2018

The State of Post-Secondary Education in Canada

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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Contents

List of Figures

Introduction to the Series

For decades, Canadians interested in post-secondary education (PSE) have decried the lack of easily available, easily digestible data on the post-secondary sector. In part, this lacuna results from some very large gaps in our PSE data system, especially with respect to colleges, staff, and student assistance (in contrast, statistics on institutional finances are among the best in the world). There are also some types of statistics which 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). Our decentralized, federal system is partly to blame, but mainly, Canadian governments and statistical agencies just seem not to care about good education data the way some other countries do.

That said, there actually is a considerable amount of data on Canadian post-secondary education available, but it is just not usually put in a narrative form which is easily accessible. The Canadian Association of University Teachers (CAUT), for instance, puts out an invaluable annual "almanac", but the data has a profound university skew and tends to be presented in tabular form rather than through more intuitive graphics. Universities Canada occasionally puts together some good publications on the state of the system, but these have become rarer as of late and in any case largely miss the colleges. 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 post-secondary 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.

As a result of all this, Higher Education Strategy Associates has decided to produce an annual publication called "The State of Post-Secondary Education in Canada". We took as our model a similar set of publications produced by Andrew Norton and his colleagues at the Grattan Institute in Melbourne entitled "Mapping Australian Higher Education". Like the Australian exercise, we expect we will take on slightly different issues in each future edition, depending on what new data come available. For the inaugural year, we chose to stick to the basics: describing the Canadian system (trickier than it sounds), detailing trends in student and staff numbers, and looking at how the system is financed, both from an institutional and a student perspective. We hope that by putting all of this information in a handy and convenient format, and providing some accompanying narrative, that we can help improve the quality of public dialogue on post-secondary education policy issues. Any and all comments or suggestions about how to improve the publication for future years will be gratefully received.

Alex Usher

August 2018

Introduction to the First Edition

The State of Canadian Post-Secondary Education in 2018 is strong. But there are nevertheless some cracks which need addressing, and soon.

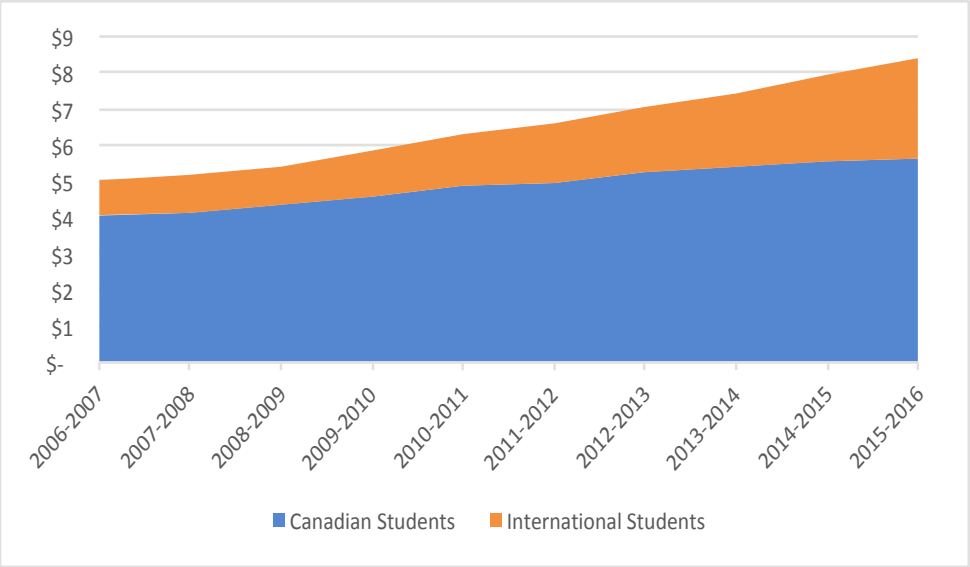
Where it is perhaps strongest is student finance. This may seem a strange statement, bombarded as Canadians regularly are with stories about rising costs and "ever-mounting student debt". The reality, however, is quite different. Tuition has been rising at about 2% per year after inflation since 2000 (see Figure 6.1), but it is a steady, controlled and manageable rise that allows most families to plan ahead to meet educational costs. Meanwhile, since 2000, total expenditures by governments and institutions for student financial assistance has been rising by approximately 4.5% per year (see Figure 6.12). Partly through tuition rises but mostly through enrolment growth, the total take from domestic tuition fees has risen by roughly $4.5 billion since the turn of the millennium, but total student aid has grown by $6 billion, only $1.5 billion of which has come through higher loans. One result of this is that student debt levels, as far as we can tell, are essentially unchanged since the year 2000 (see Figure 6.13).

The system likely has a lot of work to do in making sure the existing subsidies are going to the right people in the right amounts: Some probably receive too little while others receive too much. But on aggregate, the system seems to have been rising to the challenge of higher fees, and net affordability is essentially unchanged from where it was nearly twenty years ago.

When it comes to funding institutions, however, the story is different. Between 2000 and 2009, post-secondary funding in Canada was very good. The system was expanding quickly, with income from government, tuition fees and other sources all rising at about 6% per year after inflation. It was, by almost any measure, the best decade for Canadian post-secondary education since the 1960s. But since 2009, government expenditures on post-secondary education have declined somewhat. This may not be evident to anyone from the outside because overall university income and expenditures have continued to expand. That they have been able to do so is due to one single factor: international students.

As the figure below shows, over the past decade, international student tuition has grown enormously. In 2006, international student fees, then less than $1 billion total, made up 19% of all fees collected at Canadian universities and 4% of total revenues. In 2016-17, these fees had risen to $2.75 billion, made up 35% of all fees collected and contributed 9.3% of total revenue. On this current course (and there is no evidence that any of these trends are relenting), by 2020 the figures will probably be $4.5 billion, 42% and 12-13% of total revenues. Already some major institutions — including the University of Toronto — are receiving more money from international student tuition fees than in operating grants from their provincial governments.

Figure 1: University Tuition Fees by Source in Canada, 2006-07 to 2015-16



Figures in billions of constant $2016.

There is nothing intrinsically wrong with turning to international students to fill the gap left by flagging government support; certainly, Canada would not be the first country to do so. But we cannot continue to sleepwalk down this road. Making the system more reliant on foreign dollars changes the kind of system we will have. It will be more oriented to the business, engineering and science programs which international students want, and less oriented to the health, social sciences and the humanities programs which they tend to avoid. It will be more financially volatile and vulnerable to external political shocks, as this summer's sudden departure of Saudi students from Canadian institutions demonstrates. Given the current demographic trough of young people throughout much of Canada, there is not yet — outside BC anyway — much public concern about international students "taking Canadian students' places". But the demographic trough ends soon in most of the country, and domestic student numbers will start to rise again early in the next decade. What will happen then? How will institutions decide which students to accept? At a system level, it is possible to expand to accommodate everyone, but at prestigious institutions which routinely turn away thousands of domestic students, this could become a hot button issue.

In short, the decline of government funding has been smoothed over by the influx of international students in a manner which to date has been mostly seamless. We should not assume this seamless transition will continue indefinitely. There will be bumps on the road, and the system should prepare for them.

Chapter 1 — Defining Post-Secondary Education

1.1 Defining the Post-Secondary Sectors

Post-secondary education is very broadly defined in Canada. Traditionally, we think of the system as consisting of organizations called "universities" and "community colleges", but these definitions are no longer so tidy. New hybrid organizations, usually referred to as polytechnics, have evolved out of the college system to become a distinct part of the institutional landscape. The term "post-secondary" 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 schools sector provides certifications, mostly for short training programs of less than 12 months' duration. This chapter provides a detailed overview of the sector's main components.

1.1.a 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 really 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 CEGEP (see below, colleges).

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

Because of this definitional vagueness, it is difficult to come to a standard count of universities in Canada. Universities Canada has 97 members, but it excludes a number of institutions which call themselves universities (e.g. Tyndale University, Quest University — see below, *non-standard universities*) but includes 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 post-secondary 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". 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.

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 post-secondary 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" (see below). 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.

Canada has no official university typology. However, while Canadian universities come in a variety of shapes and sizes, they do tend to converge on a number of "types". Firstly, there are the large research universities with medical schools. There are fourteen of these, and they make up nearly all of what is known as the "U-15" group.[1] 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 enrolment from about 5,000 to 50,000 which are usually given the label of "comprehensive" universities. The smaller ones (e.g. Trent University) 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.

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 governors tend not to "take direction" from government and it is rare that a government tries to get its appointees to follow a particular line on a specific issue. 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

1 The fifteenth is the University of Waterloo, which is very strong in Math and Engineering but has no medical school; there are also universities, such as Sherbrooke, with medical schools which are not part of the U-15 and are not viewed as a research university.

Non-Standard Universities

When the term "university" is used in Canada, it generally refers to stand-alone public institutions. But many institutions in Canada do not fit that definition and yet either use the term "university" themselves or are classified as such by others. Broadly, these 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; 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 and Concordia Universities 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-based programming orientated around a single degree. 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 post-secondary 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, the New York Institute of Technology and Farleigh Dickinson University both have campuses in Vancouver, while Northeastern University recently opened a campus in Toronto.

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 very few universities have a "tricameral" system which also includes 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 acts as both Board and Senate.

1.1.b 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 heterogenous 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 delivers mostly vocational/trades programs to primarily 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, in addition, they also had a university-transfer function. 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 (regular leaving age is 16 or 17 rather than 17 or 18). Students may then attend a College d'enseignement général et professionel (CEGEP) for two years. As in Alberta and British Columbia, there are two streams — a vocational/professional one 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 necessary 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 post-secondary system was mostly composed of Catholic "Collèges classique" offering education that was more rigorous than secondary education but less so than a full degree. During Quebec's Quiet Revolution of the 1960s, these religious colleges chose the college route, except for Bishop's, which converted to university status. It is not clear if this is a model anyone would adopt deliberately today, mostly because it is not clear that there is much call for an intermediate non-vocational credential between secondary school university. Nevertheless, Quebec's current system is so entrenched that it will almost certainly survive through inertia alone.

Who controls "degree-granting authority"?

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

The power to authorize the granting of degrees rests with the various provincial ministers of advanced education. In nearly all provinces, there is enshrined in legislation a process by which institutions — be they community colleges or private institutions — can apply to offer degrees. Interested institutions must apply separately for each degree they wish to offer. Processes exist for dedicated arms-length organizations (such as Ontario's Post-Secondary 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 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.

There are over 200 community colleges across Canada, all told. Colleges tend to have greater responsibility for ensuring access 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. Colleges also tend to be smaller; there are only a dozen or so community colleges with more than 10,000 students.

From a governance perspective, colleges are often under tighter government control than universities (indeed, in several provinces, colleges were departments of government 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 it is usually one institution at a time).

1.1.c What is a polytechnic?

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

In Canada, the term polytechnic does not have a legal meaning, outside the province of Alberta where the term refers to two specific technical institutions. However, as some Canadian community colleges — mainly the large ones from Ontario westward — have become more professionally-oriented and technologically sophisticated, increased their involvement in applied research and begun teaching bachelor's level programs, there has been a move on the part of some of these institutions to rebrand themselves with the term "polytechnic" and band together to lobby at the federal level under the banner "Polytechnics Canada". However, most Polytechnics Canada members also remain members of Colleges and Institutes Canada, the peak representative body for community colleges.

Prior to the 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 and Kwantlen Polytechnic University 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.

1.1.d Apprenticeships

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

Technically, apprentices are not "students" and do not show up as such in enrolment 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, in the main apprentices in Canada tend to be 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, may vary by level, 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 post-secondary 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 (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. While this is not unknown in Canada, but much 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.

1.1.e Private Vocational Colleges

The final element of Canada's post-secondary 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 which are not covered at community colleges, such as music production, aesthetician training, and dental assisting, but they also offer some relatively advanced IT training as well. Language schools are another large sector, though they mainly focus on students from outside Canada. Because they operate without subsidy, their programs tend to be significantly more expensive than those of community colleges; on the other hand, because they operate on a continuous-intake basis, they offer students more convenience than institutions whose only intakes arein 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.

1.2 Federalism and Post-Secondary Education: Who Funds What?

A basic tension in the Canadian Confederation debates of the 1860s was how to create a system of representation by population, which also guaranteed to Catholic, francophone Quebec the ability to maintain control over crucial cultural institutions — in particular educational ones. 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 s. 93 of the Canadian Constitution, which allocates responsibility for post-secondary institutions and their funding to the provinces. This in why Canada effectively has ten provincial systems of post-secondary 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 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 post-secondary 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 five.

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

Student assistance in Canada takes various forms (see chapter 6), 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 in times of economic downturn. Increasingly, outside Quebec at least, provincial governments are relying on occasional federal government spending sprees to take care of capital funding, though institutional fund-raising is also rising in importance as a source of capital funds.

Chapter 2 — Learners

Over 2.5 million Canadians are enrolled in universities, colleges and apprenticeships. This represents roughly 6.8% of the entire population. This figure is roughly 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.

2.1 Enrolment Trends in Post-Secondary Education

Enrolments in universities and colleges have been rising steadily in Canada since the turn of the century. Throughout the 1990s, total enrolment (full-time and part-time) was relatively steady, hovering between 1.3 and 1.4 million students. After 1999, numbers began rising steadily until they touched 2 million in 2011-2012, since which time further growth has been minimal. In 2016, Statistics Canada reported total enrolment at 2.03 million (though this figure excludes one major college in Ontario which did not report so the true figure is likely around 2.06 million).

Figure 2.1: Full-time Equivalent Enrolments by Sector, 1992-93 to 2015-16

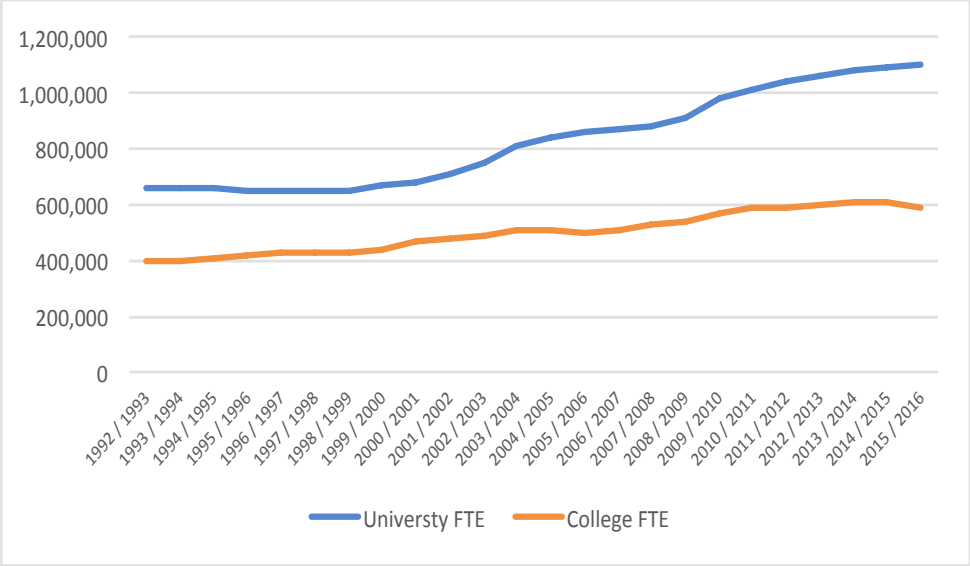


Figure 2.1 shows changes in full-time equivalent enrolment in Canada's universities and colleges.[2] As of 2015-2016, there were roughly 1.7 million full-time equivalent students in Canadian PSE institutions, with roughly one-third enrolled in colleges and two-thirds in universities. Since the turn of the century, enrolments have been growing more quickly in universities than in colleges.

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

Canadian provinces differ vastly in size, and so too do their provincial systems of higher education. But comparing provincial enrolments can still bring surprises. New Brunswick is nearly 45% larger than Newfoundland in population but its post-secondary sector is only 7% larger; similarly, Nova Scotia's population is 25% larger than New Brunswick's, but its post-secondary population is nearly 100% larger. Ontario has the country's most outsized university system, making up roughly 45% of total seats (compared to just 38% of the country's population). Quebec, with just 22% of the population, has one-third of the college students, due mainly to the CEGEP system's status as a pre-requisite to university study.

Table 2.1: Full-time Equivalent Enrolments by Sector and Province

	Universities	Colleges	Total
Newfoundland	15,445	7,248	22,694
Prince Edward Island	3,805	1,812	5,617
Nova Scotia	38,230	10,015	48,245
New Brunswick	17,733	6,583	24,316
Quebec	239,904	204,099	444,003
Ontario*	463,907	218,642	682,549
Manitoba	39,549	12,280	51,829
Saskatchewan	31,619	12,756	44,375
Alberta	114,799	48,681	163,480
British Columbia	131,286	59,325	190,611
Territories	---	1,948	1,948
Canada*	1,096,278	583,389	1,679,668

**Note: One Ontario college with roughly 25,000 students did not report in 2015-2016, figures here thus somewhat under-reported.*

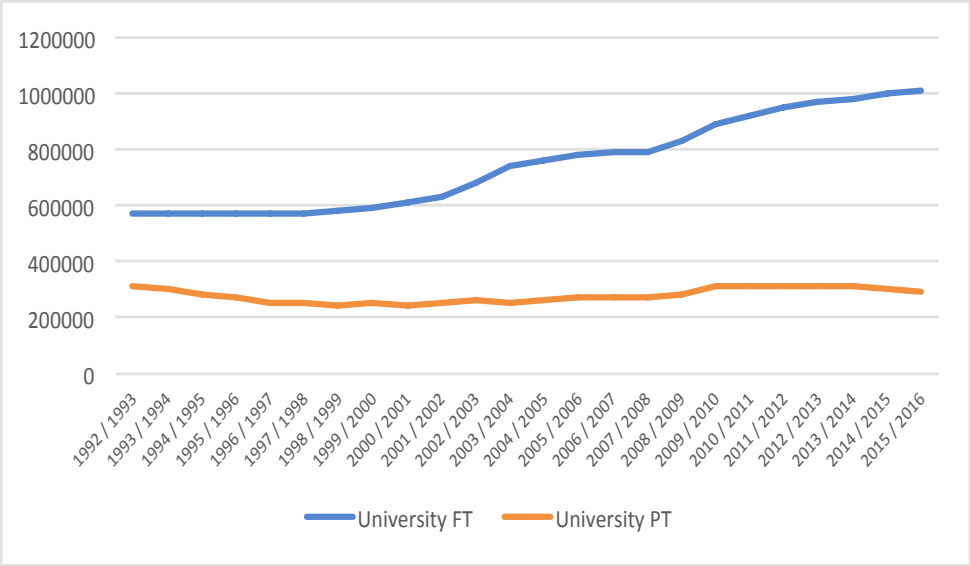
2.2 Enrolment Trends in Universities

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

From about 2000 onwards, growth — a constant for most of the post-war period — resumed, so that by 2015-16, full-time enrolments were 66% higher than they were in 2000. In part, this increase was due to demography: By the late 1990s, the children of the baby-boomers (the so-called "baby boom echo") were starting to flood into post-secondary education and increase the size of the potential cohort. The increasing demand for higher education was due to technological change, but accommodating that enlarged demand took some extraordinary measures. Two events stand out: the first was the Ontario government's decision to end the system of Ontario Academic Credit (which in practice was a 13th grade of high school) in 2002, creating a "double-cohort." 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 post-secondary systems by transforming some former community colleges into universities.

Figure 2.2: Full- and Part-time Enrolments in Universities, 1992-93 to 2015-16



Growth in university enrolments has not been universal. In the Atlantic provinces, growth has been low or even negative over the past decade, mainly due to demographic trends. Quebec, Ontario, Manitoba, and Saskatchewan have all had slightly better demographic trends (Quebec especially), and have seen growth in the 15-25% range since 2005-06. Alberta and British Columbia have had more favourable demographic growth, and in addition have converted several former colleges into universities since 2005-06, which accounts for their much larger increases in university student numbers.

Figure 2.3: Change in University Enrolments by Province, 2005-06 vs. 2015-16

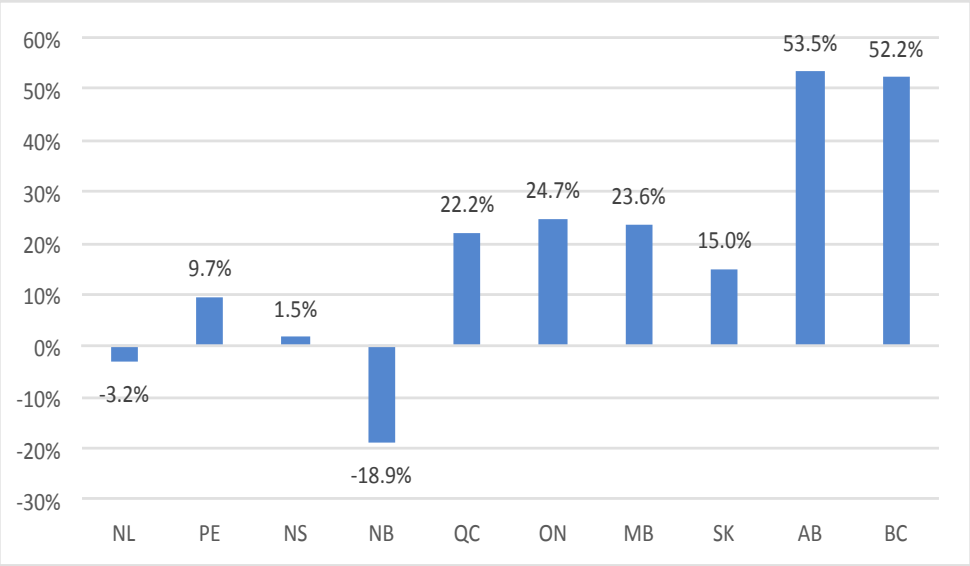
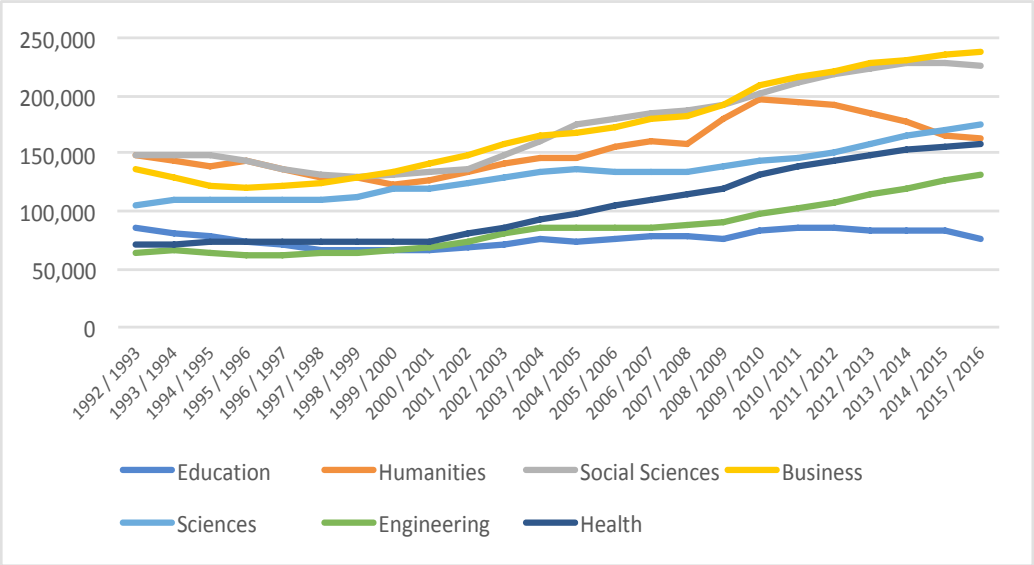


Figure 2.4 looks at changes in university enrolments by field of study. In the 1990s, when total enrolment was declining due to reductions in the number of part-time students, enrolments fell in Business, Science, Humanities, and Social Sciences. Starting at the end of the 1990s, though, nearly all fields 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 system began to require fewer teachers and the system adapted by limiting enrolments in teacher training programs. This continued until 2010 or so, when Humanities enrolments began falling while other fields continued to increase. Between 2009/10 and 2015/16, enrolment in Humanities was down by 18% while most other fields increased by 10-15% and Engineering increased by close to 30%.

2.3 Enrolment Trends in Colleges

Figure 2.4: Enrolments in Selected Major Fields, Canadian Universities 1992-93 to 2015-16



College enrolment has increased substantially over the past two decades, at rates roughly similar to those seen at universities. That said, 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 the institutions they attended were given university status.

Figure 2.5: Full and Part time Enrolments in Colleges, 1992-93 to 2015-16

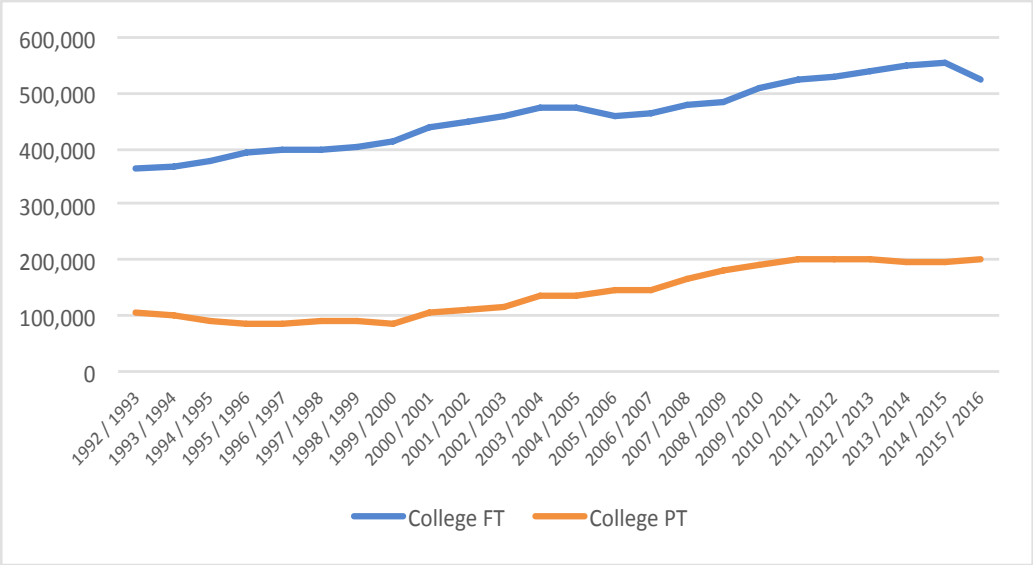


Figure 2.6 shows changes in college enrolments over the past ten years. The two biggest gainers — Manitoba and the Territories — are both statistical anomalies, and the figures are reflections of changes in the way Statistics Canada counts students rather than actual evidence of expansion; the same appears to be true of Saskatchewan, which shows the biggest fall in enrolments. Elsewhere, growth and decline have been more modest. Alberta had almost no growth and in British Columbia, enrolments actually fell, but this has to do with the fact that many institutions simply switched categories and went from being colleges to universities (see also Figure 2.3, above).

Figure 2.6: Change in College Enrolments by Province and Combined Territories, 2005-06 vs. 2015-16

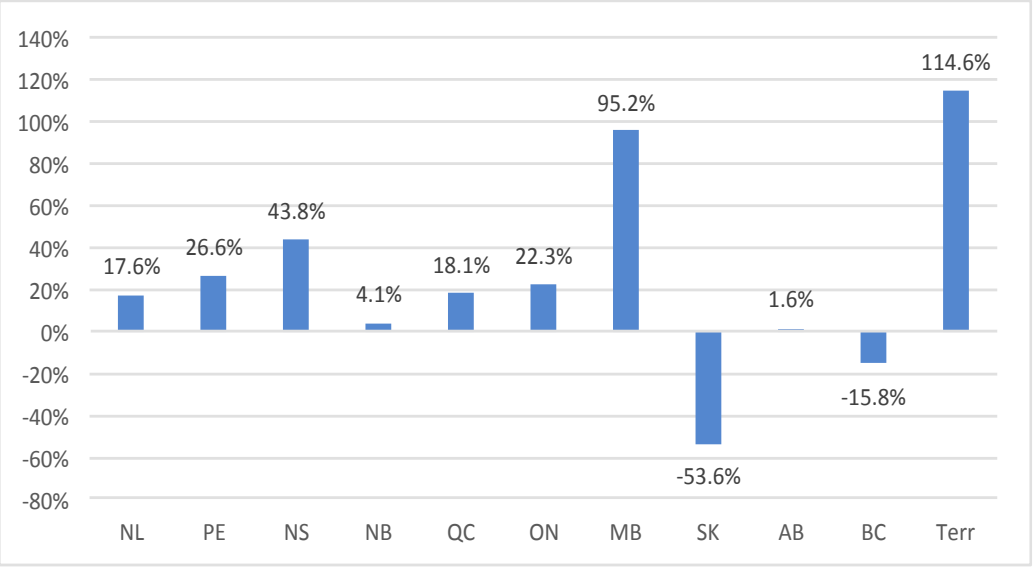
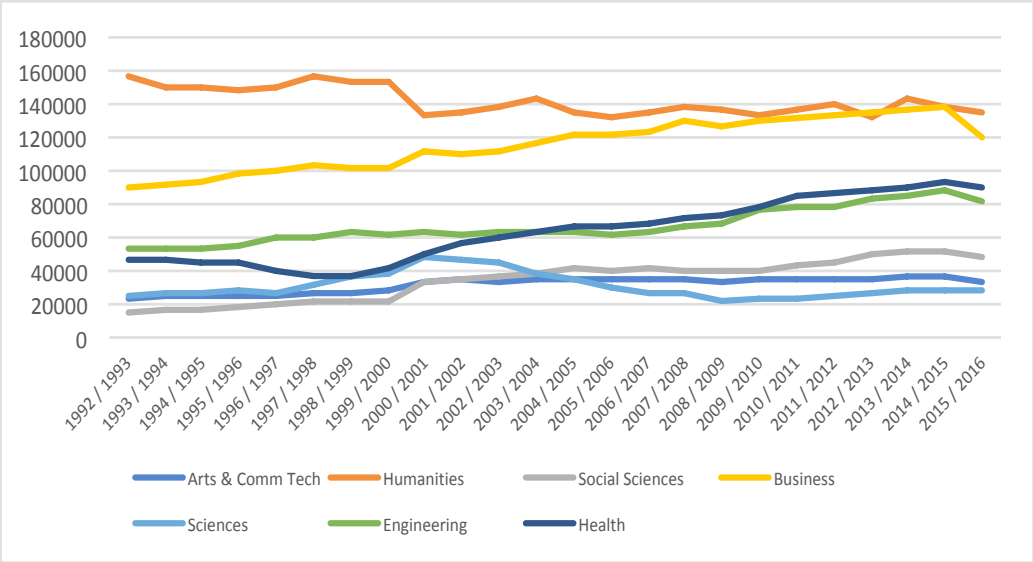


Figure 2 .7 shows enrolments in colleges by field of study. This figure may surprise people who are used to thinking of colleges as being technically-oriented, since it shows humanities as the number one field of study. That is due in no small part to the unique nature of Quebec colleges: A very large proportion of those students headed to university in that province are enrolled in programs which are labelled as "Humanities". The big increases in enrolment over the last twenty years have largely come in the areas of Business and Health, with smaller contributions from Social Sciences and Engineering.

Figure 2.7: Enrolments in Selected Major Fields, Canadian Colleges, 1992-93 to 2015-16



Because Polytechnics are not an official category of institution, we have no official count for students at Polytechnics. However, the 13 institutions who self-describe as Polytechnics and are members of Polytechnics Canada publish their own data. For 2016/17, they reported full-time equivalent enrolment of 262,685. 96% of these enrolments would be considered college enrolments 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 enrol 43% of all college students, or 66% of all college students outside Quebec.

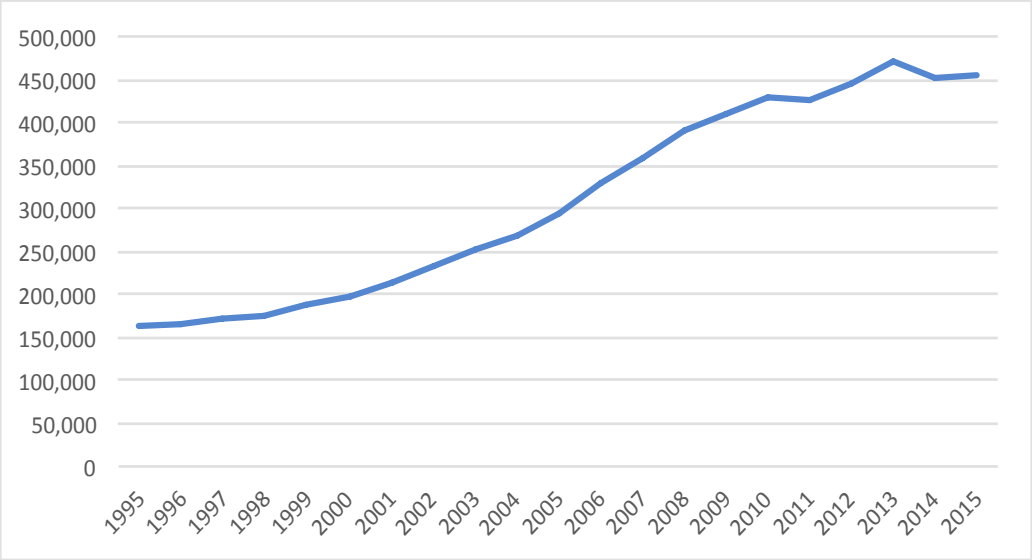
2.4 Apprenticeship Enrolments

Apprentices are considered post-secondary learners, but they are not enrolled in institutions, per se. Their enrolment as apprentices merely means that they have a contract with an employer in which both sides agree the apprentice will follow a particular course of learning and will periodically attend in-class training (see *Apprenticeships* in chapter 1).

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 began growing 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. The result was a rise in the number of apprentices, from 175,000 in 1997 to 450,000 in 2013.

Figure 2.8: Apprenticeship Enrolments, Canada, 1995-2015



Despite the recent decline of several sectors of the resource extraction economy, we have yet to see a major drop in apprentice numbers. It is possible that this has something to do with companies being 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 not documented as completely nor as quickly.

Table 2.2: Top Ten Major Trades Groups in Canada, 2005 vs. 2015

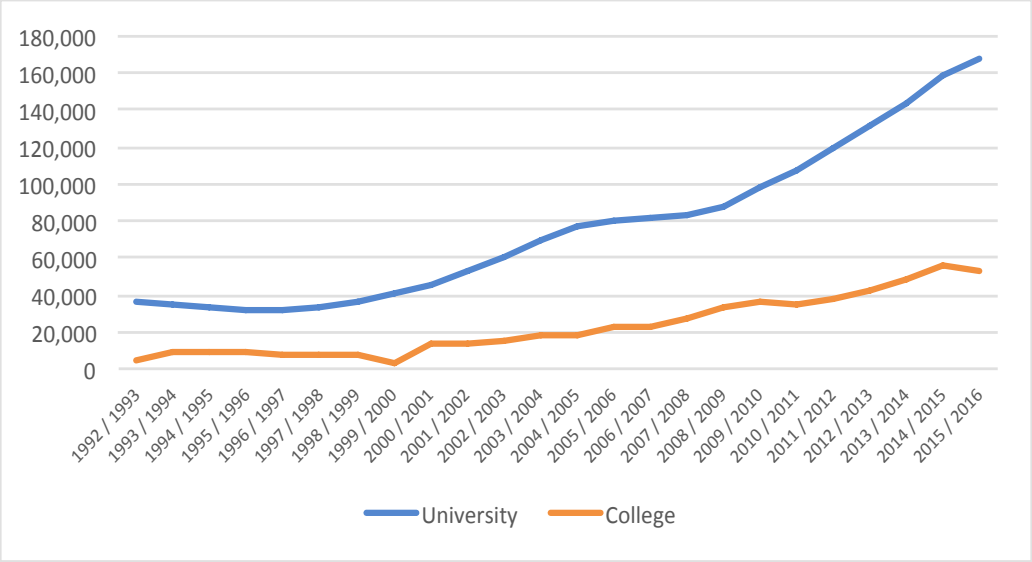
2005		2015	
Trade	#	Trade	#
1. Electricians	49,038	1. Electricians	49,038
2. Carpenters	39,927	2. Plumbers, pipefitters, and steamfitters	39,927
3. Automotive service	37, 272	3. Carpenters	37, 272
4. Plumbers, pipefitters, and steamfitters	27,783	4. Automotive service	27,783
5. Hairstylists and estheticians	15,954	5. Food Service	15,954
6. Interior finishing	14,787	6. Welders	14,787
7. Exterior finishing	11,073	7. Interior finishing	11,073
8. Welders	10, 398	8. Hairstylists and estheticians	10, 398
9. Heavy equipment and crane operators	10,701	9. User support technicians	10,701
10. Machinists	10, 488	10. Heavy duty equipment mechanics	10, 488

One of the distinguishing features of Canadian apprenticeships is the way they are focussed on very traditional trades, particularly the construction trades. As Table 2.2 shows, seven out of the top ten trades in Canada — accounting for 60% of all apprentices — are related to the construction or automotive industries. In Germany, often lauded as a system worth emulating, the top ten apprenticeship categories include retail sales, industrial sales, "vendor", wholesale/foreign trade, bank teller train and medical assisting. The more restricted nature of Canadian apprenticeships, and our decision not to use this system for training retail and white collar workers, is the main reason why direct comparisons of Canada's system to those of European nations like Germany or Switzerland are fraught.

2.5 International Students

Since about 2000, the number of international students at the post-secondary level in Canada has risen dramatically, from just under 40,000 in the late 1990s to over 220,000 in 2015-2016. This rise was gradual at first, then rapid from 2009 onwards. The reason for this increase is relatively straightforward: While international students are appreciated because they bring diversity to classrooms across the country and (marginally) because their presence burnishes institutions' standings in world rankings (which regard the presence of international students as an indicator of quality), they are mainly prized because they pay much higher tuition fees than domestic students and are thus seen as a way of offsetting stagnant government funding.

Figure 2.9: International Enrolments by Sector, 1992-93 to 2015-16



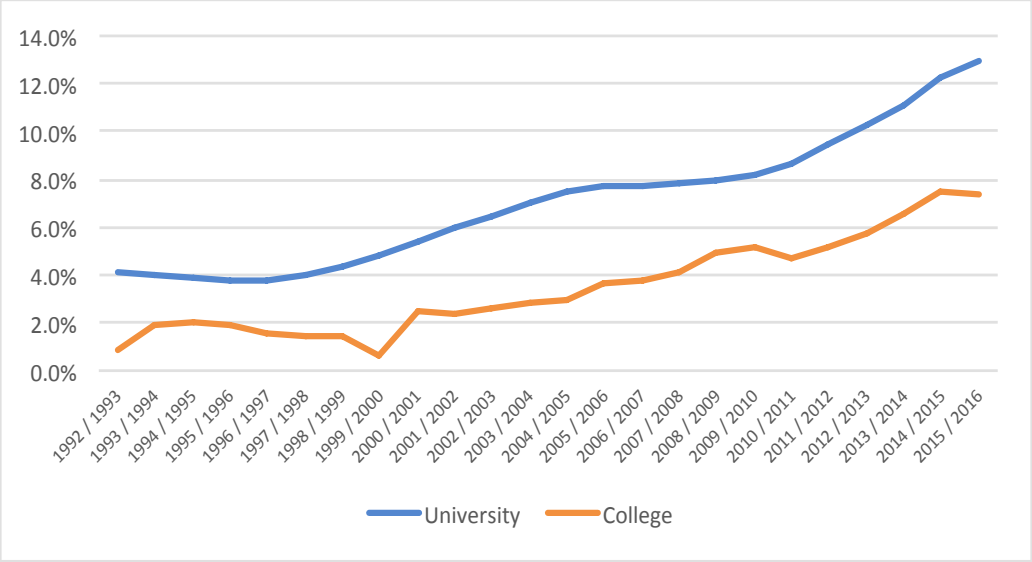
As with the general student population, international students are not distributed equally across all provinces. For instance, in Nova Scotia, international students make up roughly 20% of all university students as well over half of all the international students in Atlantic Canada. British Columbia, where international students make up over a quarter of the student body at the university level, has well over half the international students in Western Canada.

Table 2.3: International Students by Sector and Province, 2015-16

	Universities	Colleges
NL	2,307	129
PE	726	90
NS	7,662	---
NB	2,883	456
QC	38,295	4,857
ON	59,184	30,228
MB	5,862	1,647
SK	4,593	429
AB	12,915	4,563
BC	34,206	10,827

The growth in international enrolments since 2009 has been especially notable because it occured during a period of relatively slow growth in domestic enrolments. As a result, the share of total enrolments made up by international students rose from 8% in 2009 to 13% in just seven years; in colleges numbers increased from 4.5% to 7.5%. Because international students pay on average almost four times what domestic student pay, this suggests that international students now pay over one-third of all tuition fees, and in British Columbia the figure is likely over half (see also Government Expenditures).

Figure 2.10: International Enrolments by Sector, 1992-93 to 2015-16



Chapter 3 — Staff

3.1 Staff at Universities

Data on staff in Canadian Post-secondary Education 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, do not collect this data either, and for the most part individual institutions do not provide this information on their own (though there are some notable and honourable exceptions). 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. Because of this lack of data, our look at staff will necessarily be more partial than was our look at students.

3.1.a Academic staff

Academic Staff in Canada are counted through a national survey known as the University and College Academic Staff Survey (U-CASS). This survey was suspended by Statistics Canada for budgetary reasons in 2011 and nor resumed until 2017. During the intervening years, most institutions chose to contribute to something called the National Faculty Datapool, which collected most of the same information but was missing a number of institutions. In terms of total numbers of professors, we therefore have no hard data for the years 2012-2015 (marked with a dotted line in the figure below). However, we do know from the survey for 2011 and for 2016 that the number of professors changed only marginally between the two years, increasingly slightly from 44,934 to 45,660, which suggests that the system was relatively stable in the intervening years. The 2016 figure is an increase of roughly 35% over 1998, when, after many years of budget cuts and staff freezes across the country, the number of academic staff hit its modern nadir.

Figure 3.1: Total Tenure and Tenure-Track Academic Staff Numbers, Canada

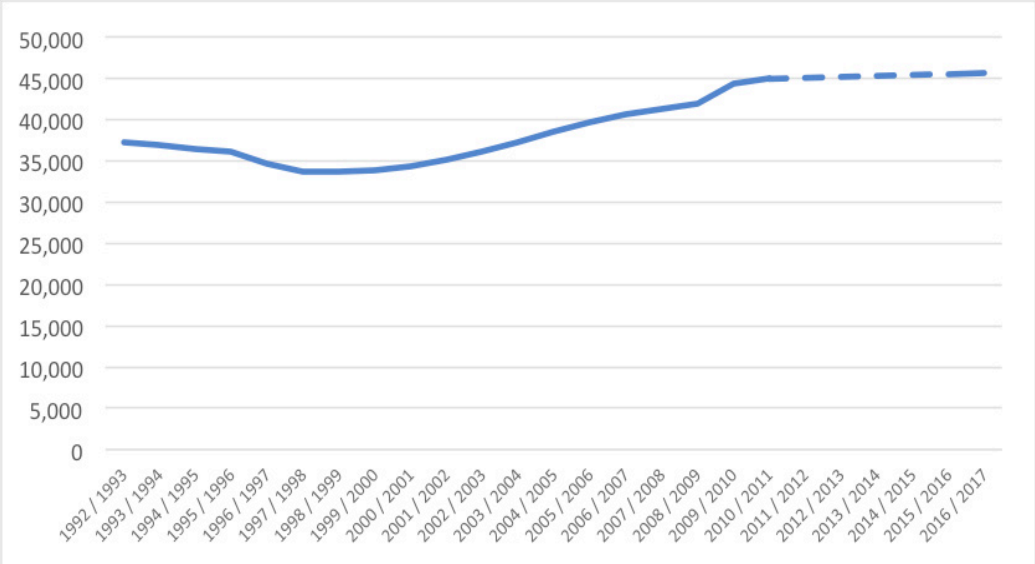
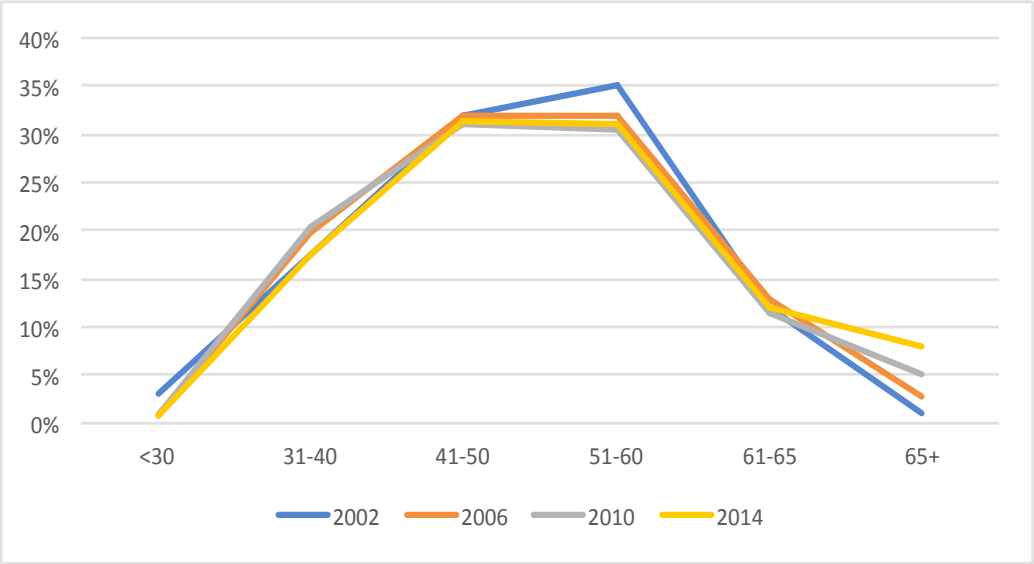
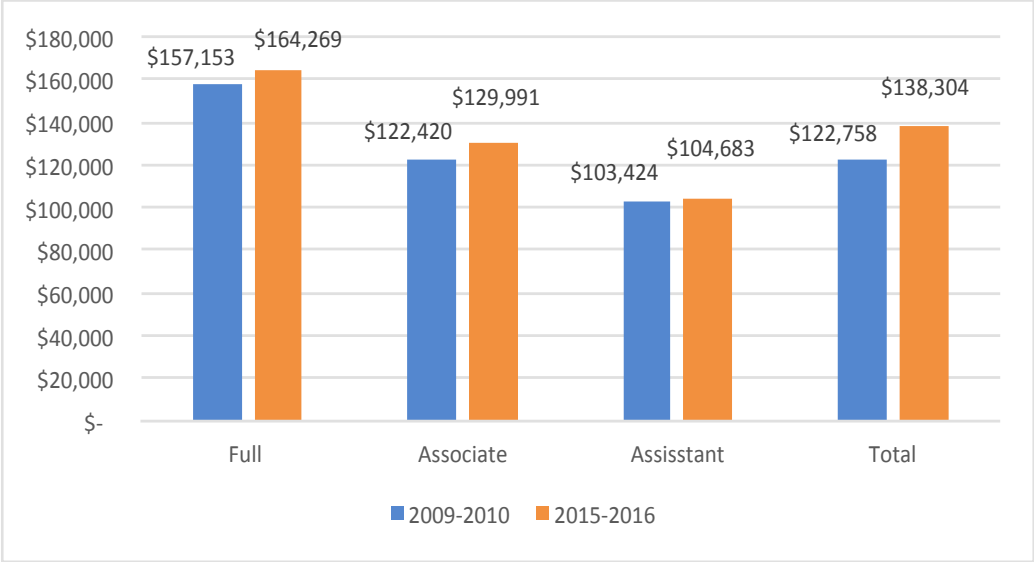


Figure 3.2: Age Compostition of Tenured and Tenure-track Staff, Canada between 2002 and 2014



The abolition of mandatory retirement led to a significant rise in the average age of the professorate over the past decade and a half. Where less than 1% of all academic staff was over 65 in 2002, by 2014 the figure was 8%, and some recent estimates suggest it is now over 10%. Because pay in academia is seniority-driven, an even more disproportionate amount of salary is used to pay for aging staff, significantly reducing the amount of funds available for faculty renewal. Figure 3.2 shows how the age composition of staff has changed over time.

Figure 3.3: Average Salary by Rank, Canada, 2009-10 vs. 2015-16



Figures in constant $2016.

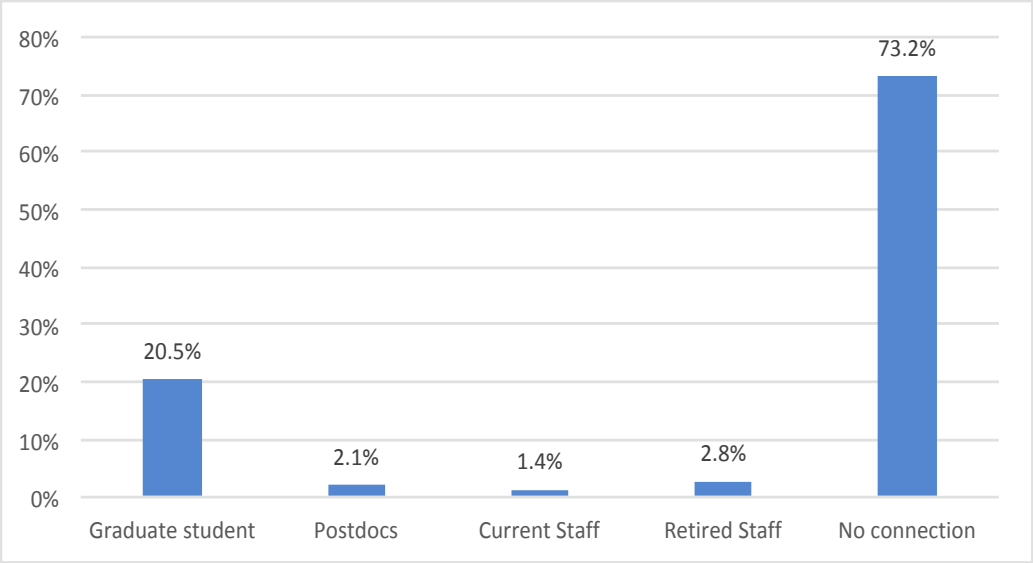
The effects of the aging professoriate can be seen in the changes in pay levels, which are of course seniority-related. Figure 3.3 compares salaries from 2015-2016 with those of 2009-2010, in real dollars. At each individual rank, there has not been a great deal of change, with real increases of between one and six percent over the six years. However, if we look at the average of all professors, we see the increase is 13%. This is because there are an increased number of older, higher-ranked, expensive professors and fewer younger, lower-ranked ones.

One persistent view in Canadian higher education is that full-time professors are increasingly being replaced by part-time, "casualized" staff. We have already seen (in Figure 3.1) that the numbers of full-time professors are not decreasing. We know almost nothing about part-time staff numbers and therefore cannot say if their numbers are increasing or decreasing. However, thanks to recent efforts in Ontario (sadly, not replicated by any national efforts), we do now have a better understanding of the composition of the part-time academic workforce.

In early 2018, the Council of Ontario Universities published Faculty at Work: The Composition and Activities of Ontario Universities' Academic Workforce, which included data from nearly all of the province's universities (with the exception, oddly, of the University of Toronto). It noted the following:

- Part-time instructors made up 52% of the academic workforce. 42% are tenure stream, while another 6% are full-time but non-tenure stream.
- Full-time instructors teach an average of 3.2 courses per year compared to 2.3 for part-time instructors. This implies that part-time instructors teach 44% of all courses.
- The mix of full- and part-time professors varies enormously from one faculty to another. Part-time faculty are most prevalent in Education and Law, and least prevalent in Science and Engineering.

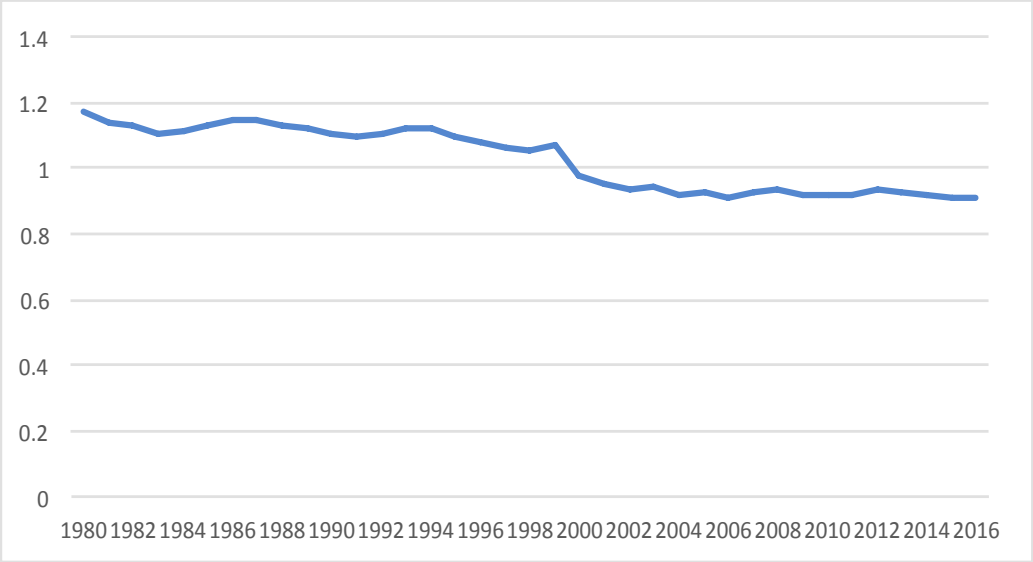
Figure 3.4: Part-time Instructors' Relationships with their University, Ontario, 2017



One of the most interesting pieces of data concerned the identity of part-time workers. As shown in Figure 3.4, less than a quarter of part-time instructors are graduate students or post-docs. Roughly 4% of part-timers are either current staff on reduced load (some professors take this option in the last year or two before retirement) or are retired professors coming back to teach a class or two. The other roughly three-quarters do not have an identifiable "pre-existing relationship" with the institution. Other data in the report, based on a more restricted sample of institutions, suggests that well over half of these remaining part-time staff do not possess PhDs and are therefore not "faculty-in-waiting".

When it comes to non-academic staff there is no aggregate data produced by institutions, though a fair number of them do produce annual (non-standardized) counts of individuals. However, through financial data provided through Statistics Canada's Financial Information of Universities and Colleges (FIUC) survey (which, again, despite the name does not include community colleges), we are able to track changes in the ratio of salary spending between academics and non-academics. The data, shown below in Figure 3.5, 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 3.5: Ratio of Non-Academic to Academic Salaries, all Canadian Universities, 1980-2016

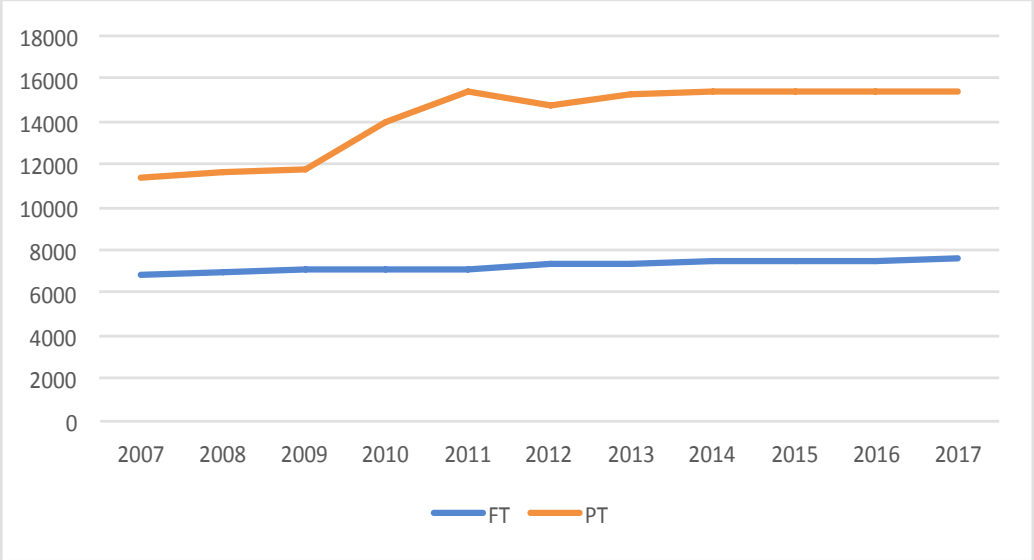


3.2 Staff at Colleges

There is almost 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 UCASS), nor do provincial governments. The lone exception here is Ontario, where Colleges Ontario (that is, the association representing the community colleges) produces an excellent annual Environment Scan which provides a wealth of data on colleges, including on 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 enrolments, it is unlikely that national averages will diverge substantially from these and so we reproduce them here as being broadly indicative of national trends.

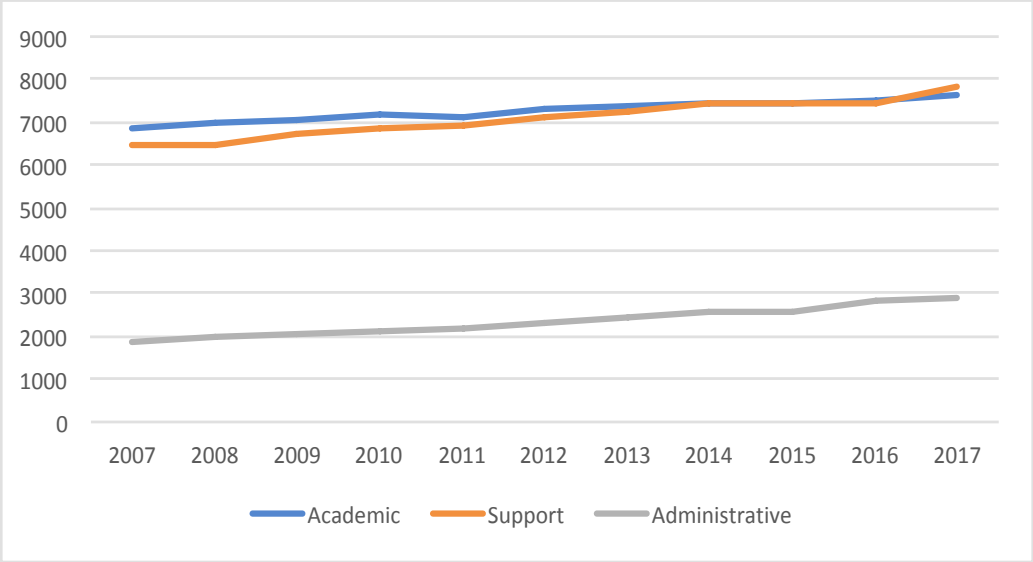
In terms of academic staff numbers, Figure 3.6 shows that there have been increases in the numbers of both full- and part-time instructors at Ontario colleges in the past decade; however, growth has been more pronounced among part-timers than full-timers. This part-timer growth was one of the major triggers of the strike which shut down Ontario colleges in late 2017. The union side 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).

Figure 3.6: Full- and Part-time Academic Staff, Ontario Colleges, 2007-2017



The Colleges Ontario Environment Scan also provides data on administrative staff and support staff (which is a useful distinction between white-collar administrators and managers and other employees). As Figure 3.7 shows, both the numbers of full-time support staff and administrative staff have grown a bit more quickly than the number of full-time academic staff over the past ten years.

Figure 3.7: Full-time Academic, Support, and Administrative Staff, Ontario Colleges, 2007-2017



As this brief survey shows, the data available to Canadians on staffing at Canadian post-secondary institutions is not enough 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 academic bloat, and while some indirect and partial inquiries (such as those shown above) suggest there is less to these claims than meets the eye, the lack of regular national or even provincial data releases addressing these issues makes it impossible to definitively account for them. For those institutions which feel these claims are unfair or wrong, there is a simple answer: start releasing the data.

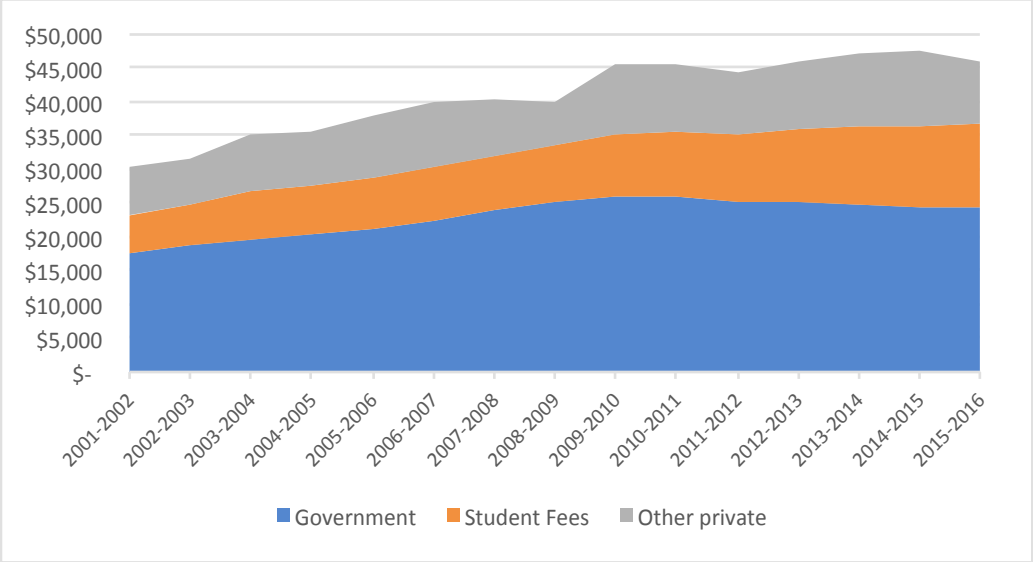
Chapter 4 — Institutional Income and Expenditures

Public post-secondary education in Canada is a $46-billion per year industry. In terms of gross domestic product, higher education makes up 2.5% 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.

4.1 Income Trends for PSE Institutions

Over the past fifteen years, overall institutional income has risen by just over 50% in real terms, from $30.3 billion in 2001-2002 to $46.1 billion in 2015-2016. Until the financial crisis of 2008-2009, income from all three main sources – governments, students, and other self-generated income, was increasing at roughly the same rate. The main change since then is that government income has stagnated and even reversed somewhat in real terms, while income from students has continued to increase. In the most recent year for which data is available for both sectors (2015-2016), just slightly more than half of total income (52.5%) came from government sources, with 27% coming from student fees and the balance from other self-generated sources.

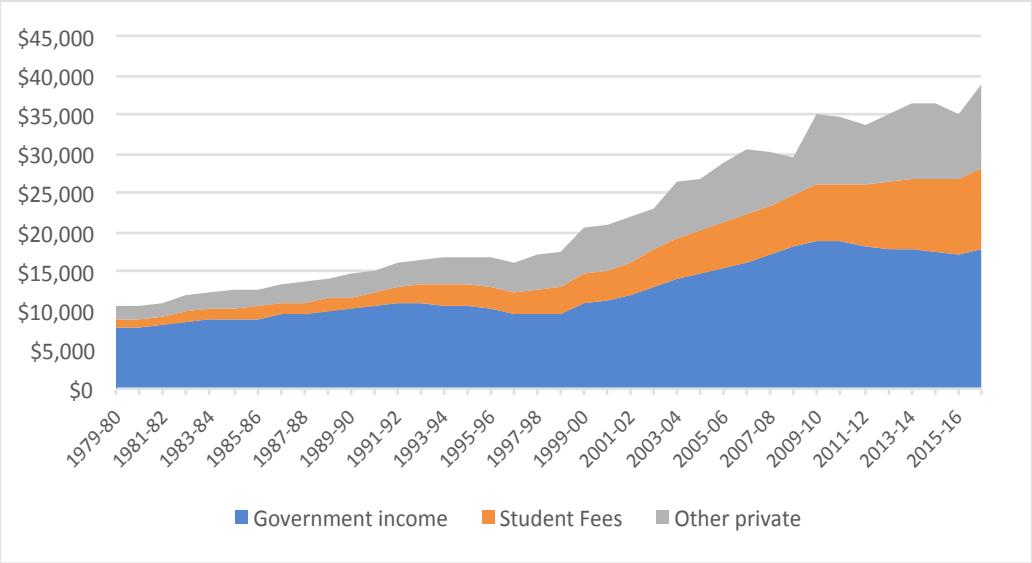
Figure 4.1: Total Income by Source for Public PSE Institutions, Canada, 2001-02 to 2015-16



Figures in millions of $2016.

Data on university expenditures are available for a much longer period than for colleges: available data stretches further back (to the late 1970s). Since data on university finances is released more quickly than for colleges, we have one extra recent year (2016-2017) available as well. The pattern we see here 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

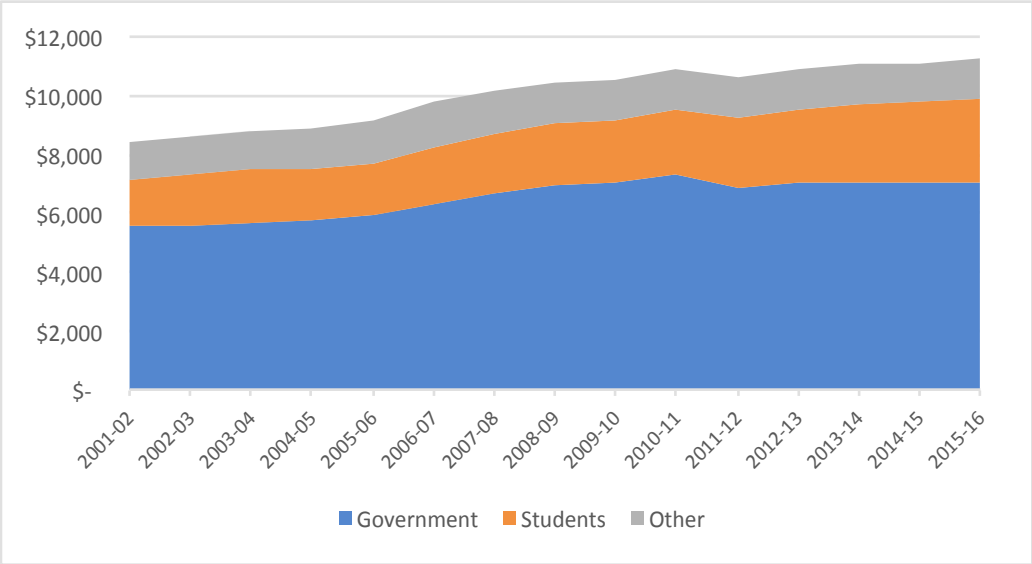
Figure 4.2: Total Income by Source for Universities, Canada, 1979-80 to 2016-17



Figures in millions of $2016.

income actually fell, mainly because of real cuts to government expenditures. Then, from about 1998 to 2009, there was very strong expansion once again, followed by another bout of post-recession stagnation in government expenditures. 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 (endowment income is a non-trivial part of self-generated income), but it is also due to significant new tuition revenues, mainly from international students.

Figure 4.3: Total Income by Source for Colleges, Canada, 2000-01 to 2015-16



Figures in millions of $2016.

On the college side, the trends look somewhat similar to that 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 62% of total revenue (compared to just under 50% for universities), and revenues from self-generated income make up just 12% of the total (compared to 27% in universities). In both sectors, however, income from student fees makes up a little over a quarter of the total.

4.2 Expenditure Patterns for PSE Institutions

Because institutions tend to want to spend all the money which they can raise, overall total expenditure trends follow total income trends closely. 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 can be quite interesting.

Table 4.1 looks at total expenditures of universities and colleges by "fund". What is rather surprising here is that, at least using certain methods of aggregation, the two systems look extremely similar. Using the categories developed by Statistics Canada, we find the following trends. Research and teaching put together make up 60% of the budget in universities and 55% in colleges. Physical plant is 7% and 9%, respectively, capital is 6% and 9%, and student services are 6% and 10% (the university numbers are lower because there is about 10% of their total expenditures which are not categorizable using the definitions used in the colleges). 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 1.4% of total expenditures for colleges, but over 31% for universities.

Table 4.1: Total Expenditures by Fund, Colleges and Universities, 2015-16

Expenditure Category	Universities	Colleges
Research and Teaching	60%	55%
Physical Plant	7%	9%
Capital	6%	9%
Student Services	6%	10%

Note: the university numbers are lower because there is about 10% of their total expenditures which are not categorizable using the definitions used in the colleges

One perennial topic of conversation in higher education is the allegedly relentless tendency toward ever-increasing expenditures on administration. Statistics Canada data allows us to chart this trend over time in both the college and university sectors, though the definition of "administration" differs quite a bit from one sector to the other (for universities the term means "central" administration only; in colleges, it includes all IT expenditures as well as central administration and seems to include a number of other miscellaneous items). Still, despite differing definitions, trends over time can be compared. Figure 4.4 shows that spending on administration is higher for colleges than universities, a fact which is partially a function of a different definition, 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. The

figure also shows that over the past decade administration spending has remained reasonably steady as a percentage of total expenditures (colleges) or only increasing very gradually (universities). 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.

Figure 4.4: Expenditures on Administration as a Percentage of Total Spending, Universities vs. Colleges, 2011-02 to 2015-16

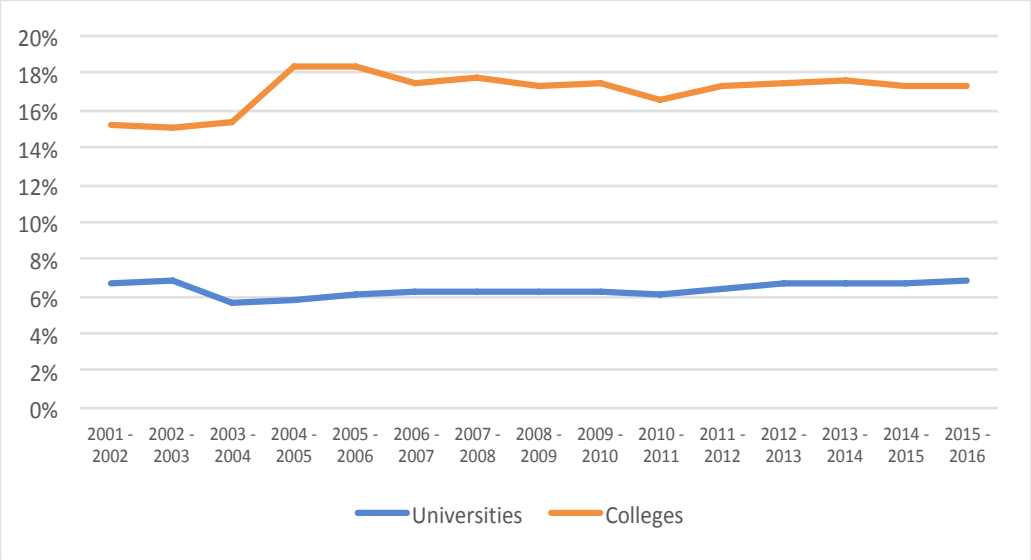


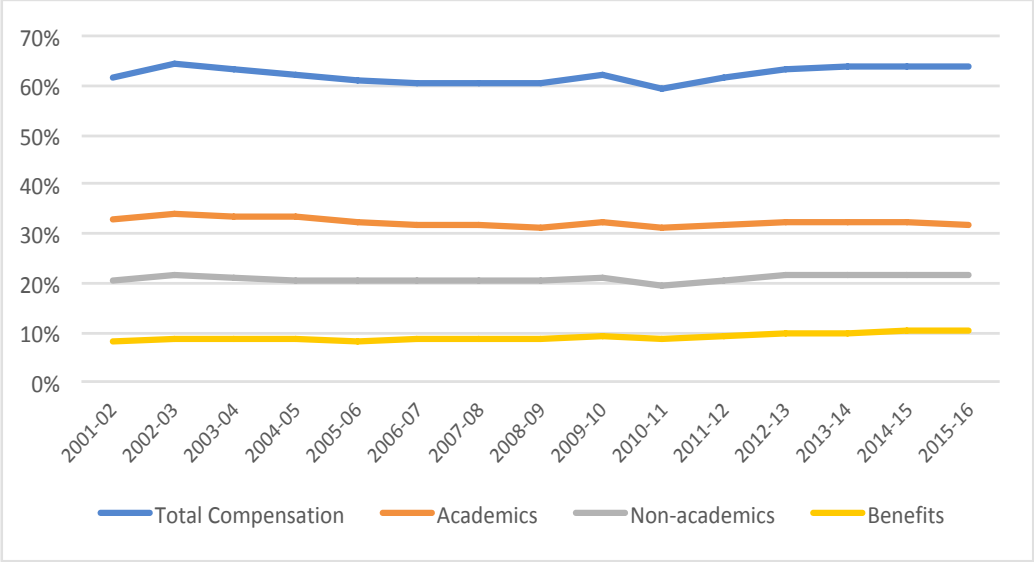
Table 4.2: Distribution of Spending by Type, Universities vs. Colleges, 2015-16

	Colleges	Universities
Academic Wages	32.0%	27.4%
Other wages	21.7%	22.6%
Benefits	10.3%	10.2%
Library acquisitions	0.2%	1.1%
Supplies	8.1%	4.4%
Utilities	1.6%	1.9%
Financial Aid	1.2%	5.7%
Fees and services	6.3%	4.8%
Furniture & Equipment	2.7%	4.8%
Buildings and Land	6.5%	7.0%
Debt service	1.2%	1.6%
Other	8.1%	8.4%

If we look at institutional expenditures by type, rather than by fund (above, Table 4 2), we see once again that the two sectors look very 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 at least 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, though 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.

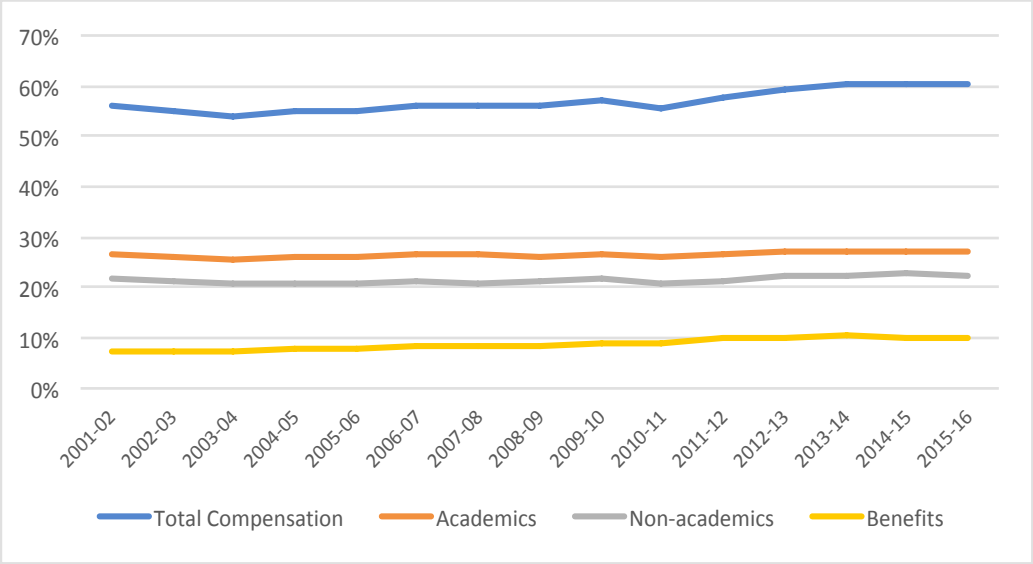
Wages are always an area of concern in post-secondary education. They have increased substantially (nearly doubling in nominal terms) at both universities and colleges over the past fifteen years. However, as a proportion of total expenditures they are remarkably stable, as Figure 4.5 and Figure 4.6 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 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 4.5: Wages as a Percentage of Total Budget, Canadian Community Colleges, 2001-02 to 2015-16



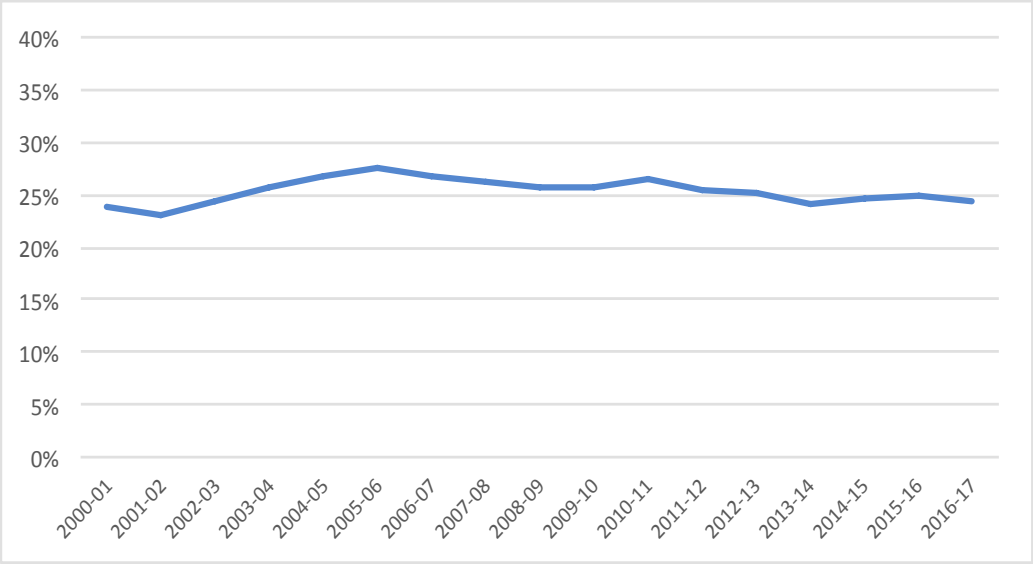
These figures distinguish between spending on academic and non-academic staff. However, one persistent debate within higher education is that of "academic casualization"; that is, the tendency of universities and colleges to hire fewer full-time staff and more part-time staff. We have already looked at this to some extent in Chapter 3, however, we can shed more light on this phenomenon (in the university sector, at least) by disaggregate 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

Figure 4.6: Wages as a Percentage of Total Budget, Canadian Universities, 2001-02 to 2015-16



the structure of the college finance survey. Figure 4.7 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 2016-17. As the data shows, this percentage has in fact been falling very slightly for the last decade or so. This does not mean that expenditure on non-tenure track staffing is shrinking: it simply means it is growing less quickly than expenditures on tenure-track staff. Nor does it mean that the ratio is falling uniformly across any given institution: it just means that if in some disciplines reliance on non-tenure track staff is rising, this rise is offset by declines in other disciplines.

Figure 4.7: Percentage of Aggregate Academic Wages Going to Non-Tenure Track Staff



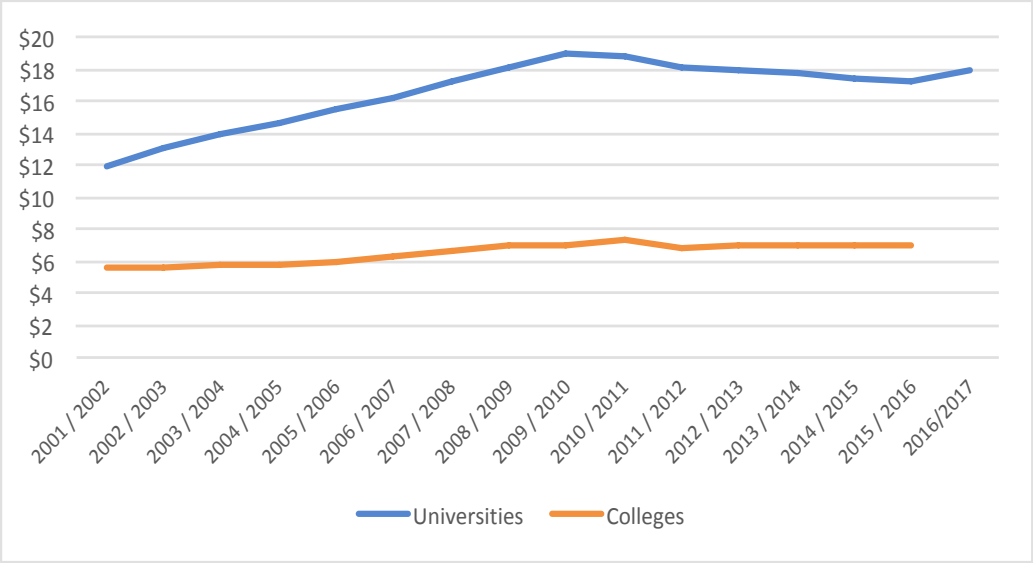
Chapter 5 — Government Expenditures

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 post-secondary sector. This chapter examines these expenditures in detail, both at the provincial and federal levels. In the main, the story is a simple one: 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 do so up to the present day. 2016-17 saw the first uptick in expenditures in nearly a decade, but this is primarily the effect of a one-time increase engineered by the federal Strategic Infrastructure Fund (SIF), created by the new Liberal government to counteract the brief and shallow 2015-16 economic slowdown.

5.1 Provincial Expenditures on PSE

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. Figure 5.1 shows provincial government transfers to PSE institutions, in billions of constant 2016 dollars, from 2001-02 to 2016-17 for universities and from 2001-02 to 2015-16 for colleges. What we see is a massive increase – over 50% – in funding for universities between 2001-02 and 2009-10, followed by a slow and steady decrease since then. The uptick in 2016-17 is likely due to federal expenditures on SIF, which required provinces to spend money to match the federal offer.

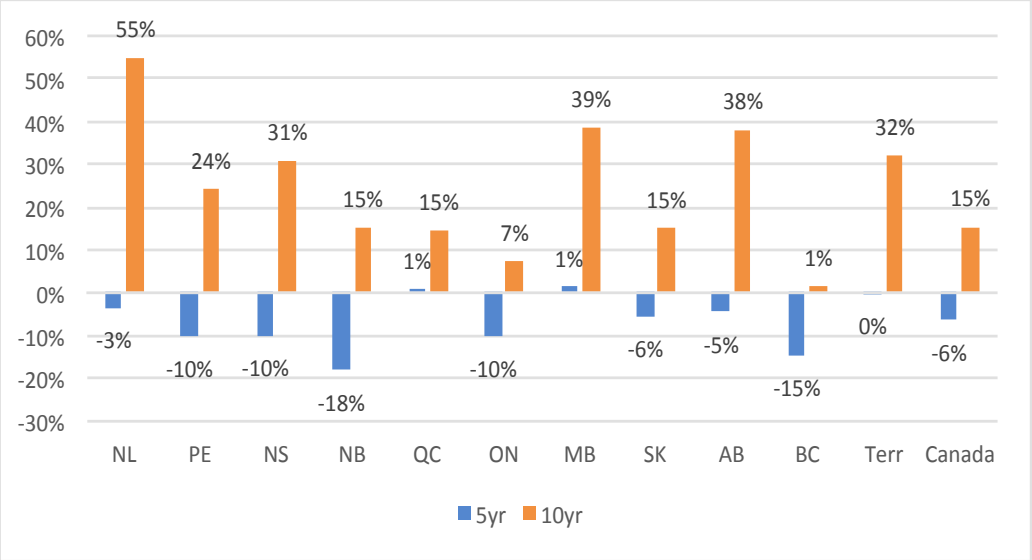
Figure 5.1: Provincial Government Transfers to Institutions, by Type of Institution, Canada, 2001-02 to 2016-17



Figures in billions of $2016.

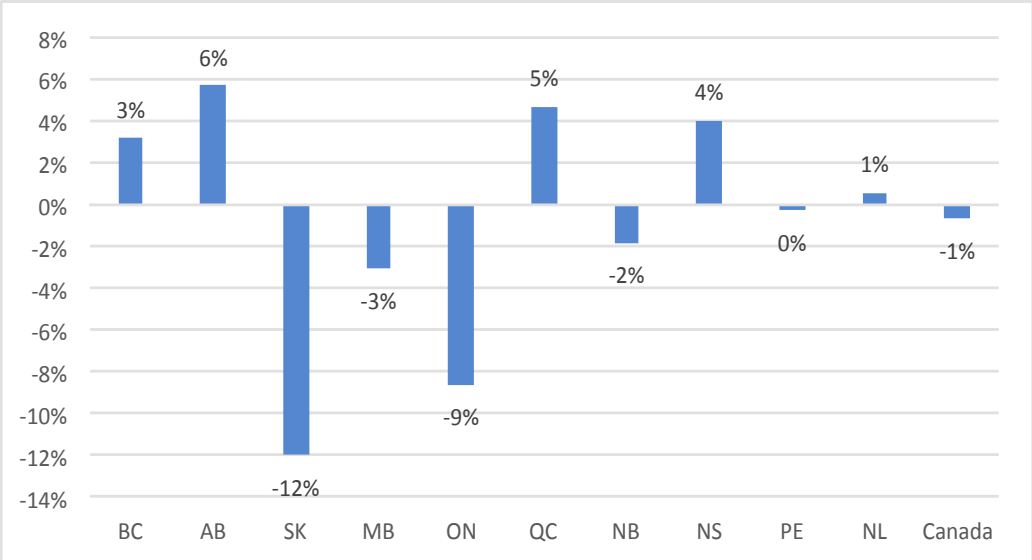
As per usual in Canada, the expenditure picture varies significantly not only depending on the time period chosen, but also from one province to another. For instance, a five-year time horizon demonstrates that for the country, provincial expenditures fell by 6% between 2010-2011 and 2015-2016. In a few provinces, the drop was quite substantial: 18% in New Brunswick, 15% British Columbia, and 10% in Ontario, PEI, and Nova Scotia. But in two provinces – Quebec and Manitoba – funding slightly increases. However, a longer 10-year horizon demonstrates a net increase of 15% overall, with provincial-level increases ranging wildly from 55% in Newfoundland and Labrador to just 1% in British Columbia.

Figure 5.2: Changes in Provincial Expenditures by Province over five and ten years, 2015-16



Figures calculated using constant $2016.

Figure 5.3: Budgeted Changes to Post-Secondary Expenditures, 2015-16 to 2018-19

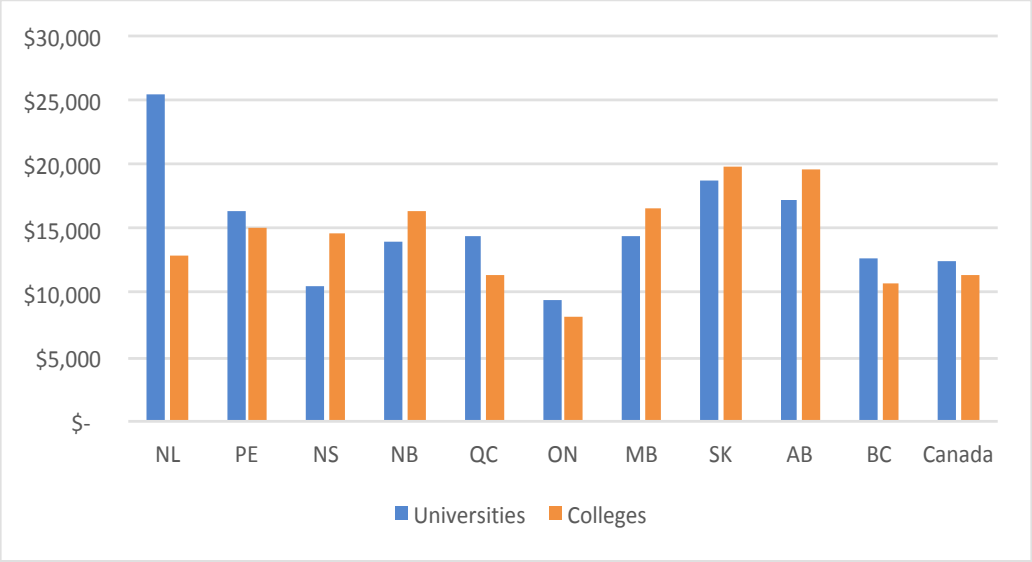


Figures calculated using constant $2016.

Though a fully accurate accounting of more recent transfers (i.e. since 2015-16) cannot be made until up to date FIUC and FINCOL numbers are available, it is still possible to look at provincial activity by using provincial budgets and their accompanying statements of what provinces intended to spend on institutions. Using this method, we can bring Figure 5.2, which ends in 2015-16, up to the present fiscal year (2018-19). The results are shown in Figure 5.3. Nationally, provincial funding is down 1% in real terms, but the national result again masks major regional variation. Quebec, Alberta, Nova Scotia, and British Columbia all saw increases while the others saw decreases, in some cases quite severe decreases. For instance, Saskatchewan's institutions endured a major episode of government budget-balancing, which saw transfers drop by 12%; in Ontario there was a 9% drop, primarily due to cuts in capital expenditures (and operating expenditures also declined a bit).

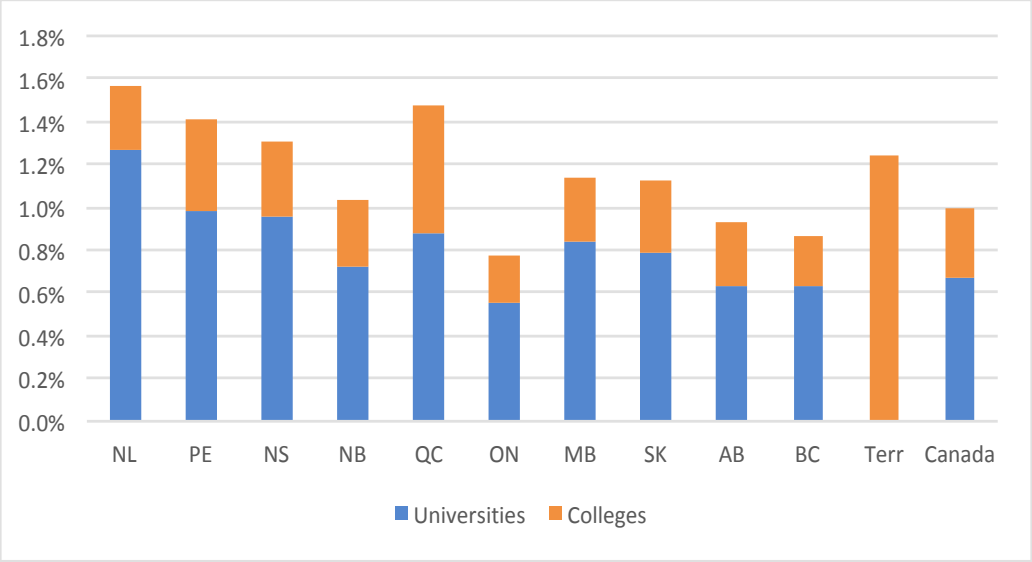
Of course, simply looking at total expenditures by sector does not tell us much about relative funding differences, because provinces differ so much in size. Figure 5.4 shows expenditures per FTE student by province in both the college and university sectors. Nationally, provincial government expenditures on universities and colleges are similar: $12,531 per student for universities and $11,386 for colleges. But again, this varies considerably by province. Five provinces – Nova Scotia, New Brunswick, Manitoba, Saskatchewan, and Alberta – each spend more per college student than they do per university student. Globally, this is extremely rare. In most jurisdictions, funding for university-level higher education is considerably higher than it is for non-university higher education. And in most provinces, expenditures for the two types of education are more or less consistent – within $2,500 per student or so. The exceptions are Nova Scotia (where expenditures per college student are over $4,000 more than per university student) and Newfoundland (where expenditures per university student are nearly $12,500 more than per college student).

Figure 5.4: Provincial Expenditures per FTE Student by Province, Canada, 2015-16



However, per-student expenditures are a limited way to compare 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 size of the provincial economy. Figure 5.5 shows provincial 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 1.56% of GDP, while in Ontario it is just 0.77%. The proportion going to colleges and universities is relatively close: in most provinces, the college share is between 27 and 33% of expenditures. The three exceptions are Newfoundland (19%), Quebec, with its very large CEGEP system (40%) and the three territories, where the figure is 100% because they have no universities.

Figure 5.5: Government PSE Expenditures as a Percentage of GDP by Province

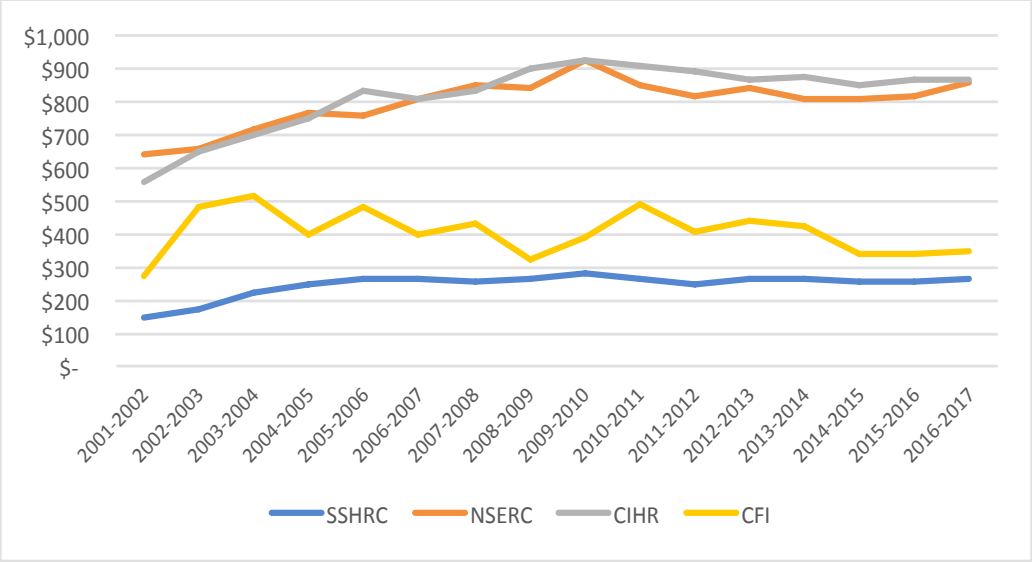


5.2 Federal Expenditures on PSE

The Canadian government essentially has four mechanisms for transferring money to post-secondary institutions. The first 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 are the largest source of federal dollars to most institutions. As of 2018, the Government of Canada now also considers the Canada Foundation for Innovation (CFI), which disburses money for scientific infrastructure, to be the fourth granting council. The second is through a variety of other scientific agencies and government departments (e.g. Health Canada), which transfer at least some of their money to post-secondary institutions. The third is through occasional large investments in capital spent on post-secondary institutions, such as the Knowledge Infrastructure Program (KIP) of 2009-2010 and the Strategic Infrastructure Fund (SIF) of 2016-2017. The fourth is an indirect method of transfers via funds included in the Canada Social Transfer that are earmarked for funding post-secondary education. Each of these are discussed in turn.

The four granting councils provide roughly $2.3 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 2005-2006. Funding from CIHR and NSERC tend to hew close to one another at around $850 million each; 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 does not yet receive annual funding allocations but instead receives occasional endowment funding.

Figure 5.6: Research Granting Council Expenditures by Council, 2001-02 to 2016-17



Figures in millions of constant $2016.

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. Table 5.1 presents the top ten institutions receiving funds from each of the three traditional granting councils, as well as the top ten receiving overall funding.

Table 5.1: Granting Council Recipients, by Institution

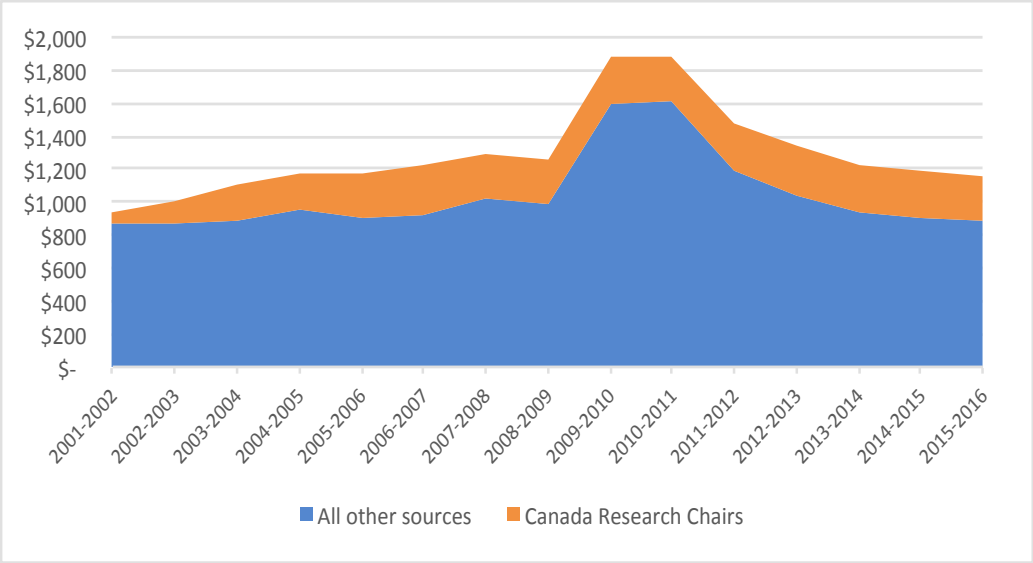
SSHRC		NSERC		CIHR		Total	
Institution	% of total	Institution	% of total	Institution	% of total	Institution	% of total
Toronto	9.4%	Toronto	9.5%	Toronto	13.6%	Toronto	11.4%
UBC	7.7%	UBC	8.3%	UBC	11.7%	UBC	9.9%
McGill	5.5%	Alberta	7.0%	McGill	8.8%	McGill	7.2%
UQAM	5.0%	Waterloo	6.7%	McMaster	7.4%	Alberta	6.3%
Laval	4.9%	McGill	5.9%	Calgary	6.6%	Calgary	4.9%
Montreal	4.8%	Laval	4.9%	Alberta	5.8%	Laval	4.6%
Ottawa	4.8%	Queen's	4.1%	Montreal	4.5%	McMaster	4.6%
Alberta	4.4%	Western	3.8%	Laval	4.3%	Waterloo	3.9%
Waterloo	3.9%	Calgary	3.7%	Western	4.0%	Montreal	3.9%
Western	3.4%	Sask.	3.7%	Ottawa	3.1%	Western	3.9%

There are a variety of other sources of federal funding for universities and colleges. The largest single on-going source is the Canada Research Chair, which provides roughly $275 million every year 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 funds to colleges, and 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 and SIF, which tend to appear during periods of economic downturn. From a government perspective, these programs are as much about Keynesian counter-cyclical support to the construction industry during economic downturns as they are about higher education. Nevertheless, these funds 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 in 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.

Finally, there is the matter of federal transfer payments to provinces for post-secondary 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. This arrangement was never accepted by Quebec's government, which believed it violated the spirit of section 93 of the British North America Act. 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 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 federal tax rates decrease, and provincial ones increase).

In 1977, this arrangement was replaced with something called Established Programs Financing (EPF), which combined federal contributions for health and post-secondary education into a single transfer made up of a combination of cash and tax points. It was at this point that the federal contribution began to erode significantly. The cash transfer under EPF was initially tied to the rate of nominal GDP growth, which meant that program expenditures exceeding GDP growth had to be financed exclusively through provincial expenditures. In 1982, 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. In 1986, the growth rate was reduced to GDP minus 2% as a deficit-fighting measure and then to GDP minus 3% a few years later, before being frozen altogether in 1990. Since tax points continued to increase in value, and the cash transfer was a residual, the cash portion of EPF began to dwindle rapidly. By the mid-1990s, it was expected that it would fall to zero early in the following decade.

Figure 5.7: Other Federal Funding, Canada, 2001-02 to 2015-16



Figures in millions of constant $2016.

In the historic 1995 Budget, the Government of Canada merged the EPF with another provincial transfer payment known as the Canada Assistance Plan (CAP), which was designed to help provinces with social assistance costs. Unlike the EPF, the CAP still retained some cost-sharing elements. This new program went through a variety of names in its first week of existence. Initially, budget documents describe it as the Canada Social Transfer. After an outcry from those who feared a gutting of the Canada Heath Act, the word "health" was inserted and for a brief couple of days this new program was known as the Canada Social and Health Transfer, or CSHT. After the scatological potential of this acronym was realized, the second and third words were reversed, thus creating the 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. This block-grant approach was of grave concern in social welfare circles but was really nothing new as far as post-secondary education was concerned. Under EPF, transfers were always "in respect of" post-secondary education rather than "for" post-secondary education, meaning there was never an expectation that provinces needed to account for the money they received from the Government of Canada.

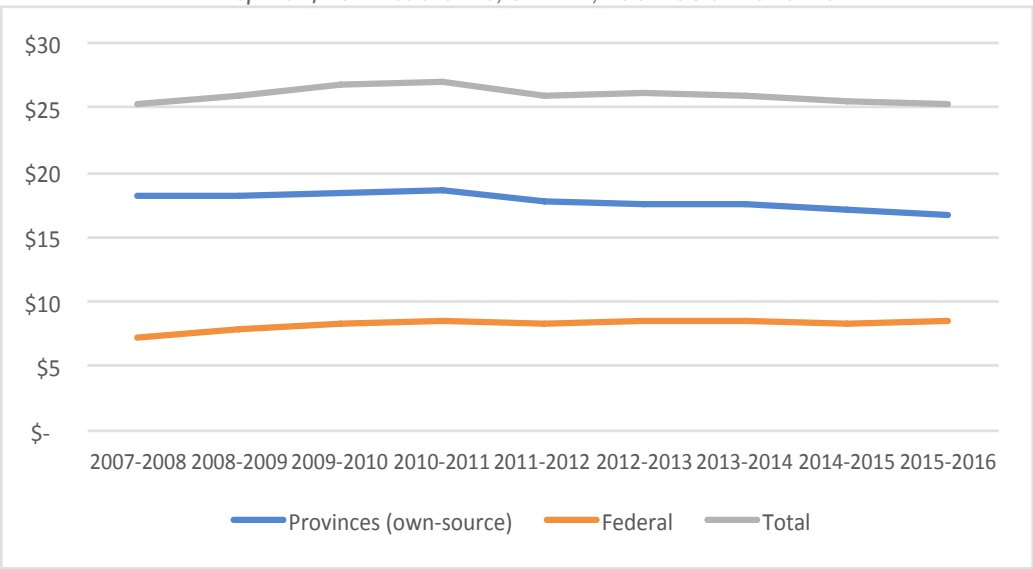
The CHST, which came into effect in 1996-1997, was not simply an amalgamation of existing programs. Owing to a federal debt amounting to 71% of GDP with one of every three dollars spent by the government going to interest payments, the amalgamation came with a significant cut as well – roughly $6 billion over two years, leaving the cash portion of the transfer at just $12.5 billion. But it also placed a floor under cash transfers, which meant that the worst fear of the early 1990s – that cash payments would dwindle to zero and the stick with which to punish provinces that contravened the Canada Health Act would disappear – was put to rest. As the economy recovered after 1996, the CHST cash payments grew. In 1999, 2000 and 2003, billions of dollars were poured into the transfer, mostly for the purposes of shoring up the health system; though accountability arrangements were not formally changed, provinces

agreed to publicly announce what they would do with any new monies received through the transfer. By 2004, the transfer had risen to $22.3 billion.

In 2004, the CHST was split roughly two-thirds/one-third into a Canada Health Transfer (CHT) and a Canada Social Transfer (CST), with the latter designed to include spending for PSE, social assistance and child care and set at $8.3 billion. In 2007, the Government of Canada announced an $800 million increase specifically for post-secondary 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 post-secondary education, meaning that federal transfers "in respect of" post-secondary education are currently just over $4 billion per year. This translates to about 20% of provincial expenditures on post-secondary institutions, up from just 14% in 2007.

From 2007-08 onwards, thanks to the clarification about the division of CST funds, it is possible to look at the distribution of post-secondary funding in Canada between federal and provincial governments without fear of double-counting the federal transfer. This is done below in Figure 5.8. 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.

Figure 5.8: Federal and Provincial Own-Source Expenditures in Respect of PSE Institutions, Canada, 2007-08 to 2015-16



Figures in billions of constant $2016.

Chapter 6 — Tuition and Student Aid

Certainly, 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 tricky because of the way tuition and student aid policies vary from province. This chapter will encapsulate the issues around affordability policies as concisely as possible.

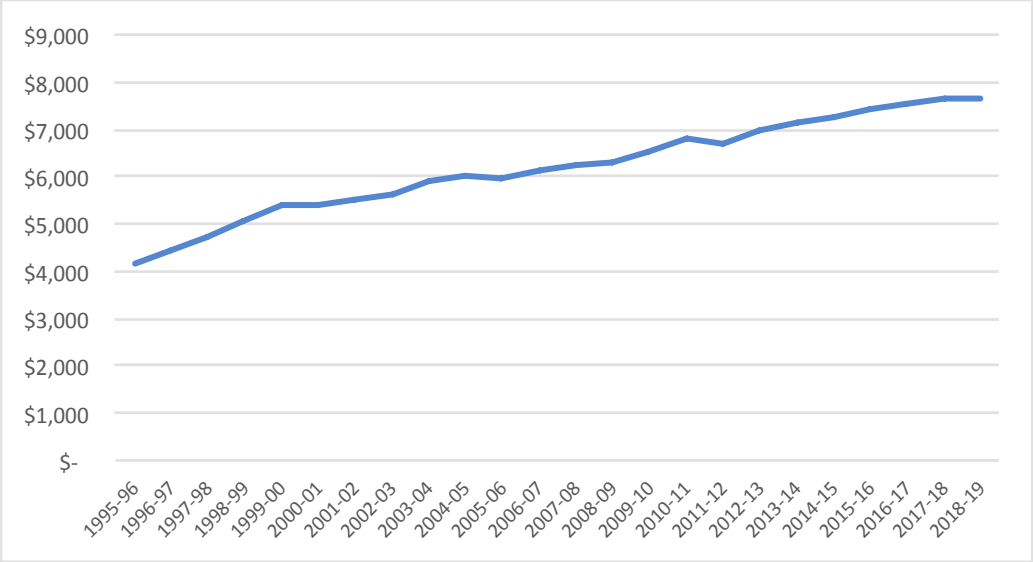
6.1 Tuition

Tuition fees in universities and colleges are a policy instrument subject to a great deal of tug-of-war between institutions and provincial governments. The former, generally, seek greater freedom to set fees, so that more revenue can be raised; the latter, generally, 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, sometimes they permit fees to be de-regulated (at least for some narrowly-defined cases). Genuinely pan-Canadian trends in fee policies are few and far between. What does seem to currently unite Canadian provinces is the willingness to allow institutions to make up for falling government funding through international student tuition dollars.

Figure 6.1 shows domestic student tuition plus mandatory fees at Canadian universities, in real dollars, from 1995 to 2018 (the latter figure is an estimate, as Statistics Canada's official figures are about a month away at the time of writing). In the 1990s, annual average rises in tuition were on 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.

Unfortunately, a similar chart is unavailable for college tuition, as Statistics Canada has chosen not to survey institutions on this. Colleges do publish their tuition rates, but in many provinces these rates differ enormously from one program to another, and so enrolments by program are needed to turn these into averages. Very few colleges publish enough of their enrolment data to make it possible to calculate a proper average properly. Requests by HESA to obtain this data from colleges have been routinely turned down, mostly – it seems – because colleges prefer not to have their tuition rates published on a basis comparable to that of universities. The closest we can come to obtaining national college tuition figures is to look at revenue per full-time equivalent, 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: in universities, with much greater numbers of international students, the figure is $8,848 per FTE student per year.

Figure 6.1: Average Domestic Undergraduate Tuitions and Fees, Canada, 1995-96 to 2018-19 (est.)

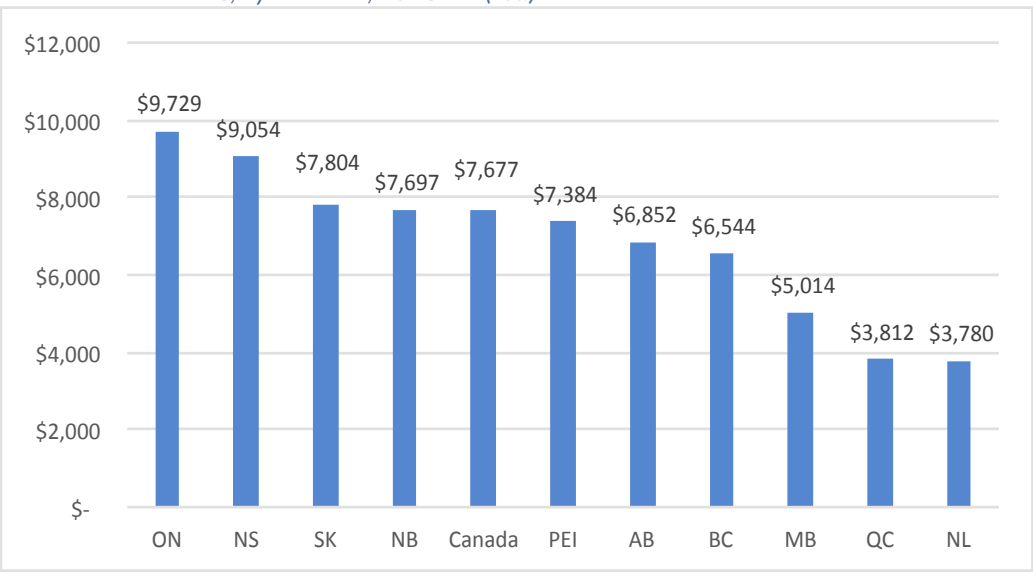


Figures in constant $2018.

In colleges, if one pulls out the CEGEPs, which for all intents and purposes are free, the figure is around $7,250 per FTE student per year. What one should probably take from that is not that college tuition is $7,250 per year, 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 do 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. Ontario and Nova Scotia, on the other hand, have relatively high levels of fees. 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. Meanwhile, the lowest participation and attainment rates are found in the Western provinces.

Figure 6.2: Undergraduate Tuition and Mandatory Fees, by Province, 2018-19 (est.)



Fees also vary considerably by field of study. Figure 6.3 shows the variation for first-entry university undergraduate programs, while Figure 6.4 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 6.3 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 low $6,000s. Even adding on the $800 or so from ancillary fees not shown here would only bring the median tuition fee to about $7,000 at most, or about 10% lower than the average noted in Figure 6.2.

Figure 6.3: Average Tuition by Field of Study, First-Entry Undergraduate Programs, Canada, 2017-18

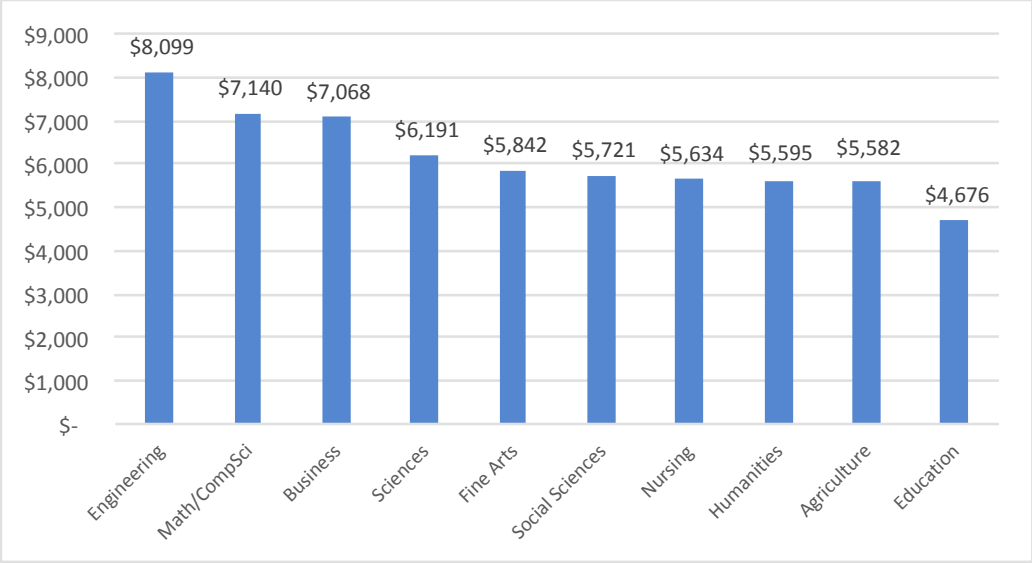
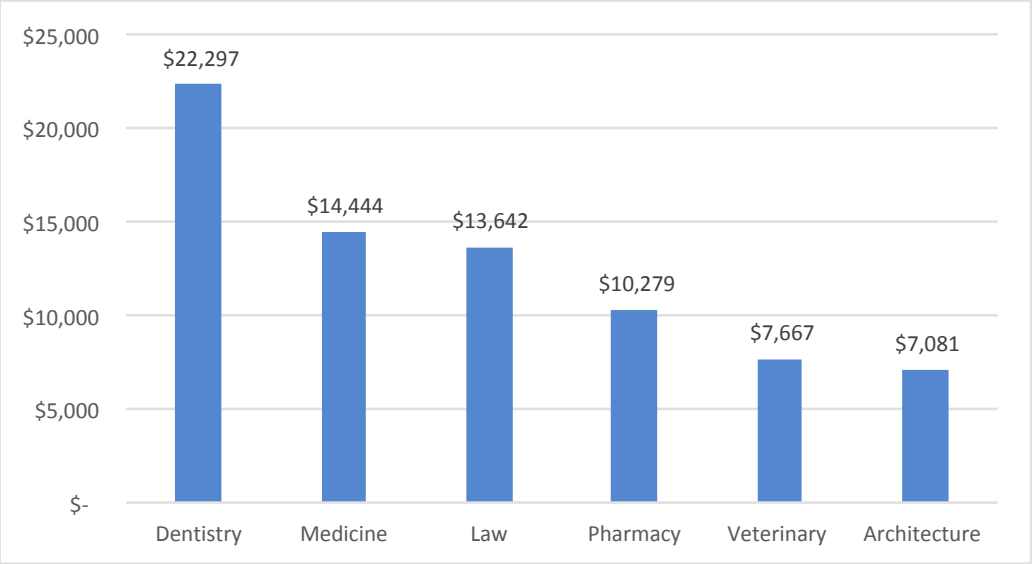


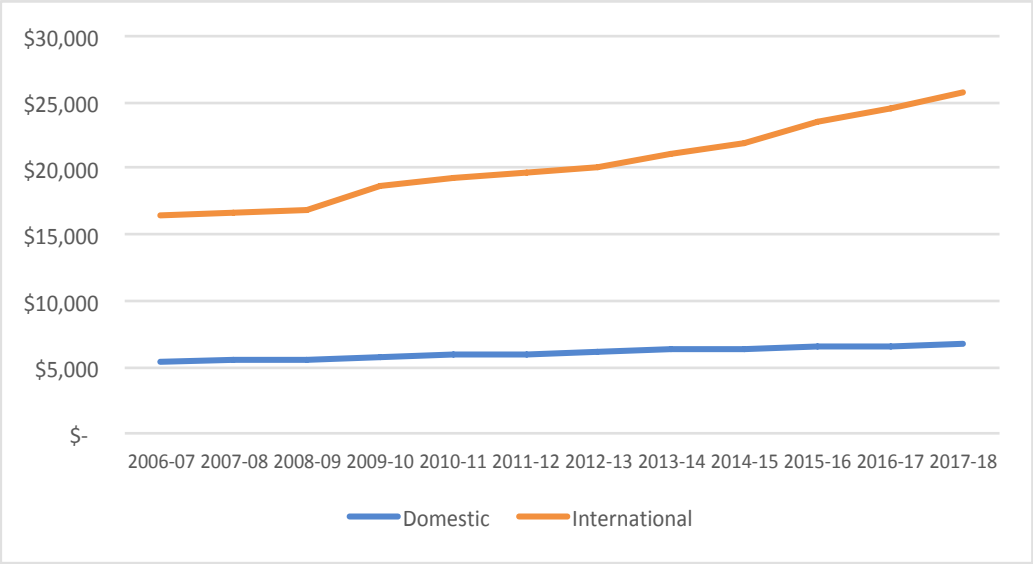
Figure 6.4: Average Tuition by Field of Study, Second-Entry Professional Undergraduate Programs, Canada, 2017-18



The reason for this difference is simple: there are a small number of professional programs which charge fees dramatically over the median: over $22,000 per year in Dentistry, over $14,000 in Medicine and over $13,500 in Law. Even with relatively small numbers of students, these fee levels push the average up significantly, to the levels seen in Figure 6.2.

But 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 well. As Figure 6.5 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% every year, international student tuition fees have been rising at inflation plus 4%. Over time, the effect of compounding means those two numbers separate at an accelerated pace. In 2017-18, international student tuition averaged over $25,000 per year, up from just $16,000 (in inflation-adjusted dollars) a decade earlier. Notably, this rise in fees has gone in tandem with an enormous rise in student numbers: there is no sign that Canadian institutions are pricing themselves out of the market.

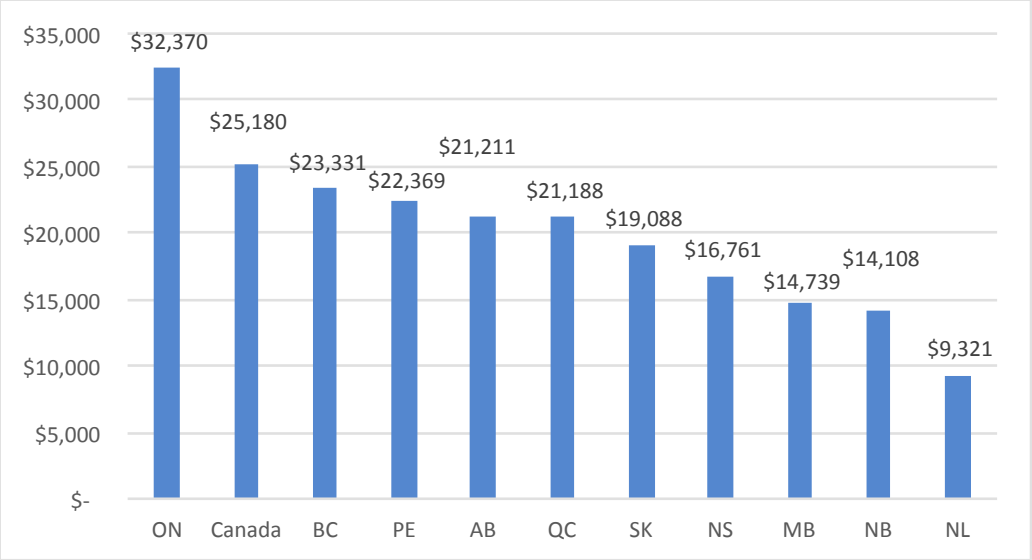
Figure 6.5: Domestic vs. International Student Tuition, Canadian Universities, 2006-07 to 2017-18



Figures in constant $2018.

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 (international education is frequently a gateway to migration), tuition fees are quite high: $32,000 in Ontario and $25,000 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 $14-21,000 range; in Newfoundland they are a (comparatively) trifling $9,321. 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.

Figure 6.6: International Student Tuition by Province, Canadian Universities, 2017-18



6.2 Student Assistance

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

6.2.a Need-based student assistance

Student aid in Canada is difficult to summarize briefly. Student assistance, however, is an area of joint responsibility with the federal government. Not only is there a national program – the Canada Student Loans Program, run by the Government of Canada – but every province has its own student aid program as well. 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 (the needs assessment processes for each program may be quite different, however). 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 aid 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 students' 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, and subject to some total assistance maximum, which varies somewhat by province and student status, but which at a minimum equal $350/week of study ($11,560 per academic year). This need figure equals the size of the student loan.

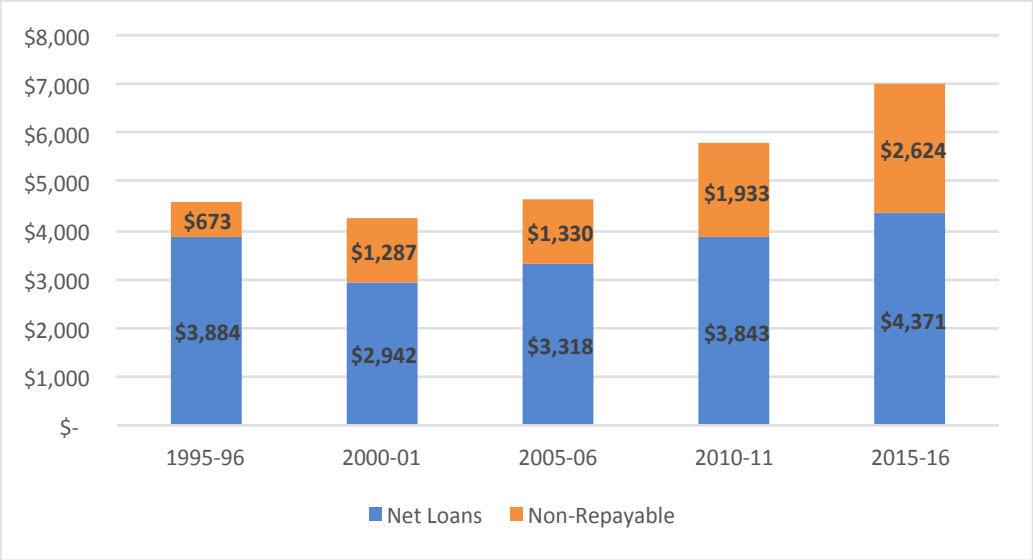
Grants, on the other hand, tend not to be need-based, but income-based. This is the case for nearly all the federal grants, as well as those in Ontario, which is the source of over half of all provincial grants. Most other provincial grants are based either directly or indirectly on need, though a non-negligible portion of both provincial and assistance is also provided based on the presence of a disability. Grants usually displace loans: that is, a student eligible for $10,000 in loans and $3,000 in grants will tend to end up with the grant plus $7,000 in loans. However, this is not universally the case.

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 Manitoba, Saskatchewan, Nova Scotia and Prince Edward Island.

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 and Saskatchewan, most provinces – for reasons that defy easy comprehension - do not publicly release data on the amounts of loans and grants they delivered, though all provinces release public data on student aid expenditures through their supplementary estimates or public accounts processes. Inexplicably, Statistics Canada does not collect data on provincial student aid either, even though they have an obligation to provide data on this to the OECD for the 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 end of the last decade. Since then, it has been more difficult to obtain data, but on the basis of what available data there is it is possible to make some educated guesses about loans and grants across Canada for 2015-16 and compare such data to those of earlier periods when better data was available.

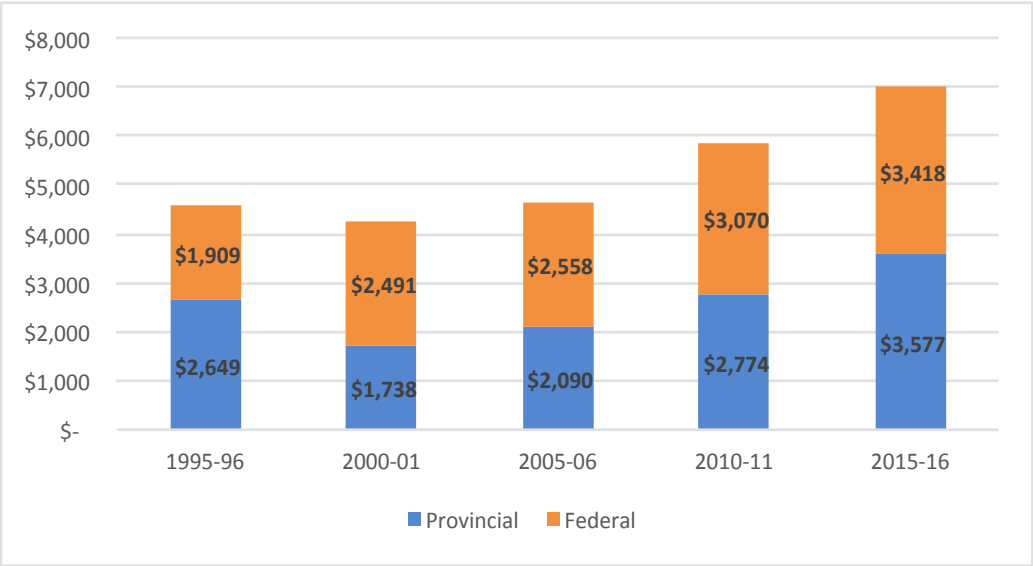
Figure 6.7: Total Annual Loans and Grants Issued, Canada (Selected Years)



Figures in millions of constant $2016.

Figure 6.7 shows the total loans and grants available in Canada at five-year intervals going back to the mid-1990s. Total need-based aid provided to students in 2015-16 was roughly $7 billion. 62% of that was delivered in the form of loans, and the remainder in grants. This is a very different system from the one which prevailed in 1995-96. Over those two decades, the volume of loans increased by about 13%, or half a billion dollars. Meanwhile, the volume of grants (which here also includes various forms of loan remission) nearly quadrupled, from $673 million to over $2.6 billion.

Figure 6.8: Total Annual Student Aid by Source, Canada (Selected Years)



Figures in millions of constant $2016.

There have also been shifts over time in the sources of student aid, and these are shown below in Figure 6.8. 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, however, provincial funding has grown substantially, and it is provinces who once again provide over 50% of support to students. Note, however, that this increase in provincial spending since 2010 was not widely-distributed and was mostly confined to Ontario and Quebec.

6.2.b 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.

Tax-based assistance for post-secondary 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. 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. 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.

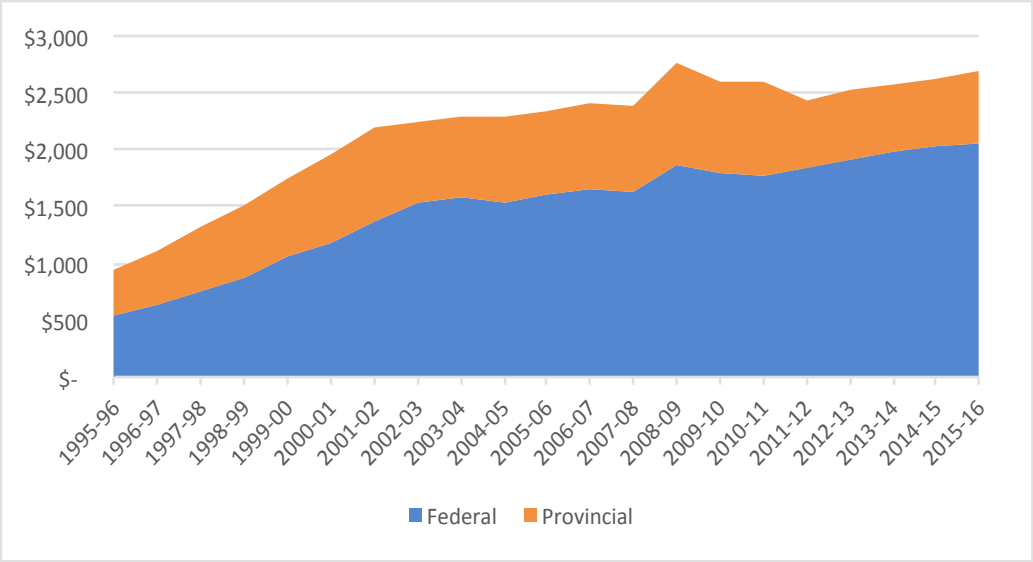
Until 2000, provincial taxes were calculated as a function of federal taxes. Therefore, whenever a federal tax credit was implemented, implicitly the credit reduced one's provincial tax payable as well. In 2000, the country moved from a TONT (tax-on-tax) system to a TONI (tax-on-income) one, under which 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 what "income" was. A majority of provinces froze tuition tax credits at the level they were at prior to the 2000 budget (i.e. $200 per month), and some chose to mirror the federal government's $400 rate. Alberta and Ontario decided to do the federal government one better by matching the $400 credit rate and then indexing it to inflation.

The new 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. They money was used to pay

for an increase in student grants (this switch does not show up in this chapter's data, because the publicly-available data ends before the measure took effect). Roughly half the proceeds from this measure were announced and spent in the 2016 budget; the other half are due to be announced in the 2019 budget. Ontario and New Brunswick followed suit by getting rid of their education credits later in 2016 and similarly re-investing the proceeds in student grants.

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 enrolment increases, from 2001 onwards. As Figure 6.9 shows, the value of these credits rose, in real dollars, from under $1 billion in 1995-96, to over $2.6 billion in 2015-16.

Figure 6.9: Total Value of Tax Credits, by Source, 1995-96 to 2015-16

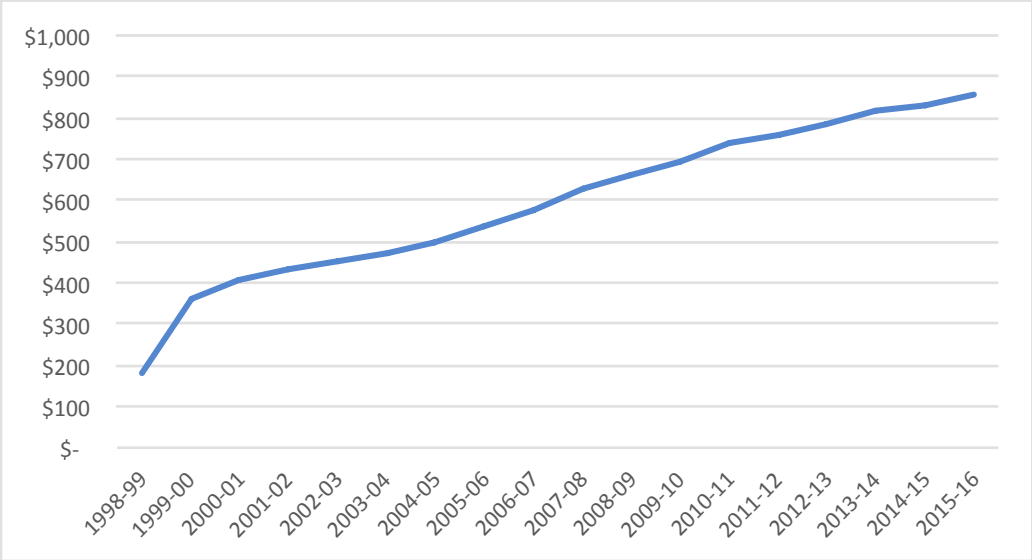


Figures in millions of constant $2016.

The other important government transfer program for post-secondary education is Education Savings Grants. 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, which was called the Canada Education Saving Grant, was very popular, and take-up rose rapidly (see Figure 6.10, 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, of course, 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 over $850 million per year and will likely hit $1 billion before the end of the decade. In 2016, over 2.7 million RESP accounts received CESG and/or A-CESG and over 50% of all Canadians under 18 have a RESP in their name. In the same year, 420,000 current students used money from their RESPs to pay for education, in an amount totalling $3.56 billion.

Figure 6.10: Total Canada Education Savings Grants Payments

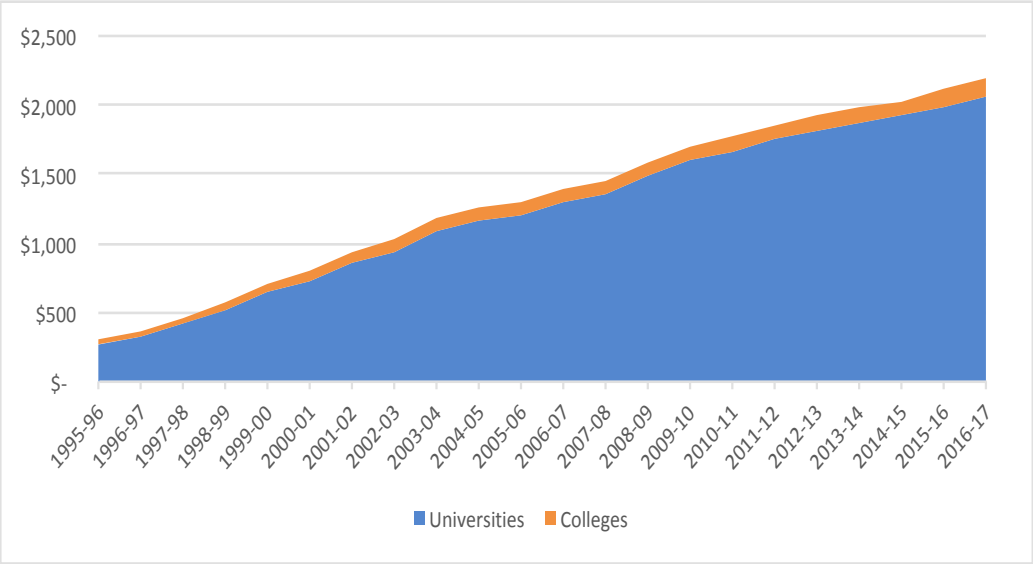


Figures in millions of constant $2016.

The final major source of funding for students is institutions themselves, which provide over $2.1 billion per year in scholarship and bursary funding to students. The overwhelming majority of this money (94%) comes from universities rather than colleges, in part because they have greater fundraising resources and in part because financial aid is a more important part of the enrolment management process at universities. Scholarships are perhaps the fastest-growing element of university expenditures in Canada, having increased eight-fold in the past twenty years or so. Total university expenditures on scholarships now equal about $1,900 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 being used to support 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.

Figure 6.11: Total Institutional Scholarships by Institutional Type, Canada, 1995-96 to 2015-16



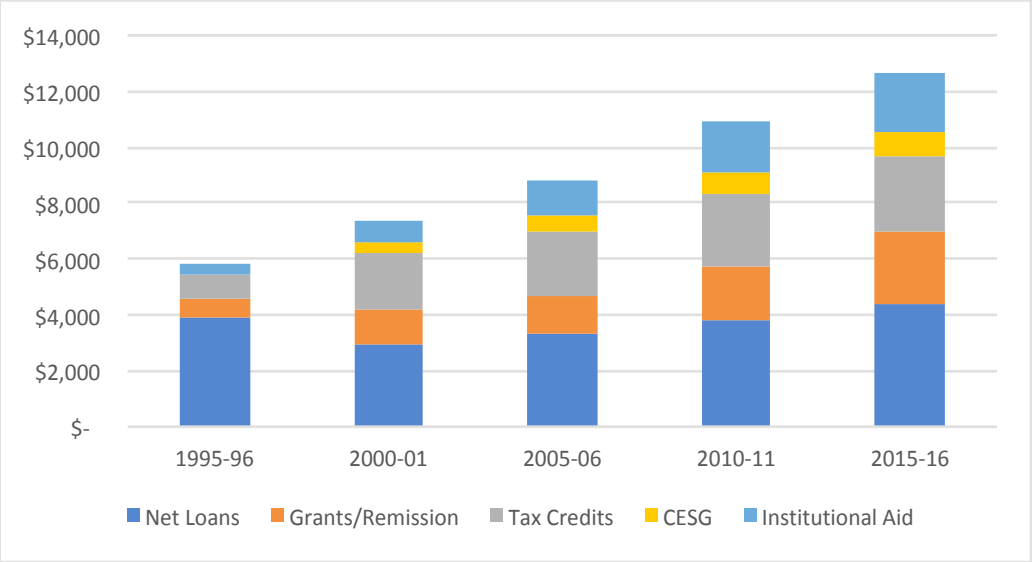
Figures in millions of constant $2016.

6.3 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 Post-secondary Student Support Program (PSSSP), which are roughly $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 at one point 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 now only Saskatchewan maintains such a program. Quebec and Saskatchewan also have small programs which top-up contributions to Canada Education Savings Grants. Future editions of this publication will provide greater detail in these areas.

Figure 6.12, on the next page, adds together 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.

Figure 6.12: Total Student Financial Assistance by Source, Selected Years, 1995-96 to 2015-16



Figures in millions of constant $2016.

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

- Overall, the amount of money given to individual Canadians has more than doubled over the past twenty years, even after accounting for inflation.

- The Canadian student aid system is less loan-based than it used to be. In 1995-96 loans made up 67% of total student aid; in 2015-16 that figure is down to just 34.5%. In those intervening 20 years, government grants have increased by 289% after inflation, tax credits by 188% after inflation, institutional grants 583% after inflation, and education savings grants have gone from zero to over $850 million per year. This is, in total, a sea change in the way post-secondary education is financed.

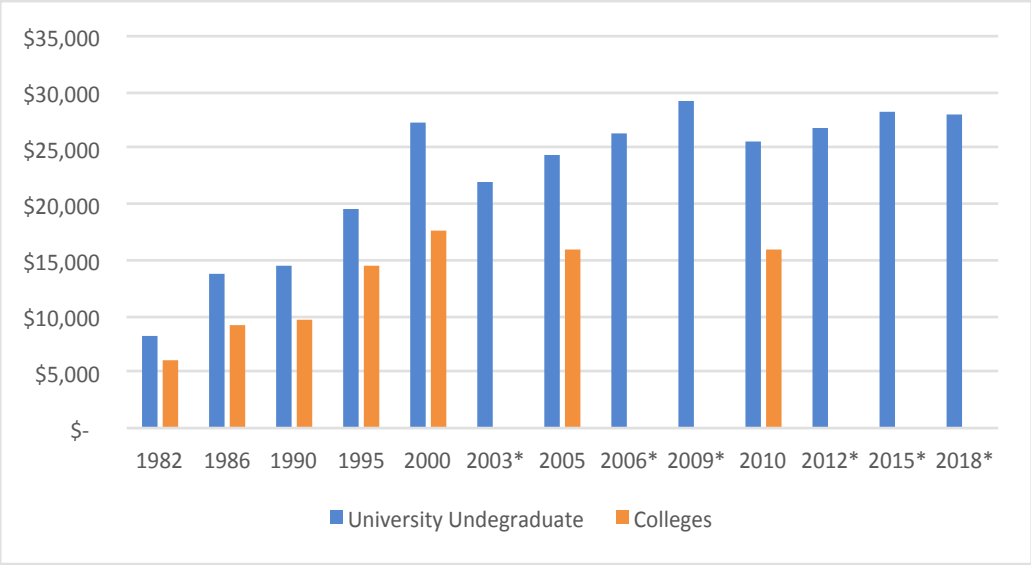
- The total amount of non-repayable assistance (that is, total assistance minus loans) was over $8 billion in 2015-16: if money from the additional sources not covered by Figure 6.12 are included, it increases to about $9 billion. We know from chapter 4 that the total amount of tuition paid to Canadian universities and colleges was in the region of $12.1 billion in that same year; however, we also know that roughly $3 billion was paid by international students. Since student assistance is rarely available to international students, it is possible to say that the total amount of non-repayable assistance given to Canadians each year is roughly the same as the amount of tuition fees paid by Canadian students. Or, put another way, Canada has net-zero tuition for domestic students.

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 like 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 nearly a decade out of date by the time it is published: at the time of writing in the summer of 2018, the most recent observation is from 2010. The second source is the Canadian Undergraduate Survey Consortium (CUSC)'s triennial survey of graduating students. These have the benefit of being published almost immediately; but they have the drawbacks of a somewhat inconsistent sample (consortium members are not entirely consistent from iteration to iteration), not including colleges, and low participation from the province of Quebec. The lack of Quebec figures tend 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 6.13.

Figure 6.13 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 incur any debt at all during their studies. Moreover, in the three most recent National Graduates Surveys, the percentage of graduates who indicated they had student debt was decreasing; from 45% to 40% for university students and from 45% to 30% for college students (CUSC data, no doubt due to the different sample frame, showed higher incidences of debt for university graduates around the same time – 58% in 2009 and 59% in 2012 – but has since shown a decline in incidence to 50% in 2018). As a result, the data shown in Figure 6.13 applies only to a minority of students who finish a college diploma or undergraduate degree.

Figure 6.13: Outstanding Debt of University and College Gradutes who Graduate with Debt, 1982 to 2018



Figures in millions of constant $2016; Years without asterisk are NGS, year with asterisks are CUSC.

In terms of debt trends, what we see is a significant run-up in student debt levels in the 1990s, but a flattening out in real terms since 2000. Of the six national surveys that have been undertaken since 2006, the value for undergraduate debt has moved around in a relatively narrow band between $24,000 and $29,000, with a mean value of just under $27,000. Thus, despite all the frequent platitudes about "ever-increasing student debt", the massive increase in student aid shown in Figure 6.12 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.

Appendix: A Note on Sources

Most of the data used here is drawn from Statistics Canada data. Many of the figures here 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.

Student numbers are generally drawn from the Post-secondary 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. Faculty data is drawn from the University and College Academic Staff System (UCASS) survey.

Data on post-secondary finances are drawn from the reports issued by the Canadian Association of University Business Officers Financial Information of Universities and Colleges (FIUC) reports. This is supplemented with data from Statistics Canada's Financial Information of Community Colleges and Vocational Schools (FINCOL) reports. 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.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