

# The State of Postsecondary Education in Canada

2020





**Higher Education Strategy Associates (HESA)** is a Toronto-based firm providing strategic insight and guidance to governments, postsecondary institutions, and agencies through excellence and expertise in policy analysis, monitoring and evaluation, and strategic consulting services. Through these activities, HESA strives to improve the quality, efficacy, and fairness of higher education systems in Canada and worldwide.

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# ABOUT THIS SERIES

**D**ESPITE 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 this series from Higher Education Strategy Associates is to change that.

Canada's higher education data challenges stem in part from the decentralized nature of our federal system, but in truth, 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 in general 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).

Ours is not the first attempts have been made to present this kind of data. Until 2016, the Canadian Association of University Teachers (CAUT), for instance, put out an invaluable annual "almanac" (and continues to update the data on its website even if the almanac itself is not published in its old form), but the data has a profound university skew and tends to be presented in tabular form rather than through more intuitive graphics. Universities Canada has over the years put together some good publications on the state of the system, but these have become rarer as of late and in any case also largely miss the colleges and polytechnics. The Council of Ministers of Education, Canada (CMEC) has an irregularly-published system of "Education Indicators" but these are more focused on education as a whole rather than on postsecondary and fall prey to the same preference for tables over graphs. Statistics Canada produces a great deal of data (if not always very promptly), but does very little to help people interpret it.

It was for this reason that 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 2020 edition updates data from the previous editions, including detailing trends in student and staff numbers and looking at how the system is financed. This year, we have augmented our coverage of these issues by adding some international comparisons and in a couple of instances new or more detailed data on Canadian students and academic staff. This edition also features a new Chapter 6 that provides new details on credential attainment rates and outcomes.

We hope that by putting all this information in a handy and convenient format, and 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](mailto:info@higheredstrategy.com).

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# INTRODUCTION

**T**HE STATE OF POSTSECONDARY EDUCATION IN CANADA in 2020 is more fragile than it has been in decades. Part of the problem, of course, is COVID. But part of the problem is the increasing dependence on international student fees as a source of income, something for which governments and institutions can share the blame.

The story, simply told, is this. In the aftermath of the 2008 recession, government support for postsecondary education stalled. There were no cuts, but, after inflation, no increases either. However, domestic students continued to stream into the system (at least until 2013), and costs continued to rise, due to student and faculty demands (more student services, better IT), rising wage costs (made significantly worse by the end of mandatory retirement), and the usual process of institutions wanting to improve their programs and infrastructure. The result was a growing gap between institutional costs and government support.

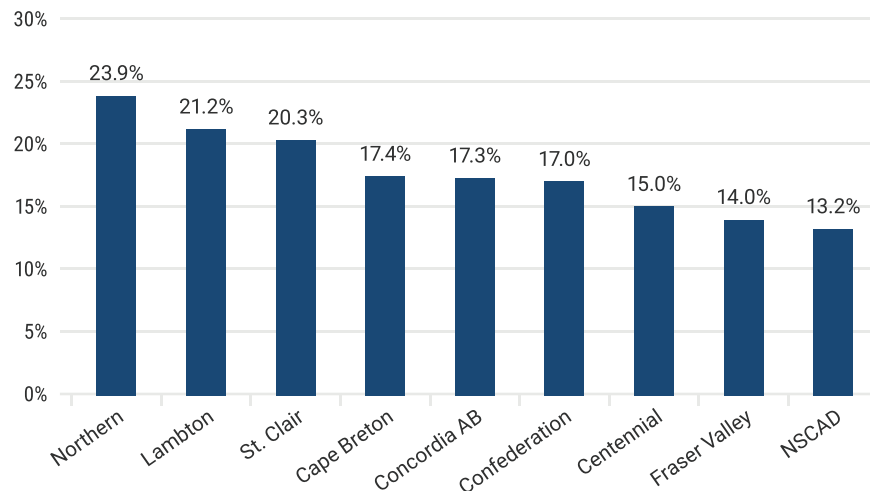
This gap was mainly covered by income from student fees, and over the past five years almost exclusively from international students. Since the start of the 2008 recession, international student numbers have more than tripled; and at the university level, the gap between domestic and international student fees has risen inex-

orably as well. These factors combined to make international students a prime source of money for Canadian colleges and universities. From 2007-08 to 2018-19, international fees grew from \$1.5 billion to \$6.9 billion (both figures in 2019 dollars), and from 4% to 13% of total system income.

The system became addicted to the money that international students represented, though not to the same degree. In Quebec and Atlantic Canada, international students make up roughly 20% of enrollments, while in Ontario west to British Columbia, the proportion is less than 15 percent. At the college level, international students make up over 27% of enrollments, while in Quebec they represent only about 3%. One university and a handful of colleges are now composed of more than 50% international students, while dozens of others have less than 10%.

But for those institutions that partook in the feast, the results were phenomenal. Since 2012-13, funds from international students have covered slightly more than 100% of the collective increase in operating budgets. Every faculty member at every institution who saw their pay rise in the last five years did so because of international students. All the new student services and IT

*Figure 1 – Top Ten Canadian Postsecondary Institutions, by Operating Margins, 2018-19*



personnel who were hired over the last five years have jobs thanks to international students.

Surpluses have piled up at institutions across the country. Some institutions saw their net margins (that is, the surplus of income over expenditures) grow well into double-digits. **Figure 1** shows the institutions with the largest net surpluses (that is, income net of donations minus total expenditures, as a percentage of total expenditures) in percentage. Most of the institutions on the list either have student bodies composed of over 25% international students or have recently seen increases of 50%+ in their international student numbers. Because Figure 1 is in percentage terms to facilitate comparison, it misses some institutions with very large absolute surpluses, but which are not quite this large in percentage terms. For instance, Western’s margin in 2018 was \$113 million, UBC’s was \$136 million, York’s was \$156 million, and Toronto’s was an eye-popping \$403 million, or about \$10 million more than the entire budget of Wilfrid Laurier University.

And then came COVID.

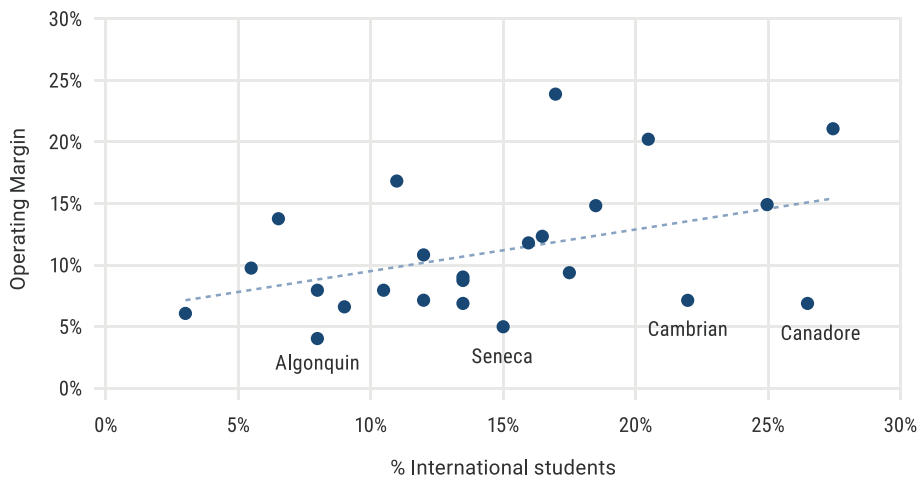
From fairly early on in the crisis, when Canadian institutions swiftly and decisively announced their plans to move most of their fall activities online, it was clear that there was a significant threat of revenue loss. Not so much with domestic students, who did not have a lot of

other options with respect to their fall plans (claims that many would take a gap year were never serious when neither working nor travelling were viable options), but specifically with respect to international students. How likely was it that current students would continue to pay premium prices if they had to study online? How easy would it be to recruit new international students if no international study visas were forthcoming and there was no prospect of entering Canada until January at the earliest?

At the time of writing (Labour Day, 2020) we do not yet have full answers to these questions. The final date for paying tuition has not yet passed at many institutions. While we know that many institutions were hopefully noting that international applications and acceptances were more or less on target, the true story will likely not be known until early October. But it is not too early to look at which institutions might be most vulnerable to an international student “recession”.

At the college level, where campus-level public data on international student enrollment is very limited, we can only consider this question in Ontario. But this is still useful, since no part of the Canadian postsecondary sector is as dependent on international students as Ontario colleges. **Figure 2** positions each Ontario college with respect to both its operating margin (excess of revenues over expenditures) and the percentage of its

**Figure 2 – Operating Margin vs. International Student Enrollment, Ontario Colleges, 2018-19**



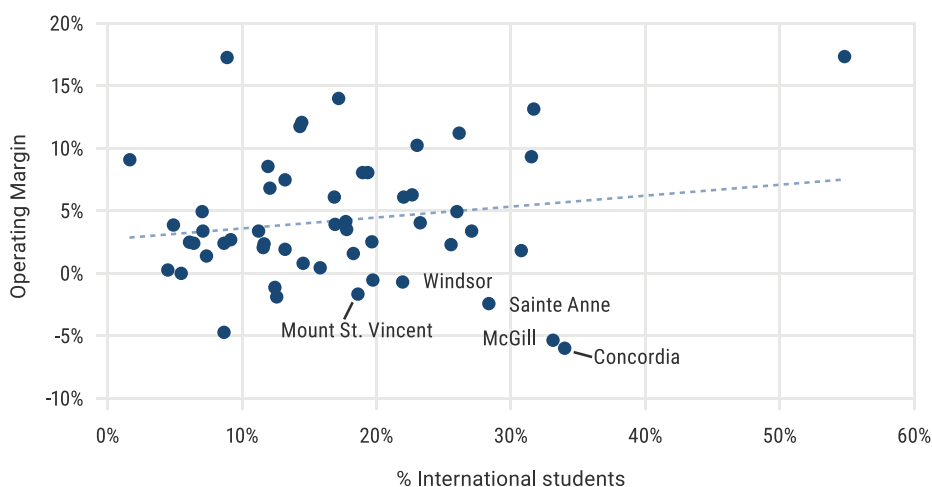
student body which is comprised of international students. Three things should be evident from this graph. First, that institutions' operating margins are positively correlated with international enrollment. Second, that overall margins are fairly high, indicating that most institutions are probably in a position to ride out one or perhaps even two semesters of reduced international enrollments. However, third, there are a number of institutions – in particular Canadore, Cambrian and Seneca, which have relatively high levels of international student enrollment, but which – in 2018-19 at least – but also relatively low levels of operating margins. These, therefore are the three institutions one might obviously expect to be most at risk from a loss of international students.

For universities we have a much more complete picture, which is shown below in **Figure 3**<sup>1</sup>. We have an extra year of international student data for most institutions. Note that overall, margins in the university sector (median = 2.8%) are far lower than they are in the Ontario college sector (median = 9%) and a significant number were operating in the red prior to COVID. It is also well to note that financial health is not as tightly correlated to international enrollments in the university sector as it is in colleges.

But most importantly, what we see is a number of institutions where universities are already operating in the red despite having international student enrollment of 20% or higher, in particular Concordia (QC), McGill, Sainte-Anne, Windsor and Mount St. Vincent. Of these, McGill's prestige means it is least likely to see a big fall in international student numbers, but at Sainte-Anne, Mount St. Vincent and Windsor in particular, the trifecta of lower prestige, weak finances and high dependence on international students means the next few months may be a time of high anxiety.

For years, international students have been the tidal force keeping the system afloat in the absence of either more government spending or concerted institutional cost-control. But as Warren Buffet once famously said, "only when the tide goes out do you discover who has been swimming naked." For Canadian higher education, COVID is the ebb tide. The system will survive, but it is not yet guaranteed that all individual institutions will do so in their current form.

**Figure 3 – Operating Margin vs. Int'l Student Enrollment, Canadian Universities, 2018-19/2019-20**



# CHAPTER ONE

## Learners

**OVER 2.5 MILLION INDIVIDUALS ARE ENROLLED IN** universities, colleges and apprenticeships. This represents roughly 6.7% of the entire population, a figure that is almost equivalent to 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 and what these students study.

### 1.1 Enrollment Trends in Postsecondary Education

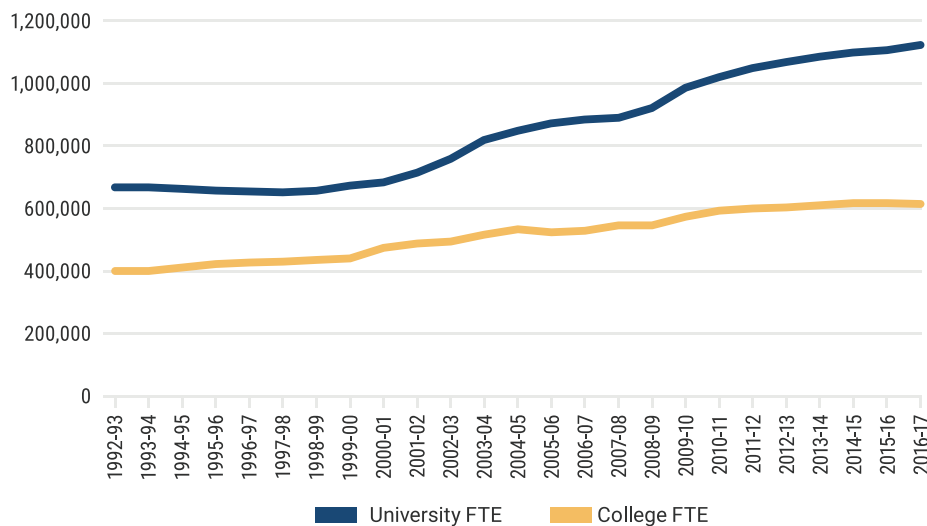
Enrollments in universities and colleges have been rising steadily in Canada since the turn of the century. Throughout the 1990s, total enrollment (full-time and part-time) was relatively consistent, hovering between 1.3 and 1.4 million students. After 1999, numbers began to increase again until they touched 2 million in 2011-12, at which point growth slowed until around 2016, when a surge of international student enrollment began pushing numbers up. In 2017-18, the last year for which Statistics Canada can provide complete enrollment data, the reported total headcount enrollment was 2.12

million. While individual colleges do not publish enough data to project enrollment past this point, most universities do. Based on institutional data, it appears that universities have grown another 3.7% between 2017-18 and 2019-20, reaching 1.34 million total enrollments.

**Figure 1.1** shows changes in full-time equivalent (FTE) enrollment in Canada's universities and colleges.<sup>2</sup> As of 2017-18, there were 1.76 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, enrollments have been growing more quickly in universities than in colleges, though this is in part due to the conversion of several institutions in Alberta and British Columbia from college to university status.

Canadian provinces differ vastly in size, and so too do their provincial systems of higher education. But comparing provincial enrollments can still bring surprises. For example, New Brunswick is 47% larger than

*Figure 1.1 – Full-time Equivalent Enrollments by Sector, 1992-93 to 2017-18*



**Table 1.1 – Full-time Equivalent Enrollments by Sector and Province<sup>5</sup>**

	UNIVERSITIES	COLLEGES	TOTAL
Newfoundland	15,516	6,125	21,642
Prince Edward Island	4,062	2,029	6,091
Nova Scotia	38,013	8,792	46,804
New Brunswick	17,007	6,626	23,634
Quebec	244,410	198,705	443,114
Ontario	480,685	267,046	747,732
Manitoba	40,037	11,855	51,892
Saskatchewan	33,867	11,733	45,600
Alberta	119,621	54,050	173,671
British Columbia	137,299	63,445	200,744
Territories	0	1,910	1,910
<b>Canada</b>	<b>1,130,516</b>	<b>632,316</b>	<b>1,762,832</b>

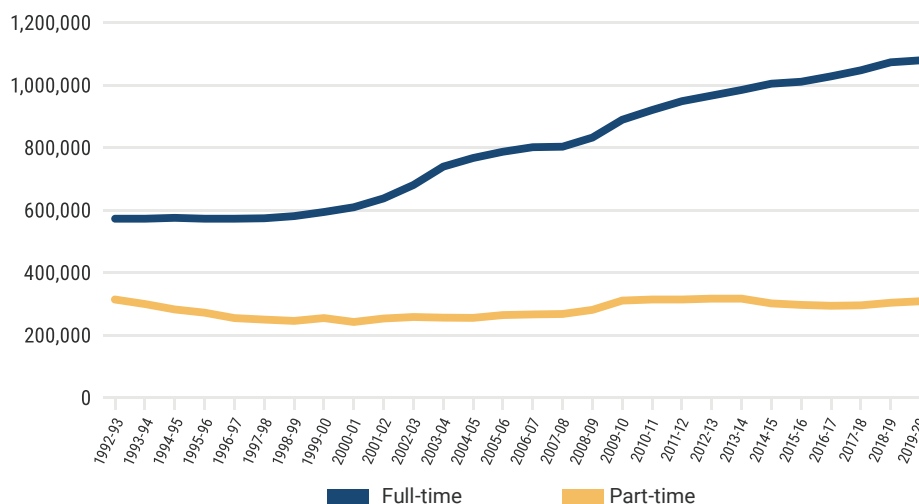
Newfoundland in population, but its postsecondary sector is only 9% larger; similarly, Nova Scotia’s population is 22% larger than New Brunswick’s, but its postsecondary population is more than twice as large. Ontario has the country’s most outsized university system, making up roughly 42% of total seats (compared to just 38% of the country’s population). Quebec, with just 22% of the population, has almost one-third 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).

### 1.2 Enrollment 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 enrollment was essentially flat. Part-time enrollment 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 enrollments 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 onwards, growth — a constant for most of the post-war period — resumed, so that by 2019-20, full-time enrollments were 78% higher than they were in 2000-01. In part, this increase was due to demography: by the late 1990s, the children of the baby-boomers (the so-called “baby boom echo”) started to flood into postsecondary education and increase the size of the potential cohort. 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.

**Figure 1.2 – Full- and Part-Time Students in Canadian Universities, 1992-93 to 2019-20**



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.” 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 by transforming some former community colleges into universities.

However, growth in university enrollments has not been universal. In the Atlantic provinces, where there has been a significant drop in youth population, growth in enrollments has been much lower than in the rest of the country, and would be lower still were it not for significant increases in international student enrollments. New Brunswick, unlike every other province, has seen a significant drop in enrollments.

Further west, Ontario, Manitoba, and British Columbia have seen increases of over 20% and Saskatchewan’s numbers approach 30%. Growth has been slower in Alberta (15%) and Quebec (17%), and in the latter, enrollments have started to shrink in the last two years.

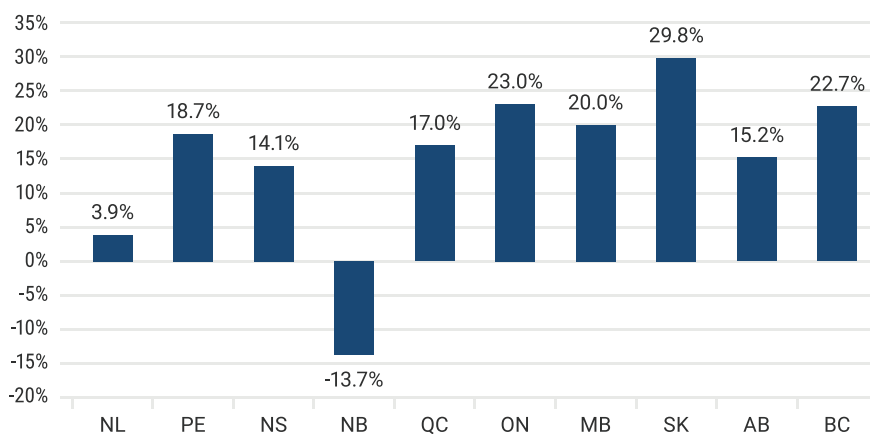
### 1.2.1 Changes in Field of Study

**Figure 1.4** looks at changes in university enrollments by field of study. In the 1990s, when total enrollment was declining due to reductions in the number of part-time students, enrollments fell in Business, Science, Humanities, and Social Sciences. Starting at the end of the 1990s though, nearly all fields of study began to grow at roughly similar rates. The exception was Education; due to falling birth rates in the late 80s and early 90s, the education systems began to require fewer teachers and universities adapted by limiting enrollments to teacher training programs. This trend of growing enrollment in most fields of study continued until 2010 or so, when Humanities enrollments began falling while other fields continued to increase. Between 2009-10 and 2017-18, enrollment in Humanities was down by 19%, while Business increased by 20%, Health by 25%, Science by 33% and Engineering by 42%.

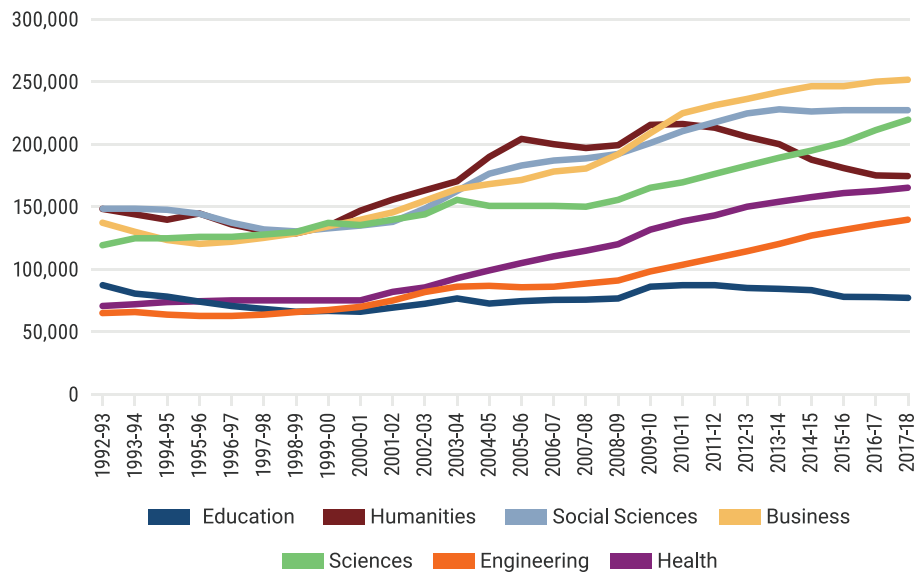
### 1.2.2 Changes in Student Demographics

With the exception of a brief interlude in the 2000s when it twice ran a survey called the “Postsecondary Education Participation Survey”, Statistics Canada has never really tried to measure anything about the Canadian student population. This absence leaves us with neither administrative data nor fully comprehensive survey data on anything that would provide demographic information on the student body with respect to ethnicities, disabilities, or family socio-economic background. But this does not mean that we know nothing about

**Figure 1.3** – Change in FTE University Enrollments by Province, 2009-10 to 2019-20



**Figure 1.4 – University Enrollments by Major Field of Study, 1992-93 to 2017-18**



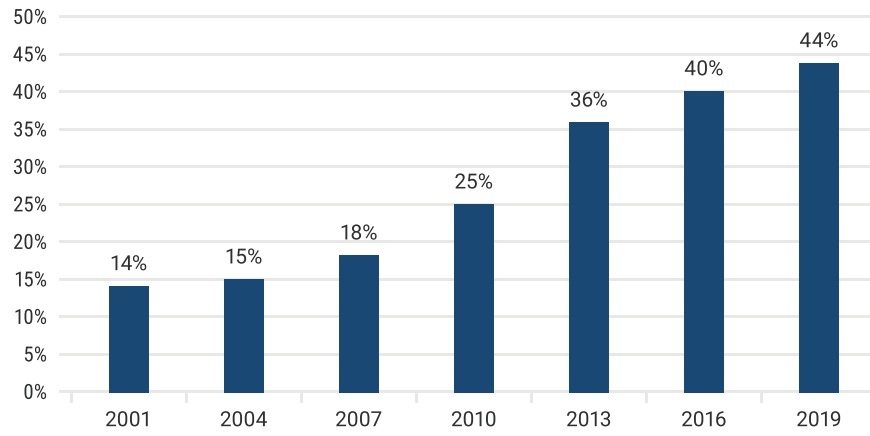
the composition of the student body. Every year, the Canadian Undergraduate Survey Consortium carries out a survey across a large number of Canadian campuses, alternating on a three-year schedule between first-year, middle-year and final-year students. While the sample from this survey is biased (it gets higher participation from smaller institutions and does not have high participation in Quebec), it is the best national source of data on student characteristics.

Perhaps the most interesting finding from the winter 2019 survey of first-year students is that 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 figure is still 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. Consider, for example, that among Canadians aged 15-24 at the time of the 2016 census, only 27% indicated they identified as a visible minority; with somewhere between 35-44% of domestic students claiming the same, that suggests an over representation of between 30-60%. Very few other countries can say anything similar; normally, minority popula-

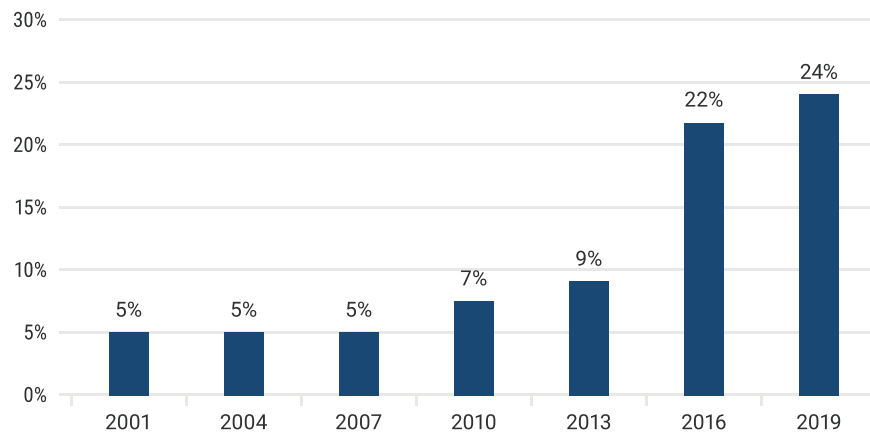
tions are much less likely to attend university than the visible majority.

Another significant shift over time is in the proportion of students who self-report having a disability/impairment. Between 2001 and 2013 this figure crept up from 5 to 9% – whether because more students with disabilities were accessing education or because of a reduced stigma in disclosing disabilities (or both) is impossible to determine. In 2016, the wording of this question changed to explicitly include mental health issues, and the proportion shot up to 22% and rose again to 24% this year. More than half of these students who disclosed a disability indicated that they had a mental health issue. See **Figures 1.5 and 1.6** on the next page.

**Figure 1.5 – First-Year Students by Visible-Minority Status, 2001-2019**



**Figure 1.6 – First-Year Students Reporting Disability, 2001-2019**



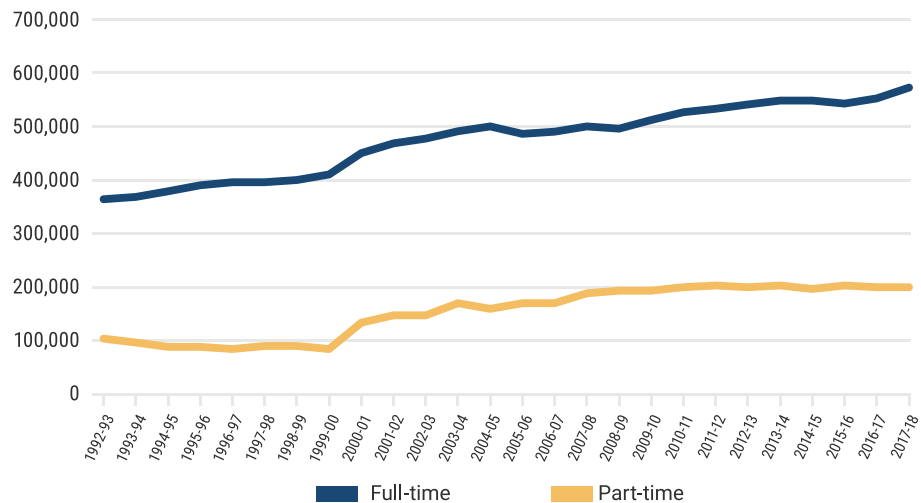
### **1.3 Enrollment Trends in Colleges**

College enrollment 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 increase may be more nominal than real. Nevertheless, the increase on the college side is even

more significant when one considers that many tens of thousands of college students were removed from the college count in Alberta and British Columbia when several institutional statuses changed from college to university.



**Figure 1.7 – Full- and Part-time Students in Canadian Colleges, 1992-93 to 2017-18**



**Figure 1.8** shows changes in college enrollments by province over the past ten years. The two biggest gainers – Manitoba and the Territories – are both statistical anomalies, and the figures are reflections of changes in the way Statistics Canada counts college students rather than actual evidence of expansion; the same appears to be true of Saskatchewan, though there student numbers fell rather than rose. Elsewhere, rates of growth and decline have been more modest. In Alberta and British Columbia, enrollments fell, but this has to do with the

forementioned fact that many institutions switched categories and went from being colleges to universities. Newfoundland’s 16% drop is mostly due to demographic factors, particularly outside the Avalon peninsula. Ontario’s strong rise is partially due to a significant expansion of post-bachelor level programming, but also, due to increasing international student enrollment over the last five years.

**Figure 1.8 – Change in College Enrollments by Province and Territories, 2007-08 to 2017-18**

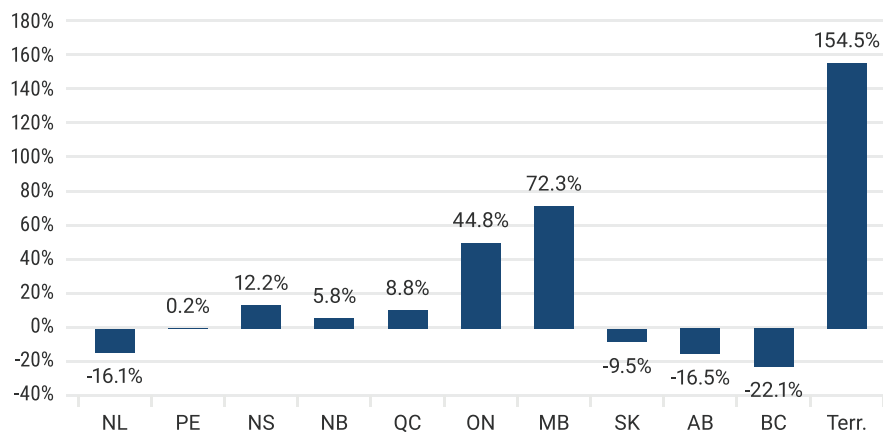


Figure 1.9 shows enrollments in colleges by field of study. As in universities, “business” is the largest single category, and some of the most important long-term growth has come in Engineering and Health. One element of this figure, which may surprise people who are used to thinking of colleges as technically-oriented, is the large proportion of enrollments 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 labelled as “Humanities”.

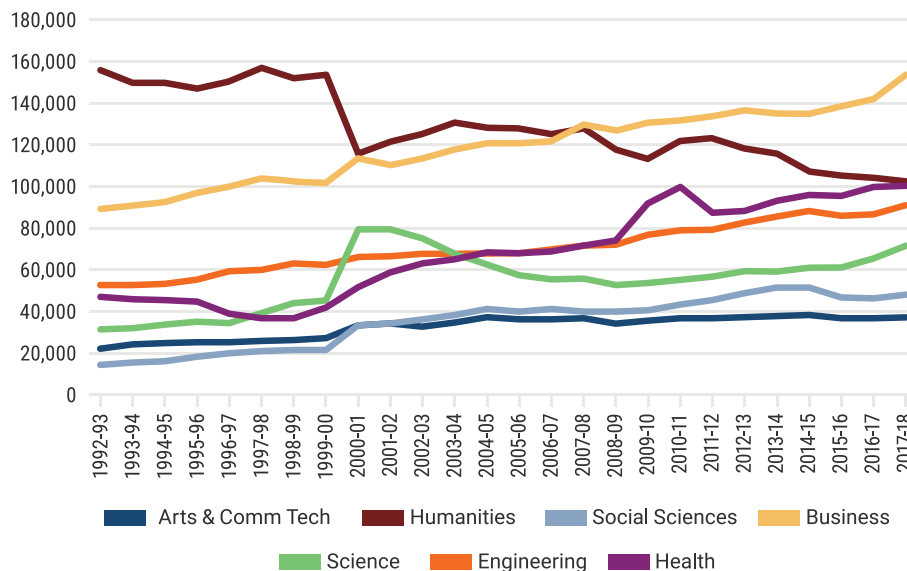
Because Polytechnics (see *What is a Polytechnic*, Appendix A) are not an official category of institution, we have no official count for students at these institutions. However, the 13 members of Polytechnics Canada do self-report some data. For 2017-18, they reported a full-time equivalent enrollment of roughly 270,000 students. 96% of these enrollments would be considered college enrollments by Statistics Canada, while only 4% (those from Kwantlen Polytechnic University in British Columbia) would be counted as university students. The thirteen self-described Polytechnics thus enroll 41% of all college students in Canada, and 60% of all college students outside Quebec.

### 1.4 Apprenticeship Enrollments

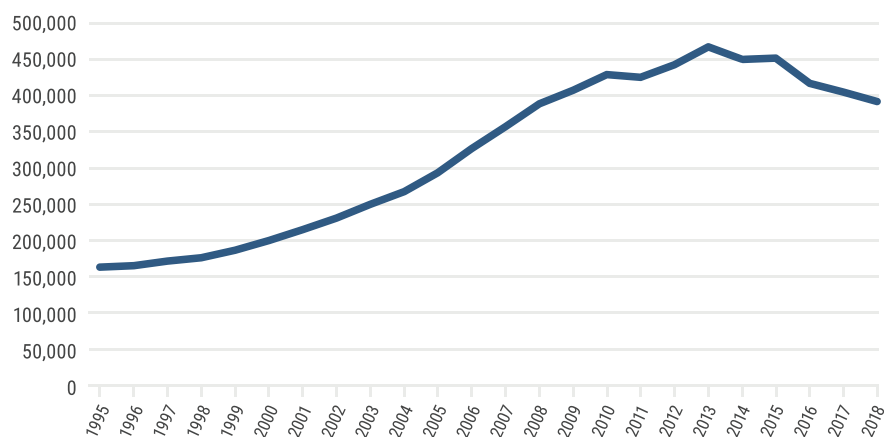
Apprentices are considered postsecondary learners, but they are not enrolled in postsecondary institutions, per se. Their enrollment as apprentices merely means that they have a contract with an employer in which both sides agree the apprentice will follow a particular course of learning and will periodically 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 450,000 in 2013.

Despite the recent slow-down of several sectors of the resource extraction economy, the decline in apprentice numbers has been relatively muted, falling to 392,000 in 2018, which is a 12% decline since 2013. It is possible that this has something to do with companies being

Figure 1.9 – College Enrollments by Major Field of Study, 1992-93 to 2017-18



**Figure 1.10 – Apprenticeship Enrollments: 1995-2018**



more far-sighted and keeping apprentices on during a downturn rather than letting them go to cut costs. However, it is more likely that it has to do with the way apprentices are counted: New apprentices are registered right away because they submit forms, while individuals leaving apprenticeship positions are documented neither completely nor quickly.

### 1.5 International Students

Since about 2000, the number of international students at the postsecondary level in Canada has risen dramatically, from just under 40,000 in the late 1990s to over 340,000 in 2018-19. This rise was gradual at first, then rapid from 2009 onwards. There are several reasons for this growth: international students are appreciated

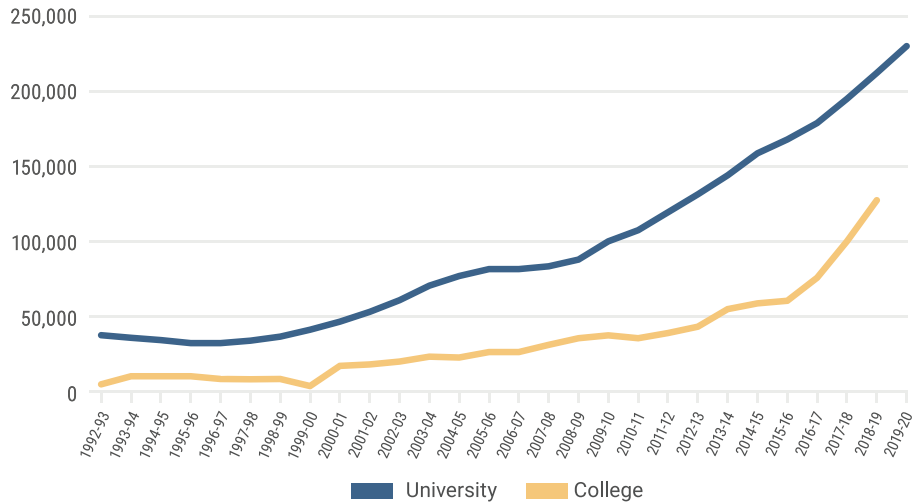
because they bring diversity to classrooms across the country and (marginally) because their presence bur-nishes institutions’ standings in world rankings, which regard the presence of international students as an indicator of quality.

However, the main reason behind the growth is that in-ternational students pay much higher tuition fees than domestic students and are thus seen as a way to offset stagnant government funding. In 2018-19, international students made up 15.7% of all university enrollments and 16% of all college enrollments. Growth has been most rapid in Ontario, where international student numbers roughly doubled over the two years to 2018-19.

**Table 1.2 – Top Ten Major Trade Groups in Canada, 2008 vs 2018**

2008		2018	
Electricians	58,155	Electricians	68,385
Carpenters	51,390	Plumbers, pipefitters & steamfitters	44,118
Automotive service	44,412	Carpenters	43,137
Plumbers, pipefitters & steamfitters	38,562	Automotive service	38,799
Hairstylists & estheticians	18,003	Food service	19,485
Welders	17,976	Interior finishing	17,148
Interior finishing	17,553	Hairstylists & estheticians	13,989
Food Service	15,105	Heavy Equipment & Crane Operators	12,786
Exterior Finishing	13,743	Welders	12,675
Heavy equipment & crane operators	12,492	Heavy duty equipment & mechanics	12,555

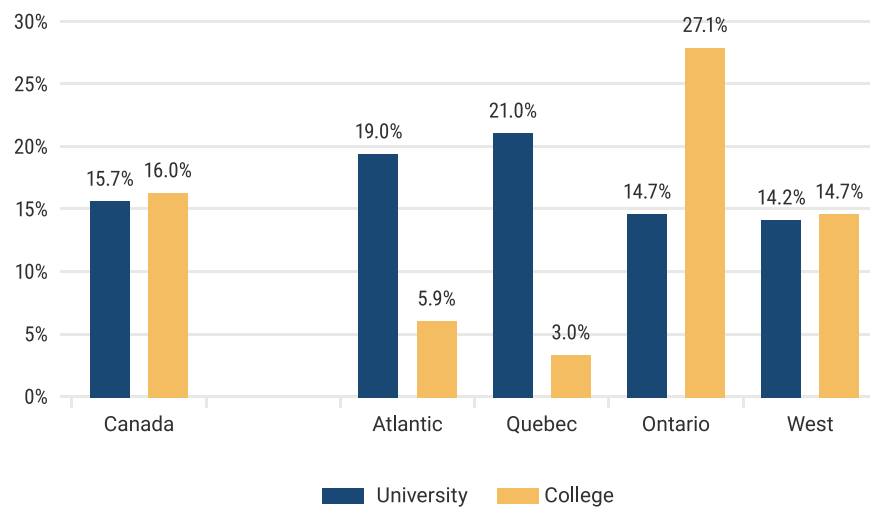
**Figure 1.11 – International Enrollments by Sector**



As with the general student population, international students are not distributed equally across all provinces. At the university level, international students are a much bigger proportion of the student body east of the Ottawa River than west of it.

At the college level, it is the reverse, with international enrollments barely noticeable in the five eastern provinces but a hugely important west of there, especially in Ontario, which accounts for about 70% of all international students at the college level in Canada.

**Figure 1.12 – International Students as a Percentage of Total Student Body, 2018-19**



### 1.6 Canada in International Perspective

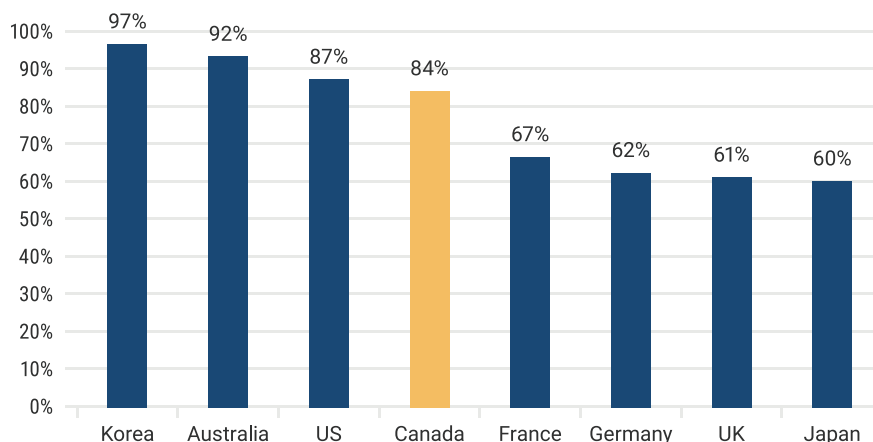
One perennial question about the postsecondary education system in Canada is how it fares in comparison to systems in other countries. This question is far harder to answer than one might think since systems in different countries contain different types of institutions and offer degrees of various length. Most comparative questions can only be answered imperfectly; nevertheless, some basic comparisons are possible. The first question has to do with the size of the overall system and the number of students it contains. Ideally, one would do this by looking at “net enrollment ratios”, which is a way of dividing the number of students in “typical” tertiary attendance (*i.e.* domestic students attending tertiary institutions between the ages of 18-24) 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 allow for a net enrollment count. So, most international comparisons rely on something called the “Gross Enrollment Ratio”, which is total enrollment, divided by the number of inhabitants in a relevant age bracket. For the purpose of **Figure 1.13**, this bracket is the five-year age bracket between ages 20-24, and results are shown for Canada and seven other comparator countries: Australia, France, Germany, Japan, South Korea, the United Kingdom and the United States. Canada’s figure is 84%, 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 by the very large number of international students enrolled there).

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, but also because of the strong tradition of professional and vocational education carried out in institutions right across the country (see *What is a College* in **Appendix A**).

**Figure 1.13** – Gross Enrollment Ratios, selected OECD Countries, 2017



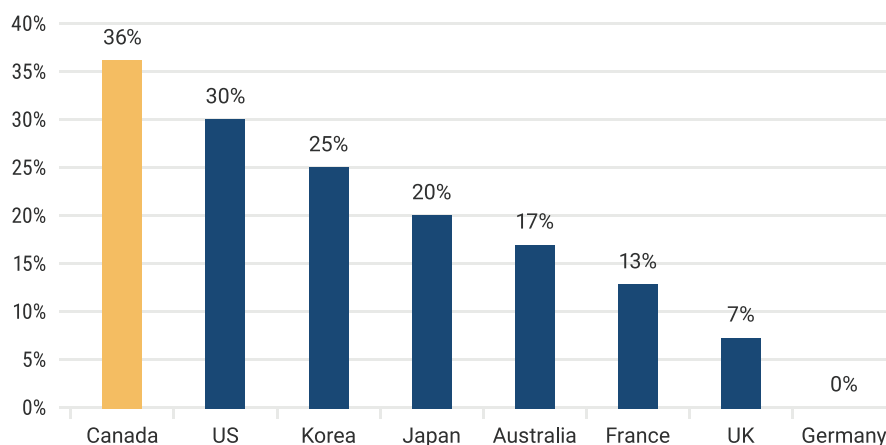
As **Figure 1.14** shows, over 35% of Canadian tertiary-level students<sup>4</sup> are enrolled in these “non-universities”, the highest among the selected countries. The US, Korea, and Japan, all of which have somewhat similar “junior” or “community” college systems, also have relatively high enrollment 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 zero 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 large number of *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 actually closer to universities since 100% of the credentials they distribute are bachelor’s degrees.

Another useful international comparison has to do with the distribution of students by subject area, which we can broadly track via data collected by the OECD on degrees awarded in each country. As **Figure 1.15** on the next page shows, science enrollments – that is, enrollments in STEM and Health disciplines combined – range from 36% of total enrollments in the US to 45% in Korea and Germany (Canada is at 38%). Meanwhile the disci-

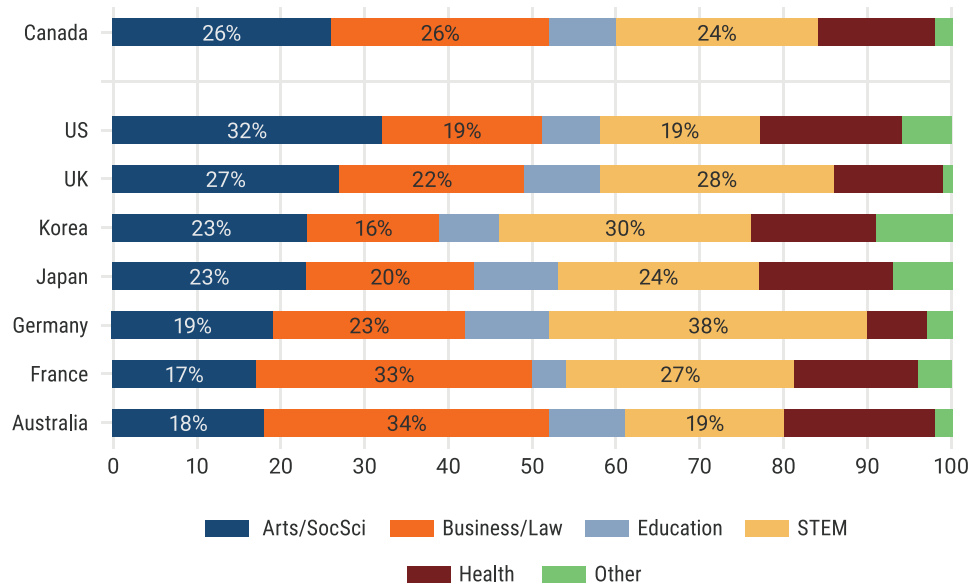
plines which might be grouped together as “non-laboratory” – Arts, Social Science, Business, Law and Education – make up a majority of total enrollments in every country except Korea, and Canada is second-highest behind Australia in this respect, with 60% of enrollments in these disciplines. A final international comparison to make is with respect to 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.

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 Germany, nearly all of the top trades are in white-collar occupations, such as retail sales, industrial sales, office clerks, and medical assistant. In fact, Canada has approximately 70% more apprentice electricians than Germany, despite the latter country having a population more than twice as large. That said, apprentice-

**Figure 1.14** – Proportion of Tertiary Students Studying in Predominantly Non-Bachelor’s Awarding Institutions, Selected OECD Countries, 2017



**Figure 1.15 – Distribution of University Students by Field of Study, Selected OECD Countries, 2016**



ships in Germany last only half as long, so the number of people qualifying from their apprenticeships may be more or less the same. All of which is simply to note that the German system of apprenticeships is different to our own and that its success may be due as much to its ability to transcend the skilled trades as much as it is to excel in them.

**Table 1.3 – Top Ten Apprenticeship Registrations by Occupation, Canada vs. Germany, 2018**

CANADA		GERMANY	
Electricians	68,385	Office clerk	70,089
Plumbers, pipefitters & steamfitters	44,118	Automotive Mechanics	66,987
Carpenters	43,137	Retail Clerk	55,632
Automotive service	38,799	Industrial Sales	49,074
Food service	19,485	Industrial Mechanics	43,320
Interior finishing	17,148	Medical Assistant	41,265
Hairstylists & estheticians	13,989	Electricians	40,257
Hairstylists & estheticians	12,786	Retail Sales	38,961
Welders	12,675	IT Specialist	36,207
Heavy duty equipment & mechanics	12,555	Foreign Sales Clerk	36,105

# CHAPTER TWO

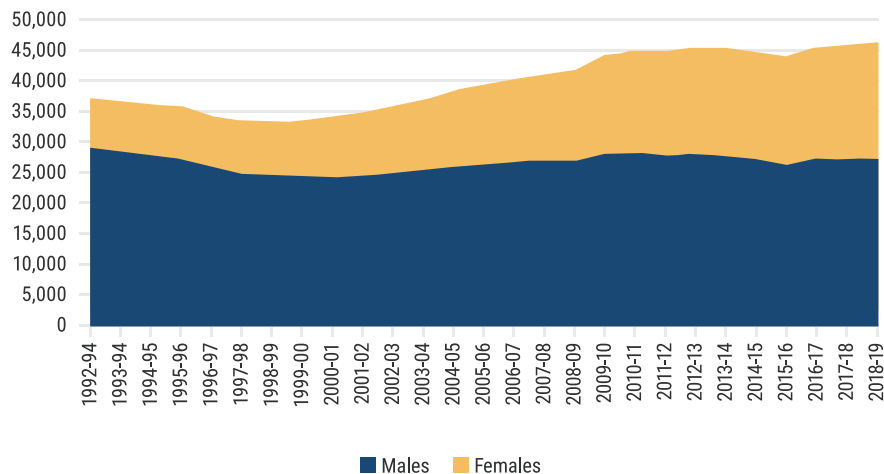
## Staff

**A**VAILABLE CANADIAN POSTSECONDARY EDUCATION staff data skews heavily towards universities. Statistics Canada does not survey colleges with respect to 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 (though the former 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 do not seem to care very much about these issues and have therefore not made institutional reporting on these topics a part of their accountability frameworks. This issue has not notably improved over the years we have released SPEC. Because of this lack of data, our look at staff will necessarily be more partial than was our look at students.

### 2.1 Staff at Universities

Full-time academic staff in Canadian universities are counted through a national survey known as the University and College Academic Staff Survey (U-CASS)<sup>5</sup>. This survey was suspended by Statistics Canada for budgetary reasons in 2011 but was re-instated in 2018 and data from the missing years re-incorporated. **Figure 2.1** shows the number of “ranked” academic staff in Canada, meaning those who are tenured or on the tenure-track<sup>6</sup>, by sex for the period 1992-93 to 2018-19. The number of such individuals reached an all-time high of 46,431 in 2018-19, an increase of 38% of the nadir-point of 1997-98, when universities were feeling the effects of multi-year hiring-freezes due to budget cuts in the early to mid 90s. Of interest here is the breakdown by sex: though Canada is nowhere near parity in its professoriate (the ratio is roughly 59-41 male-to-female), nearly 80% of the growth in faculty positions has been in the number of female professors.

**Figure 2.1** – Total Tenured and Tenure-Track Academic Staff Numbers by Sex, Canada, 1992-93 to 2018-19.





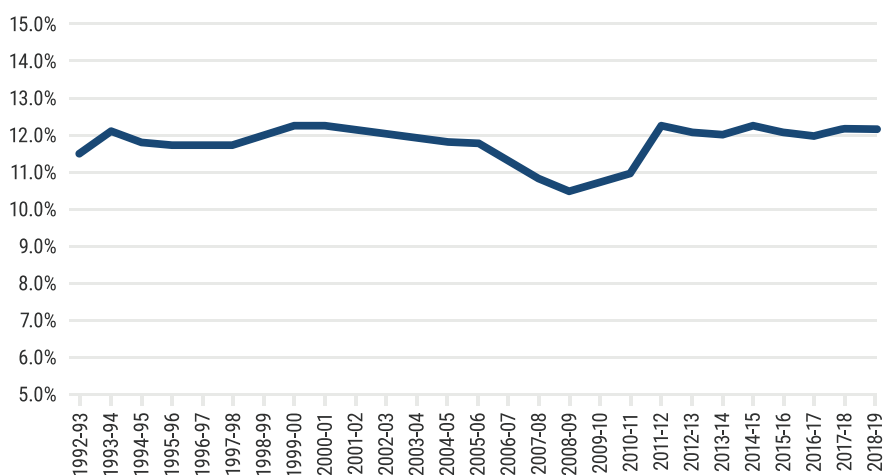
Time series data on faculty is available by sex but not by other major equity categories. However, a recent Universities Canada report drew on census data to reveal that 20.9% of full-time academic staff had a racialized background (compared to 22.3% of the general population) and 1.3% identify as Indigenous (compared to 4.9% of the population).

The data in **Figure 2.1** above counts both teaching faculty and tenured faculty who do not teach because they are in what is termed “Senior Administrative Roles”. A common concern is that the senior administration numbers are constantly growing and so the increase in faculty numbers might be masking a growth in administration. **Figure 2.2** 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 (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).

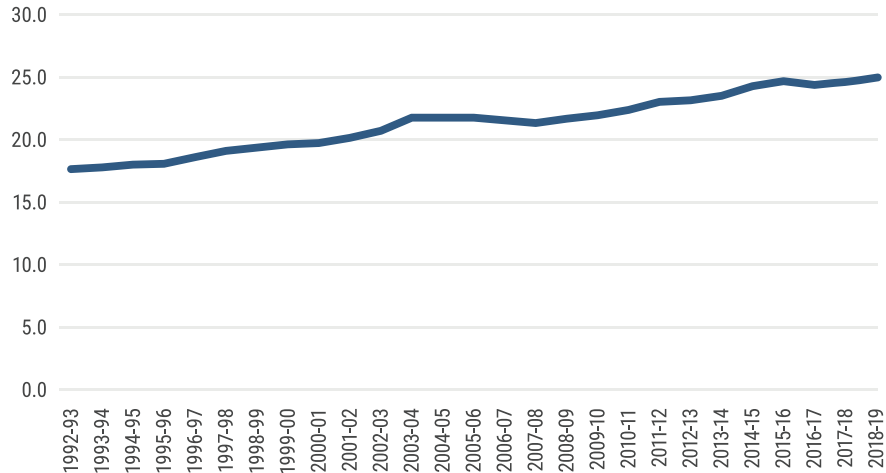
While the last two decades has seen a significant increase in faculty numbers, they have not kept pace with the large increase in student numbers shown in the previous chapter. In fact, the ratio of FTE university students to faculty has risen by nearly 50% over the past 25 years from 17.7:1 to 25:1. This does not necessarily mean that class sizes have increased by 50%, as there are a number of confounding factors involved. For one thing, the use of sessional staff appears to have become more frequent (which tends to reduce class size averages); for another, at many institutions, faculty teaching loads, as measured in classes taught per semester, are lower than they were 5 years ago because research and publication expectations have increased.

The abolition of mandatory retirement 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 2018 that figure had risen to over 4,000 (10.2%)<sup>7</sup>. All told, over a quarter of Canadian academic staff are over the age of 60, while only 15% are under the age of 40, a drop of nearly a quarter since the turn of the century.

**Figure 2.2** – Proportion of Faculty in Senior Administrative Roles, 1992-93 to 2018-19



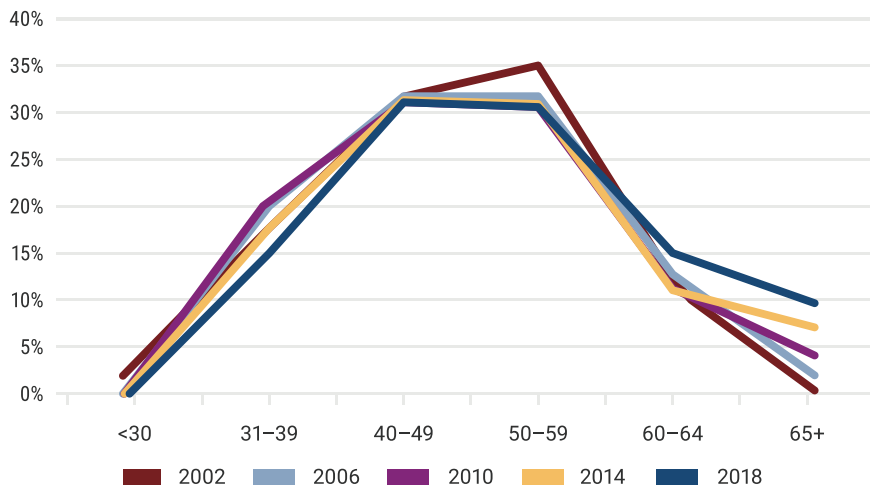
**Figure 2.3 – Ratio of FTE Students to Full-Time Tenured and Tenure-Track Academic Staff, 1992-92 to 2018-19**



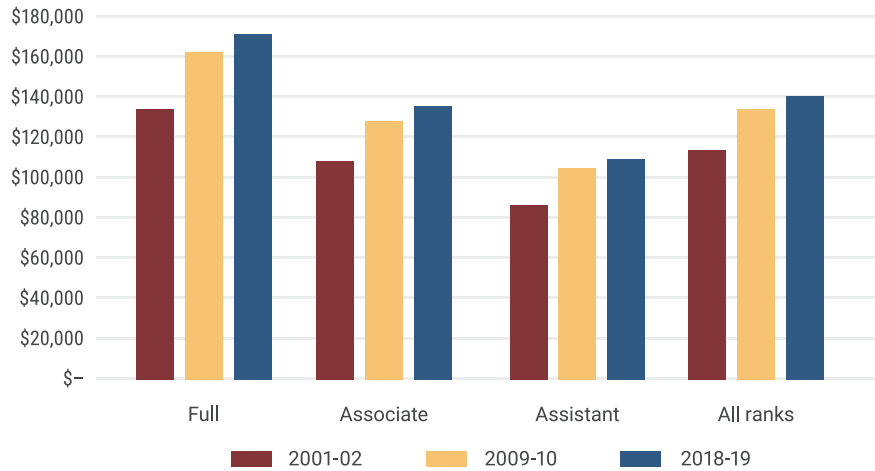
**Figure 2.4** shows how the age composition of full-time academic staff has changed over time. The effects of the aging professoriate can be seen in the changes in pay levels. Because pay in academia is seniority-driven, a disproportionate amount of salary pays aging staff, significantly reducing the amount of funds available for faculty renewal. **Figure 2.5** compares salaries from 2018-19 with those of 2009-10 and 2001-02.

Over that seventeen-year period, average professorial salaries have increased 24% overall, from \$113,705 to \$140,739 (in constant 2018 dollars). Most of this increase happened in the period before 2009-10, when governments were the main source of new money in higher education rather than after, when income from students became the main source.

**Figure 2.4 – Age Composition of Tenured and Tenure-Track Staff, Canada, 2001-02 to 2017-18**



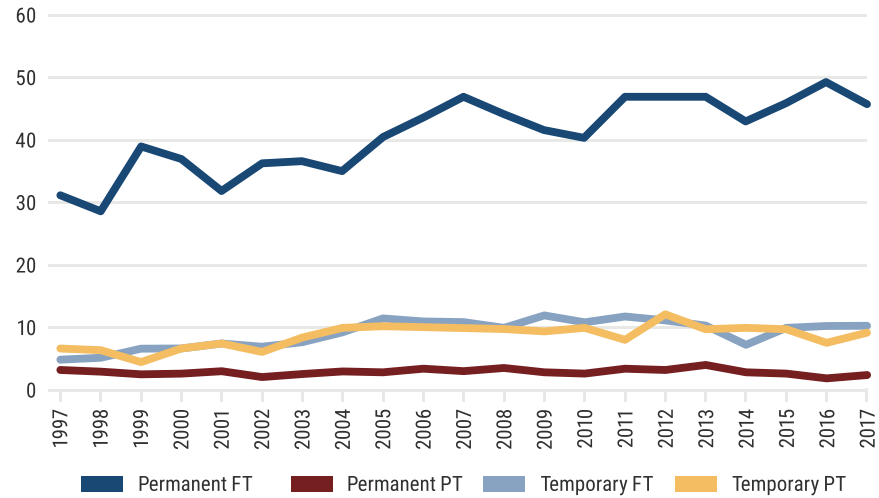
**Figure 2.5 – Average Salary by Rank 2001-02 to 2018-19, in \$2018**



One persistent view in Canadian higher education is that full-time professors are increasingly being replaced by part-time, “casualized” staff. Statistics Canada does not track the number of casualized staff and universities themselves do not report staff figures in a fashion to facilitate easy comparison. However, late in 2018, the Canadian Centre for Policy Alternatives released a study called *Contract U: Contract Faculty Appointments at Canadian Universities*. The report assessed the results of a survey on university hiring, which suggested that between 2006-07, contract faculty numbers nationally increased by about 1,800 (including major increases in Health Sciences and Business but significant decreases in Education and Humanities), while full-time numbers increased by about 1,300. There is reason to be skeptical about the exact numbers, but the pattern of hiring – increasing numbers of part-timers in professional programs where they are likely to be practitioners with existing full-time jobs and decreasing numbers in Arts, where part-timers tend to be graduate students or recent PhDs wanting to get a foothold in academia – seems broadly correct.

Data from the Labour Force Survey, shown below in **Figure 2.6**, reinforces this view. The data shows job intensity and security among those who report their primary job is teaching at a university: it excludes all those whose teaching jobs are “on the side”. The data is somewhat choppy because the number of university teachers in the Labour Force Survey at any given time is relatively small, but the broad pattern seems to show that the ratio of full-time permanent teaching staff to temporary teaching staff has increased over the past decade. This is consistent with the observation that most sessional instructors in universities are in fact professionals who consider teaching as a side-job. It is, however, inconsistent with the oft-touted view that heartless neo-liberal universities are becoming increasingly dependent on casual, precarious labour. That may be true elsewhere, but not in Canada.

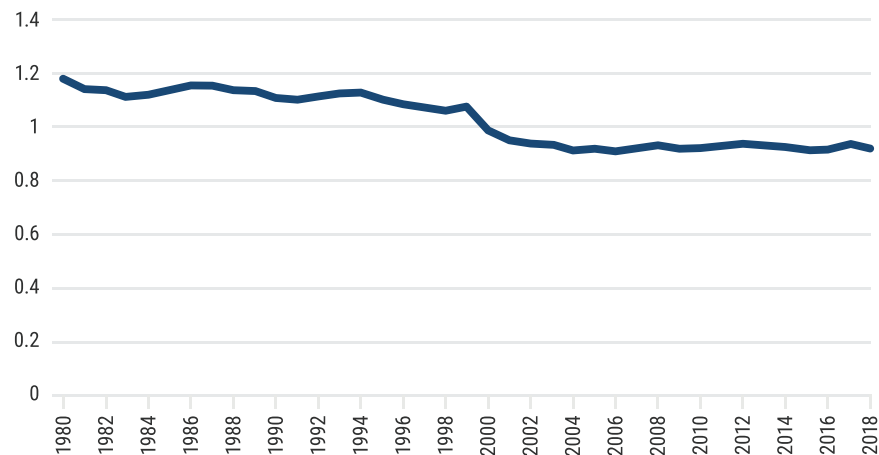
**Figure 2.6 – Job Intensity and Security among Labour Force Survey Respondents Indicating their Primary Occupation is Teaching in a University, 1997 to 2017**



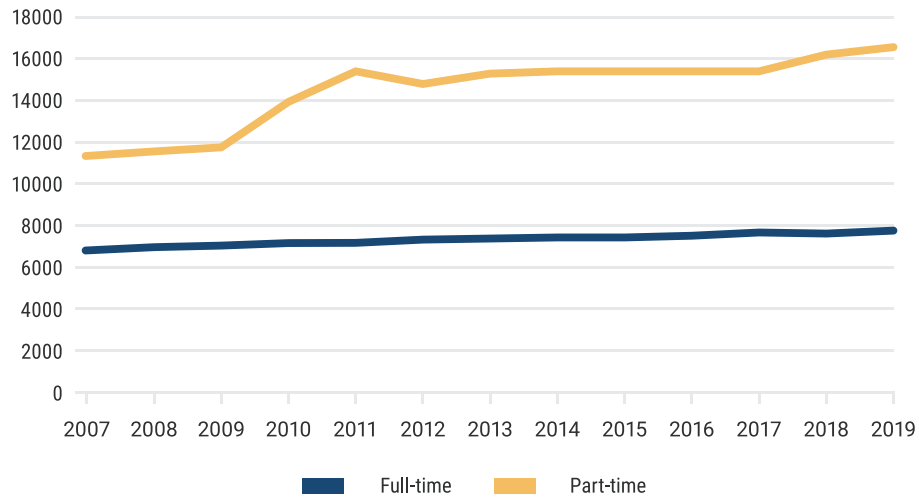
When it comes to non-academic support staff at Canadian universities, there are no national or provincial counts available, though a fair number of institutions do produce their own annual (non-standardized) reports. However, through financial data provided through Statistics Canada’s Financial Information of Universities and Colleges (FIUC) survey, we tracked changes in the ratio of aggregate salary expenditure on full-time

academics to aggregate expenditures on non-academics. These data, shown below in **Figure 2.7**, demonstrates that in the 1980s and 1990s, spending gradually shifted towards non-academic staff. Since the early 2000s, however, there has been very little change in the balance of spending on academic and non-academic salaries.

**Figure 2.7 – Ratio of Full-time Academic Salaries to Non-Academic Salaries, All Canadian Universities, 1979-80 to 2017-18**



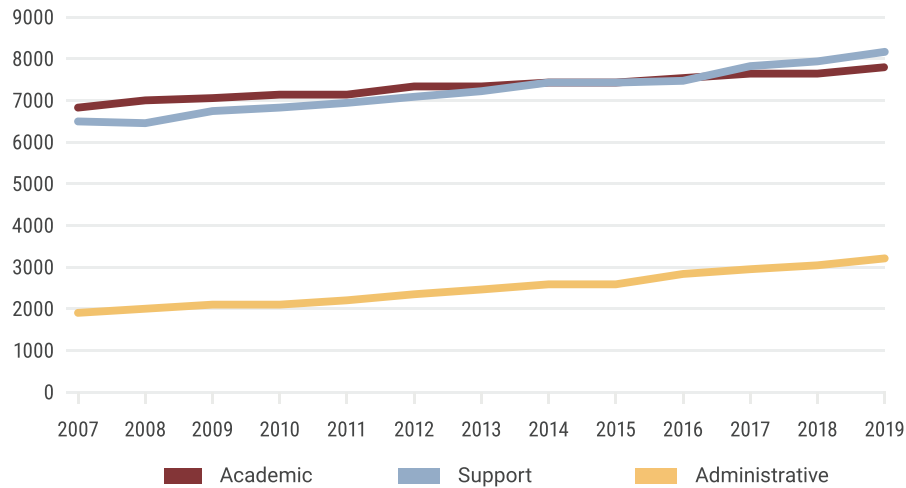
**Figure 2.8** – Full- and Part-time Academic Staff, Ontario Colleges, 2007-2019



## 2.2 Staff at Colleges

There is virtually no public data about staff at community colleges in Canada. Statistics Canada does not collect it (though it has hopes of including teaching staff data in a new, expanded U-CASS), and nor do any provincial governments. The lone exception here is Ontario, where Colleges Ontario (the association representing the community colleges) produces an excellent annual Environment Scan with a wealth of data on colleges, including staff numbers. It is by no means certain if the trends in Ontario are replicated in other provinces; however, since the province represents close to 40% of national college enrollments, it is unlikely that national averages will diverge substantially from these. So, we reproduce Ontario figures here as being broadly indicative of national trends.<sup>8</sup>

**Figure 2.9** – Full-time Academic, Support and Administrative Staff, Ontario Colleges, 2007-2019



In terms of academic staff numbers, **Figure 2.8** (previous page) shows that there have been increases in the numbers of both full- and part-time instructors at Ontario colleges over the past decade; however, growth has been more pronounced among part-timers than full-timers. This part-time growth was one of the major triggers of the strike that shut down Ontario colleges in late 2017.

The union tends to view this as a deliberate casualization and “precarization” of the workforce; employers will tend to defend it partly on budgetary grounds but also partly based on quality, since college programs are meant to provide students with exposure to real world practitioners (who, being practitioners, cannot teach full-time).

As this brief overview shows, there is not enough data available to Canadians on staffing at Canadian postsecondary institutions to accurately answer some rather basic questions about the changing nature of those institutions. Media are rife with stories about the casualization of academic labour and administrative bloat, but some indirect and partial inquiries (such as those above) suggest there is less to these claims than meets the eye. However, the lack of regular national or even provincial data releases addressing these issues makes it impossible to definitively account for them. As we have suggested over previous issues of SPEC—if an institution feels any claims here are unfair or inaccurate, start releasing more data.

# CHAPTER THREE

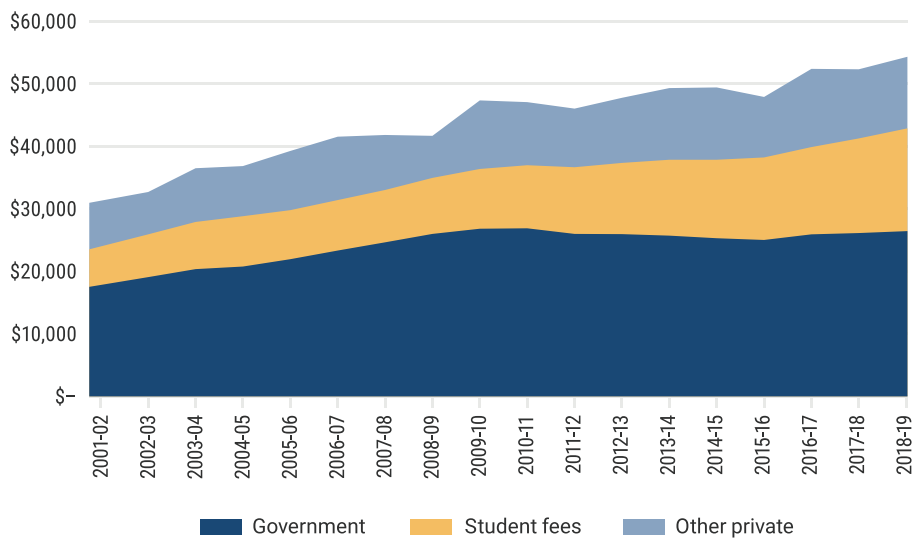
## *Institutional Income and Expenditures*

**PUBLIC POSTSECONDARY EDUCATION IN CANADA IS A** nearly \$55 billion per year industry. In terms of Gross Domestic Product, higher education makes up approximately 2.4% of the national economy, which is a larger fraction than agriculture, forestry, fishing, and hunting, combined. It is therefore of interest how this significant sector of the national economy generates and spends its money, and it is to this task which this chapter is devoted.

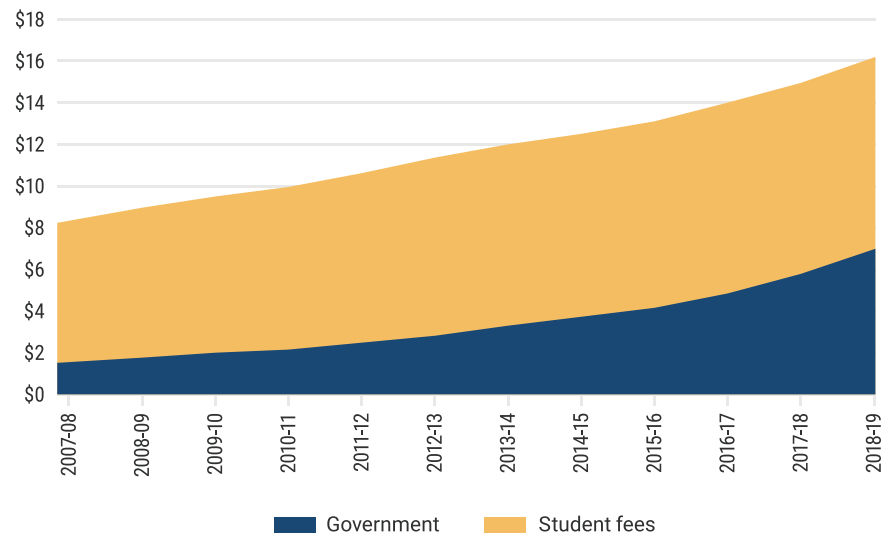
### **3.1 Income Trends for PSE Institutions**

Since 2001-02, overall institutional income has risen by 73% in real terms, from \$31.4 billion in 2001-02 to \$54.7 billion in 2018-19. Until the financial crisis of 2008-09, revenues from the three main sources – governments, students, and other self-generated income – were all increasing at similar rates of about 5% per year after inflation. Since the financial crisis this has changed: government income has stagnated, while income from students has steadily increased, mainly due to increases in international student numbers. The self-generated income is more volatile than the other two because endowment returns are part of this category; there was a jump in 2016-17 because it was a particularly good year

**Figure 3.1** – Total Income by Source, Public PSE Institutions, Canada, in Billions (\$2018), 2001-02 to 2018-19



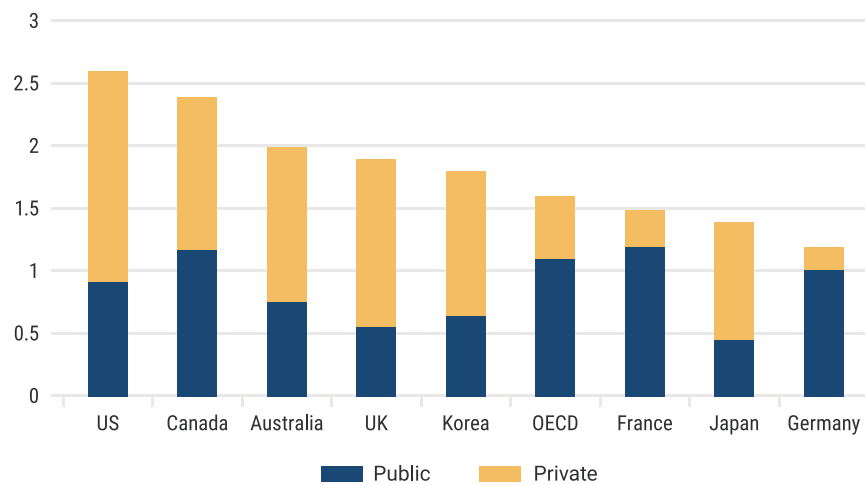
**Figure 3.2** – Total Fee Income by Source, Public PSE Institutions, Canada, in Billions (\$2018), 2007-08 to 2018-19



for equities, which form a small but significant part of these “other” revenues. As **Figure 3.1** (previous page) shows, 2016 was particularly notable in that this was the first year since modern statistics began in which income from non-government sources (\$25.9 billion) was larger

than income from government sources (\$25.4 billion). In 2018-19, 48.5% of total institutional income came from the federal and provincial governments.

**Figure 3.3** – Tertiary Institutions’ Income by Source, as a Percentage of Gross Domestic Product, Canada and Selected OECD Countries, 2016





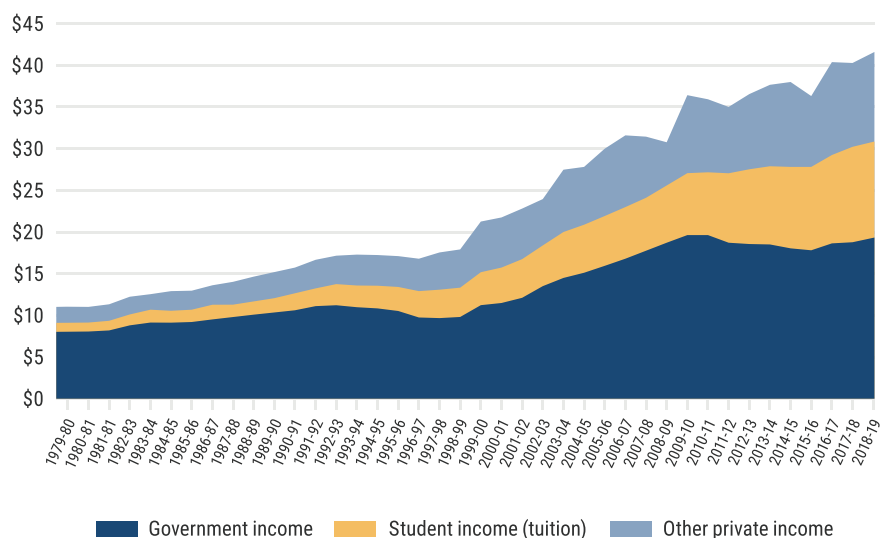
The main change in institutional income post-2008 has been the increasing reliance on tuition fees; indeed since 2007-08 tuition fee income has roughly doubled at Canadian universities and colleges from \$8 billion to \$16 billion. However, this is not primarily due to any increase in domestic fees; rather it has to do with the vast inflow of international students. In fact, since 2007-2008, domestic tuition fee income has increased by 35%, but international fees have increased by 350%. On a shorter time horizon, the \$4.11 billion increase in international student tuition fees since 2012-13 is slightly higher than the \$4.09 billion increase in operating expenditures over the same period. Thus, exactly 100% of all increased spending over the past six years has come from international student fees.

Internationally, 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, which was not quite as high as the United States’ 2.6% but twice as high as much-vaunted Germany and 50% higher than the OECD average. But as **Figure 3.3** above 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

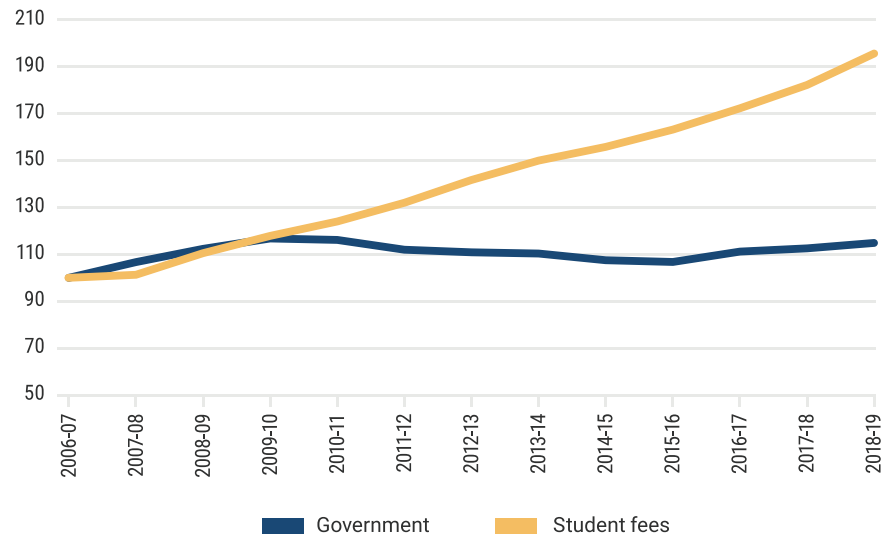
may be mostly publicly owned, but it is “publicly-aided” rather than “publicly-financed.”

Within Canada, data on university revenues are available for a much longer period than for colleges, with data available to the late 1970s. This sector’s data is shown in **Figure 3.4** below. The pattern is somewhat cyclical – 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 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 3.4 – Total Income by Source for Universities, Canada, in Billions (\$2018), 1979-90 to 2018-19**



**Figure 3.5** – Change in Government and Student Fee Income, Universities, 2006-07 to 2018-19 (2006-07 = 100)



**Figure 3.5** puts the major trends of the last decade 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. Meanwhile, revenue from student fees has grown at about 6% per year continuously, straight through to 2018-19, resulting in a cumulative 96% increase in fee revenue over the decade.

On the college side, the trends look somewhat similar to those of universities, in that total incomes have continued rising over the past decade even as income from governments has stagnated. However, the composition of the income is somewhat different. Revenues from government make up 56% of total revenue (compared to 46% for universities), and revenues from self-generated income make up just 14% of the total (compared to 24% in universities). In both sectors, income from student fees makes up about 30% of the total revenues.

### 3.2 Expenditure Patterns for PSE Institutions

Because institutions tend to want to spend all the money that they can raise, overall total expenditure trends closely follow total income trends. So closely, in fact, that it is not especially interesting to track those trends over time since they show more or less identical patterns. However, examining changes in specific areas of expenditures reveals useful patterns. **Table 3.1** looks at total expenditures of universities and colleges by “fund.” From certain methods of aggregation, the two systems look extremely similar. Using the categories developed by Statistics Canada, we find the following trends: Instruction and research collectively make up 58% of the budget in universities and 50% in colleges. Physical plant is 6% and 9%, respectively, while capital is 10% and 11%, and student services are 6% and 10%. What this kind of aggregation hides is the single major difference between the two sectors – research. Within the research/teaching aggregation, the research side only accounts for under 2% of total expenditures for colleges, but over 30% for universities.

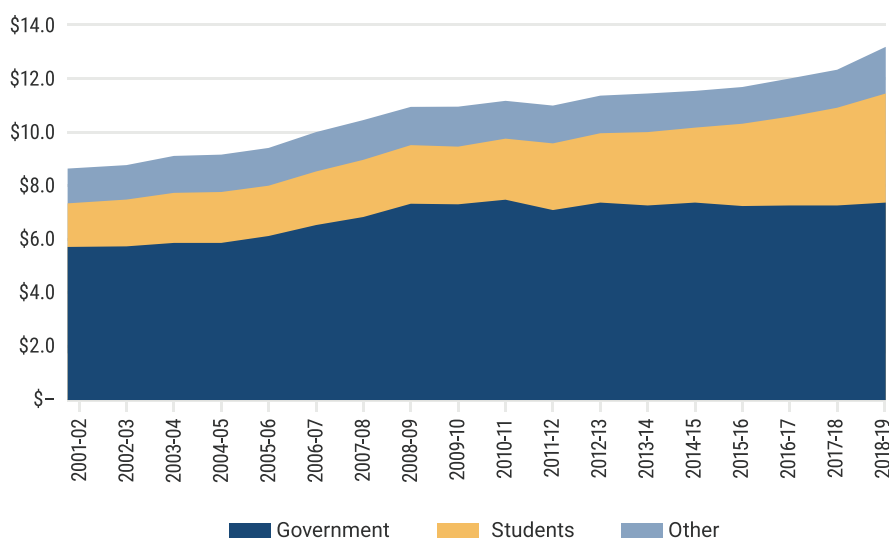
One perennial topic of conversation in higher education is the alleged tendency toward ever-increasing expenditures on administration. Statistics Canada data allows us to chart this trend over time in both the college and

**Table 3.1 – Distribution of Total Expenditures by Fund, Colleges and Universities, 2017-18**

	COLLEGES	UNIVERSITIES
Instruction & Research	50%	58%
Admin + ICT	18%	10%
Physical Plant	9%	6%
Student Services	10%	6%
Capital	11%	10%
Other	2%	9%

university sectors, though the definition of “administration” differs quite a bit from one sector to the other.<sup>10</sup> Still, despite differing definitions, trends over time can be compared. **Figure 3.6** shows that spending on administration is higher for colleges than universities, a fact which is partially a function of the surveys of the two sectors using slightly different definitions, but also a function of the fact that most colleges are relatively small, and therefore tend to have admin-related diseconomies resulting from their smaller scale. Perhaps more importantly, the figure shows that over the past decade administration spending has remained reasonably steady as a percentage of total expenditures.

**Figure 3.6 – Total Income by Source for Colleges, Canada, in Billions (\$2018), 2001-02 to 2018-19**



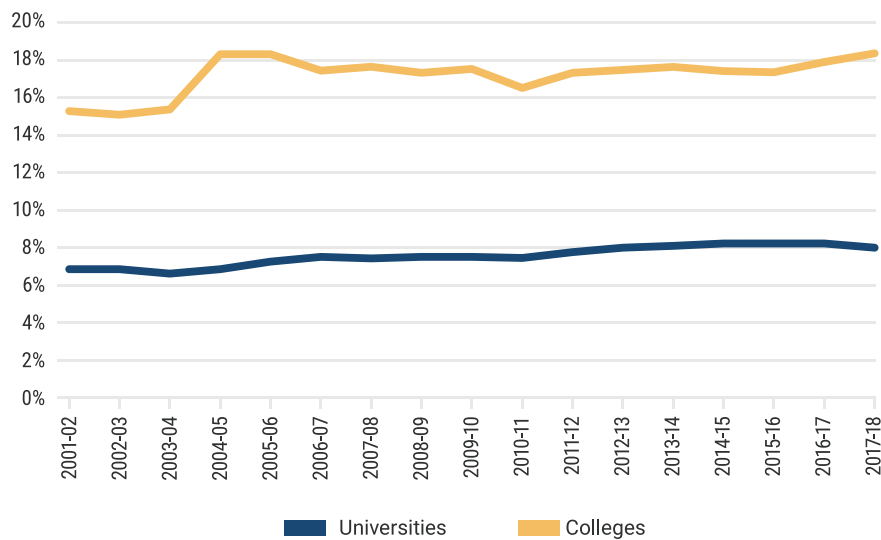
This does not mean that absolute administration costs are not increasing; in both sectors they have more than doubled, in nominal terms, since the turn of the century. However, they are not increasing disproportionately relative to overall institutional spending.

If we look at institutional expenditures by type, rather than by fund (Table 3.2), we again see that the two sectors look similar on metrics like wages, benefits, and utilities. Even the limited differences often come down to categorization decisions as much as anything: “supplies” are higher in colleges, “furniture and equipment” in universities, but if we combine them as “non-wage expenditures on physical goods not classified as capital” – which is arguably as good a definition as that used by Statistics Canada – 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 a much larger expense at universities than at community colleges. However, given that approximately 75% of university expenditures on scholarships are focused on graduate students, one might argue there is little difference between aid spending at colleges and spending on undergraduates at universities.

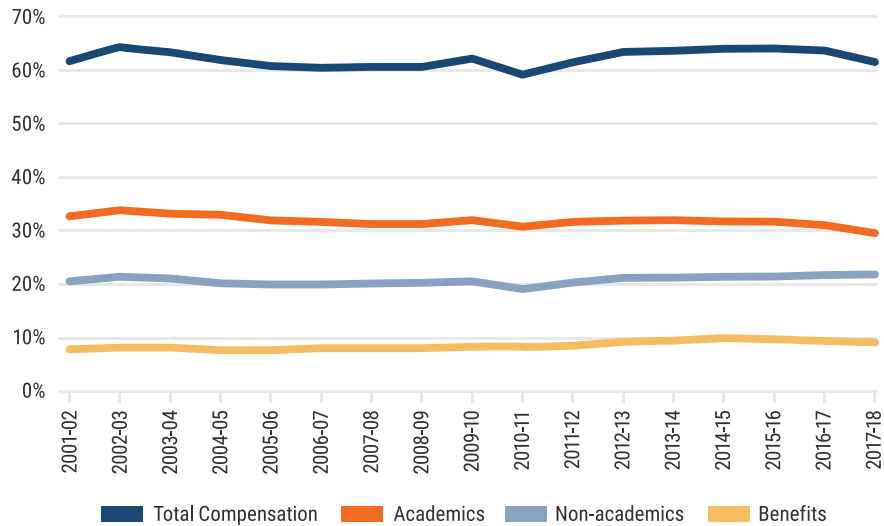
**Table 3.2 – Distribution of Spending by Type, Universities and Colleges, 2017-18**

	COLLEGES	UNIVERSITIES
Academic Wages	29.8%	26.2%
Other wages	21.9%	21.8%
Benefits	9.8%	9.7%
Library acquisitions	0.2%	1.1%
Supplies	7.6%	8.6%
Utilities	1.6%	1.7%
Financial Aid	1.1%	5.8%
Fees and services	7.5%	4.8%
Equipment	3.4%	4.3%
Buildings & Land	7.0%	10.9%
Debt service	0.9%	1.4%
Other	9.1%	3.8%

**Figure 3.7 – Expenditures on Administration as a Percentage of Total Spending, Universities vs Colleges, 2001-02 to 2017-18**



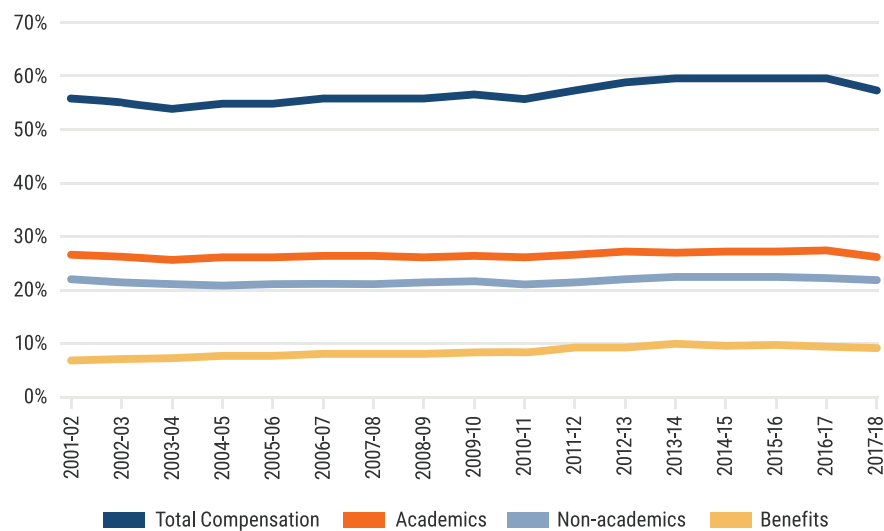
**Figure 3.8 – Wages as a Percentage of Total Budget, Colleges, 2001-02 to 2017-18**



Wages are always an area of concern in the postsecondary sector. They have increased substantially (nearly doubling in nominal terms) at both universities and colleges over the past fifteen years. However, as a proportion of total expenditures they are remarkably stable, as **Figures 3.8** and **3.9** show. And it is not just that wages are stable overall, but the components of the

wages budget (*i.e.* spending on academics vs. spending on non-academics) are stable as well. To the very limited extent 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.

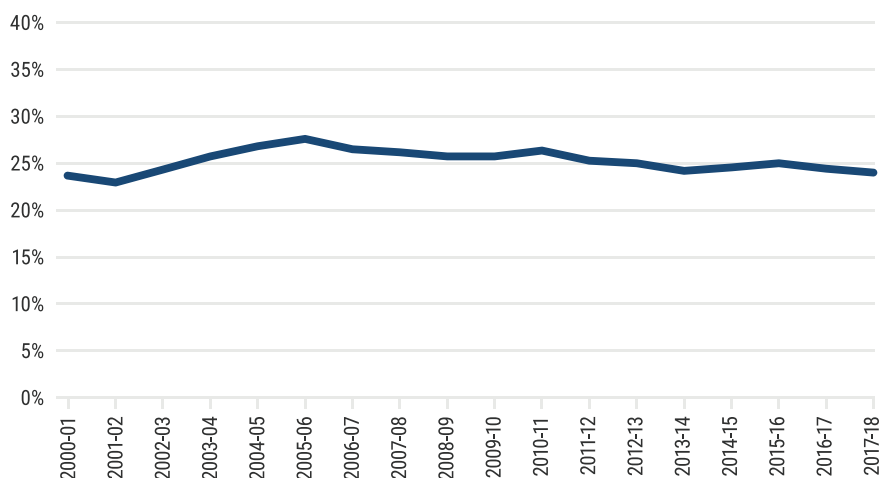
**Figure 3.9 – Wages as a Percentage of Total Budget, Universities, 2001-02 to 2017-18**



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, at least, 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.

**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 2000-01 to 2017-18. As the figure shows, this percentage has in fact been falling very slightly for the last decade or so. 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 3.10** – Percentage of Aggregate Academic Wages Going to Non-tenure Track Staff, 2000-01 to 2017-18



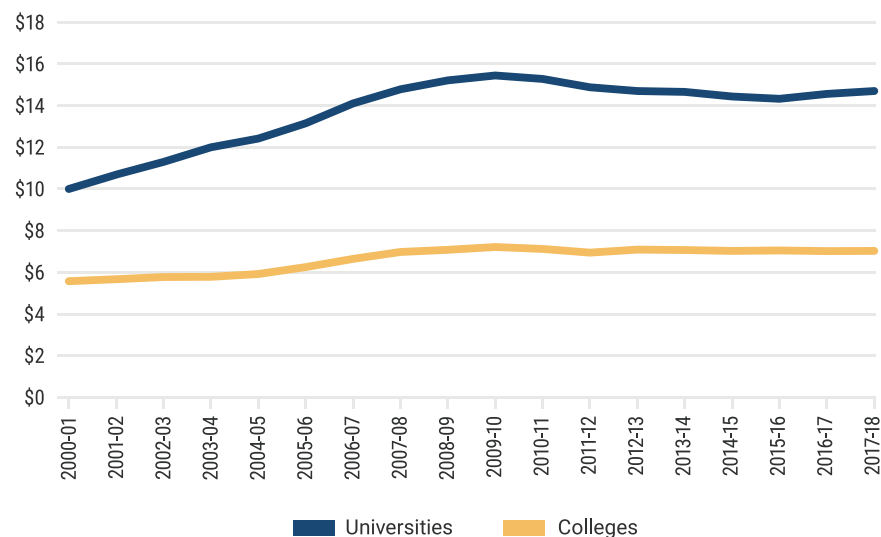
# CHAPTER FOUR

## Government Expenditures

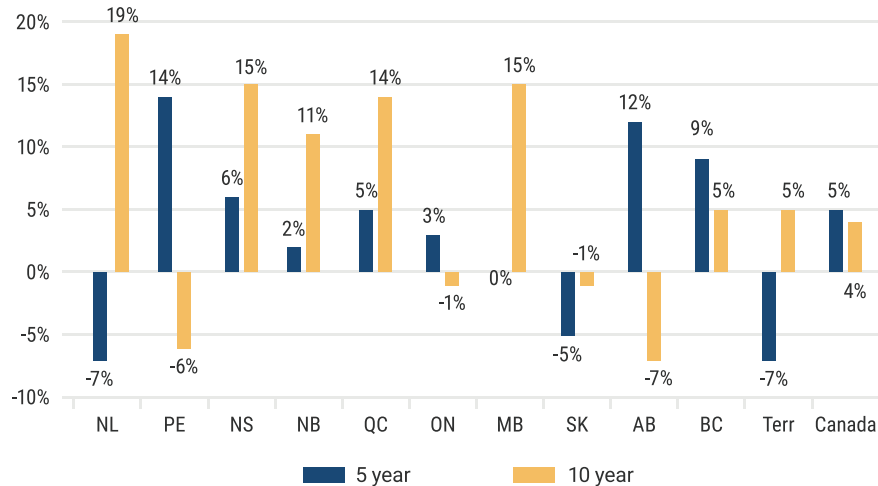
**A**S PREVIOUS CHAPTERS DEMONSTRATE, INSTITUTIONAL reliance on governments as a source of income is decreasing. Still, grants from government – particularly operating grants from the provinces – remain the largest single source of funding in the postsecondary sector. This chapter examines these expenditures in detail, both at the provincial and federal levels. In the main, the 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 and have continued to fall up to the present day. 2016-17 saw the first uptick in government expenditures in nearly a decade and this persisted for universities into 2017-18. This uptick was primarily the effect of a one-time increase engineered by the federal Strategic Infrastructure Fund (SIF), created by the Liberal government to counteract the brief 2015-16 economic slowdown.

**4.1 Provincial Expenditures on Postsecondary Education**  
Two Statistics Canada surveys – the Financial Information of Universities and Colleges (FIUC) and the Financial Information of Community Colleges and Vocational Schools (FINCOL) – provide information on PSE institutions’ sources of funding up to 2017-18. An examination of individual institutions’ financial statements revealed changes in government funding for 2018-19, and these results are included as well. **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 and partly by the conversion of several former colleges into universities in B.C. and Alberta. Between 2009-10 and 2015-16, as provincial governments mostly tried to rein in spending, real expenditures decreased slightly but steadily before ticking up again in 2016-17. It should be noted that this is not entirely an apples-to-apples comparison over time: in 2007 and 2008, several institutions in Alberta and British

**Figure 4.1** – Provincial Government Transfers to Institutions by Type of Institution, in Billions (\$2018), 2001-02 to 2017-18



**Figure 4.2 – Changes in Provincial Transfers to Institutions by Province over Five and Ten Years, to 2018-19, in \$2018**



Columbia converted from college status to university status and so moved from one category to another; without this shift, the pattern for the two sectors would be somewhat more similar.

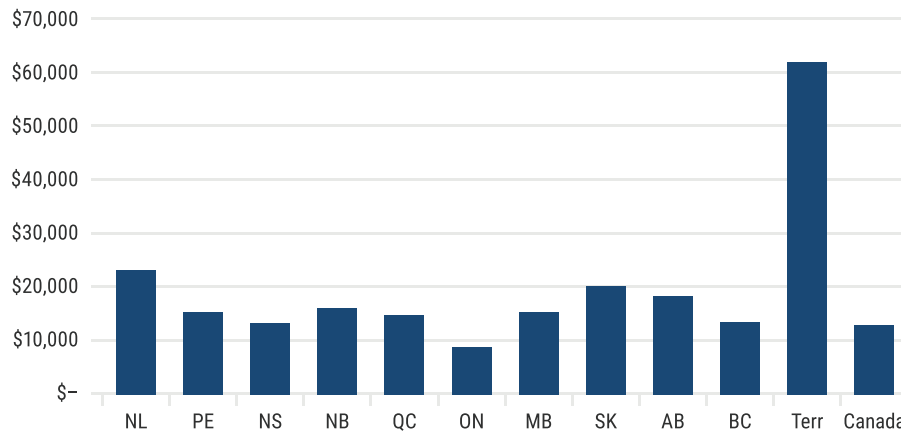
As is usually the case in Canada, the expenditure picture varies significantly not only depending on the time period chosen, but also from one province to another. Nationally, provincial transfers to institutions in 2018-19 were about 4% higher than five years previously and 5% higher than ten years previously (see **Figure 4.2**). But this consistency at the national level belies major swings at the provincial level. In 2018-19, three provinces had spending below where it was in 2008-09 while two others had spending below their 2013-14 levels (only one province – Saskatchewan - was down across both time periods). British Columbia, Quebec and Nova Scotia were the only provinces to show persistent and significant growth across both a five-and-ten year period, and yet all three of them passed through at least one three-year period in the period where provincial expenditures declined annually. To some extent, this reflects changes in capital spending, which is more volatile than spending on operating grants, and which tend to bunch around recession years. But it vividly illustrates the fact that understanding Canadian higher education requires

looking beyond national figures and that national trends rarely play out in a synchronous way across the country.

Perhaps the most important thing to understand about Canadian higher education finance is the variation across provinces and 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 is so low, dragging 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; costs in Newfoundland are elevated in part because the province chooses to run some health sector expenditures through Memorial University of Newfoundland’s medical faculty.



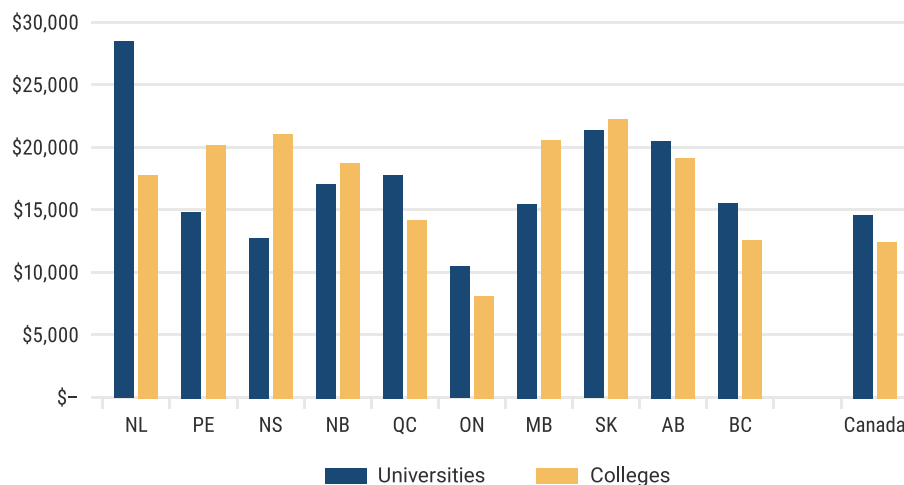
**Figure 4.3 – Provincial Expenditures per FTE Student, 2018-19**



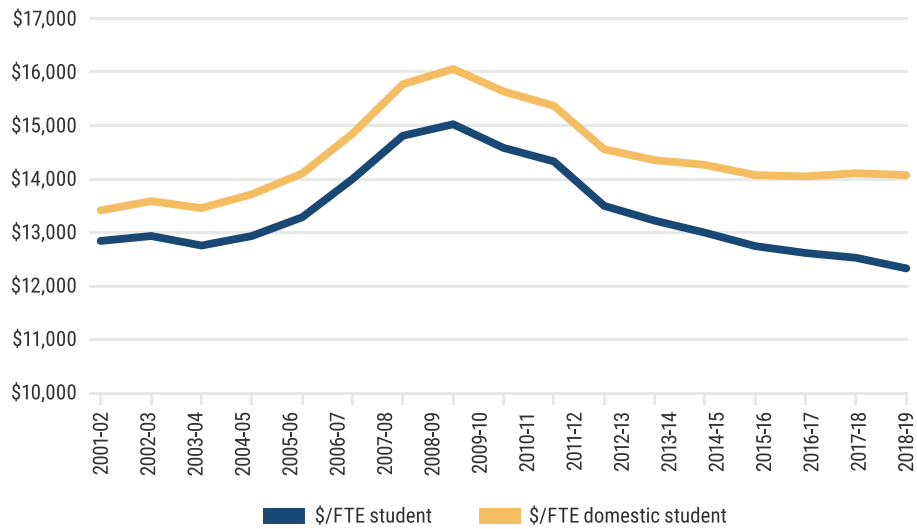
As might be expected, spending varies across the college and university sectors. As **Figure 4.4 below** shows, provincial government expenditures on universities are somewhat higher nationally than they are in colleges (\$13,234 per student for universities and \$11,259 for colleges), but this is by no means a universal phenomenon: in half of the provinces (Prince Edward Island, Nova Scotia, New Brunswick, Manitoba, and Saskatchewan) colleges receive more money than universities. More generally, there are relatively high per-student expenditures across both sectors in Alberta and Saskatchewan, and relatively low per-student expenditures in Ontario.

The very high figure for per-student expenditures in Newfoundland can be explained partly by the medical expenses noted above, and because it houses a very expensive technical institute (the Marine Institute): absent these two factors, per-student costs at MUN (the province’s only university) are similar to institutions elsewhere in the country.

**Figure 4.4 – Provincial Expenditures per FTE Student, Colleges and Universities, 2017-18**



**Figure 4.5** – Total Provincial Funding per Full-Time Student, in \$2018, 2001-02 to 2018-19



Another way to look at this 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 \$15,037 (\$16,065 per domestic student) in 2008-09 (both figures are in constant 2018 dollars). In the decade since then, spending per FTE student fell by 19% (13% per domestic student). **Figure 4.1** at the start of the chapter reminds us that this decline in per-student funding is not primarily a result of a significant decline in total funding; rather, it is a result of expenditures remaining largely constant while enrollment numbers grew.

# 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 for the most part distributed by an enrollment-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.

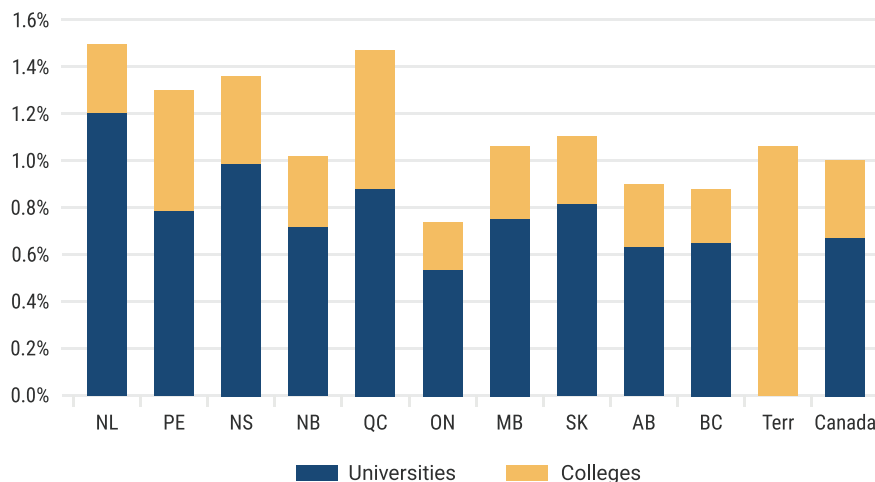
In the other seven provinces, funding is essential historically-driven: that is to say that what a school receives in any given year for core funding is largely a function of what it received the previous year, with potentially some adjustments for new programs or new government initiatives. These changes are in all cases spread equally across institutions in the province, so that unlike in an enrollment-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,” even though neither has based funding on enrollment for over a decade (at one point in the past, some or all of their funding was enrollment-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 for most of the two decades has used a historically-driven model. 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 one province – Ontario – currently uses performance funding (that is, funding based on outputs rather than inputs), and that only accounts for a miniscule 1.4% of total funding, based mainly on graduate employment rates. In 2019 both Ontario and Alberta announced plans for vastly expanded performance-based funding schemes which 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. New Brunswick and Manitoba have made tentative statements indicating that they are interested in performance-based funding, but they do not yet appear to be particularly advanced in their planning for this.

**Figure 4.6** – Government PSE Expenditures as a Percentage of GDP by Province and by Sector, in \$2018, 2018-19



Per-student expenditures have limits when comparing provincial commitment to a sector, since they are based on 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 1%, but, once again, it varies substantially by province: in Newfoundland it is 1.5% of GDP, while in Ontario it is just 0.76%. 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 (20%), Quebec with its very large CEGEP system (40%), Prince Edward Island (also 40%) and the three territories, where the college figure is 100% because they currently have no universities in these data, though the launch of Yukon University will change this figure in future editions.

#### 4.2 Federal Expenditures on Postsecondary Education

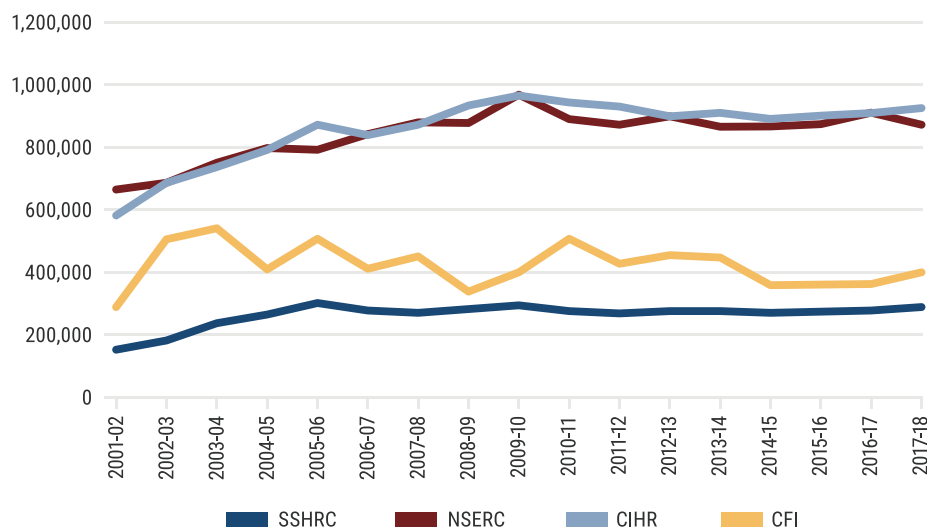
The Government of Canada essentially has four mechanisms for transferring money to postsecondary institutions. The first transfer mechanism is through the research granting councils: the Canadian Institutes for Health Research (CIHR), the Natural Science and Engineering Research Council (NSERC) and the 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 also 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 through 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. Each of these are discussed in turn.

The four granting councils provide roughly \$2.5 billion in funding to Canadian institutions every year. Close to 99% of this funding goes to universities. This total expenditure figure rose very quickly in the first half of the 2000s, but the figure today, in real dollars, is roughly the same as it was in 2005-06. Funding from both CIHR and NSERC tends to hover in the \$850-900 million range;

**Figure 4.7 – Research Granting Council Expenditures by Council, in \$2018, 2001-02 to 2017-18**



SSHRC funding has stayed very close to \$260 million per year for over a decade. Funding from CFI is more erratic, reflecting the fact that it in the period covered in this graph, CFI did not yet receive annual funding allocations but instead received occasional endowment funding.

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 more concentrated than operations funding, with the country’s top three institutions (Toronto, UBC and McGill) receiving roughly 25% of all council funding. **Table 4.1** below presents the top fifteen institutions receiving grants from each of the three traditional granting councils. The percentage of total indicates how many of the total grants and awards indicated each institution received—the value of the grants is not considered in these calculations.

There are a variety of other sources of federal funding for universities and colleges. The largest single on-going source is the Canada Research Chairs program, which provides roughly \$275 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 \$25 million per year for various services;

Employment and Social Development provides similar levels of funding 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. From a government perspective, 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 the FIUC and FINCOL databases and amount to about \$900 million per year for most years, though this increases to about \$1.5 or \$1.6 billion per year when major infrastructure drives are being undertaken, as seen below.

**Table 4.1 – Top Fifteen Institutional Recipients of Federal Research Grants, by Council 2019-20**

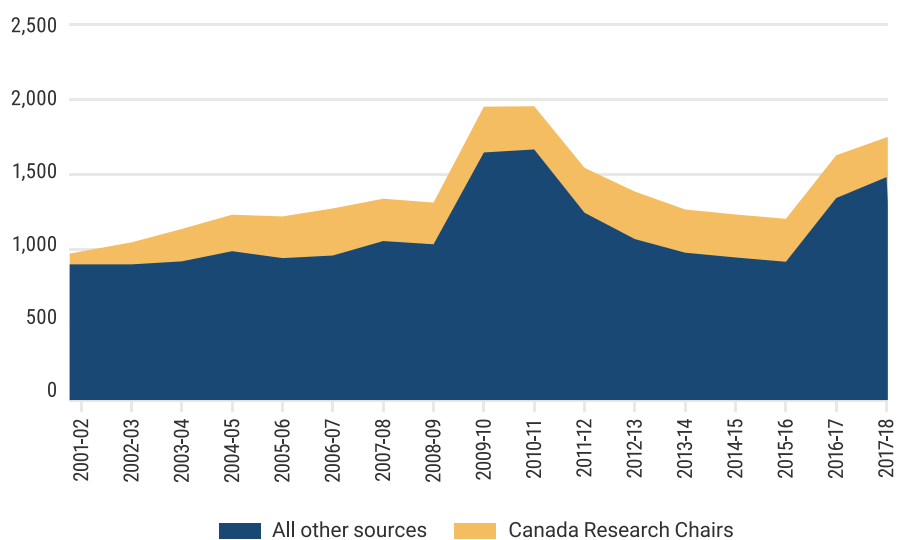
SSHRC *		NSERC **		CIHR ***	
INSTITUTION	% OF TOTAL	INSTITUTION	% OF TOTAL	INSTITUTION	COLLEGES
Toronto	9.71	Toronto	8.69	Toronto	8.16
UBC	8.28	UBC	7.35	UBC	7.94
McGill	5.83	McGill	6.30	McGill	6.33
York	4.56	Alberta	6.26	Alberta	4.75
UQàM	4.56	Waterloo	5.06	McMaster	4.19
UdeM	4.31	Calgary	4.05	Calgary	3.86
Calgary	3.72	McMaster	3.81	UdeM	3.34
Ottawa	3.55	Laval	3.65	Western	2.87
Alberta	3.46	Western	3.49	Laval	2.62
Concordia	2.96	Ottawa	2.93	Manitoba	2.51
Laval	2.87	UdeM	2.85	Ottawa	2.24
Waterloo	2.87	Queen's	2.85	Dalhousie	2.20
Carleton	2.79	Manitoba	2.61	Queen's	1.99
Western	2.62	Guelph	2.61	Sherbrooke	1.53
Queen's	2.45	Victoria	2.45	Saskatchewan	1.32

\* includes Insight Grants and Insight Development Grants.

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

\*\*\* includes both CIHR awards and grants.

**Figure 4.8 – Direct Federal Funding to Postsecondary Institutions, Excluding Tri-Council Funding, in \$2016, 2001-02 to 2017-18**



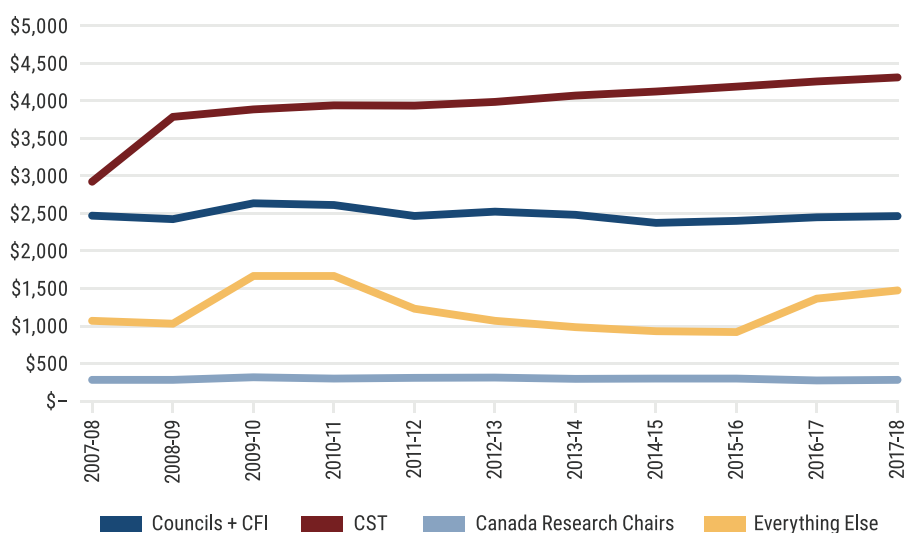
Finally, there is the matter of federal transfer payments to provinces for postsecondary education. Between 1957 and 1967, the Government of Canada attempted a modest form of direct support to institutions. This was achieved through transferring a lump sum to a shell organization owned and managed by 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 early 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 account-

**Figure 4.9** – Federal Assistance to Postsecondary Institutions by Type, in Millions of \$2018, 2007-08 to 2017-18



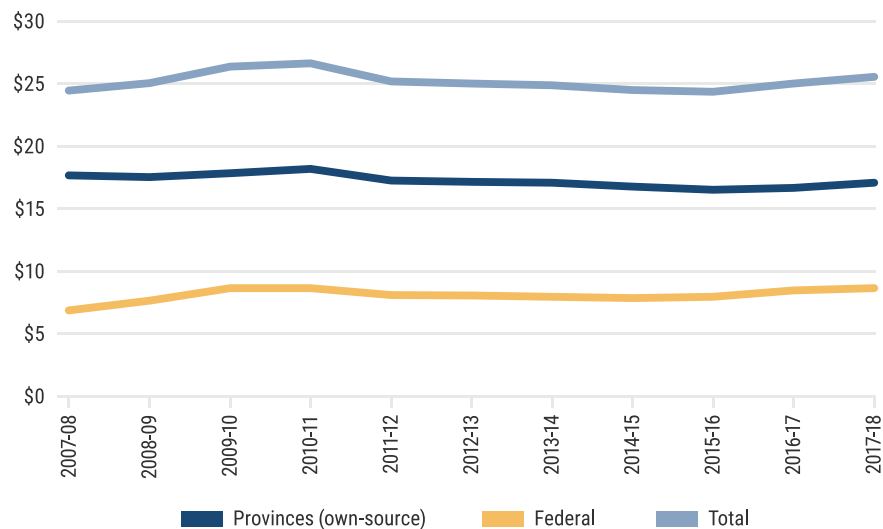
ability arrangements were not formally changed, provinces agreed to publicly announce what they would do with any new monies received through the transfer. By 2004, the value of the cash transfer had risen to \$22.3 billion.

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 PSE, 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 billion per year. This is equal to about 20% of provincial expenditures on postsecondary institutions, up from just 14% in 2007.

**Figure 4.9** above shows the relative importance of the CST compared to other forms of federal expenditures. Because CST rises automatically every year while other forms of funding have over time dropped off somewhat, the transfer is now a much more important part of the overall federal effort than it was even a decade ago. Over 50% of federal funds for PSE now go through the CST.

Thanks to the clarification about 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 done below 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 2:1 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 4.10** – Federal and Provincial Own-Source Expenditures in Respect of PSE Institutions, Canada, in \$2018, 2007-08 to 2017-18





# CHAPTER FIVE

## Tuition and Student Aid

**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 these costs. Examining these issues in a pan-Canadian context is challenging, because tuition and student aid policies vary across provinces. This chapter will encapsulate the issues around affordability as concisely as possible.

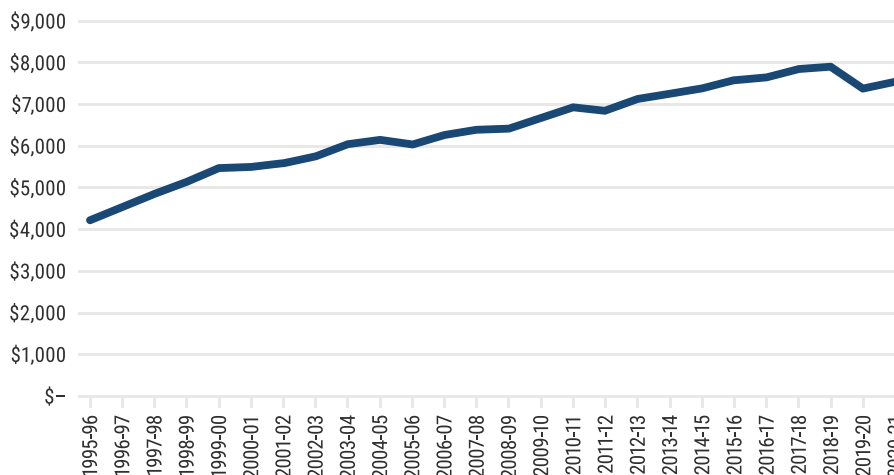
### 5.1 Tuition

Tuition fees in universities and colleges are subject to a great deal of tug-of-war between institutions and provincial governments. Generally, the former seek greater freedom to set fees in order to raise revenues; the latter seek greater control over institutional policy to limit negative headlines about the cost of education (though provinces often lack the concomitant desire to provide

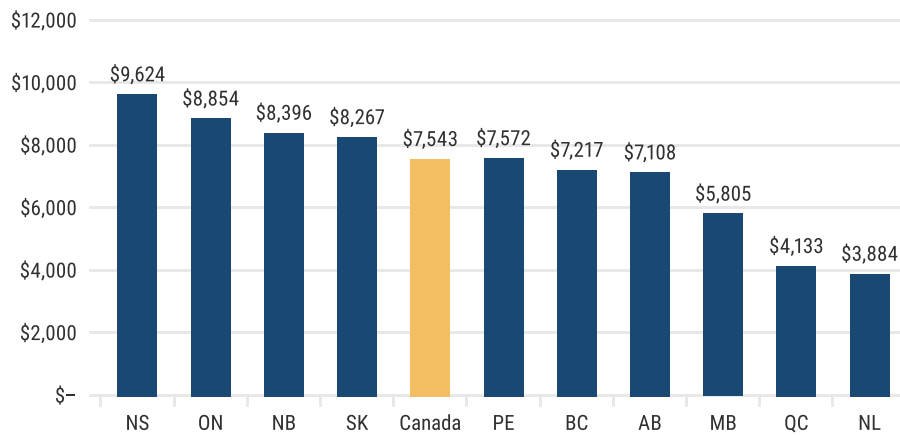
institutions with greater funding to compensate for lower tuition). This tug-of-war plays out differently across provinces and across time. Sometimes provinces impose tuition fee freezes, and in some narrowly defined cases they permit fees to be de-regulated. Genuinely pan-Canadian trends in fee policies are few and far between. What does currently unite 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 2020 (the current year's data is an estimate based on various institutional announcements on fees). In the 1990s, annual average rises 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, rises in tuition began to moderate, and since that time annual averages increases in university fees have been very close to 2% per year after inflation. 2019-20 is an excep-

**Figure 5.1** – Average Domestic Undergraduate Tuition and Fees, Canada, 1995-96 to 2020-21 (est.), in \$2020



**Figure 5.2 – Average Undergraduate Tuition and Mandatory Fees, by Province, 2020-21 (est.)**



tion due to the Ontario government’s decision to cut all tuition by 10%, which led to a substantial decline in the national average.

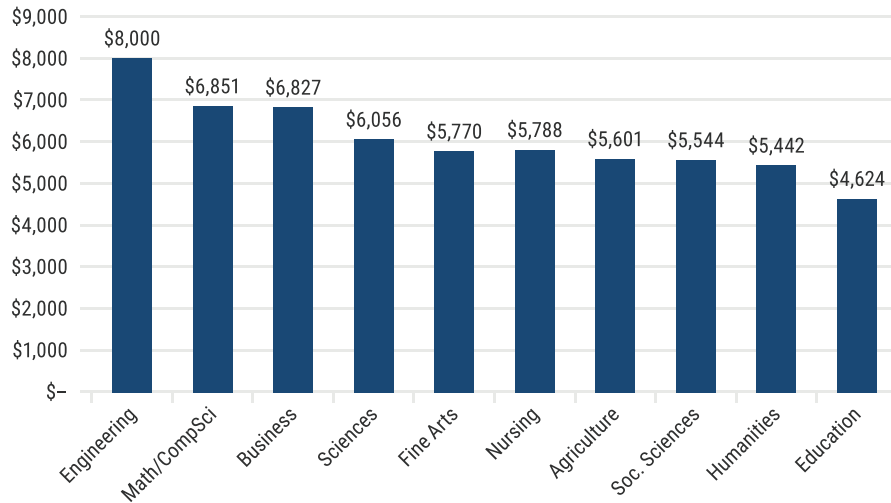
Equivalent data for college tuition is unavailable, as Statistics Canada chooses not to survey institutions on this and institutions themselves prefer not to be overly transparent on this matter. The closest we can come to obtaining national college tuition figures is to look at revenue per full-time equivalent (FTE), which is available by combining data from FINCOL and PSIS. This is not ideal because it is impossible to 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, with much larger numbers of international students, the figure is \$10,374 per FTE student per year. At colleges, excluding CEGEPs, the figure is around \$8,925 per FTE student per year. What one should take from that is not that average college tuition is actually \$8,925 per year (because this figure is driven substantially by international student enrollment and fees), but rather that the gap between university and college tuition in Canada outside Quebec is, on average, somewhere between \$1,000 and \$2,000.

University tuition and fees vary significantly by province. Quebec and Newfoundland have very low tuition fees, both resulting from lengthy periods of tuition fee freezes over the last 40 years. Nova Scotia has the country’s highest fees, though Ontario, New Brunswick and Saskatchewan are not far behind. Notably, participation rates in Canada 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 in the country. Meanwhile, the lowest participation and attainment rates are found in the Western provinces.

#### 5.1.1 Tuition by Field of Study

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 (but not exclusively) 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 \$750-800 per year) but does not break them down by field of study. **Figure 5.3** demonstrates that the median program price across the main fields of study in Canada (Business, Science, Social Science and Humanities) is probably in around the high \$5,000s. Even adding on the \$800 or so from ancillary fees not shown here would only bring the

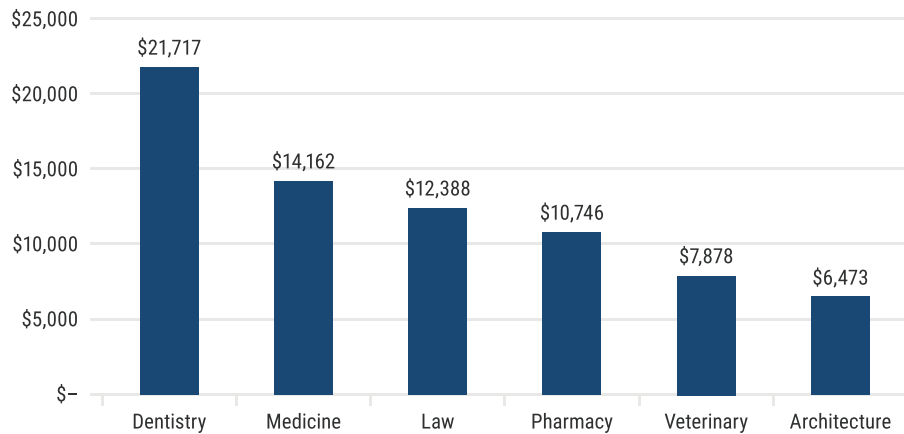
**Figure 5.3 – Average Tuition Fees, by Field of Study, First-Entry Undergraduate Programs, 2019-20**



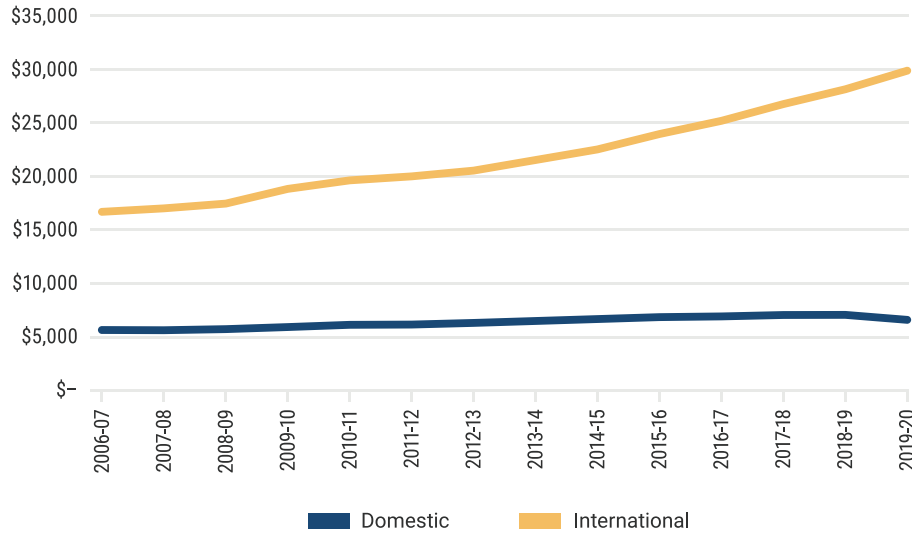
median tuition fee to somewhere between \$6,500 and 7,000, or about 10% lower than the national averages noted in **Figures 5.1** and **5.2**.

The reason for this average/median gap is simple: there are a small number of professional programs which charge fees dramatically over the median: over \$21,500 per year in Dentistry, over \$14,000 in Medicine and over \$12,000 in Law. Even with relatively small numbers of students, these fee levels push the average up significantly.

**Figure 5.4 – Average Tuition Fees, by Field of Study, Second-Entry Professional Undergraduate Programs, 2019-20**



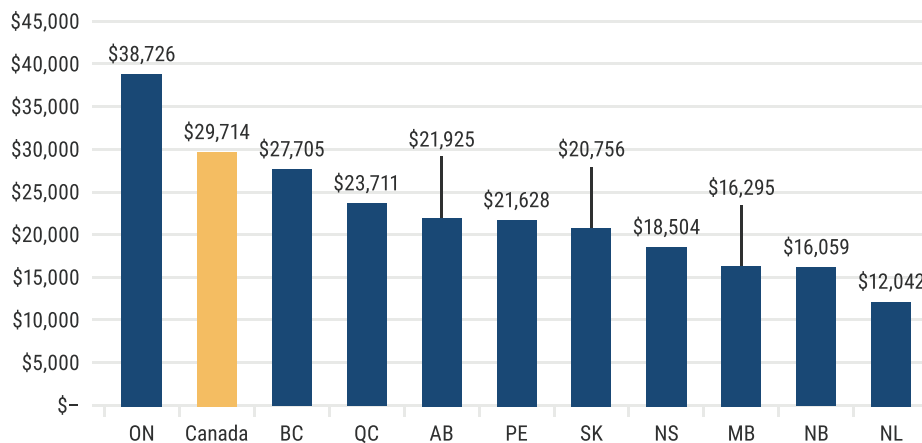
**Figure 5.5 – Domestic vs. Int'l Student Tuition, Canadian Universities, 2006-07 to 2018-19, in \$2018**



Domestic tuition fees are only part of the story. As we saw in **Chapter 2**, international student numbers have been increasing in recent years, and as shown in **Chapter 4**, international student tuition dollars have become an increasingly important source of funding for universities and colleges. As **Figure 5.5** shows, the increasing funds are coming not just from increased numbers, but increased fees as well. Whereas domestic student tuition has increased at roughly inflation plus 2% over the past

decade, international student tuition fees have been rising at inflation plus 5%. Over time, the effect of compounding means those two numbers separate at an accelerated pace. In 2019-20, international student tuition averaged \$29,714 per year, up from just \$16,667 (in inflation-adjusted dollars) a decade earlier. Notably, this rise in fees has gone in tandem with regular double-digit increases in international student numbers: there is no sign that Canadian institutions are pricing themselves out of the market.

**Figure 5.6 – International Student Tuition by Province, Canadian Universities, 2019-20**



However, as is usually the case in Canada, the picture for international student fees varies significantly from one part of the country to another. In the two provinces attracting the greatest number of migrants, tuition fees are quite high: nearly \$39,000 in Ontario and just under \$28,000 in British Columbia. In the rest of the country, international student fees are more moderate. In the Prairies and the Maritime provinces, fees are more likely to be in the \$16-23,000 range; in Newfoundland they are a comparatively trifling \$12,042. The reason for these gaps is unclear, but presumably provinces which do not boast a major metropolis feel they may have more difficulty attracting international students and price themselves accordingly. What is perhaps most intriguing here is that universities for the most part 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 costs but marginal costs, which can be quite low, meaning that even when charging low fees an institution is better off accepting more international students.

## 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 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. Student assistance is an area of joint responsibility with the federal government. Not only is there a national program – 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 Canada Student Loans Program 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 which manages both programs, permitting them to integrate the two programs in a relatively seamless fashion. As

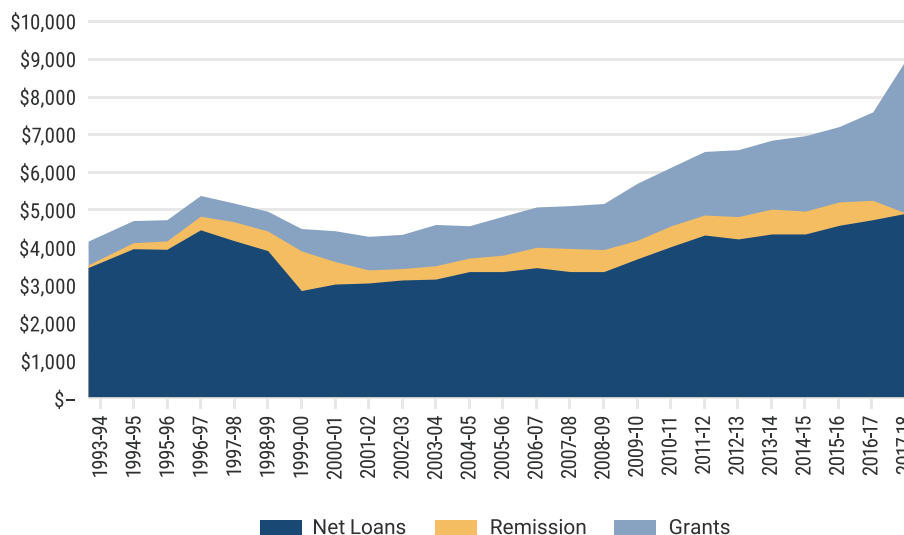
such, students only make a single application to the two programs (though the needs assessment processes for each program may be quite different). To a large extent, provinces treat the federal program as a base, and use their own resources to build a program around it. Therefore, student programs can 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 some total assistance maximum. This maximum varies somewhat by province and student status, but it is at least equal to \$350/week of study (\$11,560 per academic year). This need figure equals the size of the student loan.

In contrast to loans, grants are in many cases 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 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, though they remain significant in British Columbia and Nova Scotia.

**Figure 5.7 – Total Annual Loans and Grants Issued, Canada, 1993-94 to 2017-18 in Millions of \$2019**

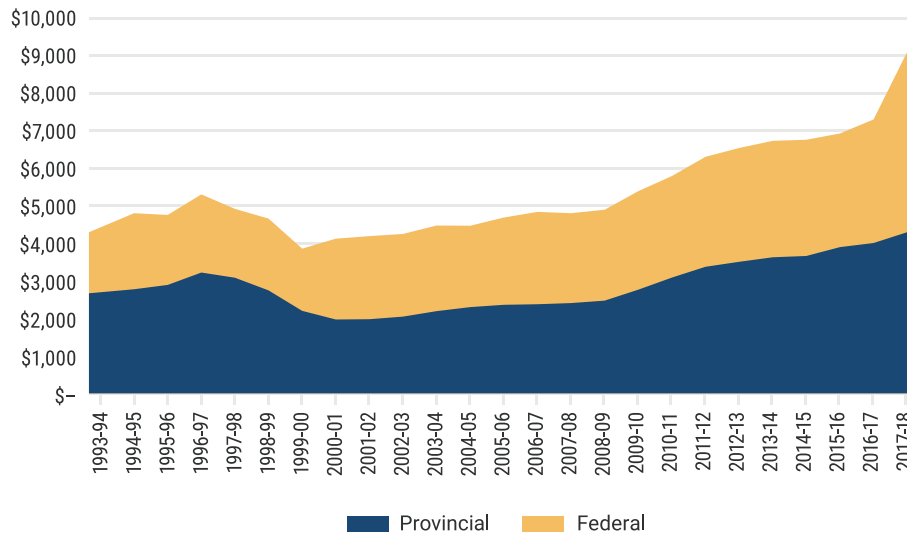


Actual figures on loans and grants in Canada are difficult to come by for a variety of reasons. Federal data is, at best, three years out of date by the time an annual report is released. Apart from Quebec, Saskatchewan, and Alberta, most provinces do not publicly release data on the amounts of loans and grants they deliver. Inexplicably, Statistics Canada does not collect data on provincial student aid, even though they have an obligation to provide data on this to the OECD for their annual *Education at a Glance* series. Instead, it chooses to provide data on the federal program only, meaning Canada’s student aid effort is grossly under-reported in international statistics. 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, however this year Higher Education Strategy Associates used freedom of information requests to update pre-2010 data to the year 2017-18.

**Figure 5.7** shows the total need-based assistance issued in Canada over the past 25 years, in constant 2019 dollars. 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, total need-based aid was roughly \$9 billion, of which 54% came in the form of loans. Of the remainder, roughly 98% was delivered in grants and the rest through various forms of provincial loan forgiveness.

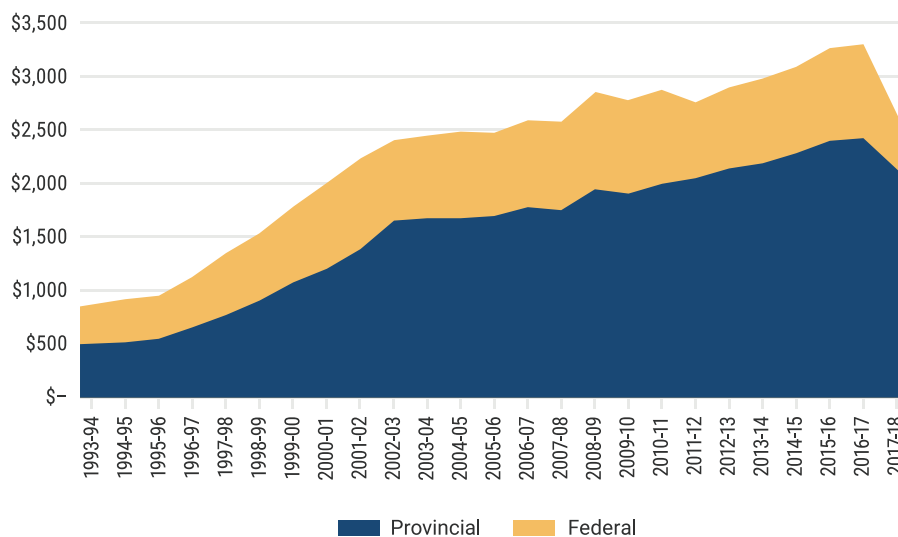
**Figure 5.8 – Total Annual Need-based Student Aid by Source, Canada, 1993-94 to 2017-18 in Millions of \$2019**



There have also been shifts over time in the sources of student aid, shown above in **Figure 5.8**. In the mid-1990s, most of the aid provided came from provincial governments. After 2000, and the creation of the Canada Millennium Scholarship Foundation, the balance shifted towards the centre and an increasing proportion of

funds were provided either directly or indirectly by the federal government. Over the last few years, provincial funding has grown substantially, and it is provinces who once again provide over 50% of support to students. Note that this increase in provincial spending since 2010 was mostly confined to Ontario and Quebec.

**Figure 5.9 – Total Value of Education and Tuition Tax Credits by Source, Canada, 1993-94 to 2017-18, in Millions of \$2019**



### 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 needs testing. The first and most important of these forms are tax credits. As **Figure 5.9** above shows, the value of these credits rose from under \$1 billion in 1996-97, to over \$3.3 billion in 2016-17 in real dollars. Major policy changes in the federal and Ontario programs reduced total tax credits by almost \$700 million to \$2.625 billion in 2017-18, with most of this being turned into grants.

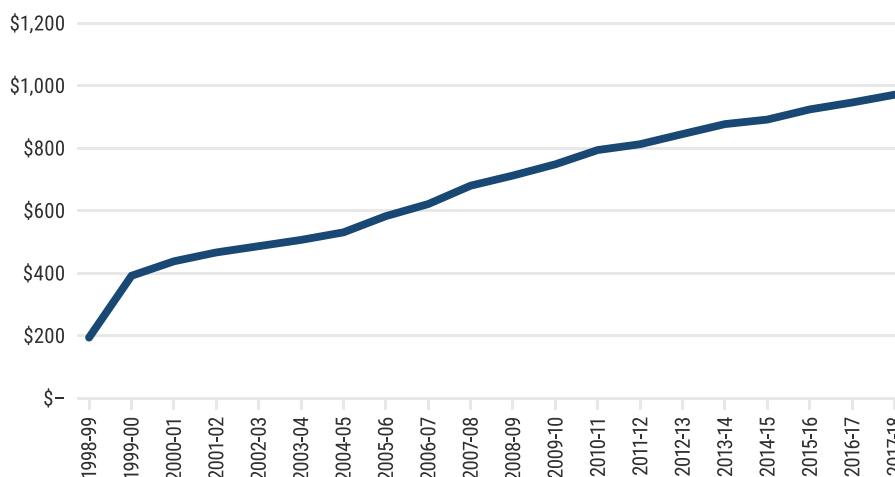
The other important government transfer program for postsecondary education is the Education Savings Grant. Since 1971, Canada has had the Registered Education Savings Plan – that is, a savings account in which growth was permitted to escape tax. In 1998, the Government of Canada introduced a savings 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 take-up rose rapidly (see **Figure 5.10**, below). 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 \$46,000 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. The barrier is that the parents need to open an account for the transfer to occur, and many do not, thus leaving the program with an only mediocre take-up rate.

The CESG has, in many ways, 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, the amount is close to \$1 billion. In 2017, over 2.8 million RESP accounts received CESG and/or A-CESG and 52% of all Canadians under 18 have a RESP in their name. In the same year, 430,000 current students used money from their RESPs to pay for education, in an amount totalling \$3.8 billion.

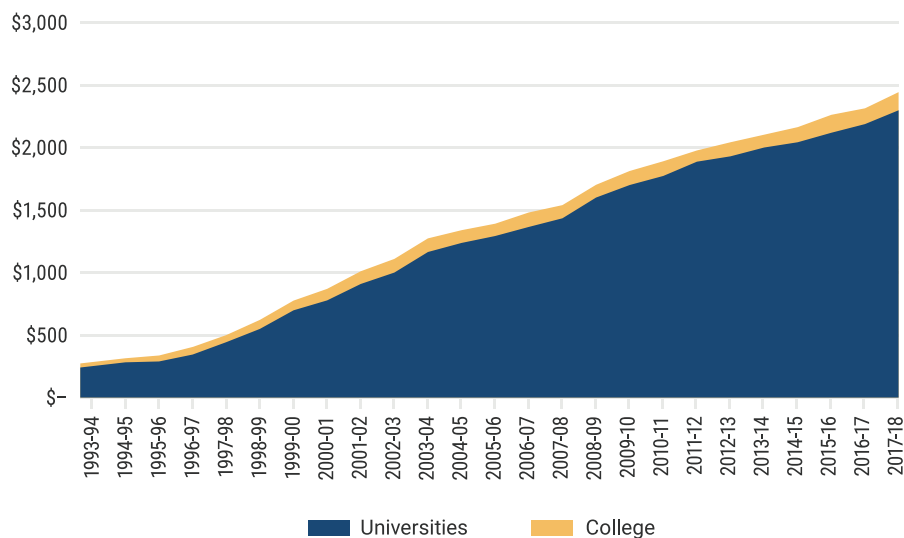
The final major source of funding for students is institutions themselves, which provide almost \$2.5 billion per year in scholarship and bursary funding to students. The overwhelming majority of this money (95%) comes from universities rather than colleges, in part because they

**Figure 5.10** – Total Canada Education Savings Grants Payments, 1998-99 to 2017-18, in Millions of \$2019





**Figure 5.11**– Total Institutional Scholarships by Institutional Type, Canada, 1993-94 to 2017-18, in Millions of \$2019



have greater fundraising resources and in part because financial aid is a more important part of the enrollment management process at universities. Scholarships are perhaps the fastest-growing element of university expenditures in Canada, having increased eight-fold in the past twenty years or so. Total university expenditures on scholarships is now close to \$2,000 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 \$600 per student annually at the undergraduate level and \$7,500 per student annually at the graduate level.

### 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 \$300 million per year, and scholarships for graduate students through the three traditional granting councils, which are roughly \$200-\$250 million per year. 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 2017-18 only Saskatchewan maintains such a program. Quebec and Saskatchewan also have small programs which top-up contributions to Canada Education Savings Grants. Certain federal tax credits have also been excluded from the calculations above. In total, these various sources of aid add up to over \$1 billion.

# Education Tax Credits in Canada:

## *A Short Explainer*

### **Tax-based assistance for postsecondary education in**

Canada pre-dates 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 and a set monthly allowance and could be used either by a student or passed 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 to 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.

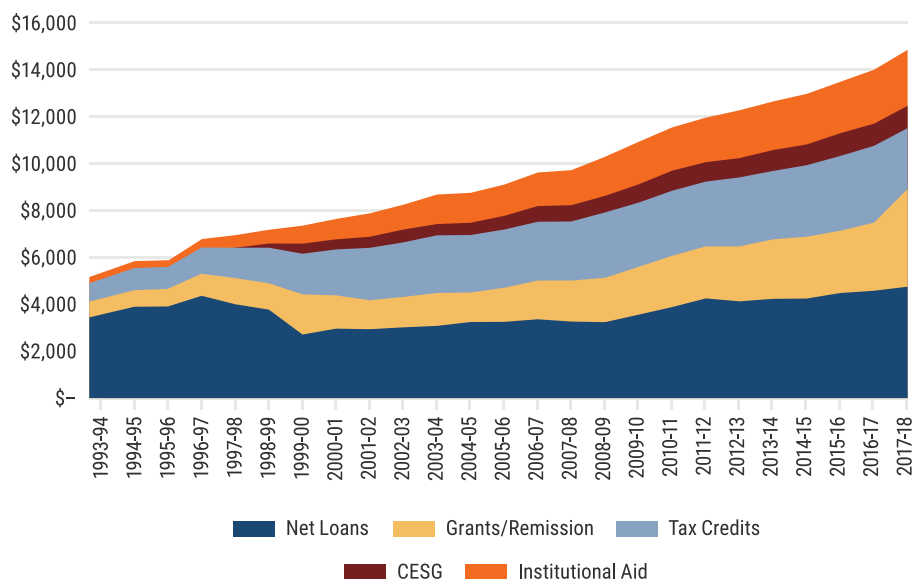
Until 2000, provincial taxes were calculated as a function of federal taxes. Therefore, whenever a federal tax credit was implemented, implicitly the credit reduced one's provincial tax payable as well. In 2000, the country moved from a TONT (tax-on-tax) system to a TONI (tax-on-income) one, under which 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 index the rate to inflation.

The federal Liberal government elected in 2015 came in 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 (this switch does not completely show up in this chapter's data, because tax credits continue to be redeemed for several years after the measures are enacted due to the carry-forward provision). Ontario and New Brunswick followed suit by getting rid of their education 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 tax credit, whereas in Ontario it did not.

In future, the value of tax credits will decrease; but until 2016 the value of tax credits was essentially on a never-ending escalator, one which moved very quickly from 1995 to 2001, and then slowly, more or less in line with tuition and enrollment increases, from 2001 onwards.

**Figure 5.12**– Total Student Financial Assistance by Type, Selected years, 1993-94 to 2017-18, in Millions of \$2019



**Figure 5.12** aggregates the four major sources of aid (excluding the programs noted in the paragraph above) to provide a near-complete picture of how student assistance has increased over the past two decades.

There are three key points to be made here based on this data:

- Overall, the amount of money given to individual Canadians has nearly tripled over the past twenty-five years, even after accounting for inflation.
- The Canadian student aid system is less loan-based than it used to be. In 1994-95 loans made up 67% of total student aid; in 2017-18 that figure is down to just 32.5%. During those intervening 20 years, government grants have increased by 208% after inflation, tax credits by 188% after inflation, institutional grants 484% after inflation, and education savings grants have gone from zero to over \$892 million per year. This is, in total, a sea change in the way postsecondary education is financed.
- The total amount of non-repayable assistance (that is, total assistance minus loans) was over \$10 billion in 2017-18: if money from the additional sources not covered

by **Figure 5.12** are included, it increases to about \$11.3 billion. We know from **Chapter 3** that the total amount of tuition paid to Canadian universities and colleges was in the region of \$15 billion in that same year; however, we also know that roughly \$5.8 billion of this was paid by international students. 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 slightly higher than the total amount of tuition fees paid by Canadian students. Or, put another way, Canada has at most net-zero tuition for domestic students and may indeed be net-negative.

#### 5.4 Student Debt at Graduation

The effect of all this extra financial aid is most easily seen in statistics on student debt. 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 4-year private institutions (which, at the time, were in the neighbourhood of \$37,000 CAD in today's dollars). Average student debt loads in Canada did increase sharply in the 1990s, but since that time have remained very constant and by some measures have decreased.

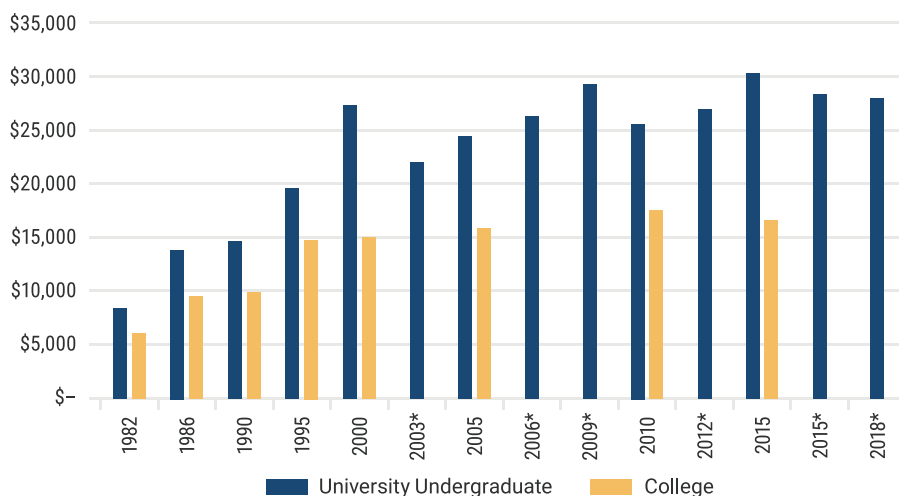
We have two data sources for looking at student debt over time. The first is the National Graduates Survey (NGS), which surveys every fifth (formerly fourth) graduating class three (formerly two) years after graduation. Despite the capricious survey timetable, it still is the country’s most thorough examination of graduate debt because of the large sample, drawn from the entire graduate cohort of both universities and colleges. The drawback is that data can be outdated by the time it is published: at the time of writing in the summer of 2020, the most recent observation is from 2015.

The second is the Canadian Undergraduate Survey Consortium’s (CUSC) triennial survey of graduating students. These have the benefit of being published almost immediately; but also the drawback of a somewhat inconsistent sample (consortium members are not entirely standardized from iteration to iteration), they exclude colleges, and it has low participation from the province of 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 5.13** (CUSC data is indicated with an asterisk)

**Figure 5.13** 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 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 seven national surveys that have been undertaken since 2006, the value for undergraduate debt has moved around in a relatively narrow band between \$25,000 and \$30,000, with a mean value of just over \$27,000. Thus, despite all the frequent platitudes about “ever-increasing student debt”, the massive increase in student aid shown in **Figure 5.12** has in fact brought the student debt problem relatively under control and since 2010 at latest, we have not seen any increase at all in student debt.

*Figure 5.13– Average Student Debt at Graduation, Universities and Colleges, Selected Years, 1982-18, in \$2019*



\* indicates result from the Canadian Undergraduate Survey Consortium

**Figure 5.14**– Average Student Debt at Graduation, by Province, Universities and Colleges, 2015



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 2015. **Figure 5.14** takes the data from this survey to look at the variation of 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 \$15,000. The exceptions are Manitoba and Quebec on the low side and Alberta on the high side. Among undergraduates, the picture is quite different. Graduates who borrow from the three maritime provinces all have average debts in the \$40,000 range, in Ontario and the west they are all around \$30,000. Quebec brings down the national average somewhat by having average debt levels in the \$16,000-range.

# CHAPTER SIX

## *Graduation, Attainment, and Graduate Outcomes*

**F**OR MOST INDIVIDUALS, HIGHER EDUCATION IS PRIMARILY a means for 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. These are not the only rationales for higher education – there are less utilitarian ones – but they are the primary ones for state and student alike. In this section, we will look at the outcomes of postsecondary education in terms of graduation rates, attainment rates, and labour market outcomes with respect to employability and incomes.

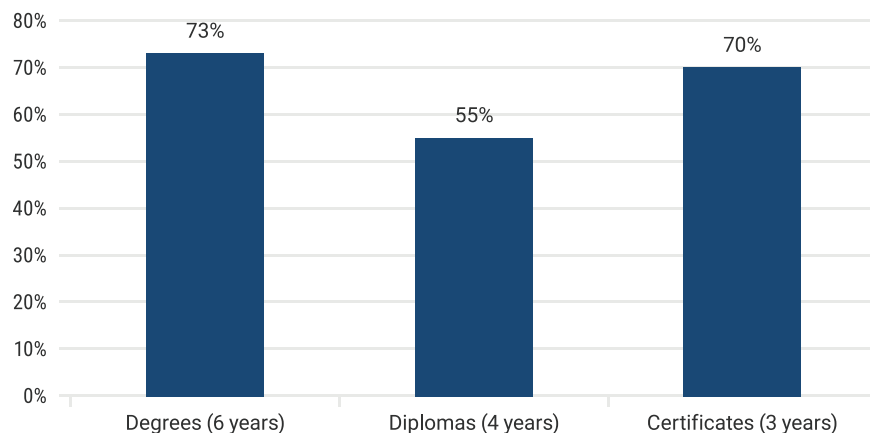
### **6.1 Graduation Rates**

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. 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 (and can the system track

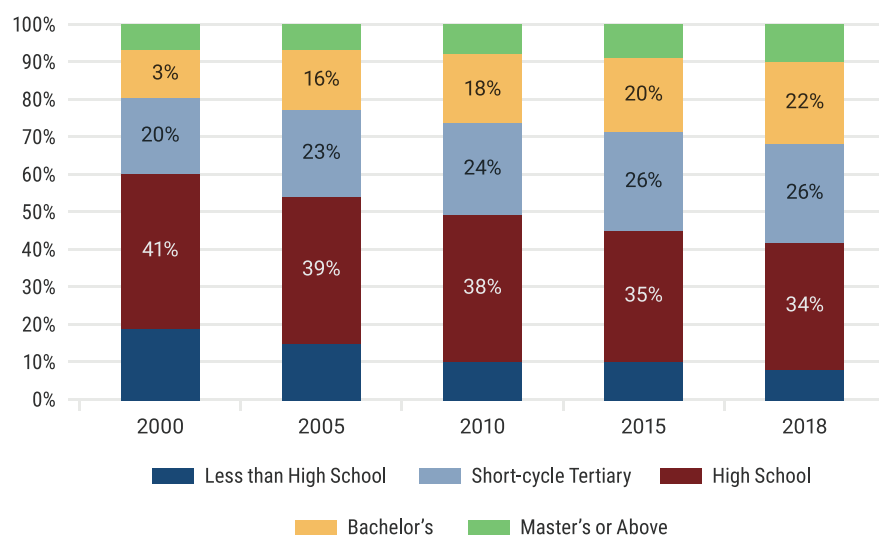
them across institutions, so a student is not erroneously counted as a drop-out for moving from one institution to another)? And then there is the function of time: how many years does one wait before ceasing to follow a student through the system? Five years? Six? Seven? A host of both definitional problems and technical challenges are involved in tracking graduation rates.

Of late, Canadian data on graduation has improved significantly due to various enhancements in the Postsecondary Student Information System (PSIS). The best and most current data available on graduation rates (shown below in **Figure 6.1**) comes from a series of analyses done by Statistics Canada in 2019, which looks at cohorts that entered postsecondary education in the early 2010s. For these students, 6-year graduation rates from four-year programs (*i.e.* undergraduate programs) was 73%, the rate for college diplomas was 55%, and the rate for shorter postsecondary certificates was 70%.

**Figure 6.1**– Completion Rates by Credential Type, Canada, early 2010s



**Figure 6.2**– Educational Attainment Rates of Canadians Aged 25-64, Selected Years, 2000-2018



This might be seen as an undercount, as it only includes those 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).

### 6.1.1 Attainment Rates

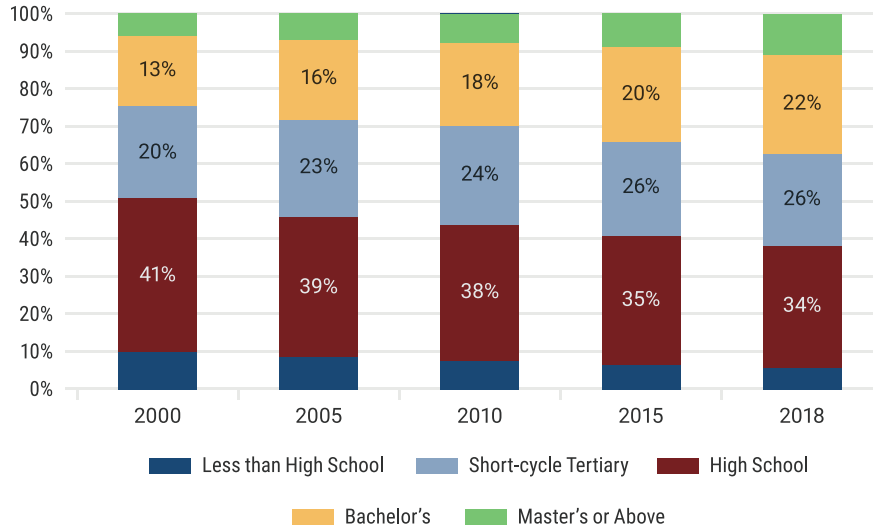
While graduation rates measure the percentage of students who complete their programs, attainment rates measure the percentage of citizens who have finished a given level of education. A high level in one does not mean a high level in the other. Even jurisdictions that have low levels of access and completion 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 of Canadians aged 25-64.<sup>11</sup> It shows a clear upward trend over time. In 2000, only 40% of Canadians had a postsecondary credential of some kind. By 2018, that figure had risen to 58%. Attainment at all postsecondary levels increased: working-aged Canadians with college credentials increased from 20 to 28%, those with bachelor's degrees from 13 to 22%, and those with graduate degrees from 7 to 10%. This is within expectations:

younger, more educated cohorts come into the sample, while older, less educated ones leave.

However, if we look specifically at the attainment levels of younger Canadians, as we do below in **Figure 6.3**, the picture becomes somewhat more complicated. For this group, attainment rates are rising less quickly than they are for the population as a whole. Levels of bachelor's and graduate degree attainment have risen (from 18 to 26% and 6 to 11%, respectively), while college attainment has barely changed. Two things account for the discrepancy. The first is that the picture in **Figure 6.2** is driven not just by high levels of attainment among young Canadians, but also low levels of education among older Canadians who leave the sample in each time period. For example, the 60-64 bracket in 2000 who left the sample in 2005 would have started high school between 1954 and 1958, which is a time when postsecondary opportunities were scarce.

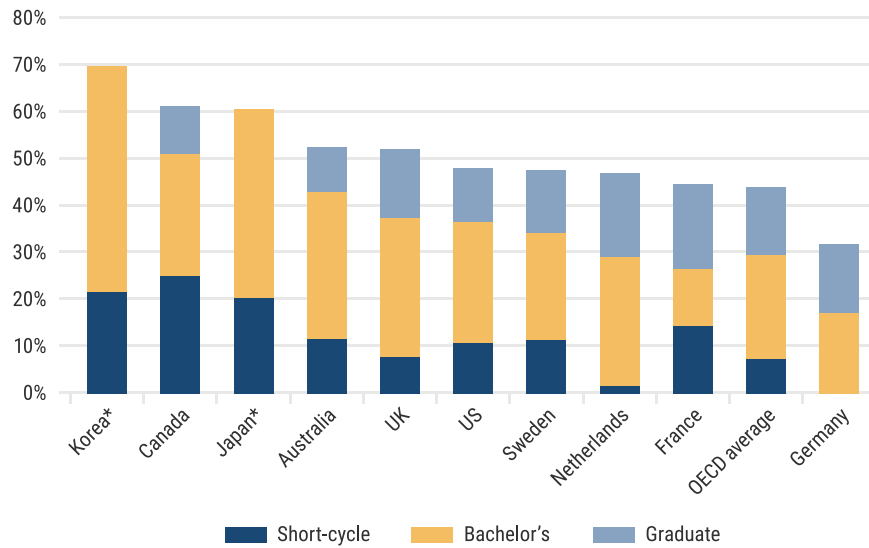
**Figure 6.3– Educational Attainment Rates of Canadians Aged 25-34, Selected Years, 2000-2018**



The second is that immigration affects the numbers as well, particularly given Canada’s immigration system that favours higher levels of education. Persons with degrees who arrive after the age of 35 will affect the numbers in **Figure 6.2** but not in **6.3**.

Globally, Canada is one of the world leaders in tertiary education attainment, with 60% of 25-34 year-olds holding some kind of postsecondary credential. Canada stands out as having the largest proportion of its population with some kind of sub-baccalaureate (*i.e.* diploma or certificate) credential. As **Figure 6.4** indicates, across

**Figure 6.4– Educational Attainment Rates of People Aged 25-34, Selected OECD Countries, 2016**



\* Korea and Japan do not split out Bachelor's degrees from higher degrees offered by universities.



the Organization for Economic Co-operation and Development (OECD) as a whole, the figure is 44%, and in most of Canada's major comparators, the figure is somewhere in high 40s. One advantage Canada has in this comparison are the CEGEPs in Quebec, which offer postsecondary credentials, which in some countries might be considered something closer to secondary education given the typical age at completion. In this comparison, trades/apprenticeship credentials are not considered because in many countries – notably Germany – this type of education is not considered to be tertiary.

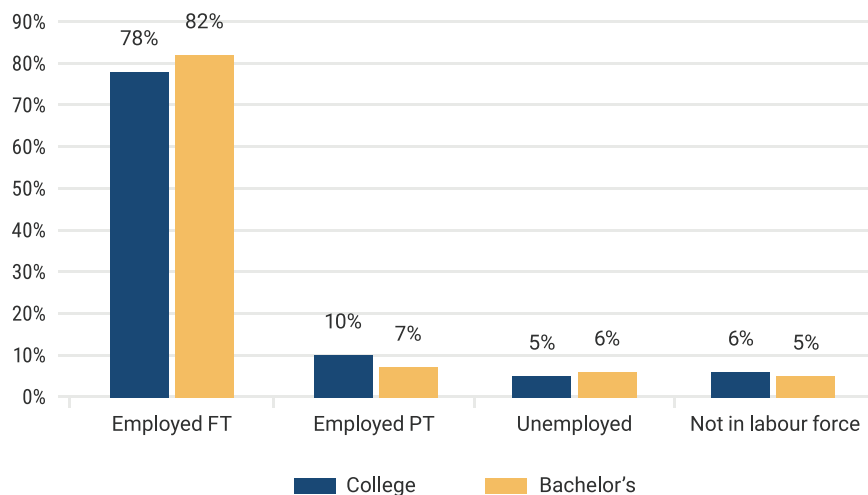
### 6.2 Labour Market Outcomes

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 both for governments and students. Canada was one of the first countries to produce a high-quality national survey of graduates back in 1978, and 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. Regular provincial surveys exist in British Columbia, Alberta, Ontario, and Quebec, and there is a similar joint effort in the Maritime

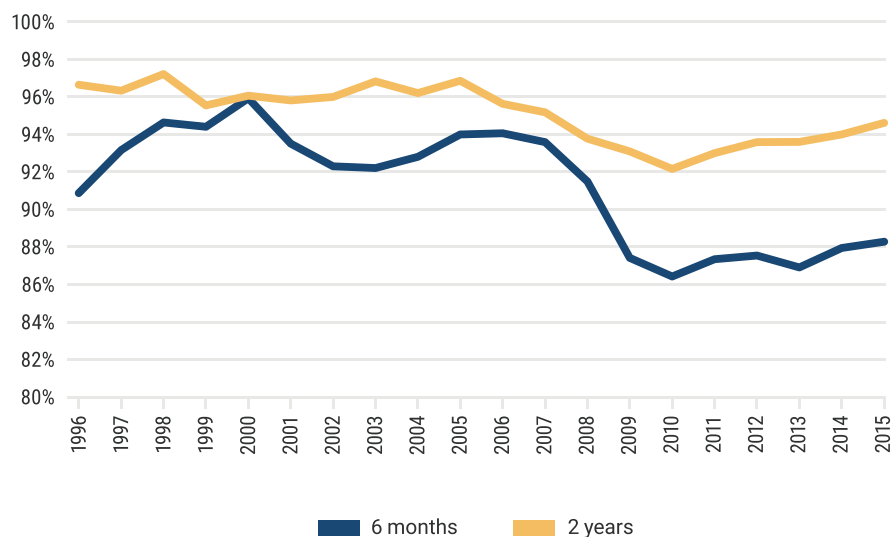
provinces, but they all ask slightly different questions at different times and issue slightly different public reports. Thus, while we know a great deal about graduate employment in Canada, it is not always easy to summarize nationally because of difficulties in compilation and comparison.

Figure 6.5 shows employment rates among all Canadian graduates from the class of 2015, 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.

Figure 6.5– Employment Status by Level of Education Completed, Canada, Class of 2015.



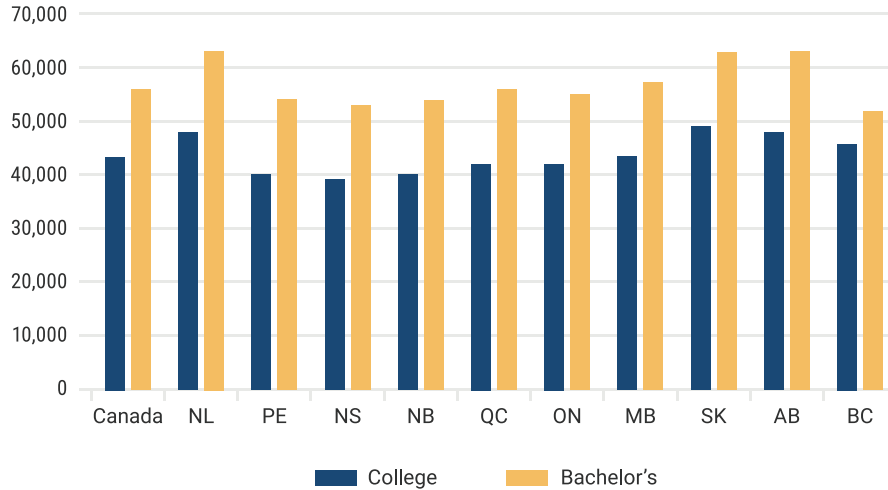
**Figure 6.6**— Employment Rates at Six Months and Two Years, Ontario Undergraduates, Graduating Classes of 1996 to 2015



Provincial surveys usually report employment rates at shorter intervals than 3 years. They usually measure results at 6, 18, and/or 24 months. These data cannot be aggregated to show a single natural picture, though the general trends they indicate are similar. In **Figure 6.6**, we take data from Ontario, which contains about 40% of all university graduates, and looks at reported employment rates 6 and 24 months after graduation. What this shows is that transitions to the labour market do 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 never really came back. For employment rates after two years, however, the drop was not quite as steep and actually bounced back somewhat after that recession, though it never quite regained its earlier heights. 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 produced quite a different set of patterns, 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, the National Graduates Survey shows that three years after graduation, the average college graduate has an annual income of \$43,000, while bachelor’s graduates have average incomes of approximately \$56,000. Nationally, these figures vary. For the class of 2015, graduates from both college and undergraduate programs in the three “oil” provinces of Saskatchewan, Alberta and Newfoundland made significantly more than graduates from other provinces. This is obviously not a reflection on the quality of institutions in various provinces: rather, it is a reflection of the opportunities that were available to young graduates in different parts of the country in the mid 2010s. Given the long-term decline in oil prices since that time, graduate salaries might be in the process of equalizing somewhat across the country.

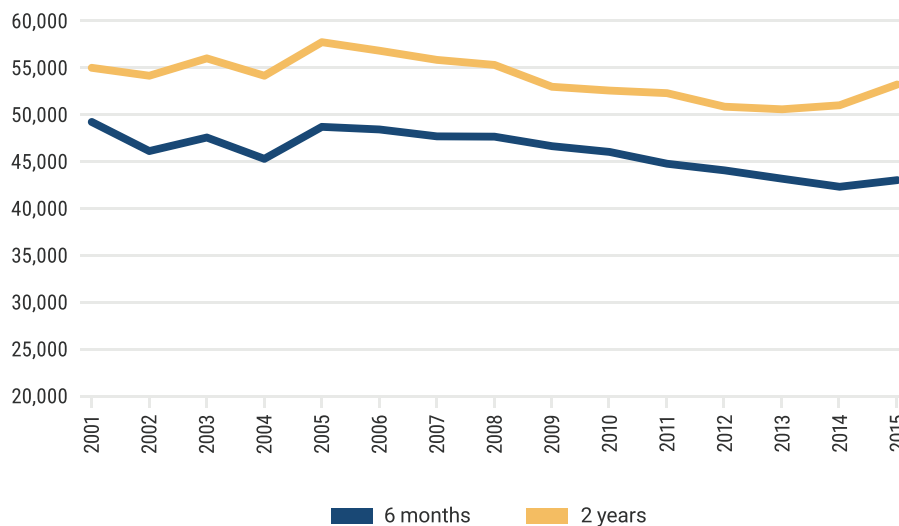
**Figure 6.7**– Graduate Incomes Three Years After Graduation, by Level and Province, Class of 2015, in \$2018.



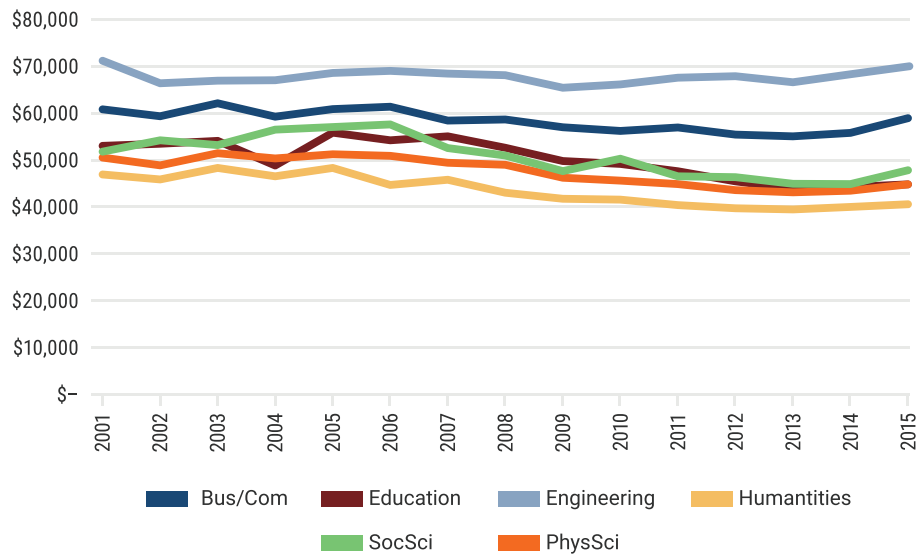
Turning to Ontario, which has a more comprehensive annual data set than any other province, **Figure 6.8** shows a long slow decline in real graduate salaries both after 6 months and after 2 years. Notably, this decline began prior to the 2008 recession, around 2006. That was the year most of Ontario’s “double-cohort” graduated (the result of a change in secondary curriculum

which effectively meant that two cohorts of students graduated at the same time in 2002), which resulted in a somewhat flooded job market that year. In inflation-adjusted terms, graduate salaries in Ontario fell by about 15% from peak to trough; over the last couple of years, however, the trend seems to have reversed and salaries are heading upwards again. There are some intra-pro-

**Figure 6.8**– Graduate Salaries at Six Months and Two Years, Ontario Undergraduates, Graduating Classes of 2001 to 2015, in \$2017



**Figure 6.9**– Graduate Salaries Two Years After Graduation, Ontario Undergraduates, Selected Fields of Study, Graduating Classes of 2001 to 2015, in \$2017



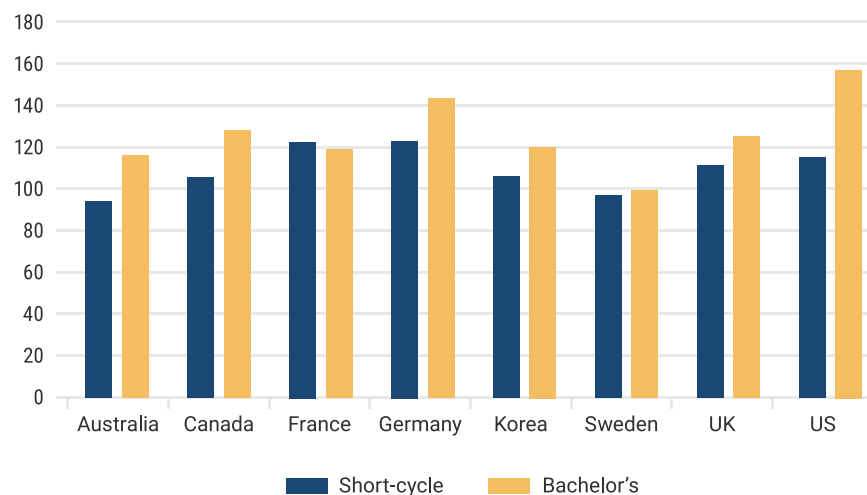
vincial differences to this story – more than there are with respect to employment rates – but overall, this trend seems to hold in more provinces than not.

Ontario’s data also allows a more detailed look at graduates’ incomes by field of study. **Figure 6.9** shows that most fields of study saw some decline in real salaries for graduates between the classes of 2005 and 2015, with Engineering and perhaps Business being the only exception. 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. Physical sciences is particularly interesting: although some commentators claim that jobs in “STEM” (Science, 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.

We conclude with international comparisons. Good apples-to-apples comparisons with respect to graduate outcomes across countries are challenging, partly because the labour market structure differs and partly because – as we saw in **Figure 6.7** – the actual opportunities available to graduates in one country might be quite different than in another. As a result, the OECD has a different way of showing comparative graduate outcomes, which is to look at the “premiums” that university or college graduates have over upper secondary school graduates of the same age in terms of earned income.

**Figure 6.10** shows the premiums for bachelor’s and “short-cycle tertiary” (which in Canadian terms means “college”) for selected OECD countries. In the US and in Germany, young graduates aged 25-34 graduates earn substantially more than their non-graduate counterparts. In comparison, Swedish graduates earn less than non-graduates. This adds some rationale to the US practice of high tuition fees (to return some of these private returns to the public) and to the Swedish practice of low tuition fees (how can you charge tuition when there is no financial benefit?), but less so to German tuition policies. Canada, as usual, is in the middle of the OECD pack: our young graduates earn more than their non-graduate counterparts, but the gap is significantly smaller than in the United States. This may also account for persistent “brain drain” from Canada to US over the years.

**Figure 6.10**– Salaries of Graduates aged 25-34, by Type of Credential, Selected OECD countries (Salaries of Upper Secondary Graduates aged 25-34 = 100), 2018



# ENDNOTES

<sup>1</sup> Data in Figure 3 is missing for Polytechnique, the Université du Québec system, as well as a number of smaller institutions in British Columbia and Ontario.

<sup>2</sup> 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.

<sup>3</sup> While Yukon College recently re-named itself “Yukon University”, the vast majority of its programs are sub-baccalaureate and so for the moment is still considered a college by Statistics Canada, which is why the number of “university” students in the territories is zero despite some students actually studying at that level.

<sup>4</sup> For these purposes, “tertiary” education means ISCED level 5 and above, according to the United Nations Educational, Scientific and Cultural Organization’s classification system.

<sup>5</sup> The term college in this context does not include community colleges, which Statistics Canada does not bother to measure.

<sup>6</sup> These academic staff will, with only a few exceptions, hold the rank of assistant, associate, or full professor.

<sup>7</sup> The data is from the Canadian Association of University Teachers’ Almanac, which tends to exclude data on TT faculty who are in Senior Administrative Roles. If these were included, the percentage over 65 would no doubt be higher.

<sup>8</sup> Given the particularities of the CEGEP system in Quebec, these national trends may not wholly reflect the reality in that province.

<sup>9</sup> University totals in this comparison are lower overall because about 10% of their total expenditures are not categorizable using the definitions employed by colleges.

<sup>10</sup> For universities, the term means central administration only; in colleges, it includes all IT costs as well as central administration, and seems to include a number of other miscellaneous items.

<sup>11</sup> Statistics Canada assigns a hierarchy to credentials which 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 to us and it is therefore the one we use in this document.

# APPENDIX A

## *The Canadian Postsecondary Education System*

### ***Defining the postsecondary sectors***

Traditionally, the Canadian postsecondary system is understood to consist of universities and community colleges; however, the line between these types of institutions is no longer so tidy. New hybrid organizations, often referred to as polytechnics, have evolved out of the college system to become a distinct part of the educational landscape. In Canada, 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-inspired education for future primary/secondary school teachers. State funding for universities began in the nineteenth century, but that funding did not become a formal annual expenditure in most provinces until the Second World War. Formula funding — 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 procession. 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 a CEGEP (see below, **COLLEGES**).

### ***How many universities are there in Canada?***

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. 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 so. Universities Canada has 96 members, but it excludes a number of institutions which call themselves universities (e.g. Tyndale University, Quest University — see below, **NONSTANDARD UNIVERSITIES**) while including a number of degree-granting bodies which are federated with other institutions (e.g. Huron College/Western University, Trinity College/University of Toronto). Complicating matters is 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 and the University of British Columbia, which have multiple campuses but are not usually described as “systems”.

### ***What types of universities are there in Canada?***

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 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 remainder, a good number have begun to style themselves as polytechnics. Universities do, however, maintain a monopoly over graduate education and basic research, though colleges and polytechnics have begun to carve out their own niches in applied research. Although Canada has no official university typology—and while Canadian universities come in a variety of shapes and sizes—they do tend to converge on several “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. 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 (e.g. 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 enrollment from about 5,000 to 50,000 which are usually given the label of comprehensive universities. The smaller ones (e.g. Trent University) to some degree resemble liberal arts colleges in their focus on undergraduate instruction while the larger ones (e.g. Guelph, Simon Fraser) are, on some counts, more research intensive than some members of the U-15.

#### *How do university boards work?*

By international standards, Canadian universities are relatively autonomous from governments. Though some of the country’s older institutions have governing boards which are entirely independent of provincial governments, most Canadian universities do have some government appointees on their boards. That said, these boards 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. Provincial governments are more inclined to steer institutions through the power of the purse; for a variety of historical reasons, governments’ inclination to engage in detail grows as one goes further west across the country. Boards are mainly responsible for universities’ financial affairs, as well as selecting presidents and monitoring/evaluating their performance (notably, Laval

and Sherbrooke are exceptions in that their presidents are elected through an electoral college of internal stakeholders). In academic matters, universities are governed by bodies which are usually known as Senates, though they sometimes go 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 few universities have a tricameral system in which the Board and Senate are joined by a body made up of elected alumni; the University of Toronto is unique in having a unicameral system consisting of a singular Governing Council which effectively acts as both Board and Senate.

#### **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 which go by this name vary significantly in nature from one end of the country to the other.

The “classic” form of community college primarily delivers vocational/trades programs to mature students (i.e. not direct-from high school) 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 orientated. 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, the Atlantic colleges the least.

Alberta and British Columbia always had a slightly different model for community colleges, one which was much closer to the American model of “junior colleges”. In these two provinces, community colleges had professional orientations like those in the other seven majority anglophone provinces. However, they also had a university-transfer function.



# Nonstandard Universities:

## *A Short Explainer*

**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 use the term “university” themselves or are classified as such by others. Broadly, these fit into one of five categories:

### ***Affiliated Colleges:***

There are a large number of small, usually denominational, colleges which have federation agreements with larger, public institutions. The majority of these are in Ontario, and 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 has 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 St. Boniface at the University of Manitoba or Glendon at York University.

### ***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 is perhaps the best known of this type, due to its rather unique “block-plan” course system. This group also includes the business-orientated Canada University West in Vancouver, as well as the multi-campus Yorkville University and the online University of Fredericton in New Brunswick.

### ***Indigenous Institutions:***

Across Canada there are roughly 50 institutions, mostly in Western Canada, which 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; to a large extent they serve as delivery platforms for programs established by a mainstream institution.

### ***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, City University of Seattle, the New York Institute of Technology, and Farleigh Dickinson University all have campuses in Vancouver, while North-eastern University recently opened a campus in Toronto.

Both provinces initially were very cautious about expanding universities and so kept it concentrated to just two (Alberta) or three (B.C.) institutions, with students from outside the urban centres doing the first two years at regional colleges before transferring to the universities. Since the turn of the century, both provinces have been expanding their university systems (British Columbia more so than Alberta), and so 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 anywhere else 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 (the regular leaving age is 16 or 17 rather than 17 or 18). Students may then attend a *Collège d'enseignement général et professionnel* (CEGEP) for two years. As in Alberta and British Columbia, there are two streams—a vocational/professional one which leads to the labour market, and a general one which ends with the awarding of a *diplôme d'études collégiales* (DEC), which is a prerequisite to attend university. All university-bound students in Quebec must therefore attend college. This model made a great deal of sense 50 years ago when the province's small postsecondary system was mostly composed of Catholic *Collèges classiques* offering education that was more rigorous than secondary education but less than a full degree. During Quebec's Quiet Revolution of the 1960s, these religious colleges chose to become CEGEPs, except for Bishop's, which converted to university status. It is doubtful that this model would be adopted deliberately today, mainly because it is not clear that there is much call for an intermediate non-vocational credential between secondary school and university. Nevertheless, Quebec's current system is so entrenched that it will survive simply through inertia; *i.e.*, while there may not be a reason to adopt such a system now, there is no compelling reason to abandon it.

All told, there are over 200 community colleges across Canada. Colleges tend to have greater responsibility for ensuring access to postsecondary education than do universities; most are open-access, and they are more likely to be located in rural and remote parts of the country. Indigenous peoples are more likely to be found

at colleges than at universities. Individual colleges also tend to be smaller than individual universities; there are only a dozen or so community colleges with more than 10,000 students.

From a governance perspective, colleges are usually under tighter government control than universities; indeed, in several provinces, colleges were government departments until the 1990s. Their boards contain more members directly appointed from government and they tend to have less freedom to independently innovate in programming. In Nova Scotia, New Brunswick, and Saskatchewan there are single "systems" of college education. 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 whereas with universities, bargaining usually occurs on an institution-by-institution basis.

#### ***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 (the *École Polytechnique*). 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 had a similar definition in New Zealand for a long time, though recently those polytechnics have come to have more professional and technical foci as well. In Finland, polytechnics (technically *ammattikorkeakoulu* or AMK) 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.

In Canada, the term polytechnic does not have a legal meaning outside the province of Alberta, where the term refers to two specific institutions (the Northern and Southern Alberta Institutes of Technology). However, as some Canadian community colleges—mainly the large ones from Ontario westward—have become more professionally-oriented and technologically sophisticated, as well as 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. These institutions band together to lobby at the federal level under the banner "Polytechnics Canada";

# 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, the process by which institutions – be they community colleges or private institutions – can apply to offer degrees is enshrined in law. Interested institutions must apply separately for each degree they wish to offer. Processes exist for dedicated arms-length organizations

(such as Ontario's Postsecondary Education Quality Assessment Board, Campus Alberta, and BCcampus) to evaluate whether the institution has the financial and human resources to offer the degree. If this is the first time an institution has made a request, there is usually a separate inquiry made into the suitability of the institution itself and its promoters.

While the dedicated organizations evaluate the proposals, their role is formally only advisory: Ministers 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.

however, most Polytechnics Canada members also remain members of Colleges and Institutes Canada, the peak representative body for community colleges.

Prior to the adoption of the term polytechnic about a decade ago, the last major institution to carry this label was Ryerson Polytechnic, which transformed into a 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 which want to become universities. In one or two cases that is clearly true: Sheridan College, a Toronto area member of Polytechnics Canada, has been quite open in seeking university status, while Kwantlen Polytechnic University in British Columbia has already achieved it. Others have decided to turn down university status when offered (for example, the British Columbia Institute of Technology) and many major colleges, like Humber and Seneca, seem focused on forging an independent identity which straddles the traditional line between colleges and universities.

## ***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 inclass study which occurs mainly, but not exclusively, in community colleges.

Technically, apprentices are not “students” and so do not show up as such in enrollment statistics. Rather, they are employees who have signed specific apprenticeship contracts with employers and who periodically attend courses. 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, for the most part apprentices in Canada tend to be men in their early-to-mid 20s.

Apprentices pass through various “levels” before certification as journeypersons. The number of levels, as well as the number of work hours and weeks of in-class training, can vary significantly by trade and province. Broadly speaking, most of the major trades have four levels that require one year each to complete. 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.

In international context, Canadian apprenticeships are outliers for a variety of reasons. The first is that they are considered postsecondary rather than a part of the secondary education system: hence the relatively advanced age of its apprentices. The second is the length of the programs, which is typically four years compared to two in most of Europe. The third is the release system for theoretical in-class training. Most countries use 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 reason is the relatively limited number of occupations for which apprenticeships are available: Canadian apprenticeship trades are heavily blue-collar in nature and the number of white-collar trades, which dominate the scene in Germany for instance, is quite small.

### ***Private Vocational Colleges***

The final element of Canada’s postsecondary education system is the private, mainly for-profit, vocational colleges. These resemble the private for-profit sector in the United States except they focus almost exclusively on programs of one year or less rather than degree-level programming. They are quite common in certain fields not covered at community colleges, such as music production, aesthetician training, and dental assistance, 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, chain institutions such as triOS or CDI, which tend to have a business or IT focus.

### ***Federalism and Postsecondary Education:***

#### *Who funds what*

The basic tension in the Canadian Confederation debates of the 1860s was how to reconcile the ideal of a national government with a system of representation by population with francophone Quebec’s desire to maintain over its own cultural institutions — in particular those dealing with education. The eventual solution was a federal system with a federal 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 § 93 of the Canadian Constitution, which allocates responsibility for postsecondary institutions and their funding to the provinces. This is 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 exclusively provincial in nature, 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 financial assistance. The federal government transfers funds to provincial governments in two ways: first, through equalization payments designed to allow poorer provinces to provide services at levels similar to richer ones and second, 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 \$3.5 billion or so from this source would account for only about 6% of total institutional revenue in Canadian PSE.

Further details about these arrangements may be found in **Chapter 5**.

Public funding for scientific research at universities did not begin until World War II, but it only became a major source of institutional revenue 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 also fund research separately (notably Quebec), but the main sources of funding lie in Ottawa.

Student assistance in Canada takes various forms (see **Chapter 5**), 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.

In addition to the above, there is funding for capital, which tends to be erratic and come in bursts, often in the form of "stimulus" programs during 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 fundraising is also rising in importance as a source of capital funds.

# APPENDIX B

## Note on Sources

Most of the data used here 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 2017-18 generally drawn from Statistics Canada's Postsecondary Student Information System (PSIS), though supplemental data is drawn from sources such as Colleges Ontario, Polytechnics Canada, and other organizations as noted in the text. For universities, this has been supplemented for the 2018-19 and 2019-20 years with data provided by institutions themselves, either on their own websites, or websites of regional agencies (such as the Atlantic Association of Universities), or through the annual Universities Canada survey of enrollment. Where multiple sources of data exist, the preference is institutional > regional > Universities Canada. To avoid large swings in data, the final two years are calculated using the reported percentage change in institutional enrollments, applied to the institution's 2017-18 Statistics Canada base. Enrollment data for colleges beyond 2017-18 is not really available outside Ontario because very few institutions choose to make such data public. However, because Ontario holds such a large fraction of the country's international students, it was possible to use this data to estimate 2018-19 international figures for colleges.

Other sources of student data include the Canadian Undergraduate Survey Consortium (CUSC)'s 2019 Survey of First-Year Students. Data on Canadian apprentices are from Statistics Canada's Registered Apprentice Information System; comparative data for Germany is from the Statistische Bundesamt document "Bildung und Kultur: Berufliche Bildung, Fachserie 11, Reihe 3, 2018"

**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. The work of the Canadian Association of University Teachers in slicing and analyzing the data for its annual Almanac is gratefully acknowledged. No national college data exists but some sample data from Colleges Ontario's annual Environmental scan is used.

**Chapter 3.** Data on postsecondary finances up to 2017-18 are drawn from Statistics Canada's Financial Information of Universities and Colleges (FIUC) survey and the Financial Information of Community Colleges and Vocational Schools (FINCOL) survey. Data for 2018-19 is based on examinations of institutional financial statements posted on individual institutional websites, which are available for all of the country's universities and all of its colleges apart from those located in the province of Quebec, where only a small minority of institutions had, as of July 2020, posted their 2018-19 financials. Because Quebec colleges are 90% or more dependent on provincial government funding, provincial public accounts were used to estimate change in institutional income.

**Chapter 4.** Tuition fee data primarily comes from Statistics Canada's Tuition and Living Accommodation Costs (TLAC) surveys. Information on student loans and grants are primarily from the annual reports of the Canada Student Loan Program and the Canada Education Savings Grant programs. Information on the granting councils are 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. Information on provincial budgets draws on HESA's ongoing analysis of the annual provincial budgets, which are available at the archives of the author's *One Thought to Start Your Day*.

**Chapter 5.** Data on fees comes from Statistics Canada’s Tuition and Living Accommodation Cost (TLAC) Survey, apart from the data for 2020-21, which are author’s estimates based on announcements from provincial and institutions sources. 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 a large freedom of information request conducted in the summer of 2020 for data from 2011 onwards. Data for 2017-18 are based partially on data received from provinces as part of the freedom of information requests, but to some extent is based on estimates based on known public expenditure changes. Federal data on tax expenditures comes from the annual federal review of tax expenditures and partly based 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.

**Chapter 6.** National data for Canada comes from Statistics Canada’s National Graduate Survey for the class of 2015. Data from Ontario comes from the Ontario University Graduate Survey and specifically from the annual publication produced by the Council on Ontario universities. International Comparative data is from the OECD’s annual *Education at a Glance* publication.

