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- Recent graduates and employer needs
- Employment and earnings of graduates



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Culture, Tourism and the Centre for Education Statistics

Education Quarterly Review

2000, Vol. 7, no. 1

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- Employment and earnings of graduates

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This publication was prepared under the direction of

Maryanne Webber, Director
Culture, Tourism and the Centre for Education Statistics
E-mail: maryanne.webber@statcan.ca

Steering Committee

- Doug Drew, Assistant Director
Centre for Education Statistics
E-mail: doug.drew@statcan.ca
- Robert Couillard
Training and Continuing Education
E-mail: robert.couillard@statcan.ca
- Patrice de Broucker
Analysis and Dissemination
E-mail: patrice.de_broucker@statcan.ca
- John Jackson
Postsecondary Education
E-mail: john.jackson@statcan.ca
- Raynald Lortie
Elementary – Secondary Education
E-mail: raynald.lortie@statcan.ca
- Jillian Oderkirk
Survey Development
E-mail: jillian.oderkirk@statcan.ca
- Jim Seidle, Editor-in-Chief
E-mail: jim.seidle@statcan.ca

Editing: Communications Division

Marketing Co-ordinator:
Grafton Ross
E-mail: grafton.ross@statcan.ca

Production Co-ordinator:
Cindy Sceviour
E-mail: cindy.sceviour@statcan.ca

Design and composition:
Dissemination Division

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Symbols

The following standard symbols are used in Statistics Canada publications:

- .. figures not available
- ... figures not appropriate or not applicable
- nil or zero
- amount too small to be expressed
- ^p preliminary figures
- ^e estimate
- ^r revised figures
- x confidential to meet secrecy requirements of the *Statistics Act*

From the

Editor-in-Chief

Mission

Education Quarterly Review analyses and reports on current issues and trends in education using information from a variety of statistical sources. It serves as a focal point for education statistics and provides a forum for communication with stakeholders and the public. Our goal is to present information and analysis that are relevant, authoritative, timely and accessible.

The theme for this issue is postsecondary graduates. Marc Frenette, using data from the National Graduates Survey (NGS), examines the extent to which the education levels of graduates exceed the requirements of their employers: are graduates 'overqualified'? And Ross Finnie, using employment and earnings data from NGS surveys, explores whether early labour market outcomes have deteriorated for postsecondary graduates in Canada.

In addition to these papers, please refer to the **Cumulative Index** at the back of the report, where we list by title all articles that have appeared in *EQR* since 1994. These articles have been grouped in 11 categories, including funding, technology and learning, and accessibility. These categories are based on education policy issues that were identified in the report *Strategic Plan (1997)*, released in November 1997, one year after the creation of the Centre for Education Statistics. The *Strategic Plan* reviews the Centre's statistical program and identifies objectives and priorities required to strengthen the program to better address information needs. *Strategic Plan (1997)* is available free of charge on the Internet at address <http://www.statcan.ca/cgi-bin/downpub/freepub.cgi>.

Please address all correspondence, in either official language, to

Jim Seidle, Editor-in-Chief
Education Quarterly Review
Centre for Education Statistics
Statistics Canada
Ottawa, Ontario
K1A 0T6

Telephone: (613) 951-1500
Fax: (613) 951-9040
E-mail: jim.seidle@statcan.ca

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Highlights



Recent graduates and employer needs

- Throughout the 1980s and 1990s, anywhere from 27% to 48% of recent college, bachelor's and doctoral graduates were overqualified for their main job. At the master's level, the range was 48% to 72%.
- Although master's graduates are more likely to be overqualified, they are less likely to be overqualified by two or more levels. In other words, their main job often requires a bachelor's degree. College and bachelor's graduates are less likely to be overqualified by two or more levels. At the college level, for example, anywhere from 31% to 43% of graduates required a high school diploma or less to obtain their main job.
- At the college and bachelor's levels, overqualification is associated with a considerable loss in earnings and in use of skills acquired in school. This is not the case for master's and doctoral graduates.
- Overqualification rates vary considerably by field of study at the college and bachelor's levels. Almost one half of bachelor's graduates of Fine Arts and Humanities and other Social Sciences (excluding Economics) require less than a college diploma to obtain their main job. At the master's level, there is very little variation by field of study.

Employment and earnings of graduates

- Have early labour market outcomes deteriorated recently for postsecondary graduates in Canada? The evidence suggests this has not been the case, or at least not to the degree some may have thought.
- The major findings regarding labour market activity rates conclude that graduates at all levels, men and women, experienced unemployment rates that have generally been at low levels relative to non-graduates and have improved significantly between two and five years following graduation.
- The average earnings of men graduates of the more recent cohorts have either held steady or shown small to moderate declines relative to earlier groups, while women's earnings have either remained stable or risen.

FOR

Articles



Overqualified? Recent graduates and the needs of their employers

Introduction

This article answers the question “To what extent, if any, have the education levels of graduates surpassed the needs of employers?” In other words, what is the percentage of recent Canadian graduates who have more postsecondary education than their main employer requires? For the most part, this question remains unexplored. Lavoie and Finnie (1997) touched on the topic, but they did not develop it. It is an important issue, however, since overqualification has been linked to lower earnings (Sicherman 1991; Rumberger 1987) and to lower productivity (Tsang, Rumberger and Levin 1991).

Lavoie and Finnie (1997) conclude that master’s graduates are more likely to be overqualified than bachelor’s graduates, but Finnie (1999) finds that a master’s degree has a large earnings advantage over a bachelor’s degree. Since these findings seem to contradict those of Sicherman and Rumberger mentioned above, this article also attempts to reconcile previous findings.

The term ‘overqualified’ refers to an individual who possesses more education than was required by the main employer (see *Methodology and data*). For several reasons, it should not be interpreted as ‘possessing too much education.’ First, graduates may use the jobs they get right after graduation as stepping-stones to better jobs. Second, employers may not have expected to receive job applications from highly educated applicants but may still benefit from the graduates’ knowledge. Third, even if the ‘extra’ knowledge that a graduate has is not required to do the job, employers may still save time (and therefore money) by screening interviewees according to their level of education. In other words, employers often use education as a proxy for skill acquisition. And fourth, it is reasonable to assume that the higher the level of education in society as a whole, the more benefits the society derives.

This article examines

- the rates of overqualification for/of various graduate characteristics;
- the rates of overqualification by at least two levels of study; and
- the relationship between overqualification and labour market outcomes, such as earnings and skill use.

Marc Frenette
Business and Labour Market Analysis
Division
Telephone: (613) 951-4228
Fax: (613) 951-5403
E-mail: marc.frenette@statcan.ca

Methodology and data

The academic literature refers to the incidence of education above the level required as *overeducation*, *surplus schooling* or *overqualification*. The term ‘overqualification’ seems more appropriate because ‘overeducation’ and ‘surplus schooling’ may imply that possessing more education than was required for the job is too much education. ‘Overqualification,’ however, refers specifically to having more qualifications than were required for the job, not necessarily too much education.

The data used for this study are the National Graduates Surveys (NGS) and Follow-Ups to the National Graduate Surveys (FOG).¹ Three cohorts of Canadian postsecondary graduates were examined: the classes of 1982 (interviewed in 1984 and 1987), 1986 (interviewed in 1988 and 1991) and 1990 (interviewed in 1992 and 1995). The NGS provides researchers with specific field-of-study codes.² Combining the education level with the field of study allowed very specific types of academic programs to be linked to the incidence of overqualification. The study focusses on graduates of college, bachelor’s, master’s and doctoral programs.

The specific job requirement question used in this study was “When you were selected for that job, what level of

education was needed to get the job?” Note that the question refers to the beginning of a *job*, not to the beginning of the respondent’s *employment* with an employer. The overqualification variable, therefore, refers to the level required at the beginning of a job versus the level attained in the reference year. That is, a respondent will not be labelled overqualified simply because the requirements of the first job with an employer were low and the respondent took training in order to get a promotion.

The level of education attained was provided by institutions, while the level of education required was provided by the graduates. In particular, graduates were asked to report the level the employer *actually* required (as opposed to the level that they *felt* was required). A graduate was considered overqualified if his or her level of education was higher than what was required by the employer. Using the graduate’s perception of the requirements could have reduced this research to a skills-based study, whereas using the employer’s actual requirements incorporated both labour market functions of education: skills acquisition and screening (or filtering).

The incidence of overqualification by at least one level

In this section, the percentages of overqualified graduates are analysed across five dimensions: level of education, field of study, co-op studies, geographical region, and industry. All numbers refer to overqualification by at least one education level. The five levels of educational requirements used in the analysis are, in ascending order, below college, college, bachelor’s, master’s and doctorate. The analysis in this section and beyond is limited to graduates who had not received a new diploma since graduating in the reference year, and had not been working part time because of school attendance in the interview year.³ The samples are further restricted to graduates who had not obtained a higher diploma prior to the one obtained in the reference year. This restriction was required because there is no specific information available for such diplomas (for example, the date obtained or the field of study).

Level of education

The percentages of overqualified graduates by level of education appear in tables 1 to 4. The highest rates occur at the master’s level and apply to all cohorts and interviews. About 27% to 48% of college, bachelor’s and doctoral

graduates are overqualified. For master’s graduates the range is 48% to 72%.⁴ The high rates at the master’s level—explored later in the article—confirm the findings of Lavoie and Finnie (1997).

Within cohorts, the percentages of overqualified graduates typically fall from two to five years after graduation for all levels of education except college. In fact, the rate actually *rises* for college graduates in all cases except females in the 1990 cohort.

With respect to long-term trends, it is worth noting that graduates of higher levels of education (master’s and doctorate) have experienced less overqualification since the 1982 cohort.⁵ For lower levels of education, there is a downward shift between the 1986 and 1990 cohorts, but no significant differences occur between the 1982 and 1990 cohorts.

Why have overqualification rates fallen since the mid-1980s? Graph 1 shows values of indices of education attained versus education required over the three cohorts.⁶ The educational requirements for the types of jobs that graduates have been getting (as measured by the education-required index) have been increasing faster than the level of education attained by the graduates (as measured by the education-attained index). Therefore, the labour market seems to be the main reason why overqualification rates



Graph 1
Education attained versus education required for job



Note: These numbers represent indices; numbers were not available for the 1984 NGS (see text).

Source: National Graduates Surveys.

have fallen. It is important to note, however, that these aggregate numbers may not tell the whole story behind the overqualification trends. It is possible that individual employers and recent graduates have increased their ability to 'match' themselves (perhaps through better advertising and search mechanisms).

Overqualification also differs by sex. Male college graduates are more likely to be overqualified than female college graduates. Male bachelor's graduates tend to be slightly less prone to overqualification than their female counterparts. At the master's level, the rates for males are higher than those for females. However, sex does not seem to influence the rates at the doctoral level.

Field of study

The percentages of overqualified graduates by field of study appear in tables 1 to 4. At the college level, graduates of Nursing and Medical Technology have typically not been prone to overqualification. However, high rates have prevailed for graduates of Arts and Humanities, Other Health (numbers available for women only), Natural and Animal Sciences, Protective Services, Secretarial Services (numbers available for women only) and Other Business Services.

At the bachelor's level, there are significant sex differences. While both male and female graduates of Engineering and Computer Science, Law and Medical

Sciences have had low rates of overqualification (as do female graduates of Education), both male and female graduates of Fine Arts and Humanities and Other Social Sciences report high rates, as do male graduates of Economics and Agricultural and Biological Sciences.

Within the master's category, Education graduates tend to have high incidences of overqualification, while the opposite is true for Other Health graduates. Based on available evidence, high rates are apparent among Medical Sciences graduates, who at this level are medical specialists such as podiatrists and dermatologists.

Statistically reliable results are unavailable for several fields of study, especially among women, because of the low number of doctoral graduates in the samples. Nonetheless, Education graduates have high rates of overqualification, while the reverse holds for graduates of Agricultural and Biological Sciences.

Co-op studies

This section focusses on co-op studies (tables 5 to 8). At the college level, co-op graduates are generally just as likely to be overqualified as non-co-op graduates. Graduates of co-op studies at the bachelor's level are typically less prone to overqualification than graduates of non-co-op bachelor's programs, while master's graduates and master's co-op graduates have roughly equal rates. Reliable results for doctoral graduates are not available because of low sample sizes.

Geographical region

The rates of overqualified graduates by region are based on the region's needs for skilled workers, as well as the desire of skilled workers to live in the region. An economically stagnant region may require very few skilled workers, and this would tend to increase the rate of overqualification. However, the region's skilled workers may choose to move to more prosperous regions where their skills may be in greater demand. The result is that the mobility of workers tends to reduce regional disparities in rates of overqualification.

Because recent graduates tend to be more mobile than the general population,⁷ the regional differences for each level of education are small, supporting the argument that the mobility of workers may decrease regional disparities in the rates of overqualified graduates (tables 5 to 8). College graduates, however, are less mobile than university graduates, and have a lower regional dispersion in overqualification rates (Table 5).

Industrial sectors

Considerable differences appear in the rates of overqualification across industrial sectors (tables 5 to 8). Generally, the semi-public sector (that is, Education and Health Services) employs the lowest percentage of overqualified graduates. This holds true for all levels of education except at the master's level, where industry and overqualification do not appear to be linked. For all levels of education, the private and public sectors employ about the same percentage of overqualified graduates.

The incidence of overqualification by two or more levels

Unless otherwise stated, any reference to numbers in this section is to the percentages of graduates overqualified by two or more levels (tables 1 to 4). The six levels of educational requirements are, in ascending order, below trade–vocational, trade–vocational, college, bachelor's, master's and doctorate.

One observation drawn from these figures is that higher-level graduates are less likely to be overqualified by two or more levels than other graduates. This is despite the fact that there are obviously more levels below higher levels than below lower levels. Master's recipients, as previously stated, have the highest rates of overqualification. However, it is now clear that many of these master's graduates hold jobs that require a bachelor's degree. This may lead one to conclude that though employers state that a given job requires a bachelor's degree, they often hire people with master's degrees,

thereby filtering out the bachelor's-degree holders early in the hiring process. The following section discusses this issue in more detail. It is worth noting that this finding may help explain the fact that master's graduates still enjoy larger earnings than bachelor's graduates, despite the fact that they are more often overqualified. This may be partly due to the lower incidence for master's graduates of overqualification by two or more levels.

Overqualification by two or more levels occurs for roughly 31% to 43% of college graduates, 19% to 29% of bachelor's graduates, 8% to 17% of master's graduates, and 9% to 21% of doctoral graduates (tables 1 to 4). For all levels of education, this trend has been less evident in the 1990s than for earlier cohorts, a finding that contradicts the common view that recent graduates have held more 'burger-flipping' jobs than in the past. The dispersion by field of study for college and bachelor's graduates generally reflects the results in the earlier section, *Field of study*. Graduates of Other Health fields at the bachelor's level typically experience much lower rates relative to other fields.

At the master's level, graduates of Engineering and Computer Science, as well as Other Health graduates were very unlikely to be overqualified by two or more levels. The evidence that exists on the dispersion of results for doctoral graduates generally mirrors the results of the section on *Field of study*.

Is overqualification linked to earnings and skill use?

Mean annual earnings (in thousands of 1995 dollars) and a use-of-skills index⁸ for three classes of workers are presented in Table 9. The three classes are (1) not overqualified, (2) overqualified and (3) overqualified by at least two levels. All workers classified in the third category are also in the second category, but the converse is not necessarily true. The important comparisons to make within Table 9 are between the first category and the other two categories.

Two dimensions were examined within the earnings comparisons. The first question asked was "For two people holding jobs requiring the same level of education, does more education matter?" Despite equal levels of requirement, people with more education generally earn more (Table 9).

The next question was "For two people possessing the same level of education, do the educational requirements of the job matter?" For equal levels of educational attainment, higher educational requirements generally lead to higher earnings for college and bachelor's graduates only (Table 9). For graduates of master's or doctoral

programs, the level of education required does not seem to have a significant influence on earnings. These graduates have more options available to them, and can obtain jobs that require lower levels of education without suffering a large decrease in earnings.

As was previously mentioned, employers may use education as a screening device in the interview process. This implies that there is no automatic negative link between overqualification and skill use. Some overqualified graduates may be just as likely as non-overqualified graduates to use the skills learned in school. For college and bachelor's graduates, the relationship between the use of skills and overqualification is quite negative (Table 9). College and bachelor's graduates who are overqualified use their skills to a lesser extent than their classmates who are not overqualified. For holders of graduate degrees, the drop in skill use is relatively small.

In the preceding section, it was mentioned that the high rate of overqualification, coupled with the low rate of overqualification by two or more levels, might indicate that a master's degree is used as a filter in the hiring process; however, it appears that the large number of master's graduates who hold jobs requiring a bachelor's degree still use their skills to a large extent.⁹ In other words, some of the filtering may be justified since overqualified master's graduates still use many of the skills acquired in school.

Even if the typical master's graduate and the typical bachelor's graduate fill jobs with identical educational requirements, the master's graduate will still enjoy an earnings advantage. This may be because the skills of master's graduates are put to use even though the job did not officially require a master's degree.

Summary

This article's findings are useful to prospective post-secondary students choosing a field of study and to recent postsecondary graduates seeking to narrow their job search. Throughout the 1980s and 1990s, anywhere from 27% to 48% of recent college, bachelor's and doctoral graduates were overqualified for their main job. At the master's level, the range was 48% to 72%. Previous studies point to an earnings advantage for a master's degree over a bachelor's degree, while other studies have linked overqualification to lower earnings. This article outlines two facts that may reconcile these findings. First, master's graduates are less likely to be overqualified by two or more levels. And second, overqualification is not linked to a large drop in skill use among master's graduates. For bachelor's graduates, large drops in skill use are linked to overqualification.

Over the time frame of this study, the gap between the average levels of education attained and required has narrowed considerably. This is partly due to the increased

demand from employers for skilled workers, but it could also be linked to an increased ability of employers and graduates to 'match' themselves.

Certain sex differences are also found. Men at the college and master's levels tend to be more prone to overqualification than women, whereas the reverse is true at the bachelor's level. No important differences occur at the doctoral level. Considerable differences appear across fields of study at the lower levels of education (that is, college and bachelor's), and holders of graduate degrees from most fields have roughly equal probabilities of being overqualified. Co-op studies seem to reduce the incidence of overqualification at the bachelor's level only. Recent graduates may be interested to know that very small regional differences appear in the overqualification rates in Canada, owing perhaps to the tendency of recent graduates to expand their job search to a national level. The one exception is college graduates, who are generally less mobile than other graduates. Finally, the data indicate that the semi-public sector (Education and Health Services) has a much lower tendency to employ overqualified graduates than the public and private sectors. This isn't surprising, given that many employees in the semi-public sector are professionals (such as doctors, teachers and nurses). More education leads to higher earnings for a given level of requirement; however, finding a job that requires more education also leads to more earnings (at least for college and bachelor's graduates). It appears that graduates of master's and doctoral programs have more options available to them—whether or not their job requires as much education as they possess does not seem to affect their earnings. The findings also indicate that overqualified college and bachelor's graduates use fewer of their skills than do their non-overqualified colleagues. For holders of graduate degrees, no significant loss in skill use is detected.

EOR

Notes

1. Henceforth, we will refer to all of these surveys as the NGS.
2. The NGS has five-digit University Student Information System (USIS) and Community College Student Information System (CCSIS) field-of-study codes.
3. Those who received a new diploma since the reference year had less time to search for a suitable job, whereas those who worked part-time hours because of school were too occupied with school to work full-time hours.
4. Unless specific years are mentioned, all results in this study refer to the entire time frame of the data.

5. One factor that could explain the long-term downward trend in overqualification rates for graduate degree holders is a possible 'brain drain' to other countries. However, little evidence is available to support this hypothesis.
6. The index is calculated as the mean of the education attained (or required), where a doctorate obtains a score of 100, a master's 80, a bachelor's 60, a college diploma 40, a trade-vocational diploma 20, and anything lower 0. Results for 1984 are unavailable since it's impossible to distinguish between jobs requiring a trade-vocational diploma and jobs requiring less training.
7. Tabulations performed by the author using the NGS support this statement. Recent graduates may be unattached or simply more willing to move to other provinces in order to start their career. See Burbidge and Finnie (2000) for a detailed description of the mobility of recent baccalaureate graduates. Their results show that recent graduates are considerably more mobile than the general population. See Finnie (1999) for a description of the mobility patterns of the general population.
8. For the 1982 and 1986 cohorts, this was based on the question "Are you using the skills acquired through your educational program in your job?" Positive responses were given a score of 100 and negative responses a score of 0. For the 1990 cohort, this was based on the question "To what extent do you use the skills acquired through the educational program in your job?" This index can range from 0 to 100 (100 for the greatest use, 66.7 for the next greatest use, 33.3 for the third greatest use, and 0 for the lowest use of skills).
9. This statement addresses a finding by Lavoie and Finnie (1997) who found a high rate of overqualification among master's graduates. The authors claimed that "...these results may well call into question the use to which these graduates' skills have been put and the relevance of doing a master's degree..."

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Table 1
Overqualification of college graduates for main job, by sex and field of study

| | 1982 Cohort | | | | 1986 Cohort | | | | 1990 Cohort | | | |
|--------------------------------|-----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| | 1984 | | 1987 | | 1988 | | 1991 | | 1992 | | 1995 | |
| | 1(+) levels | 2(+) levels | 1(+) levels | 2(+) levels | 1(+) levels | 2(+) levels | 1(+) levels | 2(+) levels | 1(+) levels | 2(+) levels | 1(+) levels | 2(+) levels |
| | % overqualified | | | | | | | | | | | |
| Men | | | | | | | | | | | | |
| Total | 43 | .. | 48 | 43 | 46 | 41 | 47 | 39 | 41 | 36 | 45 | 37 |
| Arts and Humanities | 61 | .. | 66 | 62 | 54 | 51 | 66 | 57 | 56 | 55 | 56 | 55 |
| Nursing | 17 | .. | 24 | 24 | 13 | 11 | 20 | 20 | 7 | 6 | 7 | 7 |
| Medical Technology | 20 | .. | 26 | 19 | 18 | 9 | 13 | 7 | 17 | 11 | 14 | 6 |
| Other Health | -- | .. | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Electronic Technology | 27 | .. | 32 | 26 | 37 | 32 | 39 | 29 | 44 | 30 | 43 | 31 |
| Math and Computer Science | 21 | .. | 30 | 26 | 29 | 25 | 28 | 21 | 27 | 24 | 32 | 26 |
| General Engineering | 39 | .. | 52 | 46 | 37 | 29 | 42 | 27 | 34 | 24 | 42 | 26 |
| Other Engineering | 44 | .. | 53 | 48 | 50 | 44 | 51 | 40 | 46 | 38 | 46 | 34 |
| Natural and Animal Sciences | 65 | .. | 69 | 61 | 64 | 62 | 59 | 56 | 56 | 54 | 61 | 53 |
| Primary Industries | 40 | .. | 55 | 47 | 56 | 50 | 57 | 48 | 37 | 31 | 49 | 42 |
| Protective Services | 54 | .. | 47 | 46 | 67 | 62 | 64 | 61 | 57 | 56 | 66 | 62 |
| Social Services and Recreation | 40 | .. | 49 | 47 | 48 | 48 | 49 | 47 | 42 | 35 | 38 | 32 |
| Other Social Sciences | 34 | .. | -- | -- | 54 | 54 | -- | -- | -- | -- | -- | -- |
| Secretarial Services | -- | .. | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Other Business Services | 58 | .. | 56 | 52 | 55 | 52 | 54 | 50 | 49 | 47 | 52 | 48 |
| Women | | | | | | | | | | | | |
| Total | 33 | .. | 41 | 38 | 37 | 34 | 39 | 35 | 34 | 31 | 34 | 31 |
| Arts and Humanities | 53 | .. | 61 | 57 | 63 | 60 | 53 | 47 | 55 | 51 | 53 | 49 |
| Nursing | 4 | .. | 10 | 8 | 8 | 7 | 9 | 9 | 6 | 6 | 7 | 6 |
| Medical Technology | 10 | .. | 20 | 16 | 18 | 11 | 18 | 10 | 22 | 18 | 25 | 22 |
| Other Health | 41 | .. | 65 | 65 | 47 | 43 | 47 | 39 | 53 | 49 | -- | -- |
| Electronic Technology | -- | .. | -- | -- | -- | -- | -- | -- | 56 | 49 | -- | -- |
| Math and Computer Science | 34 | .. | 42 | 39 | 32 | 29 | 32 | 30 | 32 | 24 | 37 | 29 |
| General Engineering | 44 | .. | -- | -- | 37 | 29 | 40 | 31 | 46 | 40 | 47 | 42 |
| Other Engineering | 34 | .. | 41 | 38 | 36 | 31 | 48 | 35 | 45 | 43 | 39 | 35 |
| Natural and Animal Sciences | 47 | .. | 56 | 54 | 47 | 45 | 51 | 43 | 39 | 27 | 32 | 23 |
| Primary Industries | 46 | .. | 49 | 49 | 40 | 39 | 37 | 37 | 48 | 41 | 62 | 57 |
| Protective Services | 65 | .. | 63 | 62 | 57 | 55 | 68 | 66 | 51 | 50 | 51 | 49 |
| Social Services and Recreation | 33 | .. | 41 | 36 | 38 | 37 | 45 | 44 | 37 | 36 | 34 | 33 |
| Other Social Sciences | 23 | .. | 25 | 24 | 29 | 27 | 32 | 32 | 26 | 25 | 24 | 23 |
| Secretarial Services | 49 | .. | 61 | 56 | 54 | 50 | 54 | 46 | 47 | 41 | 48 | 42 |
| Other Business Services | 54 | .. | 59 | 55 | 56 | 52 | 58 | 53 | 48 | 45 | 47 | 43 |

Notes:

-- Sample size too small to report (fewer than 30 subjects).

.. The numbers were not available for 1982 college grads since the questionnaire did not have a separate category for trade-vocational job requirements.

Source: National Graduates Surveys.



Table 2
Overqualification of bachelor's graduates for main job, by sex and field of study

| | 1982 Cohort | | | | 1986 Cohort | | | | 1990 Cohort | | | |
|--------------------------------------|-----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| | 1984 | | 1987 | | 1988 | | 1991 | | 1992 | | 1995 | |
| | 1(+) levels | 2(+) levels | 1(+) levels | 2(+) levels | 1(+) levels | 2(+) levels | 1(+) levels | 2(+) levels | 1(+) levels | 2(+) levels | 1(+) levels | 2(+) levels |
| | % overqualified | | | | | | | | | | | |
| Men | | | | | | | | | | | | |
| Total | 32 | 26 | 29 | 25 | 34 | 28 | 28 | 21 | 29 | 23 | 27 | 21 |
| Education | 26 | 19 | 28 | 24 | 25 | 19 | 19 | 15 | 20 | 17 | 19 | 15 |
| Fine Arts and Humanities | 54 | 47 | 44 | 42 | 54 | 51 | 41 | 33 | 55 | 49 | 53 | 43 |
| Commerce | 31 | 24 | 30 | 26 | 40 | 31 | 36 | 29 | 27 | 20 | 26 | 20 |
| Economics | 46 | 41 | 47 | 47 | 48 | 46 | 38 | 34 | 36 | 30 | 35 | 32 |
| Other Social Sciences | 54 | 45 | 50 | 40 | 62 | 55 | 48 | 39 | 52 | 44 | 46 | 38 |
| Agricultural and Biological Sciences | 41 | 35 | 46 | 46 | 43 | 40 | 35 | 25 | 40 | 34 | 36 | 30 |
| Engineering and Computer Science | 18 | 11 | 15 | 12 | 19 | 12 | 16 | 8 | 12 | 7 | 13 | 9 |
| Other Health | 13 | 9 | -- | -- | 32 | 17 | 21 | 18 | 15 | 6 | 19 | 2 |
| Math and Physical Science | 27 | 21 | 21 | 14 | 32 | 26 | 18 | 14 | 32 | 28 | 27 | 23 |
| Law | 6 | 6 | 3 | 0 | 18 | 18 | 17 | 17 | 13 | 6 | 21 | 18 |
| Medical Sciences | 12 | 10 | 12 | 10 | 7 | 7 | 1 | 1 | 6 | 5 | 9 | 9 |
| Women | | | | | | | | | | | | |
| Total | 35 | 24 | 30 | 25 | 42 | 29 | 34 | 23 | 30 | 21 | 27 | 19 |
| Education | 23 | 15 | 19 | 16 | 28 | 22 | 25 | 19 | 10 | 7 | 13 | 9 |
| Fine Arts and Humanities | 55 | 43 | 48 | 44 | 61 | 51 | 41 | 34 | 46 | 40 | 42 | 38 |
| Commerce | 29 | 23 | 27 | 23 | 42 | 30 | 42 | 26 | 32 | 22 | 27 | 19 |
| Economics | 39 | 37 | -- | -- | 47 | 38 | 33 | 28 | 50 | 45 | -- | -- |
| Other Social Sciences | 54 | 41 | 45 | 39 | 54 | 40 | 39 | 30 | 43 | 33 | 37 | 27 |
| Agricultural and Biological Sciences | 32 | 22 | 32 | 24 | 37 | 35 | 23 | 15 | 38 | 28 | 35 | 23 |
| Engineering and Computer Science | 17 | 11 | 9 | 7 | 23 | 13 | 19 | 14 | 15 | 9 | 19 | 9 |
| Other Health | 24 | 1 | 22 | 9 | 50 | 11 | 46 | 13 | 32 | 4 | 28 | 6 |
| Math and Physical Science | 26 | 16 | 26 | 23 | 28 | 22 | 36 | 28 | 25 | 20 | 13 | 9 |
| Law | 20 | 16 | 7 | 7 | 11 | 11 | 5 | 5 | 11 | 10 | 14 | 14 |
| Medical Sciences | 5 | 4 | 2 | 2 | 7 | 6 | 5 | 4 | 5 | 5 | 10 | 9 |

Note:

-- Sample size too small to report (fewer than 30 subjects).

Source: National Graduates Surveys.



Table 3
Overqualification of master's graduates for main job, by sex and field of study

| | 1982 Cohort | | | | 1986 Cohort | | | | 1990 Cohort | | | |
|--------------------------------------|-----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| | 1984 | | 1987 | | 1988 | | 1991 | | 1992 | | 1995 | |
| | 1(+) levels | 2(+) levels | 1(+) levels | 2(+) levels | 1(+) levels | 2(+) levels | 1(+) levels | 2(+) levels | 1(+) levels | 2(+) levels | 1(+) levels | 2(+) levels |
| | % overqualified | | | | | | | | | | | |
| Men | | | | | | | | | | | | |
| Total | 72 | 14 | 64 | 17 | 64 | 13 | 58 | 13 | 60 | 8 | 58 | 8 |
| Education | 87 | 17 | 77 | 21 | 75 | 14 | 67 | 9 | 70 | 7 | 64 | 7 |
| Fine Arts and Humanities | 69 | 23 | 66 | 23 | 62 | 21 | 55 | 18 | 56 | 17 | 52 | 15 |
| Commerce | 75 | 18 | 65 | 19 | 62 | 15 | 63 | 14 | 65 | 8 | 65 | 8 |
| Economics | 50 | 5 | 45 | 36 | 41 | 13 | 39 | 4 | 44 | 5 | 30 | 5 |
| Other Social Sciences | 65 | 14 | 56 | 13 | 61 | 16 | 51 | 12 | 53 | 13 | 50 | 12 |
| Agricultural and Biological Sciences | 56 | 4 | 57 | 15 | 63 | 18 | 42 | 3 | 52 | 6 | 54 | 10 |
| Engineering and Computer Science | 66 | 5 | 63 | 8 | 64 | 5 | 59 | 8 | 59 | 4 | 60 | 5 |
| Other Health | 42 | 3 | 37 | 2 | 53 | 7 | 46 | 0 | 40 | 4 | 39 | 3 |
| Math and Physical Science | 68 | 9 | 59 | 14 | 55 | 7 | 38 | 12 | 49 | 6 | 49 | 9 |
| Law | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Medical Sciences | -- | -- | -- | -- | 77 | 25 | -- | -- | 68 | 0 | 46 | 4 |
| Women | | | | | | | | | | | | |
| Total | 64 | 15 | 55 | 15 | 62 | 17 | 56 | 16 | 50 | 8 | 48 | 8 |
| Education | 80 | 14 | 70 | 18 | 78 | 17 | 74 | 14 | 61 | 4 | 59 | 4 |
| Fine Arts and Humanities | 50 | 17 | 46 | 14 | 54 | 21 | 46 | 17 | 51 | 11 | 45 | 13 |
| Commerce | 74 | 22 | 63 | 26 | 61 | 21 | 60 | 21 | 53 | 8 | 57 | 11 |
| Economics | -- | -- | -- | -- | -- | -- | -- | -- | 30 | 11 | -- | -- |
| Other Social Sciences | 51 | 14 | 46 | 11 | 54 | 16 | 43 | 17 | 41 | 9 | 37 | 11 |
| Agricultural and Biological Sciences | 61 | 18 | 54 | 14 | 52 | 17 | 58 | 14 | 47 | 6 | 38 | 7 |
| Engineering and Computer Science | 59 | 4 | 55 | 5 | 59 | 12 | 60 | 5 | 51 | 4 | 68 | 10 |
| Other Health | 33 | 2 | 30 | 8 | 38 | 10 | 29 | 4 | 29 | 5 | 24 | 4 |
| Math and Physical Science | -- | -- | -- | -- | 57 | 15 | 58 | 4 | 40 | 6 | 50 | 4 |
| Law | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Medical Sciences | 85 | 30 | -- | -- | 80 | 13 | 81 | 33 | 61 | 27 | -- | -- |

Note:

-- Sample size too small to report (fewer than 30 subjects).

Source: National Graduates Surveys.



Table 4
Overqualification of doctoral graduates for main job, by sex and field of study

| | 1982 Cohort | | | | 1986 Cohort | | | | 1990 Cohort | | | |
|--------------------------------------|-----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| | 1984 | | 1987 | | 1988 | | 1991 | | 1992 | | 1995 | |
| | 1(+) levels | 2(+) levels | 1(+) levels | 2(+) levels | 1(+) levels | 2(+) levels | 1(+) levels | 2(+) levels | 1(+) levels | 2(+) levels | 1(+) levels | 2(+) levels |
| | % overqualified | | | | | | | | | | | |
| Men | | | | | | | | | | | | |
| Total | 41 | 19 | 39 | 21 | 34 | 14 | 34 | 17 | 29 | 11 | 29 | 12 |
| Education | 72 | 30 | 71 | 27 | 65 | 23 | 65 | 10 | 50 | 22 | 46 | 13 |
| Fine Arts and Humanities | 52 | 34 | 44 | 39 | 40 | 23 | 35 | 17 | 31 | 9 | 29 | 12 |
| Commerce | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Economics | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Other Social Sciences | 43 | 12 | 40 | 17 | 41 | 10 | 30 | 8 | 35 | 13 | 29 | 10 |
| Agricultural and Biological Sciences | 16 | 10 | 22 | 18 | 16 | 8 | 18 | 14 | 20 | 5 | 22 | 4 |
| Engineering and Computer Science | 42 | 21 | 42 | 17 | 27 | 9 | 35 | 20 | 30 | 11 | 26 | 12 |
| Other Health | -- | -- | -- | -- | -- | -- | -- | -- | 21 | 18 | -- | -- |
| Math and Physical Science | 36 | 21 | 32 | 19 | 30 | 11 | 34 | 16 | 27 | 8 | 36 | 18 |
| Law | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Medical Sciences | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Women | | | | | | | | | | | | |
| Total | 39 | 13 | 38 | 19 | 36 | 12 | 35 | 15 | 30 | 9 | 29 | 9 |
| Education | 56 | 17 | 49 | 22 | 59 | 12 | 50 | 8 | 45 | 12 | 44 | 14 |
| Fine Arts and Humanities | -- | -- | -- | -- | 36 | 10 | 29 | 4 | 32 | 12 | 34 | 10 |
| Commerce | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Economics | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Other Social Sciences | 37 | 7 | 45 | 17 | 37 | 13 | 36 | 17 | 34 | 4 | 31 | 8 |
| Agricultural and Biological Sciences | -- | -- | -- | -- | -- | -- | -- | -- | 14 | 12 | 6 | 3 |
| Engineering and Computer Science | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Other Health | -- | -- | -- | -- | -- | -- | -- | -- | 35 | 19 | -- | -- |
| Math and Physical Science | -- | -- | -- | -- | -- | -- | -- | -- | 19 | 6 | 19 | 3 |
| Law | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Medical Sciences | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

Note:

-- Sample size too small to report (fewer than 30 subjects).

Source: National Graduates Surveys.



Table 5
Overqualified college graduates, by sex, co-op status, geographical region and industrial sector

| | 1982 Cohort | | 1986 Cohort | | 1990 Cohort | |
|----------------------------------|-----------------|------|-------------|------|-------------|------|
| | 1984 | 1987 | 1988 | 1991 | 1992 | 1995 |
| | % overqualified | | | | | |
| Men | | | | | | |
| Co-op | | | | | | |
| No | 44 | 49 | 46 | 47 | 43 | 45 |
| Yes | 41 | 44 | 37 | 46 | 36 | 42 |
| Region | | | | | | |
| Atlantic | 36 | 51 | 49 | 53 | 37 | 44 |
| Quebec | 35 | 39 | 37 | 27 | 39 | 37 |
| Ontario | 49 | 52 | 47 | 51 | 42 | 44 |
| Prairies | 39 | 45 | 47 | 56 | 49 | 57 |
| British Columbia and Territories | 49 | 59 | 55 | 62 | 45 | 54 |
| Industry | | | | | | |
| Public | 33 | 42 | 49 | 50 | 39 | 44 |
| Semi-public | 25 | 29 | 26 | 23 | 19 | 21 |
| Private | 47 | 51 | 48 | 50 | 47 | 50 |
| Women | | | | | | |
| Co-op | | | | | | |
| No | 35 | 42 | 37 | 38 | 34 | 34 |
| Yes | 29 | 38 | 29 | 60 | 35 | 34 |
| Region | | | | | | |
| Atlantic | 15 | 31 | 29 | 33 | 26 | 30 |
| Quebec | 32 | 41 | 37 | 31 | 40 | 36 |
| Ontario | 36 | 44 | 38 | 42 | 32 | 32 |
| Prairies | 18 | 23 | 28 | 33 | 31 | 29 |
| British Columbia and Territories | 36 | 44 | 39 | 43 | 30 | 37 |
| Industry | | | | | | |
| Public | 49 | 57 | 47 | 51 | 57 | 58 |
| Semi-public | 12 | 20 | 16 | 20 | 18 | 18 |
| Private | 52 | 59 | 57 | 57 | 51 | 50 |

Source: National Graduates Surveys.



Table 6
Overqualified bachelor's graduates, by sex, co-op status, geographical region and industrial sector

| | 1982 Cohort | | 1986 Cohort | | 1990 Cohort | |
|----------------------------------|-----------------|------|-------------|------|-------------|------|
| | 1984 | 1987 | 1988 | 1991 | 1992 | 1995 |
| | % overqualified | | | | | |
| Men | | | | | | |
| Co-op | | | | | | |
| No | 33 | 30 | 35 | 29 | 31 | 29 |
| Yes | 20 | 18 | 15 | 11 | 14 | 14 |
| Region | | | | | | |
| Atlantic | 31 | 29 | 37 | 27 | 31 | 26 |
| Quebec | 29 | 25 | 36 | 29 | 28 | 23 |
| Ontario | 35 | 34 | 32 | 27 | 30 | 29 |
| Prairies | 34 | 28 | 36 | 32 | 34 | 33 |
| British Columbia and Territories | 34 | 32 | 43 | 30 | 33 | 34 |
| Industry | | | | | | |
| Public | 39 | 37 | 51 | 38 | 39 | 37 |
| Semi-public | 24 | 17 | 25 | 19 | 20 | 19 |
| Private | 33 | 31 | 35 | 29 | 31 | 28 |
| Women | | | | | | |
| Co-op | | | | | | |
| No | 36 | 31 | 43 | 35 | 30 | 27 |
| Yes | 21 | 15 | 18 | 23 | 14 | 14 |
| Region | | | | | | |
| Atlantic | 32 | 29 | 40 | 34 | 33 | 30 |
| Quebec | 32 | 28 | 47 | 41 | 31 | 28 |
| Ontario | 40 | 33 | 40 | 31 | 28 | 27 |
| Prairies | 33 | 26 | 39 | 32 | 31 | 30 |
| British Columbia and Territories | 40 | 37 | 49 | 35 | 30 | 24 |
| Industry | | | | | | |
| Public | 40 | 32 | 45 | 35 | 36 | 37 |
| Semi-public | 26 | 24 | 37 | 31 | 21 | 17 |
| Private | 46 | 37 | 48 | 40 | 40 | 38 |

Source: National Graduates Surveys.



Table 7

Overqualified master's graduates, by sex, co-op status, geographical region and industrial sector

| | 1982 Cohort | | 1986 Cohort | | 1990 Cohort | |
|----------------------------------|-------------|------|-------------|------|-------------|------|
| | 1984 | 1987 | 1988 | 1991 | 1992 | 1995 |
| % overqualified | | | | | | |
| Men | | | | | | |
| Co-op | | | | | | |
| No | 72 | 65 | 65 | 58 | 60 | 58 |
| Yes | 67 | 53 | -- | -- | 51 | 55 |
| Region | | | | | | |
| Atlantic | 68 | 64 | 65 | 61 | 60 | 50 |
| Quebec | 79 | 72 | 68 | 62 | 64 | 62 |
| Ontario | 70 | 61 | 62 | 56 | 60 | 59 |
| Prairies | 70 | 65 | 60 | 55 | 62 | 57 |
| British Columbia and Territories | 67 | 63 | 59 | 48 | 49 | 51 |
| Industry | | | | | | |
| Public | 72 | 68 | 67 | 61 | 65 | 66 |
| Semi-public | 72 | 63 | 59 | 50 | 56 | 51 |
| Private | 72 | 64 | 66 | 63 | 62 | 60 |
| Women | | | | | | |
| Co-op | | | | | | |
| No | 63 | 55 | 63 | 57 | 51 | 48 |
| Yes | 64 | 60 | -- | -- | 44 | 43 |
| Region | | | | | | |
| Atlantic | 55 | 46 | 62 | 53 | 50 | 48 |
| Quebec | 71 | 63 | 67 | 67 | 57 | 55 |
| Ontario | 61 | 51 | 60 | 54 | 46 | 42 |
| Prairies | 67 | 62 | 59 | 44 | 58 | 61 |
| British Columbia and Territories | 54 | 53 | 60 | 49 | 44 | 38 |
| Industry | | | | | | |
| Public | 63 | 60 | 60 | 56 | 49 | 54 |
| Semi-public | 62 | 54 | 61 | 54 | 47 | 43 |
| Private | 69 | 59 | 68 | 65 | 60 | 59 |

Note:

-- Sample size too small to report (fewer than 30 subjects).

Source: National Graduates Surveys.



Table 8

Overqualified doctoral graduates, by sex, co-op status, geographical region and industrial sector

| | 1982 Cohort | | 1986 Cohort | | 1990 Cohort | |
|----------------------------------|-----------------|------|-------------|------|-------------|------|
| | 1984 | 1987 | 1988 | 1991 | 1992 | 1995 |
| | % overqualified | | | | | |
| Men | | | | | | |
| Co-op | | | | | | |
| No | 40 | 37 | 34 | 33 | 29 | 29 |
| Yes | -- | -- | -- | -- | -- | -- |
| Region | | | | | | |
| Atlantic | -- | -- | 34 | 25 | 21 | 20 |
| Quebec | 44 | 43 | 35 | 37 | 24 | 26 |
| Ontario | 37 | 34 | 35 | 33 | 34 | 35 |
| Prairies | -- | -- | 33 | 35 | 36 | 27 |
| British Columbia and Territories | -- | -- | 34 | 34 | 30 | 29 |
| Industry | | | | | | |
| Public | 57 | 61 | 49 | 47 | 40 | 43 |
| Semi-public | 32 | 29 | 28 | 26 | 20 | 19 |
| Private | 58 | 52 | 44 | 51 | 45 | 44 |
| Women | | | | | | |
| Co-op | | | | | | |
| No | 39 | 38 | 37 | 35 | 30 | 30 |
| Yes | -- | -- | -- | -- | -- | -- |
| Region | | | | | | |
| Atlantic | -- | -- | -- | -- | -- | -- |
| Quebec | -- | -- | 45 | 39 | 31 | 29 |
| Ontario | 36 | 42 | 31 | 29 | 31 | 30 |
| Prairies | -- | -- | -- | -- | -- | -- |
| British Columbia and Territories | -- | -- | -- | -- | 23 | 30 |
| Industry | | | | | | |
| Public | -- | -- | 52 | -- | 29 | 36 |
| Semi-public | 33 | 33 | 32 | 30 | 27 | 26 |
| Private | -- | -- | -- | -- | 47 | 43 |

Note:

-- Sample size too small to report (fewer than 30 subjects).

Source: National Graduates Surveys.



Table 9
Mean earnings and use of skills by graduates, by sex, education and overqualification

| | 1982 Cohort | | | | | | 1986 Cohort | | | | | | 1990 Cohort | | | | | |
|-------------------------------------------|---------------------|----------|------------|--------|----------|------------|-------------|----------|------------|--------|----------|------------|-------------|----------|------------|--------|----------|------------|
| | 1984 | | | 1987 | | | 1988 | | | 1991 | | | 1992 | | | 1995 | | |
| | Not OQ | OQ by OQ | OQ by 2(+) | Not OQ | OQ by OQ | OQ by 2(+) | Not OQ | OQ by OQ | OQ by 2(+) | Not OQ | OQ by OQ | OQ by 2(+) | Not OQ | OQ by OQ | OQ by 2(+) | Not OQ | OQ by OQ | OQ by 2(+) |
| Men | \$ thousands (1995) | | | | | | | | | | | | | | | | | |
| Mean earnings – education required | | | | | | | | | | | | | | | | | | |
| College | 30.6 | 36.9 | 52.0 | 34.8 | 38.5 | -- | 30.0 | 35.7 | 41.1 | 35.1 | 36.7 | -- | 30.7 | 32.0 | -- | 36.3 | 34.5 | -- |
| Bachelor's | 37.3 | 51.6 | 50.9 | 43.8 | 54.7 | -- | 36.9 | 51.0 | 48.5 | 42.4 | 52.2 | 51.9 | 36.1 | 50.1 | 49.2 | 43.6 | 56.1 | 54.0 |
| Master's | 45.7 | 55.9 | .. | 51.6 | 61.3 | .. | 43.8 | 52.5 | .. | 46.9 | 49.2 | .. | 45.6 | 51.9 | .. | 53.5 | 56.8 | .. |
| Mean earnings – education attained | | | | | | | | | | | | | | | | | | |
| College | 30.6 | 26.0 | .. | 36.7 | 33.9 | 32.9 | 30.1 | 28.3 | 27.8 | 35.7 | 35.2 | 34.2 | 30.7 | 26.2 | 25.6 | 36.6 | 32.2 | 31.3 |
| Bachelor's | 37.4 | 31.2 | 30.3 | 45.6 | 38.8 | 34.9 | 36.9 | 33.4 | 32.9 | 43.7 | 38.8 | 37.1 | 36.4 | 27.2 | 26.2 | 44.0 | 35.3 | 35.8 |
| Master's | 48.4 | 50.8 | 47.3 | 55.1 | 55.0 | 52.1 | 47.1 | 49.6 | 44.1 | 51.6 | 53.9 | 51.5 | 47.8 | 48.4 | 36.7 | 54.7 | 55.1 | 49.0 |
| Doctorate | 45.9 | 53.1 | 50.0 | 51.3 | 58.6 | 57.7 | 45.2 | 51.3 | 49.5 | 52.2 | 54.9 | 51.9 | 45.6 | 50.4 | 47.8 | 52.9 | 56.2 | 55.4 |
| | index | | | | | | | | | | | | | | | | | |
| Skills index | | | | | | | | | | | | | | | | | | |
| College | 94 | 56 | .. | 95 | 70 | 69 | 95 | 69 | 67 | 94 | 77 | 75 | 83 | 54 | 50 | 79 | 56 | 53 |
| Bachelor's | 93 | 58 | 52 | 94 | 69 | 64 | 93 | 66 | 61 | 92 | 70 | 69 | 79 | 46 | 41 | 76 | 52 | 47 |
| Master's | 96 | 87 | 81 | 96 | 91 | 77 | 98 | 87 | 73 | 98 | 90 | 84 | 87 | 72 | 53 | 86 | 72 | 59 |
| Doctorate | 99 | 92 | 87 | 100 | 96 | 90 | 98 | 92 | 86 | 98 | 95 | 90 | 94 | 80 | 74 | 94 | 84 | 75 |
| Women | \$ thousands (1995) | | | | | | | | | | | | | | | | | |
| Mean earnings – education required | | | | | | | | | | | | | | | | | | |
| College | 25.9 | 34.9 | 41.4 | 27.9 | 31.3 | -- | 27.1 | 34.2 | 42.8 | 28.8 | 31.2 | -- | 27.6 | 31.5 | 34.2 | 29.7 | 32.8 | 39.5 |
| Bachelor's | 32.9 | 45.3 | -- | 36.1 | 44.6 | -- | 33.4 | 44.6 | -- | 37.3 | 45.2 | -- | 33.8 | 45.1 | 58.1 | 37.9 | 49.2 | 59.3 |
| Master's | 39.0 | 51.4 | .. | 41.2 | -- | .. | 39.6 | 50.3 | .. | 41.6 | -- | .. | 40.8 | 49.0 | .. | 46.7 | 53.4 | .. |
| Mean earnings – education attained | | | | | | | | | | | | | | | | | | |
| College | 26.1 | 19.8 | .. | 28.9 | 23.6 | 23.1 | 27.1 | 22.3 | 22.3 | 29.7 | 25.0 | 24.8 | 27.6 | 21.8 | 21.6 | 29.9 | 24.7 | 24.7 |
| Bachelor's | 33.0 | 27.3 | 24.1 | 37.9 | 31.7 | 27.5 | 33.4 | 29.8 | 28.0 | 38.2 | 32.8 | 28.4 | 33.8 | 26.4 | 24.4 | 38.3 | 29.4 | 29.4 |
| Master's | 41.6 | 43.2 | 36.6 | 45.4 | 46.1 | 40.7 | 43.1 | 43.4 | 39.9 | 45.5 | 45.6 | 37.5 | 43.9 | 42.7 | 30.0 | 48.0 | 46.9 | 46.9 |
| Doctorate | 42.3 | 50.8 | 49.6 | 46.6 | 50.7 | -- | 42.5 | 47.6 | 42.5 | 48.6 | 49.4 | -- | 45.1 | 50.2 | 53.0 | 50.5 | 55.1 | 55.1 |
| | index | | | | | | | | | | | | | | | | | |
| Skills index | | | | | | | | | | | | | | | | | | |
| College | 96 | 65 | .. | 97 | 76 | 75 | 96 | 74 | 71 | 95 | 76 | 74 | 88 | 58 | 56 | 85 | 59 | 57 |
| Bachelor's | 93 | 63 | 53 | 93 | 72 | 67 | 94 | 71 | 66 | 92 | 74 | 68 | 80 | 51 | 42 | 77 | 55 | 50 |
| Master's | 97 | 87 | 78 | 98 | 90 | 77 | 97 | 90 | 80 | 98 | 91 | 76 | 88 | 74 | 55 | 87 | 74 | 63 |
| Doctorate | 97 | 87 | 66 | 99 | 98 | -- | 96 | 92 | 88 | 99 | 95 | -- | 95 | 81 | 74 | 95 | 82 | 75 |

Notes:

-- Sample size too small to report (fewer than 30 subjects).

.. Figures not available.

Source: National Graduates Surveys.



Holding their own: Employment and earnings of postsecondary graduates^{1,2}

Introduction

Generation faces grim job outlook

—*The Globe and Mail*, Sept. 6, 1993

Headlines such as this have become commonplace, describing the bleak situation faced by younger workers entering the labour market. Of particular interest is that the article cited above focusses on the plight of university graduates: although they have traditionally fared well, the story suggests, they are now having almost as much difficulty finding work as are their contemporaries who have less education.

“There is no car, no spacious apartment, no expensive vacations, no career,” the article points out. One woman describes her own personal set of stunted expectations: “I can’t imagine ever getting married, ever owning my own home, ever owning a car or ever having children. I’m just never going to have that.” The article offers anecdotal evidence of the difficulties of finding—and keeping—a job and of the underemployment and low wages that characterize the ‘burger-flipping’ jobs that are found. The alleged confusion and despair is neatly summed up by a recent law graduate: “I think we’re all a little lost. People just don’t know what to do next.”

Indeed, it seems to have become an accepted fact that Generation X, as a whole, has been facing tough times and has consequently sunk into a multifaceted collective malaise: cultural, moral and political, as well as economic. But is the situation really as bad as this popular wisdom suggests? Or have the experiences of today’s youth been exaggerated by a combination of the media’s search for a hot topic, a particular capacity for collective angst within the generation in question, and perhaps the preceding generation’s sense of guilt for things done and/or not done? It is important to know what the real situation is because only then can we know which policies, if any, should be brought to bear to assist this new ‘lost generation.’

On the surface, the evidence seems incontrovertible, with various researchers—including this one—reporting a decline in the fortunes of younger Canadian workers, accompanied by explanations of how this has come to be.³ However, these studies have mostly been restricted

Ross Finnie, Researcher
Business and Labour Market Analysis,
Statistics Canada
and
School of Policy Studies,
Queen’s University
Telephone: (613) 951-3962 (Statistics
Canada);
(613) 533-6000, ext. 74219 (Queen’s)
Fax: (613) 951-5403 (Statistics Canada);
(613) 533-6606 (Queen’s)
E-mail: ref@qsilver.queensu.ca

to the Survey of Consumer Finances (SCF) databases, and several problems can arise from this concentration of the empirical evidence. One problem is that there has perhaps been less cross-verification of the patterns than would be desirable—although the consistency of the SCF results with those based on other existing data sources is obviously significant in this regard.⁴ In addition, because the SCF is a general-purpose labour market survey, the potential for applying analysis to the subgroup level—such as separating out different cohorts of recent postsecondary graduates, and breaking the outcomes down by sex and specific level of education—is limited, as the associated sample sizes are small. Another problem, again owing to the omnibus nature of the SCF databases, is that the variables available reflect no preference for younger workers in general, or for those going through the school-to-work transition in particular, thus limiting the scope of any analysis of this stage of the life cycle. As well, the cross-sectional nature of the SCF data precludes any sort of explicitly dynamic analysis, such as how employment status or earnings levels evolve over the early years in the labour market for given individuals.⁵ Finally, the SCF data pose problems for comparisons over time based on the specific level of education because of changes in the definition of the educational categories used in the survey in 1989.⁶

In reporting the results of a longitudinal analysis across cohorts, this paper offers new empirical evidence from the National Graduates Surveys (NGS) databases⁷ regarding the early labour market outcomes of Canadian postsecondary graduates.

The NGS databases (see the Appendix for details on the databases in general and on the specific samples and variables used in this analysis) comprise large, representative samples of Canadian postsecondary students who successfully completed their college and university programs in 1982, 1986 and 1990. The databases include detailed information on individuals' educational experiences and early labour market outcomes, based on interviews conducted two and five years after graduation for each group. The NGS data thus facilitate a tightly focussed and detailed dynamic analysis of the school-to-work transition of Canadian postsecondary graduates from the early 1980s into the mid-1990s, a period generally thought to be one of significant change in labour market outcomes—especially for younger workers. This analysis is broken down by sex and level of education—college, bachelor's, master's or doctoral.

The primary focus of this analysis is to determine whether early labour market outcomes have deteriorated recently for postsecondary graduates in Canada. The evidence suggests that this has not in fact been the case—or at least not to the degree that some may have thought.

More specifically, the most recent class of male graduates (1990) generally had similar employment rates and in some cases moderately lower earnings than the first group (1982 graduates). The middle group (1986 graduates) fared better than both of these, having come onto the labour market during the boom years of the mid-1980s. While employment rates for female graduates were also effectively unchanged, earnings levels were generally higher for the most recent group—but more so two years than five years after graduation. There was also a fairly significant narrowing of the earnings gap among graduates by sex, but interestingly this narrowing was greater immediately following graduation than at the interview times.

The factors underlying these earnings patterns are treated in a detailed econometric framework elsewhere (Finnie 1998b). However, those findings indicate that the overall effects of changed 'characteristics'—including field of study, employment status, and industry of employment—are small, while the moderate declines in earnings for certain groups of male graduates appear to be largely due to a generalized downward shift and attenuated growth in earnings over the early years in the labour market. That is, male postsecondary graduates' age-earnings profiles appear to have become somewhat lower and flatter over the last decade.

A profile of graduates' activity rates and earnings levels

The analysis begins with some general trends in employment and earnings. The trends were based on standard Labour Force Survey (LFS) data for all workers, not just for recent postsecondary graduates, in order to provide the context for the focus on the latter adopted in this paper. In the remainder of the section, we turn to the record of recent postsecondary graduates as revealed by the NGS data in terms of activity rates and earnings patterns. The focus is on three aspects: employment and earnings patterns by level of education and sex; the evolution of these patterns from two to five years after graduation; and shifts in these patterns across the three cohorts—1982, 1986 and 1990 graduates—covered by the data.

The context: General trends in unemployment rates and earnings levels

Unemployment rates

Trends in unemployment rates based on standard LFS data for 1982 to 1995—the same period covered by the NGS data used here—are shown in Graph A1. The first point of note is that unemployment rates have been generally higher for younger workers than for older ones. In 1995, for

example, men aged 20 to 24 had an unemployment rate of 15.0%, while men aged 25 to 34 had a rate of 10.2% and men of all ages taken together had a rate of 9.9%. The latter figure implies considerably lower rates for those aged 35 and older.⁸ In most cases women's unemployment rates were lower than men's for all age groups, but followed a similar pattern by age, with rates of 12.1%, 9.3% and 9.2%, respectively, for each of the three age groups.

The trends over time included the following:

- general increases in 1983 (after even sharper rises from 1981 to 1982);
- recovery through the rest of the 1980s;
- new increases during the early-1990s recession, with rates peaking in 1992; and
- subsequent improvements through 1995.

Around these cyclical patterns—and perhaps contrary to popularly held views—there is little evidence of a general upward trend in unemployment rates over time. For example, comparing 1983 and 1992, the years in which rates peaked, unemployment was lower in 1992 for men and women of all age groups, with the exception of men aged 25 to 34 for whom rates were slightly higher. Similarly, while younger workers generally had higher unemployment rates than older ones (as noted above), there was no significant general deterioration in their situation relative to older workers over the same period. The unemployment rates of younger workers thus held more or less stable relative to the rates of workers of all ages taken together throughout the entire period 1982 to 1995.

The following comparisons across specific years provide the context for the cross-cohort comparisons made with the NGS data:

1. For the comparisons based on the first interview, conducted two years after graduation for each cohort,
 - unemployment rates for younger as well as older men were slightly higher for the third cohort (interviewed in 1992) than for the first (interviewed in 1984), and distinctly lower for the middle cohort (interviewed in 1988); and
 - women's unemployment rates showed a broad similarity across cohorts, but the third cohort's rates were slightly lower than those of the first cohort, while the middle cohort again faced more favourable economic conditions than the others did.
2. For the comparisons based on the second interview, conducted five years after graduation for each cohort,
 - men's unemployment rates were uniformly lowest for the first cohort (interviewed in 1987), next lowest for the third cohort (interviewed in 1995), and most elevated for the middle cohort (interviewed in 1991);

- women's unemployment rates were generally quite similar across the three cohorts; and
- it is noteworthy as well that the unemployment situation improved between the two interviews for the first and third cohorts, but worsened for the second cohort.

Earnings levels

The mean earnings of workers of various age groups, again based on standard LFS data, are shown in Graph A2. To enable us to abstract from labour supply issues and to dovetail with the NGS results reported below, the figures are restricted to full-time workers. The patterns are in some ways very consistent with the unemployment rates just seen, but are in other ways quite different.

It is not surprising that men's mean earnings were generally higher for older workers than for younger ones, reflecting the well-known life-cycle pattern. Of greater interest, however, is that the time paths show much less cyclical variation than was the case for unemployment rates, while there was a moderate trend towards lower earnings for both the younger groups of men (aged 20 to 24 and 25 to 34) over the period 1982 to 1995—both in real terms and relative to older men's earnings, which exhibited no such general decline.

Younger women also showed much less cyclical variation in earnings than was seen for unemployment rates, while the general trends over time were towards moderate gains in real earnings levels, rather than the declines experienced by young men. The mean earnings of full-time female workers of all ages rose as well.

For the cross-cohort comparisons, the following points are most salient:

1. For the first interview data (obtained two years after graduation for each cohort), the second and third cohorts of male graduates found themselves in labour markets where the earnings of young men aged 20 to 24 and 25 to 34 were in each case slightly to moderately lower than those of the preceding wave, with more pronounced changes from the second cohort to the third. For women, the trends were in the opposite direction, showing increases rather than declines.
2. For the second interview, conducted five years after graduation for each cohort, younger men's earnings were again lower over time, although the timing and extent of the changes varied with the specific age group. For young women, earnings trends were relatively flat for those aged 20 to 24 and moderately upward for those aged 25 to 34.

Activity rates of postsecondary graduates

Broad activity rates⁹

Table 1 provides a broad overview of what postsecondary students were doing in the years following graduation. It shows the percentages of graduates who were employed (full and part time), unemployed, and out of the labour force (enrolled or not), by sex and level of education; and it presents this breakdown for each of the two interview dates for the three cohorts. Although graduates are classified by their original degree, the rates shown in

Table 1 are based on samples that include graduates who had obtained another degree by the relevant interview date—this is the only time in this analysis where this is the case. The percents unemployed shown in Table 1 are not conventional ones, since they represent the proportion of all graduates—including those who are out of the labour force—who were unemployed. Rates based only on labour market participants (the more standard definition) are reported in Table 2.

In every case, by far the greatest proportion of postsecondary graduates was employed full time, with these rates generally rising between two and five years after graduation. Full-time employment rates tended to be higher

| | | Table 1 Labour force activities of graduates | | | | | | | | | |
|-------------------|-------|-------------------------------------------------|-----------|------------|---------------------|--------------|-----------|-----------|------------|---------------------|--------------|
| | | First cohort (1982 graduates) | | | | | | | | | |
| | | 1984 | | | | | 1987 | | | | |
| | | Employed | | | Not in labour force | | Employed | | | Not in labour force | |
| | | Full time | Part time | Unemployed | Enrolled | Not enrolled | Full time | Part time | Unemployed | Enrolled | Not enrolled |
| | | % | | | | | | | | | |
| College | Men | 81 | 5 | 12 | 2 | 1 | 83 | 4 | 7 | 4 | 2 |
| | Women | 75 | 12 | 9 | 1 | 3 | 72 | 15 | 5 | 3 | 6 |
| Bachelor's | Men | 76 | 6 | 9 | 6 | 2 | 85 | 5 | 4 | 4 | 2 |
| | Women | 70 | 11 | 9 | 5 | 5 | 74 | 12 | 4 | 3 | 7 |
| Master's | Men | 79 | 4 | 6 | 10 | 1 | 88 | 6 | 2 | 3 | 2 |
| | Women | 71 | 10 | 8 | 7 | 4 | 74 | 13 | 3 | 3 | 6 |
| PhD | Men | 86 | 4 | 7 | 2 | 1 | 89 | 4 | 3 | 2 | 1 |
| | Women | 80 | 6 | 8 | 1 | 5 | 82 | 9 | 2 | 3 | 4 |
| | | Second cohort (1986 graduates) | | | | | | | | | |
| | | 1988 | | | | | 1991 | | | | |
| | | Full time | Part time | Unemployed | Enrolled | Not enrolled | Full time | Part time | Unemployed | Enrolled | Not enrolled |
| College | Men | 82 | 4 | 11 | 2 | 1 | 83 | 3 | 10 | 3 | 1 |
| | Women | 77 | 11 | 8 | 1 | 3 | 75 | 11 | 6 | 2 | 5 |
| Bachelor's | Men | 76 | 6 | 11 | 6 | 1 | 85 | 4 | 6 | 4 | 0 |
| | Women | 70 | 12 | 9 | 5 | 3 | 75 | 12 | 5 | 3 | 4 |
| Master's | Men | 76 | 6 | 6 | 10 | 1 | 86 | 5 | 4 | 4 | 1 |
| | Women | 72 | 11 | 7 | 7 | 3 | 76 | 14 | 4 | 3 | 4 |
| PhD | Men | 89 | 4 | 4 | 1 | 1 | 95 | 2 | 2 | 0 | 1 |
| | Women | 80 | 10 | 7 | 1 | 2 | 85 | 10 | 3 | 0 | 2 |
| | | Third cohort (1990 graduates) | | | | | | | | | |
| | | 1992 | | | | | 1995 | | | | |
| | | Full time | Part time | Unemployed | Enrolled | Not enrolled | Full time | Part time | Unemployed | Enrolled | Not enrolled |
| College | Men | 81 | 5 | 11 | 1 | 1 | 87 | 4 | 7 | 1 | 1 |
| | Women | 73 | 12 | 10 | 2 | 3 | 74 | 14 | 7 | 1 | 5 |
| Bachelor's | Men | 76 | 6 | 10 | 6 | 1 | 85 | 4 | 6 | 4 | 1 |
| | Women | 70 | 12 | 10 | 4 | 4 | 75 | 12 | 6 | 2 | 4 |
| Master's | Men | 75 | 6 | 6 | 11 | 1 | 83 | 5 | 6 | 4 | 1 |
| | Women | 73 | 10 | 7 | 6 | 3 | 75 | 11 | 5 | 3 | 4 |
| PhD | Men | 89 | 3 | 5 | 1 | 1 | 93 | 3 | 3 | 0 | 0 |
| | Women | 83 | 6 | 7 | 1 | 2 | 82 | 8 | 6 | 0 | 4 |

Source: National Graduates Surveys.

for men than for women, while women held down more part-time jobs than men did.

Looking at things by level of education, full-time work was more common for PhD graduates than for those at other levels, reflecting the fact that in most cases such graduates have fully completed their schooling, are committed to being in the labour force, and have relatively abundant opportunities for employment. The higher full-time employment rates at the doctoral level thus reflect a number of demand-and-supply influences.

Beyond this, the rates do not generally vary by level of education—college, bachelor's or master's—because of various crosscutting influences. For example,

- higher percentages of master's and bachelor's graduates are out of the labour force but still in school;
- enrolment has the further effect of increasing part-time employment at the expense of full-time employment; and
- college graduates typically have higher unemployment rates than those at the bachelor's and master's levels.

Employment and unemployment rates

Table 2 presents more conventionally defined labour force activity rates—that is, the percentage of graduates employed full time, employed part time and unemployed—while Graph A1 shows the unemployment rates. Here, as

| | | First cohort (1982 graduates) | | | | | |
|-------------------|-------|--------------------------------|-----------|------------|-----------|-----------|------------|
| | | 1984 | | | 1987 | | |
| | | Employed | | Unemployed | Employed | | Unemployed |
| | | Full time | Part time | | Full time | Part time | |
| | | % | | | | | |
| College | | | | | | | |
| | Men | 84 | 5 | 11 | 89 | 4 | 7 |
| | Women | 79 | 12 | 9 | 79 | 16 | 5 |
| Bachelor's | | | | | | | |
| | Men | 85 | 6 | 9 | 92 | 4 | 4 |
| | Women | 79 | 12 | 9 | 81 | 14 | 5 |
| Master's | | | | | | | |
| | Men | 89 | 4 | 6 | 92 | 6 | 2 |
| | Women | 80 | 11 | 8 | 81 | 15 | 4 |
| PhD | | | | | | | |
| | Men | 89 | 4 | 6 | 93 | 4 | 3 |
| | Women | 87 | 6 | 7 | 89 | 9 | 2 |
| | | Second cohort (1986 graduates) | | | | | |
| | | 1988 | | | 1991 | | |
| College | | | | | | | |
| | Men | 85 | 4 | 11 | 86 | 4 | 10 |
| | Women | 80 | 12 | 8 | 81 | 13 | 7 |
| Bachelor's | | | | | | | |
| | Men | 84 | 5 | 10 | 90 | 4 | 7 |
| | Women | 78 | 13 | 9 | 81 | 14 | 6 |
| Master's | | | | | | | |
| | Men | 87 | 6 | 7 | 90 | 6 | 4 |
| | Women | 80 | 12 | 7 | 81 | 15 | 4 |
| PhD | | | | | | | |
| | Men | 91 | 4 | 4 | 96 | 2 | 2 |
| | Women | 82 | 10 | 8 | 86 | 11 | 3 |
| | | Third cohort (1990 graduates) | | | | | |
| | | 1992 | | | 1995 | | |
| College | | | | | | | |
| | Men | 84 | 5 | 11 | 90 | 4 | 7 |
| | Women | 77 | 13 | 10 | 79 | 14 | 7 |
| Bachelor's | | | | | | | |
| | Men | 84 | 6 | 10 | 92 | 3 | 5 |
| | Women | 78 | 13 | 10 | 82 | 13 | 5 |
| Master's | | | | | | | |
| | Men | 86 | 7 | 7 | 89 | 5 | 6 |
| | Women | 81 | 12 | 7 | 82 | 13 | 5 |
| PhD | | | | | | | |
| | Men | 92 | 3 | 5 | 94 | 3 | 4 |
| | Women | 87 | 7 | 7 | 85 | 9 | 6 |

1. Samples exclude graduates who had completed a new diploma by the relevant interview.

Source: National Graduates Surveys.

before, all graduates who had obtained an additional diploma by the relevant interview were date excluded from the calculations. However, continuing students who had not yet obtained a new diploma and who were in the labour force were included.

The first important point to note is that unemployment rates were quite low for graduates of all levels (college through doctoral)—mostly in the 4% to 10% range, but sometimes as low as 2% and nowhere greater than 11%. Furthermore, these rates are considerably below those of all labour force participants taken together (that is, postsecondary graduates plus all others). The rates for workers of comparable ages in the general population ranged from 10% to 20%, thus implying rates considerably higher than these for non-postsecondary graduates taken alone. The graduates' rates also compare rather favourably with those of men and women of all ages taken together, thus further distancing college and university graduates from the 'youth unemployment problem.'

A second point is that the unemployment rates show only a very slight upward trend across cohorts, with rates generally stable or rising only one percentage point or so from the first to last set of graduates, and some of the later groups actually showing declines at either the two- or five-year interviews. Thus, in addition to enjoying unemployment rates that have generally been much lower than those of the general population, postsecondary graduates also appear to have experienced no significant general deterioration in employment opportunities from the early 1980s into the middle 1990s. This is an important finding—at least partly because it is likely to surprise many readers who have come to accept the Generation X idea in a wholesale fashion.

Also of considerable interest is the extent to which unemployment rates have declined from two to five years following graduation, sometimes halving or dropping even further over this three-year interval (albeit with some variation in these general tendencies by cohort, level of education, and sex). Thus, with respect to finding a job, the school-to-work transition appears to be very much a process rather than a date-specific event; this process evidently extends beyond the first couple of years following graduation and implies that any assessment of how graduates are doing that lacks the requisite longer-term perspective risks being quite misleading.¹⁰

For the later two cohorts, there are certain patterns by sex in the unemployment rates—such as women tending to have lower unemployment rates than men at the college level, but higher rates at the doctoral level. However, the patterns are neither particularly flagrant nor perfectly uniform, and there are no obvious general differences at the bachelor's or master's levels at all.

As for part-time work, the most obvious pattern is that, as noted above, this job status is much more common among women than men—at all levels of education and at all points in time. Furthermore, the proportion of women with part-time jobs has tended to rise over the postgraduation years, primarily reflecting labour supply decisions related to having and raising children, whereas the rise in men's rates of part-time work (in only one case did they fall) from two to five years after graduation presumably reflects different life-cycle forces as well the availability of full-time work. By education level, there has been a tendency for PhD graduates, especially women, to have lower rates of part-time work than others, but there are no clear patterns across the other groups.

The most remarkable finding regarding part-time work may be the absence of any clear cross-cohort patterns. At a time when it is often taken for granted that there have been significant increases in the rates of 'non-standard work' in general and part-time work in particular—and where these are typically assumed to represent the absence of full-time job opportunities—the data provide no empirical evidence of this phenomenon among postsecondary graduates. Indeed, comparing the first and last set of graduates, there were more declines than increases in the percentage of part-time workers among the various groups defined by sex and level of education from the first cohort to the most recent one.

Earnings patterns

Mean earnings by education level

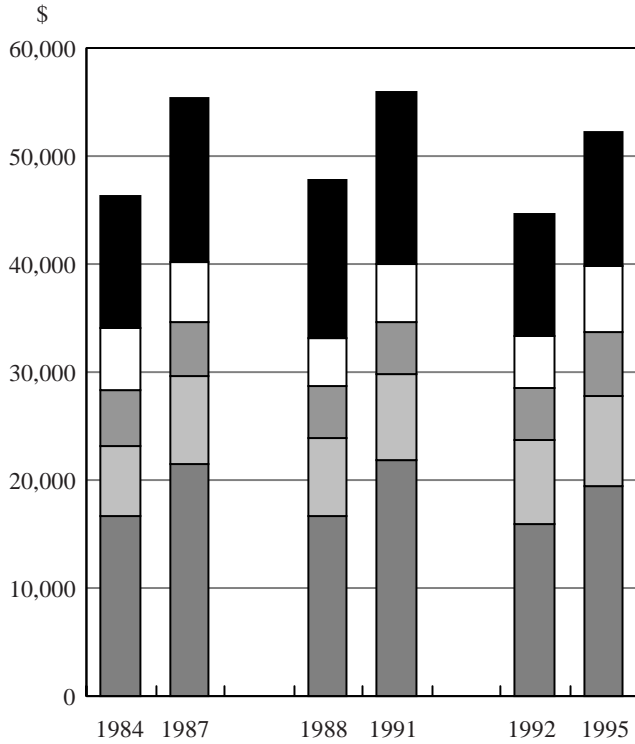
Graph 1 presents the mean real earnings of graduates (in constant 1995 dollars) who were working full time as of the relevant interview dates.¹¹ The first observation is the rather unsurprising one that mean earnings are generally higher at each level of education, from college through the bachelor's degree to the master's. Perhaps more interesting is the precise magnitude of these differences, however, as the NGS data allow us to observe the patterns for each education/sex group at two specific points in time (two and five years after graduation) for the three different cohorts of graduates; none of this would be possible with databases such as the SCF. For all years studied, the difference in annual earnings between college and bachelor's graduates ranges from \$6,000 to \$10,200, averaging approximately \$8,300 for men and \$8,700 for women. The differences between bachelor's and master's graduates were generally greater: they ranged from \$10,000 to \$14,000 and averaged \$12,700 for men and \$11,300 for women.

Finally, at the doctoral level, men's mean earnings dipped slightly when compared with master's graduates

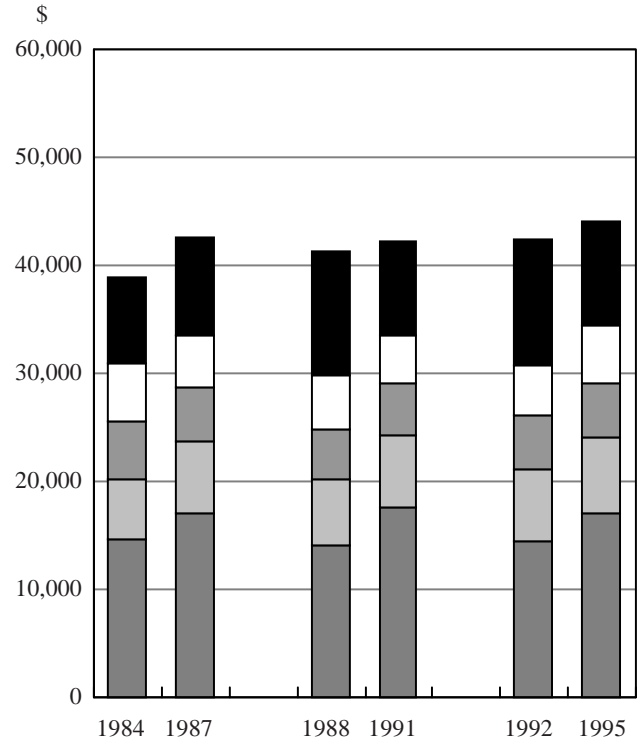


Graph 1
Mean earnings¹ of graduates,² by sex, level of education and quintile³

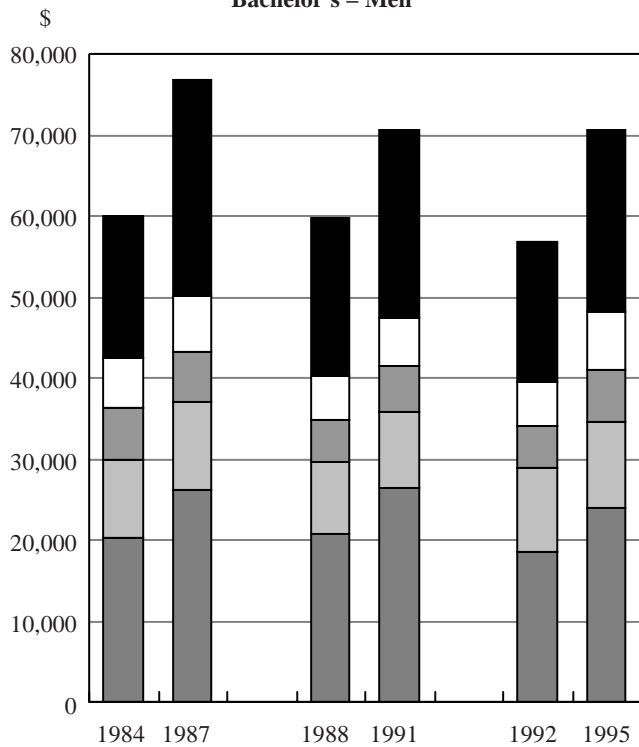
College – Men



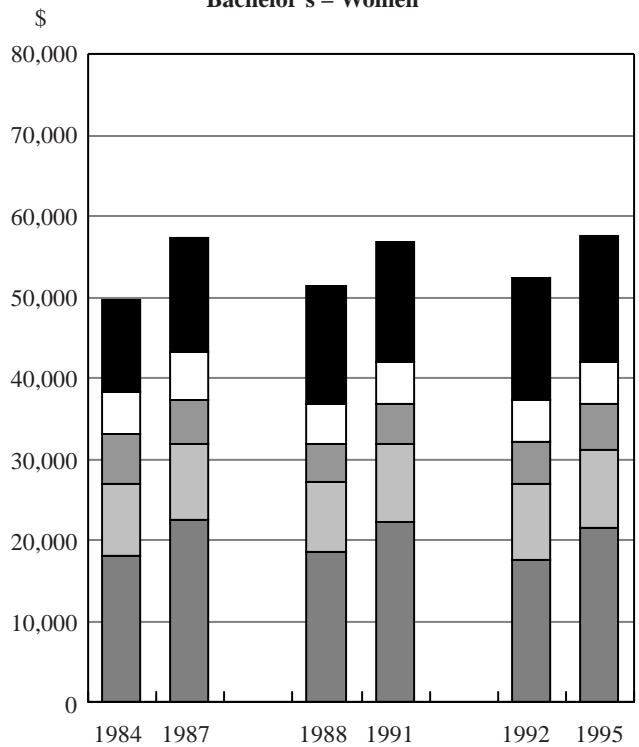
College – Women



Bachelor's – Men



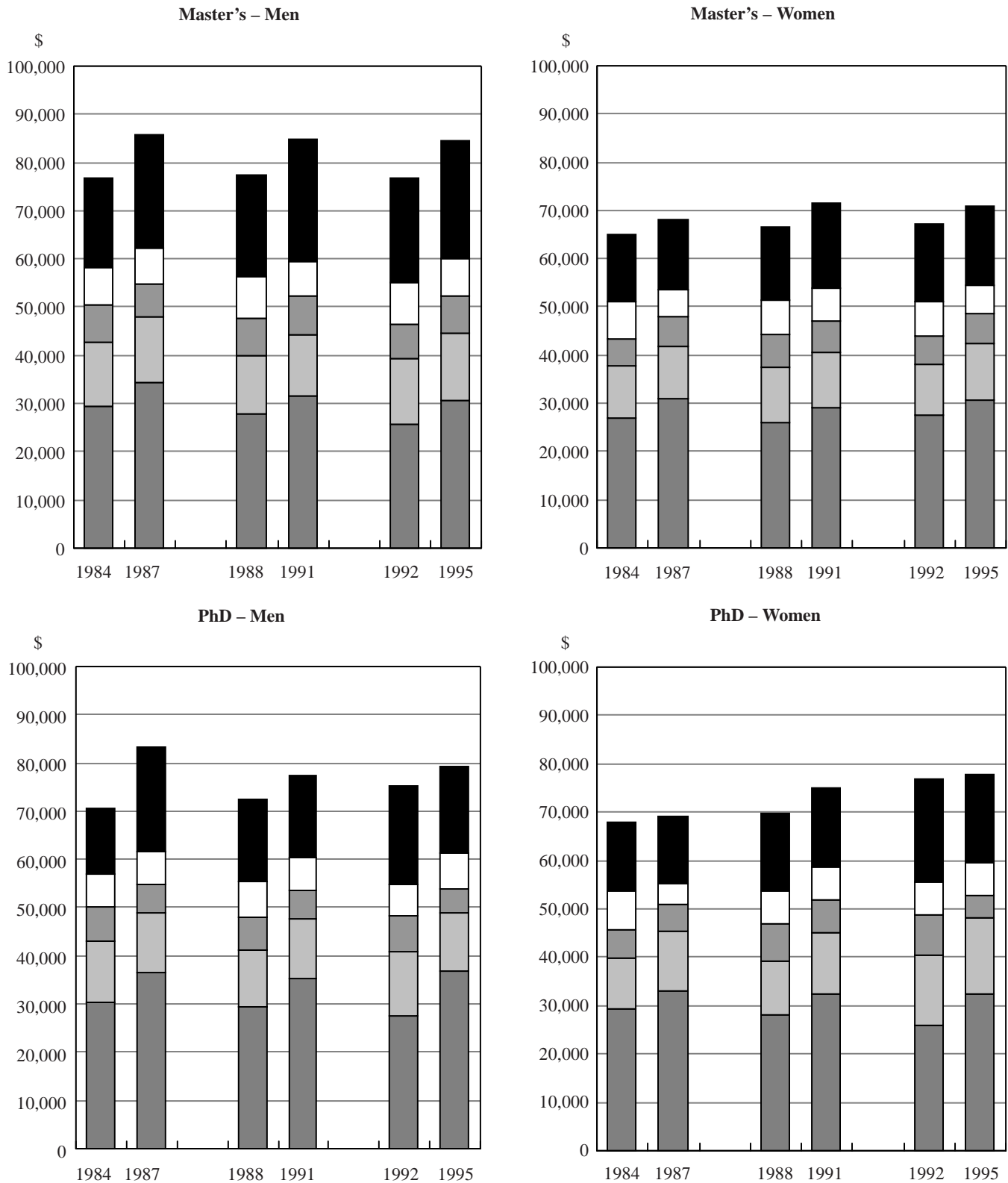
Bachelor's – Women



See notes at end of graph.



Graph 1
Mean earnings¹ of graduates,² by sex, level of education and quintile³ (concluded)



1. In 1995 constant dollars.
 2. Samples exclude graduates who had completed another diploma by the relevant interview.
 3. A given population is divided into five equal segments, each representing 20% of that population.
Source: National Graduates Surveys.

mean earnings, except in 1995, when earnings were basically equal. In contrast, women's mean earnings rose at the doctoral level compared with the master's level.

Taking into account the overall lower earnings levels of women, these absolute dollar patterns indicate greater rates of return from obtaining a bachelor's degree (relative to a college diploma) or a doctoral degree (relative to a master's degree) for women than for men, and comparable rates of return from going on to a master's degree (relative to a bachelor's degree).

Earnings growth in the postgraduation years

A second important general finding—that mean earnings rose substantially over the early years in the labour market—is seen here in the changes that took place between the two interviews, held at two and five years after graduation. The percentage increases (see the column labelled 'Change' in Table 3) vary from a minimum of 7% for 1986 female master's graduates to as much as 26% for 1982 male bachelor's graduates.

Interestingly, growth in earnings was uniformly greater in percentage terms for college and bachelor's graduates than for those at the master's and doctoral levels, which were characterized by higher, but flatter, postgraduation earnings profiles. This is not necessarily what would have been predicted.

Sex patterns in earnings

In every case, a third set of findings pertains to differences between men's and women's earnings. Mean earnings were higher for male graduates than for female graduates, with women's mean earnings varying from 77% to 100% of the level of men's for a given education group in a given year (see the 'Women/men' proportions in Table 3). The differences tend to vary inversely with education level, with women's earnings being closest to men's among PhD graduates, next nearest at the bachelor's and master's levels, and furthest behind at the college level.

On the other hand, women's earnings as a proportion of men's as of two and five years after graduation were all higher in each succeeding cohort when compared for education group and interview date. Indeed, in most cases the earnings gap between the sexes narrowed significantly over this period, declining by 30% to 55% from the first cohort to the third among college, bachelor's and master's graduates. For example, for college graduates at the first interview, women's earnings were 84%, 85% and 91% of men's, respectively, and the earnings gap narrowed by 44%, from 16 to 9 percentage points. Further, the earnings gap between the sexes was completely eliminated among PhD graduates for the last cohort at the two-year interview.

Along the other time dimension, however, the NGS data permit us to see quite precisely that men's mean earnings rose more than women's from two to five years

 Table 3
Mean earnings of graduates in 1995 constant dollars^{1,2,3}

| | First cohort (1982 graduates) | | | Second cohort (1986 graduates) | | | Third cohort (1990 graduates) | | |
|-------------------|-------------------------------|--------|--------|--------------------------------|--------|--------|-------------------------------|--------|--------|
| | 1984 | 1987 | Change | 1988 | 1991 | Change | 1992 | 1995 | Change |
| | \$ | | % | \$ | | % | \$ | | % |
| College | | | | | | | | | |
| Men | 29,700 | 36,600 | 23 | 29,400 | 35,500 | 21 | 29,700 | 35,300 | 19 |
| Women | 24,900 | 28,200 | 13 | 25,100 | 28,700 | 14 | 27,000 | 29,700 | 10 |
| Women/men | 84% | 77% | | 85% | 81% | | 91% | 84% | |
| Bachelor's | | | | | | | | | |
| Men | 37,400 | 47,000 | 26 | 37,600 | 44,700 | 19 | 35,700 | 43,800 | 23 |
| Women | 32,700 | 38,400 | 17 | 33,500 | 38,900 | 16 | 33,600 | 38,500 | 15 |
| Women/men | 87% | 82% | | 89% | 87% | | 94% | 88% | |
| Master's | | | | | | | | | |
| Men | 51,400 | 57,500 | 12 | 50,600 | 55,700 | 10 | 50,500 | 56,500 | 12 |
| Women | 44,400 | 48,400 | 9 | 45,500 | 48,900 | 7 | 46,000 | 50,400 | 10 |
| Women/men | 86% | 84% | | 90% | 88% | | 91% | 89% | |
| PhD | | | | | | | | | |
| Men | 49,700 | 56,300 | 13 | 49,100 | 54,400 | 11 | 49,300 | 55,900 | 13 |
| Women | 46,700 | 50,700 | 9 | 47,300 | 52,400 | 11 | 49,400 | 53,800 | 9 |
| Women/men | 94% | 90% | | 96% | 96% | | 100% | 96% | |

1. Samples exclude graduates who had completed another diploma by the relevant interview.

2. The calculations of the mean earnings omit individuals with reported earnings below \$5,000.

3. Earnings have been truncated to \$143,035.

Source: National Graduates Surveys.

following graduation for all but PhD graduates of the middle cohort. Furthermore, in most cases the differences between the sexes in earnings growth were substantial (see tables 3 and 4), meaning that these differences grew significantly in the years following graduation in both relative (proportions) and absolute dollar terms. This was especially true among college and bachelor's graduates where the differences in mean earnings between men and women were not only generally greater but also increased more sharply over the early years in the labour market than was the case for master's and PhD graduates.

Finally, while the differences in mean earnings between the sexes were generally smaller in the later cohorts, as noted above, the differential growth rates did not change in a similar manner. This implies that the earnings gaps seen between the sexes in the later cohorts may continue to widen in the postgraduation years more or less as much as they did with the earlier sets of graduates. That is, we have the interesting and important finding that while the earnings gaps between the sexes narrowed among postsecondary graduates across cohorts, it would appear that these were 'ratchet-like' cohort effects related to the earnings levels of each group of graduates. At the same time, the gaps have continued to increase from new (lower) levels in the postgraduation years about as much for the most recent set of graduates as for the earliest one.

In short, while female graduates' earnings profiles appear to be shifting up towards men's with each succeeding cohort in terms of the starting levels, the relative slopes of those profiles do not appear to have changed commensurately. Whether this is due to the specific types of human capital investments (such as field of education and postgraduation labour market experience), labour supply factors, direct labour market discrimination, or other factors cannot be answered by these data. This result does, however, place recent affirmative action policies in an interesting light: perhaps such policy initiatives have narrowed starting salary differences, but not subsequent earnings growth, thus attenuating their effects in the longer run.¹²

Cross-cohort earnings patterns

Most important to the major themes of this paper, however, are the patterns across cohorts for given education/sex groups. For the first and last cohorts of graduates, whose relevant two-year (1984 and 1992) and five-year (1987 and 1995) interview dates were at roughly comparable points in the business cycle, men's mean earnings were stable to moderately lower for the later graduates, varying with the specific educational level and interview year. As of two and five years after graduation, respectively, male graduates experienced the following declines:

- 0% and 3.6% at the college level;

- 4.5% and 6.8% at the bachelor's level—the sharpest drops;
- 1.8% and 1.7% at the master's level—more moderate reductions; and
- 0.8% and 0.7% at the doctoral level—almost negligible decreases.

For women, on the other hand, mean earnings were uniformly higher among graduates of the later cohorts than of the earlier ones, in some cases quite substantially so. Furthermore, the increases came steadily over time, with earnings rising from the first cohort to the second and then from the second to the third (the only exception being the 1% decline in the mean earnings of bachelor's graduates from 1991 to 1995). Female graduates experienced the following increases between the first and the third cohorts at two and five years after graduation, respectively:

- 8.4% and 5.3% at the college level;
- 2.8% and 0.3% at the bachelor's level—the smallest increases;
- 3.6% and 4.1% at the master's level; and
- 5.8% and 6.1% at the doctoral level.

We can now see that it was as a result of these cross-cohort declines in the mean real earnings of men and increases registered by women that women's earnings as a proportion of men's rose from the first cohort to the second, and again to the third. This was true for all education groups at two and five years after graduation, when the interviews were held.

Median earnings and related distribution patterns

The median earnings patterns (Table 4) are generally similar to the means. But there are also some interesting differences, which imply something about the shape of the underlying earnings distributions of each education/sex group as well as the changes in earnings over time across the different ranges of these distributions.¹³

Average earnings as measured by the median, as are those measured by the means, rise with the level of education, except from master's to doctoral for male graduates. Also, median earnings are generally higher for men than for women; however, the earnings gap between the sexes is smallest among PhD graduates, next narrowest at the master's and bachelor's levels, and greatest among college graduates. In addition, women did some significant 'catching up' from the first cohort to the second, and again from the second to the third, with women's median earnings actually surpassing men's at the doctoral level in 1992 (but no longer in 1995).

Median earnings also rose substantially between two and five years after graduation. More interesting, perhaps, is that while the increases in median earnings for female graduates were in every case greater than or equal to the



Table 4
Median earnings of graduates in 1995 constant dollars^{1,2,3}

| | First cohort (1982 graduates) | | | Second cohort (1986 graduates) | | | Third cohort (1990 graduates) | | |
|-------------------|-------------------------------|--------|--------|--------------------------------|--------|--------|-------------------------------|--------|--------|
| | 1984 | 1987 | Change | 1988 | 1991 | Change | 1992 | 1995 | Change |
| | \$ | | % | \$ | | % | \$ | | % |
| College | | | | | | | | | |
| Men | 28,900 | 34,500 | 19 | 28,300 | 33,800 | 19 | 29,200 | 35,000 | 20 |
| Women | 23,100 | 26,900 | 16 | 23,400 | 28,600 | 22 | 26,100 | 29,000 | 11 |
| Women/men | 80% | 78% | | 83% | 85% | | 89% | 83% | |
| Bachelor's | | | | | | | | | |
| Men | 36,100 | 43,500 | 20 | 34,400 | 42,300 | 23 | 34,400 | 40,000 | 16 |
| Women | 31,800 | 37,100 | 17 | 32,000 | 37,000 | 16 | 32,300 | 38,000 | 18 |
| Women/men | 88% | 85% | | 93% | 87% | | 94% | 95% | |
| Master's | | | | | | | | | |
| Men | 50,600 | 55,000 | 9 | 49,200 | 52,900 | 8 | 46,900 | 54,000 | 15 |
| Women | 43,300 | 47,300 | 9 | 44,300 | 47,600 | 7 | 43,800 | 50,000 | 14 |
| Women/men | 86% | 86% | | 90% | 90% | | 93% | 93% | |
| PhD | | | | | | | | | |
| Men | 50,600 | 53,700 | 6 | 49,200 | 52,900 | 8 | 46,900 | 54,000 | 15 |
| Women | 44,800 | 51,100 | 14 | 46,700 | 51,800 | 11 | 47,900 | 52,600 | 10 |
| Women/men | 89% | 95% | | 95% | 98% | | 102% | 97% | |

1. Samples exclude graduates who had completed another diploma by the relevant interview.

2. The calculations of the mean earnings omit individuals with reported earnings below \$5,000.

3. Earnings have been truncated to \$143,035.

Source: National Graduates Surveys.

increases in their means (see 'Change' columns in tables 3 and 4), this was not the case for men, for whom the median increases were in many cases smaller than those of their means, especially in the first two cohorts. As a result, the increases in female graduates' median earnings between interviews were closer to the men's increases than was the case with mean earnings, with the exception of bachelor's graduates of the middle cohort and PhD graduates of the third cohort. For 1982 and 1986 PhD graduates, 1986 college graduates, and 1990 bachelor's graduates, the women's growth rates surpassed the men's.

Thus, whereas the earnings gap between men and women based on mean earnings widened between two and five years after graduation in almost every case (excepting only PhD graduates of the middle cohort), according to the median measures the gap widened more slowly, or even became smaller, in all cases except the two noted above. It should be emphasized, however, that according to the median measures, men's earnings remain greater than women's for all groups—except, again, the most recent cohort of PhD graduates as of the first interview.

These mean-versus-median results thus provide an interesting alternative perspective of the evolution of the earnings gap between the sexes over the graduates' early years in the labour market. At a more fundamental level,

they suggest that the changes in earnings following graduation were in most cases relatively more concentrated in the middle and lower earnings ranges for women than for men. That is, there appears to have been greater equality with respect to the increases in earnings among women than among men. It appears that more of the higher-earning male graduates have been characterized by higher-than-average earnings increases relative to their fellow graduates than have women—'fast tracking' has generally been more of a male than a female phenomenon. On the other hand, the relatively unrobust nature of the median measures as applied to the NGS data suggest that further investigation of this issue is required before more categorical statements can be made along these lines.¹⁴

Conclusion

This paper has provided an analysis of the employment and earnings patterns of recent postsecondary graduates based on three waves of the relatively underexploited National Graduates Surveys. The major findings regarding labour force activity rates conclude that unemployment rates of male and female graduates at all levels have been lower than those of non-graduates, have improved significantly between two and five years following graduation, and have not deteriorated for later cohorts relative to earlier ones.

Amidst relatively predictable patterns by sex and level of education, neither have rates of part-time work shifted noticeably over time.

With respect to earnings, we saw again the general pattern of significant improvements in the years following graduation. But perhaps the most important set of findings is that the average earnings of male graduates of the more recent cohorts either held steady or showed small to moderate declines relative to earlier groups, while women's earnings have either remained stable or risen; these combined effects have resulted in steady decreases in the various earnings gaps between the sexes (by level of education and year) over the last decade or so.

Thus, with respect to Generation X, the maximum decline in mean earnings of just under 7% found for male graduates at the bachelor's level is perhaps not as great as many might have expected, given that it represents the worst case among all sets of results for all groups of graduates. Furthermore, the stability and improvements experienced by female graduates would presumably be received as good news in a context where discussions are often predicated on the fact that there have been significant declines. The fact that these earnings findings are supported by relatively stable employment rates suggests certain robustness to the results.

Related work currently underway includes a regression-based analysis of the structure of earnings across cohorts, a much broader analysis of the various elements of the school-to-work transition of postsecondary graduates, a more detailed probing of the sex patterns, and other projects that exploit the unique and valuable elements of the National Graduates Surveys. Together, they should provide a useful profile of postsecondary graduates and the patterns of their fortunes over the last decade or so, with new data to come online as they collected and prepared for analysis. This accumulation of empirical evidence should help us better understand the situation and, therefore, assess policy in a much more informed context.

Appendix

The data¹⁵

The National Graduates Surveys

The National Graduates Surveys and Follow-up (NGS) databases, developed by Statistics Canada in conjunction with Human Resources Development Canada, are well suited to this analysis for a number of reasons. First, the NGS files are representative of the underlying national population of college and university graduates: with over 30,000 individuals in each survey, the postgraduation

experience can be analysed meaningfully at a detailed level.^{16,17}

Secondly, the availability of data for three separate cohorts of graduates—who completed their studies in 1982, in 1986 and in 1990—permits the comparison of outcomes over a period characterized by important changes in labour market outcomes, especially for younger workers. It also updates the record as much as possible.¹⁸

Thirdly, the NGS files are longitudinal, based on information gathered during interviews carried out two and five years after graduation for each succeeding cohort (1984 and 1987, 1988 and 1991, and 1992 and 1995, respectively). This allows for a dynamic and relatively extended analysis of the school-to-work transition at two specific points in time relative to graduation.

Finally, the databases include a wide, interesting and, in some cases, rather unique array of variables covering the educational experiences, general labour market outcomes, specific job characteristics, and basic demographic characteristics of graduates. This richness of information, however, only sets the broader context for the present paper, which concentrates on key labour market outcomes (activity rates and earnings levels) and thus leaves the other elements of the file to be explored.

In summary, the NGS data uniquely provide for a focussed, detailed and dynamic analysis, from the early 1980s into the mid-1990s, of Canadian postsecondary graduates in the critical early years following graduation.

Construction of the working samples

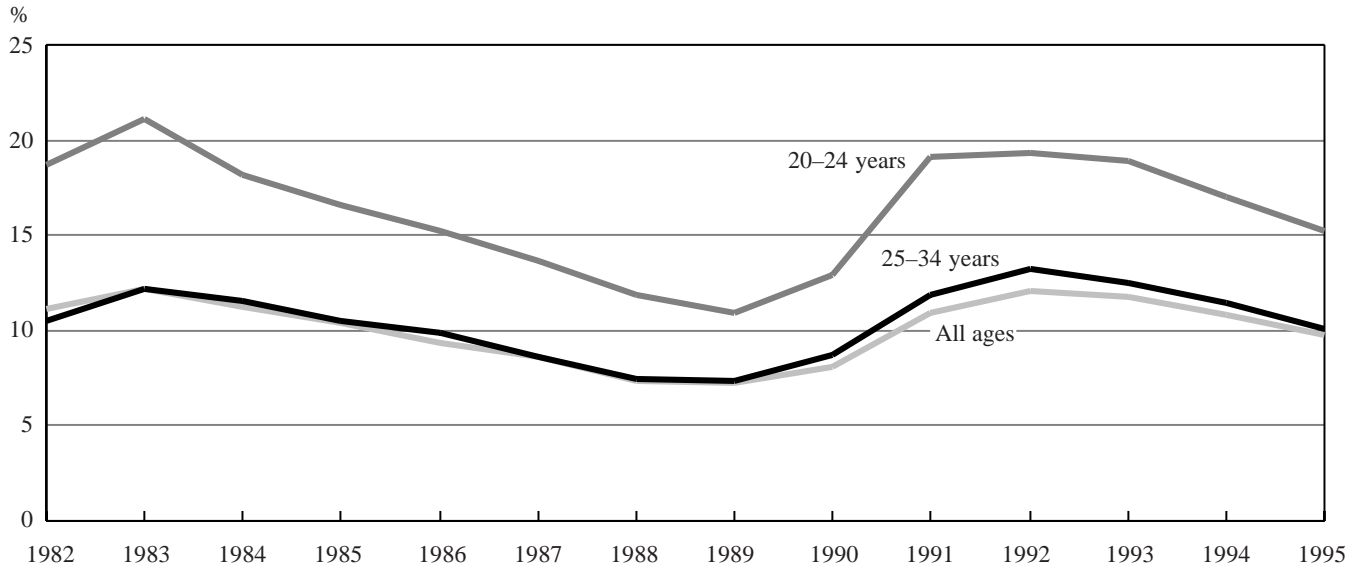
Except for an initial analysis of postgraduation activity rates, data on graduates who indicated at one of the two interviews that they had obtained an additional degree were deleted from the analysis. This was done on the grounds that such graduates no longer belonged to the original education group—for example, in going on to become a master's graduate, a bachelor's graduate might have chosen a different major field of study—and had in any event been mixing school and work in a way likely to affect the labour market outcomes upon which this analysis is focussed. Including later graduates would also throw off the postgraduation time frame of two and five years after graduation, which corresponded to the two interview dates and which held for the non-continuing group.

In the principal earnings analysis, the samples were further restricted to full-time workers, thus focussing the exercise on those with significant labour market attachment and allowing the analysis to abstract from labour supply decisions that could affect earnings patterns. In particular, most full-time continuing students were eliminated from the samples by this condition, for reasons similar to those given for the deletion of graduates with additional diplomas.

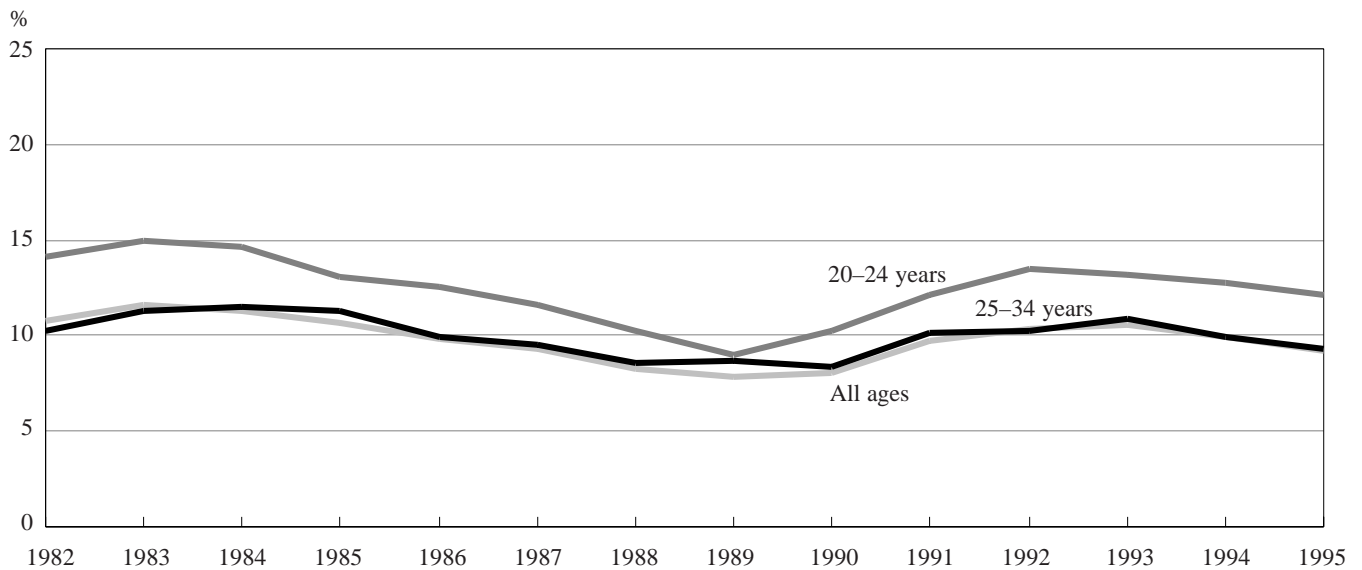


Graph A1
Unemployment rates¹ in general population, 1982–1995

Men



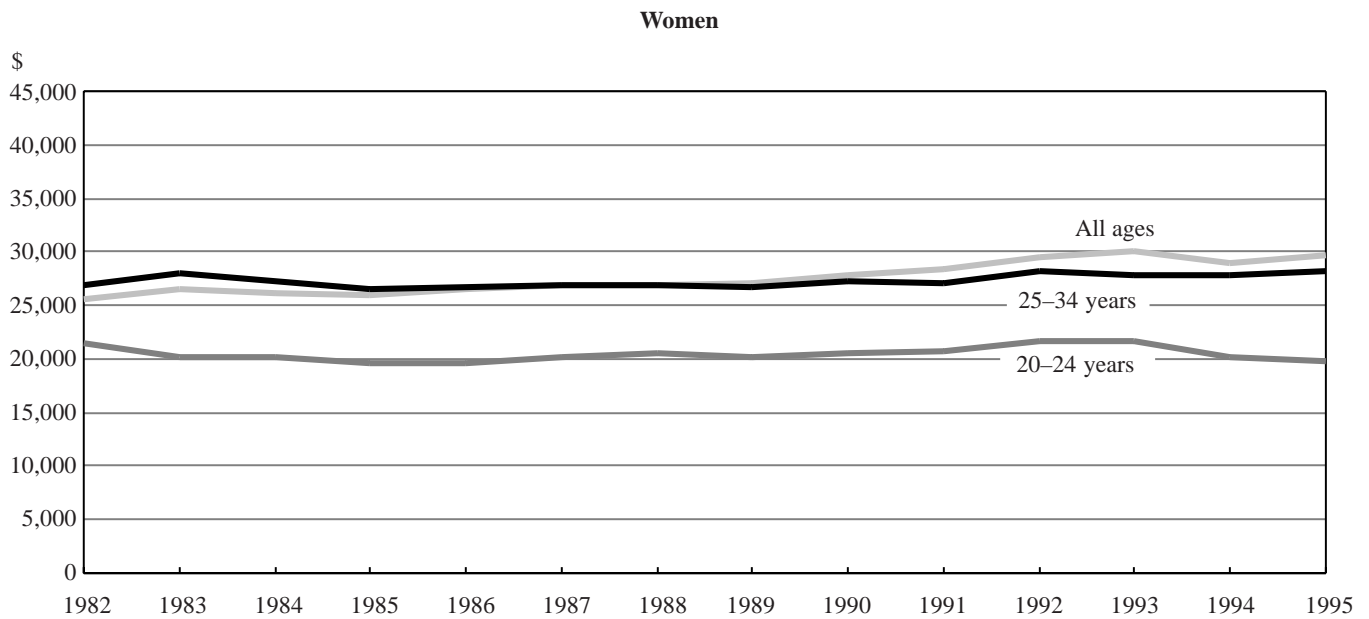
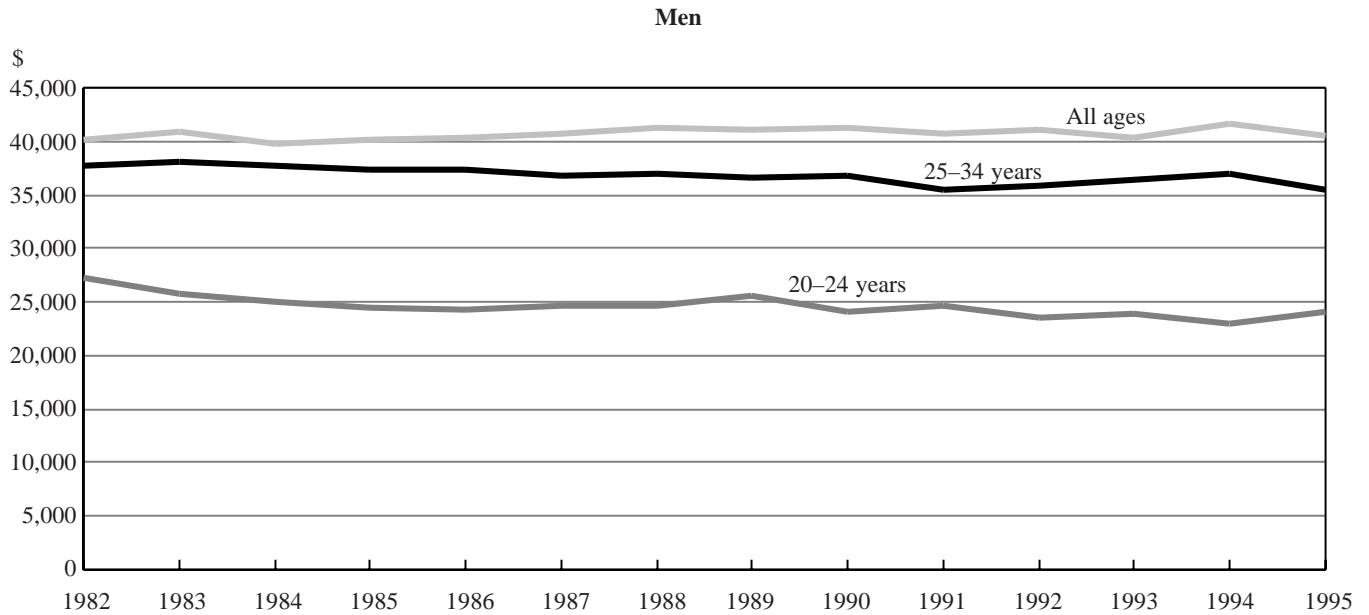
Women



1. The unemployment rate is calculated for a given group by expressing the number of unemployed persons as a percentage of the labour force.
Source: Statistics Canada, Labour Force Historical Review. Catalogue no. 71F0004XCB.



Graph A2
Mean earnings¹ of full-time workers in the general population, 1982–1995



1. In 1995 constant dollars. The 1983 data by age group are based on estimates calculated by the Income and Housing Surveys Section, Household Surveys Division, Statistics Canada.
 Source: Statistics Canada, 1981–1982 and 1984–1995, Earnings of Men and Women (annual). Catalogue nos. 13-217, 13-217S and 13-577S.

Finally, observations were deleted where the required information was missing, took extreme values (in the case of earnings), or was otherwise deemed unusable.

The labour force status and earnings variables

The employment and unemployment rates are standard measures that follow the usual Statistics Canada conventions (with the exceptions noted). The earnings variable reflects what individuals would earn on an annual basis were the job to last the full year, regardless of the actual job status.

In automatically adjusting for irregular work patterns over the course of the year, this measure represents the rate of pay, which is perhaps analytically more interesting than the amount earned.

All earnings values are expressed in constant 1995 dollars, rounded to the nearest thousand, and capped at the \$99,000 upper limit that characterizes the 1984 data (the lowest bound in the six databases), or \$143,035 in constant 1995 dollars. EOR

Notes

1. This research was made possible by financial support from the Human Capital and Education Studies Division of the Applied Research Branch of Human Resources Development Canada, while a Social Sciences and Humanities Research Council grant provided assistance for earlier phases of the work. Helpful comments were received from Marc Frenette, Doug Giddings, Philip Jennings, Garnett Picot and Ted Wannell. Excellent research assistance was provided by Marc Frenette and Michel Villeneuve.
2. This article was adapted from Finnie (1998a).
3. Beaudry and Green (1997), Beach and Slotsve (1996), Finnie (1997a), Morissette and Bérubé (1996), Morissette, Myles and Picot (1995), Picot (1997), Riddell (1995) and Zybblock (1996) all report that the earnings levels of younger workers have declined in relative and/or absolute terms. Beaudry and Green (1997), Morissette and Bérubé (1996), and Finnie (1997b, 1997c and 1997d) indicate that younger workers' movements up the earnings ladder over the early years in the labour market have also slowed. In short, the age-earnings profiles of recent cohorts of younger workers appear to have both shifted downward and become flatter, thus indicating a decline in 'lifetime' earnings. See OECD (1996) for an international perspective of the earnings of younger workers.
4. Finnie (1997a) and Morissette and Bérubé (1996) use databases constructed from individuals' tax files.
5. Beaudry and Green (1997) attempt to push the capacity of the SCF data beyond its inherently static nature by constructing synthetic earnings profiles from the various cross-sections. But while such constructions can be quite useful for many purposes, they can never be as good as true longitudinal data, which follow given individuals over time.
6. Beaudry and Green (1997) also develop useful means for dealing with the 1989 changes in the education categories to create classifications that are as consistent as possible over time, but are still left with an irresolvable margin of error in this regard (owing largely to non-conventional educational pathways).
7. Related work by the author includes Finnie (1998b, 1998c, 1998d and 1998e).
8. Unemployment rates of even younger men were highest of all (results not shown).
9. The activity rates presented here depart slightly from standard definitions because of the treatment of ongoing students in the NGS: students looking for work are classified as unemployed rather than out of the labour force even if they are enrolled full-time, whereas such individuals are usually counted as out of the labour force. (Classification of students with jobs as 'working' is consistent with the standard treatment.) As for the residual category of being non-labour force participants (the last two columns in each year's data), current student status was imputed based on the reason given for being out of the labour force.
10. The 'transition' notion is the central theme in Finnie (1998c). See Betts, Ferrall and Finnie (1998) for an analysis of the specific issue of time to first job.
11. The analysis focusses on full-time workers in order to abstract from labour supply decisions as much as possible. See Finnie (1998a) for further discussion of the merits of this approach.
12. See Finnie and Wannell (1999) for further analysis of these issues.

13. These median results need to be interpreted with some caution, however, because rounding earnings to the nearest thousand means that certain small differences in the underlying distribution of earnings (across groups or over time) could lead to exaggerated differences in the medians. In other cases, differences in the distribution of earnings might be underrepresented by the medians. Such effects could be especially strong when looking at changes over time. See Finnie (1998a) for further discussion of the pertinent issues.

It should be noted that while earnings figures were in fact rounded in the raw NGS data in every year except 1995, an analysis of 1995 data indicated that most individuals gave earnings figures rounded to the nearest thousand themselves. Mean earnings levels are unlikely to be greatly affected by the rounding imposed in the other survey years (imposing a similar rule on the 1995 data left the means virtually unchanged). Medians appear to be slightly more sensitive to that rounding (imposing the rounding rule generated greater differences). But the greatest problem with respect to median calculations is likely due to individuals' own rounding of the earnings figures they provided rather than the rounding exercise carried out during the collection of the data.

14. This part of the analysis is principally based on the simple rule of thumb that a greater increase in the median than in the mean generally indicates a greater increase in earnings among those in the lower parts of the distribution than among those with higher earnings to begin with. On the other hand, the median really only tells us about the very middle of the distribution, and we have noted above that the median calculations using the rounded earnings figures available in the NGS data might lack robustness. Hence the caution regarding the interpretation of the findings—which are, nevertheless, both interesting and of some validity because they hold for most groups in most cohorts.

15. See Finnie (1998a) for further discussion of some of the data issues discussed here.

16. A stratified sample scheme (by province, level of education and field of study) was employed. All results reported here reflect the appropriate sample weights. The databases also include trade and vocational school graduates, but these individuals are not included in the present analysis.

17. Response rates were on the order of 80% for each of the first interviews, and about 90% of these respondents were successfully interviewed a second time for each of the cohorts, resulting in 30,000 to 35,000 observations across the various years of data.

18. The first survey of 1995 graduates has been carried out, but those data were not ready for analysis at the time of this writing. Second interview data are being collected in 2000.

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announcements

Data releases

For tables or general inquiries, contact Sharon-Anne Borde (sharon-anne.borde@statcan.ca) at (613) 951-1503 or 1 800 307-3382, Centre for Education Statistics.

For more information, or to enquire about the concepts, methods or data quality of this release, contact Peter Elliott (peter.elliott@statcan.ca) at (613) 951-4551, Centre for Education Statistics.

University finances, 1998–1999

- University revenue rose for the second straight year in 1998–1999—the cumulative effect of higher revenue from student fees and the first increase in government grants and contracts in six years.
- From 1993–1994 to 1998–1999, revenue from student fees rose 40.8%, mostly as a result of tuition fee increases, which offset decreases in government grants and contracts. Over the same period, full-time equivalent student enrolment at the undergraduate level remained virtually unchanged.
- Universities collected \$12.6 billion in total revenue for the 1998–1999 fiscal year, up 3.8% from the previous year (in constant dollars). This was due mainly to increases in revenue from student fees, federal grants and contracts, bequests, donations and non-government grants and contracts, as well as provincial government grants and contracts. The only major reduction in revenue from the 1997–1998 academic year was a 16.2% decline in investment revenue, reflecting the market conditions during this fiscal year period.
- Combined federal, provincial and municipal government grants and contracts to all universities increased for the first time since 1992–1993. They totalled nearly \$7.0 billion, a 3.6% increase over 1997–1998. As a result, government grants and contracts accounted for 55.2% of total revenue in 1998–1999, a share virtually unchanged from the previous year, following several years of declines.

Note: Information is also available at the provincial and institutional level, and by type of funds.

Available on CANSIM: T00590206

- Student fees rose 7.9% to more than \$2.5 billion, after rising 9.5% in the previous academic year. Student fees accounted for just over 20% of total university revenue in 1998–1999, the highest level observed since the survey began in 1972–1973. In 1993–1994, fees accounted for 15.0% of revenue. (Data on tuition fees for university students for the academic year 2000–2001 were released in August 2000.)
- Fees accounted for 28.5% of revenue in Nova Scotia, the highest proportion among the provinces, followed by 25.3% in Ontario. Universities in these two provinces have depended less on revenue from government grants and contracts than have those in other provinces. In 1998–1999, government funding represented slightly under half of total university revenue in both provinces.
- In contrast, Quebec universities received the highest proportion of revenue from government grants and contracts (67.7%), with student fees representing just 13.1% of total university revenue, the lowest among the provinces.
- Universities spent \$12.4 billion in 1998–1999, up 3.9% from 1997–1998. Salaries and benefits represented the largest share, 62.1%, down slightly from 65.0% in 1993–1994.
- Since 1993–1994, universities have increased their spending on scholarships and bursaries, while cutting back on building expenditures. In 1998–1999, the value of scholarships and bursaries reached \$370.5 million, up 16.9% from the previous year and 68.4% from 1993–1994. This represented 3.0% of total spending, compared with 1.8% in 1993–1994.
- During the same time period, the proportion spent on buildings declined from 4.3% to 2.9%. Universities allocated \$365.9 million to buildings in 1998–1999, up 8.9%, the first increase in several years. However, this spending was still 30.6% less than the level five years earlier.
- Universities in Manitoba, Quebec, Nova Scotia and Alberta spent proportionately more than average (over 5%) on buildings. Those in Newfoundland, Ontario, Alberta and Nova Scotia universities directed a slightly higher than average share (over 3%) of their expenditures to scholarships and bursaries. EQR



Table 1
University revenue sources, 1998–1999

| | Government grants and contracts | Student fees ¹ | Bequests, donations and non-government grants and contracts | Sale of services and products | Investment revenue ² | Miscellaneous ³ |
|----------------------|---------------------------------|---------------------------|-------------------------------------------------------------|-------------------------------|---------------------------------|----------------------------|
| | % of total revenue | | | | | |
| Canada | 55.2 | 20.3 | 9.7 | 8.4 | 3.5 | 2.9 |
| Newfoundland | 63.0 | 21.6 | 3.7 | 5.0 | 2.5 | 4.2 |
| Prince Edward Island | 62.7 | 21.9 | 3.8 | 7.9 | 2.3 | 1.4 |
| Nova Scotia | 46.6 | 28.5 | 5.6 | 12.0 | 3.5 | 3.8 |
| New Brunswick | 52.6 | 22.6 | 6.4 | 10.5 | 4.8 | 3.1 |
| Quebec | 67.7 | 13.1 | 9.8 | 3.5 | 2.6 | 3.4 |
| Ontario | 47.2 | 25.3 | 12.2 | 10.4 | 2.9 | 1.9 |
| Manitoba | 61.4 | 18.2 | 9.9 | 6.7 | 3.4 | 0.5 |
| Saskatchewan | 56.9 | 16.8 | 7.5 | 8.2 | 3.7 | 7.0 |
| Alberta | 55.5 | 19.7 | 9.2 | 7.9 | 7.4 | 0.4 |
| British Columbia | 56.1 | 17.1 | 6.2 | 10.9 | 3.5 | 6.2 |

1. Include fees for both credit and non-credit courses as well as miscellaneous student fees.

2. Includes revenue from dividends, bonds, mortgages, short-term notes, bank interest, etc.

3. Includes rental of facilities, library fines, etc.



Table 2
University revenue and expenditures¹

| | 1993–1994 | 1997–1998 | 1998–1999 | 1993–1994 to 1998–1999 | 1997–1998 to 1998–1999 |
|-----------------------------------------------------------------|-------------------|-------------------|-------------------|------------------------------|------------------------------|
| | \$'000 | | | % change | |
| Total revenue | 12,103,484 | 12,165,132 | 12,628,741 | 4.3 | 3.8 |
| Federal government grants and contracts | 1,158,529 | 918,475 | 1,049,870 | -9.4 | 14.3 |
| Provincial government grants and contracts | 6,498,724 | 5,725,502 | 5,832,947 | -10.2 | 1.9 |
| Municipal and other government grants and contracts | 49,455 | 84,322 | 89,794 | 81.6 | 6.5 |
| Student fees ² | 1,820,283 | 2,375,701 | 2,562,749 | 40.8 | 7.9 |
| Bequests, donations, and non-government grants and contracts | 909,831 | 1,099,363 | 1,229,488 | 35.1 | 11.8 |
| Sales of services and products | 1,032,938 | 1,071,540 | 1,056,451 | 2.3 | -1.4 |
| Investment revenue ³ | 363,137 | 521,733 | 436,987 | 20.3 | -16.2 |
| Miscellaneous ⁴ | 270,587 | 368,496 | 370,455 | 36.9 | 0.5 |
| Total expenditures | 12,151,837 | 11,941,651 | 12,411,929 | 2.1 | 3.9 |
| Salaries and benefits | 7,898,996 | 7,501,302 | 7,707,055 | -2.4 | 2.7 |
| Scholarships and bursaries | 220,075 | 317,135 | 370,584 | 68.4 | 16.9 |
| Buildings | 527,292 | 335,998 | 365,899 | -30.6 | 8.9 |
| Other ⁵ | 3,505,474 | 3,787,216 | 3,968,391 | 13.2 | 4.8 |

1. In constant 1999 dollars.

2. Includes fees for both credit and non-credit courses, as well as miscellaneous student fees (such as transcripts and late registrations).

3. Includes revenue from dividends, bonds, mortgages, short-term notes and bank interest.

4. Includes rental of facilities and library fines.

5. Includes operational supplies and expenses, furniture and equipment (purchase and rental), externally contracted services, travel, utilities, library acquisitions, renovations and alterations, and other expenditures.

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For more information, or to enquire about the concepts, methods, or data quality of this release, contact Claudio Pagliarello (claudio.pagliarello@statcan.ca) at (613) 951-1508, Centre for Education Statistics.

School board revenues and expenditures, 1997

- School board expenditures edged up 0.3% in 1997 (actual dollars). This follows a 0.1% decline in school board expenditures in 1996, the first recorded decline. In comparison, the Consumer Price Index (CPI) rose 1.6% in 1997.
- The \$31.1 billion spent by school boards in 1997 represented 3.6% of the gross domestic product (GDP). This continued a downward trend that started after 1992, when spending by school boards had reached a peak of 4.3% of GDP.
- From 1993 to 1997, expenditures per full-time equivalent student have remained relatively stable at more than \$6,800. In 1997, expenditures per student increased or were little changed in most provinces and territories, with the following exceptions: Quebec, where a slight decline in enrolment combined with a relatively larger decrease in expenditures, contributed to a 5% drop in expenditures per student; the Northwest Territories, where expenditures per student have been decreasing since 1995 as enrolment has been steadily rising; and Newfoundland, where expenditures have been falling since 1994 but the school-aged population has been dropping even faster, pushing up expenditures per student over this period.
- Expenditures by school boards account for about 85% of total elementary and secondary education expenditures. Other categories of elementary and secondary expenditures include private schools, federal schools, special education schools and departmental expenditures by the ministries of education. About 96% of school board revenues come from provincial or territorial governments and local taxation.
- Expenditures include both operating and capital spending. Operating expenditures are salaries, fringe benefits, supplies and services, fees and contractual services, and other operating costs. These expenses can be further broken down by function (e.g., instruction, administration, transportation and school facilities). EOR

Note: School board revenues and expenditures are reported on a calendar-year basis. Data from 1900 to 1997 are now available for school board revenues and expenditures.

Available on CANSIM: T00590301, T00590302 and T00590303



Table 1
School board revenues, Canada, provinces and territories, 1993 to 1997

| | Nfld. | P.E.I. | N.S. | N.B. | Que. | Ont. | Man. | Sask. | Alta. | B.C. | Y.T. | N.W.T. | Canada |
|-------------------------------|----------------|----------------|----------------|----------------|------------------|-------------------|------------------|------------------|------------------|------------------|---------------|----------------|-------------------|
| | \$'000 | | | | | | | | | | | | |
| Local taxation | | | | | | | | | | | | | |
| 1993 | - | - | 136,476 | - | 722,860 | 7,858,429 | 497,494 | 481,088 | 1,130,653 | 1,109,199 | - | 8,982 | 11,945,181 |
| 1994 | 2 | - | 137,737 | - | 746,833 | 8,035,216 | 512,281 | 491,468 | 1,268,221 | 1,151,514 | - | 9,179 | 12,352,451 |
| 1995 | 3 | - | 138,123 | - | 764,765 | 8,184,393 | 527,275 | 510,382 | 1,436,839 | 1,176,521 | - | 9,880 | 12,748,181 |
| 1996 | - | - | 138,240 | - | 811,656 | 8,363,136 | 544,024 | 522,005 | 1,331,341 | 1,191,705 | - | 10,505 | 12,912,612 |
| 1997 | - | - | 139,299 | - | 924,244 | 8,668,540 | 559,439 | 552,848 | 1,347,664 | 1,226,063 | - | 10,568 | 13,428,665 |
| Provincial governments | | | | | | | | | | | | | |
| 1993 | 544,442 | 121,659 | 612,883 | 588,503 | 5,698,143 | 4,975,177 | 591,658 | 423,293 | 1,637,603 | 2,148,721 | 59,244 | 134,449 | 17,535,775 |
| 1994 | 522,281 | 119,365 | 594,520 | 590,133 | 5,676,773 | 5,088,285 | 576,079 | 403,156 | 1,472,625 | 2,224,881 | 57,918 | 142,315 | 17,468,331 |
| 1995 | 521,058 | 111,984 | 574,551 | 579,080 | 5,659,901 | 4,883,523 | 571,127 | 399,157 | 1,218,198 | 2,317,342 | 60,715 | 149,931 | 17,046,567 |
| 1996 | 510,460 | 107,878 | 560,435 | 568,635 | 5,517,854 | 4,509,909 | 572,277 | 398,940 | 1,324,830 | 2,489,305 | 59,195 | 147,538 | 16,767,256 |
| 1997 | 493,281 | 114,404 | 572,802 | 573,102 | 5,258,444 | 4,219,778 | 569,897 | 414,315 | 1,313,981 | 2,467,915 | 59,969 | 145,345 | 16,203,233 |
| Federal government | | | | | | | | | | | | | |
| 1993 | 2,320 | - | 10,699 | - | 8,431 | 77,158 | 14,626 | 18,330 | 52,199 | 12,794 | 1,085 | 1,736 | 199,378 |
| 1994 | 3,767 | - | 9,559 | - | 8,525 | 79,745 | 16,184 | 18,443 | 50,895 | 12,847 | 1,171 | 1,631 | 202,767 |
| 1995 | 4,710 | - | 9,807 | - | 8,870 | 95,610 | 16,012 | 16,269 | 48,567 | 13,776 | 1,131 | 1,695 | 216,447 |
| 1996 | 2,561 | - | 9,215 | - | 10,387 | 76,776 | 14,399 | 16,265 | 46,293 | 9,408 | 970 | 1,663 | 187,937 |
| 1997 | 1,388 | - | 8,758 | - | 12,688 | 74,163 | 13,806 | 17,373 | 46,268 | 11,528 | 986 | 1,674 | 188,632 |
| Fees | | | | | | | | | | | | | |
| 1993 | - | - | 2,354 | 105 | 6,057 | 35,358 | 21,970 | 2,799 | 17,711 | 17,762 | - | 10 | 104,126 |
| 1994 | - | - | 2,349 | 70 | 10,602 | 28,860 | 20,388 | 2,645 | 17,080 | 19,760 | - | - | 101,754 |
| 1995 | - | - | 2,306 | 32 | 10,132 | 28,148 | 21,401 | 1,938 | 19,816 | 20,453 | - | - | 104,226 |
| 1996 | - | - | 2,043 | 37 | 9,301 | 31,621 | 25,121 | 3,016 | 24,421 | 20,914 | - | - | 116,474 |
| 1997 | - | - | 1,692 | 39 | 7,941 | 32,117 | 28,256 | 2,801 | 23,480 | 20,694 | - | - | 117,020 |
| Other | | | | | | | | | | | | | |
| 1993 | 9,907 | 619 | 10,701 | 1,654 | 294,537 | 196,282 | 17,063 | 16,799 | 61,644 | 106,549 | 481 | 3,161 | 719,397 |
| 1994 | 9,842 | 815 | 10,834 | 1,473 | 301,449 | 227,700 | 17,734 | 17,224 | 65,834 | 102,884 | 664 | 3,163 | 759,616 |
| 1995 | 9,373 | 845 | 10,295 | 1,456 | 317,902 | 315,080 | 15,996 | 18,778 | 100,298 | 127,276 | 2,170 | 3,252 | 922,721 |
| 1996 | 13,365 | 809 | 7,147 | 1,487 | 342,524 | 295,894 | 13,835 | 15,571 | 201,231 | 144,824 | 1,799 | 3,378 | 1,041,864 |
| 1997 | 12,289 | 568 | 7,363 | 3,789 | 363,389 | 249,274 | 11,620 | 12,824 | 289,421 | 175,242 | 2,664 | 3,588 | 1,132,031 |
| Total revenues | | | | | | | | | | | | | |
| 1993 | 556,669 | 122,278 | 773,113 | 590,262 | 6,730,028 | 13,142,404 | 1,142,811 | 942,309 | 2,899,810 | 3,395,025 | 60,810 | 148,338 | 30,503,857 |
| 1994 | 535,892 | 120,180 | 754,999 | 591,676 | 6,744,182 | 13,459,806 | 1,142,666 | 932,936 | 2,874,655 | 3,511,886 | 59,753 | 156,288 | 30,884,919 |
| 1995 | 535,144 | 112,829 | 735,082 | 580,568 | 6,761,570 | 13,506,754 | 1,151,811 | 946,524 | 2,823,718 | 3,655,368 | 64,016 | 164,758 | 31,038,142 |
| 1996 | 526,386 | 108,687 | 717,080 | 570,159 | 6,691,722 | 13,277,336 | 1,169,656 | 955,797 | 2,928,116 | 3,856,156 | 61,964 | 163,084 | 31,026,143 |
| 1997 | 506,958 | 114,972 | 729,914 | 576,930 | 6,566,706 | 13,243,872 | 1,183,018 | 1,000,161 | 3,020,814 | 3,901,442 | 63,619 | 161,175 | 31,069,581 |



Table 2
School board expenditures, Canada, provinces and territories, 1993 to 1997

| | Nfld. | P.E.I. | N.S. | N.B. | Que. | Ont. | Man. | Sask. | Alta. | B.C. | Y.T. | N.W.T. | Canada |
|---------------------------------|---------|---------|---------|--------------------|-----------|------------|-----------|---------|-----------|-----------|--------|---------|-------------------|
| | \$'000 | | | | | | | | | | | | |
| Operating expenditures | | | | | | | | | | | | | |
| Teachers' salaries ¹ | | | | | | | | | | | | | |
| 1993 | 391,808 | 78,184 | 541,256 | 391,007 | 3,896,045 | 8,595,156 | 676,682 | 556,945 | 1,779,299 | 1,990,482 | 36,658 | 84,989 | 19,018,511 |
| 1994 | 377,235 | 75,907 | 542,088 | 396,693 | 3,899,688 | 8,583,206 | 687,908 | 570,344 | 1,709,005 | 2,053,055 | 36,415 | 92,536 | 19,024,080 |
| 1995 | 378,096 | 73,575 | 525,269 | 402,802 | 3,913,156 | 8,597,541 | 692,904 | 571,990 | 1,596,158 | 2,078,183 | 37,189 | 95,685 | 18,962,548 |
| 1996 | 377,341 | 75,005 | 514,808 | 390,947 | 3,889,595 | 8,550,545 | 694,591 | 577,449 | 1,645,318 | 2,143,977 | 38,879 | 95,353 | 18,993,808 |
| 1997 | 368,042 | 77,136 | 527,102 | 397,288 | 3,801,311 | 8,636,605 | 702,927 | 591,180 | 1,700,048 | 2,214,120 | 39,555 | 95,861 | 19,151,175 |
| Instructional supplies | | | | | | | | | | | | | |
| 1993 | 10,742 | 949 | 9,821 | 8,263 | 119,896 | 288,239 | 48,458 | 31,071 | 78,752 | 82,205 | 1,285 | 2,775 | 682,456 |
| 1994 | 11,144 | 920 | 13,907 | 7,464 | 120,959 | 290,696 | 49,617 | 31,745 | 76,317 | 87,817 | 1,324 | 3,571 | 695,481 |
| 1995 | 11,566 | 941 | 15,650 | 8,286 | 125,107 | 301,194 | 50,588 | 35,401 | 82,769 | 88,726 | 1,301 | 4,131 | 725,660 |
| 1996 | 11,372 | 1,013 | 15,766 | 10,553 | 129,052 | 322,331 | 52,965 | 36,981 | 117,158 | 96,558 | 1,595 | 4,370 | 799,714 |
| 1997 | 9,466 | 1,032 | 17,165 | 9,824 | 132,338 | 309,197 | 54,375 | 38,034 | 143,858 | 101,607 | 1,290 | 4,552 | 822,738 |
| Administration | | | | | | | | | | | | | |
| 1993 | 34,964 | 8,456 | 42,063 | 37,767 | 468,144 | 1,060,033 | 95,062 | 46,523 | 157,382 | 180,678 | 4,052 | 19,249 | 2,154,373 |
| 1994 | 34,566 | 8,481 | 41,383 | 37,695 | 469,921 | 1,038,438 | 94,262 | 47,131 | 204,458 | 229,018 | 3,855 | 20,902 | 2,230,110 |
| 1995 | 34,921 | 8,369 | 40,194 | 37,743 | 470,796 | 1,007,758 | 94,864 | 48,830 | 272,154 | 231,729 | 3,836 | 20,480 | 2,271,674 |
| 1996 | 33,636 | 8,974 | 39,332 | 38,454 | 441,257 | 1,016,079 | 94,391 | 50,825 | 271,355 | 315,139 | 3,856 | 18,286 | 2,331,584 |
| 1997 | 31,399 | 10,265 | 41,224 | 33,961 | 425,825 | 1,141,827 | 95,033 | 54,112 | 256,778 | 319,802 | 4,706 | 17,627 | 2,432,559 |
| Conveyance | | | | | | | | | | | | | |
| 1993 | 28,172 | 8,877 | 39,209 | 40,102 | 429,865 | 630,017 | 45,628 | 65,875 | 137,256 | 70,721 | 2,516 | 96 | 1,498,334 |
| 1994 | 28,022 | 8,752 | 38,167 | 39,954 | 437,971 | 612,746 | 44,791 | 65,466 | 131,109 | 73,484 | 2,509 | 74 | 1,483,045 |
| 1995 | 28,007 | 8,442 | 37,792 | 39,227 | 437,766 | 607,934 | 45,033 | 65,677 | 125,793 | 74,810 | 2,574 | 31 | 1,473,086 |
| 1996 | 27,678 | 8,467 | 38,085 | 42,666 | 441,968 | 585,716 | 45,536 | 66,117 | 134,013 | 79,007 | 647 | 241 | 1,470,141 |
| 1997 | 26,689 | 8,366 | 38,833 | 42,158 | 436,712 | 555,196 | 45,682 | 68,743 | 142,163 | 81,629 | - | 621 | 1,446,792 |
| Plant operation | | | | | | | | | | | | | |
| 1993 | 50,096 | 11,884 | 75,119 | 73,578 | 526,032 | 1,406,957 | 128,083 | 98,661 | 289,120 | 400,845 | 5,994 | 13,570 | 3,079,939 |
| 1994 | 50,782 | 11,427 | 72,747 | 72,792 | 523,659 | 1,404,920 | 130,525 | 100,326 | 286,238 | 415,780 | 6,176 | 12,762 | 3,088,134 |
| 1995 | 49,557 | 11,131 | 70,869 | 70,889 | 511,774 | 1,414,347 | 130,493 | 102,029 | 285,526 | 420,420 | 6,417 | 10,816 | 3,084,268 |
| 1996 | 48,542 | 11,265 | 72,332 | 77,508 | 502,910 | 1,393,122 | 131,428 | 105,104 | 291,940 | 438,012 | 3,456 | 11,383 | 3,087,002 |
| 1997 | 48,698 | 11,514 | 75,329 | 78,055 | 497,956 | 1,386,561 | 133,099 | 110,385 | 291,505 | 439,048 | 2,513 | 12,696 | 3,087,359 |
| Other | | | | | | | | | | | | | |
| 1993 | 9,543 | 562 | 32,228 | 37,224 | 903,584 | 430,515 | 79,755 | 59,705 | 87,336 | 291,519 | 3,102 | 22,173 | 1,957,246 |
| 1994 | 11,036 | 561 | 30,672 | 33,792 | 913,985 | 442,329 | 82,963 | 56,821 | 78,016 | 307,356 | 3,205 | 24,032 | 1,984,768 |
| 1995 | 8,818 | 745 | 26,425 | 19,449 | 918,727 | 480,928 | 82,829 | 56,434 | 89,226 | 378,360 | 3,274 | 24,784 | 2,089,999 |
| 1996 | 7,934 | 905 | 27,515 | 11,291 | 916,847 | 476,093 | 81,868 | 55,605 | 158,855 | 336,079 | 2,957 | 23,687 | 2,099,636 |
| 1997 | 7,796 | 865 | 29,038 | 12,859 | 920,387 | 157,396 | 81,140 | 60,354 | 187,049 | 344,120 | 3,210 | 23,729 | 1,827,943 |
| Total operating expenditures | | | | | | | | | | | | | |
| 1993 | 525,325 | 108,912 | 739,696 | 587,941 | 6,343,566 | 12,410,917 | 1,073,668 | 858,780 | 2,529,145 | 3,016,450 | 53,607 | 142,852 | 28,390,859 |
| 1994 | 512,785 | 106,048 | 738,964 | 588,390 | 6,366,183 | 12,372,335 | 1,090,066 | 871,833 | 2,485,143 | 3,166,510 | 53,484 | 153,877 | 28,505,618 |
| 1995 | 510,965 | 103,203 | 716,199 | 578,396 | 6,377,326 | 12,409,702 | 1,096,711 | 880,361 | 2,451,626 | 3,272,228 | 54,591 | 155,927 | 28,607,235 |
| 1996 | 506,503 | 105,629 | 707,838 | 571,419 | 6,321,629 | 12,343,886 | 1,100,779 | 892,081 | 2,618,639 | 3,408,772 | 51,390 | 153,320 | 28,781,885 |
| 1997 | 492,090 | 109,178 | 728,691 | 574,145 | 6,214,529 | 12,186,782 | 1,112,256 | 922,808 | 2,721,401 | 3,500,326 | 51,274 | 155,086 | 28,768,566 |
| Capital expenditures | | | | | | | | | | | | | |
| Capital outlay | | | | | | | | | | | | | |
| 1993 | 24,457 | 2,335 | 16,308 | 1,946 | 27,274 | 533,445 | 31,769 | 6,889 | 83,058 | 75,809 | 7,202 | 5,267 | 815,759 |
| 1994 | 16,954 | 1,809 | 16,243 | 1,827 | 23,626 | 842,821 | 38,222 | 5,330 | 81,008 | 77,778 | 6,269 | 5,585 | 1,117,472 |
| 1995 | 14,821 | 1,790 | 17,283 | 2,195 | 17,202 | 791,134 | 38,055 | 5,418 | 61,513 | 93,715 | 9,425 | 7,980 | 1,060,531 |
| 1996 | 12,958 | 3,324 | 15,479 | 510 | 18,013 | 643,242 | 33,116 | 6,367 | - | 92,399 | 10,573 | 6,438 | 842,419 |
| 1997 | 11,665 | 6,013 | 13,863 | 3,563 | 20,906 | 746,270 | 37,582 | 13,359 | - | 70,310 | 12,343 | 4,463 | 940,337 |
| Debt charges | | | | | | | | | | | | | |
| 1993 | 13,053 | 11,806 | 14,781 | - | 357,441 | 198,042 | 56,756 | 60,558 | 272,620 | 268,330 | 1 | 219 | 1,253,607 |
| 1994 | 7,624 | 12,609 | 1,249 | - | 360,413 | 244,650 | 56,337 | 52,767 | 282,731 | 317,230 | - | 178 | 1,335,788 |
| 1995 | 7,524 | 7,850 | 1,014 | - | 363,680 | 305,918 | 58,183 | 51,722 | 269,295 | 329,319 | - | 1,019 | 1,395,524 |
| 1996 | 10,112 | 30 | 904 | 1,282 | 360,201 | 290,208 | 59,526 | 48,509 | 254,176 | 365,916 | 1 | 1,504 | 1,392,369 |
| 1997 | 8,643 | 29 | 1,109 | - | 360,031 | 310,820 | 59,191 | 39,879 | 260,683 | 351,553 | 2 | 275 | 1,392,215 |
| Total capital expenditures | | | | | | | | | | | | | |
| 1993 | 37,510 | 14,141 | 31,089 | 1,946 ² | 384,715 | 731,487 | 88,525 | 67,447 | 355,678 | 344,139 | 7,203 | 5,486 | 2,069,366 |
| 1994 | 24,578 | 14,418 | 17,492 | 1,827 ² | 384,039 | 1,087,471 | 94,559 | 58,097 | 363,739 | 395,008 | 6,269 | 5,763 | 2,453,260 |
| 1995 | 22,345 | 9,640 | 18,297 | 2,195 ² | 380,882 | 1,097,052 | 96,238 | 57,140 | 330,808 | 423,034 | 9,425 | 8,999 | 2,456,055 |
| 1996 | 23,070 | 3,354 | 16,383 | 1,792 ² | 378,214 | 933,450 | 92,642 | 54,876 | 254,176 | 458,315 | 10,574 | 7,942 | 2,234,788 |
| 1997 | 20,308 | 6,042 | 14,972 | 3,563 ² | 380,937 | 1,057,090 | 96,773 | 53,238 | 260,683 | 421,863 | 12,345 | 4,738 | 2,332,552 |
| Total expenditures | | | | | | | | | | | | | |
| 1993 | 562,835 | 123,053 | 770,785 | 589,887 | 6,728,281 | 13,142,404 | 1,162,193 | 926,227 | 2,884,823 | 3,360,589 | 60,810 | 148,338 | 30,460,225 |
| 1994 | 537,363 | 120,466 | 756,456 | 590,217 | 6,750,222 | 13,459,806 | 1,184,625 | 929,930 | 2,848,882 | 3,561,518 | 59,753 | 159,640 | 30,958,878 |
| 1995 | 533,310 | 112,843 | 734,496 | 580,591 | 6,758,208 | 13,506,754 | 1,192,949 | 937,501 | 2,782,434 | 3,695,262 | 64,016 | 164,926 | 31,063,290 |
| 1996 | 529,573 | 108,983 | 724,221 | 573,211 | 6,699,843 | 13,277,336 | 1,193,421 | 946,957 | 2,872,815 | 3,867,087 | 61,964 | 161,262 | 31,016,673 |
| 1997 | 512,398 | 115,220 | 743,663 | 577,708 | 6,595,466 | 13,243,872 | 1,209,029 | 976,046 | 2,982,084 | 3,922,189 | 63,619 | 159,824 | 31,101,118 |

1. Includes principals and vice-principals.

2. Most of these expenditures are assumed by the provincial government.



Table 3
Expenditures¹ per full-time equivalent student, Canada, provinces and territories, 1993 to 1997

| | Nfld. | P.E.I. | N.S. | N.B. | Que. | Ont. | Man. | Sask. | Alta. | B.C. | Y.T. | N.W.T. | Canada |
|------|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------------|
| | \$'000 | | | | | | | | | | | | |
| 1993 | 5,102 | 5,181 | 5,260 | 5,668 | 7,164 | 7,306 | 6,481 | 5,490 | 6,158 | 6,650 | 10,961 | 12,291 | 6,815 |
| 1994 | 5,221 | 5,090 | 5,283 | 5,780 | 7,268 | 7,280 | 6,638 | 5,570 | 5,981 | 6,847 | 10,842 | 13,804 | 6,853 |
| 1995 | 5,272 | 4,824 | 5,180 | 5,773 | 7,370 | 7,213 | 6,764 | 5,670 | 5,836 | 6,941 | 11,587 | 13,746 | 6,853 |
| 1996 | 5,323 | 4,610 | 5,134 | 5,786 | 7,372 | 7,098 | 6,786 | 5,740 | 5,987 | 7,092 | 11,913 | 12,390 | 6,844 |
| 1997 | 5,337 | 4,843 | 5,133 | 5,902 | 7,000 | 7,236 | 6,923 | 5,871 | 6,157 | 7,054 | 12,365 | 11,784 | 6,852 |

1. Includes school board expenditures in Table 2, less adult education expenses, plus spending by the departments of education on contributions to teachers' pension plans and services to school boards.

To obtain tables or make general data inquiries, contact Sharon-Anne Borde (sharon-anne.borde@statcan.ca) at (613) 951-1503 or 1 800 307-3382, Centre for Education Statistics.

For more information, or to enquire about the concepts, methods or data quality of this release, contact Mongi Mouelhi (mongi.mouelhi@statcan.ca) at (613) 951-1537, Centre for Education Statistics.

Full-time university faculty, 1998–1999

- In 1998–1999, universities had 33,665 full-time faculty, down 9.7% from the record of 37,266 in the 1992–1993 academic year.
- The number of faculty grew relatively slowly and consistently through the 1970s and 1980s, as student enrolments increased significantly. However, from 1992–1993 to 1998–1999 the number of full-time faculty steadily declined in a climate of budget constraints, growing reliance on part-time teaching staff, and slightly decreasing student enrolment. While full-time faculty shrank 9.7% from 1992–1993 to 1998–1999, the number of students decreased 1.4% on a full-time equivalent basis.
- Among the provinces, only Prince Edward Island did not see a decline in full-time faculty from 1992–1993 to 1998–1999. The largest declines occurred in Newfoundland (-18.6%), Manitoba (-15.9%) and Ontario (-11.7%).
- The decline in the number of full-time faculty was not distributed evenly among either ranks or sexes.
- The number of full professors fell 6.2% and the number of associate professors was down 5.3% from 1992–1993 to 1998–1999. At the same time, the number of assistant professors and lower ranks fell 20.5%. The declines among full-time faculty were concentrated among males, although full-time men continued to make up a majority of faculty at all levels. In 1998–1999, there were 24,861 men teaching in universities, down 15.2% from six years earlier. During the same period, the number of women increased by 10.8% to 8,804. Women made up 13.7% of full professors in 1998–1999, up from 9.5% in 1992–1993. Similarly, the proportion of women in the ranks of associate professors increased from 21.9% to 29.1% over the same period.
- In constant 1998 dollars, the average salary declined by 2.2% between 1992–1993 and 1998–1999 to \$76,284, compared with a 4.8% increase in the average earnings of all full-time workers in the labour force. A factor in the decline of the salaries of full-time university teachers appears to be the replacement of retiring faculty

at the top of their salary scales with newly hired or promoted faculty at or near the bottom of their salary scales. The small 1.0% increase for female faculty reflects their increased representation in the higher ranks.

- Despite gains through promotion, the continuing higher concentration of women in the lower ranks is reflected in their lower overall average salaries. In 1998–1999,

the average salary of women faculty was 85.7% of that of men (\$67,870, compared with \$79,238 for men). Within each rank, however, this gap was smaller; women's salaries varied from 93.9% to 95.6% that of men. Part of this difference may be explained by the overrepresentation of female faculty among new hirings and new promotions. Men on average have spent 60% more time than women at their current rank. EOR

 Table 1
Full-time university faculty

| | 1992–1993 | 1997–1998 | 1998–1999 | 1992–1993 to 1998–1999 |
|----------------------|---------------|---------------|---------------|------------------------------|
| | number | | | % change |
| Canada | 37,266 | 33,702 | 33,665 | -9.7 |
| Newfoundland | 1,049 | 865 | 854 | -18.6 |
| Prince Edward Island | 178 | 180 | 179 | 0.6 |
| Nova Scotia | 2,062 | 1,910 | 1,914 | -7.2 |
| New Brunswick | 1,208 | 1,146 | 1,145 | -5.2 |
| Quebec | 8,924 | 8,144 | 8,046 | -9.8 |
| Ontario | 14,050 | 12,346 | 12,411 | -11.7 |
| Manitoba | 1,784 | 1,506 | 1,501 | -15.9 |
| Saskatchewan | 1,509 | 1,372 | 1,390 | -7.9 |
| Alberta | 3,233 | 2,940 | 3,008 | -7.0 |
| British Columbia | 3,269 | 3,293 | 3,217 | -1.6 |



Table 2
University faculty and average salary

| | | 1992-1993 | 1997-1998 | 1998-1999 | 1992-1993 to 1998-1999 |
|-----------------------------------------|--------------------|---------------------|---------------|---------------|------------------------------|
| | | Number of faculty | | | % change |
| All faculty | No. | 37,266 | 33,702 | 33,665 | -9.7 |
| Men | | 29,323 | 25,137 | 24,861 | -15.2 |
| Women | | 7,943 | 8,565 | 8,804 | 10.8 |
| Proportion of women in faculty | % | 21.3 | 25.4 | 26.2 | ... |
| Full professor | No. | 14,788 | 13,910 | 13,871 | -6.2 |
| Men | | 13,387 | 12,110 | 11,972 | -10.6 |
| Women | | 1,401 | 1,800 | 1,899 | 35.5 |
| Proportion of women in faculty | % | 9.5 | 12.9 | 13.7 | ... |
| Associate professor | No. | 12,683 | 12,095 | 12,008 | -5.3 |
| Men | | 9,901 | 8,694 | 8,517 | -14.0 |
| Women | | 2,782 | 3,401 | 3,491 | 25.5 |
| Proportion of women in faculty | % | 21.9 | 28.1 | 29.1 | ... |
| Other ranks | No. | 9,795 | 7,697 | 7,786 | -20.5 |
| Men | | 6,035 | 4,333 | 4,372 | -27.6 |
| Women | | 3,760 | 3,364 | 3,414 | -9.2 |
| Proportion of women in faculty | % | 38.4 | 43.7 | 43.8 | ... |
| | | Salary ¹ | | | |
| All faculty | \$ (constant 1998) | 77,991 | 75,075 | 76,284 | -2.2 |
| Men | | 80,880 | 78,014 | 79,238 | -2.0 |
| Women | | 67,217 | 66,393 | 67,870 | 1.0 |
| Women's salary as a proportion of men's | % | 83.1 | 85.1 | 85.7 | ... |
| Full professor | \$ (constant 1998) | 93,595 | 89,226 | 90,464 | -3.3 |
| Men | | 94,174 | 89,917 | 91,219 | -3.1 |
| Women | | 88,003 | 84,545 | 85,672 | -2.6 |
| Women's salary as a proportion of men's | % | 93.4 | 94.0 | 93.9 | ... |
| Associate professor | \$ (constant 1998) | 75,461 | 70,576 | 71,943 | -4.7 |
| Men | | 76,343 | 71,577 | 72,895 | -4.5 |
| Women | | 72,305 | 68,008 | 69,606 | -3.7 |
| Women's salary as a proportion of men's | % | 94.7 | 95.0 | 95.5 | ... |
| Other ranks | \$ (constant 1998) | 57,451 | 56,308 | 57,523 | 0.1 |
| Men | | 58,574 | 57,363 | 58,642 | 0.1 |
| Women | | 55,638 | 54,945 | 56,077 | 0.8 |
| Women's salary as a proportion of men's | % | 95.0 | 95.8 | 95.6 | ... |

1. Average salary is based on the number of faculty who provided salary figures.

... Not applicable.



Note: Information is also available on additional compulsory fees and the cost of accommodation on campus.

For tables or general inquiries, contact Sharon-Anne Borde (sharon-anne.borde@statcan.ca) at (613) 951-1503 or 1 800 307-3382, Centre for Education Statistics.

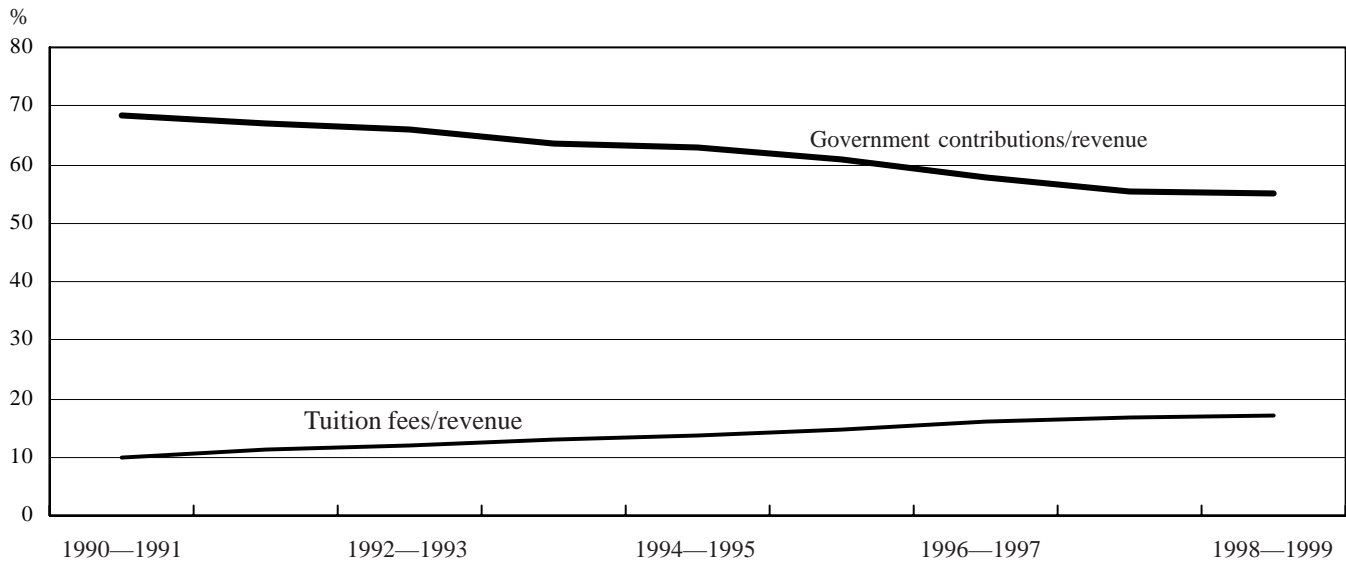
For more information, or to enquire about the concepts, methods or data quality of this release, contact Peter Elliott (peter.elliott@statcan.ca) at (613) 951-4551, Centre for Education Statistics.

University tuition fees, 2000–2001

- Undergraduate arts students will pay an average of 3.0% more in university fees for the 2000–2001 academic year. This increase is smaller than those of previous years, as more provinces have frozen tuition.
- This fall, undergraduate arts students will pay on average \$3,380 in tuition, up 3.0% from \$3,281 in 1999–2000. The 2000–2001 level is more than double the average tuition of about \$1,500 at the beginning of the 1990s. The 2000–2001 rate of growth represents a significant slowing of the average annual increase, which has been nearly 9% during the last five years.
- Tuition fees will be frozen this fall at universities in several provinces, including Newfoundland, Prince Edward Island, Quebec (for residents only) and British Columbia (at public institutions only) for the sixth consecutive year. Manitoba students are receiving a 10% rebate from the provincial government for 2000–2001.
- Average increases in tuition for 2000–2001 across Canada range between 3% and 7%, compared with annual average increases of between 7% and 12% during the past five years.
- Fees at universities in Quebec will be frozen for the fourth year at \$1,668 for Quebec residents. However, students from other provinces attending Quebec universities face a 7.8% increase in tuition this fall.
- Tuition fees will increase at universities in five provinces: Saskatchewan, Nova Scotia, Ontario, Alberta and New Brunswick. The highest average increase, 7.7%, will be in Saskatchewan. However, average undergraduate arts fees in Nova Scotia, at \$4,408, will be the highest in Canada.
- The average undergraduate arts tuition at Ontario universities, \$3,971, remains the nation's second highest. While the average 2.7% fee increase at Ontario universities this fall is only slightly below the national average, it falls well below Ontario's average annual growth rate of 11.5% during the previous five years.



Graph 1
Tuition fees and government contributions as percentages of universities' revenue



Reduced government funding partly offset by higher tuition fees

- Tuition fees increased during the 1990s, as universities attempted to make up for reductions in government funding. Undergraduate arts fees since 1990–1991 have more than doubled in all provinces except Prince Edward Island, New Brunswick and British Columbia. The largest increase occurred in Alberta, where average tuition fees for undergraduate arts students have more than tripled, from \$1,244 to \$3,841.
- The lowest undergraduate fees in Canada will be for university students who are residents of Quebec; they will continue to pay less than half the tuition fees of those in other provinces in virtually all fields of study.
- British Columbia had the lowest overall arts tuition fee increases during the previous decade—less than 50% from \$1,727 to \$2,520. British Columbia now has the second-lowest average arts fees after Quebec.
- According to the most recent data on university finances, government funding to universities increased in 1998–1999 for the first time since 1992–1993. As a result, government grants and contracts accounted for 55% of total university revenue in 1998–1999, unchanged from the previous year, following nearly two decades of steady decline. In 1981–1982, government contributions made up 74% of university revenue.

- In 1998–1999, tuition fees for credit courses made up 17% of university revenue, more than double the proportion of 8.3% in 1981–1982.

Law and music programs see largest fee increases

- The two faculties with the largest fee increases for 2000–2001 will be law (18.2%) and music (11.3%).
- Dentistry and medicine remain the most expensive programs in terms of average tuition. Students in dentistry will pay \$7,678 on average this fall, up 6% from 1999–2000. Those in medicine will pay \$5,975 on average, a 5.8% increase.
- Average dentistry fees will be highest in Saskatchewan and Ontario. Tuition fees for medicine will be highest in Newfoundland and Ontario.

Graduate fees rise more rapidly

- For the fourth consecutive year, graduate students face higher average fee increases than their undergraduate counterparts. In 2000–2001, they are paying \$3,961 in tuition, up 12.5% from the previous year. Since 1996–1997, graduate students have seen tuition fees rise about 13% per year, compared with 8% per year for undergraduates. Graduates' fee increases are largest in Nova Scotia, Ontario and Alberta.



Table 1
Average tuition fees¹

| | 1999–2000 | 2000–2001 | 1999–2000 to 2000–2001 |
|--------------------|-----------|-----------|------------------------------|
| | \$ | | % change |
| Agriculture | 3,205 | 3,208 | 0.1 |
| Architecture | 3,347 | 3,318 | -0.9 |
| Arts | 3,281 | 3,380 | 3.0 |
| Commerce | 3,125 | 3,264 | 4.4 |
| Dentistry | 7,244 | 7,678 | 6.0 |
| Education | 3,024 | 2,838 | -6.2 |
| Engineering | 3,465 | 3,622 | 4.5 |
| Household sciences | 3,182 | 3,164 | -0.6 |
| Law | 3,475 | 4,106 | 18.2 |
| Medicine | 5,646 | 5,975 | 5.8 |
| Music | 3,314 | 3,688 | 11.3 |
| Science | 3,252 | 3,360 | 3.3 |
| Undergraduate | 3,293 | 3,405 | 3.4 |
| Graduate | 3,522 | 3,961 | 12.5 |

1. Using the most current enrolment data available, average tuition fees have been weighted by the number of students.

- Many public universities have frozen tuition for foreign students at the undergraduate and/or graduate level for the current school year. The exceptions are Nova Scotia, New Brunswick, Ontario and Alberta, where fees for foreign students increased from 3% to 20%, depending on the institution and field of study. EOR



Table 2
Average undergraduate arts tuition¹

| | 1990–1991 | 1999–2000 | 2000–2001 | 1990–1991 to 2000–2001 | 1999–2000 to 2000–2001 |
|-------------------------------|--------------|--------------|--------------|------------------------------|------------------------------|
| | | \$ | | | % change |
| Canada | 1,496 | 3,281 | 3,380 | 125.9 | 3.0 |
| Newfoundland | 1,344 | 3,300 | 3,300 | 145.5 | 0.0 |
| Prince Edward Island | 1,840 | 3,480 | 3,480 | 89.1 | 0.0 |
| Nova Scotia | 1,943 | 4,101 | 4,408 | 126.9 | 7.5 |
| New Brunswick | 1,898 | 3,329 | 3,519 | 85.4 | 5.7 |
| Quebec ² | 902 | 1,868 | 1,898 | 110.4 | 1.6 |
| Ontario | 1,653 | 3,865 | 3,971 | 140.2 | 2.7 |
| Manitoba | 1,415 | 3,018 | 2,873 | 103.0 | -4.8 |
| Saskatchewan | 1,526 | 3,164 | 3,409 | 123.4 | 7.7 |
| Alberta | 1,244 | 3,658 | 3,841 | 208.8 | 5.0 |
| British Columbia ³ | 1,727 | 2,470 | 2,520 | 45.9 | 2.0 |

1. Using the most current enrolment data available, average tuition fees have been weighted by the number of students.
2. Fees for both local and out-of-province students are included in the weighted average calculation. Note that the weighting methodology was revised to reflect more accurately the impact of Quebec's differential fee policy. Hence, average tuition fees by program, at all Quebec university and subsequently at the Canada level, have been revised for the years 1997–1998 through 2000–2001.
3. Fees at both public and private institutions are included in the weighted average calculation.

For more information, or to enquire about the concepts, methods or data quality of this release, contact Teresa Omiecinski at (613) 951-5093, Mongi Mouelhi (mongi.mouelhi@statcan.ca) at (613) 951-1537, or Jim Donnelly (jim.donnelly@statcan.ca) at (613) 951-1528, Centre for Education Statistics.

Part-time university faculty, 1992–1993 to 1997–1998 (preliminary)

- Universities are relying more on part-time faculty to deliver their educational programs.
- While the number of full-time faculty decreased 9.6% from 1992–1993 to 1997–1998, the number of part-time faculty increased 6.0%. Enrolment was down 2.3% during the same five-year period.
- Regional variations from the national trend are significant. In Atlantic Canada, the number of part-time faculty increased 13.8%. Part-time faculty also worked longer hours, resulting in an increase of 20.9% when measured in full-time teaching equivalents. During the five-year period, full-time faculty decreased 8.8% and enrolment also declined.
- In Quebec, no data are available for 1992–1993 to produce a percentage change in the number of part-time faculty for the period of analysis. Nevertheless, in more recent years this number has increased, while full-time faculty declined 8.7%. Enrolment decreased 5.9%.
- In Ontario, the picture was different. Part-time faculty declined 6.0% and full-time teaching equivalents declined 4.3%, indicating a reduction in average teaching load over the five-year period. Full-time faculty declined 12.1%, while enrolment was down 4.8%.
- In Western Canada, the number of part-time faculty rose 13.5% and a significant 43.7% in full-time teaching equivalents. Full-time faculty declined 7.0%, while enrolment increased 5.8%. EQR





Table 1
Faculty and students in Canadian universities

| | 1992-1993 | 1997-1998 | 1998-1999 | 1992-1993 to 1998-1999 |
|------------------------------------------------------------|----------------|----------------|----------------|------------------------------|
| | number | | | % change |
| Part-time teachers | | | | |
| Atlantic Canada | 2,509 | 3,022 | 2,856 | 13.8 |
| Quebec | .. | 9,986 | 10,410 | .. |
| Ontario | 9,209 | 8,351 | 8,655 | -6.0 |
| Western Canada | 5,339 | 5,777 | 6,062 | 13.5 |
| Canada | .. | 27,136 | 27,983 | .. |
| Full-time teaching equivalent of part-time teachers | | | | |
| Atlantic Canada | 999 | 1,289 | 1,208 | 20.9 |
| Quebec | .. | .. | .. | .. |
| Ontario | 3,842 | 3,288 | 3,678 | -4.3 |
| Western Canada | 1,835 | 2,522 | 2,636 | 43.7 |
| Canada | .. | .. | .. | .. |
| Full-time faculty | | | | |
| Atlantic Canada | 4,497 | 4,294 | 4,101 | -8.8 |
| Quebec | 8,924 | 8,705 | 8,144 | -8.7 |
| Ontario | 14,050 | 12,539 | 12,346 | -12.1 |
| Western Canada | 9,795 | 9,229 | 9,111 | -7.0 |
| Canada | 37,266 | 34,767 | 33,702 | -9.6 |
| Full-time equivalent students | | | | |
| Atlantic Canada | 70,109 | 68,629 | 68,248 | -2.7 |
| Quebec | 170,006 | 161,665 | 159,937 | -5.9 |
| Ontario | 261,564 | 249,808 | 248,940 | -4.8 |
| Western Canada | 158,135 | 166,714 | 167,309 | 5.8 |
| Canada | 659,813 | 646,816 | 644,434 | -2.3 |

Note:

.. Figures not available.

To obtain tables or make general inquiries, contact Sharon-Anne Borde (sharon-anne.borde@statcan.ca) at (613) 951-1503 or 1 800 307-3382, Centre for Education Statistics.

For more information, or to enquire about the concepts, methods or data quality of this release, contact Bernard Bourgoin (bernard.bourgoin@statcan.ca) at (613) 951-1506, Centre for Education Statistics.

Educational staff of community colleges and vocational schools, 1997–1998

- For fiscal 1997–1998, community colleges and public vocational schools in Canada employed 64,600 educational staff, down slightly from 65,100 in 1996–1997.
- The percentage of educational staff aged 50 and over in community colleges and public vocational schools was lower in 1997–1998 (28%) than in 1996–1997 (33%).
- Among full-time teaching personnel, the proportion of educational staff aged 50 and over was 43% for males and 31% for females. Those proportions were lower than a year earlier, when the comparable figures were 47% for males and 35% for females. Nova Scotia had the lowest proportion of male full-time staff aged 50 and over (10%). The highest proportion occurred in Ontario (54%) where, as a result, attrition through retirement may be higher over the next few years.
- Full-time staff as a proportion of total educational staff ranged from a low of 35% in both the Yukon and Saskatchewan to a high of 95% and 90% in New Brunswick and Manitoba, respectively. EOR

Note: Educational staff comprises academic administrators (deans, directors, chairpersons, co-ordinators, department heads and supervisors) engaged in some teaching in addition to administrative duties; teaching staff (teachers, instructors and lecturers); academic advisors and career counsellors, who help guide students into the different educational programs; and employment counsellors, who help students make decisions about academic programs.

Data are available for 1997–1998 and 1996–1997. The latter was the first year of full coverage from this survey.



Current data

| Data series | Most recent data | |
|---------------------------------------------------------------------------------|--------------------|----------------------------------------------------------------------------|
| | Final ¹ | Preliminary or estimate ² |
| A. Elementary/secondary | | |
| Enrolment in public schools | 1997–1998 | 1998–1999 ^e 1999–2000 ^e |
| Enrolment in private schools | 1997–1998 | 1998–1999 ^e 1999–2000 ^e |
| Enrolment in minority and second language education programs | 1997–1998 | |
| Secondary school graduation | 1996–1997 | |
| Educators in public schools | 1997–1998 | 1998–1999 ^e 1999–2000 ^e |
| Educators in private schools | 1997–1998 | 1998–1999 ^e 1999–2000 ^e |
| Elementary/secondary school characteristics | 1997–1998 | 1998–1999 ^e 1999–2000 ^e |
| Financial statistics of school boards | 1997 | |
| Financial statistics of private academic schools | 1995–1996 | 1996–1997 ^P |
| Federal government expenditures on elementary/secondary education | 1996–1997 | 1997–1998 ^e |
| Consolidated expenditures on elementary/secondary education | 1996–1997 | 1997–1998 ^e 1998–1999 ^e |
| Education Price Index | 1998 | |
| B. Postsecondary | | |
| University enrolments | 1998–1999 | discontinued |
| University degrees granted | 1998 | discontinued |
| University continuing education enrolment | 1996–1997 | discontinued |
| Educators in universities | 1998–1999 | 1999–2000 ^e |
| Salaries and salary scales of full-time teaching staff at Canadian universities | 1999–2000 | |
| Tuition and living accommodation costs at Canadian universities | 2000–2001 | |
| University finance | 1997–1998 | 1998–1999 ^P 1999–2000 ^e |
| College finance | 1997–1998 | 1998–1999 ^P 1999–2000 ^e |
| Federal government expenditures on postsecondary education | 1996–1997 | 1997–1998 ^e 1998–1999 ^e |
| Consolidated expenditures on postsecondary education | 1996–1997 | 1997–1998 ^e 1998–1999 ^e 1999–2000 ^e |

¹ See notes at end of this table.



Current data (concluded)

| Data series | Most recent data | |
|----------------------------------------------------------------------|--------------------|--------------------------------------|
| | Final ¹ | Preliminary or estimate ² |
| Community colleges and related institutions: enrolment and graduates | 1998–1999 | 1999–2000 ^P |
| Trade/vocational enrolment | 1996–1997 | 1997–1998 ^e |
| College/trade teaching staff | 1997–1998 | 1998–1999 ^e |
| International student participation in Canadian universities | 1998–1999 | |

C. Publications³

Education in Canada (1999)

South of the Border: Graduates from the class of '95 who moved to the United States (1999)

Leaving school (1993)

After High School, the First Years (1996)

Adult education and training survey (1995)

International student participation in Canadian education (1993–1995)

Education Price Index – methodological report

Handbook of education terminology: elementary and secondary level (1994)

Guide to data on elementary secondary education in Canada (1995)

A Guide to Statistics Canada Information and Data Sources on Adult Education and Training (1996)

A Statistical Portrait of Elementary and Secondary Education in Canada – Third edition (1996)

A Statistical Portrait of Education at the University Level in Canada – First edition (1996)

The Class of '90: A compendium of findings (1996)

The Class of '90 Revisited (1997)

The Class of '95: Report of the 1997 National Survey of 1995 Graduates (1999)

Education indicators in Canada: Report of the Pan-Canadian Indicators Program (1999)

Education at a Glance: OECD Indicators (2000)

Literacy, Economy and Society (1995)

Literacy Skills for the Knowledge Society (1997)

Literacy in the Information Age (2000)


International Adult Literacy Survey Monograph Series

Growing Up in Canada: National Longitudinal Survey of Children and Youth (1996)

1. Indicates the most recent calendar year (e.g., 1993) or academic/fiscal year (e.g., 1993–1994) for which final data are available for all provinces and territories.
2. Indicates the most recent calendar year (e.g., 1995) or academic/fiscal year (e.g., 1996–1997) for which any data are available. The data may be preliminary (e.g., 1995^P), estimated (e.g., 1995^e) or partial (e.g., data not available for all provinces and territories).
3. The year indicated in parentheses denotes the year of publication. Some of these publications are prepared in co-operation with other departments or organizations. For information on acquiring copies of these reports, please contact the Analysis and Dissemination Section of the Centre for Education Statistics at Statistics Canada. Telephone: (613) 951-1503, Fax: (613) 951-9040 or E-mail: sharon-anne.borde@statcan.ca.

Education at a glance

This section provides a series of social, economic and education indicators for Canada, the provinces/territories and the G-7 countries. Included are key statistics on the characteristics of the student and staff populations, educational attainment, public expenditures on education, labour force employed in education, and educational outcomes.

|  Table 1 Education indicators, Canada, 1981 to 1999 | | | | | | | | | | | |
|-------------------------------------------------------------------------------------------------------------------------------------------------|-----------|----------|----------|----------|----------|----------|----------|----------|-------------------|----------------------|----------------------|
| Indicator ¹ | 1981 | 1986 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 |
| | thousands | | | | | | | | | | |
| Social context | | | | | | | | | | | |
| Population aged 0–3 | 1,448.7 | 1,475.0 | 1,573.4 | 1,601.7 | 1,610.6 | 1,596.1 | 1,595.1 | 1,578.6 | 1,560.7 | 1,550.7 | 1,453.9 |
| Population aged 4–17 | 5,480.3 | 5,204.7 | 5,395.4 | 5,437.7 | 5,484.7 | 5,536.4 | 5,620.7 | 5,691.4 | 5,754.0 | 5,795.7 | 5,725.6 |
| Population aged 18–24 | 3,493.1 | 3,286.3 | 2,886.1 | 2,869.2 | 2,869.6 | 2,852.0 | 2,823.4 | 2,816.8 | 2,833.0 | 2,865.4 | 2,895.9 |
| Total population | 24,900.0 | 26,203.8 | 28,120.1 | 28,542.2 | 28,940.6 | 29,248.1 | 29,562.5 | 29,963.7 | 30,358.5 | 30,747.0 | 30,553.8 |
| Youth immigration ^f | 42.8 | 25.9 | 61.2 | 61.2 | 73.1 | 68.3 | 65.9 | 66.3 | 70.4 | 61.2 | .. |
| | % | | | | | | | | | | |
| Lone-parent families | 16.6 | 18.8 | 15.3 | 14.4 | 14.8 | 14.9 | 15.1 | 14.8 | 14.9 | .. | .. |
| Economic context | | | | | | | | | | | |
| GDP: Real annual percentage change | 4.0 | 3.1 | -1.8 | -0.6 | 2.2 | 4.1 | 2.3 | 1.5 | .. | .. | .. |
| CPI: Annual percentage change | 12.4 | 4.2 | 5.6 | 1.5 | 1.8 | 0.2 | 2.2 | 1.7 | 1.7 | 1.0 | 1.9 |
| Employment rate | 60.0 | 59.6 | 59.7 | 58.4 | 58.0 | 58.4 | 58.8 | 58.5 | 59.0 | 59.7 | 60.6 |
| Unemployment rate | 7.6 | 9.7 | 10.3 | 11.2 | 11.4 | 10.4 | 9.4 | 9.7 | 9.1 | 8.3 | 7.6 |
| Student employment rate | .. | 34.4 | 38.0 | 35.1 | 34.0 | 34.2 | 33.3 | 34.8 | 32.5 ² | .. | .. |
| Mothers' participation rate | 54.7 | 63.8 | 70.4 | 69.8 | 70.1 | 70.2 | 70.7 | 71.6 | .. | .. | .. |
| Families below low income cut-offs: | | | | | | | | | | | |
| Two-parent families | 10.2 | 10.9 | 10.8 | 10.6 | 12.2 | 11.5 | 12.8 | 11.8 | 12.0 | .. | .. |
| Lone-parent families | 48.4 | 52.5 | 55.4 | 52.3 | 55.0 | 53.0 | 53.0 | 56.8 | 51.1 | .. | .. |
| Enrolments | thousands | | | | | | | | | | |
| Elementary/secondary schools | 5,024.2 | 4,938.0 | 5,218.2 | 5,284.1 | 5,327.8 | 5,362.8 | 5,441.4 | 5,414.6 | 5,386.3 | 5,483.9 ^e | 5,524.9 ^e |
| | % | | | | | | | | | | |
| Percentage in private schools | 4.3 | 4.6 | 4.7 | 4.9 | 5.0 | 5.1 | 5.1 | 5.2 | 5.3 | 5.3 ^e | .. |

See notes at end of this table.



Table 1
Education indicators, Canada, 1981 to 1999 (concluded)

| Indicator ¹ | 1981 | 1986 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 |
|---------------------------------------------------------|-------------------|-------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|-----------------------|-----------------------|-----------------------|
| | thousands | | | | | | | | | | |
| Public college/trade/vocational, full-time ³ | .. | 238.1 | 275.9 | 266.7 | 306.5 | 298.5 | 269.1 | 266.4 ^e | 264.5 ^e | .. | .. |
| College/postsecondary, full-time | 273.4 | 321.5 | 349.1 | 364.6 | 369.2 ^r | 380.0 ^r | 391.3 ^r | 397.3 ^r | 398.6 | 403.5 ^r | 409.4 ^e |
| College/postsecondary, part-time ⁴ | .. | 96.4 ^e | 125.7 ^e | 106.6 ^e | 98.4 | 90.8 | 87.7 | 87.1 | 91.6 | 91.4 | .. |
| Full-time university | 401.9 | 475.4 | 554.0 | 569.5 | 574.3 | 575.7 | 573.2 | 573.6 | 573.1 ^r | 580.4 | .. |
| Part-time university | 251.9 | 287.5 | 313.3 | 316.2 | 300.3 | 283.3 | 273.2 | 256.1 | 249.7 | 246.0 | .. |
| Adult education and training | .. | .. | 5,504 | .. | 5,842 | .. | .. | .. | 6,069 | .. | .. |
| | % | | | | | | | | | | |
| Participation rate | .. | .. | 27 | .. | 28 | .. | .. | .. | 26 | .. | .. |
| Graduates | thousands | | | | | | | | | | |
| Secondary schools ⁵ | .. | .. | 260.7 | 272.9 | 281.4 | 280.4 | 295.3 | 300.2 ^r | 296.4 ^r | 300.8 ^e | .. |
| Public college/trade/vocational ⁶ | .. | 145.0 | 159.7 | 158.8 | 163.9 | 151.1 | 144.2 | 141.5 ^e | 138.7 ^e | .. | .. |
| College/postsecondary | 71.8 | 82.4 | 85.9 | 92.5 | 95.2 | 97.2 | 100.9 | 105.0 | 105.9 ^e | .. | .. |
| University/Bachelor's | 84.9 | 101.7 | 114.8 | 120.7 | 123.2 | 126.5 | 127.3 | 128.0 | 125.8 | 124.9 | .. |
| University/Master's | 12.9 | 15.9 | 18.0 | 19.4 | 20.8 | 21.3 | 21.4 | 21.6 | 21.3 | 22.0 | .. |
| University/Doctorate | 1.8 | 2.2 | 2.9 | 3.1 | 3.4 ^e | 3.6 | 3.7 | 3.9 | 4.0 | 4.0 | .. |
| Full-time educators | ratio | | | | | | | | | | |
| Elementary/secondary schools | 274.6 | 269.9 | 302.6 | 301.8 | 295.4 | 295.7 ^e | 298.7 ^e | 294.4 ^e | 296.8 ^e | 295.9 ^e | 295.9 ^e |
| College/postsecondary/trade/vocational | 26.8 ⁷ | 30.6 ⁷ | 31.7 ⁷ | 31.8 ⁷ | 32.2 ⁷ | 31.0 ⁷ | 30.9 ^r | 31.5 ^r | 31.0 ^r | 32.1 ^e | .. |
| University | 33.6 | 35.4 | 36.8 | 37.3 | 36.9 | 36.4 | 36.0 | 34.6 | 33.7 | 33.7 ^e | .. |
| | ratio | | | | | | | | | | |
| Elementary/secondary pupil-educator ratio | 17.0 | 16.5 | 15.5 | 15.7 ^e | 16.1 ^e | 16.1 ^e | 16.1 ^e | 16.3 ^e | 16.3 ^e | 16.5 ^e | 16.6 ^e |
| Education expenditures | \$ millions | | | | | | | | | | |
| Elementary/secondary | 16,703.2 | 22,968.0 | 33,444.9 | 34,774.5 | 35,582.3 | 35,936.0 | 36,424.7 | 36,744.7 | 36,973.1 ^P | 37,453.8 ^e | 37,498.9 ^e |
| Vocational | 1,601.2 | 3,275.1 | 4,573.8 | 5,380.9 | 5,631.2 | 6,559.0 | 6,185.2 | 5,301.8 | 5,896.9 ^P | 5,903.4 ^e | 6,229.6 ^e |
| College | 2,088.1 | 2,999.0 | 3,870.7 | 4,075.3 | 4,105.9 | 4,207.1 | 4,531.8 | 4,477.9 | 4,642.0 ^P | 4,808.9 ^e | 5,261.7 ^e |
| University | 4,980.7 | 7,368.7 | 11,254.8 | 11,569.8 | 11,736.8 | 11,857.9 | 11,802.0 | 11,600.7 | 12,255.4 ^P | 12,660.5 | 12,874.9 ^e |
| Total education expenditures | 25,373.2 | 36,610.8 | 53,144.2 | 55,800.5 | 57,056.2 | 58,560.0 | 58,943.7 | 58,125.1 | 59,767.4 ^P | 60,826.6 | 61,865.1 |
| | % | | | | | | | | | | |
| As a percentage of GDP | 7.1 | 7.3 | 7.9 | 8.1 | 8.0 | 7.8 | 7.6 | 7.1 | 6.9 | 6.8 | .. |

1. See 'Definitions' following Table 3.

2. The figure is for April 1997.

3. The enrolments have all been reported as full-time based on a 'full-day' program, even though the duration of the programs varies from 1 to 48 weeks.

4. Excludes enrolments in continuing education courses, which had previously been included.

5. Source: Canadian Education Statistics Council. (Excludes adults for Quebec, Ontario and Alberta equivalencies.)

6. The majority of trade and vocational programs, unlike graduate diploma programs which are generally two or three years' duration, are short programs or single courses that may require only several weeks. A person successfully completing these short-duration programs or courses is considered a completer, not a graduate. These completers do not include persons in part-time programs.

7. Figures have been revised to include a complete count of staff in trade programs.



Table 2
Education indicators, provinces and territories

| Indicator ¹ | Canada | Newfound- land | Prince Edward Island | Nova Scotia | New Brunswick | Quebec | Ontario |
|------------------------------------------------------------------------------------------------|-------------------|-------------------|----------------------------|----------------|------------------|---------------------|-------------------|
| | % | | | | | | |
| Social and economic context | | | | | | | |
| Educational attainment, ² 1999: | | | | | | | |
| Less than secondary | 26.8 | 38.4 | 35.7 | 30.8 | 32.9 | 33.0 | 24.1 |
| Graduated from high school | 19.3 | 14.1 | 15.1 | 14.0 | 19.9 | 15.8 | 21.0 |
| Some postsecondary | 6.9 | 4.8 | 5.5 | 5.6 | 4.5 | 5.4 | 7.2 |
| Postsecondary certificate, diploma or university degree | 47.0 | 42.6 | 43.8 | 49.5 | 42.8 | 45.7 | 47.6 |
| Labour force participation rates by educational attainment, 1999: | | | | | | | |
| Total | 66.0 | 58.5 | 65.7 | 60.8 | 60.8 | 63.4 | 66.9 |
| Less than secondary | 40.0 | 34.5 | 47.0 | 36.2 | 36.2 | 37.5 | 40.2 |
| Graduated from high school | 69.6 | 64.4 | 73.7 | 66.8 | 69.1 | 70.1 | 68.8 |
| Some postsecondary | 71.8 | 63.0 | 71.4 | 70.0 | 67.9 | 70.3 | 72.1 |
| Postsecondary certificate, diploma or university degree | 78.5 | 77.8 | 77.0 | 73.4 | 75.1 | 79.0 | 78.9 |
| Unemployment rate, 1999 | 6.3 | 15.1 | 13.4 | 7.8 | 8.9 | 8.1 | 5.0 |
| Costs and school processes | | | | | | | |
| Public and private expenditures on education as a percentage of GDP, 1994–1995 | | | | | | | |
| | 7.0 | 9.9 | 7.6 | 7.6 | 7.4 | 7.6 | 6.8 |
| Public expenditures on education as a percentage of total public expenditures, 1994–1995 | | | | | | | |
| | 13.6 | 16.9 | 10.8 | 9.7 | 11.2 | 13.8 | 14.2 |
| Elementary/secondary pupil–educator ratio, 1997–1998 | | | | | | | |
| | 16.4 ^r | 14.6 | 17.2 | 17.5 | 17.6 | 14.6 ^r | 16.7 ^r |
| Educational outcomes | | | | | | | |
| Secondary school graduation rates, 1996–1997 | | | | | | | |
| | 73.4 | 80.2 | 85.6 | 80.7 | 86.0 | 75.9 ^{3,4} | 72.0 |
| University graduation rate, 1997–1998 | | | | | | | |
| | 35.1 | 32.5 | 22.1 | 53.8 | 33.8 | 41.7 | 36.7 |
| Unemployment rate by level of educational attainment, 1999 | | | | | | | |
| Less than secondary | 10.4 | 25.4 | 23.6 | 13.0 | 15.7 | 12.7 | 7.7 |
| Graduated from high school | 6.3 | 16.7 | 15.3 | 6.6 | 8.9 | 8.4 | 5.1 |
| Some postsecondary | 7.1 | 9.2 | 5.7 | 5.8 | 5.9 | 9.8 | 6.6 |
| Postsecondary certificate, diploma or university degree | 5.0 | 10.7 | 8.1 | 6.6 | 6.5 | 6.2 | 4.1 |

See notes at end of this table.



Table 2
Education indicators, provinces and territories (concluded)

| Indicator ¹ | Manitoba | Saskatchewan | Alberta | British Columbia | Yukon | Northwest Territories |
|------------------------------------------------------------------------------------------|----------|--------------|-------------------|------------------|-------|-----------------------|
| | % | | | | | |
| Social and economic context | | | | | | |
| Educational attainment, ² 1999: | | | | | | |
| Less than secondary | 30.9 | 31.4 | 21.6 | 20.5 | .. | .. |
| Graduated from high school | 18.3 | 18.8 | 19.9 | 22.6 | .. | .. |
| Some postsecondary | 6.8 | 7.9 | 8.2 | 8.8 | .. | .. |
| Postsecondary certificate, diploma or university degree | 44.0 | 41.9 | 50.3 | 48.1 | .. | .. |
| Labour force participation rates by educational attainment, 1999: | | | | | | |
| Total | 66.8 | 67.5 | 73.1 | 65.8 | .. | .. |
| Less than secondary | 44.5 | 44.6 | 50.4 | 39.8 | .. | .. |
| Graduated from high school | 72.1 | 77.5 | 75.4 | 66.5 | .. | .. |
| Some postsecondary | 75.9 | 73.5 | 77.5 | 69.0 | .. | .. |
| Postsecondary certificate, diploma or university degree | 78.9 | 79.1 | 81.2 | 76.0 | .. | .. |
| Unemployment rate, 1999 | 4.6 | 4.8 | 4.4 | 7.2 | .. | .. |
| Costs and school processes | | | | | | |
| Public and private expenditures on education as a percentage of GDP, 1994–1995 | 7.8 | 7.4 | 5.4 | 6.5 | 11.3 | 16.6 |
| Public expenditures on education as a percentage of total public expenditures, 1994–1995 | 12.9 | 13.8 | 13.2 | 12.2 | 10.4 | 12.0 |
| Elementary/secondary pupil–educator ratio, 1997–1998 | 16.3 | 17.3 | 17.8 [†] | 17.5 | 13.2 | 13.1 |
| Educational outcomes | | | | | | |
| Secondary school graduation rates, 1996–1997 | 78.1 | 78.8 | 64.7 | 70.5 | 37.3 | 24.6 |
| University graduation rate, 1997–1998 | 31.5 | 33.2 | 25.0 | 24.4 | .. | .. |
| Unemployment rate by level of educational attainment, 1999 | | | | | | |
| Less than secondary | 6.8 | 7.9 | 5.6 | 12.8 | .. | .. |
| Graduated from high school | 4.2 | 3.9 | 3.9 | 8.1 | .. | .. |
| Some postsecondary | 4.7 | 5.6 | 5.2 | 7.3 | .. | .. |
| Postsecondary certificate, diploma or university degree | 3.8 | 3.7 | 3.9 | 5.6 | .. | .. |

1. See 'Definitions' following Table 3.

2. Parts may not add up to 100% due to rounding.

3. Starting in 1995, Quebec graduate data for regular day programs include individuals over the age of 20 that graduated from regular day programs.

4. Excludes "Formation professionnelle."

..



Table 3
Education indicators, G-7 countries, 1998

| Indicator ¹ | Canada | United States | France | United Kingdom | Germany | Italy | Japan |
|------------------------------------------------------------------------------|--------|---------------|--------|----------------|---------|-------|-------|
| | % | | | | | | |
| Social and economic context | | | | | | | |
| Educational attainment: | | | | | | | |
| Lower secondary or less | 20 | 14 | 39 | 19 | 16 | 56 | 20 |
| Tertiary | 39 | 35 | 21 | 24 | 23 | 9 | 18 |
| Labour force participation by educational attainment: | | | | | | | |
| Upper secondary education | | | | | | | |
| Men | 78 | 86 | 64 | 70 | 89 | 43 | 80 |
| Women | 79 | 87 | 58 | 50 | 79 | 40 | 80 |
| Costs and school processes | | | | | | | |
| Public expenditure on education as a percentage of total public expenditures | 11.6 | 15.3 | 10.6 | 11.0 | 9.2 | 8.9 | 10.1 |
| Public expenditure on education as a percentage of GDP | 5.4 | 5.2 | 5.8 | 4.6 | 4.5 | 4.6 | 3.6 |
| Participation rate in formal education | 82 | 74 | 88 | 70 | 88 | 70 | .. |
| Educational outcomes | | | | | | | |
| Ratio of upper secondary graduates to population | 72 | 74 | 87 | .. | 93 | .. | 96 |
| Unemployment rate by level of educational attainment: | | | | | | | |
| All levels | | | | | | | |
| Men | 8 | 4 | 9 | 6 | 9 | 7 | 3 |
| Women | 8 | 4 | 13 | 4 | 11 | 13 | 3 |
| Upper secondary education | | | | | | | |
| Men | 12 | 8 | 14 | 14 | 18 | 8 | 5 |
| Women | 12 | 9 | 17 | 7 | 15 | 16 | 3 |

1. See 'Definitions' following Table 3.

Source: Education at a Glance: OECD Indicators, OECD, Paris, 2000.

Definitions

Education indicators, Canada

Table 1.

Year references are as follows: (1) *population* refers to July of the given year; (2) *enrolment* and *staff* refer to the academic year beginning in September of the given year; (3) *graduates* refers to number of persons graduating in the spring or summer of the given year; (4) *expenditures* refers to the fiscal year beginning in April of the given year.

1. Youth immigration

The number of persons aged 0 to 19 who are, or have been, landed immigrants in Canada. A landed immigrant is a person who is not a Canadian citizen by birth, but who has been granted the right to live in Canada permanently by Canadian immigration authorities.

2. Lone-parent families

The number of lone-parent families expressed as a percentage of the total number of families with children. A lone parent refers to a mother or a father, with no spouse or common-law partner present, living in a dwelling with one or more never-married sons and/or daughters. Sources: Statistics Canada, 1971 to 1986: *Lone-parent families in Canada*, Catalogue no. 89-522-XPE; 1991 to present: Small Area and Administrative Data Division.

3. Gross domestic product

The unduplicated value of production originating within the boundaries of Canada, regardless of the ownership of the factors of production. GDP can be calculated three ways: as total incomes earned in current production; as total final sales of current production; or as total net values added in current production. It can be valued either at factor cost or at market prices. Source: Statistics Canada, Industry, Measures and Analysis Division.

4. Consumer Price Index

The Consumer Price Index (CPI) is an indicator of changes in consumer prices. It is defined as a measure of price change obtained by comparing, over time, the cost of a specific basket of commodities. Figures are annual averages.

5. Employment rate

The number of persons employed expressed as a percentage of the population 15 years of age and over, excluding institutional residents. Figures are annual averages.

6. Unemployment rate

The number of unemployed persons expressed as a percentage of the labour force.

7. Student employment rate

The number of persons aged 15 to 24 attending school on a full-time basis who were employed during the calendar year (excluding May through August), expressed as a percentage of the total number of full-time students 15 to 24 years of age.

8. Mothers' participation rate

The number of mothers who were in the labour force during the reference period and who live in a dwelling with one or more never-married sons and/or daughters, expressed as a percentage of the total number of mothers living in dwellings with one or more never-married sons and/or daughters. Source: Statistics Canada, 1992, *Women in the Workplace*, Catalogue no. 71-534-XPE.

9. Families below low income cut-offs

Low income cut-offs are a relative measure of the income adequacy of families. A family that earns less than one-half of the median adjusted family unit income is considered to be in difficult circumstances. The set of low income cut-offs is adjusted for the size of the area of residence and for family size. Source: Statistics Canada, *Low Income Persons, 1980 to 1995*, December 1996, Catalogue no. 13-569-XPB/XIB.

10. Adult education participation rate

The number of persons 17 years of age or over participating in adult education or training activities, expressed as a percentage of the total population 17 years of age or over. Excludes regular full-time students who are completing their initial schooling.

11. Elementary/secondary pupil-educator ratio

Full-time equivalent enrolment (enrolment in grades 1 to 12 [including Ontario Academic Credits] and ungraded programs, pre-elementary enrolment in provinces where attendance is full time, and half of the pre-elementary enrolment in other provinces) divided by the full-time equivalent number of educators.

12. Education expenditures

Includes expenditures of governments and of all institutions providing elementary/secondary and postsecondary education, and vocational training programs offered by public and private trade/vocational schools and community colleges.

Education indicators, provinces and territories

Table 2.

The methodologies used to derive the indicators in Table 2 may differ from those used in other statistical tables of this section.

13. Educational attainment and labour force participation rates

Refers to the population aged 25 and over. Source: Statistics Canada, Labour Statistics Division.

14. Secondary school graduation rate

Source: Statistics Canada, 1999, Centre for Education Statistics, *Education in Canada*, Catalogue no. 81-229-XPB.

15. University graduation rate

Number of degrees awarded at the undergraduate level, as a percentage of the population aged 22.

16. Unemployment rate by level of educational attainment

The number unemployed with a given level of education expressed as a percentage of the labour force with the same education for the population aged 25 and over. Upper secondary includes the final grade of secondary school.

17. University/secondary school earnings ratio

The average annual earnings of those with university education are expressed as a percentage of the average annual earnings of those with upper secondary education for the population aged 45 to 64.

Education indicators, G-7 countries

Table 3.

18. Educational attainment

Percentage of the adult population aged 25 to 64 that has completed a certain level of education.

19. Participation rate in formal education

The total number of students aged 15 to 19 enrolled in formal education expressed as a percentage of the population aged 15 to 19. EOR



In upcoming
ISSUES

The following articles are scheduled to appear in upcoming issues of *Education Quarterly Review*:

Postsecondary graduates' earnings and the education—job skills match

An examination of the following relationships: (1) the transition from school to the labour market and earnings of graduates, and (2) the education—job skills match and earnings.

Factors influencing bachelor's graduates pursuing further postsecondary education

An analysis, using data from the National Graduates Surveys, of the patterns associated with the pursuit of further education.

Making the transition: The impact of moving from elementary to secondary school on adolescents' academic achievement and psychological adjustment

This paper compares the academic, behavioural and emotional outcomes of children who continued their education in an elementary school versus those who transferred during early adolescence to middle and high schools.

Indicators of success for effective schools

An examination of how new initiatives from Statistics Canada's Centre for Education Statistics can be utilized to explore the ability of elementary and secondary schools to attain their intended goals. EQR

This index lists all analytical articles published in *Education Quarterly Review*. Included are descriptions of education and education-related surveys conducted by Statistics Canada, provincial governments and institutions. The categories under which the articles appear are based on policy issues identified in the report *Strategic Plan (1997)*, released by the Centre for Education Statistics in November 1997 and available on the Internet at address <http://www.statcan.ca/cgi-bin/downpub/freepub.cgi>.

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