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Culture, Tourism and the Centre for Education Statistics

Profile and Labour Market Outcomes of Doctoral Graduates from Ontario Universities

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Louise Desjardins, Statistics Canada

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Note of appreciation

Canada owes the success of its statistical system to a long-standing partnership between Statistics Canada, the citizens of Canada, its businesses, governments and other institutions. Accurate and timely statistical information could not be produced without their continued cooperation and goodwill.

Acronyms

The following acronyms are used in this publication:

CEGEP	Collège d'enseignement général et professionnel
CIP	Classification of Instructional Programs
GDP	Gross Domestic Product
NGS	National Graduates Survey
OECD	Organisation for Economic Co-operation and Development
PhD	Doctoral graduates
PSIS	Postsecondary Student Information System
SED	Survey of Earned Doctorates

Table of contents

Acknowledgements		4
Acronyms		5
Chapter 1	Introduction	7
Chapter 2	Data sources	9
Chapter 3	Profile of 2005 doctoral degree graduates two years after graduation	11
Chapter 4	International and interprovincial mobility	25
	4.1 Graduates who moved to the United States	25
	4.2 Interprovincial mobility	32
Chapter 5	Graduates' labour market outcomes	34
Chapter 6	Conclusion	47
Appendix		49
References		99
Endnotes		100
Cumulative index		102

Chapter 1

Introduction

In recent years, there have been a number of discussions within Canada and in other countries on the value of obtaining a doctoral degree. Some argue that the country is experiencing an over-supply of PhDs relative to the labour market demand for these very highly-skilled graduates, while others contend that Canada lags behind other developed countries in the production of doctoral graduates.[1]

Crucial to this debate is the issue of how the labour market absorbs new doctoral graduates. According to the 2006 Census of Population, more than two-thirds of doctoral holders who worked full-time in Canada were employed by the public sector in 2005 (67%). This share of workers was distributed across educational services (47%), health care and social assistance (11%) and public administration (9%), with only one-third of graduates employed by the private sector.

Data from the Census also shows that between 1981 and 2006, the overall number of university professors almost doubled in Canada, increasing from 18,135 to 34,140.[2] This increase reflects strong growth in the number of students enrolling in university and the creation of new university programs during that period.

However, this did not necessarily translate into more full-time tenured positions for young professors. The overall proportion of tenured or tenure-track positions for doctorate holders working full-time in Canadian universities decreased by 10 percentage points between 1981 and 2007, decreasing from 79.8% in the 1980/1981 academic year to 70.3% in the 2006/2007 academic year. The decline was even more pronounced for professors under the age of 35. In 1980/1981, one-third of professors under age 35 (35%) held a full-time tenured or tenure-track position; 25 years later, this was true for only 12% of professors in that age category, a decrease of 23 percentage points.[3]

Although most young doctoral students still pursue a doctorate degree to become university professors, many contemplate other career options outside academia.

This research paper builds on the 2011 study "Expectations and Labour Market Outcomes of Doctoral Graduates from Canadian Universities" to better understand the profile and labour market outcomes of recent doctoral graduates from Ontario universities who lived in Canada or the United States two years after graduation.[4] It uses data from three cohorts of the National Graduates Survey (NGS), namely the Classes of 1995, 2000 and 2005.

The analysis first examines indicators and outcomes for doctoral graduates who received their degree from an Ontario university in 2005 and compares them to doctoral graduates from universities in all other provinces combined. Then, results from the Class of 2005 are compared to results from the two previous NGS cohorts.

The report is organized as follows: Chapter 2 presents the sources of data used; Chapter 3 describes Ontario doctoral graduates in terms of demographic and program characteristics; Chapter 4 examines mobility patterns, with a particular focus on graduates who moved to the United States; Chapter 5 examines labour market outcomes for doctoral graduates, including employment rates, income, industry and the prevalence of over-qualification. Finally, Chapter 6 provides some concluding remarks.

Chapter 2

Data sources

This report uses data from three cohorts of doctoral graduates from the National Graduates Survey (NGS), namely the Classes of 1995, 2000 and 2005, with the most recent cohort forming the focal point of the analysis.

The NGS examines the labour market experiences of graduates from Canadian public universities, CEGEPs, community colleges and trade/vocational programs. Two of its main objectives are: 1) to obtain information for the analysis of the labour market outcomes of recent graduates, focusing on education, training, employment, occupations and geographic mobility; and 2) to gain a better understanding of school-to-work transitions and returns to human capital. Graduates were interviewed two years after graduation. Due to the relatively small number of doctoral graduates, the NGS consists of a census of doctoral graduates in Canada.

Box 1: Note to readers

Detailed information on survey methodology, including questionnaire content, can be found on Statistics Canada's website for each of the surveys referenced in this report.

On the *Main Page,* go to the left side bar and click on "Analysts and researchers", then on "Definitions, data sources and methods", and then, "Surveys and statistical programs". There you can search either alphabetically on the survey name or by subject area.

Comparability between National Graduates Survey cohorts

Prior to the Class of 2000, only graduates who were living in Canada at the time of the survey, i.e., two years after graduation, were considered to be in scope for the NGS.

While conducting the NGS for the Class of 1995 in the summer of 1997, about 1,060 graduates — of which 360 were doctoral graduates — were found to be living in the United States. At that time, they were considered to be out of scope for the NGS and were not interviewed.

Since then, all graduates from a recognized public postsecondary Canadian institution who were living in Canada or the United States at the time of the survey were considered to be in scope and were interviewed for the NGS.

In addition, conceptual differences exist between the content of the 1995 NGS and the content of the more recent 2000 and 2005 surveys. Consequently, results for the Classes of 2000 and 2005 are considered to be directly comparable whereas some important variability may be observed for the Class of 1995 due to differences in population coverage and questionnaire content.

Other data sources consulted

Additional data were provided by the 2006 Census of Population and by the Survey of Earned Doctorates (SED) to add explanatory power to the outcomes found in the NGS. The SED provided annual data on doctoral graduates at the time of graduation between the 2003/2004 and 2007/2008 academic years.

Collapsed list of fields of study

For simplicity and to meet the conditions of confidentiality, the fields of study have been collapsed in order to provide larger sample sizes (Table 1).

Table 1

Comparison of detailed field of study and Classification of Instructional Programs (CIP) to collapsed list

Collapsed list	Detailed field of study list	Classification of Instructional Programs (CIP) series and subseries
Life sciences	Agricultural sciences Biological sciences Health sciences	Agriculture, natural resources and conservation Biological and biomedical sciences, natural sciences All health sciences – including nutrition sciences and neurosciences
Engineering	Engineering	Engineering
Computer, mathematics and physical sciences	Computer and information sciences and mathematics Physical sciences – including astronomy and astrophysics, atmospheric sciences and meteorology, chemistry, geological and earth sciences / geosciences, physics	Mathematics, computer and information sciences Physical sciences – including astronomy and astrophysics, atmospheric sciences and meteorology, chemistry, geological and earth sciences / geosciences, physics
Psychology and social sciences	Psychology Social sciences	Psychology Social sciences Behavioural sciences
Humanities	History Letters, languages and literature Other humanities	History Letters, languages, literatures and linguistics Liberal arts, general studies and humanities Philosophy and religious studies
Education and other fields of study	Education Professional fields / other fields	Education Business, management and public administration Architecture Communication, journalism and related and library science Law Parks, recreation, leisure and fitness Other multidisciplinary studies

Note: Not all Classification of Instructional Programs (CIP) series and subseries are represented at the doctoral level.

Chapter 3

Profile of 2005 doctoral degree graduates two years after graduation

Of the 3,500 doctoral graduates from the Class of 2005 who lived in Canada or in the United States two years after graduation, slightly more than four out of ten (41% or about 1,440 individuals) were granted their degree by an Ontario university. Between 1995 and 2005, Ontario institutions saw their number of doctoral graduates increase by 15.7%, compared to an increase of 10.7% in all other provinces combined.

One-quarter of Ontario 2005 doctoral recipients graduated in life sciences and a fifth graduated in psychology and social sciences. The proportions of graduates in the other four fields were similar at 13% or 14% within each (Appendix table A.1.1).

The proportions of graduates in Ontario were comparable to the proportions of graduates in the other provinces in three fields of study, namely: engineering (14% and 13% respectively), computer, mathematics and physical sciences (14% and 12%), and education and other fields of study (13% and 15%). Outside Ontario, however, the life sciences accounted for almost one-third (32%) of doctoral graduates (versus 25% for Ontario), while one out of ten doctoral recipients graduated in the humanities compared to 14% in Ontario.

Women were still clustered in traditionally female fields of study

Data from the Postsecondary Student Information System (PSIS), which includes data from 1992 to 2009, show that the share of university graduates accounted for by women in Canada has consistently surpassed that of men, increasing from 56% in 1992 to 60% in 2009.

On the other hand, when it comes to doctoral studies, men make up the majority of graduates. In 1992, women accounted for less than one-third of doctoral graduates (32%) with that proportion rising to 41% eight years later, in 2000. Between 2004 and 2009, the share of women doctoral graduates fluctuated between 43% and 45%.[5]

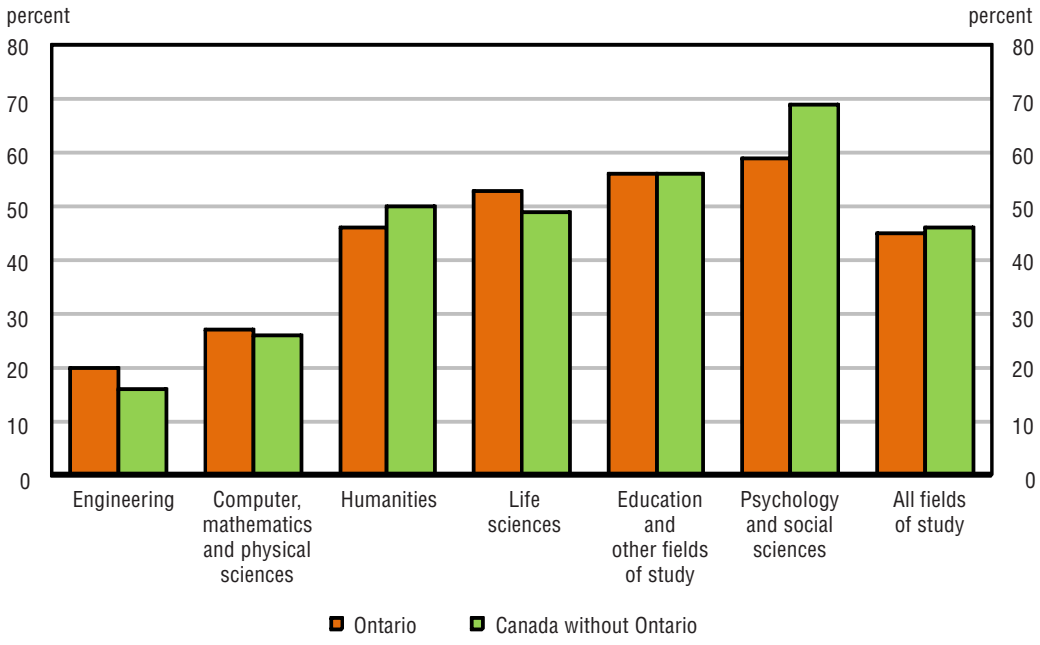
Data from the NGS show that, among the Class of 2005, women represented 45% of doctoral graduates from Ontario universities and 46% of graduates from universities in the rest of Canada. This was comparable to the share of women in the Class of 2000 (43% for both groups of graduates), but an increase of 10 percentage points from the Class of 1995, which stood at 35% for both Ontario graduates and those in the rest of Canada (Appendix table A.1.2, Chart 1).

The difference between the proportions of female and male graduates in Ontario was highest in engineering, where for every female (20%) there were four male graduates (80%), as well as in computer, mathematics and physical sciences, where the proportion of men, at 73%, was almost three times that of women (27%). Although the gender gap in these fields of study was somewhat more pronounced in the other provinces, with women accounting for 16% and 26% of the graduates, these proportions were not significantly different than the proportions in Ontario.

On the other hand, women made up the majority of Ontario graduates in three fields of study: psychology and social sciences (59%); education and other fields of study (56%) and life sciences (53%). The proportions of women in these fields of study were comparable outside the province, except in psychology and social sciences where almost seven out of ten graduates were female (69%), a difference of 10 percentage points between Ontario and the other provinces.

Chart 1

Proportion of women doctoral graduates by field of study, Class of 2005, Ontario and Canada without Ontario



Source: Statistics Canada, National Graduates Survey (Class of 2005).

More Ontario women were granted a doctoral degree in life sciences in 2005 than in previous cohorts

The distributions of women across the different fields of study were similar in Ontario and outside the province. Women were mostly clustered in life sciences (29% in Ontario and 33% in the other provinces) and psychology and social sciences (26% and 27%, respectively). Education and professional fields of study came third at 16% in Ontario and 18% in the other provinces, followed by the humanities at 14% and 11% (Appendix table A.1.1).

On the other hand, there were significant differences between Ontario and the other provinces in the distribution of male graduates by field of study. While life sciences posted the highest proportions of men in both Ontario and outside the province, the proportion in Ontario was 9 percentage points lower than that in all the other provinces combined (22% compared to 31%). Conversely, Ontario posted significantly higher proportions of male graduates in psychology and social sciences (15%) and the humanities (14%) than was the case outside the province (11% and 9%, respectively).

The distribution across fields of study of Ontario male graduates from the Class of 2005 was similar to that of the Classes of 2000 and 1995. However, proportionally more Ontario women were granted a doctoral degree in life sciences in 2005 (29%) than in 2000 (22%) and 1995 (21%) and fewer had chosen a career in the humanities (14%) compared to 19% in the earlier cohorts (Appendix table A.1.1).

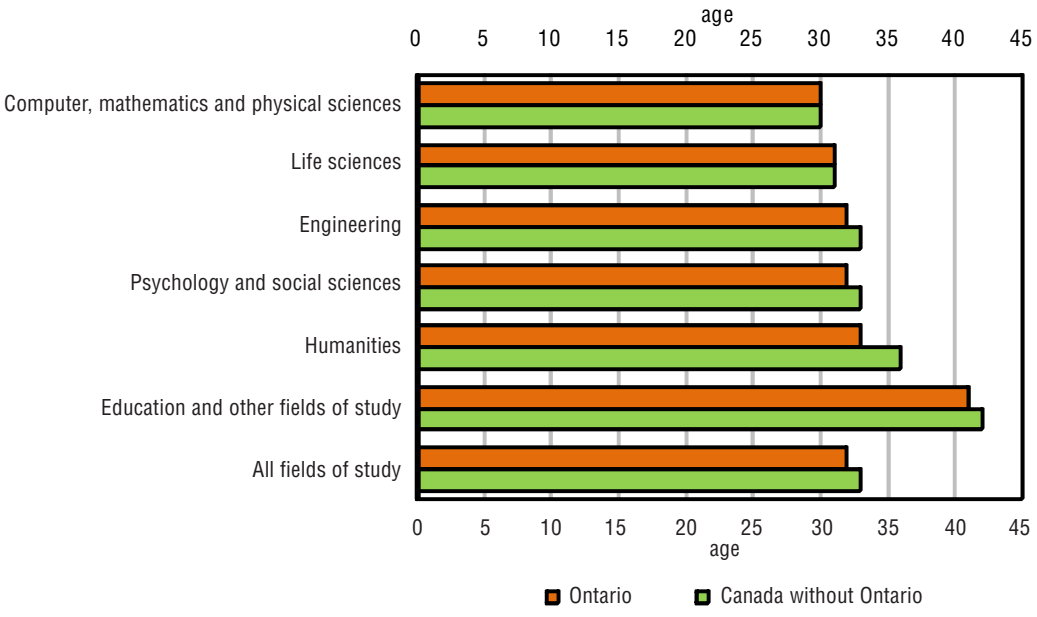
The youngest graduates were found in computer, mathematics and physical sciences, as well as in life sciences

The median age of doctoral graduates at graduation was similar whether or not they graduated from an Ontario university, at 32 and 33 years, respectively. In both groups of graduates, those from education and other fields of study reported the highest median age, at 41 and 42 years, respectively (Appendix table A.1.3, Chart 2).

Conversely, the lowest median ages at graduation were found in computer, mathematics and physical sciences (30 years in both Ontario and the other provinces) and in life sciences (31 years, both groups).

Chart 2

Median age at graduation of doctoral graduates by field of study, Class of 2005, Ontario and Canada without Ontario



Note: Excludes respondents for whom the age is unknown.

Source: Statistics Canada, National Graduates Survey (Class of 2005).

The relatively high age of graduates from education and other professional fields of study can be explained by the fact that they were, on average, 9 years older than their counterparts in other major fields of study at the start of their programs, at 36 years old compared to a median age across all programs of 27 years. This is likely due to the fact that most of them were out of school during the 12 months before enrolling in their programs — six out of ten students in education and other fields of study were working prior to commencing their doctoral studies, compared to just over one-third of all graduates in Ontario (35%) and 40% of graduates in other provinces (Appendix table A.5).

In contrast, about one-fifth of 2005 Ontario graduates in computer, mathematics and physical sciences (22%) and just over one-third of graduates in life sciences (35%) were working during the 12 months before the start of their doctoral programs.

Furthermore, graduates in education and other professional fields of study were also less likely to have taken their entire program on a full-time basis (53% for Ontario and 57% for the other provinces respectively) compared to all graduates combined (82% in Ontario and 78% in other provinces). Indeed, the majority of graduates in education and other fields of study (70% in Ontario and 62% outside the province) indicated that the reason they did not take the entirety of their program full-time was because they had a full-time job.

The median age of doctoral graduates from the other two cohorts was similar to that of the Class of 2005 in all fields of study except in the case of graduates in psychology and social sciences, who were younger by two and four years, for Ontario and the other provinces, respectively, compared to their counterparts from previous cohorts (Appendix table A.1.3).

Compared to other provinces, Ontario had more doctoral graduates whose mother tongue was a non-official language

Since Canadian universities deliver their programs in either English or French, and since the pursuit of a doctoral program requires very high level literacy skills, it is worth exploring the literacy profiles of doctoral graduates by examining the first language learned at home in childhood and still understood by the graduates; that is, their mother tongue.

Slightly more than two-thirds of Ontario doctoral graduates (67%) reported English or French as their mother tongue whereas 34% had a mother tongue other than English or French (Appendix table A.2).

Outside the province, the proportion of graduates whose mother tongue was one of the two official languages was slightly higher, at 72%. This was mostly due to Quebec, where almost two-thirds (60%) of doctoral recipients had French as a mother tongue. In addition, the proportion of allophones[6] in other provinces was significantly lower than in Ontario, at 28%.

The proportion of allophones earning a doctorate in Canada has grown continuously over the past 20 years. Both in Ontario and outside the province, their proportions doubled between the Classes of 1995 and 2005, rising from 16% to 34% in Ontario and from 14% to 28% in other provinces.

Three out of ten Ontario graduates whose mother tongue was a non-official language were Chinese speakers

After English and French, Chinese languages[7] were the third largest group. The proportion of Ontario 2005 graduates who reported a Chinese language as their mother tongue, at 10%, was significantly higher than was the case in all the other provinces combined, at 7%. It is interesting to note that these proportions are identical to the percentages of Chinese speakers who hold a doctorate degree in the general population (10% in Ontario and 7% in the rest of Canada).[8]

Furthermore, Chinese speakers accounted for almost three out of ten Ontario doctoral graduates whose mother tongue was a non-official language (29%), while the proportion in other provinces was 25%. In addition, the vast majority of allophones from Ontario universities lived in Canada two years after graduation rather than in the United States, whether their mother tongue was Chinese (84%) or another non-official language (86%).

The proportion of graduates with a non-official language mother tongue varied greatly across fields of study. More than two-thirds of engineering graduates (68%), and four out of ten graduates in computer, mathematics and physical sciences (40%) from Ontario universities had a non-official language as their mother tongue. The first two fields of study also posted the highest proportions of allophones in the other provinces combined (61% and 35% respectively). However, allophones accounted for a quarter of life sciences graduates in these provinces, 7 percentage points less than in Ontario.

Fields such as the humanities (18% in Ontario and 17% in other provinces) and education and other fields of study (25% and 19%, respectively) posted relatively low proportions of graduates who reported a non-official language as their mother tongue. However, Ontario posted a higher proportion of allophones in psychology and social sciences (25%) than was the case in the other provinces (16%), a difference of 9 percentage points.

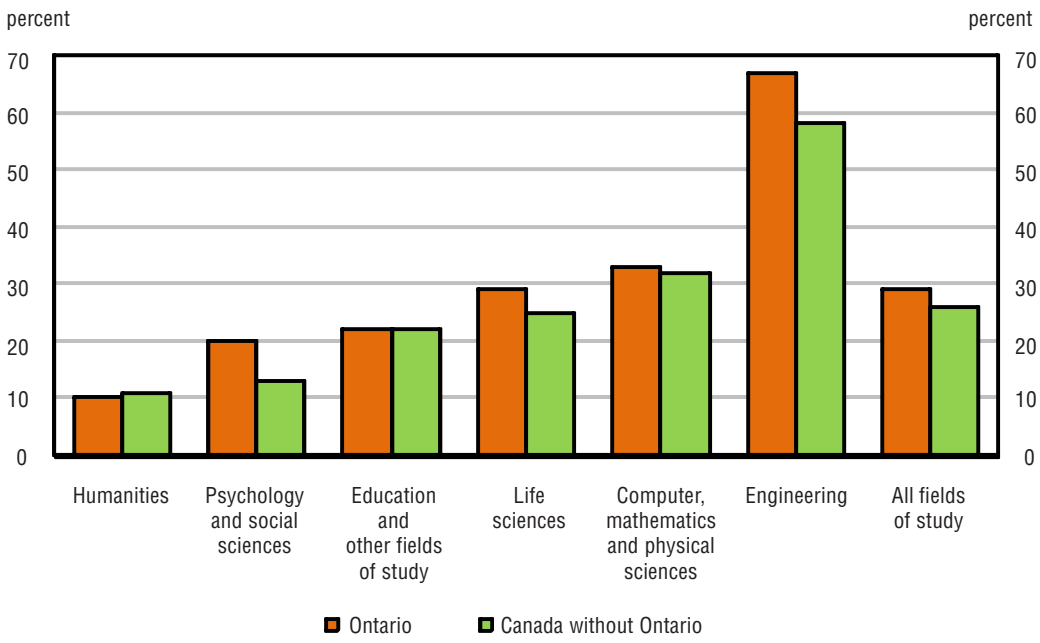
The proportions of graduates who were members of a visible-minority group were higher in engineering than in any other field of study

Overall, more than one-quarter of doctoral graduates were members of a visible-minority group (29% in Ontario and 26% in the other provinces). The proportion was highest in engineering (67% in Ontario and 58% in other provinces), followed by computer, mathematics and physical sciences (33% and 32% respectively) and life sciences (29% and 25%, respectively). The humanities posted the lowest proportions of visible minorities, at 10% in Ontario and 11% in the other provinces (Chart 3).

Psychology and social sciences in Ontario posted a significantly higher proportion of graduates who reported being a member of a visible-minority group (20%) than was the case outside the province (13%). Apart from this field of study, there were no significant differences between Ontario and the other provinces in the proportion of graduates who were members of a visible-minority group.

Chart 3

Proportion of doctoral graduates who were members of a visible-minority group, by field of study, Class of 2005, Ontario and Canada without Ontario



Note: Only includes respondents who indicated whether or not they identified themselves as members of a visible-minority ethnic or racial group.

Source: Statistics Canada, National Graduates Survey (Class of 2005).

The overall proportion of doctoral graduates from the Class of 1995 who identified themselves as members of a visible-minority group was comparable to that of the Class of 2005. Moreover, all fields of study, except computer, mathematics and physical sciences in Ontario, had proportions of members of a visible-minority group similar to the Class of 2005.

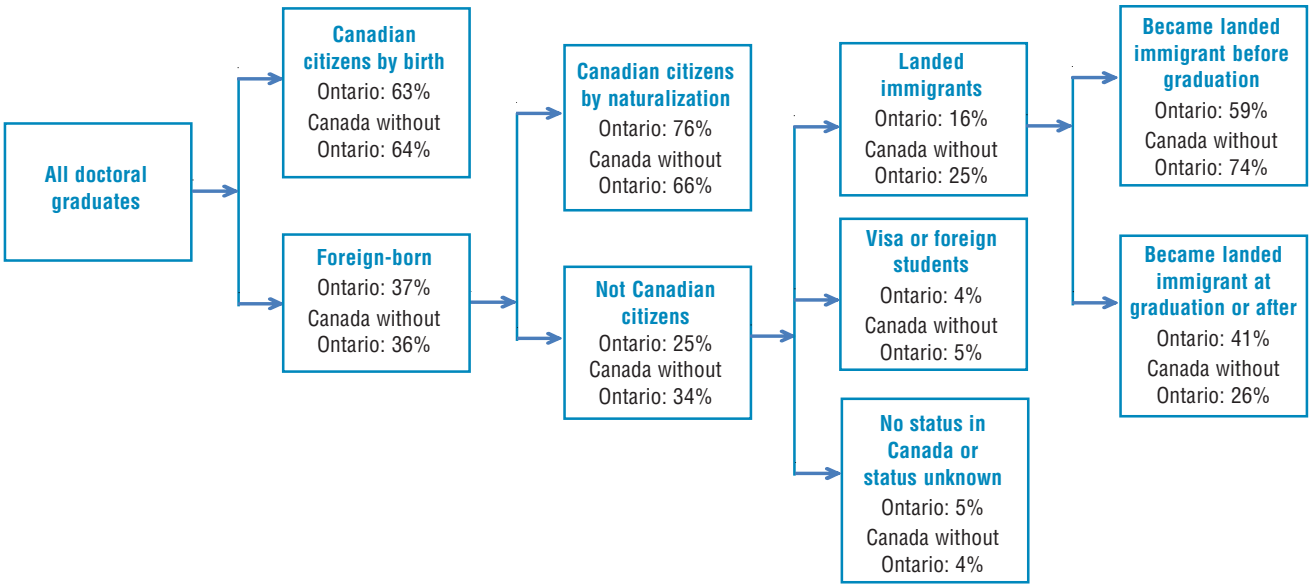
This is in contrast with the Class of 2000 where members of visible-minority groups accounted for just one-fifth of Ontario doctoral graduates (20%) and slightly less than one-quarter of graduates in other provinces (23%) (Appendix table A.3.1). These results can be attributed in part to engineering where the proportions of graduates from visible-minority groups decreased by 17 percentage points in Ontario and by 18 percentage points in the other provinces in 2000 compared to the Class of 1995. Five years later, in 2005, their proportions had sharply increased from 47% to 67% in Ontario and from 44% to 58% in the other provinces (Appendix table A.3.1).

The vast majority of foreign-born doctoral graduates from the Class of 2005 were naturalized or landed immigrants by 2007

The high proportions of graduates from visible minorities in engineering and in computer, mathematics and physical sciences can be attributed to the fact that many of them were born outside Canada. Indeed, about three-quarters of engineering doctoral recipients (76% in Ontario and 73% in other provinces) as well as 44% and 45% of graduates in computer, mathematics and physical sciences in Ontario and other provinces, respectively, were born outside Canada compared to 37% and 36% for all fields of study combined (Appendix table A.3.2, Figure 1).

However, the vast majority of foreign-born[9] graduates from the Class of 2005 who were living in Canada or the United States two years after graduation (92% in Ontario and 91% in other provinces) were naturalized citizens or had become landed immigrants by the time of the interview in 2007. As shown in Figure 1 below, more than three-quarters of foreign-born Ontario doctoral graduates were already naturalized by the time of the interview (76%). Moreover, among foreign-born Ontario graduates who became landed immigrants, most did so before graduating from their doctoral program in 2005 (59%).

Figure 1
Citizenship status in 2007 of 2005 doctoral graduates, Ontario and Canada without Ontario



Notes: Some percentages may not sum up to 100 due to rounding.
The proportion of visa students for Ontario should be used with caution.
Source: Statistics Canada, National Graduates Survey (Class of 2005).

Overall, the proportions of foreign-born graduates in the Classes of 2000 and 2005 were comparable, at 32% and 37%, respectively. However, there were significantly more foreign-born graduates in engineering in the Class of 2005 compared to the Class of 2000, a difference of about 20 percentage points (76% compared to 56% in Ontario). The difference in the other provinces was not statistically significant (73% compared to 64%).[10]

Half of doctoral graduates had a parent whose education was at least a bachelor degree

Previous studies have suggested that higher parental education results in higher education levels among their children, and that the type of postsecondary education pursued by young Canadians is strongly associated with parents' educational attainment. For example, Knighton and Mirza (2002) find that young people whose parents had a university degree were three times more likely to pursue university studies than were those whose parents had a high school diploma or less.[11]

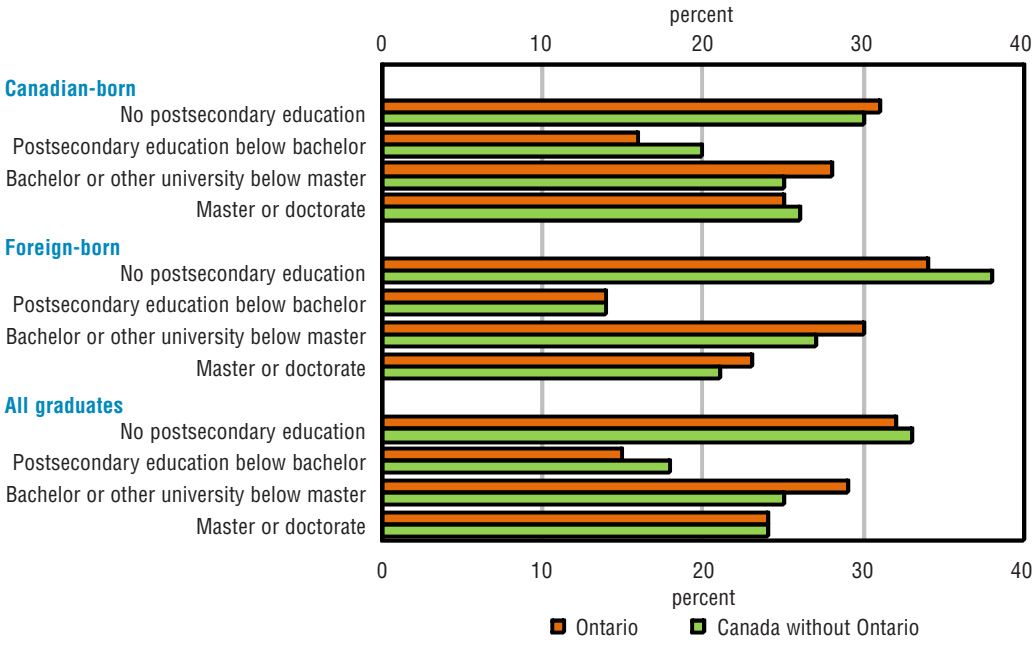
Moreover, a study of doctoral graduates in the United States showed that doctorate recipients who were American citizens were more likely than their non-citizen counterparts to report that at least one of their parents had attained at least a bachelor degree.[12]

As shown in Chart 4, half of doctoral graduates had a parent whose highest level of education was at least a bachelor degree (53% in Ontario and 49% in other provinces). In addition, the proportion of graduates who reported that at least one of their parents held a graduate degree was identical in Ontario and outside the province, at 24%. On the other hand, Ontario posted a higher proportion of graduates whose parents had a bachelor or other university degree below the master degree than was the case outside the province, at 29% compared to 25%, but a lower proportion of graduates with parents who had a postsecondary education below the bachelor level (15% in Ontario and 18% in other provinces). This is likely due to the differences in the educational systems between provinces.

In Ontario, there were no significant differences between Canadian- and foreign-born graduates when comparing the educational attainment of parents. Outside the province, however, foreign-born students were more likely to have parents who had not pursued postsecondary education (38% versus 30% for the Canadian-born) whereas Canadian-born students were more likely to have parents who had completed postsecondary education below the bachelor level (20% compared to 14% for foreign-born). Again, this can be explained by differences in the structure of educational systems in Canada, which possess a well-developed system of community and applied arts and technology colleges compared to other countries (Chart 4 and Appendix table A.4).

Chart 4

Highest level of parental education, Canadian- and foreign-born doctoral graduates, Class of 2005, Ontario and Canada without Ontario



Source: Statistics Canada, National Graduates Survey (Class of 2005).

A higher proportion of Ontario graduates were in school before entering their program than was the case in other provinces

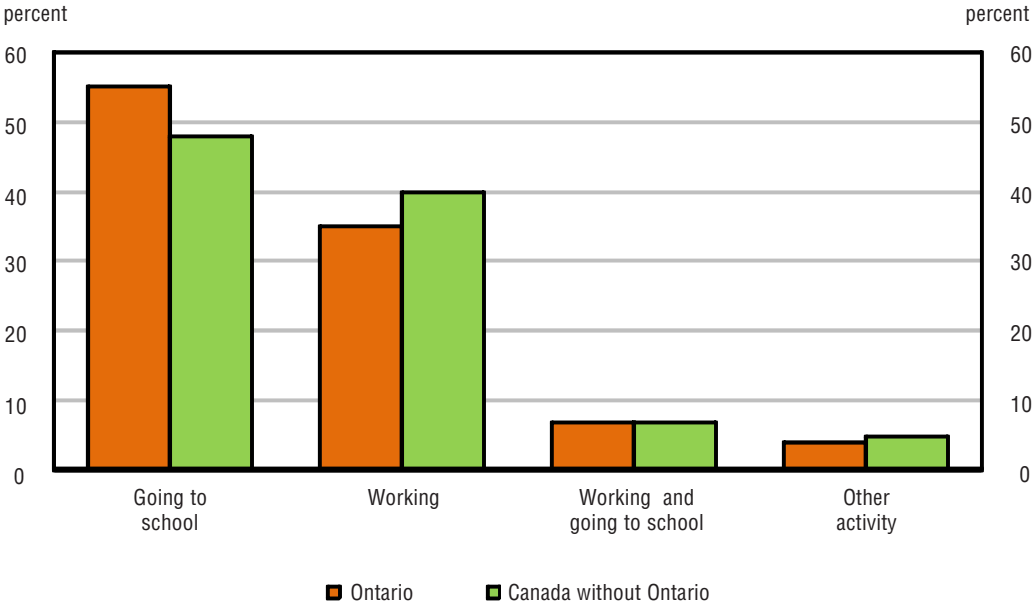
More than half (55%) of Ontario graduates were in school in the year prior to enrolling in their doctoral program; this is 7 percentage points higher than was the case for graduates in other provinces (48%). In those provinces, four graduates out of ten were working before the beginning of their doctoral studies, compared to just over one-third in Ontario (35%) (Chart 5).

The highest proportions of graduates to have been in school just prior to their doctoral studies were those in computer, mathematics and physical sciences, where more than six graduates out of ten, both in Ontario and outside the province (68% and 61% respectively), had been in school. In Ontario, these graduates were followed by graduates in the humanities (61%), psychology and social sciences (60%), life sciences (58%) and engineering (52%). Outside the province, they were followed by graduates in psychology and social sciences (56%), life sciences (52%) and the humanities (46%). The proportion for engineering graduates in school before the start of their doctoral program in these provinces was significantly lower than in Ontario, at 40%.

As discussed earlier, fewer graduates in education and other fields of study were in school before starting their doctoral program. This was even more pronounced in Ontario, where only 21% had been students, compared to 26% of education and other fields of study graduates in the other provinces (Appendix table A.5).

Chart 5

Main activity of doctoral graduates 12 months prior to enrolment in a doctoral program, Class of 2005, Ontario and Canada without Ontario



Note: "Other activity" includes: Taking care of family or household responsibility, without work and looking for work and other.

Source: Statistics Canada, National Graduates Survey (Class of 2005).

The proportion of 2000 Ontario graduates who were in school prior to the start of their program (53%) was similar to the Class of 2005, whereas the percentage for the Class of 1995 (49%) was lower. Significant differences between the Class of 1995 and the Class of 2005 were observed in two fields of study in particular: computer, mathematics and physical sciences which posted a gap of almost 10 percentage points (59% for 1995 graduates compared to 68% for 2005 graduates), and psychology and social sciences with a gap of 8 percentage points (52% and 60%, respectively).

The majority of doctoral graduates wanted to become university professors

Previous studies have shown that a large proportion of doctoral graduates expected to be employed by a higher education organization once they had obtained their degree.[13] Thus, becoming a university professor remains one of the main reasons for pursuing doctoral studies in Canada.

About two-thirds (65%) of Ontario graduates pursued a doctoral degree with the intention of becoming university professors, a proportion that was higher than was the case for graduates in other provinces by 7 percentage points (58%) (Appendix table A.6.1).

In Ontario, the proportions were comparable across most fields of study, at approximately 60%. A notable exception was in the humanities where almost nine out of ten graduates (86%) planned to become university professors.

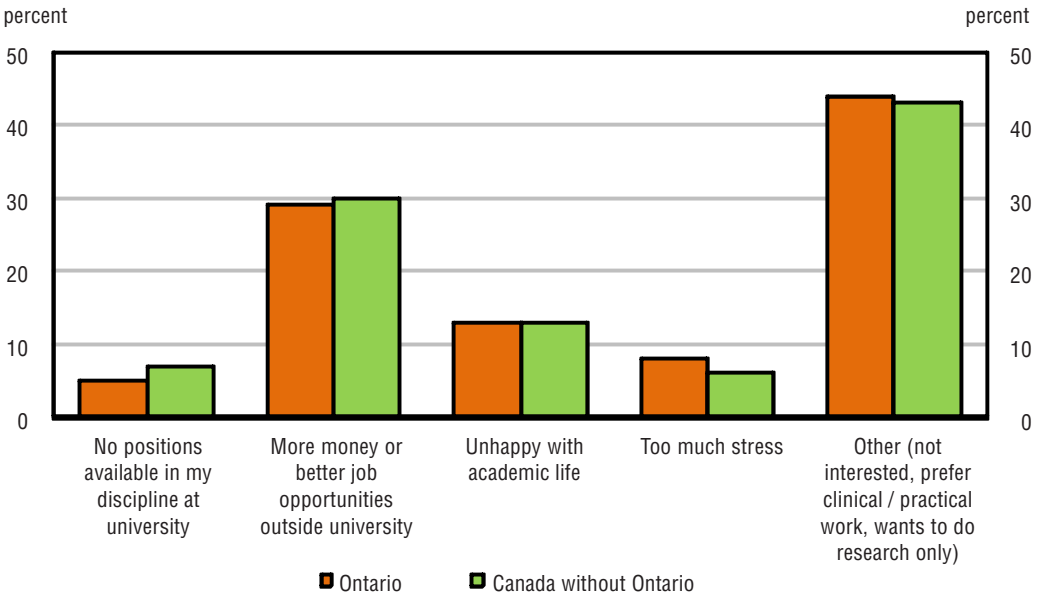
In other provinces, however, there were greater variations between fields of study. The proportion was above the average in the humanities (71%) and education and other fields of study (64%), but below the average in computer, mathematics and physical sciences (51%) and psychology and social sciences (50%). Life sciences (59%) and engineering (58%) for their part were on par with the average.

Graduates not wishing to become university professors were asked why they did not consider that choice of career. The reasons given by graduates can best be described as being reasons of perceiving better opportunities outside academia or of personal choices (Appendix table A.6.2, Chart 6).

Among this group of graduates, only 5% indicated that the fact that there appeared to be no university faculty positions available in their discipline was the reason. The percentage for graduates in other provinces is slightly higher at 7%. However, three out of ten (29% in Ontario and 30% in other provinces) indicated that they could make more money or have better job opportunities outside a university setting. A relatively higher proportion (44% and 43%) gave a diverse range of other reasons such as: preferring clinical or practical work, wanting to do research only or just not interested in teaching. An additional 13% were unhappy with academic life. The remaining graduates indicated that they found a career as a university professor to be too much stress (8% in Ontario and 6% in other provinces).

Chart 6

Reasons why the graduate did not want to become a university professor, Class of 2005, Ontario and Canada without Ontario



Source: Statistics Canada, National Graduates Survey (Class of 2005).

Results were comparable across most fields of study, except for Ontario graduates in psychology and social sciences and in the humanities. Among graduates who did not choose a career as university professors, the vast majority of those in the humanities (80%) were just not interested in teaching and more interested in other careers such as research only, clinical or practical work. Almost four out of ten graduates in psychology and social sciences (38%) believed there were better job opportunities outside academia or that they could make more money in other careers.

Substantially more graduates from the Class of 2000 who did not want to become university professors considered that better opportunities or income were available outside academia, at 49% in Ontario and 51% in other provinces, compared to 29% and 30%, respectively, for the Class of 2005. No significant difference was observed when examining fields of study.[14]

At the time of graduation, more than three-quarters of 2005 graduates had firm plans post-graduation

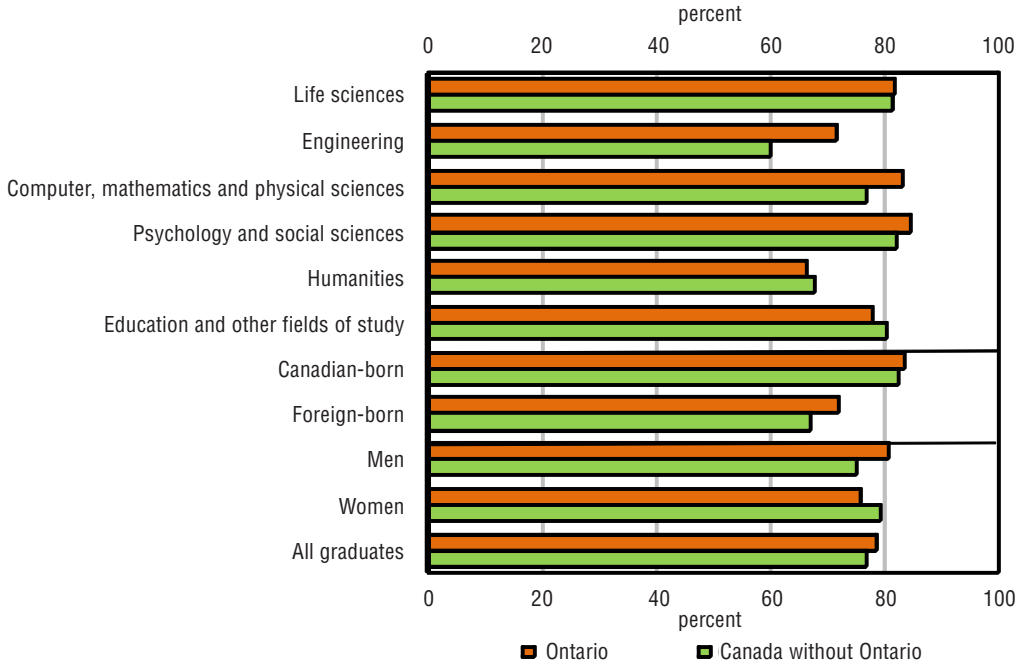
Upon graduation, most doctoral recipients may have firm plans to enter the labour market, continue their research, pursue further studies or to pursue other activities; while others are undecided. At the time of graduation in 2005, more than three-quarters of doctoral graduates (78% in Ontario and 77% in other provinces) had made firm plans for either employment or postdoctoral studies or further training for the year following their graduation (Chart 7).

According to the Survey of Earned Doctorates (SED), the proportion of Ontario graduates with definite plans upon graduation was statistically comparable across all fields of study, ranging from 66% to 85%. However, Canadian-born graduates (83%) were more likely than their foreign-born counterparts (72%) to have definite plans at the time of graduation for the following year. This was also the case for Canadian-born and foreign-born graduates in other provinces, where the proportions were 83% and 67%, respectively.

Engineering graduates outside Ontario were less likely to have made definite plans than graduates from other fields of study, that proportion being 60%. On the other hand, there were no substantial differences between men and women, whether in Ontario (81% for men and 76% for women) or outside the province (75% and 79%, respectively).

Chart 7

Proportion of 2005 doctoral graduates with definite plans at graduation, Class of 2005, Ontario and Canada without Ontario



Note: Only includes 2005 doctoral recipients who intended to live in Canada or the United States at the time of graduation.
Source: Statistics Canada, Survey of Earned Doctorates.

Whether they graduated from an Ontario university or not, more than half the graduates with firm plans (54% in Ontario and 53% in other provinces) expected to join the labour market upon graduation (Appendix table A.6.3). Proportionally more women graduates (61% and 64% respectively) than men (49% and 44%) had plans for employment, whereas more than half the men (51% and 56%) were planning to pursue a postdoctoral fellowship or other training (see Box 2 for a definition of postdoctoral fellowship).

Box 2: Postdoctoral positions

The Survey of Earned Doctorates defines a "postdoctoral position" or a "postdoc" as a **temporary position** primarily for gaining additional education and training in research, usually in academia, industry, or government.

In Canada, individuals who contract with a university (and sometimes with a specific faculty member) to conduct academic or scholarly research that will further professional development and expand their expertise in a specialized subject are usually referred to as "Postdoctoral Fellows" or "Postdoctoral Research Associates." Historically, they have mostly been considered as being trainees rather than employees by the university or research institution. However, in 2010, the Canada Revenue Agency and the federal government made clear that, for tax purposes, post-docs are to be considered employees.

These appointments normally occur within five years of the completion of a doctoral degree and are time limited (often to a maximum of three years), with the possibility of renewal. The postdoctoral researcher may be funded through a salary, a stipend or sponsorship award. The annual amount of the fellowship typically varies between $25,000 and $50,000 depending on the field of research, the funding agency and the research institution.

Source: Information gathered from diverse Canadian universities' web sites.

In addition, there were marked differences in the type of definite plans across fields of study. Almost all Ontario graduates in education and other fields, as well as in the humanities (93% each), were planning to work immediately upon receiving their degree. These were followed by graduates in psychology and social sciences (70%). In contrast, more than two-thirds of life sciences graduates (69%) and three-quarters of computer, mathematics and physical sciences graduates (76%) had plans for postdoctoral studies or research when they graduated in 2005.

In Ontario, although the proportion of foreign-born graduates who had definite plans for postdoctoral studies was 11 percentage points higher than that of Canadian-born graduates (at 53% and 42% respectively), the difference was not statistically significant.

When comparing across fields of study, results for graduates outside Ontario painted a similar portrait. The majority of graduates in education and other fields of study (92%), the humanities (82%) and psychology and social sciences (70%) were planning to work upon receiving their degree, whereas the majority of those in life sciences and in computer, mathematics and physical sciences (both at 68%) had plans for postdoctoral studies.

In contrast to what was observed in Ontario, foreign-born graduates in the other provinces were far more likely than their Canadian-born classmates to plan to pursue postdoctoral studies, at 59% versus 41%.

Similar proportions of engineering graduates in Ontario and outside the province planned to enter the labour force or to pursue postdoctoral studies, the proportions varying between 48% and 52% (Appendix table A.6.3).

Summary

Ontario accounted for four out of ten of the country's doctoral graduates in 2005, slightly more than its share of the Canadian population. Although female doctoral graduates from the Class of 2005 in Ontario were still clustered in traditionally female fields of study, proportionally more women were granted a doctoral degree in life sciences in 2005 than in the two previous cohorts and fewer had chosen a career in the humanities.

Compared to other provinces, Ontario had more doctoral graduates whose mother tongue was a non-official language. Moreover, the proportion of allophones earning a doctorate in Canada has grown continuously over the past 20 years. Both in Ontario and outside the province, their proportions doubled between the Classes of 1995 and 2005.

About two-thirds (65%) of Ontario graduates pursued a doctoral degree with the intention of becoming university professors, a proportion that was higher than was the case for graduates in other provinces by 7 percentage points (58%). Among graduates who did not wish to become university professors, a substantial proportion (44% in Ontario and 43% in other provinces) gave a diverse range of reasons for pursuing a doctoral degree, such as preferring clinical or practical work, wanting to do research only or just not interested in teaching, and three out of ten (29% in Ontario and 30% in other provinces) indicated that they could make more money or have better job opportunities outside a university setting.

Chapter 4

International and interprovincial mobility

Canada, like most industrialized countries, is faced with an aging population and an expected shortage of skilled workers in some professions. Thus, a possible exodus of highly-educated workers or the threat of a "brain drain" not only out of the country, but also out of the labour market, remains an important policy issue.

While concerns over brain drain were especially current during the periods in which the Classes of 1995 and 2000 graduated,[15] more recent analysis notes that the nature of international migration of highly-educated individuals has changed over time, involving "brain churn" rather than brain drain, per se.[16] As noted by Dion and Vézina (2010), while migration between the member countries of the Organisation for Economic Co-operation and Development (OECD) is on the rise, it is characterized mainly by the temporary flow of researchers, students, managers and computer specialists.

4.1 Graduates who moved to the United States

As previous studies have shown, about one-fifth of the doctoral graduates from the Class of 2005 (21%) intended to leave Canada upon completion of their degrees and most of them (57%)[17] planned to move to the United States. This section looks at the characteristics of doctoral graduates from Canadian universities who lived in the United States at the time of the National Graduates Survey (NGS) interview in 2007.

More than one-quarter of Ontario graduates who had moved to the United States after graduation had returned to Canada by 2007

Slightly more than one out of ten 2005 Ontario doctoral graduates (13%) were living in the United States in 2007. This proportion is nearly identical to that of the doctoral graduates of the Class of 2000 who were living south of the border two years after graduation, in 2002 (12%) (Appendix table A.7).

Another 5% had moved to the United States after graduation but had returned to Canada by 2007 (Appendix table A.7). Proportionally more Ontario "movers" had returned to Canada than was the case for movers from the other provinces. Indeed, Ontario "returnees" accounted for 27% of those who had moved south of the border after graduation compared to 21% of movers from other provinces.[18]

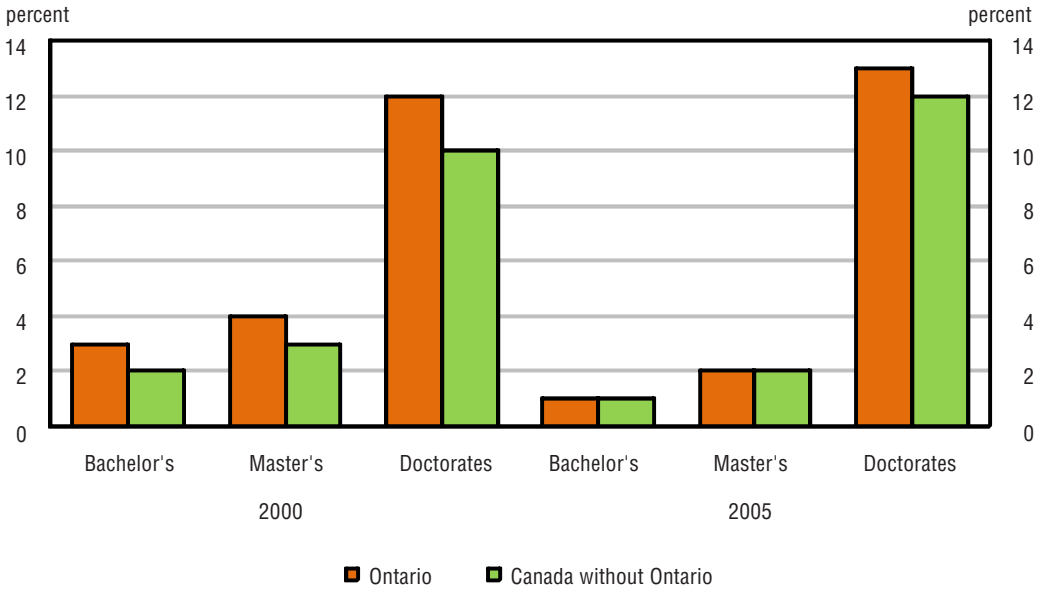
There were no substantial differences in the proportions of graduates from Ontario universities living in the United States in 2007 when gender was taken

into account, the percentages standing at 14% for men and 11% for women. On the other hand, men in other provinces were more likely to have moved to the United States than women, at 14% and 9%, respectively.

In contrast to the results for doctoral graduates, graduates at the bachelor and the master's levels were much less likely to have lived in the United States two years after graduation, at 1% and 2% respectively for both Ontario and the other provinces (Chart 8).

Chart 8

University graduates who lived in the United States two years after graduation, Classes of 2000 and 2005, Ontario and Canada without Ontario



Note: 2005 Ontario data for bachelor and master graduates should be used with caution.
Sources: Statistics Canada, National Graduates Survey (Classes of 2000 and 2005).

Most movers to the United States were younger and were males without dependents

More than six doctoral graduates out of ten who were living south of the border in 2007 were males (62% for Ontario and 65% for the other provinces). Movers were less likely to have dependent children than graduates who lived in Canada in 2007. Indeed, about three movers out of ten had children (28% for Ontario graduates and 33% for graduates from other provinces) compared to 44% and 49%, respectively, for graduates who resided in Canada two years after graduation. Male movers were two years younger than their counterparts who lived in Canada two years after graduation (at 31 years and 33 years, respectively). The age difference was larger for women — Ontario female graduates who moved south of the border were 3 years younger than female graduates who lived in Canada (30 years compared to 33 years) while the age gap was 5 years in the female graduates from the other provinces (at 29 years compared to 34 years) (Appendix tables A.8.1 and A.8.2).

On the other hand, there were no substantial differences in the proportions of graduates who were Canadian citizens, whether they were living in Canada or

in the United States, nor in whether they had graduated from an Ontario university or from a university in another province, with the percentages ranging between 85% and 92%.

Life sciences and computer, mathematics and physical sciences posted the highest proportions of doctoral graduates who moved to the United States

The proportions of graduates who moved to the United States were slightly above the average in life sciences and computer, mathematics and physical sciences (16% for both fields of study in Ontario and 18% for both fields of study for the other provinces). Ontario engineering graduates also posted slightly above-average proportions, at 16%, though this did not hold true for engineering graduates in the other provinces (Appendix table A.8.1).

One detailed field of study contributed the most to these overall results in life sciences. Ontario graduates in biochemistry, biophysics and molecular biology posted a proportion of 27%, more than twice the average for the province overall (13%). Outside Ontario, the share of movers in that field of study was 17 percentage points higher than the average, at 29% compared to 12% (Table 2).

Whereas no single detailed field of study among computer, mathematics and physical sciences stood out in the case of Ontario graduates, the proportion of doctoral recipients in chemistry, physics and other physical sciences in the other provinces who had moved to the United States was close to twice the overall average, at 23% compared to 12%.

Table 2

Proportion of 2005 doctoral graduates in life sciences and computer, mathematics and physical sciences who lived in the United States in 2007

		Confidence limits (95%)	
	Proportion	Lower	Upper
		percent	
Ontario			
Graduates in life sciences			
Biochemistry, biophysics, molecular biology and biology, general	27	19	35
Health professions and related clinical sciences	13	9	17
Other life sciences	16	11	21
All life sciences graduates	**16**	**13**	**19**
Graduates in computer, mathematics and physical sciences			
Computer, mathematics and information sciences	21 [E]	14	28
Chemistry, physics and other physical sciences	16	11	21
All computer, mathematics and physical sciences graduates	**16**	**12**	**20**
Canada without Ontario			
Graduates in life sciences			
Biochemistry, biophysics, molecular biology and biology, general	29	24	34
Health professions and related clinical sciences	11	8	14
Other life sciences	20	16	24
All life sciences graduates	**18**	**16**	**20**
Graduates in computer, mathematics and physical sciences			
Computer, mathematics and information sciences	13 [E]	7	19
Chemistry, physics and other physical sciences	23	18	28
All computer, mathematics and physical sciences graduates	**18**	**14**	**22**

[E] use with caution

Source: Statistics Canada, National Graduates Survey (Class of 2005).

Graduates from the Class of 2000 who were living in the United States two years after graduation shared similar characteristics with graduates from the Class of 2005. The only notable difference was observed for life sciences graduates outside Ontario who were less likely to have moved than was the case in 2005 (12% compared to 18%).[19]

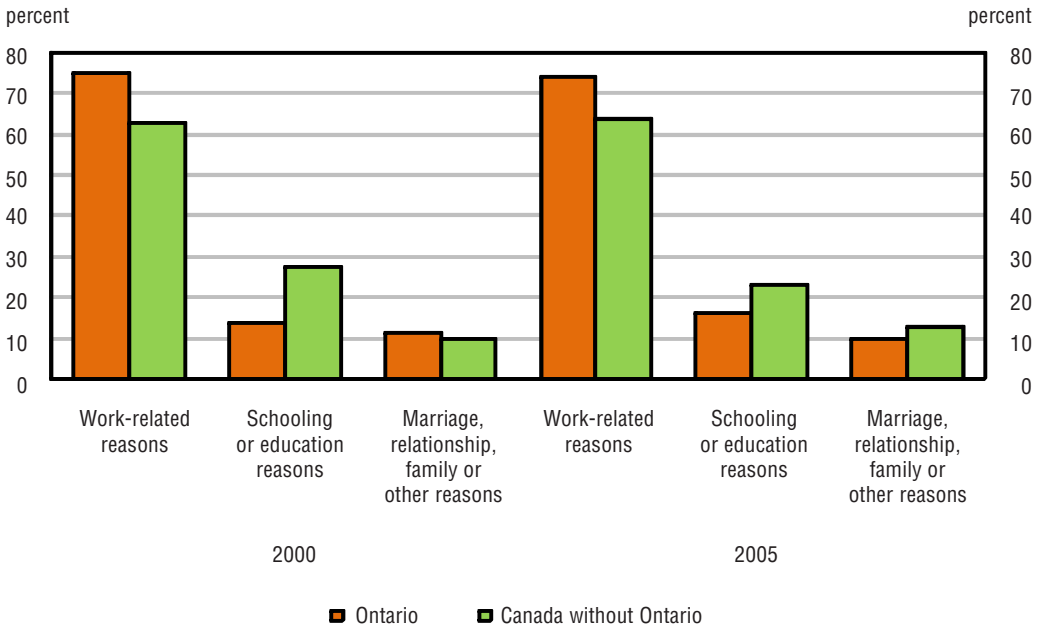
Most Ontario graduates moved for work-related reasons

Ontario graduates were more likely than their counterparts from other provinces to have moved to the United States for work-related reasons (74% compared to 64%) (Chart 9). While the proportion of Ontario females who reported this reason for leaving Canada matched that of their male counterparts (75% and 74% respectively), proportionally more male graduates from the other provinces identified work as a reason for the move, at 70% for males compared to 53% for females. In contrast, women were more likely to have moved for schooling or education-related reasons (31%) compared to men (19%).

Overall, the results for the graduates of the Class of 2000 were similar to those for the Class of 2005 (Chart 9).

Chart 9

Reasons why graduates moved to the United States, Classes of 2000 and 2005, Ontario and Canada without Ontario



Note: Ontario 2005 data for the category "marriage, relationship, family or other reasons" should be used with caution.
Sources: Statistics Canada, National Graduates Survey (Classes of 2000 and 2005).

No specific factor stood out when Ontario graduates were asked what attracted them to the United States. Most of the main job-related incentives were reported in comparable proportions.[20] Among these were: the quality of the research facilities or the commitment to research of the organization (29%); better career advancement opportunities (27%); a greater availability of jobs in a particular field or industry (26%); and a higher salary (26%) (Appendix table A.9).

This is in contrast with graduates from other provinces, where four graduates out of ten were attracted by the quality of the research facilities or the commitment to research (40%). Another frequently-cited job-related reason for moving south of the border for these graduates was the greater availability of jobs (27%). Women and men were equally attracted by these aspects of the job (Appendix table A.9).

Graduates in the rest of Canada from the Class of 2000 were twice as likely as their 2005 counterparts to have been attracted to the United States by a higher salary: 32% compared to 14%. Apart from this group, results were comparable between the Class of 2000 and the Class of 2005.

A job awaited the doctoral graduates who moved to the United States

The vast majority of doctoral graduates from the Class of 2005 who moved to the United States had a job waiting for them upon their arrival, the proportions standing at 93% for Ontario graduates and at 90% for graduates from the other provinces (Appendix table A.10).

All Ontario graduates in computer, mathematics and physical sciences had a job arranged to start upon their arrival in the United States. They were followed by graduates in life sciences (98%), the humanities (94%), psychology and social sciences (93%) and engineering (86%).

The results were similar for doctoral graduates from the other provinces: graduates in computer, mathematics and physical sciences posted the highest proportion at 97%, followed by graduates in life sciences (94%), the humanities (88%), psychology and social sciences (85%) and engineering (80%). There were no significant differences between men and women, regardless of the province of study.

In comparison, significantly fewer doctoral graduates from the Class of 2000 had a job arranged to start upon their arrival in the United States. The proportions were 11 percentage points lower for Ontario graduates (82%) as well as for graduates from the other provinces (79%) than was the case for the Class of 2005 (93% and 90%, respectively). This was mostly due to women (66% for Ontario and 70% for the other provinces) and life sciences graduates (77% for Ontario and 78% for the other provinces).

Moreover, nine out of ten 2005 Ontario graduates living in the United States (92%) were still employed two years after graduation, a proportion comparable to that of Ontario graduates who were living in Canada in 2007 (90%). On the other hand, proportionally more graduates from universities in the other provinces who resided in the United States were still employed two years after graduation, compared to their counterparts who lived in Canada (92% and 87%, respectively). Here, however, men were the largest contributors to this finding, posting a gap of 8 percentage points between those who resided in the United States and those who lived in Canada two years after graduation (at 95% and 87%, respectively) (Appendix table A.11).

No differences were observed between these two groups for the Class of 2000, either in Ontario or outside the province.

The majority of graduates who planned to move to the United States at the time of graduation intended to take a postdoctoral position

Graduates in a postdoctoral position can either refer to their situation as pursuing further studies (i.e. an educational activity) or as working (i.e. holding a job). Since the National Graduates Survey does not allow the identification of graduates who were in a postdoctoral position in 2007, using data from the Survey of Earned Doctorates can shed light on their postdoctoral intentions at the time of graduation.

As shown in Table 3, more than two-thirds of Ontario graduates (67%) and four out of five graduates from other provinces (81%) who planned to live in the United States at the time of graduation intended to take a postdoctoral position. This is in sharp contrast with graduates who planned to remain in Canada — about half of graduates who intended to live in Canada (47% of Ontario graduates and 50% of graduates from other provinces) had plans to take a postdoctoral position upon completion of their programs. These results suggest that the majority of graduates who moved to the United States did so to do postdoctoral work.

Table 3

Proportion of 2005 doctoral graduates who intended to take a postdoctoral position by intended country of residence

		Confidence limits (95%)	
	Proportion	Lower	Upper
		percent	
Ontario			
Canada	47	42	51
United States	67	58	76
All graduates	**50**	**46**	**54**
Canada without Ontario			
Canada	50	46	54
United States	81	73	89
All graduates	**54**	**50**	**58**

Source: Statistics Canada, Survey of Earned Doctorates.

Half of the movers went to three states

About half of the Ontario graduates who lived in the United States in 2007 had first moved to three states: California (22%), Massachusetts (14%) and New York (13%). Graduates from the other provinces as well as graduates from the Class of 2000 showed similar results.

The vast majority of movers were temporary residents when they arrived in the United States; the proportions stood at 94% for Ontario graduates and 91% for graduates from the other provinces. Of those temporary residents, almost twice as many Ontario graduates (41%) as graduates from other provinces (24%) were planning to become permanent residents in the United States within the next two years (Table 4).

Table 4

Status of graduates upon arrival in the United States and two years after graduation, Ontario and Canada without Ontario

	Class of 2005	Class of 2000
	percent	
Ontario		
Status upon arrival		
Temporary resident (includes students)	94	90
Status two years after graduation		
Temporary resident (includes students)	83	86
Permanent resident	14	7 [E]
Temporary residents who planned to become permanent residents within two years		
Both sexes	**41**	**37**
Men	39	41
Women	45	30 [E]
Canada without Ontario		
Status upon arrival		
Temporary resident (includes students)	91	94
Status two years after graduation		
Temporary resident (includes students)	86	86
Permanent resident	10 [E]	9 [E]
Temporary residents who planned to become permanent residents within two years		
Both sexes	**24** [1]	**33**
Men	18 [E]	34
Women	35	32 [E]

[E] use with caution

1. Significantly different between Ontario graduates and graduates from other provinces within the Class of 2005 ($p<0.05$).

Sources: Statistics Canada, National Graduates Survey (Classes of 2005 and 2000).

The majority of movers intended to return to Canada

Plans for permanent residency notwithstanding, more than three-quarters (77%) of Ontario graduates living in the United States in 2007 expected to return to live in Canada. This was true for all doctoral graduates in engineering (100%) and for the majority of graduates in the humanities (91%), life sciences (79%) and psychology and social sciences (73%) (Appendix table A.12).

Similarly, the vast majority of movers from the other provinces (87%) intended to return to Canada. The proportion was comparable to that of Ontario graduates and for graduates in the fields of engineering and the humanities. These fields were followed by psychology and social sciences (90%), and computer, mathematics and physical sciences and life sciences, both at 87%.

In addition, most were planning to return within five years or less, the proportions standing at 80% for Ontario graduates and 84% for graduates from the other provinces.

The overall proportions of doctoral graduates from the Class of 2000 from Ontario and from the other provinces who intended to return to Canada were very similar to those from the Class of 2005. The only substantial difference was observed in engineering where only 71% of Ontario graduates from the Class of 2000 intended to return to the country.

4.2 Interprovincial mobility

In addition to data on graduates who moved to the United States after graduation, the NGS collected information on the graduates' province of residence at three points in time. The first is the province of residence in the 12 months prior to enrolment in the program; the second is the province in which the graduate studied and the third is the province of residence at the time of the 2007 interview. With this information, it is possible to measure mobility both prior to enrolment and after completing the degree in 2005.[21]

The majority of doctoral graduates studied in their province of origin

Overall, about three-quarters of Ontario graduates in 2005 were non-migrants (74%), i.e. they lived in Ontario at all three points in time. Another 12% were Ontario residents before enrolling in their program, but left the province after graduation, while about 15% had moved to Ontario from elsewhere to complete their doctoral program. Of the latter group, more than half (8%) remained in Ontario after obtaining their degree (Appendix table A.13.1).

Ontario graduates in education and other fields of study were the least likely to have changed provinces before or after their programs, as 91% of them were non-migrants. Graduates in computer, mathematics and physical sciences, as well as those in the humanities, were the most mobile, with over one-third (34% and 39%, respectively) moving into and out of the province before and after their programs.

The percentage of non-migrants did not differ significantly from the overall average of 74% for both Canadian- and foreign-born Ontario graduates and for men and women (Appendix table A.13.2).

Doctoral graduates from the other provinces were more mobile than those who received their degree from an Ontario university. Overall, less than 70% of them were non-migrants and an additional 16% left their province of residence and study after completing their programs (Table 5). More men (18%) than women (13%) left their province of residence and study after graduation. Likewise, more foreign-born graduates (22%) left their province of residence and graduation compared to the Canadian-born (13%).

Table 5

Migration in and out of province of study, Class of 2005, Ontario and Canada without Ontario

	percent
Ontario	
Non-migrant	74
Migrant before graduation, returning to province of origin	4
Migrant before graduation, not returning to province of origin	8
Migrant after graduation, not before	12
Migrant before and after graduation, not returning to province of origin	3
Canada without Ontario	
Non-migrant	68
Migrant before graduation, returning to province of origin	7
Migrant before graduation, not returning to province of origin	7
Migrant after graduation, not before	16
Migrant before and after graduation, not returning to province of origin	3

Notes: Excludes graduates who had lived outside of Canada before their studies or at the time of the interview.
Percentages may not sum up to 100 due to rounding.

Source: Statistics Canada, National Graduates Survey (Class of 2005).

Summary

More than six doctoral graduates out of ten who were living south of the border in 2007 were males (62% for Ontario and 65% for the other provinces). Movers to the United States were also less likely to have dependent children than graduates who lived in Canada in 2007. About seven movers out of ten were childless compared to about half of graduates who resided in Canada two years after graduation.

Life sciences and computer, mathematics and physical sciences posted the highest proportions of doctoral graduates who moved to the United States, both for Ontario and the other provinces.

The majority of graduates who planned to move to the United States at the time of graduation intended to take postdoctoral positions. This was true for more than two-thirds of Ontario graduates (67%) and for four out of five graduates from other provinces (81%).

Finally, more than three-quarters of Ontario graduates (77%) and the vast majority of movers from the other provinces (87%) who lived in the United States in 2007 expected to return to live in Canada.

Chapter 5

Graduates' labour market outcomes

Between 2000 and 2007, Canada's economy was stronger than that of the United States, with annual growth in Gross Domestic Product (GDP) of 2.5% compared with 2.2% for the United States. Consequently, employment in Canada grew at twice the pace of that of the United States, at an annual rate of 2% versus 1%.

In Ontario, annual employment growth was just under 2% between 2000 and 2007 and despite losses in manufacturing (-12%), overall employment grew by almost 13% in the province over the period. Moreover, there were large employment gains in educational services (28%) and health care and social assistance (23%).

Also, since the mid-1970s, Canada has experienced a shift in employment from goods-producing industries to services industries, with professional, scientific and technical services as well as health care and social assistance among them. In fact, employment in professional, scientific and technical services doubled between 1987 and 2007 and grew by 60% in health care and social assistance. These sectors, along with educational services, all employ workers with high levels of educational attainment.[22]

Nine out of ten doctoral graduates were working two years after graduation

In 2007, 86% of doctoral graduates from Ontario universities were employees[23] with an additional 4% being self-employed and 6% unemployed. Only 3% were out of the labour force, and when these graduates were excluded, the unemployment rate increased to 7%, slightly above the provincial rate of 6.4% (Appendix tables A.14.1 and A.15).

When employees and self-employed graduates were combined, the overall proportions of doctoral graduates who were working were comparable for Ontario (90%) and the other provinces (87%).

There were also no differences in the proportion of working graduates across the various fields of study, or between Canadian- or foreign-born graduates overall, either for Ontario graduates or for other Canadian graduates (Appendix tables A.14.1 and A.14.2).

However, Canadian-born Ontario graduates in engineering and in computer, mathematics and physical sciences fared better than their foreign-born counterparts. Indeed, almost all Canadian-born graduates in those two fields of study (97% and 95%, respectively) were employed in 2007. Although their foreign-born colleagues also posted high rates of employment (85% in engineering and 87% in computer, mathematics and physical sciences), there was nevertheless a gap of 12 and 8 percentage points between the two groups.

Results were similar for graduates in engineering from the other provinces, with 95% of the Canadian-born being employed compared to 88% for the foreign-born. In contrast, proportionally more foreign-born graduates in the humanities (93%) were working two years after graduation than was the case for Canadian-born graduates (76%), a gap of 17 percentage points. This result may be related to the fact that a much higher proportion of foreign-born students from that field of study graduated from a French language and literature program (16%) than was the case for Canadian-born graduates in the humanities (0.7%). Furthermore, two-thirds of foreign-born graduates in the humanities were working in the educational services industry (66%) compared to slightly more than half of the Canadian-born graduates in that field of study (55%).

In addition, about one out of ten Ontario graduates in psychology and social sciences (9%) and in the humanities (10%) were working part-time. The rates of part-time employment in those fields of study were even higher for graduates in these fields from the rest of Canada, at 15% and 13%, respectively (Appendix table A.16).

The proportions of male and female graduates from Ontario universities who worked full-time were similar, at 81% and 78%, respectively. The proportions were also comparable for males and females within each field of study. In contrast, a higher proportion of male graduates from universities outside Ontario were working full-time (81%) compared to women (73%). This was mostly due to engineering graduates where there was a 19 percentage point difference (89% for men and 70% for women) (Appendix table A.14.3).

Graduates from the Class of 2000 who obtained their doctoral degree from a university outside Ontario were much more likely to be self-employed two years after graduation than was the case for 2005 graduates. In fact, their proportion was more than twice that of the later cohort, at 13% compared to 6%. Life sciences was the field of study which contributed the most to this result, since more than one out of five graduates in that field was self-employed in 2002 (21%). This can be explained by the fact that a much higher proportion of doctoral graduates from the Class of 2000 in that field of study had their own private practice compared to those of the two other cohorts. Examples of professionals with private practices are: physicians, dentists, chiropractors, pharmacists or nutritionists.

All fields of study, except the humanities in Ontario, posted comparable proportions of Canadian- and foreign-born graduates who were employed in 2002. More than three-quarters of Canadian-born graduates in the humanities from Ontario institutions (79%) were employed, while this was the case for less than two-thirds of foreign-born doctoral recipients. Otherwise, all employment indicators were comparable between the two cohorts.

Compared to the Class of 2005, proportionally fewer 1995 doctoral graduates were working (about 85%) and more were unemployed (8% for Ontario and 7% for other provinces) or out of the labour force (4% and 6%, respectively). This was the case in all fields of study except in engineering and the humanities where the proportions of employed graduates were comparable between the two cohorts (Appendix table A.14.1).

The median earnings[24] of Ontario graduates from the Class of 2005 were $5,500 higher than the median earnings of their counterparts who graduated in other provinces

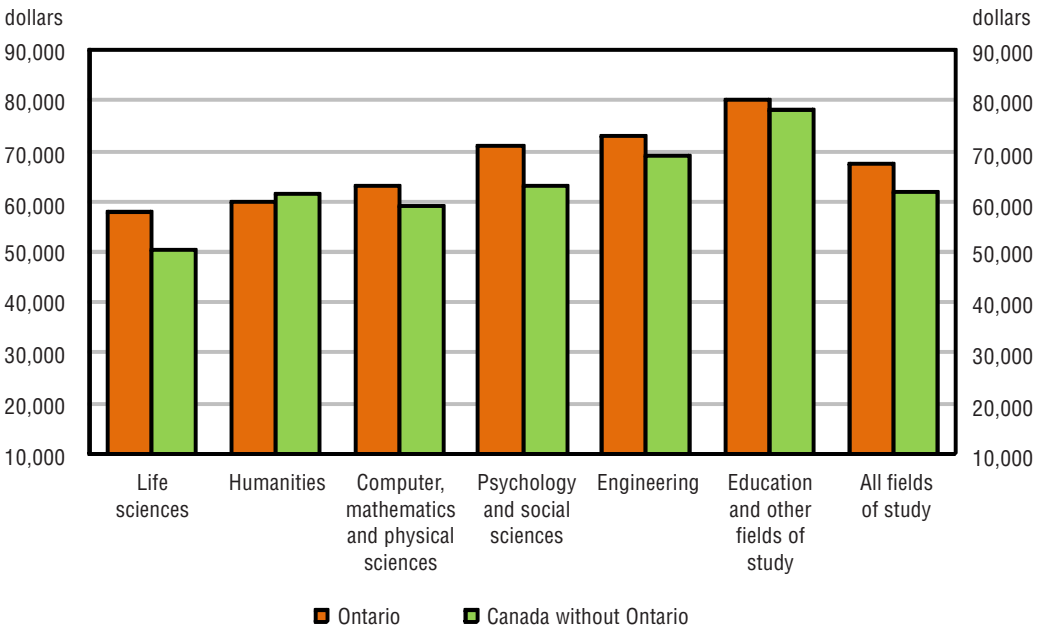
Ontario doctoral graduates who worked full-time in 2007[25] had median earnings of $67,500 compared to a median of $62,000 earned by graduates from the other provinces, an earnings gap of $5,500. Ontario graduates were also paid more at the 25th percentile, at $51,480 compared to $45,161, and at the 75th percentile, at $80,000 compared to $76,000 (Appendix tables A.17.1 and A.17.2).

There were also substantial variations across fields of study. Life sciences graduates from Ontario were the lowest median earners ($58,000), followed by graduates in the humanities ($60,000) and those who received a doctorate in computer, mathematics and physical sciences ($63,000). Life sciences and computer, mathematics and physical sciences also posted the lowest earnings at the 25th percentile ($42,000 and $45,161, respectively), whereas humanities graduates had the lowest earnings at the 75th percentile, at $68,000. Graduates in education and other fields of study ($80,000), engineering ($73,000) and psychology and social sciences ($71,000) all earned significantly more than the overall median. At the 75th percentile, graduates from education and other fields of study posted earnings that were $20,000 higher than the earnings reported by all graduates combined ($80,000).

The situation was slightly different for graduates who obtained their doctoral degree outside Ontario, for whom there was more earnings equality across fields of study. The earnings of graduates in computer, mathematics and physical sciences ($59,000), psychology and social sciences ($63,000) and the humanities ($61,500) were on par with the overall median. However, here again life sciences posted the lowest median earnings, at $50,400 in 2007, while engineering graduates ($69,000) and graduates in education and other fields of study ($78,000) had earnings that were significantly higher than those for graduates in other fields of study (Chart 10).

Chart 10

Median earnings of doctoral graduates who were employed full-time in 2007, by field of study, Class of 2005, Ontario and Canada without Ontario



Note: Excludes unpaid workers and respondents still taking education credits, but includes postdoctoral positions.
Source: Statistics Canada, National Graduates Survey (Class of 2005).

Furthermore, the largest gaps between Ontario graduates and graduates from the other provinces were noted in psychology and social sciences and in life sciences, both at about $8,000. The earnings premium for Ontario graduates compared to those in the other provinces was slightly smaller for computer, mathematics, physical sciences and engineering, at around $4,000.

These earnings differentials reflect higher earnings in the overall population in Ontario in 2007 compared to most other provinces, with the exception of Alberta.[26]

Part of the earning gaps between fields of study can be explained by whether or not the graduates had postdoctoral intentions

The reasons for both the earnings advantage of graduates in education and other fields of study and the lower earnings of those in life sciences are twofold.

First, the median earnings of graduates in education and professional fields reflect their longer work experience. As discussed in Chapter 3, compared to graduates from other fields of study, graduates in education and other professional fields were far more likely to have been working before the start of their programs and proportionally fewer had taken their entire program on a full-time basis. Indeed, 53% of graduates from Ontario and 57% graduates from the other provinces in that field of study took their entire program full-time. In contrast, the vast majority of graduates in life sciences (89% in Ontario and 88% in the other provinces) had studied full-time for the entire duration of their programs. Moreover, a much

higher proportion of graduates in the life sciences (58% for Ontario and 52% for other provinces) had advanced to doctoral studies directly from school, compared to graduates from education and other fields of study (21% and 26%, Ontario and other provinces, respectively).

Second, only a very small percentage of graduates in education and other fields of study planned to take a postdoctoral position when they graduated in 2005, choosing instead to return to a previous or current job or directly enter the labour force (93% for Ontario and 92% for the other provinces). This is in sharp contrast with graduates from the life sciences, where about seven out of ten students (69% and 68%, respectively) were planning to take a postdoctoral position upon graduation.[27]

This last point is of substantial importance given that a previous study showed that doctoral graduates who intended to take a postdoctoral position at the time of graduation posted an earnings gap of $18,000 with those who intended to directly join the labour force. The gap was largest in the life sciences, where graduates who planned to take a postdoctoral position had median earnings of only $45,000 compared to median earnings of $72,000 for those with no postdoctoral intentions.[28] The NGS data do not identify whether or not the graduates were, in fact, in postdoctoral positions or not two years after graduation. However, as noted in Box 2 of Chapter 3, postdoctoral positions can be best described as somewhere between further studies and employment, and most graduates probably referred to it as employment.

More earnings equality between the sexes for Ontario graduates than for graduates in other provinces

There was little disparity in the median earnings of men ($68,000) and women ($67,000) in the case of Ontario graduates in 2007. Two fields of study contributed to the overall gender equality. Women's earnings were higher than men's in computer, mathematics and physical sciences ($65,000 and $60,242, respectively) and in life sciences ($60,000 and $52,000 respectively) (Appendix table A.17.1).

On the other hand, women graduates from other provinces posted median earnings that were significantly below those of their male counterparts, namely $60,000 compared to $65,000. The gap was largest in education and other fields of study ($9,000), humanities ($9,000), engineering ($8,000), and in psychology and social sciences ($8,000). At the median, women earned $8,000 more than men in life sciences, while earnings were comparable between men and women in computer, mathematics and physical sciences.

The earning advantage of women — or their earning equality with men — in life sciences and in computer, mathematics and physical sciences may be related in part to the relatively higher proportions of male graduates who intended to take postdoctoral positions — which generally offer lower salaries — in these fields of study.

Likewise, the median earnings of foreign-born graduates from Ontario were comparable to that of their Canadian-born counterparts, at $65,000 and $68,000, respectively. This was the case in all fields of study except the humanities, where foreign-born graduates earned $11,000 less than Canadian-born graduates, and

engineering where foreign-born graduates earned $8,000 less than Canadian-born graduates (Appendix table A.18).

Whether they obtained their degree in Ontario or outside the province, doctoral graduates who lived in Canada two years after graduation earned substantially more than their colleagues who lived in the United States in 2007[29]. The differences in earnings were $11,000 for Ontario graduates and more than $15,000 for graduates from other provinces. Since the majority of graduates who intended to move to the United States at the time of graduation also intended to take a postdoctoral position, this suggests that such earning disparities may well be related to their postdoctoral intentions (Appendix table A.19.1).

Engineering graduates earned more in 2002 than in 2007

Measured in 2007 constant dollars, median earnings varied greatly from one cohort to another, depending on the indicator analysed. When all fields of study were combined, earnings were comparable between 2005 and 2000 graduates, but much lower for 1995 graduates, a deficit of about $8,000 (Appendix table A.17.1).

On the other hand, when considering individual fields of study, Ontario graduates from the Class of 2005 posted higher earnings than their counterparts from the two previous cohorts in all fields except computer, mathematics and physical sciences, where earnings were comparable across all three cohorts, as well as in engineering where 2000 graduates had the highest earnings of the three cohorts. Ontario engineering graduates from the Class of 2000 earned median earnings of $85,800 in 2002. This was nearly $13,000 higher than their 2005 counterparts and $18,000 more than graduates from the Class of 1995.

This situation may very well be related to the explosive growth in the high-tech sector during the late 1990s followed by the subsequent meltdown of the early 2000s, coupled with the decline in manufacturing employment, particularly since 2005. Indeed, a higher proportion of Ontario engineering graduates were employed by the manufacturing sector in 2002 (30%) than was the case in 2007 (19%) and half of those were working in the computer and electronic products and equipment manufacturing sector (Appendix table A.22). Moreover, median earnings for recent doctoral graduates in the manufacturing sector decreased by nearly $30,000 during the five-year period, dropping from $109,000 in 2002 to $80,000 in 2007.

In contrast, one-third of the 2005 engineering graduates were employed in the educational services sector (34%) — the vast majority as university professors — compared to just one-quarter of those who received their diploma in 2000 (25%). Furthermore, Ontario engineering graduates who were employed full-time by a university in 2007 earned $25,000 less than their colleagues working in the private sector, at $55,000 compared to $80,000, respectively.

Earnings were generally comparable for male and female graduates in previous cohorts who worked full-time, though they varied by field of study

Ontario women from the Class of 2000 posted median earnings that were statistically similar to those of their male counterparts in four fields of study out

of six. Women earned more than men in psychology and social sciences ($68,000 compared to $62,000), whereas men earned more in education and other fields of study, namely $78,000 compared to $67,000. In other provinces, male graduates from 2000 also earned significantly more than women in education and other professional fields of study, the earnings gap standing at $13,000. A closer look at the detailed occupations shows that men from that field of study tended to be concentrated in higher-paying jobs than women. Examples of those occupations are: business senior managers, financial auditors or investments professionals.

With the exception of one field of study, earnings between males and females were also comparable when it came to the Class of 1995. In the rest of Canada, women in computer, mathematics and physical sciences earned $8,000 more than their male counterparts two years after graduation (Appendix table A.17.1). It is not clear whether this wage differential is due to specific choices of occupations or sector of employment.

Neither was there any wage gap between Canadian-born and foreign-born graduates in the Class of 2000 when all fields of study were combined (Appendix table A.18). Furthermore, the only differences between graduates who lived in Canada or the United States in 2002 were observed in engineering for Ontario graduates and in life sciences for graduates from the other provinces. Engineering graduates from Ontario who were living in the United States in 2002 earned about $112,000 compared to $83,000 for graduates living in Canada. In contrast, graduates from the life sciences from the rest of Canada who lived in Canada earned about $8,000 more than their counterparts who lived south of the border.[30]

Education-job skill match/mismatch

Other indicators can also shed light on the labour market outcomes of these highly-qualified graduates. The indicators below pertain to how well doctoral graduates integrate into the Canadian labour market. One of these indicators is the match or mismatch between the educational requirement for the job and the education attained by the graduate, or whether or not the graduate is overqualified.

Two definitions were used to identify overqualified individuals. The first is a self-reported indicator of whether or not the graduates felt overqualified for their current position. The second was derived by matching the respondent's educational attainment (i.e. doctorate degree) to the level of education they said was necessary to obtain the job. If less than a doctoral degree was required for their employment, they were classified as being overqualified. The results are shown in Chart 11 below.

Overall, and for each field of study, fewer employed graduates considered themselves to be overqualified (subjective definition: self-reported indicator) than reported needing less than a doctoral degree to obtain their current job (objective definition: derived variable comparing job requirements to level of education). This apparent paradox may be due to the fact that graduates were asked the level of education needed to **get** the job as opposed to the level at which they were actually working.

Less than one in five Ontario graduates (17%) felt that they were overqualified, compared to 27% who reported that less than a doctoral degree was needed to obtain the job they held. Moreover, these proportions were significantly lower than the proportions for graduates from the other provinces, which stood at 20% and 32%, respectively.

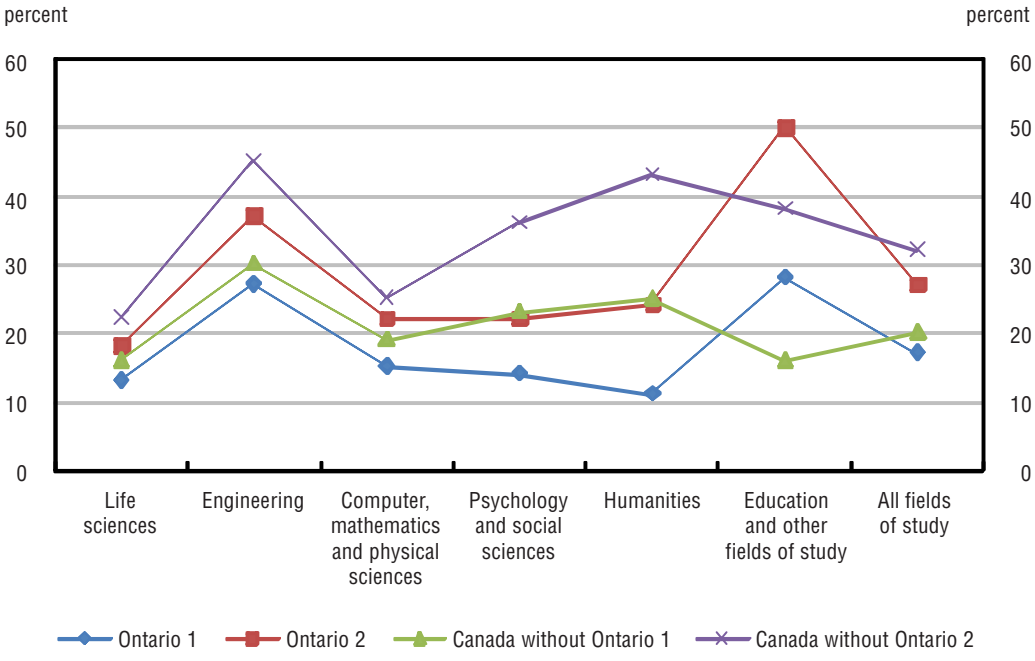
There were notable differences across fields of study. On both definitions, Ontario graduates in education and other professional fields were the most likely to feel or be overqualified (28% and 50%, respectively), followed by engineering graduates (27% and 37%, respectively).

Outside Ontario, however, engineering graduates were the most likely to be overqualified on both definitions (30% and 45%, respectively). They were followed by graduates in the humanities, with proportions of 25% and 43%.

In contrast, life sciences as well as computer, mathematics and physical sciences consistently posted low proportions of overqualified graduates on both definitions, regardless of the province of graduation, with proportions ranging from 13% to 25%. As seen earlier, these graduates were also the most likely to have plans for postdoctoral work upon graduation. This may have resulted in a better match between the requirements of the position and the graduates' qualifications two years after graduation.

Chart 11

Proportion of doctoral graduates overqualified for current job, defined using two different definitions, by field of study, Class of 2005, Ontario and Canada without Ontario



Note: 1) Subjective definition: self-reported indicator; 2) objective definition: derived variable comparing job requirements to level of education.

Source: Statistics Canada, National Graduates Survey (Class of 2005).

Although the proportions of graduates who felt that they were overqualified for their jobs were similar across the three cohorts of graduates, the rates of objective overqualification decreased between 1997 and 2007. The incidence of mismatch between job requirements and the graduates' level of schooling was the lowest in the Class of 2005 (27% for Ontario and 32% for other provinces) and the highest for the Class of 2000 (51% and 46%, respectively). In 1997, about one-third of doctoral graduates had more education than their job required, the rates standing at 34% for Ontario graduates and 37% for graduates from the other provinces (Appendix table A.20).

The higher rates of objective overqualification for 2000 graduates compared to their 2005 counterparts were more prominent in specific industry sectors. In 2002, the rate of overqualification in the educational services industry was twice the rate of 2007 (37% and 18%, respectively). There was also a differential of 18 percentage points in the professional, scientific and technical services industry (61% and 43%) and of 19 percentage points in the health care and social assistance industry (54% and 35%). It is unclear if, and how, the economic slowdown of 2001 may have affected the labour market opportunities of the 2000 doctoral graduates. While employment had improved by the end of 2002, some lingering effects may have persisted when it came to the quality of available jobs.

In contrast, there was no significant difference in the overall proportion of graduates who felt overqualified (subjective definition) across the three cohorts.

With respect to earnings, not all overqualified workers were penalized as might have been expected according to an earlier study in which overqualified doctoral graduates posted lower earnings than their "not overqualified" colleagues.[31] In fact, overall median earnings between those considering themselves to be overqualified and other graduates were similar (Appendix table A.21.1). Ontario graduates who perceived themselves as being overqualified for their job had median earnings of $66,000 compared to the $67,500 for their "not overqualified" colleagues. In the case of graduates from the other provinces, median earnings were also comparable, at $60,000 and $63,000 respectively.

Moreover, results in some fields of study were not consistent with the proportion of graduates who reported being overqualified. Although earning gaps between overqualified and "not overqualified" workers in education and other fields of study were significant at $9,000 for Ontario graduates and $15,000 for graduates from the other provinces, this was not the case for engineering graduates who instead posted similar median earnings despite relatively high proportions of overqualified graduates (Appendix table A.21.1).

On the other hand, the largest earning gap of $16,000 was found among Ontario graduates in the humanities even though they posted the lowest share of overqualified workers (11%).

Except for education and the humanities, no other field of study in either Ontario or the other provinces showed a difference in median earnings conditional on overqualification.

Earnings were also comparable for graduates from the Class of 1995 whether or not they reported being overqualified. On the other hand, overqualified Ontario graduates from the Class of 2000 earned about $7,000 less than their "not

overqualified" colleagues. No specific pattern emerged when fields of study were examined (Appendix table A.20).

The majority of graduates were employed by the public sector, with most of them in educational services

Another indicator of the labour market integration of doctoral graduates is the matter of which economic sectors employ them.

The main sector of employment for doctoral holders in Canada, as in most other OECD countries, is the public sector.[32] Data from the 2006 Census show that two-thirds of doctorate holders who were working full-year full-time in 2005 were employed by the public sector (67%). This share of workers was distributed across educational services (47%), health care and social assistance (11%) and public administration (9%). Doctoral holders working in the private sector were mostly active in the professional, scientific and technical services industry (15%) and in manufacturing (6%), while the remaining doctorate recipients were found in a variety of other industries.

Recent NGS doctoral graduates, for their part, found employment in the public sector in much higher proportions than was the case for graduates who have been in the work force for longer periods of time, with their shares standing at 78% for Ontario and 75% for graduates from the other provinces. Moreover, more than half were employed in educational services (58% for Ontario and 55% for the other provinces) with the vast majority of them working in a university (88% and 86%, respectively). Employment in educational services was highest among the humanities (83% and 71%, respectively) and among graduates in education and other fields of study (75% and 77%, respectively), and lowest among engineering graduates (34% and 37%, respectively) (Table 6).

Other sectors that were significant employers of doctoral graduates were professional, scientific and technical services (11% for Ontario graduates and 14% for graduates from the other provinces), health care and social assistance (13% for both groups of graduates), public administration (7% for both groups) and manufacturing (4% for both).

After educational services, engineering graduates were mostly employed in professional, scientific and technical services (29% and 33%, respectively); this was also the case for graduates in computer, mathematics and physical sciences (16% and 21%).

Compared to their counterparts who graduated in the other provinces, Ontario graduates from the life sciences were much more likely to be employed in health care and social assistance (26% compared to 15%), while the proportion of psychology and social sciences graduates found in the health care and social assistance sector was much smaller for Ontario graduates than it was for their counterparts from other provinces (20% compared to 34%).

Table 6

Distribution of doctoral graduates by field of study and sector of employment, Class of 2005, Ontario and Canada without Ontario

	Manufacturing	Professional, scientific and technical services	Educational services	Health care and social assistance	Public administration
			percent		
Ontario					
All fields of study	**4.0**	**11.3**	**57.9**	**12.5**	**7.2**
Life sciences	x	13.4	46.3	26.1	8.7
Engineering	18.6	29.1	33.8	x	8.2 [E]
Computer, mathematics and physical sciences	6.0 [E]	16.0	56.0	x	7.7 [E]
Psychology and social sciences	..	3.5 [E]	63.5	20.0	8.7
Humanities	x	x	82.9	x	x
Education and other fields of study	x	5.1 [E]	74.8	6.2 [E]	6.2 [E]
Canada without Ontario					
All fields of study	**3.6**	**14.4**	**55.1**	**12.6**	**7.3**
Life sciences	4.9	15.1	51.9	15.0	8.0
Engineering	8.1	32.7	37.0	x	9.4
Computer, mathematics and physical sciences	6.7 [E]	20.5	55.2	4.5 [E]	5.9 [E]
Psychology and social sciences	..	5.8	47.7	34.0	8.7
Humanities	..	6.8 [E]	70.5	x	5.9 [E]
Education and other fields of study	x	7.7	76.7	5.0 [E]	4.6

.. not available for a specific reference period

x suppressed to meet the confidentiality requirements of the *Statistics Act*

[E] use with caution

Source: Statistics Canada, National Graduates Survey (Class of 2005).

Notwithstanding their location of study, men were twice as likely as women to be employed in professional, scientific and technical services whereas women were more likely to work in health care and social assistance (Appendix table A.22).

Graduates who lived in Canada were distributed in comparable proportions to those who lived in the United States in three of the five economic sectors. That said, a higher proportion of Ontario graduates who lived in the United States worked in professional, scientific and technical services (17%) than was the case for those who lived in Canada (10%). In the case of graduates from other provinces, the proportion working in the educational services in the United States (64%) was 10 percentage points higher than in Canada (54%) (Appendix table A.23).

As seen earlier, proportionately more graduates from the two previous cohorts were working in the manufacturing sector and fewer in educational services than was the case in 2007 (Appendix table A.22). These results reflect the profound structural changes in the Canadian economy during the 10 years covered in this study, particularly in Ontario. Between 1997 and 2002, full-time employment in manufacturing grew by 17% in Ontario and by 11% in the rest of the country. In contrast, between 2002 and 2007, manufacturing full-time employment decreased by 14% in Ontario and by 9.5% in other provinces. During the same period, Ontario full-time jobs in educational services grew by 25.8%, double the growth observed in other provinces (12.6%).[33]

Summary

Nine out of ten doctoral graduates from the Class of 2005 were working two years after graduation, and when employed workers and self-employed graduates are combined, the overall proportions of graduates who were working were comparable for Ontario (90%) and the other provinces (87%).

The median earnings of Ontario graduates from the Class of 2005 were $5,500 higher than the median earnings of their counterparts who graduated in other provinces. There were substantial variations across fields of study. Life sciences graduates were the lowest earners, at $58,000 in Ontario and $50,400 in other provinces, while graduates in education and other fields of study were the highest earners, at $80,000 in Ontario and $78,000 in other provinces.

Part of the earnings gap between these two fields of study can be explained by whether or not the graduates had postdoctoral intentions. Indeed, only a very small percentage of graduates in education and other fields planned to take a postdoctoral position when they graduated in 2005, choosing instead to return to a previous or current job or directly enter the labour force (93% for Ontario and 92% for the other provinces). This is in sharp contrast with graduates from the life sciences, where about seven out of ten students (69% and 68%, respectively) were planning to take a postdoctoral position at graduation.

Furthermore, doctoral graduates who lived in Canada two years after graduation earned substantially more than their colleagues who lived in the United States in 2007. The differences in earnings were $11,000 for Ontario graduates and more than $15,000 for graduates from other provinces. Since the majority of graduates who intended to move to the United States at the time of graduation also intended to take a postdoctoral position, this suggests that such earnings disparities may also be related to their postdoctoral intentions.

While there was no disparity in the median incomes of men and women in the case of Ontario graduates, women graduates from other provinces posted median earnings that were $5,000 below those of their male counterparts.

Engineering graduates earned more in 2002 than in 2007. This situation is likely related to the explosive growth in the high-tech sector during the late 1990s followed by the subsequent meltdown of the early 2000s, coupled with the decline in manufacturing employment, particularly since 2005.

The incidence of mismatch between job requirements and the graduates' level of schooling was lowest for the Class of 2005 (27% for Ontario and 32% for other provinces) and the highest for the Class of 2000 (51% and 46%, respectively). This may be attributed to the economic slowdown of 2001 which may have affected the labour market opportunities of the 2000 doctoral graduates. While employment had improved by the end of 2002, some lingering effects may have persisted when it came to the quality of available jobs.

The majority of doctoral graduates from the Class of 2005 were employed in the public sector, with their shares standing at 78% for Ontario and 75% for graduates from the other provinces. Moreover, more than half were employed in educational services (58% for Ontario and 55% for the other provinces) with the vast majority of those working in a university (88% and 86%, respectively).

Proportionately more graduates from the previous two cohorts were working in the manufacturing sector and fewer in educational services than was the case in 2007. These results reflect the profound structural changes in the Canadian economy, and particularly in Ontario, during the 10 years covered by this study.

Chapter 6

Conclusion

This report has highlighted several findings relevant for understanding the profile and labour market outcomes of doctoral graduates from Ontario universities.

Ontario accounted for four out of ten Canadian graduates in 2005, slightly more than its share of the Canadian population. Although women were still clustered in traditionally female disciplines in 2005, proportionately more Ontario women were granted a degree in life sciences, while fewer had chosen the humanities than in previous cohorts.

Compared to other provinces, Ontario had more doctoral graduates whose mother tongue was a non-official language. Moreover, the proportion of allophones earning a doctorate in Canada has grown continuously over the past 20 years. Both in Ontario and outside the province, their proportions doubled between the Classes of 1995 and 2005, rising from 16% to 34% in Ontario and from 14% to 28% in other provinces.

Notwithstanding the reduction in full-time tenured or tenure-track positions in Canadian universities, about two-thirds (65%) of Ontario graduates pursued a PhD to become university professors, a proportion that was higher than was the case for graduates in other provinces by 7 percentage points (58%).

The majority of graduates who planned to move to the United States at the time of graduation also intended to take a postdoctoral position, the proportions standing at 67% in the case of Ontario graduates and 81% for graduates from other provinces.

Furthermore, a higher proportion of Ontario graduates who had moved to the United States after graduation had returned to Canada than was the case for movers from the other provinces. Ontario "returnees" accounted for 27% of those who had moved south of the border after graduation, compared to 21% of movers from other provinces.

In 2007, two years after graduation, nine out of ten doctoral graduates were working either as salaried employees or as self-employed workers. The median earnings of Ontario graduates who worked full-time was $5,500 higher than the earnings of their counterparts who graduated in other provinces. This earning differential reflected the higher wages in the general working population in Ontario compared to most other provinces at that time.

Contrary to their counterparts from other provinces, women graduates from Ontario earned as much as men, at $67,000 and $68,000 respectively. What is more, graduates who lived and worked in Canada two years after graduation earned substantially more than those who worked in the United States. This earning disparity may well be related to the postdoctoral intentions of movers to the United States.

The public sector remained the primary employer of new doctoral graduates in Canada in 2007, as more than three-quarters found employment in educational services (58% for Ontario and 55% for graduates from other provinces), health care and social assistance (13% for both groups) and public administration (7% for both groups).

This report has also highlighted the fact that fewer graduates from the Class of 2005 were working in the manufacturing sector than the previous two cohorts, a result of the structural changes in the Canadian economy during the 10 years covered by the study.

Future iterations of the NGS could better inform us on the role of economic cycles related to the labour market outcomes of doctoral graduates. The Class of 2010, in particular, may have been impacted by the economic downturn that began in October 2008. It took a full 28 months for employment in the country to recover to its October 2008 level, that is, until the beginning of 2011. What types of job prospects were available to this cohort of doctoral graduates? How well did new entrants integrate into the labour force? While full-time and part-time employment recovered at the end of 2010, full-time employment did not recover as swiftly as part-time employment. Did this lead to more underemployment for doctoral graduates?

These are but a few of the many questions for which the next NGS could provide some answers.

Appendix

Standard tables

Table A.1.1

Distribution of doctoral graduates within fields of study by gender, Ontario and Canada without Ontario

	Class of 2005	Class of 2000	Class of 1995
		percent	
Ontario			
Both sexes			
Life sciences	**25**	**23**	**23**
Engineering	**14**	**13**	**14**
Computer, mathematics and physical sciences	**14**	**15**	**18** [3]
Psychology and social sciences	**20**	**23** [2]	**19**
Humanities	**14**	**15**	**15**
Education and other fields of study	**13**	**11**	**12**
Women			
Life sciences	29	22 [2]	21 [3]
Engineering	6	4 [E]	5
Computer, mathematics and physical sciences	9	8	10
Psychology and social sciences	26	30	27
Humanities	14	19 [2]	19 [3]
Education and other fields of study	16	17	18
Men			
Life sciences	22	24	23
Engineering	20	20	19
Computer, mathematics and physical sciences	19	20	22
Psychology and social sciences	15	18	15
Humanities	14	12	13
Education and other fields of study	10	7	9
Canada without Ontario			
Both sexes			
Life sciences	**32** [1]	**40** [2]	**27** [3]
Engineering	**13**	**12**	**14**
Computer, mathematics and physical sciences	**12**	**12**	**15** [3]
Psychology and social sciences	**18**	**14** [2]	**16**
Humanities	**10** [1]	**12**	**12** [3]
Education and other fields of study	**15**	**11** [2]	**15**
Women			
Life sciences	33	44 [2]	34
Engineering	5	4	3 [3]
Computer, mathematics and physical sciences	6	5	6
Psychology and social sciences	27	18 [2]	23
Humanities	11	14	13
Education and other fields of study	18	15	21 [3]
Men			
Life sciences	31 [1]	37 [2]	24 [3]
Engineering	21	18	21
Computer, mathematics and physical sciences	16	18	20 [3]
Psychology and social sciences	11 [1]	10	13
Humanities	9 [1]	10	12 [3]
Education and other fields of study	12	7 [2]	11

[E] use with caution

1. Significantly different between Ontario graduates and graduates from other provinces within the Class of 2005 ($p<0.05$).
2. Significantly different between the Class of 2005 and the Class of 2000 ($p<0.05$).
3. Significantly different between the Class of 2005 and the Class of 1995 ($p<0.05$).

Note: Sum of percentages may not sum up to 100 due to rounding.

Sources: Statistics Canada, National Graduates Survey (Classes of 2005, 2000 and 1995).

Table A.1.2
Proportion of women doctoral graduates by field of study, Ontario and Canada without Ontario

	Class of 2005	Class of 2000	Class of 1995
		percent	
Ontario			
All fields of study	**45**	**43**	**35** [3]
Life sciences	53	41 [2]	34 [3]
Engineering	20	13 [E]	14
Computer, mathematics and physical sciences	27	22	19
Psychology and social sciences	59	57	49 [3]
Humanities	46	56	44
Education and other fields of study	56	66 [2]	54
Canada without Ontario			
All fields of study	**46**	**43**	**35** [3]
Life sciences	49	47	44
Engineering	16	15	6 [3]
Computer, mathematics and physical sciences	26	17 [2]	14 [3]
Psychology and social sciences	69 [1]	57 [2]	49 [3]
Humanities	50	51	38 [3]
Education and other fields of study	56	60	50

[E] use with caution

1. Significantly different between Ontario graduates and graduates from other provinces within the Class of 2005 ($p<0.05$).
2. Significantly different between the Class of 2005 and the Class of 2000 ($p<0.05$).
3. Significantly different between the Class of 2005 and the Class of 1995 ($p<0.05$).

Sources: Statistics Canada, National Graduates Survey (Classes of 2005, 2000 and 1995).

Table A.1.3

Median age of doctoral graduates at the start of doctoral program and at graduation, Ontario and Canada without Ontario

	Class of 2005	Class of 2000	Class of 1995
	Median age		
	years		
Median age at the start of program			
Ontario			
All fields of study	**27**	**27**	**28**
Life sciences	26	26	26
Engineering	28	27	28
Computer, mathematics and physical sciences	25	25	26
Psychology and social sciences	26	28 [2]	28 [3]
Humanities	26	28	29 [3]
Education and other fields of study	36	35	34
Canada without Ontario			
All fields of study	**27**	**27**	**29** [3]
Life sciences	26	25 [2]	27
Engineering	29	28	28
Computer, mathematics and physical sciences	26	25 [2]	26
Psychology and social sciences	26	30 [2]	30 [3]
Humanities	30 [1]	30	33 [3]
Education and other fields of study	36	37	34
Median age at graduation			
Ontario			
All fields of study	**32**	**33**	**33**
Life sciences	31	31	31
Engineering	32	33	32
Computer, mathematics and physical sciences	30	31	31
Psychology and social sciences	32	34	34 [3]
Humanities	33	34	35
Education and other fields of study	41	40	41
Canada without Ontario			
All fields of study	**33**	**33**	**34**
Life sciences	31	30	32
Engineering	33	33	33
Computer, mathematics and physical sciences	30	31	31
Psychology and social sciences	33	37 [2]	37 [3]
Humanities	36	37	39
Education and other fields of study	42	41	40

1. Significantly different between Ontario graduates and graduates from other provinces within the Class of 2005 ($p<0.05$).
2. Significantly different between the Class of 2005 and the Class of 2000 ($p<0.05$).
3. Significantly different between the Class of 2005 and the Class of 1995 ($p<0.05$).

Note: Excludes respondents for whom the age is unknown.

Sources: Statistics Canada, National Graduates Survey (Classes of 2005, 2000 and 1995).

Table A.2

Mother tongue of doctoral graduates by field of study and country of residence for non-official language speakers, Ontario and Canada without Ontario

	Class of 2005	Class of 2000	Class of 1995
	percent		
Mother tongue			
Ontario			
All fields of study			
English only	**60**	**64**	**43** [3]
French only	**4**	**5**	**2**
Non-official language only	**34**	**28** [2]	**16** [3]
English and French	**1** [E]	**1** [E]	**16**
English or French and non-official language	**2**	**2**	**21** [3]
Life sciences			
English only	59	69	56
French only	7	x	x
Non-official language only	32	28	16 [3]
English and French	x	x	12
English or French and non-official language	x	x	14
Engineering			
English only	28	40 [2]	21
French only	x	x	x
Non-official language only	68	51 [2]	31 [3]
English and French	x	..	9 [E]
English or French and non-official language	x	x	35
Computer, mathematics and physical sciences			
English only	55	52	37 [3]
French only	3 [E]	7 [E]	x
Non-official language only	40	40	25 [3]
English and French	x	..	14
English or French and non-official language	x	..	19
Psychology and social sciences			
English only	69	71	46 [3]
French only	3 [E]	8 [2]	4
Non-official language only	25	19	4 [3]
English and French	x	..	20
English or French and non-official language	x	3 [E]	23
Humanities			
English only	74	73	44 [3]
French only	7	5 [E]	x
Non-official language only	18	19	10 [3]
English and French	x	x	25
English or French and non-official language	x	x	20
Education and other fields of study			
English only	70	71	50 [3]
French only	x	7 [E]	x
Non-official language only	25	16 [2]	11 [3]
English and French	x	x	16
English or French and non-official language	x	6 [E]	18
Canada without Ontario			
All fields of study			
English only	**38** [1]	**37**	**29** [3]
French only	**31** [1]	**36** [2]	**19** [3]
Non-official language only	**28** [1]	**26**	**14** [3]
English and French	**1**	**1** [E]	**17** [3]
English or French and non-official language	**2**	**1** [E]	**20** [3]
Life sciences			
English only	38 [1]	29 [2]	32
French only	33 [1]	48 [2]	16 [3]
Non-official language only	25 [1]	21	11 [3]
English and French	1 [E]	x	21 [E]
English or French and non-official language	3 [E]	1 [E]	18 [3]

Table A.2 (concluded)

Mother tongue of doctoral graduates by field of study and country of residence for non-official language speakers, Ontario and Canada without Ontario

	Class of 2005	Class of 2000	Class of 1995
		percent	
Engineering			
English only	18 [1]	22	17
French only	18	23	8 [3]
Non-official language only	61	53	29 [3]
English and French	x	..	9
English or French and non-official language	x	x	35
Computer, mathematics and physical sciences			
English only	36 [1]	41	29
French only	26	18	16 [3]
Non-official language only	35	39	22 [3]
English and French	x	x	11
English or French and non-official language	x	x	21
Psychology and social sciences			
English only	40 [1]	46	31 [3]
French only	41 [1]	36	31 [3]
Non-official language only	16 [1]	16	5 [3]
English and French	2 [E]	x	22
English or French and non-official language	x	x	11
Humanities			
English only	42 [1]	50	30 [3]
French only	37 [1]	27 [2]	22 [3]
Non-official language only	17	19	7 [3]
English and French	x	x	18
English or French and non-official language	x	x	23
Education and other fields of study			
English only	51 [1]	51	34 [3]
French only	26	35 [2]	20 [3]
Non-official language only	19	14	12 [3]
English and French	x	x	18
English or French and non-official language	2 [E]	..	14 [3]
Country of residence two years after graduation for non-official language speakers			
Ontario			
Chinese speakers			
Canada	84	80	..
United States	16	20 [E]	..
Other non-official language speakers			
Canada	86	87	..
United States	14	13	..
Canada without Ontario			
Chinese speakers			
Canada	78	81	..
United States	22	19	..
Other non-official language speakers			
Canada	88	85	..
United States	12	15	..

.. not available for a specific reference period

x suppressed to meet the confidentiality requirements of the *Statistics Act*

[E] use with caution

1. Significantly different between Ontario graduates and graduates from other provinces within the Class of 2005 ($p<0.05$).
2. Significantly different between the Class of 2005 and the Class of 2000 ($p<0.05$).
3. Significantly different between the Class of 2005 and the Class of 1995 ($p<0.05$).

Sources: Statistics Canada, National Graduates Survey (Classes of 2005, 2000 and 1995).

Table A.3.1

Proportion of doctoral graduates members of a visible-minority group by field of study, Ontario and Canada without Ontario

	Class of 2005	Class of 2000	Class of 1995
		percent	
Ontario			
All fields of study	**29**	**20** [2]	**31**
Life sciences	29	18 [2]	25
Engineering	67	47 [2]	64
Computer, mathematics and physical sciences	33	24	44 [3]
Psychology and social sciences	20	18	16
Humanities	10	5 [E]	14
Education and other fields of study	22	13 [E]	24
Canada without Ontario			
All fields of study	**26**	**23** [2]	**27**
Life sciences	25	22	26
Engineering	58	44 [2]	62
Computer, mathematics and physical sciences	32	31	36
Psychology and social sciences	13 [1]	13	13
Humanities	11	9	14
Education and other fields of study	22	19	16

[E] use with caution

1. Significantly different between Ontario graduates and graduates from other provinces within the Class of 2005 ($p<0.05$).
2. Significantly different between the Class of 2005 and the Class of 2000 ($p<0.05$).
3. Significantly different between the Class of 2005 and the Class of 1995 ($p<0.05$).

Note: Only includes respondents who indicated whether or not they identified themselves as members of a visible-minority ethnic or racial group.

Sources: Statistics Canada, National Graduates Survey (Classes of 2005, 2000 and 1995).

Table A.3.2
Characteristics of foreign-born doctoral graduates by field of study, Ontario and Canada without Ontario

	Class of 2005	Class of 2000
	percent	
Ontario		
Proportion of foreign-born		
All fields of study	**37**	**32**
Life sciences	27	25
Engineering	76	56 [2]
Computer, mathematics and physical sciences	44	41
Psychology and social sciences	28	25
Humanities	28	25
Education and other fields of study	29	33
Canadian citizen by naturalization		
All fields of study	**76**	**84** [2]
Life sciences	80	85
Engineering	81	91
Computer, mathematics and physical sciences	60	83 [2]
Psychology and social sciences	89	88
Humanities	65	77
Education and other fields of study	74	77
Landed immigrant		
All fields of study	**16**	**15**
Life sciences	16	14 [E]
Engineering	14	x
Computer, mathematics and physical sciences	20	18 [E]
Psychology and social sciences	x	10 [E]
Humanities	25	24 [E]
Education and other fields of study	10	23 [E]
Canada without Ontario		
Proportion of foreign-born		
All fields of study	**36**	**32** [2]
Life sciences	32	25 [2]
Engineering	73	64
Computer, mathematics and physical sciences	45	49
Psychology and social sciences	22	21
Humanities	18 [1]	27 [2]
Education and other fields of study	33	24
Canadian citizen by naturalization		
All fields of study	**66** [1]	**76** [2]
Life sciences	62 [1]	77 [2]
Engineering	70 [1]	83 [2]
Computer, mathematics and physical sciences	63	66
Psychology and social sciences	66 [1]	86 [2]
Humanities	70	76
Education and other fields of study	66	68
Landed immigrant		
All fields of study	**25** [1]	**18** [2]
Life sciences	26 [1]	14 [2]
Engineering	25 [1]	16
Computer, mathematics and physical sciences	28	25
Psychology and social sciences	26	12 [E]
Humanities	27 [E]	16 [E]
Education and other fields of study	21	27 [E]

1. Significantly different between Ontario graduates and graduates from other provinces within the Class of 2005 ($p<0.05$).
2. Significantly different between the Class of 2005 and the Class of 2000 ($p<0.05$).

Notes: Excludes respondents for whom the citizenship is unknown as well as the Class of 1995 for which questions on country of birth and citizenship were not asked.

Percentages may not sum up to 100 due to suppression of categories.

Sources: Statistics Canada, National Graduates Survey (Classes of 2005 and 2000).

Table A.4

Highest level of parental education, Canadian- and foreign-born doctoral graduates, Ontario and Canada without Ontario

	Class of 2005	Class of 2000	Class of 1995
		percent	
Ontario			
All graduates			
No postsecondary education	**32**	**36**	**44** [3]
Postsecondary education below bachelor	**15**	**13**	**F**
Bachelor or other university below master	**29**	**27**	**20** [E]
Master or doctorate	**24**	**24**	**24**
Canadian-born			
No postsecondary education	31	37 [2]	..
Postsecondary education below bachelor	16	13	..
Bachelor or other university below master	28	24	..
Master or doctorate	25	26	..
Foreign-born			
No postsecondary education	34	36	..
Postsecondary education below bachelor	14	11	..
Bachelor or other university below master	30	33	..
Master or doctorate	23	21	..
Canada without Ontario			
All graduates			
No postsecondary education	**33**	**38** [2]	**49** [3]
Postsecondary education below bachelor	**18** [1]	**13** [2]	**15** [E]
Bachelor or other university below master	**25** [1]	**28**	**19** [E]
Master or doctorate	**24**	**22**	**17**
Canadian-born			
No postsecondary education	30	37 [2]	..
Postsecondary education below bachelor	20 [1]	14 [2]	..
Bachelor or other university below master	25	27	..
Master or doctorate	26	22	..
Foreign-born			
No postsecondary education	38	40	..
Postsecondary education below bachelor	14	10	..
Bachelor or other university below master	27	30	..
Master or doctorate	21	20	

.. not available for a specific reference period

1. Significantly different between Ontario graduates and graduates from other provinces within the Class of 2005 ($p<0.05$).
2. Significantly different between the Class of 2005 and the Class of 2000 ($p<0.05$).
3. Significantly different between the Class of 2005 and the Class of 1995 ($p<0.05$).

Note: Questions on country of birth and citizenship were not asked to graduates from the Class of 1995.

Sources: Statistics Canada, National Graduates Survey (Classes of 2005, 2000 and 1995).

Table A.5

Main activity of doctoral graduates 12 months prior to enrolment in program by field of study, Ontario and Canada without Ontario

	Class of 2005	Class of 2000	Class of 1995
		percent	
Ontario			
Going to school			
All fields of study	**55**	**53**	**49** [3]
Life sciences	58	49	51
Engineering	52	54	43
Computer, mathematics and physical sciences	68	72	59 [3]
Psychology and social sciences	60	54	52 [3]
Humanities	61	59	58
Education and other fields of study	21	19	23
Working			
All fields of study	**35**	**36**	**42** [3]
Life sciences	35	43	44
Engineering	44	35	50
Computer, mathematics and physical sciences	22	19	34 [3]
Psychology and social sciences	27	32	37 [3]
Humanities	29	26	31
Education and other fields of study	60	64	66
Working and going to school			
All fields of study	**7**	**6**	**5**
Life sciences	6	4 [E]	3 [E]
Engineering	x	x	x
Computer, mathematics and physical sciences	5 [E]	x	5 [E]
Psychology and social sciences	9	9	6
Humanities	6 [E]	9	6
Education and other fields of study	13	11	7 [3]
Other activity[4]			
All fields of study	**4**	**6**	**4**
Life sciences	2 [E]	4 [E]	x
Engineering	x	9 [E]	5 [E]
Computer, mathematics and physical sciences	4 [E]	6 [E]	x
Psychology and social sciences	3 [E]	5 [E]	5
Humanities	4 [E]	6 [E]	5 [E]
Education and other fields of study	7 [E]	5 [E]	x

Table A.5 (concluded)

Main activity of doctoral graduates 12 months prior to enrolment in program by field of study, Ontario and Canada without Ontario

	Class of 2005	Class of 2000	Class of 1995
	percent		
Canada without Ontario			
Going to school			
All fields of study	**48**	**55** [2]	**51**
Life sciences	52	64 [2]	62 [3]
Engineering	40	49	47
Computer, mathematics and physical sciences	61	61	65
Psychology and social sciences	56	51	52
Humanities	46	45	36 [3]
Education and other fields of study	26	34	33 [3]
Working			
All fields of study	**40** [1]	**34** [2]	**38**
Life sciences	35	27 [2]	29
Engineering	51	40 [2]	44
Computer, mathematics and physical sciences	32 [1]	28	28
Psychology and social sciences	29	34	33
Humanities	39 [1]	39	48 [3]
Education and other fields of study	60	54	59
Working and going to school			
All fields of study	**7**	**6**	**7**
Life sciences	6	4	6
Engineering	6	4 [E]	3 [E]
Computer, mathematics and physical sciences	5 [E]	9 [E]	4 [E]
Psychology and social sciences	10	9 [E]	12
Humanities	9	10	10
Education and other fields of study	8	8 [E]	5
Other activity[4]			
All fields of study	**5**	**5**	**4**
Life sciences	6	6	3 [E]
Engineering	3 [E]	7 [E]	6
Computer, mathematics and physical sciences	x	x	x
Psychology and social sciences	6	7 [E]	4 [E]
Humanities	7 [E]	6 [E]	6
Education and other fields of study	5 [E]	5 [E]	4

x suppressed to meet the confidentiality requirements of the *Statistics Act*

[E] use with caution

1. Significantly different between Ontario graduates and graduates from other provinces within the Class of 2005 ($p<0.05$).
2. Significantly different between the Class of 2005 and the Class of 2000 ($p<0.05$).
3. Significantly different between the Class of 2005 and the Class of 1995 ($p<0.05$).
4. "Other activity" includes: Taking care of family or household responsibility, without work and looking for work and other.

Note: Excludes respondents for whom the main activity prior to enrolment in program is unknown.

Sources: Statistics Canada, National Graduates Survey (Classes of 2005, 2000 and 1995).

Table A.6.1

Reasons why the graduate pursued a doctorate degree by field of study, Ontario and Canada without Ontario

	Class of 2005	Class of 2000
	percent	
Ontario		
All fields of study		
To become a university professor	**65**	**54** [2]
To get a specific type of work other than university professor	**19**	**19**
To get into a specific industry	**15**	**15**
To get a job with a higher salary	**20**	**14** [2]
To start a business	**4**	**5**
Other reason	**22**	**26** [2]
Life sciences		
To become a university professor	62	51
To get a specific type of work other than university professor	21	19
To get into a specific industry	20	20 [E]
To get a job with a higher salary	23	13 [2]
To start a business	3 [E]	5 [E]
Other reason	21	18
Engineering		
To become a university professor	60	51
To get a specific type of work other than university professor	27	21
To get into a specific industry	30	18 [2]
To get a job with a higher salary	33	17 [2]
To start a business	9 [E]	8 [E]
Other reason	14	22
Computer, mathematics and physical sciences		
To become a university professor	58	43 [2]
To get a specific type of work other than university professor	20	23
To get into a specific industry	15	21
To get a job with a higher salary	23	22
To start a business	x	5 [E]
Other reason	19	33 [2]
Psychology and social sciences		
To become a university professor	63	47 [2]
To get a specific type of work other than university professor	26	27
To get into a specific industry	16	12
To get a job with a higher salary	17	15
To start a business	7	6
Other reason	21	25
Humanities		
To become a university professor	86	78
To get a specific type of work other than university professor	4 [E]	4 [E]
To get into a specific industry	4 [E]	6 [E]
To get a job with a higher salary	8 [E]	8 [E]
To start a business	x	..
Other reason	20	27
Education and other fields of study		
To become a university professor	60	61
To get a specific type of work other than university professor	9	10 [E]
To get into a specific industry	4 [E]	6 [E]
To get a job with a higher salary	12	9 [E]
To start a business	x	x
Other reason	37	37

Table A.6.1 (concluded)

Reasons why the graduate pursued a doctorate degree by field of study, Ontario and Canada without Ontario

	Class of 2005	Class of 2000
	percent	
Canada without Ontario		
All fields of study		
To become a university professor	**58** [1]	**46** [2]
To get a specific type of work other than university professor	**23** [1]	**23**
To get into a specific industry	**20** [1]	**22**
To get a job with a higher salary	**23**	**17** [2]
To start a business	**7** [1]	**5**
Other reason	**24**	**21**
Life sciences		
To become a university professor	59	36 [2]
To get a specific type of work other than university professor	25	27
To get into a specific industry	24	28
To get a job with a higher salary	25	17 [2]
To start a business	7	6
Other reason	19	20
Engineering		
To become a university professor	58	47 [2]
To get a specific type of work other than university professor	23	20
To get into a specific industry	32	28
To get a job with a higher salary	24	22
To start a business	10	7 [E]
Other reason	21	20
Computer, mathematics and physical sciences		
To become a university professor	51	43
To get a specific type of work other than university professor	26	29
To get into a specific industry	25	18
To get a job with a higher salary	26	22
To start a business	5 [E]	3 [E]
Other reason	20	25
Psychology and social sciences		
To become a university professor	50	51
To get a specific type of work other than university professor	34	25 [2]
To get into a specific industry	14	18
To get a job with a higher salary	20	15
To start a business	6	5 [E]
Other reason	20	21
Humanities		
To become a university professor	71	67
To get a specific type of work other than university professor	10	13
To get into a specific industry	9	9 [E]
To get a job with a higher salary	18	7 [E]
To start a business	5 [E]	x
Other reason	32	22 [2]
Education and other fields of study		
To become a university professor	64	54
To get a specific type of work other than university professor	13	11
To get into a specific industry	9	18 [E]
To get a job with a higher salary	21	15
To start a business	5	4 [E]
Other reason	38	25 [2]

x suppressed to meet the confidentiality requirements of the *Statistics Act*

[E] use with caution

1. Significantly different between Ontario graduates and graduates from other provinces within the Class of 2005 ($p<0.05$).
2. Significantly different between the Class of 2005 and the Class of 2000 ($p<0.05$).

Notes: No comparable data were available for the Class of 1995.

Percentages do not sum up to 100 since multiple responses were permitted.

Sources: Statistics Canada, National Graduates Survey (Classes of 2005 and 2000).

Table A.6.2

Reasons why the graduate did not want to become a university professor by field of study, Ontario and Canada without Ontario

	Class of 2005	Class of 2000
	percent	
Ontario		
All fields of study		
No positions available in my discipline at university	**5**	**5**
More money or better job opportunities outside university	**29**	**49** [2]
Unhappy with academic life	**13**	**14**
Too much stress	**8**	**9**
Other (not interested, prefer clinical / practical work, wants to do research only)	**44**	**24** [2]
Life sciences		
No positions available in my discipline at university	x	x
More money or better job opportunities outside university	32	45
Unhappy with academic life	10	13 [E]
Too much stress	10	8 [E]
Other (not interested, prefer clinical / practical work, wants to do research only)	45	F
Engineering		
No positions available in my discipline at university	x	..
More money or better job opportunities outside university	31	58 [2]
Unhappy with academic life	16 [E]	13 [E]
Too much stress	x	x
Other (not interested, prefer clinical / practical work, wants to do research only)	42	22 [E]
Computer, mathematics and physical sciences		
No positions available in my discipline at university	14 [E]	x
More money or better job opportunities outside university	26	49 [2]
Unhappy with academic life	20	14 [E]
Too much stress	12 [E]	11 [E]
Other (not interested, prefer clinical / practical work, wants to do research only)	28	22
Psychology and social sciences		
No positions available in my discipline at university	x	7 [E]
More money or better job opportunities outside university	38	55 [2]
Unhappy with academic life	14	14
Too much stress	6 [E]	10
Other (not interested, prefer clinical / practical work, wants to do research only)	39	15 [2]
Humanities		
No positions available in my discipline at university	x	x
More money or better job opportunities outside university	..	32 [E]
Unhappy with academic life	x	21 [E]
Too much stress	..	x
Other (not interested, prefer clinical / practical work, wants to do research only)	80	29 [E]
Education and other fields of study		
No positions available in my discipline at university	x	x
More money or better job opportunities outside university	22	43 [2]
Unhappy with academic life	9 [E]	x
Too much stress	x	x
Other (not interested, prefer clinical / practical work, wants to do research only)	60	33 [2]

Table A.6.2 (concluded)

Reasons why the graduate did not want to become a university professor by field of study, Ontario and Canada without Ontario

	Class of 2005	Class of 2000
	percent	
Canada without Ontario		
All fields of study		
No positions available in my discipline at university	**7**	**10**
More money or better job opportunities outside university	**30**	**51** [2]
Unhappy with academic life	**13**	**16**
Too much stress	**6**	**8**
Other (not interested, prefer clinical / practical work, wants to do research only)	**43**	**16** [2]
Life sciences		
No positions available in my discipline at university	7	9
More money or better job opportunities outside university	34	55 [2]
Unhappy with academic life	17 [1]	15
Too much stress	9	8
Other (not interested, prefer clinical / practical work, wants to do research only)	33 [1]	13 [2]
Engineering		
No positions available in my discipline at university	9 [E]	16 [E]
More money or better job opportunities outside university	27	54 [2]
Unhappy with academic life	10 [E]	10 [E]
Too much stress	x	x
Other (not interested, prefer clinical / practical work, wants to do research only)	50	15 [E]
Computer, mathematics and physical sciences		
No positions available in my discipline at university	14	9 [E]
More money or better job opportunities outside university	30	50 [2]
Unhappy with academic life	8 [E]	14 [E]
Too much stress	x	10 [E]
Other (not interested, prefer clinical / practical work, wants to do research only)	42 [1]	16 [E]
Psychology and social sciences		
No positions available in my discipline at university	x	11 [E]
More money or better job opportunities outside university	34	45
Unhappy with academic life	14	23 [2]
Too much stress	5 [E]	9 [E]
Other (not interested, prefer clinical / practical work, wants to do research only)	44	12 [2]
Humanities		
No positions available in my discipline at university	12 [E]	17 [E]
More money or better job opportunities outside university	21	38
Unhappy with academic life	14 [E]	15 [E]
Too much stress	..	x
Other (not interested, prefer clinical / practical work, wants to do research only)	54 [1]	25 [E]
Education and other fields of study		
No positions available in my discipline at university	x	x
More money or better job opportunities outside university	23	44 [2]
Unhappy with academic life	9 [E]	16 [E]
Too much stress	8 [E]	x
Other (not interested, prefer clinical / practical work, wants to do research only)	54	31 [E]

.. not available for a specific reference period

x suppressed to meet the confidentiality requirements of the *Statistics Act*

[E] use with caution

F too unreliable to be published

1. Significantly different between Ontario graduates and graduates from other provinces within the Class of 2005 ($p<0.05$).
2. Significantly different between the Class of 2005 and the Class of 2000 ($p<0.05$).

Notes: No comparable data were available for the Class of 1995.
Percentages may not sum up to 100 due to rounding.

Sources: Statistics Canada, National Graduates Survey (Classes of 2005 and 2000).

Table A.6.3
Type of definite plans at graduation of 2005 doctoral graduates, Ontario and Canada without Ontario

	Proportion
	percent
Ontario	
All graduates	
Employment	**54**
Postdoctoral fellowship or other training or study	**46**
Life sciences	
Employment	31
Postdoctoral fellowship or other training or study	69
Engineering	
Employment	48
Postdoctoral fellowship or other training or study	52
Computer, mathematics and physical sciences	
Employment	24 E
Postdoctoral fellowship or other training or study	76
Psychology and social sciences	
Employment	70
Postdoctoral fellowship or other training or study	30
Humanities	
Employment	93
Postdoctoral fellowship or other training or study	x
Education and other fields of study	
Employment	93
Postdoctoral fellowship or other training or study	x
Canadian-born	
Employment	58
Postdoctoral fellowship or other training or study	42
Foreign-born	
Employment	47
Postdoctoral fellowship or other training or study	53
Men	
Employment	49
Postdoctoral fellowship or other training or study	51
Women	
Employment	61
Postdoctoral fellowship or other training or study	39

Table A.6.3 (concluded)

Type of definite plans at graduation of 2005 doctoral graduates, Ontario and Canada without Ontario

	Proportion
	percent
Canada without Ontario	
All graduates	
Employment	**53**
Postdoctoral fellowship or other training or study	**47**
Life sciences	
Employment	32
Postdoctoral fellowship or other training or study	68
Engineering	
Employment	49
Postdoctoral fellowship or other training or study	51
Computer, mathematics and physical sciences	
Employment	32 E
Postdoctoral fellowship or other training or study	68
Psychology and social sciences	
Employment	70
Postdoctoral fellowship or other training or study	30
Humanities	
Employment	82
Postdoctoral fellowship or other training or study	x
Education and other fields of study	
Employment	92
Postdoctoral fellowship or other training or study	x
Canadian-born	
Employment	59
Postdoctoral fellowship or other training or study	41
Foreign-born	
Employment	41
Postdoctoral fellowship or other training or study	59
Men	
Employment	44
Postdoctoral fellowship or other training or study	56
Women	
Employment	64
Postdoctoral fellowship or other training or study	36

x suppressed to meet the confidentiality requirements of the *Statistics Act*
E use with caution

Notes: Only includes doctoral recipients who intended to live in Canada or the United States at the time of graduation.
Sum of percentages may not sum up to 100 due to rounding.

Source: Statistics Canada, Survey of Earned Doctorates.

Table A.7

Proportion of doctoral graduates who lived in the United States by gender, Ontario and Canada without Ontario

	Class of 2005	Class of 2000
	percent	
Ontario		
Both sexes		
Never lived in the United States after graduation	**83**	**84**
Moved to the United States after graduation but lived in Canada two years after graduation	**5**	**4**
Lived in the United States two years after graduation	**13**	**12**
Men		
Never lived in the United States after graduation	82	81
Moved to the United States after graduation but lived in Canada two years after graduation	4	4
Lived in the United States two years after graduation	14	15
Women		
Never lived in the United States after graduation	84	88
Moved to the United States after graduation but lived in Canada two years after graduation	6	2 [E]
Lived in the United States two years after graduation	11	9
Canada without Ontario		
Both sexes		
Never lived in the United States after graduation	**86** [1]	**86**
Moved to the United States after graduation but lived in Canada two years after graduation	**3**	**4**
Lived in the United States two years after graduation	**11**	**10**
Men		
Never lived in the United States after graduation	83	84
Moved to the United States after graduation but lived in Canada two years after graduation	4	5
Lived in the United States two years after graduation	14	12
Women		
Never lived in the United States after graduation	89 [1]	89
Moved to the United States after graduation but lived in Canada two years after graduation	2 [1]	3 [E]
Lived in the United States two years after graduation	9	8

[E] use with caution

1. Significantly different between Ontario graduates and graduates from other provinces within the Class of 2005 ($p<0.05$).

Note: Sum of percentages may not sum up to 100 due to rounding.

Sources: Statistics Canada, National Graduates Survey (Classes of 2005 and 2000).

Table A.8.1

Characteristics of doctoral graduates who lived in the United States two years after graduation, Ontario and Canada without Ontario

	Class of 2005	Class of 2000
	percent	
Ontario		
Gender		
Male	62	67
Female	38	33
Marital status		
Married or living common-law	70	67
Single, never married	27	28
Had dependent children	28	38
Median age		
Male	31	31
Female	30	31
Citizenship status two years after graduation		
Canadian citizen by birth	52	67 [1]
Canadian citizen by naturalization	33	31
Landed immigrant or foreign student	6 [E]	x
No status in Canada or other	9 [E]	x
Proportion by field of study		
Life sciences	16	22
Engineering	16	16
Computer, mathematics and physical sciences	16	13 [E]
Psychology and social sciences	7	8
Humanities	11	6 [E]
Education and other fields of study	8 [E]	6 [E]
Canada without Ontario		
Gender		
Male	65	65
Female	35	35
Marital status		
Married or living common-law	67	66
Single, never married	32	32
Had dependent children	33	35
Median age		
Male	31	30
Female	29	30
Citizenship status two years after graduation		
Canadian citizen by birth	64	53
Canadian citizen by naturalization	25	38 [1]
Landed immigrant or foreign student	6 [E]	4 [E]
No status in Canada or other	6 [E]	5 [E]
Proportion by field of study		
Life sciences	18	12 [1]
Engineering	7 [E]	7 [E]
Computer, mathematics and physical sciences	18	21
Psychology and social sciences	6 [E]	5 [E]
Humanities	7 [E]	8
Education and other fields of study	5 [E]	3 [E]

x suppressed to meet the confidentiality requirements of the *Statistics Act*

[E] use with caution

1. Significantly different between the Class of 2005 and the Class of 2000 ($p<0.05$).

Sources: Statistics Canada, National Graduates Survey (Classes of 2005 and 2000).

Table A.8.2

Characteristics of doctoral graduates who lived in Canada two years after graduation, Ontario and Canada without Ontario

	Class of 2005	Class of 2000
	percent	
Ontario		
Gender		
Male	54	55
Female	46	45
Marital status		
Married or living common-law	74	73
Single, never married	22	21
Had dependent children	44	46
Median age		
Male	33	33
Female	33	35 [2]
Citizenship status two years after graduation		
Canadian citizen by birth	65	68
Canadian citizen by naturalization	27	26
Landed immigrant or foreign student	7	5
No status in Canada or other	1 [E]	x
Proportion by field of study		
Life sciences	84	78
Engineering	84	84
Computer, mathematics and physical sciences	84	88
Psychology and social sciences	93	92
Humanities	89	94
Education and other fields of study	92	94
Canada without Ontario		
Gender		
Male	52	56 [2]
Female	48	44 [2]
Marital status		
Married or living common-law	73	72
Single, never married	21	23
Had dependent children	49 [1]	46
Median age		
Male	33	33
Female	34	33
Citizenship status two years after graduation		
Canadian citizen by birth	64	69 [2]
Canadian citizen by naturalization	23 [1]	23
Landed immigrant or foreign student	12 [1]	7 [2]
No status in Canada or other	1 [E]	1 [E]
Proportion by field of study		
Life sciences	82	88 [2]
Engineering	93 [1]	93
Computer, mathematics and physical sciences	82	79
Psychology and social sciences	94	95
Humanities	93	92
Education and other fields of study	95	97

x suppressed to meet the confidentiality requirements of the *Statistics Act*

[E] use with caution

1. Significantly different between Ontario graduates and graduates from other provinces within the Class of 2005 ($p<0.05$).
2. Significantly different between the Class of 2005 and the Class of 2000 ($p<0.05$).

Sources: Statistics Canada, National Graduates Survey (Classes of 2005 and 2000).

Table A.9

Aspects of the job which attracted the graduate to the United States by gender, Ontario and Canada without Ontario

	Class of 2005	Class of 2000
	percent	
Ontario		
Both sexes		
Quality of the research facilities / commitment to research	**29**	**20**
Greater availability of jobs in a particular / specialized field / industry	**26**	**18**
Better career advancement opportunities	**27**	**31**
Higher salary	**26**	**28**
Wanted to be where the action is / on the leading edge of a particular industry / field	**12 E**	**17**
Wanted to work with particular colleagues or superiors	**14**	**18**
Men		
Quality of the research facilities / commitment to research	24	17 E
Greater availability of jobs in a particular / specialized field / industry	26	24
Better career advancement opportunities	27	27
Higher salary	29	29
Wanted to be where the action is / on the leading edge of a particular industry / field	13 E	18 E
Wanted to work with particular colleagues or superiors	17 E	17 E
Women		
Quality of the research facilities / commitment to research	37	29 E
Greater availability of jobs in a particular / specialized field / industry	25 E	x
Better career advancement opportunities	28	39
Higher salary	20 E	25 E
Wanted to be where the action is / on the leading edge of a particular industry / field	x	x
Wanted to work with particular colleagues or superiors	x	21 E
Canada without Ontario		
Both sexes		
Quality of the research facilities / commitment to research	**40**	**30**
Greater availability of jobs in a particular / specialized field / industry	**27**	**20**
Better career advancement opportunities	**21**	**23**
Higher salary	**14 1**	**32 2**
Wanted to be where the action is / on the leading edge of a particular industry / field	**21**	**18**
Wanted to work with particular colleagues or superiors	**18**	**12 E**
Men		
Quality of the research facilities / commitment to research	44	32
Greater availability of jobs in a particular / specialized field / industry	26	18 E
Better career advancement opportunities	21	22
Higher salary	12 E	35
Wanted to be where the action is / on the leading edge of a particular industry / field	20 E	20 E
Wanted to work with particular colleagues or superiors	15 E	11 E
Women		
Quality of the research facilities / commitment to research	31 E	27 E
Greater availability of jobs in a particular / specialized field / industry	32 E	26 E
Better career advancement opportunities	19 E	25 E
Higher salary	18 E	26 E
Wanted to be where the action is / on the leading edge of a particular industry / field	21 E	x
Wanted to work with particular colleagues or superiors	27 E	x

x suppressed to meet the confidentiality requirements of the *Statistics Act*

E use with caution

1. Significantly different between Ontario graduates and graduates from other provinces within the Class of 2005 ($p<0.05$).
2. Significantly different between the Class of 2005 and the Class of 2000 ($p<0.05$).

Note: Percentages do not sum up to 100 since multiple responses were permitted.

Sources: Statistics Canada, National Graduates Survey (Classes of 2005 and 2000).

Table A.10

Graduate had a job to start upon arrival in the United States by gender, Ontario and Canada without Ontario

	Class of 2005	Class of 2000
	percent	
Ontario		
Gender		
Male	94	90
Female	91	66 [1]
All fields of study	**93**	**82** [1]
Life sciences	98	77 [1]
Engineering	86	87
Computer, mathematics and physical sciences	100	93
Psychology and social sciences	93	88
Humanities	94	89
Education and other fields of study	74	x
Canada without Ontario		
Gender		
Male	93	84
Female	85	70
All fields of study	**90**	**79** [1]
Life sciences	94	78 [1]
Engineering	80	74
Computer, mathematics and physical sciences	97	87
Psychology and social sciences	85	70
Humanities	88	66
Education and other fields of study	63 [E]	100

x suppressed to meet the confidentiality requirements of the *Statistics Act*

[E] use with caution

1. Significantly different between the Class of 2005 and the Class of 2000 ($p<0.05$).

Sources: Statistics Canada, National Graduates Survey (Classes of 2005 and 2000).

Table A.11

Proportion of graduates who were employed in the survey reference week by country of residence, Ontario graduates and graduates from Canada without Ontario

	Class of 2005	Class of 2000
	percent	
Graduates lived in the United States		
Ontario		
All fields of study	**92**	**93**
Life sciences	92	91
Engineering	86	100 [1]
Computer, mathematics and physical sciences	91	93
Psychology and social sciences	93	100 [1]
Humanities	94	67 [1]
Education and other fields of study	100	100
Gender		
Men	90	95
Women	94	88
Canada without Ontario		
All fields of study	**92**	**89**
Life sciences	94	85
Engineering	100	90
Computer, mathematics and physical sciences	97	97
Psychology and social sciences	86	77
Humanities	67	94
Education and other fields of study	87	100
Gender		
Men	95	92
Women	87	83
Graduates lived in Canada		
Ontario		
All fields of study	**90**	**88**
Life sciences	92	89
Engineering	89	95
Computer, mathematics and physical sciences	92	92
Psychology and social sciences	94	89 [1]
Humanities	79	75
Education and other fields of study	92	92
Gender		
Men	90	91
Women	90	85 [1]
Canada without Ontario		
All fields of study	**87**	**88**
Life sciences	84	87
Engineering	89	90
Computer, mathematics and physical sciences	88	89
Psychology and social sciences	92	89
Humanities	80	79
Education and other fields of study	92	95
Gender		
Men	87	89
Women	88	86

1. Significantly different between the Class of 2005 and the Class of 2000 ($p<0.05$).

Sources: Statistics Canada, National Graduates Survey (Classes of 2005 and 2000).

Table A.12

Intention to return to Canada for doctoral graduates who lived in the United States, Ontario and Canada without Ontario

	Class of 2005	Class of 2000
	percent	
Intended to return to Canada		
Ontario		
All fields of study	**77**	**82**
Life sciences	79	89
Engineering	100	71 [2]
Computer, mathematics and physical sciences	62	73
Psychology and social sciences	73	86
Humanities	91	86
Education and other fields of study	52 [E]	71
Canada without Ontario		
All fields of study	**87**	**83**
Life sciences	87	88
Engineering	100	87
Computer, mathematics and physical sciences	87	69
Psychology and social sciences	90	100
Humanities	100	100
Education and other fields of study	x	x
Intended to return in five years or less		
Ontario		
All fields of study	**80**	**73**
Life sciences	95	81
Engineering	71	x
Computer, mathematics and physical sciences	80	100 [2]
Psychology and social sciences	74	58
Humanities	x	x
Education and other fields of study	x	x
Canada without Ontario		
All fields of study	**84**	**81**
Life sciences	87	85
Engineering	x	x
Computer, mathematics and physical sciences	100 [1]	93
Psychology and social sciences	100 [1]	x
Humanities	x	72
Education and other fields of study	x	..

.. not available for a specific reference period

x suppressed to meet the confidentiality requirements of the *Statistics Act*

[E] use with caution

1. Significantly different between Ontario graduates and graduates from other provinces within the Class of 2005 ($p<0.05$).
2. Significantly different between the Class of 2005 and the Class of 2000 ($p<0.05$).

Sources: Statistics Canada, National Graduates Survey (Classes of 2005 and 2000).

Table A.13.1
Migration in and out of province of study by field of study, Ontario and Canada without Ontario

	Class of 2005	Class of 2000	Class of 1995
	percent		
Ontario			
All fields of study			
Non-migrant	**74**	**76**	**68**
Migrant before graduation, returning to province of origin	**4**	**5**	**1 E**
Migrant before graduation, not returning to province of origin	**8**	**6**	**24**
Migrant after graduation, not before	**12**	**11**	**6**
Migrant before and after graduation, not returning to province of origin	**3**	**2**	**3**
Life sciences			
Non-migrant	76	75	68
Migrant before graduation, returning to province of origin	4 E	4 E	x
Migrant before graduation, not returning to province of origin	6 E	6 E	21
Migrant after graduation, not before	12	11	8
Migrant before and after graduation, not returning to province of origin	x	4 E	x
Engineering			
Non-migrant	79	86	61
Migrant before graduation, returning to province of origin	x	x	x
Migrant before graduation, not returning to province of origin	7 E	x	30
Migrant after graduation, not before	10 E	x	6 E
Migrant before and after graduation, not returning to province of origin	..	..	x
Computer, mathematics and physical sciences			
Non-migrant	63	76	70
Migrant before graduation, returning to province of origin	x	x	..
Migrant before graduation, not returning to province of origin	12	8 E	22
Migrant after graduation, not before	15	10 E	5 E
Migrant before and after graduation, not returning to province of origin	7 E	x	3 E
Psychology and social sciences			
Non-migrant	71	76	72
Migrant before graduation, returning to province of origin	5	6	x
Migrant before graduation, not returning to province of origin	9	6	21
Migrant after graduation, not before	15	10	4
Migrant before and after graduation, not returning to province of origin	x	x	3 E
Humanities			
Non-migrant	61	68	60
Migrant before graduation, returning to province of origin	6 E	x	x
Migrant before graduation, not returning to province of origin	13	7 E	26
Migrant after graduation, not before	16	19	9
Migrant before and after graduation, not returning to province of origin	4 E	x	4 E
Education and other fields of study			
Non-migrant	91	75	74
Migrant before graduation, returning to province of origin	x	12 E	..
Migrant before graduation, not returning to province of origin	x	x	25
Migrant after graduation, not before	4 E	7 E	..
Migrant before and after graduation, not returning to province of origin	x	x	x

Table A.13.1 (concluded)

Migration in and out of province of study by field of study, Ontario and Canada without Ontario

	Class of 2005	Class of 2000	Class of 1995
		percent	
Canada without Ontario			
All fields of study			
Non-migrant	**68** [1]	**70**	**67**
Migrant before graduation, returning to province of origin	**7** [1]	**5**	**1**
Migrant before graduation, not returning to province of origin	**7**	**7**	**24**
Migrant after graduation, not before	**16** [1]	**14**	**5**
Migrant before and after graduation, not returning to province of origin	**3**	**4**	**3**
Life sciences			
Non-migrant	68 [1]	75	67
Migrant before graduation, returning to province of origin	8	4 [E]	x
Migrant before graduation, not returning to province of origin	7	6 [E]	23
Migrant after graduation, not before	14	11	5
Migrant before and after graduation, not returning to province of origin	3	4 [E]	4
Engineering			
Non-migrant	67 [1]	74	53
Migrant before graduation, returning to province of origin	x	6 [E]	..
Migrant before graduation, not returning to province of origin	x	7 [E]	36
Migrant after graduation, not before	23 [1]	8 [E]	6 [E]
Migrant before and after graduation, not returning to province of origin	x	F	5
Computer, mathematics and physical sciences			
Non-migrant	63	60	58
Migrant before graduation, returning to province of origin	8 [E]	x	x
Migrant before graduation, not returning to province of origin	11	10 [E]	30
Migrant after graduation, not before	15	25	7
Migrant before and after graduation, not returning to province of origin	x	x	3 [E]
Psychology and social sciences			
Non-migrant	71	64	79
Migrant before graduation, returning to province of origin	5 [E]	8	x
Migrant before graduation, not returning to province of origin	8	7	15
Migrant after graduation, not before	14	17	4
Migrant before and after graduation, not returning to province of origin	2 [E]	4 [E]	x
Humanities			
Non-migrant	64	67	73
Migrant before graduation, returning to province of origin	8 [E]	10 [E]	x
Migrant before graduation, not returning to province of origin	6 [E]	9	18
Migrant after graduation, not before	16	9 [E]	7
Migrant before and after graduation, not returning to province of origin	6 [E]	6 [E]	x
Education and other fields of study			
Non-migrant	69 [1]	71	74
Migrant before graduation, returning to province of origin	9	5 [E]	x
Migrant before graduation, not returning to province of origin	4 [E]	4 [E]	20
Migrant after graduation, not before	16	17 [E]	3 [E]
Migrant before and after graduation, not returning to province of origin	x	3 [E]	x

.. not available for a specific reference period

x suppressed to meet the confidentiality requirements of the *Statistics Act*

[E] use with caution

1. Significantly different between Ontario graduates and graduates from other provinces within the Class of 2005 ($p<0.05$).

Notes: Excludes graduates who had lived outside of Canada before their studies or at the time of the interview.

Although data on the interprovincial mobility of graduates from the Classes of 2000 and 1995 are included in this table, the historical comparability of this information may be affected due to different manners in which the province of residence at the time of interview was derived. Therefore, no comparative analysis was done with previous cohorts.

Percentages may not sum up to 100 due to rounding.

Sources: Statistics Canada, National Graduates Survey (Classes of 2005, 2000 and 1995).

Table A.13.2

Migration in and out of province of study by gender and by immigration status, Ontario and Canada without Ontario

	Class of 2005	Class of 2000	Class of 1995
	percent		
Ontario			
Men			
Non-migrant	74	76	64
Migrant before graduation, returning to province of origin	5	5	x
Migrant before graduation, not returning to province of origin	8	6	27
Migrant after graduation, not before	11	11	6
Migrant before and after graduation, not returning to province of origin	3	1	3
Women			
Non-migrant	73	77	74
Migrant before graduation, returning to province of origin	4	5	x
Migrant before graduation, not returning to province of origin	7	5	17
Migrant after graduation, not before	14	10	5
Migrant before and after graduation, not returning to province of origin	2 E	3	3
Canadian-born			
Non-migrant	72	74	..
Migrant before graduation, returning to province of origin	5	6	..
Migrant before graduation, not returning to province of origin	8	6	..
Migrant after graduation, not before	12	12	..
Migrant before and after graduation, not returning to province of origin	3	2	..
Foreign-born			
Non-migrant	78	82	..
Migrant before graduation, returning to province of origin	3 E	3	..
Migrant before graduation, not returning to province of origin	6	5	..
Migrant after graduation, not before	12	8	..
Migrant before and after graduation, not returning to province of origin	x	x	..
Canada without Ontario			
Men			
Non-migrant	64	67	63
Migrant before graduation, returning to province of origin	7	6	1 E
Migrant before graduation, not returning to province of origin	6	7	26
Migrant after graduation, not before	18	16	7
Migrant before and after graduation, not returning to province of origin	4	5	4
Women			
Non-migrant	71	75	76
Migrant before graduation, returning to province of origin	7	5	1 E
Migrant before graduation, not returning to province of origin	7	6	20
Migrant after graduation, not before	13	11	3
Migrant before and after graduation, not returning to province of origin	2 E	3	x
Canadian-born			
Non-migrant	67	69	..
Migrant before graduation, returning to province of origin	8	6	..
Migrant before graduation, not returning to province of origin	8	7	..
Migrant after graduation, not before	13	13	..
Migrant before and after graduation, not returning to province of origin	3	5	..
Foreign-born			
Non-migrant	69	73	..
Migrant before graduation, returning to province of origin	4	3	..
Migrant before graduation, not returning to province of origin	3 E	6	..
Migrant after graduation, not before	22	16	..
Migrant before and after graduation, not returning to province of origin	2 E	x	..

.. not available for a specific reference period
x suppressed to meet the confidentiality requirements of the *Statistics Act*
E use with caution

Notes: Excludes graduates who had lived outside of Canada before their studies or at the time of the interview.
Although data on the interprovincial mobility of graduates from the Classes of 2000 and 1995 are included in this table, the historical comparability of this information may be affected due to different manners in which the province of residence at the time of interview was derived. Therefore, no comparative analysis was done with previous cohorts.
Percentages may not sum up to 100 due to rounding.

Sources: Statistics Canada, National Graduates Survey (Classes of 2005, 2000 and 1995).

Table A.14.1

Labour force activity of doctoral graduates two years after graduation by field of study, Ontario and Canada without Ontario

	Class of 2005	Class of 2000	Class of 1995
		percent	
Ontario			
All fields of study			
In education	..	1 [E]	..
Employee	86	83 [2]	79 [3]
Self-employed	4	6	6 [3]
Unemployed	6	7	8 [3]
Out of the labour force	3	3	4 [3]
Life sciences			
In education	x	3 [E]	..
Employee	88	84	77 [3]
Self-employed	4	6 [E]	7
Unemployed	4	5 [E]	8 [3]
Out of the labour force	2 [E]	3 [E]	6 [3]
Engineering			
In education	..	x	..
Employee	86	90	87
Self-employed	x	6 [E]	x
Unemployed	9	x	5 [E]
Out of the labour force	x	..	x
Computer, mathematics and physical sciences			
In education	..	x	..
Employee	91	88	81 [3]
Self-employed	x	5 [E]	5 [E]
Unemployed	6 [E]	6 [E]	8
Out of the labour force	x	x	5 [E]
Psychology and social sciences			
In education	x	..	..
Employee	86	81	79 [3]
Self-employed	7	8	9
Unemployed	5	7	8
Out of the labour force	x	3 [E]	x
Humanities			
In education	..	x	..
Employee	76	68	72
Self-employed	5 [E]	7 [E]	9
Unemployed	15 [E]	16	11
Out of the labour force	5 [E]	9 [E]	x
Education and other fields of study			
In education	..	..	..
Employee	86	87	78 [3]
Self-employed	7 [E]	4 [E]	7
Unemployed	4 [E]	x	11
Out of the labour force	4 [E]	5 [E]	x

Table A.14.1 (concluded)

Labour force activity of doctoral graduates two years after graduation by field of study, Ontario and Canada without Ontario

	Class of 2005	Class of 2000	Class of 1995
	percent		
Canada without Ontario			
All fields of study			
In education	**2**	**2 E**	**..**
Employee	**81 1**	**75 2**	**77 3**
Self-employed	**6**	**13 2**	**9**
Unemployed	**7**	**6**	**7**
Out of the labour force	**4**	**4**	**6**
Life sciences			
In education	4	5 E	..
Employee	81 1	65 2	76
Self-employed	3	21 2	10 E
Unemployed	6	5 E	4
Out of the labour force	4	4 E	9
Engineering			
In education	x	..	..
Employee	87	87	83
Self-employed	x	3 E	4 E
Unemployed	8	10 E	7
Out of the labour force	x	..	3 E
Computer, mathematics and physical sciences			
In education	..	x	..
Employee	87	88	83
Self-employed	3 E	x	6
Unemployed	6 E	6 E	4
Out of the labour force	4 E	x	6
Psychology and social sciences			
In education	..	x	..
Employee	78 1	78	73
Self-employed	12 1	11	13
Unemployed	6	6 E	8
Out of the labour force	3 E	5 E	x
Humanities			
In education	x	x	..
Employee	71	70	66
Self-employed	8	10	7
Unemployed	16	12	19
Out of the labour force	5 E	5 E	7
Education and other fields of study			
In education	x	..	..
Employee	82	84	79
Self-employed	10	11	9
Unemployed	3 E	4 E	7
Out of the labour force	4 E	x	4

.. not available for a specific reference period

x suppressed to meet the confidentiality requirements of the *Statistics Act*

E use with caution

1. Significantly different between Ontario graduates and graduates from other provinces within the Class of 2005 ($p<0.05$).
2. Significantly different between the Class of 2005 and the Class of 2000 ($p<0.05$).
3. Significantly different between the Class of 2005 and the Class of 1995 ($p<0.05$).

Note: Percentages may not sum up to 100 due to rounding.

Sources: Statistics Canada, National Graduates Survey (Classes of 2005, 2000 and 1995).

Table A.14.2

Proportion of Canadian-born and foreign-born graduates who were employed by field of study, Ontario and Canada without Ontario

	Class of 2005	Class of 2000
	percent	
Ontario		
All fields of study		
Canadian-born	**92**	**90**
Foreign-born	**88**	**88**
Life sciences		
Canadian-born	94	89
Foreign-born	88	92
Engineering		
Canadian-born	97	98
Foreign-born	85	94 [2]
Computer, mathematics and physical sciences		
Canadian-born	95	96
Foreign-born	87	87
Psychology and social sciences		
Canadian-born	92	90
Foreign-born	97	92
Humanities		
Canadian-born	81	79
Foreign-born	79	62 [2]
Education and other fields of study		
Canadian-born	93	93
Foreign-born	95	90
Canada without Ontario		
All fields of study		
Canadian-born	**88** [1]	**89**
Foreign-born	**88**	**86**
Life sciences		
Canadian-born	87 [1]	87
Foreign-born	84	86
Engineering		
Canadian-born	95	95
Foreign-born	88	88
Computer, mathematics and physical sciences		
Canadian-born	89	94
Foreign-born	91	87
Psychology and social sciences		
Canadian-born	92	88
Foreign-born	90	88
Humanities		
Canadian-born	76	82
Foreign-born	93 [1]	75 [2]
Education and other fields of study		
Canadian-born	94	96
Foreign-born	88	93

1. Significantly different between Ontario graduates and graduates from other provinces within the Class of 2005 ($p<0.05$).
2. Significantly different between the Class of 2005 and the Class of 2000 ($p<0.05$).

Note: Excludes the Class of 1995 for which questions on country of birth were not asked.

Sources: Statistics Canada, National Graduates Survey (Classes of 2005 and 2000).

Table A.14.3
Full-time employment by gender and field of study, Ontario and Canada without Ontario

	Class of 2005	Class of 2000	Class of 1995
		percent	
Ontario			
Men			
All fields of study	**81**	**82**	**83**
Life sciences	89	84	84
Engineering	86	92	88
Computer, mathematics and physical sciences	83	88	85
Psychology and social sciences	81	72	82
Humanities	60	64	71
Education and other fields of study	82	89	79
Women			
All fields of study	**78**	**71** [2]	**74**
Life sciences	88	83	78 [3]
Engineering	76	100 [2]	87
Computer, mathematics and physical sciences	85	76	75
Psychology and social sciences	76	72	76
Humanities	65	53	67
Education and other fields of study	72	65	71
Canada without Ontario			
Men			
All fields of study	**81**	**85** [2]	**83**
Life sciences	84	85	86
Engineering	89	92	84
Computer, mathematics and physical sciences	85	87	86
Psychology and social sciences	69 [1]	74	83 [3]
Humanities	64	77 [2]	66
Education and other fields of study	75	85	84
Women			
All fields of study	**73** [1]	**76**	**73**
Life sciences	79 [1]	82	79
Engineering	70	76	89
Computer, mathematics and physical sciences	76	82	87
Psychology and social sciences	74	74	71
Humanities	56	51	44
Education and other fields of study	70	84 [2]	79 [3]

1. Significantly different between Ontario graduates and graduates from other provinces within the Class of 2005 ($p<0.05$).
2. Significantly different between the Class of 2005 and the Class of 2000 ($p<0.05$).
3. Significantly different between the Class of 2005 and the Class of 1995 ($p<0.05$).

Sources: Statistics Canada, National Graduates Survey (Classes of 2005, 2000 and 1995).

Table A.15
Unemployment rate by field of study, Ontario and Canada without Ontario

	Class of 2005	Class of 2000	Class of 1995
		percent	
Ontario			
All fields of study	**7**	**7**	**9**
Life sciences	4	5 [E]	9 [1]
Engineering	9	x	6 [E]
Computer, mathematics and physical sciences	6 [E]	6 [E]	8
Psychology and social sciences	5	7	8
Humanities	15 [E]	17	12
Education and other fields of study	4 [E]	x	11
Gender			
Men	7	6	8
Women	6	9	10 [1]
Canada without Ontario			
All fields of study	**7**	**7**	**8**
Life sciences	6	5 [E]	4
Engineering	9	10 [E]	7
Computer, mathematics and physical sciences	6 [E]	7 [E]	5
Psychology and social sciences	6	6 [E]	8
Humanities	16	13	21
Education and other fields of study	3 [E]	4 [E]	7
Gender			
Men	8	6	7
Women	6	7	10 [1]

[E] use with caution

1. Significantly different between the Class of 2005 and the Class of 1995 ($p<0.05$).

Sources: Statistics Canada, National Graduates Survey (Classes of 2005, 2000 and 1995).

Table A.16
Rate of part-time employment by field of study, Ontario and Canada without Ontario

	Class of 2005	Class of 2000	Class of 1995
		percent	
Ontario			
All fields of study	**6**	**7**	**5**
Life sciences	2 [E]	4 [E]	x
Engineering	x	x	x
Computer, mathematics and physical sciences	x	x	x
Psychology and social sciences	9	14	10
Humanities	10	11	10
Education and other fields of study	9	10	10
Gender			
Men	4	6	4
Women	7	9	9
Canada without Ontario			
All fields of study	**7**	**5**	**6**
Life sciences	4	3 [E]	3 [E]
Engineering	x	..	x
Computer, mathematics and physical sciences	5 [E]	x	x
Psychology and social sciences	15 [1]	13	11
Humanities	13	14	14
Education and other fields of study	9	7 [E]	6
Gender			
Men	4	4	4
Women	11	8	9

.. not available for a specific reference period

x suppressed to meet the confidentiality requirements of the *Statistics Act*

[E] use with caution

1. Significantly different between Ontario graduates and graduates from other provinces within the Class of 2005 ($p<0.05$).

Sources: Statistics Canada, National Graduates Survey (Classes of 2005, 2000 and 1995).

Table A.17.1

Median earnings (in 2007 constant dollars) of doctoral graduates who were employed full-time, by field of study and gender, Ontario and Canada without Ontario

	Class of 2005	Class of 2000	Class of 1995
		dollars	
Ontario			
All fields of study			
Both sexes	**67,500**	**64,670**	**59,204** [3]
Men	**68,000**	**64,670**	**59,204** [3]
Women	**67,000**	**62,965** [2]	**61,670** [3]
Life sciences			
Both sexes	**58,000**	**49,283** [2]	**47,462** [3]
Men	52,000	47,388	48,525
Women	60,000	50,175 [2]	44,896 [3]
Engineering			
Both sexes	**73,000**	**85,855** [2]	**67,837**
Men	74,194	85,855 [2]	68,454
Women	68,000	90,873	64,137
Computer, mathematics and physical sciences			
Both sexes	**63,000**	**65,228**	**57,970**
Men	60,242	66,900	59,204
Women	65,000	55,750	55,503
Psychology and social sciences			
Both sexes	**71,000**	**66,900** [2]	**61,670** [3]
Men	72,000	62,106 [2]	60,437 [3]
Women	70,000	68,211	62,904 [3]
Humanities			
Both sexes	**60,000**	**54,635** [2]	**49,336** [3]
Men	61,000	54,635 [2]	49,336 [3]
Women	57,000	54,914	50,570 [3]
Education and other fields of study			
Both sexes	**80,000**	**72,475** [2]	**76,471**
Men	84,000	78,050	77,705 [3]
Women	80,000	66,900 [2]	72,771 [3]

Table A.17.1 (concluded)

Median earnings (in 2007 constant dollars) of doctoral graduates who were employed full-time, by field of study and gender, Ontario and Canada without Ontario

	Class of 2005	Class of 2000	Class of 1995
		dollars	
Canada without Ontario			
All fields of study			
Both sexes	**62,000** [1]	**61,325**	**57,970** [3]
Men	**65,000** [1]	**61,325** [2]	**57,970** [3]
Women	**60,000** [1]	**60,210**	**55,503** [3]
Life sciences			
Both sexes	**50,400** [1]	**55,750** [2]	**49,336**
Men	47,000	55,634 [2]	49,336
Women	55,000	57,980	49,336
Engineering			
Both sexes	**69,000**	**66,900**	**61,670** [3]
Men	70,000	68,238	61,670 [3]
Women	62,000	61,325	x
Computer, mathematics and physical sciences			
Both sexes	**59,140**	**64,224** [2]	**55,257**
Men	61,932	62,329	53,037 [3]
Women	57,000 [1]	68,211 [2]	61,670
Psychology and social sciences			
Both sexes	**63,000** [1]	**61,325**	**61,670**
Men	68,000	61,325	64,137 [3]
Women	60,000 [1]	61,325	60,930
Humanities			
Both sexes	**61,500**	**57,980**	**57,970**
Men	65,000 [1]	60,210	57,970 [3]
Women	56,000	56,865	53,283
Education and other fields of study			
Both sexes	**78,000**	**66,900** [2]	**67,729** [3]
Men	84,000	72,475 [2]	66,604 [3]
Women	75,000 [1]	59,095 [2]	67,729 [3]

x suppressed to meet the confidentiality requirements of the *Statistics Act*

1. Significantly different between Ontario graduates and graduates from other provinces within the Class of 2005 ($p<0.05$).
2. Significantly different between the Class of 2005 and the Class of 2000 ($p<0.05$).
3. Significantly different between the Class of 2005 and the Class of 1995 ($p<0.05$).

Sources: Statistics Canada, National Graduates Survey (Classes of 2005, 2000 and 1995).

Table A.17.2

Earnings (at the 25th, 50th and 75th percentiles) of 2005 doctoral graduates who were employed full-time, by field of study, Ontario and Canada without Ontario

		Confidence limits (95%)	
	Earnings	Lower	Upper
		dollars	
Ontario			
All fields of study			
25th percentile	**51,480**	**49,730**	**53,230**
Median	**67,500**	**66,690**	**68,310**
75th percentile	**80,000**	**79,200**	**80,800**
Life sciences			
25th percentile	42,000	40,824	43,176
Median	58,000	54,752	61,248
75th percentile	76,800	74,496	79,104
Engineering			
25th percentile	61,000	57,340	64,660
Median	73,000	69,934	76,066
75th percentile	86,000	82,560	89,440
Computer, mathematics and physical sciences			
25th percentile	45,161	40,735	49,587
Median	63,000	59,346	66,654
75th percentile	77,600	75,117	80,083
Psychology and social sciences			
25th percentile	60,000	59,280	60,720
Median	71,000	68,870	73,130
75th percentile	82,000	79,868	84,132
Humanities			
25th percentile	48,000	42,816	53,184
Median	60,000	58,200	61,800
75th percentile	68,000	65,960	70,040
Education and other fields of study			
25th percentile	70,000	66,780	73,220
Median	80,000	77,760	82,240
75th percentile	101,000	95,950	106,050

Table A.17.2 (concluded)

Earnings (at the 25th, 50th and 75th percentiles) of 2005 doctoral graduates who were employed full-time, by field of study, Ontario and Canada without Ontario

		Confidence limits (95%)	
	Earnings	Lower	Upper
		dollars	
Canada without Ontario			
All fields of study			
25th percentile	**45,161**	**44,167**	**46,155**
Median	**62,000**	**60,636**	**63,364**
75th percentile	**76,000**	**74,936**	**77,064**
Life sciences			
25th percentile	40,000	39,440	40,560
Median	50,400	48,283	52,517
75th percentile	70,200	68,234	72,166
Engineering			
25th percentile	53,000	50,562	55,438
Median	69,000	66,930	71,070
75th percentile	81,000	76,950	85,050
Computer, mathematics and physical sciences			
25th percentile	48,000	44,832	51,168
Median	59,140	57,484	60,796
75th percentile	72,000	69,408	74,592
Psychology and social sciences			
25th percentile	51,000	49,878	52,122
Median	63,000	61,362	64,638
75th percentile	75,000	72,900	77,100
Humanities			
25th percentile	50,000	46,600	53,400
Median	61,500	58,425	64,575
75th percentile	70,000	68,180	71,820
Education and other fields of study			
25th percentile	65,000	62,530	67,470
Median	78,000	75,348	80,652
75th percentile	100,000	97,200	102,800

Source: Statistics Canada, National Graduates Survey (Class of 2005).

Table A.18

Median earnings (in 2007 constant dollars) of Canadian-born and foreign-born doctoral graduates who were employed full-time by field of study, Ontario and Canada without Ontario

	Class of 2005	Class of 2000
	dollars	
Ontario		
All fields of study		
Canadian-born	**68,000**	**63,555** [2]
Foreign-born	**65,000**	**65,785**
Life sciences		
Canadian-born	58,000	47,388 [2]
Foreign-born	56,989	55,393
Engineering		
Canadian-born	80,000	94,447 [2]
Foreign-born	72,000	81,395
Computer, mathematics and physical sciences		
Canadian-born	63,000	66,900
Foreign-born	65,000	57,534
Psychology and social sciences		
Canadian-born	72,000	66,900 [2]
Foreign-born	68,000	64,276
Humanities		
Canadian-born	61,000	55,193 [2]
Foreign-born	50,000	52,405
Education and other fields of study		
Canadian-born	81,000	72,475 [2]
Foreign-born	78,000	72,475
Canada without Ontario		
All fields of study		
Canadian-born	**64,000** [1]	**61,896**
Foreign-born	**60,000** [1]	**59,095**
Life sciences		
Canadian-born	54,600	57,980
Foreign-born	46,237 [1]	50,175
Engineering		
Canadian-born	70,000 [1]	70,914
Foreign-born	67,000	66,900
Computer, mathematics and physical sciences		
Canadian-born	60,000	66,900
Foreign-born	56,000 [1]	61,325
Psychology and social sciences		
Canadian-born	63,000 [1]	61,896
Foreign-born	60,000 [1]	59,096
Humanities		
Canadian-born	60,000	60,210
Foreign-born	65,000 [1]	57,980
Education and other fields of study		
Canadian-born	80,000	66,900 [2]
Foreign-born	73,000	66,900

1. Significantly different between Ontario graduates and graduates from other provinces within the Class of 2005 ($p<0.05$).
2. Significantly different between the Class of 2005 and the Class of 2000 ($p<0.05$).

Note: Excludes the Class of 1995 for which questions on country of birth were not asked.

Sources: Statistics Canada, National Graduates Survey (Classes of 2005 and 2000).

Table A.19.1

Median earnings (in 2007 constant dollars) of doctoral graduates who were employed full-time by field of study and country of residence two years after graduation, Ontario and Canada without Ontario

	Class of 2005	Class of 2000
	dollars	
Ontario		
All fields of study		
Canada	**68,000**	**64,670** [2]
United States	**56,989**	**61,325**
Life sciences		
Canada	60,000	49,283 [2]
United States	45,161	49,847 [2]
Engineering		
Canada	70,000	83,068 [2]
United States	88,172	111,500 [2]
Computer, mathematics and physical sciences		
Canada	65,000	62,440
United States	51,613	83,953
Psychology and social sciences		
Canada	72,000	66,900 [2]
United States	54,839	62,965
Humanities		
Canada	60,000	55,193 [2]
United States	57,097	x
Education and other fields of study		
Canada	80,000	72,475 [2]
United States	x	x
Canada without Ontario		
All fields of study		
Canada	**64,000** [1]	**61,325**
United States	**48,387**	**56,406** [2]
Life sciences		
Canada	55,000 [1]	56,865
United States	44,086	48,798
Engineering		
Canada	68,500	66,900
United States	x	x
Computer, mathematics and physical sciences		
Canada	60,000	66,900 [2]
United States	53,763	57,718
Psychology and social sciences		
Canada	63,045 [1]	61,325
United States	53,419	x
Humanities		
Canada	61,500	57,980
United States	x	52,471
Education and other fields of study		
Canada	77,000	66,900 [2]
United States	x	x

x suppressed to meet the confidentiality requirements of the *Statistics Act*

1. Significantly different between Ontario graduates and graduates from other provinces within the Class of 2005 ($p<0.05$).
2. Significantly different between the Class of 2005 and the Class of 2000 ($p<0.05$).

Notes: Excludes the Class of 1995.

All earnings are converted to Canadian dollars.

Sources: Statistics Canada, National Graduates Survey (Classes of 2005 and 2000).

Table A.19.2

Earnings (at the 25th, 50th and 75th percentiles) of 2005 doctoral graduates who were employed full-time, by field of study and country of residence in 2007, Ontario and Canada without Ontario

		Confidence limits (95%)	
	Earnings	Lower	Upper
	dollars		
Ontario			
All fields of study			
Lived in Canada			
25th percentile	**54,000**	**52,380**	**55,620**
Median	**68,000**	**67,048**	**68,952**
75th percentile	**80,000**	**79,200**	**80,800**
Lived in the United States			
25th percentile	**45,000**	**43,650**	**46,350**
Median	**56,989**	**53,000**	**60,978**
75th percentile	**77,419**	**67,664**	**87,174**
Life sciences			
Lived in Canada			
25th percentile	42,000	40,320	43,680
Median	60,000	57,240	62,760
75th percentile	77,287	74,659	79,915
Lived in the United States			
25th percentile	43,011	40,602	45,420
Median	45,161	43,535	46,787
75th percentile	64,516	53,677	75,355
Engineering			
Lived in Canada			
25th percentile	60,000	56,040	63,960
Median	70,000	67,480	72,520
75th percentile	85,000	82,280	87,720
Lived in the United States			
25th percentile	x	...	...
Median	88,172	75,828	100,516
75th percentile	x	...	...
Computer, mathematics and physical sciences			
Lived in Canada			
25th percentile	48,000	42,816	53,184
Median	65,000	60,840	69,160
75th percentile	77,000	74,844	79,156
Lived in the United States			
25th percentile	x	...	...
Median	51,613	40,774	62,452
75th percentile	x	...	...
Psychology and social sciences			
Lived in Canada			
25th percentile	60,000	57,960	62,040
Median	72,000	69,840	74,160
75th percentile	83,200	80,704	85,696
Lived in the United States			
25th percentile	x	...	...
Median	54,839	48,368	61,310
75th percentile	x	...	...
Humanities			
Lived in Canada			
25th percentile	45,000	40,230	49,770
Median	60,000	58,200	61,800
75th percentile	68,000	65,280	70,720
Lived in the United States			
25th percentile	x	...	...
Median	57,097	51,616	62,578
75th percentile	x	...	...

Table A.19.2 (continued)

Earnings (at the 25th, 50th and 75th percentiles) of 2005 doctoral graduates who were employed full-time, by field of study and country of residence in 2007, Ontario and Canada without Ontario

		Confidence limits (95%)	
	Earnings	Lower	Upper
		dollars	
Education and other fields of study			
Lived in Canada			
25th percentile	70,000	66,780	73,220
Median	80,000	78,240	81,760
75th percentile	100,000	94,000	106,000
Lived in the United States			
25th percentile	x	...	...
Median	x	...	...
75th percentile	x	...	...
Canada without Ontario			
All fields of study			
Lived in Canada			
25th percentile	**49,400**	**47,918**	**50,882**
Median	**64,000**	**63,104**	**64,896**
75th percentile	**77,000**	**76,076**	**77,924**
Lived in the United States			
25th percentile	**40,860**	**39,552**	**42,168**
Median	**48,387**	**45,097**	**51,677**
75th percentile	**69,892**	**64,580**	**75,204**
Life sciences			
Lived in Canada			
25th percentile	40,000	39,120	40,880
Median	55,000	53,020	56,980
75th percentile	75,000	72,900	77,100
Lived in the United States			
25th percentile	40,000	39,280	40,720
Median	44,086	42,763	45,409
75th percentile	52,000	45,240	58,760
Engineering			
Lived in Canada			
25th percentile	52,500	48,510	56,490
Median	68,500	66,171	70,829
75th percentile	80,000	76,320	83,680
Lived in the United States			
25th percentile	x	...	...
Median	x	...	...
75th percentile	x	...	...
Computer, mathematics and physical sciences			
Lived in Canada			
25th percentile	50,000	47,500	52,500
Median	60,000	57,960	62,040
75th percentile	73,480	70,835	76,125
Lived in the United States			
25th percentile	40,000	33,360	46,640
Median	53,763	49,247	58,279
75th percentile	69,892	48,645	91,139
Psychology and social sciences			
Lived in Canada			
25th percentile	52,000	50,440	53,560
Median	63,045	61,532	64,558
75th percentile	75,000	73,200	76,800
Lived in the United States			
25th percentile	x	...	...
Median	53,419	49,039	57,799
75th percentile	x	...	...

Table A.19.2 (concluded)

Earnings (at the 25th, 50th and 75th percentiles) of 2005 doctoral graduates who were employed full-time, by field of study and country of residence in 2007, Ontario and Canada without Ontario

		Confidence limits (95%)	
	Earnings	Lower	Upper
		dollars	
Humanities			
Lived in Canada			
25th percentile	50,000	46,400	53,600
Median	61,500	58,548	64,452
75th percentile	70,000	68,460	71,540
Lived in the United States			
25th percentile	x	...	...
Median	x	...	...
75th percentile	x	...	...
Education and other fields of study			
Lived in Canada			
25th percentile	65,000	63,310	66,690
Median	77,000	74,690	79,310
75th percentile	96,000	91,392	100,608
Lived in the United States			
25th percentile	x	...	...
Median	x	...	...
75th percentile	x	...	...

... not applicable

x suppressed to meet the confidentiality requirements of the *Statistics Act*

Source: Statistics Canada, National Graduates Survey (Class of 2005).

Table A.20

Proportion of doctoral graduates overqualified for current job, defined using two different definitions, by field of study, Ontario and Canada without Ontario

	Class of 2005	Class of 2000	Class of 1995
		percent	
Ontario			
Subjective definition			
All fields of study	**17**	**19**	**21** [3]
Life sciences	13	20	15
Engineering	27	15 [E]	31
Computer, mathematics and physical sciences	15	13 [E]	20
Psychology and social sciences	14	19	13
Humanities	11	28 [2]	24 [3]
Education and other fields of study	28	18 [2]	29
Objective definition			
All fields of study	**27**	**51** [2]	**34** [3]
Life sciences	18	44 [2]	32 [E]
Engineering	37	55 [2]	40
Computer, mathematics and physical sciences	22	47 [2]	34 [3]
Psychology and social sciences	22	50 [2]	22
Humanities	24	54 [2]	34
Education and other fields of study	50	64 [2]	49
Canada without Ontario			
Subjective definition			
All fields of study	**20** [1]	**20**	**22**
Life sciences	16	14	18
Engineering	30	30	27
Computer, mathematics and physical sciences	19	13 [E]	17
Psychology and social sciences	23 [1]	17	23
Humanities	25 [1]	25	31
Education and other fields of study	16 [1]	30 [2]	26 [3]
Objective definition			
All fields of study	**32** [1]	**46** [2]	**37** [3]
Life sciences	22	41 [2]	28 [E]
Engineering	45	51	45
Computer, mathematics and physical sciences	25	37 [2]	31
Psychology and social sciences	36 [1]	49 [2]	40
Humanities	43 [1]	48	47
Education and other fields of study	38 [1]	61	45

[E] use with caution

1. Significantly different between Ontario graduates and graduates from other provinces within the Class of 2005 ($p<0.05$).
2. Significantly different between the Class of 2005 and the Class of 2000 ($p<0.05$).
3. Significantly different between the Class of 2005 and the Class of 1995 ($p<0.05$).

Note: Subjective definition: self-reported indicator; objective definition: derived variable comparing job requirements to level of education.

Sources: Statistics Canada, National Graduates Survey (Classes of 2005, 2000 and 1995).

Table A.21.1

Median earnings (in 2007 constant dollars) of doctoral graduates who reported being overqualified for their job, by field of study, Ontario and Canada without Ontario

	Class of 2005	Class of 2000	Class of 1995
		dollars	
Ontario			
All fields of study			
Overqualified	**66,000**	**57,980** [2]	**61,670** [3]
Not overqualified	**67,500**	**65,589**	**59,204** [3]
Life sciences			
Overqualified	60,000	46,830 [2]	43,169 [3]
Not overqualified	55,000	50,175	49,336
Engineering			
Overqualified	72,000	F	65,371
Not overqualified	74,194	88,085 [2]	69,688
Computer, mathematics and physical sciences			
Overqualified	63,000	66,900	61,670
Not overqualified	63,000	65,228	56,737
Psychology and social sciences			
Overqualified	68,000	65,005	59,204 [3]
Not overqualified	70,000	66,900	61,670 [3]
Humanities			
Overqualified	45,000	51,848	51,803
Not overqualified	61,000	55,750 [2]	49,336 [3]
Education and other fields of study			
Overqualified	75,000	62,571	80,171
Not overqualified	84,000	72,475 [2]	74,004 [3]
Canada without Ontario			
All fields of study			
Overqualified	**60,000** [1]	**60,210**	**55,503** [3]
Not overqualified	**63,000** [1]	**59,024** [2]	**57,970** [3]
Life sciences			
Overqualified	55,000	53,520	49,336
Not overqualified	50,000	52,182	49,336
Engineering			
Overqualified	66,000	61,325	59,204
Not overqualified	69,000	69,130	64,137 [3]
Computer, mathematics and physical sciences			
Overqualified	56,000	61,325	49,336
Not overqualified	59,140	65,589 [2]	55,257
Psychology and social sciences			
Overqualified	61,000 [1]	55,750	55,503
Not overqualified	63,045 [1]	61,325	61,670
Humanities			
Overqualified	50,500	65,785 [2]	53,283
Not overqualified	65,000 [1]	56,865 [2]	57,970 [3]
Education and other fields of study			
Overqualified	65,000 [1]	66,900	65,371
Not overqualified	80,000	66,900 [2]	67,837 [3]

F too unreliable to be published
1. Significantly different between Ontario graduates and graduates from other provinces within the Class of 2005 ($p<0.05$).
2. Significantly different between the Class of 2005 and the Class of 2000 ($p<0.05$).
3. Significantly different between the Class of 2005 and the Class of 1995 ($p<0.05$).

Notes: Definition based on respondent's self identified perception.
Only includes respondents who worked full-time.

Sources: Statistics Canada, National Graduates Survey (Classes of 2005, 2000 and 1995).

Table A.21.2

Earnings (at the 25th, 50th and 75th percentiles) of 2005 doctoral graduates who reported being overqualified for their job in 2007 by field of study, Ontario and Canada without Ontario

		Confidence limits (95%)	
	Earnings	Lower	Upper
	dollars		
Ontario			
All fields of study			
Overqualified			
25th percentile	**50,000**	**46,700**	**53,300**
Median	**66,000**	**63,888**	**68,112**
75th percentile	**80,000**	**77,920**	**82,080**
Not overqualified			
25th percentile	**51,613**	**49,652**	**53,574**
Median	**67,500**	**66,285**	**68,715**
75th percentile	**80,000**	**79,520**	**80,480**
Life sciences			
Overqualified			
25th percentile	41,886	38,116	45,656
Median	60,000	54,480	65,520
75th percentile	70,000	64,820	75,180
Not overqualified			
25th percentile	42,000	40,824	43,176
Median	55,000	51,370	58,630
75th percentile	75,000	72,300	77,700
Engineering			
Overqualified			
25th percentile	60,000	52,080	67,920
Median	72,000	63,792	80,208
75th percentile	92,000	77,280	106,720
Not overqualified			
25th percentile	64,000	60,544	67,456
Median	74,194	70,929	77,459
75th percentile	85,000	81,260	88,740
Computer, mathematics and physical sciences			
Overqualified			
25th percentile	x	...	...
Median	63,000	58,716	67,284
75th percentile	x	...	...
Not overqualified			
25th percentile	45,000	40,860	49,140
Median	63,000	57,960	68,040
75th percentile	78,000	75,504	80,496
Psychology and social sciences			
Overqualified			
25th percentile	57,000	45,030	68,970
Median	68,000	65,144	70,856
75th percentile	77,500	74,090	80,910
Not overqualified			
25th percentile	60,000	59,280	60,720
Median	70,000	68,040	71,960
75th percentile	80,645	78,548	82,742
Humanities			
Overqualified			
25th percentile	x	...	...
Median	45,000	40,860	49,140
75th percentile	x	...	...
Not overqualified			
25th percentile	54,000	51,192	56,808
Median	61,000	59,780	62,220
75th percentile	69,000	66,792	71,208

Table A.21.2 (continued)

Earnings (at the 25th, 50th and 75th percentiles) of 2005 doctoral graduates who reported being overqualified for their job in 2007 by field of study, Ontario and Canada without Ontario

		Confidence limits (95%)	
	Earnings	Lower	Upper
		dollars	
Education and other fields of study			
Overqualified			
25th percentile	65,000	58,240	71,760
Median	75,000	70,200	79,800
75th percentile	84,000	76,608	91,392
Not overqualified			
25th percentile	73,000	70,226	75,774
Median	84,000	80,640	87,360
75th percentile	105,000	99,330	110,670
Canada without Ontario			
All fields of study			
Overqualified			
25th percentile	**49,741**	**48,348**	**51,134**
Median	**60,000**	**58,200**	**61,800**
75th percentile	**74,000**	**71,040**	**76,960**
Not overqualified			
25th percentile	**45,161**	**44,619**	**45,703**
Median	**63,000**	**61,614**	**64,386**
75th percentile	**76,000**	**74,936**	**77,064**
Life sciences			
Overqualified			
25th percentile	42,000	39,060	44,940
Median	55,000	49,940	60,060
75th percentile	72,000	68,544	75,456
Not overqualified			
25th percentile	40,000	39,440	40,560
Median	50,000	48,000	52,000
75th percentile	70,000	68,180	71,820
Engineering			
Overqualified			
25th percentile	54,000	49,140	58,860
Median	66,000	61,380	70,620
75th percentile	80,000	72,160	87,840
Not overqualified			
25th percentile	53,000	47,276	58,724
Median	69,000	66,930	71,070
75th percentile	81,000	76,626	85,374
Computer, mathematics and physical sciences			
Overqualified			
25th percentile	50,000	47,000	53,000
Median	56,000	52,752	59,248
75th percentile	77,424	66,894	87,954
Not overqualified			
25th percentile	47,312	42,770	51,854
Median	59,140	56,656	61,624
75th percentile	72,000	69,696	74,304
Psychology and social sciences			
Overqualified			
25th percentile	52,000	50,232	53,768
Median	61,000	58,682	63,318
75th percentile	70,000	66,920	73,080
Not overqualified			
25th percentile	51,398	49,136	53,660
Median	63,045	61,406	64,684
75th percentile	75,000	73,050	76,950

Table A.21.2 (concluded)

Earnings (at the 25th, 50th and 75th percentiles) of 2005 doctoral graduates who reported being overqualified for their job in 2007 by field of study, Ontario and Canada without Ontario

		Confidence limits (95%)	
	Earnings	Lower	Upper
		dollars	
Humanities			
Overqualified			
25th percentile	44,000 [E]	28,688	59,312
Median	50,500	47,167	53,833
75th percentile	65,000	59,540	70,460
Not overqualified			
25th percentile	55,000	52,140	57,860
Median	65,000	62,920	67,080
75th percentile	70,000	67,340	72,660
Education and other fields of study			
Overqualified			
25th percentile	55,000	52,910	57,090
Median	65,000	61,360	68,640
75th percentile	77,000	70,532	83,468
Not overqualified			
25th percentile	70,000	67,200	72,800
Median	80,000	76,480	83,520
75th percentile	100,000	97,800	102,200

... not applicable
x suppressed to meet the confidentiality requirements of the *Statistics Act*
[E] use with caution

Source: Statistics Canada, National Graduates Survey (Class of 2005).

Table A.22

Distribution of doctoral graduates by fields of study, gender and industry of employment, Ontario and Canada without Ontario

	Class of 2005	Class of 2000	Class of 1995
		percent	
Ontario			
All fields of study			
Manufacturing	**4**	**8** [2]	**8** [3]
Professional, scientific and technical services	**11**	**13**	**12**
Educational services	**58**	**52** [2]	**50** [3]
Health care and social assistance	**13**	**10**	**13**
Public administration	**7**	**9**	**8**
Life sciences			
Manufacturing	x	4 [E]	6
Professional, scientific and technical services	13	12	6 [E]
Educational services	46	56	40
Health care and social assistance	26	17 [2]	30 [E]
Public administration	9	8 [E]	13
Engineering			
Manufacturing	19	30	26
Professional, scientific and technical services	29	29	25
Educational services	34	25	27
Health care and social assistance	x	..	..
Public administration	8 [E]	10 [E]	6 [E]
Computer, mathematics and physical sciences			
Manufacturing	6 [E]	15 [E]	16
Professional, scientific and technical services	16	19	21
Educational services	56	43 [2]	40 [3]
Health care and social assistance	x	x	4 [E]
Public administration	8 [E]	12 [E]	6 [E]
Psychology and social sciences			
Manufacturing	..	x	x
Professional, scientific and technical services	4 [E]	7	10
Educational services	64	50 [2]	54 [3]
Health care and social assistance	20	22	22
Public administration	9	10	9
Humanities			
Manufacturing	x	x	x
Professional, scientific and technical services	x	x	6 [E]
Educational services	83	70 [2]	72 [3]
Health care and social assistance	x	x	x
Public administration	x	5 [E]	6 [E]
Education and other fields of study			
Manufacturing	x	..	x
Professional, scientific and technical services	5 [E]	9 [E]	9
Educational services	75	73	76
Health care and social assistance	6 [E]	x	x
Public administration	6 [E]	6 [E]	x
Gender			
Men			
Manufacturing	6	10 [2]	10 [3]
Professional, scientific and technical services	14	14	15
Educational services	57	51	46 [3]
Health care and social assistance	9	6 [2]	11 [E]
Public administration	7	8	7

Table A.22 (continued)

Distribution of doctoral graduates by fields of study, gender and industry of employment, Ontario and Canada without Ontario

	Class of 2005	Class of 2000	Class of 1995
		percent	
Women			
Manufacturing	2 E	4 E	5
Professional, scientific and technical services	8	11	8
Educational services	60	53 2	58
Health care and social assistance	16	16	15
Public administration	7	10	9
Canada without Ontario			
All fields of study			
Manufacturing	**4**	**6 2**	**7 3**
Professional, scientific and technical services	**14**	**14**	**15**
Educational services	**55**	**46 2**	**49 3**
Health care and social assistance	**13**	**22 2**	**14**
Public administration	**7**	**7**	**9**
Life sciences			
Manufacturing	5	4	8
Professional, scientific and technical services	15	13	14
Educational services	52	34 2	37 3
Health care and social assistance	15 1	40 2	25 E
Public administration	8	6	12
Engineering			
Manufacturing	8 1	16 2	19 3
Professional, scientific and technical services	33	31	32
Educational services	37	35	33
Health care and social assistance	x	x	x
Public administration	9	9 E	6
Computer, mathematics and physical sciences			
Manufacturing	7 E	15 2	12
Professional, scientific and technical services	21	23	27
Educational services	55	43 2	42 3
Health care and social assistance	5 E	9 E	3 E
Public administration	6 E	6 E	8
Psychology and social sciences			
Manufacturing	..	..	..
Professional, scientific and technical services	6	7 E	4 E
Educational services	48 1	53	54
Health care and social assistance	34 1	24 2	26 3
Public administration	9	12	11
Humanities			
Manufacturing	..	x	x
Professional, scientific and technical services	7 E	9 E	6
Educational services	71 1	72	71
Health care and social assistance	x	3 E	6 E
Public administration	6 E	5 E	7 E
Education and other fields of study			
Manufacturing	x	x	x
Professional, scientific and technical services	8	6 E	7 E
Educational services	77	67	75
Health care and social assistance	5 E	F	8
Public administration	5	7 E	5

Table A.22 (concluded)

Distribution of doctoral graduates by fields of study, gender and industry of employment, Ontario and Canada without Ontario

	Class of 2005	Class of 2000	Class of 1995
		percent	
Gender			
Men			
Manufacturing	5	8 [2]	8 [3]
Professional, scientific and technical services	19 [1]	18	18
Educational services	54	45 [2]	49 [3]
Health care and social assistance	8	16 [2]	7
Public administration	7	8	10
Women			
Manufacturing	2	2 [E]	6 [3]
Professional, scientific and technical services	9	9	8
Educational services	56	47 [2]	50
Health care and social assistance	18	32 [2]	26
Public administration	8	6	6

.. not available for a specific reference period
x suppressed to meet the confidentiality requirements of the *Statistics Act*
[E] use with caution
F too unreliable to be published
1. Significantly different between Ontario graduates and graduates from other provinces within the Class of 2005 ($p<0.05$).
2. Significantly different between the Class of 2005 and the Class of 2000 ($p<0.05$).
3. Significantly different between the Class of 2005 and the Class of 1995 ($p<0.05$).

Note: Percentages do not sum up to 100 since some industry sectors were excluded due to small samples.
Sources: Statistics Canada, National Graduates Survey (Classes of 2005, 2000 and 1995).

Table A.23

Distribution of doctoral graduates by country of residence two years after graduation and by industry of employment, Ontario and Canada without Ontario

	Class of 2005	Class of 2000
	percent	
Ontario		
Lived in Canada		
Manufacturing	4	7 [2]
Professional, scientific and technical services	10	12
Educational services	57	52
Health care and social assistance	13	11
Public aministration	8	10
Lived in the United States		
Manufacturing	6 [E]	13 [E]
Professional, scientific and technical services	17	21
Educational services	61	50
Health care and social assistance	6 [E]	x
Public aministration	x	x
Canada without Ontario		
Lived in Canada		
Manufacturing	3	6 [2]
Professional, scientific and technical services	15 [1]	14
Educational services	54	43 [2]
Health care and social assistance	13	25 [2]
Public aministration	8	8
Lived in the United States		
Manufacturing	6 [E]	8 [E]
Professional, scientific and technical services	14	20
Educational services	64	66
Health care and social assistance	9 [E]	x
Public aministration	4 [E]	x

x suppressed to meet the confidentiality requirements of the *Statistics Act*

[E] use with caution

1. Significantly different between Ontario graduates and graduates from other provinces within the Class of 2005 ($p<0.05$).
2. Significantly different between the Class of 2005 and the Class of 2000 ($p<0.05$).

Note: Percentages do not sum up to 100 since some industry sectors were excluded due to small samples.

Sources: Statistics Canada, National Graduates Survey (Classes of 2005, 2000 and 1995).

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Statistics Canada. 2009. *The Canadian Labour Market at a Glance, 2007*. Statistics Canada Catalogue no. 71-222-X, 127 p.

Statistics Canada. Table 282-0074 – *Labour Force Survey Estimates (LFS), Wages of Employees by Job Permanence, Union Coverage, Sex and Age Group, Annual (Current Dollars Unless Otherwise Noted),* CANSIM (database).

Statistics Canada. Table 282-0008 – *Labour Force Survey Estimates (LFS), by North American Industry Classification System (NAICS), Sex and Age Group, Annual*, CANSIM (database).

Statistics Canada. Table 477-0020 – *Public Postsecondary Graduates, by Pan-Canadian Standard Classification of Education (PCSCE), Classification of Instructional Programs, Primary Grouping (CIP_PG), Sex and Immigration Status, Annual (Number),* CANSIM (database).

Zhao, John, Doug Drew and T. Scott Murray. 2000. "Brain Drain and Brain Gain: The Migration of Knowledge Workers from and to Canada." *Education Quarterly Review*. Vol. 6, no. 3. Statistics Canada Catalogue no. 81-003-XPB.

Endnotes

1. See Auriol (2010).
2. Includes both full-year full-time and part-year part-time professors, but excludes teaching assistants.
3. Data from the University and College Academic Staff System (UCASS).
4. Desjardins and King (2011).
5. Statistics Canada. Table 477-0020 – *Public Postsecondary Graduates, by Pan-Canadian Standard Classification of Education (PCSCE), Classification of Instructional Programs, Primary Grouping (CIP_PG), Sex and Immigration Status, Annual (Number),* CANSIM (database).
6. The term "allophone" refers to those whose mother tongue is a language other than English or French.
7. Chinese languages include: Mandarin, Cantonese, Hakka, Taiwanese, Chaochow (Teochow), Fukien and Shanghainese.
8. Statistics Canada, 2006 Census of Population.
9. Includes visa students; however, these accounted for only 4% and 5% of all foreign-born graduates in Ontario and in the other provinces, respectively.
10. Graduates from the Class of 1995 were not asked questions about their country of birth or citizenship status.
11. See for example: Knighton, Tamara and Sheba Mirza. 2002. "Postsecondary Participation: The Effects of Parents' Education and Household Income." *Education Quarterly Review*. Vol. 8, no. 3: p. 25-32. Statistics Canada Catalogue no. 81-003-XPB2001.
12. Hoffer, T.B., M. Hess, V. Welch Jr. and K. Williams. 2007. *Doctorate Recipients from United States Universities: Summary Report 2006*. Chicago: National Opinion Research Centre, 203p.
13. See King, Eisl-Culkin and Desjardins (2008) and Auriol (2010).
14. No comparable data were available for 1995 graduates.
15. See, for example, Zhao, John, Doug Drew and T. Scott Murray. 2000. "Brain Drain and Brain Gain: The Migration of Knowledge Workers from and to Canada." *Education Quarterly Review.* Vol. 6, no. 3. Statistics Canada Catalogue no. 81-003-XPB.
16. See Dion, Patrice and Mireille Vézina. 2010. "Emigration from Canada to the United States from 2000 to 2006." *Canadian Social Trends.* Vol. 90, no. 2. Statistics Canada Catalogue no. 11-008-X.
17. King, Darren, Judy Eisl-Culkin and Louise Desjardins. 2008. *Doctoral Graduates in Canada: Findings from the Survey of Earned Doctorates, 2005/2006*. Statistics Canada Catalogue no. 81-595MIE2008069. Ottawa. Statistics Canada and Human Resources and Social Development Canada, 75p.
18. No comparable data on doctoral graduates from the Class of 1995 who moved to the United States are available.
19. No further analysis of specific fields of study was done for the Class of 2000 due to small sample size.
20. No analysis of the specific education related factors was done due to small sample size.
21. Although information on the interprovincial mobility of graduates from the Classes of 2000 and 1995 are included in Appendix tables A.13.1 and A.13.2, the historical comparability of this information may be affected by the methods used to derive the province of residence at the time of interview. Therefore, no comparative analysis was done with previous cohorts.
22. Statistics Canada. 2009. *The Canadian Labour Market at a Glance, 2007*. Statistics Canada Catalogue no. 71-222-X. Ottawa, Statistics Canada, 127 p.
23. This term refers to a person who works for pay for others as opposed to the self-employed.

24. All earnings, whether the graduate lived in Canada or the United States, were converted to Canadian dollars.
25. Includes employees and self-employed workers.
26. Statistics Canada. Table 282-0074 – *Labour Force Survey Estimates (LFS), Wages of Employees by Job Permanence, Union Coverage, Sex and Age Group, Annual (Current Dollars Unless Otherwise Noted),* CANSIM (database).
27. Although Ontario graduates in computer, mathematics and physical sciences posted a higher proportion of graduates who planned to take a postdoctoral position than life sciences graduates, the difference was not statistically significant.
28. Desjardins, Louise and Darren King. 2011. *Expectations and Labour Market Outcomes of Doctoral Graduates from Canadian Universities*. Statistics Canada Catalogue no. 81-595-M089. Ottawa, Statistics Canada and Human Resources and Skills Development Canada, 58 p.
29. All graduates' earnings, whether they lived in Canada or the United States, were converted to Canadian dollars.
30. Although Appendix table A.19.1 shows relatively large earnings gaps in computer, mathematics and physical sciences between residents of Canada and residents of the United States, these were not statistically different.
31. See Desjardins and King for earlier results.
32. OECD/UNESCO. *Institute for Statistics/Eurostat Careers of Doctorate Holders (CDH) project.* www.oecd.org/sti/cdh (accessed April 2, 2012)
33. Statistics Canada. Table 282-0008 – *Labour Force Survey Estimates (LFS), by North American Industry Classification System (NAICS), Sex and Age Group, Annual,* CANSIM (database).

Culture, Tourism and the Centre for Education Statistics

Research Papers

Cumulative index

Statistics Canada's **Division of Culture, Tourism and the Centre for Education Statistics** develops surveys, provides statistics and conducts research and analysis relevant to current issues in its three areas of responsibility.

The **Culture Statistics Program** creates and disseminates timely and comprehensive information on the culture sector in Canada. The program manages a dozen regular census surveys and databanks to produce data that support policy decision and program management requirements. Issues include the economic impact of culture, the consumption of culture goods and services, government, personal and corporate spending on culture, the culture labour market, and international trade of culture goods and services. Analysis is also published in *Focus on Culture* (87-004-XIE, free, http://www.statcan.ca/bsolc/english/bsolc?catno=87-004-X).

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81-595-M no. 002	Canadian education and training services abroad: the role of contracts funded by international financial institution
81-595-M No. 003	Finding their way: a profile of young Canadian graduates
81-595-M No. 004	Learning, earning and leaving – The relationship between working while in high school and dropping out
81-595-M No. 005	Linking provincial student assessments with national and international assessments
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81-595-M No. 007	Access, persistence and financing: First results from the Postsecondary Education Participation Survey (PEPS)
81-595-M No. 008	The labour market impacts of adult education and training in Canada
81-595-M No. 009	Issues in the design of Canada's Adult Education and Training Survey
81-595-M No. 010	Planning and preparation: First results from the Survey of Approaches to Educational Planning (SAEP) 2002
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81-595-M No. 018	Education and Labour Market Pathways of Young Canadians Between age 20 and 22: an Overview
81-595-M No. 019	Salaries and salary scales of full-time teaching staff at Canadian universities, 2003-2004
81-595-M No. 020	Culture Goods Trade Estimates: Methodology and Technical Notes
81-595-M No. 021	Canadian Framework for Culture Statistics
81-595-M No. 022	Summary public school indicators for the provinces and territories, 1996-1997 to 2002-2003
81-595-M No. 023	Economic Contribution of Culture in Canada
81-595-M No. 024	Economic Contributions of the Culture Sector in Ontario
81-595-M No. 025	Economic Contribution of the Culture Sector in Canada – A Provincial Perspective

Following is a cumulative index of Culture, Tourism and the Centre for Education Statistics research papers published to date

Research papers

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Following is a cumulative index of Culture, Tourism and the Centre for Education Statistics research papers published to date

Research papers

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81-595-M No. 068 Educating Health Workers: Provincial Results

81-595-M No. 069 Doctorate Education in Canada: Findings from the Survey of Earned Doctorates, 2005/2006

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Following is a cumulative index of Culture, Tourism and the Centre for Education Statistics research papers published to date

Research papers

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81-595-M No. 096 Salaries and Salary Scales of Full-time Teaching Staff at Canadian Universities, 2009/2010: Final Report

Following is a cumulative index of Culture, Tourism and the Centre for Education Statistics research papers published to date

Research papers

81-595-M No. 097 Salaries and Salary Scales of Full-time Teaching Staff at Canadian Universities, 2010/2011: Final Report

81-595-M No. 098 Profile and Labour Market Outcomes of Doctoral Graduates from Ontario Universities