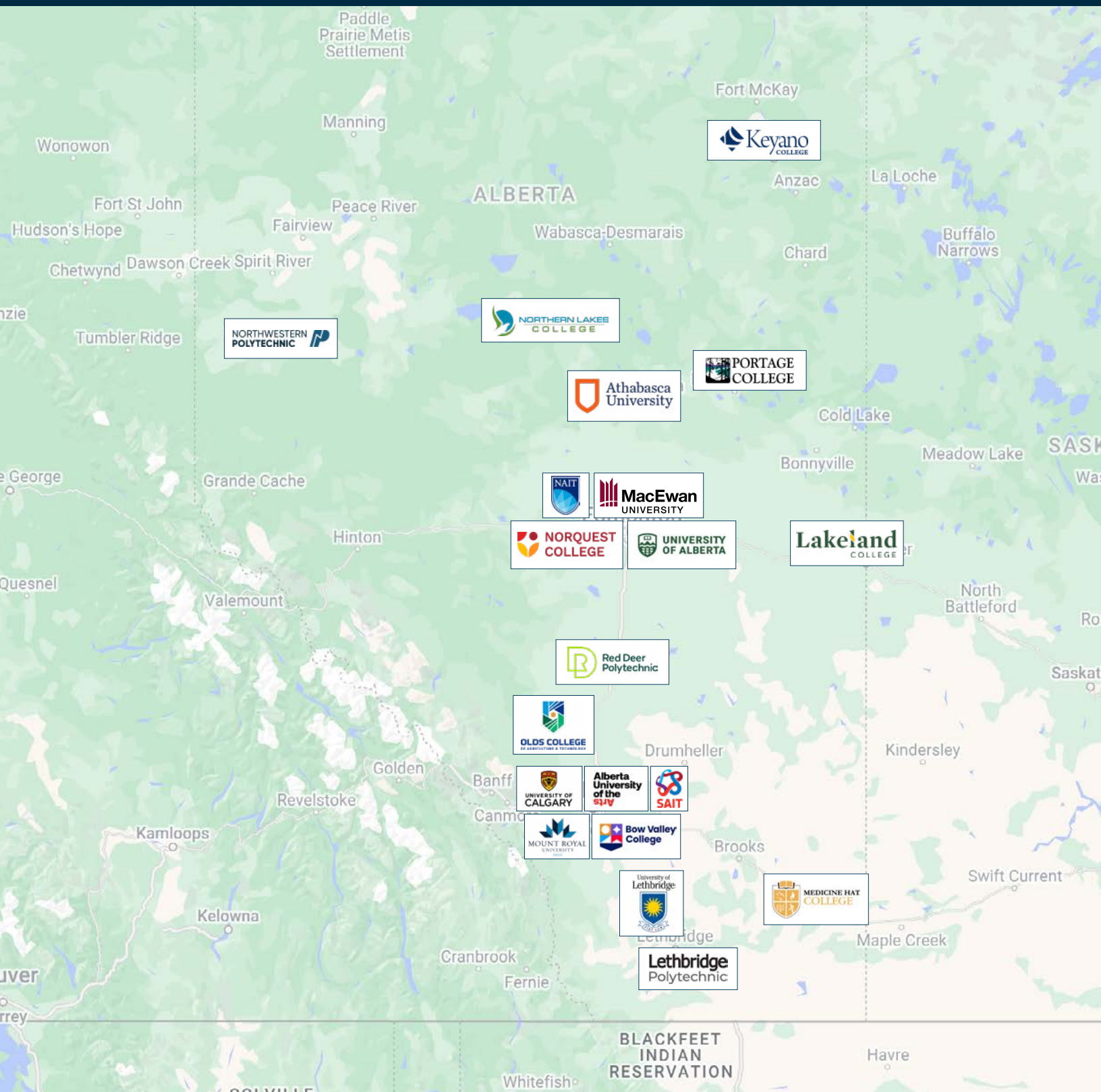


Figure SK10: Total Government Student Aid, by Type of Aid, as a Percentage of Gross Domestic Product, Canada, 2011-12 to 2022-23



PROVINCIAL PROFILE

Alberta



STUDENTS

Enrolment growth in Alberta outpaced the national growth over the past two decades, more so at the university than the college level because two institutions – Mount Royal and Grant MacEwan – changed status from college to university in 2008. International students are a smaller proportion of the student body at both the college and university levels in Alberta compared to the rest of the country.

Figure AB1: Total Postsecondary Enrolments by Sector, Alberta, 2000-01 to 2022-23

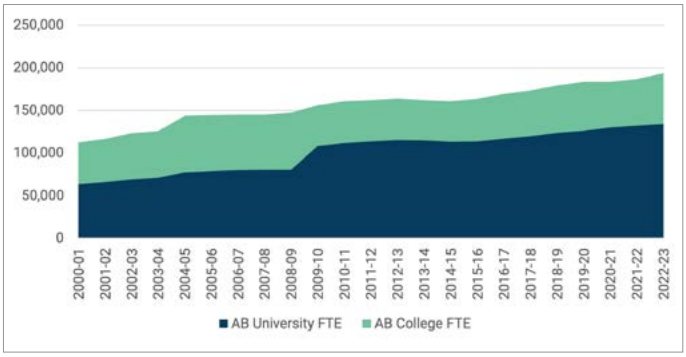


Figure AB2: Total Postsecondary Enrolments by Sector, Canada, 2000-01 to 2022-23

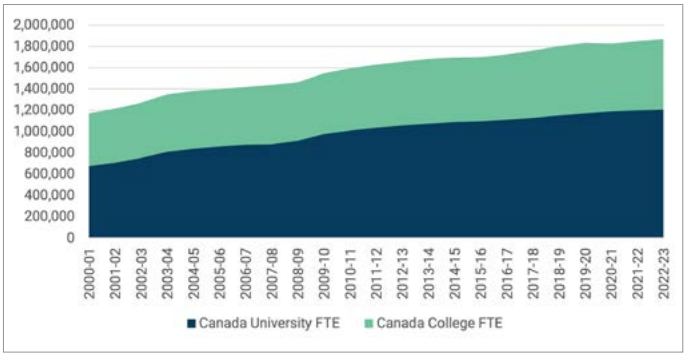


Figure AB3: International Students as a Percentage of Total College Enrolments, Canada vs. Alberta, 2000-01 to 2021-22

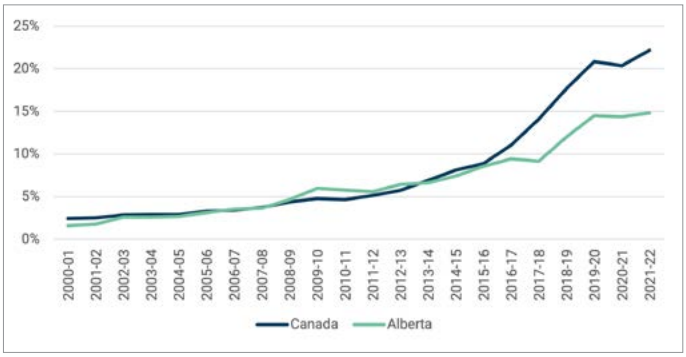
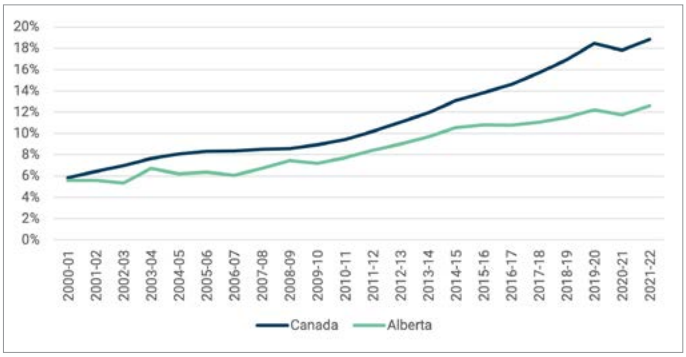


Figure AB4: International Students as a Percentage of Total University Enrolments, Canada vs. Alberta, 2000-01 to 2021-22



INSTITUTIONAL INCOME

Alberta universities per-student income patterns have declined in comparison to the rest of Canada, and Alberta colleges are substantially better-funded than the national average, which is mainly due to higher public funding. Government funding hit a peak in 2008 and has steadily declined ever since.

Figure AB5: Total University and College Income by Source, Alberta, 2001-02 to 2022-23 in Billions, in $2022

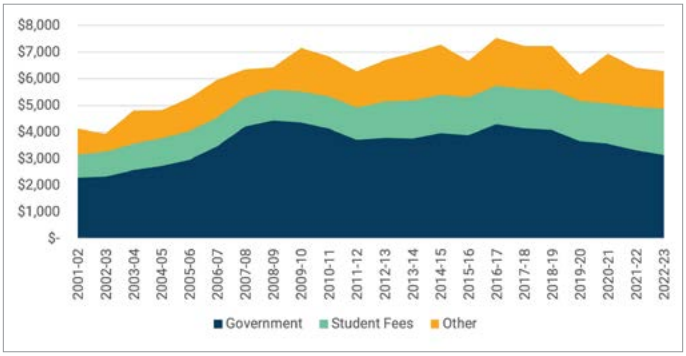
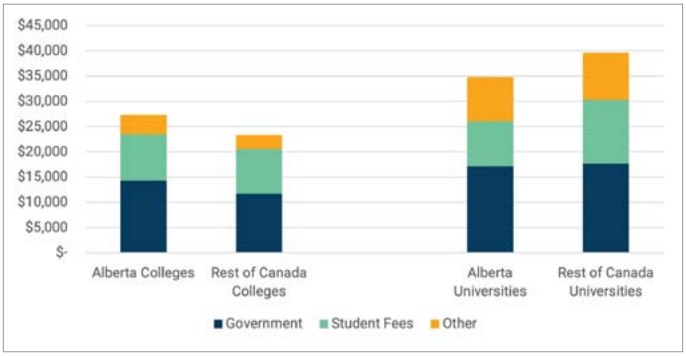


Figure AB6: Total Income Per FTE Student, by Source and Type of Institution, Canada vs. Alberta, 2022-23



TUITION AND STUDENT AID

Undergraduate tuition fees in Alberta are relatively close to the national average. Alberta student aid is more loan-reliant than other provinces, mainly due to policies which permit dependent students to borrow without reference to parental income.

Figure AB7: University Undergraduate Tuition and Additional Fees, Canada vs. Alberta, 2006-07 to 2023-24, in $2023

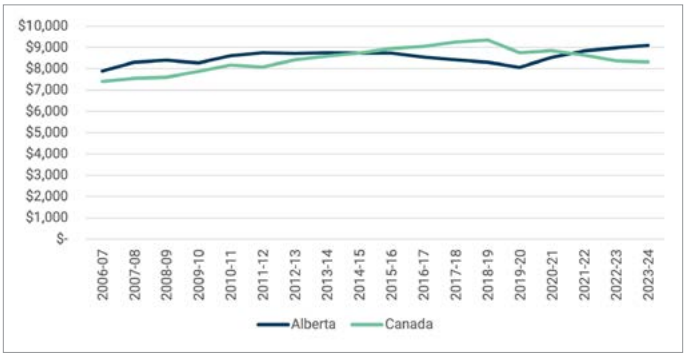


Figure AB8: Percentage of Total Financial Aid Supplied by the Province, by Type of Aid, 2011-12 to 2022-23

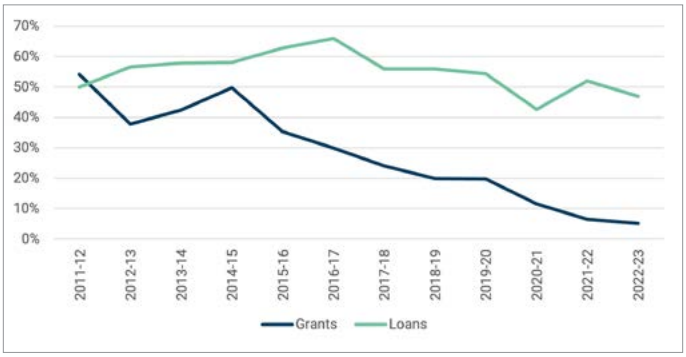


Figure AB9: Total Government Student Aid, by Type of Aid, as a Percentage of Gross Domestic Product, Alberta, 2011-12 to 2022-23

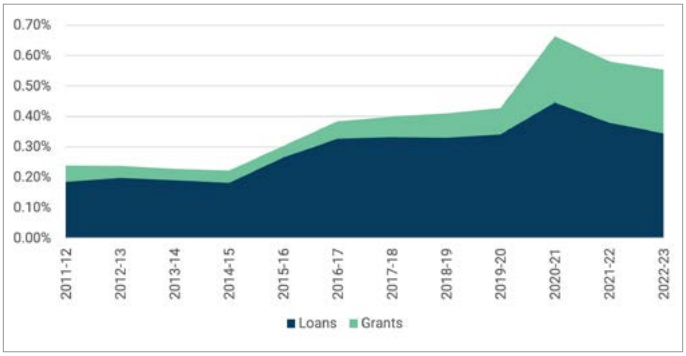
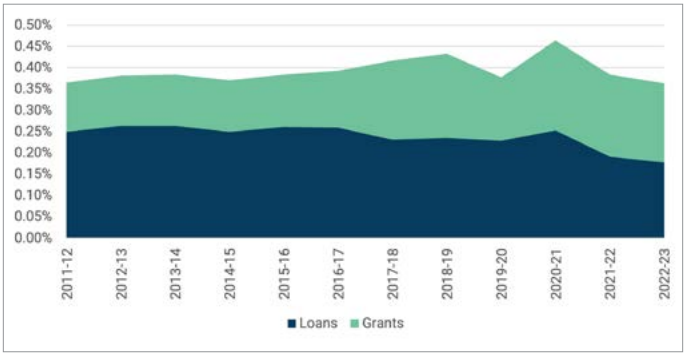
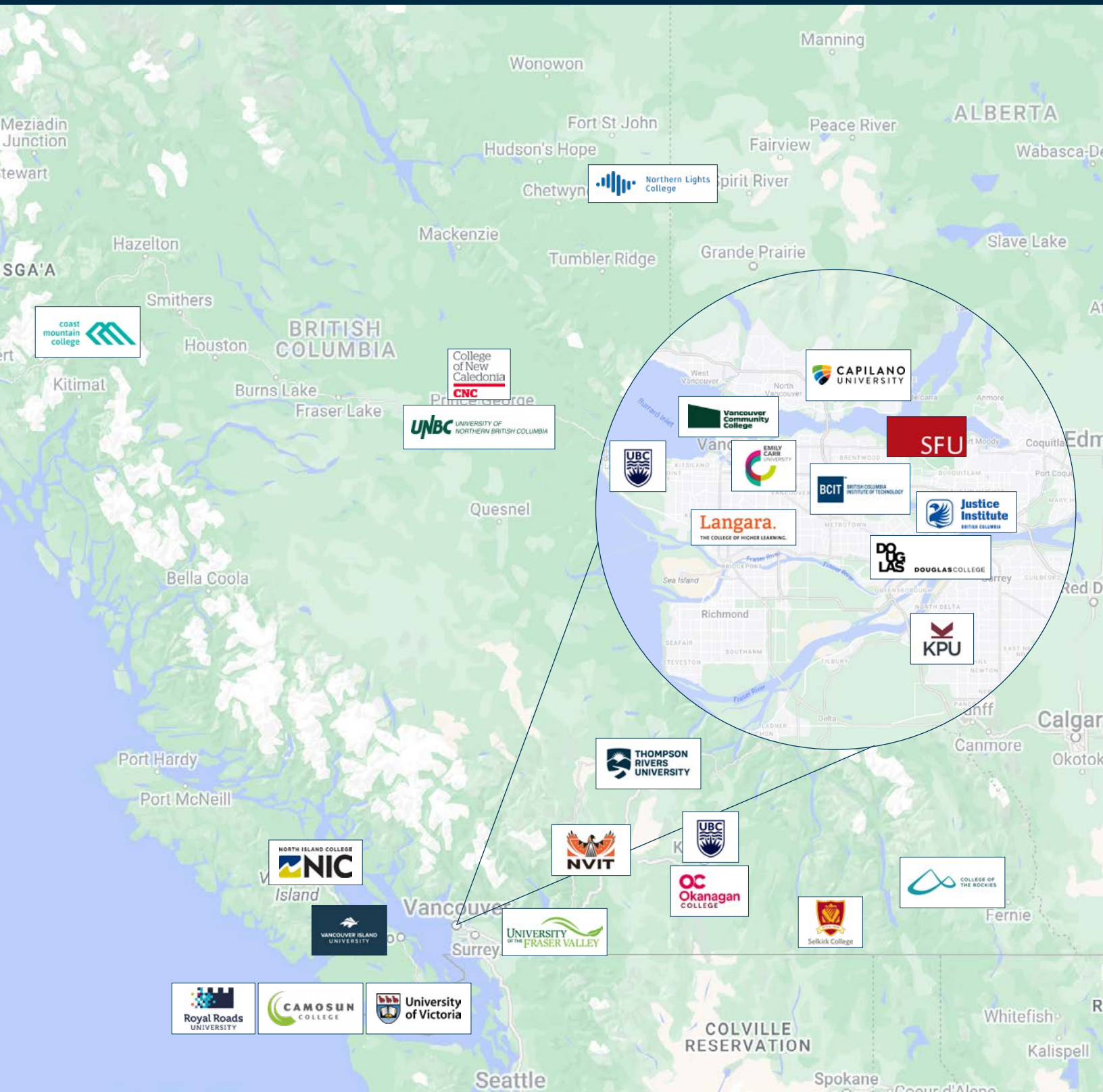


Figure AB10: Total Government Student Aid, by Type of Aid, as a Percentage of Gross Domestic Product, Canada, 2011-12 to 2022-23



PROVINCIAL PROFILE

British Columbia



STUDENTS

Enrolment growth in British Columbia matched the rest of the country over the past two decades. With the transition of several institutions from one status to the other in the mid-200s, the university numbers have grown more than the college ones.

Both the college and university sectors are more reliant on international students than the national average.

Figure BC1: Total Postsecondary Enrolments by Sector, British Columbia, 2000-01 to 2022-23

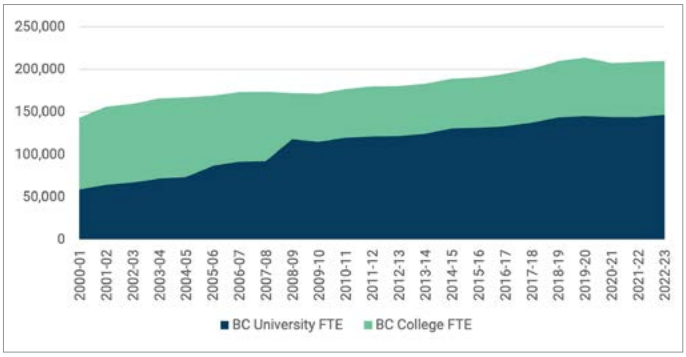


Figure BC2: Total Postsecondary Enrolments by Sector, Canada, 2000-01 to 2022-23

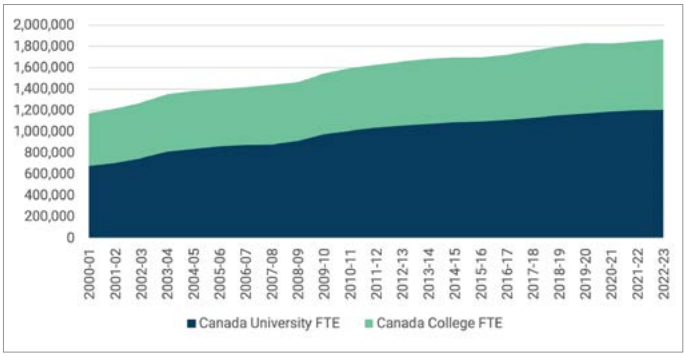


Figure BC3: International Students as a Percentage of Total College Enrolments, Canada vs. British Columbia, 2000-01 to 2021-22

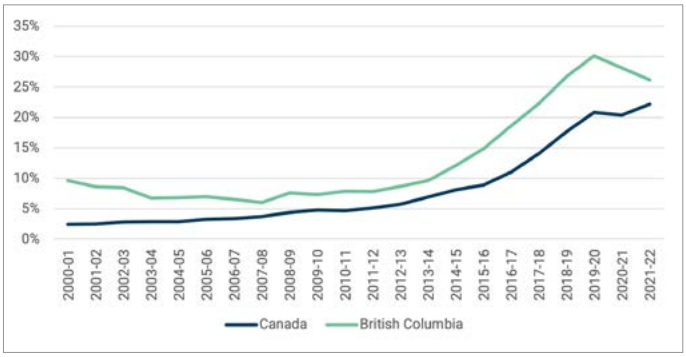
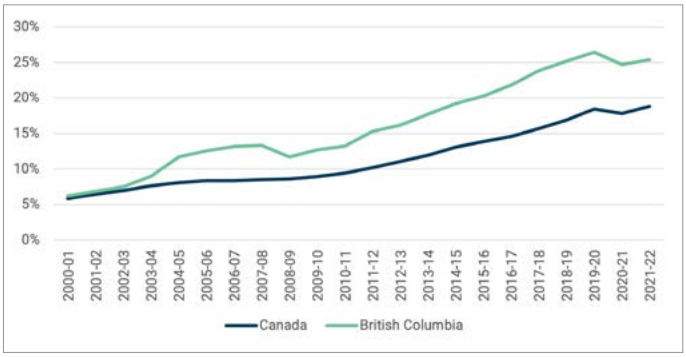


Figure BC4: International Students as a Percentage of Total University Enrolments, Canada vs. British Columbia, 2000-01 to 2021-22



INSTITUTIONAL INCOME

Funding for British Columbia postsecondary institutions has increased relatively steadily over the past two decades, which is unlike most other provinces. This is due to multiple factors, as the provincial colleges and universities have above-average per-student revenues from governments, student fees, and other self-generated revenues.

Figure BC5: Total University and College Income by Source, British Columbia, 2001-02 to 2022-23 in Billions, in $2022

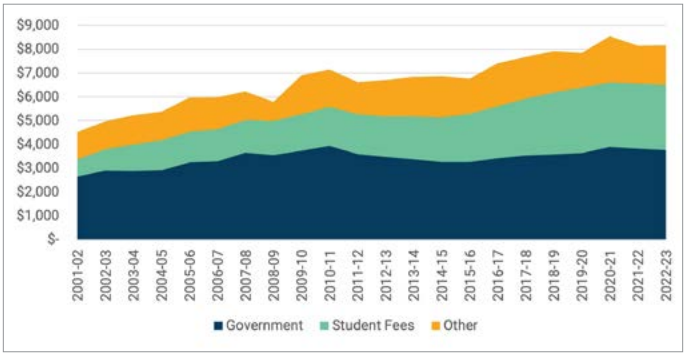
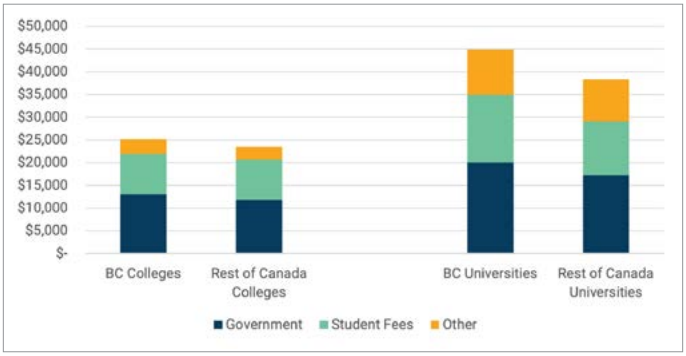


Figure BC6: Total Income Per FTE Student, by Source and Type of Institution, Canada vs. British Columbia, 2022-23



TUITION AND STUDENT AID

Undergraduate tuition fees in British Columbia are below the national average. Overall, student aid – in particular loans – was declining as a percentage of gross domestic product until the COVID bump of 2020, and the downward trend continues following 2020.

Figure BC7: University Undergraduate Tuition and Additional Fees, Canada vs. British Columbia, 2006-07 to 2023-24, in $2023

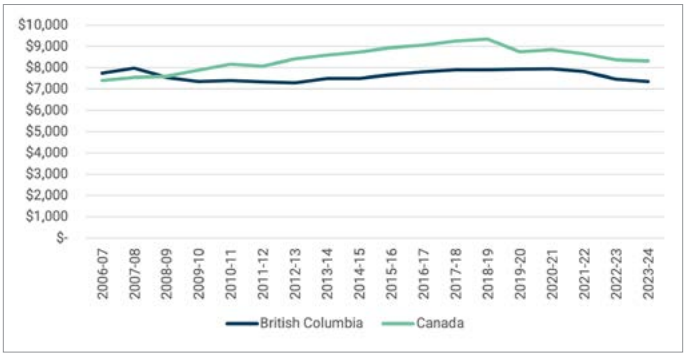


Figure BC8: Percentage of Total Financial Aid Supplied by the Province, by Type of Aid, 2011-12 to 2022-23

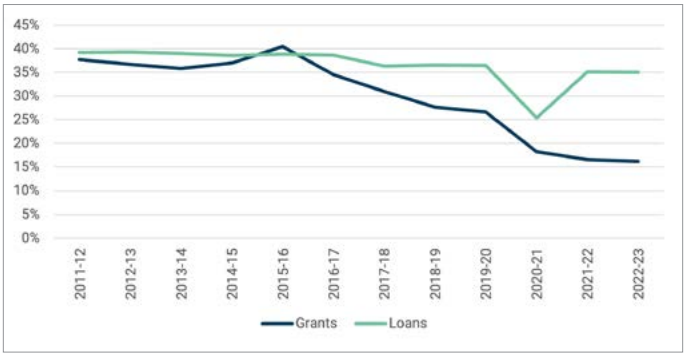


Figure BC9: Total Government Student Aid, by Type of Aid, as a Percentage of Gross Domestic Product, British Columbia, 2011-12 to 2022-23

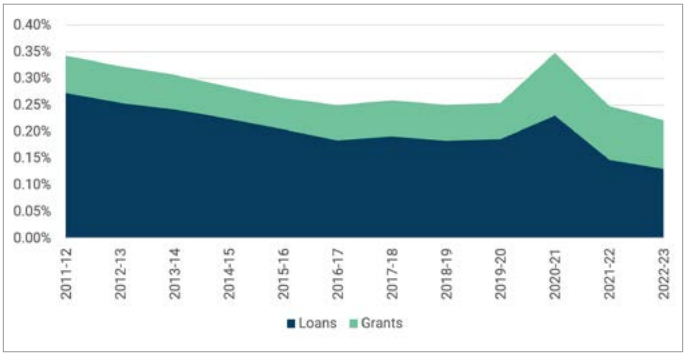
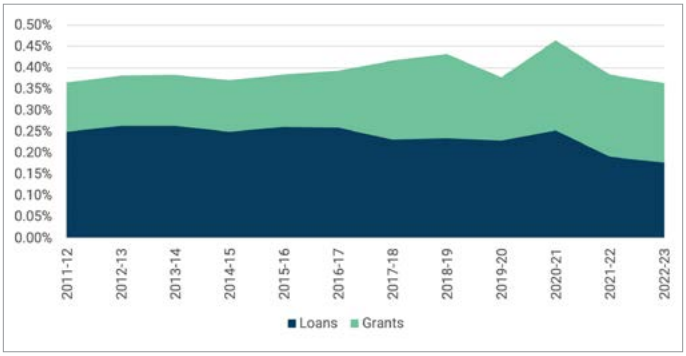


Figure BC10: Total Government Student Aid, by Type of Aid, as a Percentage of Gross Domestic Product, Canada, 2011-12 to 2022-23



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