An Inter-Provincial Comparison of Post-Secondary Education Participation Rates in Canada

December 1998

Post Secondary
Education Division

Centre For Education Information

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Prepared for:

Post-Secondary Education Division
Ministry of Advanced Education, Training and Technology

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December 1998

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OVERVIEW AND KEY FINDINGS

Issue:

Participation rates are a commonly used measure of "access" to post-secondary education (PSE). Comparisons are often made between provinces to determine the relative levels of access across the country. Participation rates in British Columbia have generally been viewed as low compared with the rest of the country, particularly with respect to university participation.

This paper examines participation rates in a variety of ways to provide the reader with a more comprehensive understanding of the factors that influence participation rates—and, hopefully, a better appreciation of post-secondary participation in British Columbia.

Framework for Examining the Issue:

In essence, a participation rate is no more than some measure of enrolment divided by some segment of the population. The enrolment measure is generally restricted to enrolments in the public post-secondary education system (often excluding enrolments in trade or vocational programs). The population cohort most commonly used as the denominator is those individuals aged 18 to 24 as this age group is thought to be reasonably representative of the student population attending post-secondary programs.

The above approach to calculating participation rates provides a very limited perspective on participation in PSE. Participation rates can vary (sometimes significantly) depending on a variety of factors including:

- the age cohorts used
- the time frame examined
- the post-secondary programs included (e.g. vocational)
- the post-secondary institutions included (university, college, private, etc.)
- the inclusion of full and/or part time students
- gender
- adjustments for inter-provincial migration
- structural differences between provincial education systems

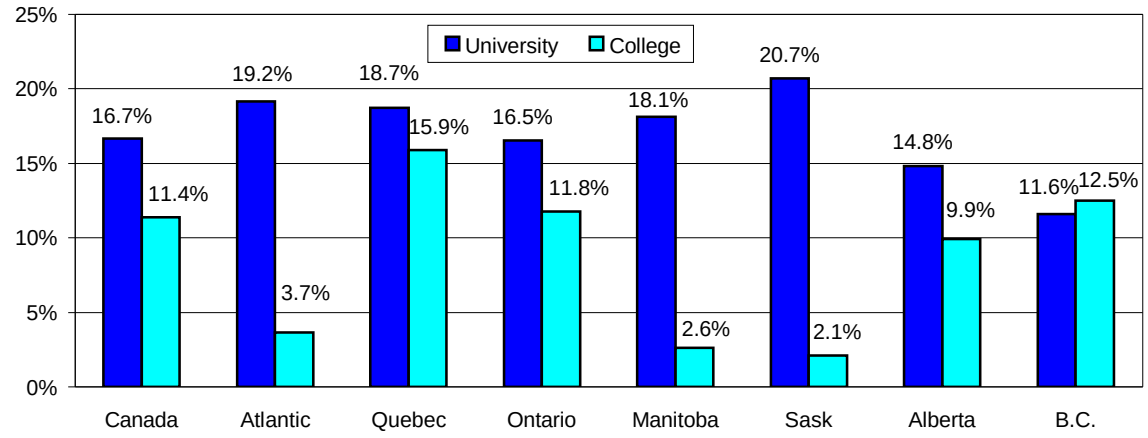
The purpose of this paper is to explore the influences of many of the above factors in order to better illustrate how British Columbia compares to other provinces in this area. Two quite different data sources are used - administrative enrolment data (Section 2) and household survey data (Section 3). While both data sources are drawn from Statistics Canada, they show markedly different trends with respect to BC participation rates.

This report concludes with a discussion of a series of other issues and measures that should also be considered in relation to participation rates.

Some Key Findings

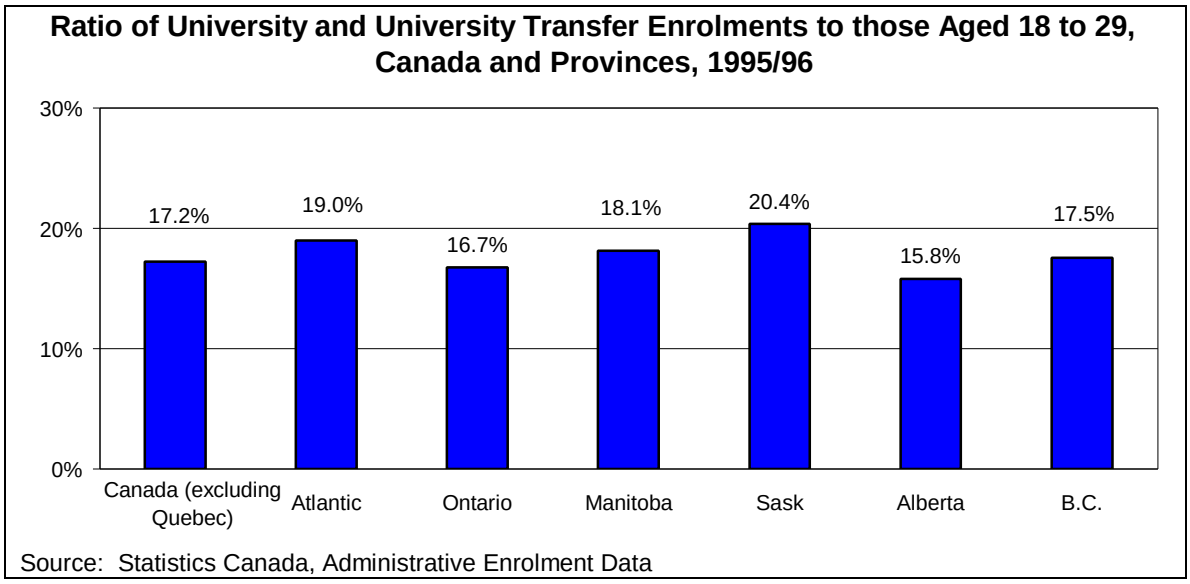
Using administrative data, BC tends to have a slightly lower overall (university and college combined) participation rate compared to the rest of the country. Considered independently, however, college participation is higher than the national average, while university participation is significantly lower.

Ratio of University and College Enrolments to Population Aged 18 to 29
Canada and Provinces, 1996/97

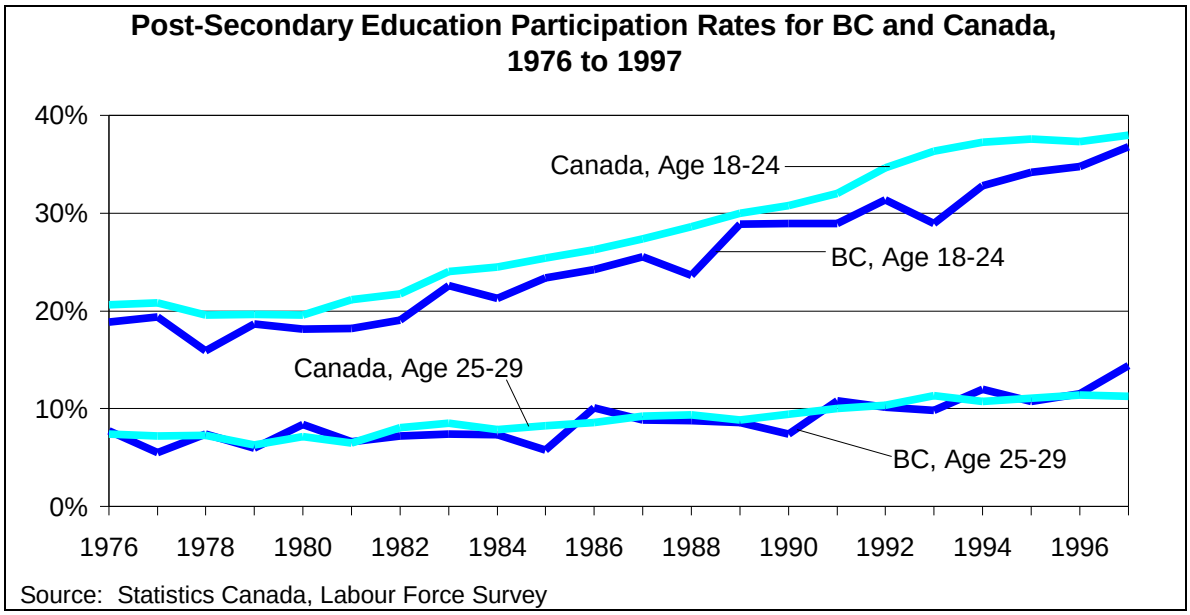


Source: Statistics Canada, Administrative Enrolment Data

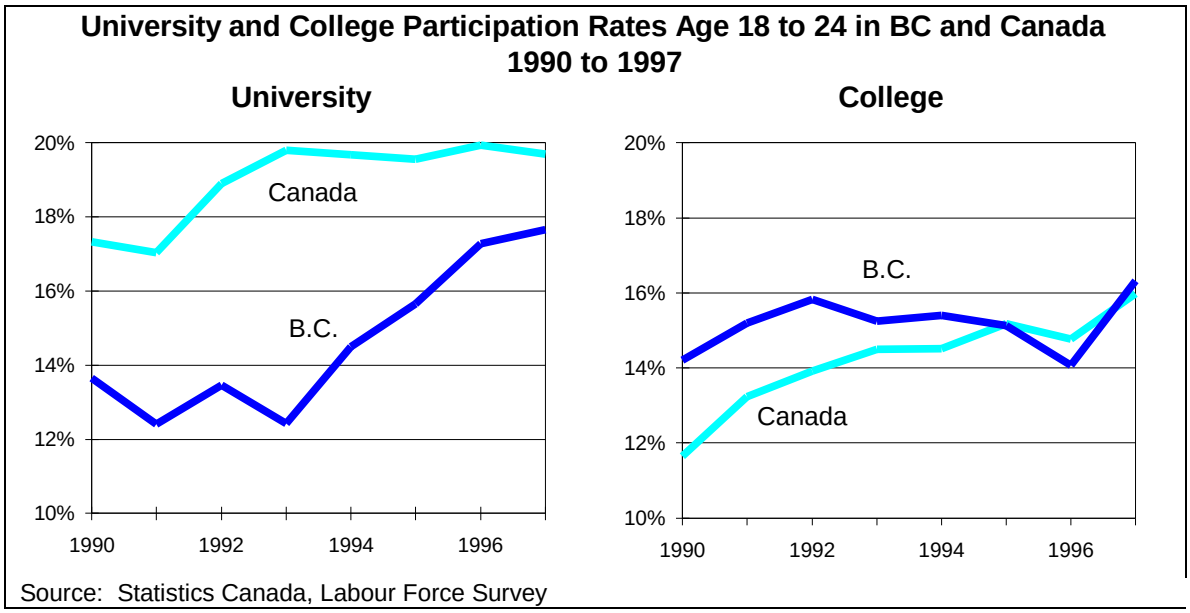
As illustrated below, university participation rates in BC actually exceed the national average if Quebec, with it's relatively large CEGEP system, is excluded, and if the large proportion of BC students taking university transfer credits in community colleges and university colleges are included as university enrolments. Note that participation rates viewed this way would have a corresponding negative effect on BC's college participation.



Using household survey data, participation rates in BC have tended to be very close to the national average over a 20-year period.

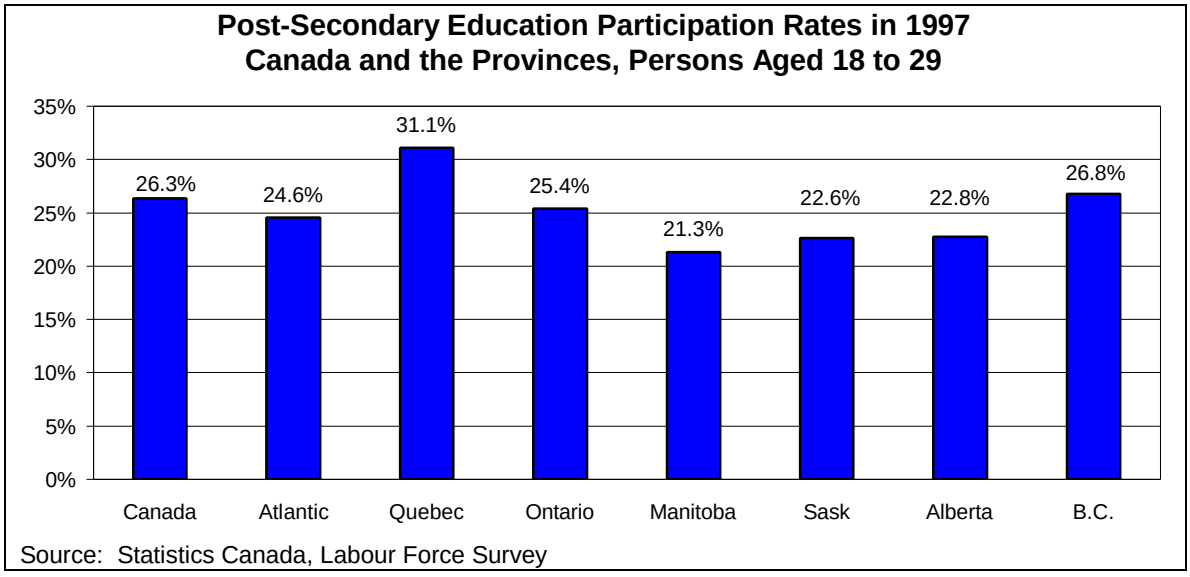


For 18-24 year olds, university participation in BC remains behind the national average though the gap has been significantly reduced in recent years. College participation is just slightly above the national average for this age group.



Source: Statistics Canada, Labour Force Survey

The picture is somewhat different when an 18 to 29 year old cohort is used. Using this broader age group, the combined (university and college) participation rate for BC was second only to Quebec in 1997, and exceeded the national average.



Source: Statistics Canada, Labour Force Survey

Some Other Interesting Findings:

- PSE participation by women has grown faster than participation by men in both Canada and BC.

- PSE participation rates for those aged 25 to 29 are significantly higher in BC than in the rest of Canada.

- PSE participation rates in BC have grown faster than the Canadian average in recent years **despite** downward pressures exerted by large inflows of individuals aged 18 to 29 into the province.

- Compared to the rest of Canada, BC residents tend to have higher levels of educational attainment, particularly for older age groups.

- Expenditures on colleges and universities have continued to grow moderately in BC over the last few years but have declined or stayed flat in all of the other provinces.

Conclusion

The single most important conclusion to be drawn from this report is that participation rates are very much a product of the method by which they are calculated. To gain a better understanding of "access" it is useful to calculate a variety of participation rates, varying key factors such as the programs included, age cohorts examined, and so on.

It is also important to recognize that the structure of educational systems varies considerably across provinces, suggesting that inter-provincial comparisons should be made with caution.

Finally, while participation rates are an important measure by which to assess post-secondary education, other measures (e.g. expenditures on PSE) should also be used to complete the picture.

1. Introduction

1.1 Background

There exists a common perception that British Columbia has a comparatively low rate of participation in post-secondary education (PSE) compared to the other provinces, particularly in the university sector. Traditionally, proxy participation rates have been calculated using administrative data collected from institutions. Unfortunately, these administrative data are not always consistent between provinces, and little attention has been given to these differences. While inter-provincial comparisons are routinely made, they are problematic. However, other data sources exist that give a new perspective on the comparison of inter-provincial PSE participation rates.

1.2 Methodology

1.2.1 Objectives

This report looks at PSE participation rates for British Columbia, other provinces, and Canada overall. A number of data sources are drawn upon and examined in order to make this inter-provincial PSE participation rate comparison as comprehensive and consistent as possible. The comparison covers all types of post-secondary training, and takes into account systematic differences between the provinces. A range of variables that may influence participation rates are examined, including the effects of age, gender and province of residence. PSE participation rates are also broken down by full-time and part-time attendance.

The main purpose of this report is to broaden the frame of reference—change the terms of the debate, if you will—to look at a range of measures that collectively give a more complete picture of post-secondary education participation in BC against that of other provinces.

1.2.2 Enrolments and "Enrolment Ratios"

Section 2 examines the Statistics Canada administrative data based on institutional enrolments, illustrating the challenges of using such data. Proxy participation rates, or more accurately "enrolment ratios" for Canada and the Provinces, are calculated by dividing university and college enrolments by population groups aged 18 to 29.

The popular perception that BC has relatively low PSE participation rates is challenged here, citing a number of reasons for this misinterpretation; primarily, a lack of consistent

measurement of participation rates between the provinces. For example, participation rate comparisons between BC and Canada excluding Quebec from the national totals are made, in order to control for the relatively high C olleges d'Enseignement General et Professionnel" (CEGEP) enrolments unique to Quebec.

An examination of additional "enrolment ratios," including trade/vocational and college career vs. university transfer enrolments, provides a clearer picture of the variability of PSE participation rates. In addition, other systematic differences between the provinces are taken into account (discussed in further detail in Section 1.3).

1.2.3 "Participation Rates"

In Section 3, PSE participation rates based on the Labour Force Survey (LFS) are examined. This household survey has consistently measured educational attendance in all provinces since 1976. Systematic differences in PSE between the provinces are circumvented through the use of these data, allowing for a more consistent inter-provincial comparison.

Unlike the traditional measure of enrolment to population ratios (using administrative data), the LFS data enables the calculation of PSE "participation rates" for different age groups. Participation rate trends over the last twenty years are explored.

1.2.4 Other Issues Related to Post-Secondary Education Participation

In Section 4, some other educational indicators besides PSE participation are discussed, including educational attainment, inter-provincial mobility, and college and university expenditures. All three issues are related to PSE participation in different ways.

For example, the effectiveness of PSE systems can be judged in terms of education attainment (or "output of the system") as well as on participation levels. PSE attainment is a function not only of the participation of domestic residents, but also of the level of education of new residents (in-migrants). A province with high levels of educational attainment may be importing educated individuals, as well as training them at home. Section 4.2 compares BC's educational attainment with the rest of the country.

Furthermore, PSE participation rates are affected not only by enrolment numbers (the numerator), but also by the population of the target age groups (the denominator), which is in turn influenced by inter-provincial migration. Section 4.3 analyzes PSE participation in the light of recent inter-provincial migration (in particular, large net inflows of individuals in the specified age cohorts to BC during the 1990s), in order to identify some of the forces affecting the constructed enrolment ratios and demand for PSE throughout Canada. It appears that the population denominator (a good portion of which includes

persons with post-secondary credentials who come to BC) has limited PSE participation rate increases in BC.

The total cost of delivery of college and university programs in Canada and the provinces is primarily a function of the number of enrolments. The higher the level of enrolments, the more student spaces and instructors required to continue to provide educational services. Section 4.4 considers funding for universities and colleges, rather than student counts. Expenditures are divided through by population, enrolments, and gross domestic product (GDP); also, inter-provincial comparisons are made based on per capita spending, per student spending, and expenditures as a percentage of GDP. It is intended that these calculations, examined in the context of relatively large increases in enrolments in BC, will offer some clues as to the reasons behind changing levels of university and college spending between the provinces.

1.3 Structural Differences between Provincial PSE Systems

It is essential that any inter-provincial comparison of PSE participation rates is undertaken in the context of the Canadian education system. Despite the fact that PSE in Canada is funded by all three levels of government, provision of the PSE programs is the responsibility of each separate province. Inherent in this type of system are differences in terms of how higher education (as well as secondary school) is structured from province to province.

The type of credentials offered by institutions differs from province to province, making the classification of students a challenge. Quebec with their CEGEP system of combined college level and secondary school programs is unique in Canada. BC and Alberta have significant numbers of students in university transfer programs within their colleges, and in BC's case, the university colleges now also have a growing number of degree level programs. In Ontario, there is little articulation between the colleges and universities, making it easier to distinguish between college and university students.

1.3.1 Secondary School: Age upon Graduation

The age at which an individual completes secondary school depends on their province of residence. A student will graduate from high school in grade 11 in Quebec, grade 12 in BC and Alberta, or grade 13 in Ontario. This has an effect on the age structure of the PSE system in each respective province, as well as on individual attendance decisions. For example, in Quebec, an average student may graduate from high school as young as 16, whereas in Ontario an average high school graduate may be as old as 19.

1.3.2 Articulation between Universities and Colleges

In BC, there are three avenues through which a university degree can be obtained. A student may undertake all of their undergraduate degree studies at a university. Alternatively, most of the community colleges and university colleges offer university transfer programs, where students can complete the first one or two years of a bachelor degree, and than transfer the credits to a university for completion. More recently, students have the option of earning a degree entirely from a university college. Such students are, in a practical sense, university-level students taking university-level programs outside of universities.

In Ontario, for the most part, the college and university sectors are considered two separate entities, with community colleges seen as clear alternatives to universities, resulting in little formal relationship between the two. In contrast, the colleges and universities in BC recognize the potential benefits of the concept of laddering and strong articulation; college and university credits are viewed as compliments, not substitutes.

1.3.3 CEGEP

The system in Quebec is quite unique, with a relatively large proportion of high-school graduates attending "colleges d'enseignement general et professionnel" (CEGEPs), resulting in relatively high PSE (college in particular) participation rates, especially for the younger age groups. After completing high school in grade 11, students in Quebec enroll in CEGEPs for one or two years prior to entering either university or the labour force. CEGEPs are very different from the public community colleges in other provinces which offer primarily post-secondary programs. Quebec's public, tuition-free colleges are, in a sense, a combination of high school and college level programs.

Due to these structural differences in PSE systems between Quebec and the rest of the country, it is useful to compare participation rates in BC with Canada, excluding Quebec from the national totals. This allows for a more direct comparison of BC with the remaining provinces by controlling for the relatively high CEGEP numbers in Quebec.

1.4 Data Sources

1.4.1 Administrative Data

The analysis undertaken in Section 2 is based on administrative data on university and college enrolments collected by Statistics Canada as reported by institutions and provincial governments. The use of administrative data in the calculation and comparison of PSE "enrolment ratios" between provinces must recognize a number of inherent challenges and limitations. Interpretation of enrolment ratios based on these data must be made in light of the following caveats and considerations:

1. There exist significant structural differences between provinces in their respective post-secondary education systems and programs (outlined in the previous section). These differences need to be carefully considered when attempting to draw comparisons between provinces.
2. Comparability of students from trade and vocational programs with those in college career/technical and university programs continues to be difficult due to measurement challenges. Trade/vocational programs typically have continuous intake with a wide range of program durations, while the career and university programs have similar semester systems allowing for relatively good headcounts of students at a consistent point in time. While trade/vocational enrolments cannot be directly compared with career and university programs, their exclusion and the impact upon aggregate participation rates needs to be explicitly acknowledged and considered.
3. Private post-secondary students are excluded from aggregate participation rate comparisons mainly because no comparable coverage of such data across provinces exist from administrative data. This needs to be acknowledged, and possible issues considered.
4. Administrative enrolment data for all provinces is generally only available on an aggregate all-age basis. These data then are most often used with particular age-group population data to construct proxy PSE participation rate measures. Acknowledgement and consideration of relative differences in specific age-group populations are often not considered. Also, little consideration is given to the effect of interprovincial migration of specific age groups. Such factors can have significant influence on the magnitude of proxy participation rates, and some analysis and consideration of this influence is warranted.

1.4.2 Household Survey Data (Labour Force Survey)

The data used in Section 3 is taken from the Labour Force Survey (LFS). The Labour Force Survey is a household survey carried out monthly by Statistics Canada covering approximately 62,000 households in Canada. While the LFS chiefly focuses on labour market measures, it also questions all respondents on their education activities. For the purposes of this report, a special run of the survey data was ordered, focusing on post-secondary education (PSE) program participants and the population of individuals aged 15 to 29 from 1976 to 1997.

Survey respondents are asked, if they were attending a school, college or university during the week previous to the survey, Attendees are then categorized by attendance frequency (full-time or part-time), and type of school (1: primary or secondary, 2: community college, junior college, CEGEP, 3: university, or 4: 'other'). Only those in courses toward a credit program are covered. Respondents taking non-credit courses do not qualify as students.

It should be noted that the distinction between the "university", "college" and "other" categories is, to a certain extent, at the discretion of the interviewer and respondent, and is sensitive to inconsistencies in interpreting responses. More specifically, whether a respondent from a private post-secondary institution is classified in the "college" or "other" category depends on the name of the school they are attending, and the respondent's perception of the type of school in which they are enrolled. Ideally, the "other" category is defined to include secretarial schools, barber schools, hairdressing schools, and computer training, and should not include vocational schools, which are included in the college category. However, a respondent enrolled in CompuCollege may technically belong in the "other" category, but may end up in the college category because of the name of the school.

Another challenge with coding the type of school, quite specific to the province of BC, is in the treatment of students at university colleges. If the respondent is clear that they are taking university credit courses, they should be classified as a university student, and as a college student if they are taking college type courses. However, if the respondent is not clear about the nature of their particular program, it may be left up to the interviewer to decide on classifying them as either in the "university" or "college" category. In such cases, it is likely that if the school is a community college, they are classified as college. For this reason, the most reliable participation rate comparisons may be those based on the more inclusive "all post-secondary" category.

Despite these challenges in ensuring consistency in categorization of students, examination of household survey data offers some advantages for the following reasons. First, the administrative data collected from institutions are not completely consistent between provinces, whereas the LFS data is based on a large survey sample that has asked the same questions in consistent fashion across the country for the last 20 years. Second, the LFS

data allows for comparison of more detailed, age sensitive participation rates because both participants and population are broken down by age group and gender, unlike the administrative data. Finally, the LFS data includes private and public PSE attendance, allowing for a more complete comparison including an "all post-secondary" participation rate, which circumvents the systematic issues encountered in Section 2 when working with institutional administrative data.

To avoid giving the false impression that small variations in survey estimates have any significance, estimates are always rounded before release. All estimates of attendance are expressed in thousands and estimates of 1,500 or less are suppressed. Yet, smaller estimates released tend to have a greater coefficient of variation, so caution must still be used for finer cross tabulations by small age groups. The reference period for the data is the fourth quarter (Oct.-Dec.) of each year to avoid inconsistencies caused by the summer months when post-secondary programs are in recess.

1.4.3 Other Data Sources – Census 1996, Education in Canada 1997, and Financial Management System Data

In many areas throughout this paper, data from Statistics Canada's 1996 Census are used. Statistics Canada's Census of Population is conducted every five years, and was last conducted on May 14, 1996. In addition to the short-form questionnaire, which goes to 4 out of 5 households in Canada, there is a long-form version, which is received by 20 per cent of Canadian households. The long-form has additional demographic and socio-economic questions on topics such as mobility and education.

Due to its large sample size, the census long-form produces very accurate estimates relative to other surveys conducted in Canada. For this reason, the census survey is a very desirable tool for conducting research and aiding in policy decisions. In Section 4, the 1996 Census is used to examine inter-provincial migration and educational attainment. Unfortunately, the data series that breaks down educational participation by education level is not yet available; therefore, the proposed examination of PSE participation rates using Census data is not possible at this time.

The analysis in Section 4.4 is undertaken using Statistics Canada Financial Management System data. It is compiled based on surveys of public colleges and universities throughout Canada. Statistics Canada takes results from the surveys and aggregates them, categorizing college and university expenditures into four broad sub-categories: administration, education proper, support to students and other. For confidentiality reasons, numbers are not available for finer sub-categories.

Finally, the Statistics Canada publication *Education in Canada, 1997*(which is itself a compilation of a number of data sources), was used extensively in this report. It primarily

served for the construction of enrolment ratios for college career and trade/vocational programs, as well as a general guide to addressing PSE participation and financing issues.

1.5 Expanding Information and Data to Better Inform Public Policy Debate

A number of questions and issues regarding PSE participation continue to be raised in the ongoing public policy debate.

- Is participation in PSE in BC adequately preparing a sufficient proportion of the domestic population, or is the BC labour market relying on imported talent?
- Does BC actually have a relatively low PSE participation rate compared with the other provinces, or are such measures clouded by both measurement and systematic differences?
- Is it possible to conduct a consistent inter-provincial PSE participation comparison in light of the existing structural differences between the provincial systems?
- If, in fact, BC does have lower *university* participation rates than some of the other provinces, but higher participation rates in other types of post-secondary education and training, is this necessarily a problem?
- To what extent should local labour supply and labour demand considerations be included in the analysis of PSE participation rates in order to determine optimal levels of PSE and training in BC? In other words: "Is it appropriate to compare PSE participation rates between the provinces without reference to differences between these provinces in terms of demand for graduates by specific industries?"

This report acknowledges that such broader questions and issues continue to be debated. The objective here is simply to expand and enhance the level of base information about PSE participation between provinces. The analysis is meant to establish the beginnings of a comparative framework for an ongoing better understanding of PSE participation issues.

2. Enrolments and Participation in Post-Secondary Education -- Measures from Administrative Data Sources

2.1 Introduction

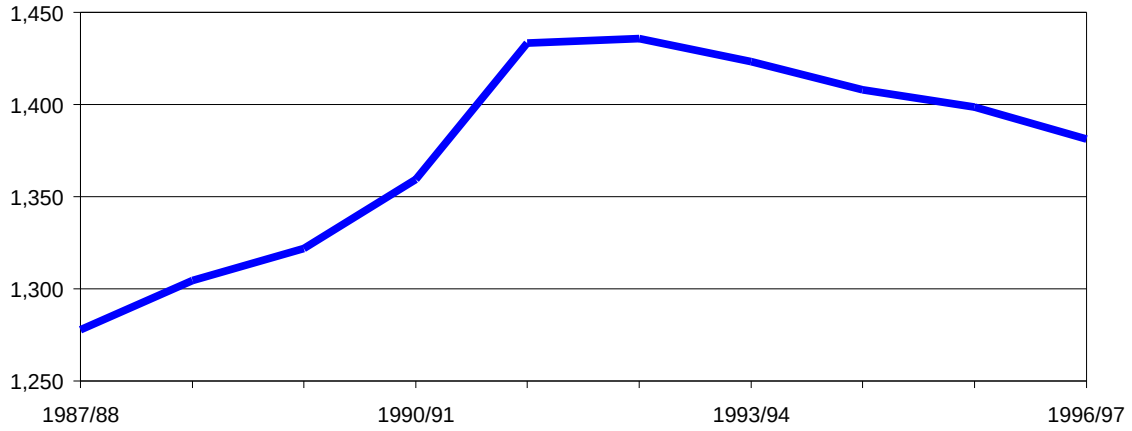
The analysis in this section is undertaken using annual post-secondary education (PSE) enrolment data published by Statistics Canada as collected from provincial governments and public PSE institutions across Canada. Such administrative data based on institutional enrolments are examined and combined with population figures to construct proxy PSE participation rates.

Despite the many challenges (already discussed in Section 1.4.1) associated with this traditional method of comparison, it is worthwhile to consider enrolments and proxy participation measures in order to examine comparisons between provinces and changes over time in PSE participation. Furthermore, the analysis in this section goes beyond the usual treatment of the data in an attempt to achieve a more comprehensive view of PSE in Canada and BC. During the mid to late 1990s, there have been a number of changes in PSE enrolments and participation compared to measures in the early 1990s.

2.2 University and College Enrolments in Canada

As a first step in this analysis, trends in public PSE enrolments in Canada and the provinces since the 1987/88 school year are highlighted. Figure 2.1 shows the total number of students enrolled in universities and colleges in Canada for the 1987/88 to 1996/97 academic years. The number of PSE enrolments increased significantly between 1987/88 and 1991/92, peaked in 1992/93 at 1.44 million students, and dropped every year thereafter, to just over 1.38 million in 1996/97.

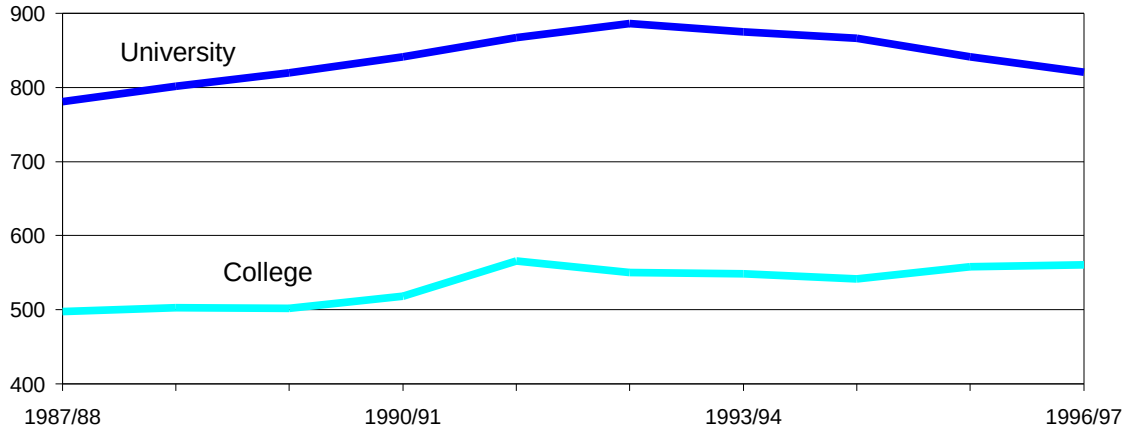
Figure 2.1: Enrolment in Universities and Colleges in Canada, (000s) 1987/88 to 1996/97



Source: Statistics Canada, Administrative Enrolment Data

Figure 2.2 breaks down enrolments by university and college enrolments. The drop in total enrolments since 1992/93 was driven largely by a decrease in the number of part-time university students. Part-time university enrolments fell by over 75,000 between 1992/93 and 1997/98. The only province to experience an increase in part-time enrolments during that time period was BC, with an increase of almost 4,000 enrolments which contrasts with Ontario's decline of over 33,000 part-time students. College enrolments in Canada peaked in 1991/92, followed by a slight decrease throughout the early and mid 1990s, and growth again over the last couple of years. Note college enrolment data excludes trade/vocational students, however, they will be discussed later in this section.

Figure 2.2: University vs. College Enrolments in Canada, (000s) 1987/88 to 1996/97



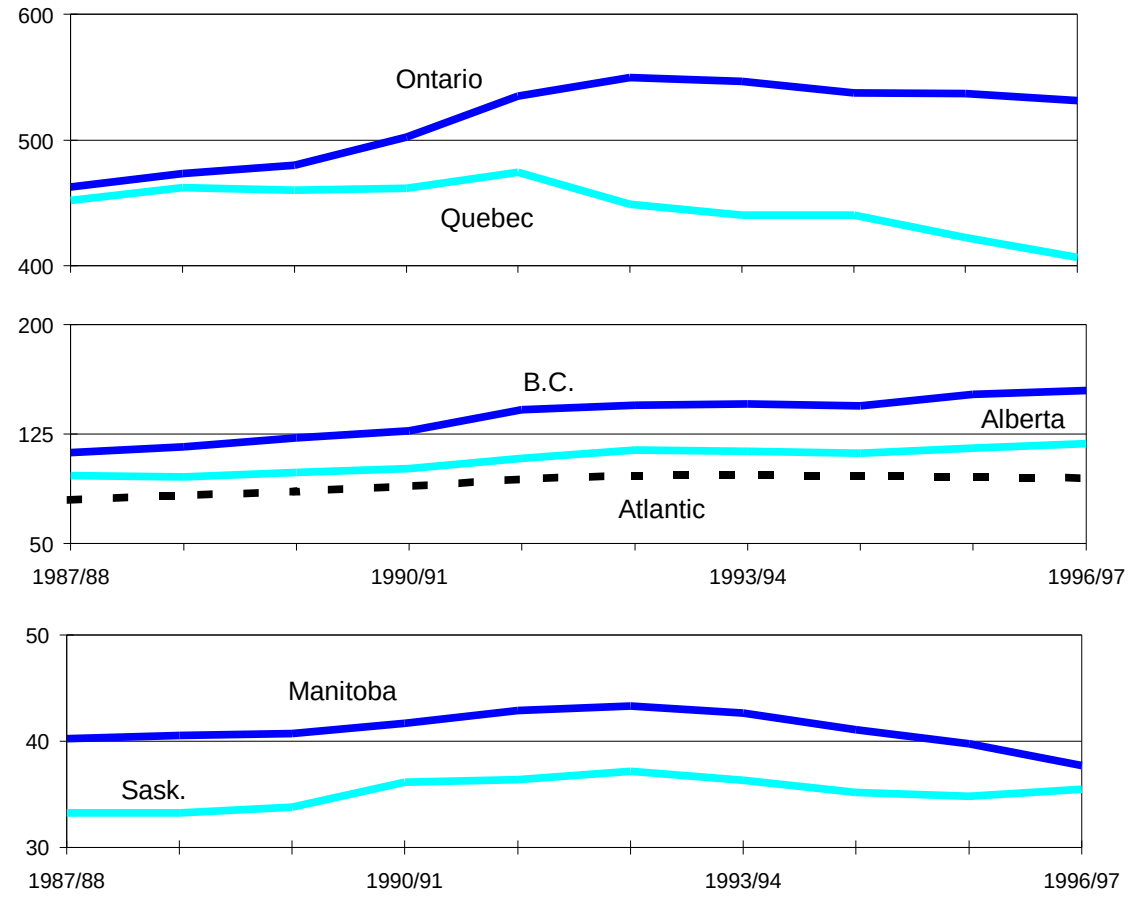
Source: Statistics Canada, Administrative Enrolment Data

2.3 Enrolments by Province

2.3.1 Overall Enrolments

Figure 2.3 shows university and college enrolment numbers broken down by province (Figure 2.3 is split into three separate graphs with varying scale to better illustrate more discrete enrolment changes in some of the smaller provinces). Between the 1987/88 and 1996/97 school years, all of the selected provinces experienced overall growth in enrolments with the exception of Quebec and Manitoba. In terms of absolute numbers, Ontario saw the largest increase in enrolments, with an increase of 69 thousand between 1987/88 and 1996/97, followed closely by BC, with an increase of 43 thousand students, and Alberta, with an increase of 22 thousand. Quebec experienced a net decline of 45 thousand students between 1987/88 and 1996/97, with the largest drop in enrolments occurring between 1991/92 and 1996/97. Manitoba also experienced significant declines in enrolments, with a drop in enrolments of 13 per cent between 1992/93 and 1996/97.

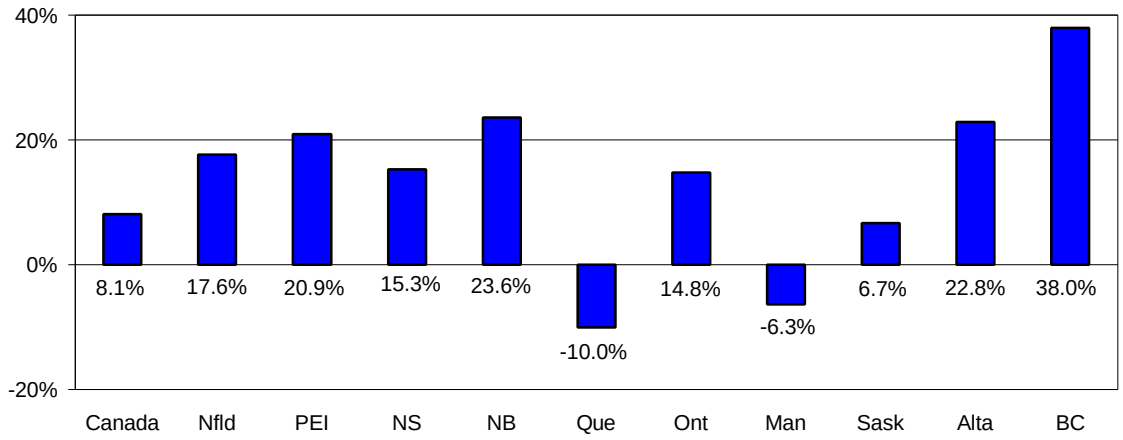
Figure 2.3: Enrolment in Universities and Colleges in Thousands Selected Provinces, 1987/88 to 1996/97



Source: Statistics Canada, Administrative Enrolment Data

University and college enrolments in Canada increased by 8 per cent between the 1987/88 and 1996/97 school years. The increase in enrolments in Canada during this time was primarily a result of increases in Ontario, BC and Alberta, and to a smaller extent, increases in the Atlantic Provinces. As illustrated in Figure 2.4, the province with the largest per cent increase in university and college enrolments was BC, with a rise of 38.0 per cent. By comparison, enrolments grew by 22.8 per cent in Alberta and 14.8 in Ontario.

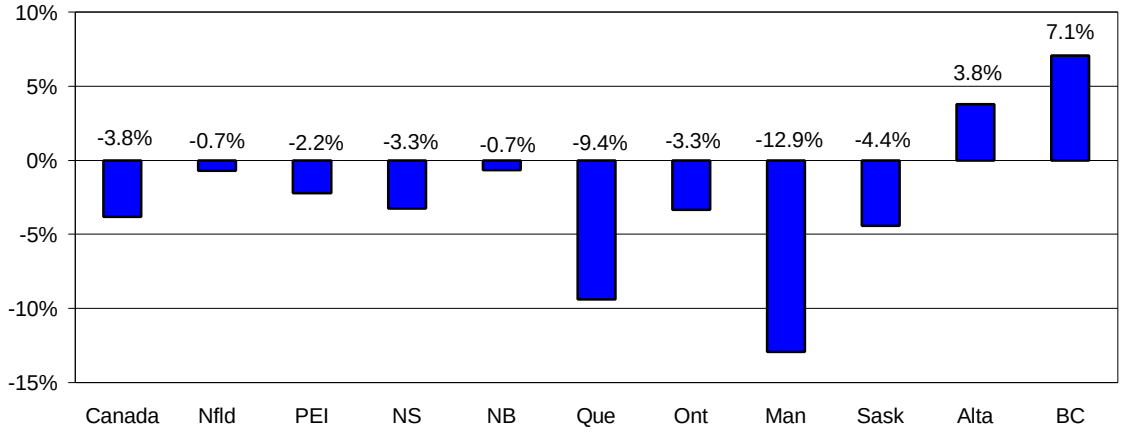
Figure 2.4: Percentage Increase in University and College Enrolments 1987/88 to 1996/97, Canada and Provinces



Source: Statistics Canada, Administrative Enrolment Data

Despite a net increase in university and college enrolments in Canada between 1987/88 and 1996/97, there were decreases in enrolments in many provinces since 1992/93, which slowed longer term growth substantially. Figure 2.5 illustrates this point by showing the percentage change in university and college enrolments between 1992/93 and 1996/97. Only BC and Alberta experienced growth in enrolments during this time period. Enrolments in BC rose by over 7 per cent between 1992/93 and 1996/97. In contrast, for the same period, enrolments in universities and colleges were down 9.4 per cent in Quebec and 3.8 per cent for all of Canada.

Figure 2.5: Percentage Increase in University and College Enrolments 1992/93 to 1996/97, Canada and Provinces

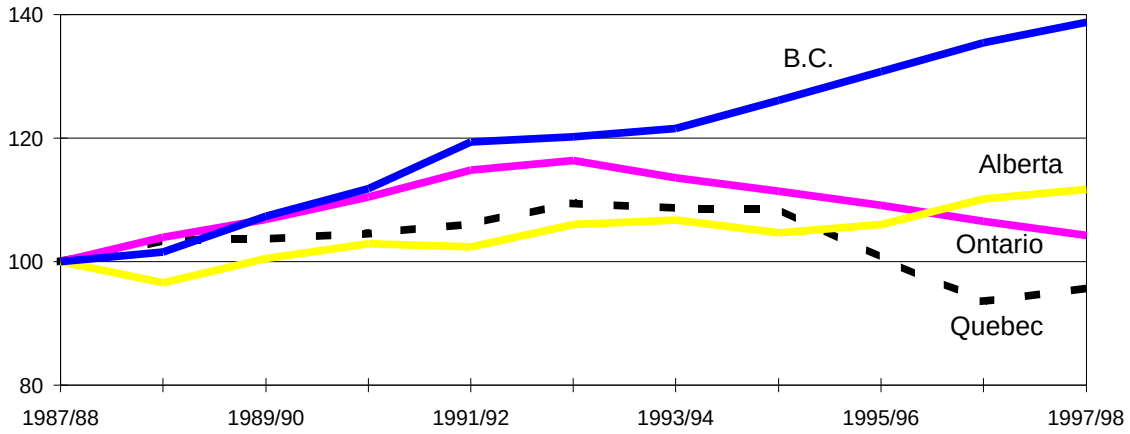


2.3.2 University vs. College Enrolments

In order to control for province size, and to allow for consistent comparisons of university and college enrolments, an index is used. An index is a numerical scale showing relative changes in reference to some predetermined base level. The enrolment index employed here measures changes in enrolments in universities and colleges between 1987/88 and 1996/97. A base of 100 is assigned to enrolment totals in 1987/88, with the growth in enrolments measured by the subsequent years' index.

Figure 2.6 displays the enrolment index for universities in BC and selected provinces. Growth in university enrolments in BC has far outpaced the other provinces since 1987/88, with the most rapid growth occurring between 1993/94 and 1996/97.

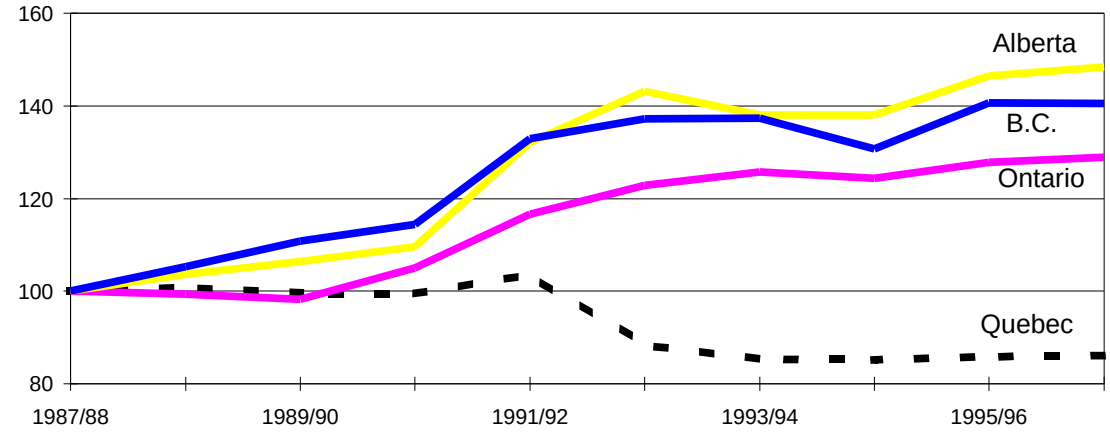
Figure 2.6: University Enrolment Index, 1987/88 = 100, Selected Provinces



Source: Statistics Canada, Administrative Enrolment Data

Growth in college enrolments have also been quite substantial in BC, as illustrated in Figure 2.7, second only to Alberta. In contrast to university enrolments, college enrolments in BC grew more in the late 1980s and early 1990s.

Figure 2.7: College Enrolment Index, 1987/88 = 100, Selected Provinces



Source: Statistics Canada, Administrative Enrolment Data

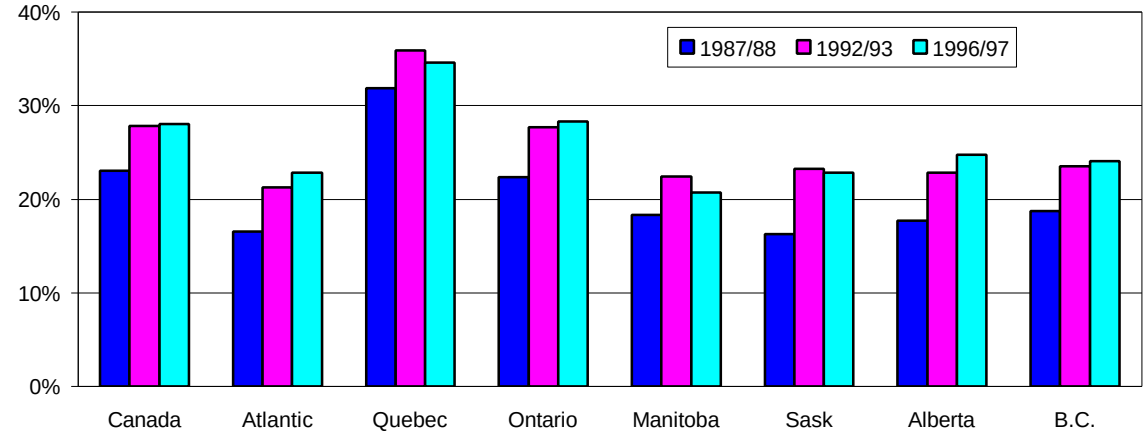
2.4 University and College "Enrolment Ratios" as Proxies for PSE Participation Rates

2.4.1 BC and All of Canada

Post-secondary participation rates are determined by the number of enrolments divided by population. Participation rates seek to gauge the relative degree of PSE enrolments as a percentage of a particular population. Ideally, participation rates are calculated using the same age groups in terms of enrolments and population. However, since the enrolment data are not broken down by age category, the ratio of total enrolments to the population aged 18 to 29 is used as a proxy measure of participation rates. This was done in order to focus on the age range most likely to be participating in PSE. Total population of all ages was not chosen as some provinces have notably different age structures. Newfoundland, Prince Edward Island, Nova Scotia, and New Brunswick are combined into one Atlantic region.

For the 1996/97 academic year, the ratio of enrolments to the target population in BC was 24.1 per cent, compared with 24.8 per cent in Alberta, 28.3 per cent in Ontario, and a national average of 28.0 per cent. Manitoba, Saskatchewan and Atlantic Canada all had measures below that of BC The ratio increased in all of the selected provinces between 1987/88, 1992/93, and 1996/97, with the exception of Quebec, Manitoba and Saskatchewan, where the ratio fell between 1992/93 and 1996/97.

Figure 2.8: Ratio of University and College Enrolments to Population Aged 18 to 29, Canada and Provinces, 1987/88, 1992/93 and 1996/97

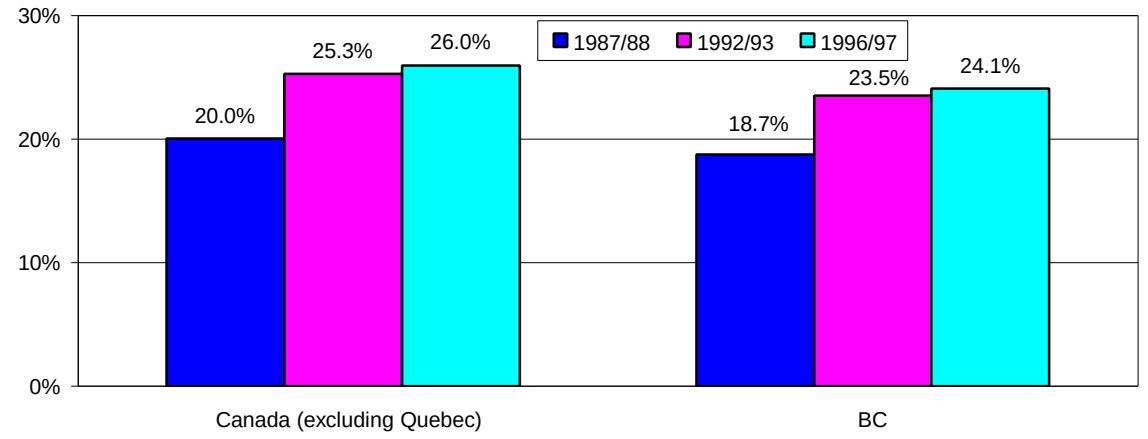


Source: Statistics Canada, Administrative Enrolment Data

2.4.2 BC and Canada (excluding Quebec)

As noted in Section 1.3.1, due to the high proportion of Quebec students who enroll in CEGEP, it is useful to consider a comparable ratio for Canada with Quebec excluded from the national total. Figure 2.9 includes the ratio of PSE enrolments to those aged 18 to 29 for Canada (excluding Quebec) and BC. With the province of Quebec excluded, the ratio for Canada falls to 26 per cent, leaving BC only slightly below national levels in 1996/97.

Figure 2.9: Ratio of University and College Enrolments to Population Aged 18 to 29, Canada(excluding Quebec) and BC, 1987/88, 1992/93 and 1996/97



Source: Statistics Canada, Administrative Enrolment Data

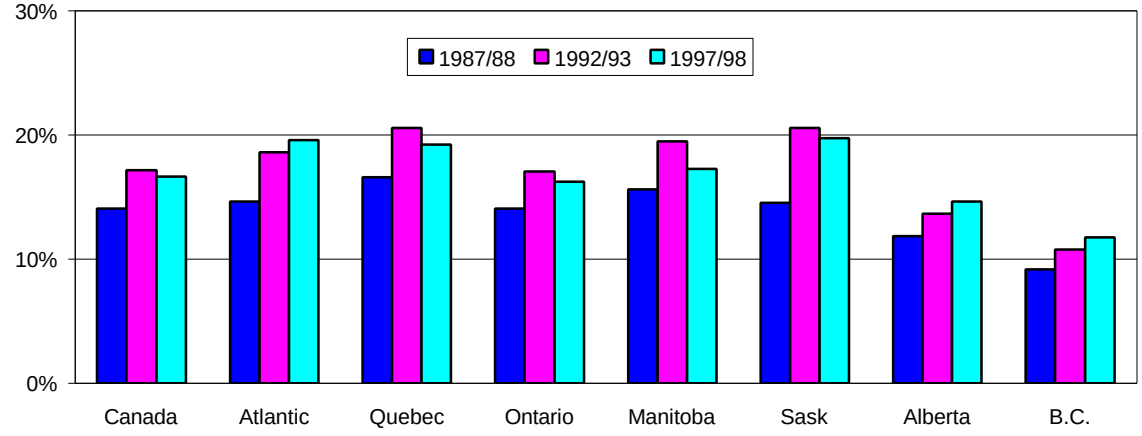
2.5 Participation in University

2.5.1 "University" Only Enrolments Ratios

In Figure 2.10, the ratio of total university enrolments to the population aged 18 to 29 is displayed. All of the provinces experienced declines in the ratio between 1992/93 and 1997/98, except for BC, Alberta and the Atlantic provinces. For Canada in total, the ratio of university enrolments to those aged 18 to 29 was 16.6 per cent in the 1997/98 academic year, falling from 17.2 per cent in 1992/93. The ratio was highest in Saskatchewan in 1997/98, at 19.7 per cent and lowest in BC at 11.8 per cent.

However, the apparently low levels of university participation in BC, as suggested by these measures based on administrative enrolment data, may be in part due to the inability of such data to reflect BC's unique PSE system (characterized by the existence of University-Colleges and the large degree of students in university transfer programs of University-Colleges and Community Colleges).

Figure 2.10: Ratio of University Enrolments to Population Aged 18 to 29 Canada and Provinces, 1987/88, 1992/93 and 1997/98

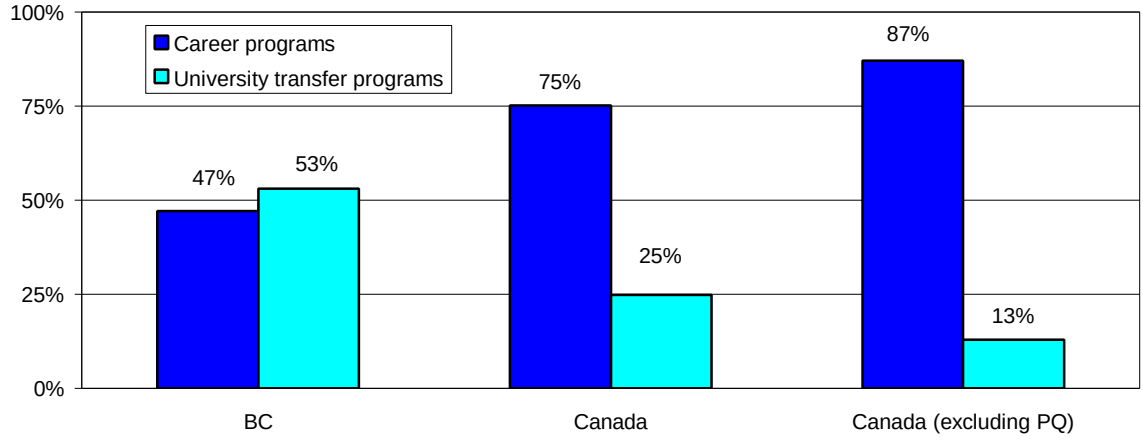


Source: Statistics Canada, Administrative Enrolment Data

2.5.2 University and "University Transfer" Programs Combined

As seen in Figure 2.11, of the over 30 thousand non-vocational students enrolled in colleges and institutes in BC during the 1995/96 academic year, over half were in university transfer programs, compared with a national average of only 25 per cent. Furthermore, when Quebec is not included in the national totals (due to high CEGEP enrolments), the proportion of college students in university transfer programs in colleges and institutes in Canada falls to only 13 per cent.

Figure 2.11: Percentage of College Enrolments in Career and University Transfer Programs, BC and Canada, 1995/96



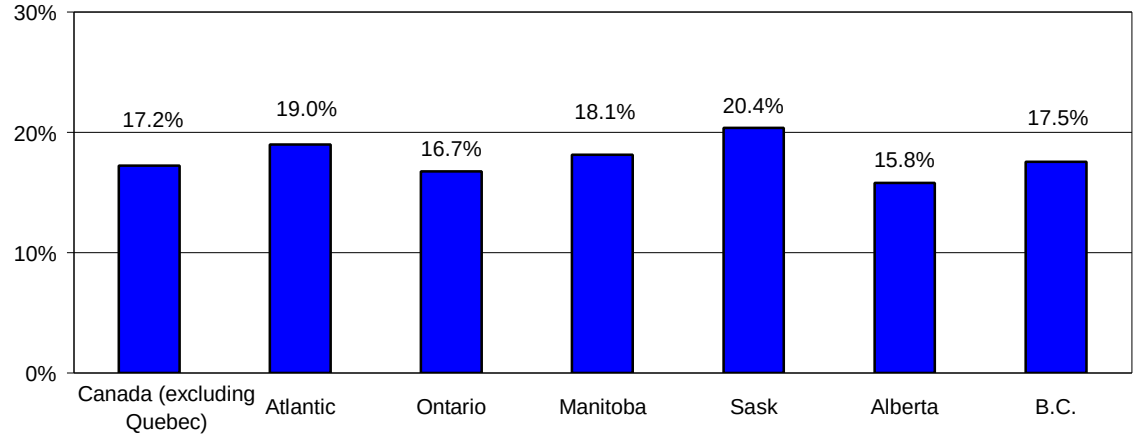
Source: Statistics Canada, Administrative Enrolment Data

The preceding evidence on structural differences in PSE systems suggests that in order to be consistent and more complete in comparing enrolments and participation between the provinces, it may be necessary to venture beyond the conventional and historic comparison methods. One way is to combine university enrolment totals with the number of students enrolled in university transfer programs.

Figure 2.12 shows the ratio of those enrolled in universities and university transfer programs to the population aged 18 to 29. Assuming this new measure better approximates true university-level program participation, it appears that BC is not lagging behind the rest of the country in terms of university-level enrolments. The ratio is 17.5 per cent for BC compared with a national average of 17.2 per cent (excluding Quebec).

Despite significant decreases in university enrolments since the early 1990s, this combined ratio is highest in the Prairie and Atlantic provinces, possibly due to disproportionately large outflows of individuals in the specified age cohort that occurred in the early to mid 1990s. Along with BC, Alberta had a significant number of students enrolled in university transfer programs in 1995/96 (over 6,000), but still had the lowest ratio of university and university transfer enrolments to those aged 18 to 29, at only 15.8 per cent.

Figure 2.12: Ratio of University and University Transfer Enrolments to those Aged 18 to 29, Canada and Provinces, 1995/96



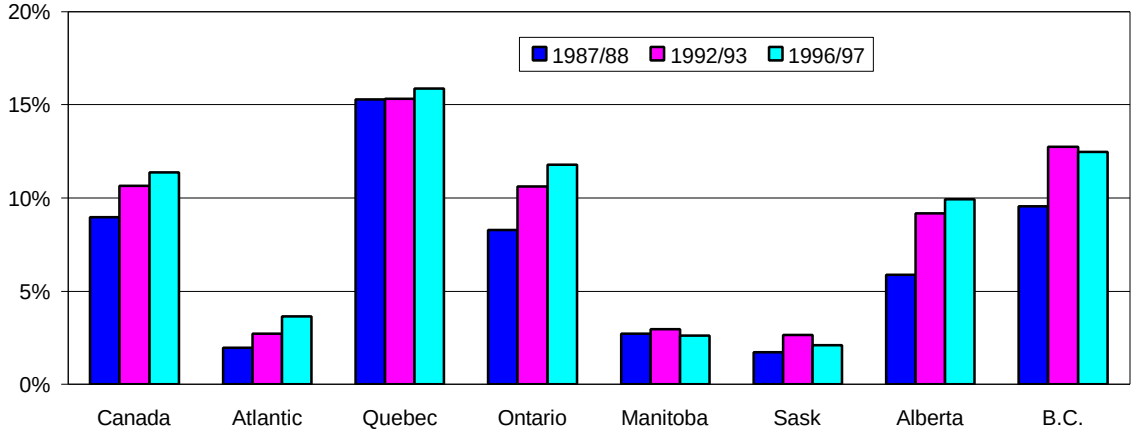
Source: Statistics Canada, Administrative Enrolment Data

2.6 Participation in Colleges and Institutes

2.6.1 BC, Canada, and the Provinces

Figure 2.13 shows the ratio of those enrolled in colleges and institutes, including both career programs and university transfer programs, to the population aged 18 to 29. Trade/vocational students are excluded (but discussed later). With the exception of Quebec, the ratio was highest in BC, at 12.5 per cent, compared with a national average of 11.4 per cent. In contrast to relatively high university participation, the Atlantic and Prairie provinces had low rates of enrolments in community colleges and institutes, with Saskatchewan having the lowest ratio, at only 2.1 per cent.

Figure 2.13: Ratio of College Enrolments to Population Aged 18 to 29 Canada and Provinces, 1987/88, 1992/93 and 1996/97

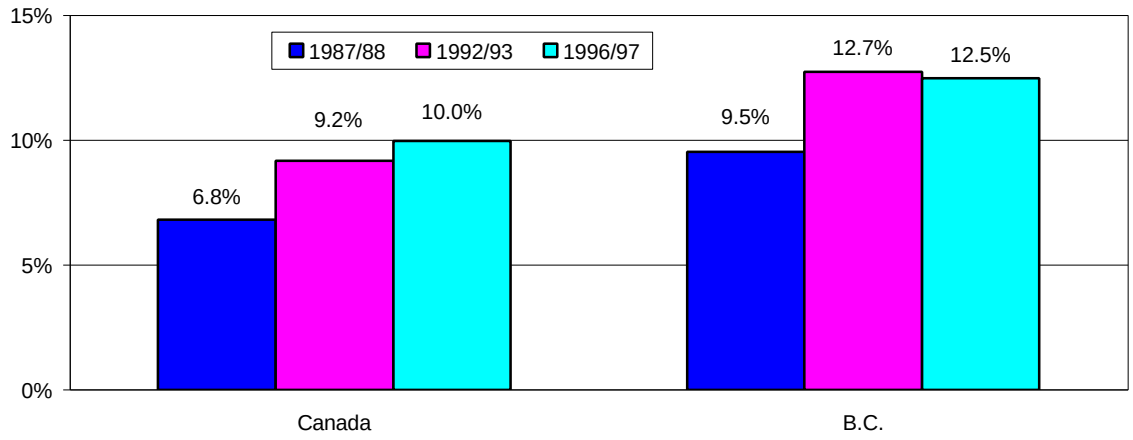


Source: Statistics Canada, Administrative Enrolment Data

2.6.2 BC and Canada (excluding Quebec)

When the province of Quebec is not included in the totals, the participation rate for Canada decreases to 10 per cent, leaving BC significantly above the national average. It should be noted, however, that the college and institute totals used in Figure 2.13 and 2.14 include both career and university transfer programs.

Figure 2.14: Ratio of College Enrolments to Population Aged 18 to 29 Canada(excluding Quebec) and BC, 1987/88, 1992/93 and 1996/97



Source: Statistics Canada, Administrative Enrolment Data

2.6.3 College "Career" Programs

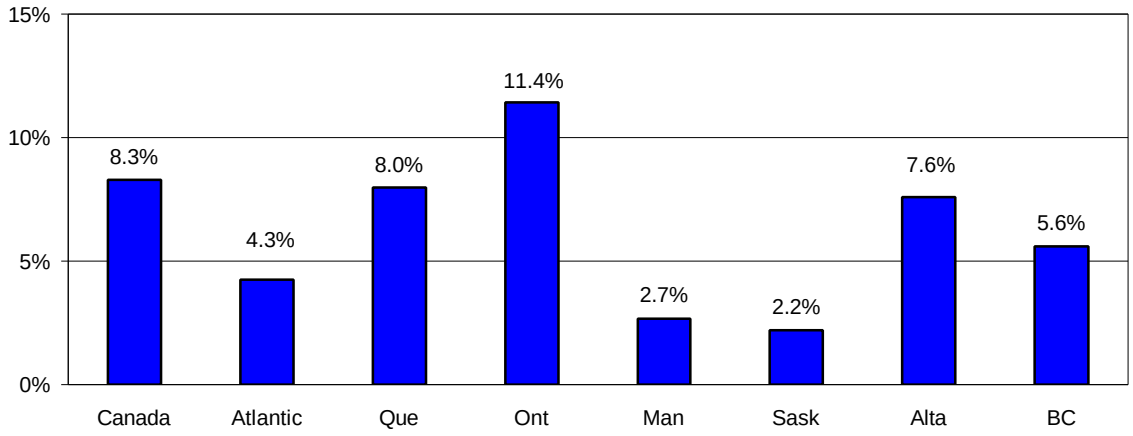
In focusing on college and institute student participation, it may be more appropriate to compare participation between the provinces in career programs only, based on the argument that the university transfer programs should, more appropriately, be considered next to university totals. Figure 2.15 displays the ratio of college and institute career program enrolments to the population aged 18 to 29 for the 1995/96 academic year.

For Canada on average, the ratio was 8.3 per cent. The province with the highest ratio was Ontario at 11.4 per cent, compared with 5.6 per cent for BC and 2.2 per cent for Saskatchewan. When the university transfer programs are not included in the college and institute enrolment totals, the ratio for Quebec falls to just below the national average. The major drawback for such a comparison on "career" program student participation is that there exist concerns about the difficulty in ensuring this "category" as defined by Statistics Canada is consistent when applied against programs across provinces.

Differences in the category labeling of programs between provinces may not be consistently resolved in terms of totals that are re-assigned into common labels of "career"

vs. “trade/vocational” in a national context. For example, Ontario has the highest enrolment ratio in terms of “career” programs, but as we will see below, the lowest ratio of “trade/vocational” participation; BC is the reverse.

Figure 2.15: Ratio of College Career Program Enrolments to Population Aged 18 to 29, Canada and Provinces, 1995/96



Source: Statistics Canada, Administrative Enrolment Data

2.6.4 Trade/Vocational Programs

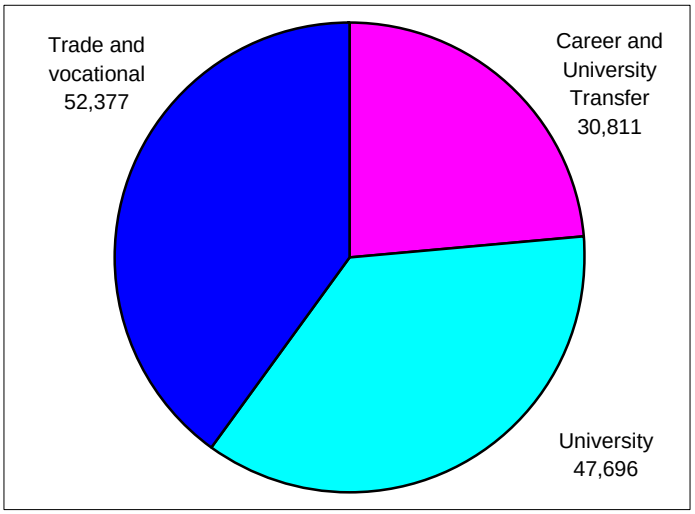
According to Statistics Canada, “career/technical” programs prepare students to enter an occupation upon completion of a level between that of the university-trained professional and the skilled tradesperson. Unlike university programs, career programs teach students industry specific skills, with a focus on a particular occupation upon completion. Trade/vocational programs, as defined by Statistics Canada , are similar to career programs in that they also prepare trainees for a specific occupation upon completion, with an emphasis on manipulative skills and on the performance of well-defined procedures.

In BC, there are a number of programs up to 12 months referred to as vocational, usually offering a certificate. By Statistics Canada categories, they should appear in career/technical, yet often there are also 2-year diploma level programs in the same field of study. Based on data published by Statistics Canada, it appears some of these vocational programs are being categorized under “trade/vocational”.

There were a relatively large number of individuals enrolled in trade/vocational programs in BC in 1994/95 (the latest year for which data is available from Statistics Canada) compared with university and college enrolments. Figure 2.16 includes the number of full-time enrolments in trade/vocational programs (only full-time enrolments were readily available). There were over 52 thousand enrolments in these programs in 1994/95, proportionally over 40 per cent of total full-time university, college and vocational

enrolments in BC. Based on these numbers, it is suggested that an important part of the occupational training undertaken in BC is delivered by trade/vocational programs, which serve a large number of students. Participation rates in these programs should be included in the discussion.

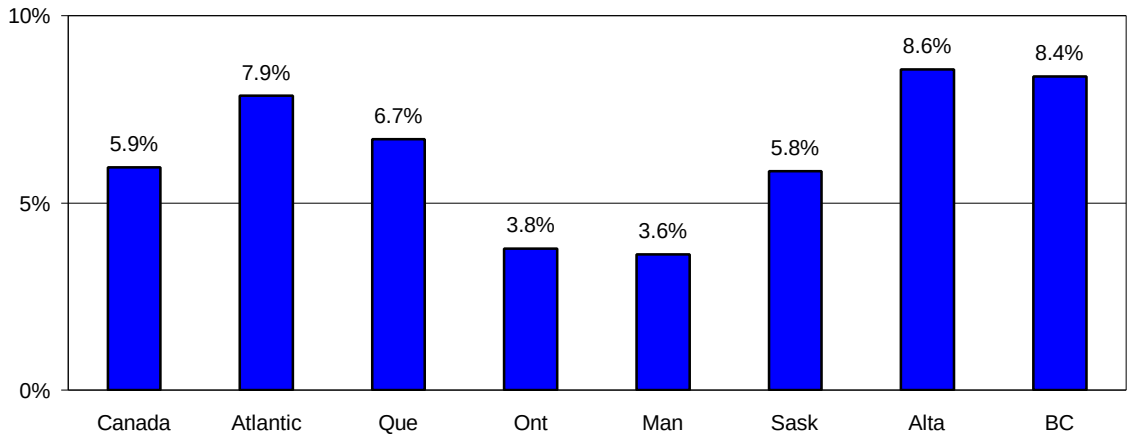
Figure 2.16: Full-time Enrolments in Universities, Career and University Transfer Programs, and Trade/Vocational Programs in BC, 1994/95



Source: Statistics Canada, Administrative Enrolment Data

Figure 2.17 displays the ratio of enrolments in trade/vocational programs to the population aged 18 to 29 for 1994/95. BC had the second highest ratio in the country, at 8.4 per cent, second only to Alberta, at 8.6 per cent, and well above the national average of 5.9 per cent. The province with the lowest ratio was Manitoba at 3.6 per cent, followed closely by Ontario at 3.8 per cent.

Figure 2.17: Ratio of Full-time Enrolments in Trade/Vocational Programs to Population Aged 18 to 29, Canada and Provinces, 1994/95



Source: Statistics Canada, Administrative Enrolment Data

2.6.5 Private Training

In addition to those students enrolled in public PSE institutions, many students choose to pursue their education through private providers. In BC for example, there are a significant number of individuals enrolled in private PSE and training. According to the Private Post-Secondary Education Commission (PPSEC), there were over 1,100 private training and education providers in B.C by July 1998, up from 774 at the end of 1993. Based on a survey conducted by PPSEC in 1995, it is estimated that there were upwards of 150 thousand students enrolled in private training institutes over the 12 months previous, close to the same number enrolled in universities and colleges.

Results from the 1998 Private Outcomes Training Survey, conducted on behalf of the federal and BC governments, suggest that almost 90 per cent of those enrolled in private training in BC had at least a high school diploma, and almost 50 per cent were under the age of 30. This suggests that any comprehensive analysis of PSE participation rates requires some consideration of private post-secondary students. Unfortunately, comparative administrative data on private PSE students between provinces is not readily available. Yet, private post-secondary attendance is reflected along with public post-secondary attendance in household survey data, and is examined in Section 3.

3. Post-Secondary Education "Participation Rates" using Household Survey Data

3.1 Introduction

Traditionally, comparisons of post-secondary education (PSE) participation have been made using administrative data based on enrolments by all ages divided by "typical" post-secondary age cohorts. In this section, an alternative method of comparison is derived through the use household survey data, which captures consistent participation data and provides considerable information on other related characteristics of respondents, providing a better understanding of some of the issues already raised.

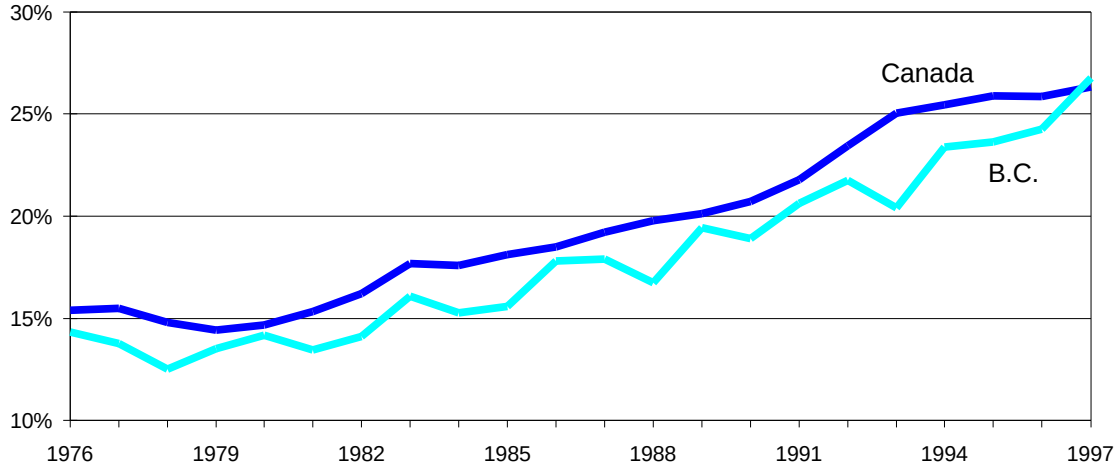
3.2 PSE Participation Rates in BC and Canada – 1976 to 1997

3.2.1 Participation Rates by Age Group

The analysis in this section is focused on individuals aged 18 to 29, often broken down into 18 to 24 year olds and 25 to 29 year olds. Not included are those aged 15 to 17, many of whom are still in secondary school. The LFS data indicates that there were over 1.2 million 18 to 29 year olds in the college and university categories in Canada in 1997.

Recall in Section 2 that administrative data for individuals aged 18 to 29 indicated that there was a significant difference between Canada and BC in the proportion of that age group engaged in PSE in 1997. Figure 3.1 below, based on household survey data, tells a different story. In BC from 1976 to 1997, the PSE participation rate (both full-time and part-time for all post-secondary) for those 18 to 29 increased from 14 per cent to 27 per cent, compared with an increase from 15 per cent to 26 per cent for Canada on average. For the first time since 1976, the PSE participation rate for BC surpassed that of Canada in 1997.

Figure 3.1: PSE Participation Rate for Canada and BC for Persons Aged 18 to 29 1976 to 1997

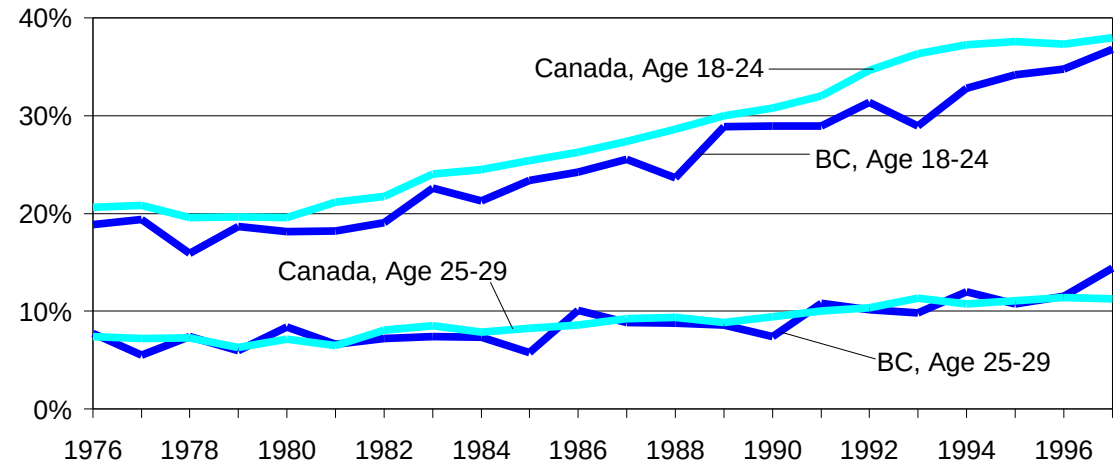


Source: Statistics Canada, Labour Force Survey

Figure 3.2 shows the PSE participation rate broken down by age group for those aged 18 to 24 and 25 to 29 for BC and Canada. In Canada between 1976 and 1997, the proportion of those aged 18 to 24 attending PSE institutions almost doubled, increasing from 21 per cent in 1976, to 38 per cent in 1997. In BC during the same time period, PSE participation for those aged 18 to 24 has remained slightly below the Canadian average, increasing from 19 per cent to 37 per cent. The notable gap in participation rates between Canada and BC in 1993 and 1994 has closed considerably by 1997.

For individuals aged 25 to 29, there is a substantially lower rate of post-secondary attendance than for those aged 18 to 24. Nonetheless, Canada has experienced a slow but steady increase in participation, from 7 per cent in 1976 to 11 per cent in 1997. B.C's participation rate for those aged 25 to 29 has kept pace with the rest of Canada over this time period, jumping ahead of the Canadian average in 1997 to 14 per cent.

Figure 3.2: PSE Participation Rate for BC and Canada by Age, 1976 to 1997

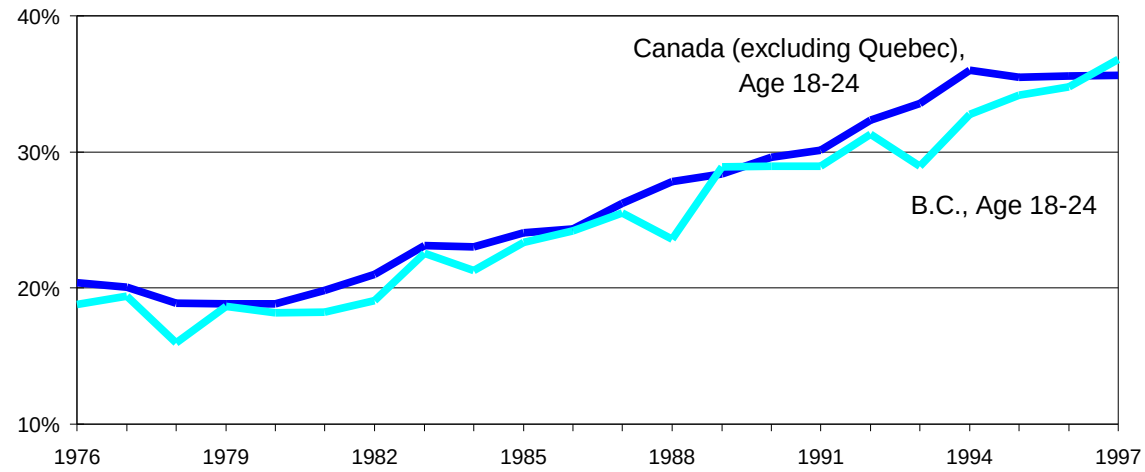


Source: Statistics Canada, Labour Force Survey

3.2.2 BC and Canada (excluding Quebec)

The PSE participation rates for Canada in Figures 3.1 and 3.2 above include all students in the specified age groups enrolled in universities and colleges, however, as mentioned in Section 1.3, the college system in Quebec is different than in the rest of Canada. Figure 3.3 includes the PSE participation rates for BC and Canada (excluding Quebec) for those aged 18 to 24. When Quebec is excluded from the totals, BC is much closer in terms of PSE participation compared with the rest of Canada.

Figure 3.3: PSE Participation Rate for Canada (excluding Quebec) and BC 1976 to 1997



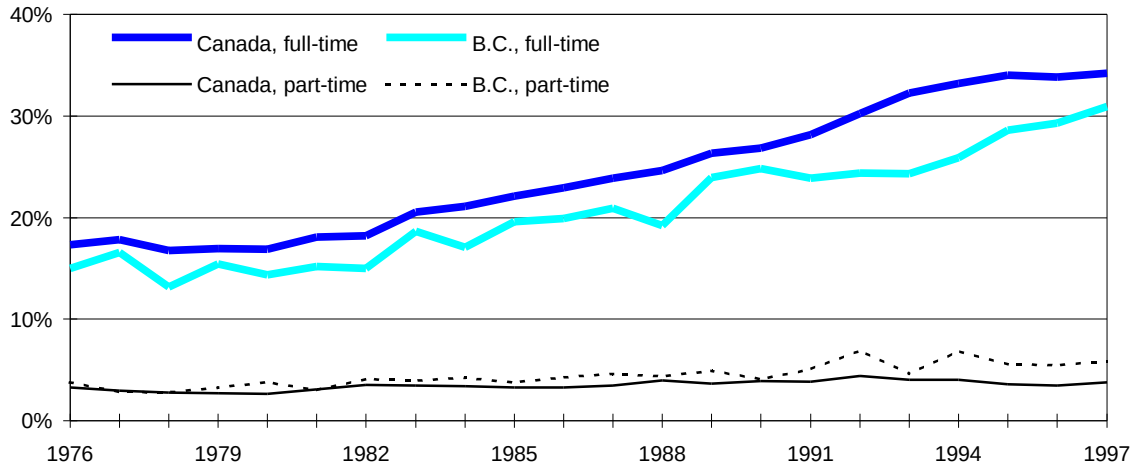
Source: Statistics Canada, Labour Force Survey

3.2.3 Full-time and Part-time PSE Participation

Looking at the traditional 18 to 24 age group over time (including Quebec), BC tends to have a lower full-time participation rate compared to the national average, but a higher part-time participation rate. Figures 3.4 and 3.5 break out PSE participation rates by full-time and part-time attendance for those aged 18 to 24 (Figure 3) and 25 to 29 (Figure 4). The majority of those aged 18 to 24 attending PSE institutions in Canada and BC were enrolled full-time. Since 1976, full-time PSE participation in Canada and BC has doubled. In Canada, full-time participation increased from 17 per cent in 1976 to 34 per cent in 1997, compared with an increase in BC from 15 per cent to 31 per cent.

In contrast to the full-time rates, part-time PSE participation for those aged 18 to 24 were much lower in both Canada and BC In Canada, the part-time rate has remained steady since 1976 at around the 4 per cent level. In BC, part-time rates were higher than the national average, increasing from a low of 3 per cent in 1977 to a high of 7 per cent in 1994.

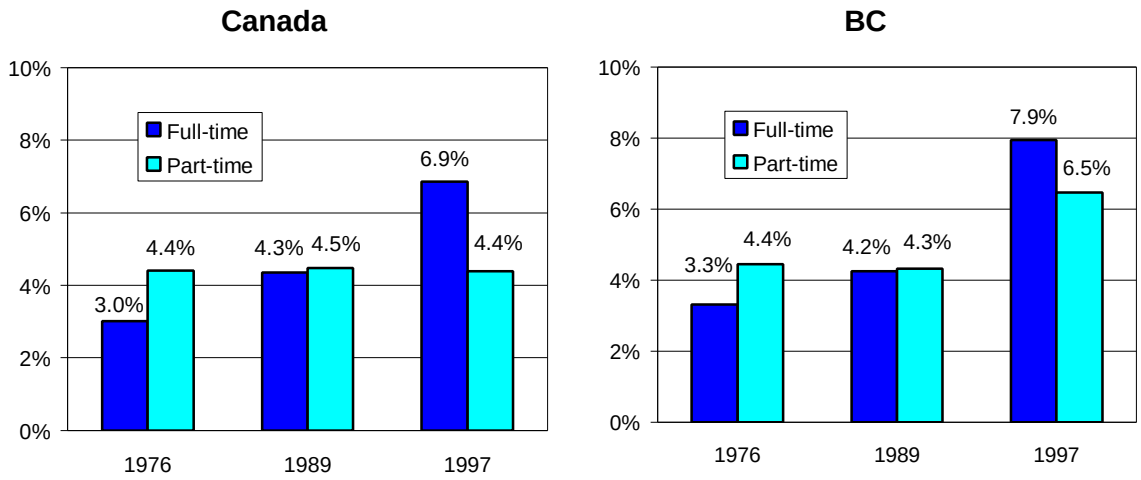
Figure 3.4: Full-time and Part-time PSE Participation Rates, Canada and BC Ages 18-24



Source: Statistics Canada, Labour Force Survey

In terms of older students (ages 25 to 29), BC's participation rate has historically been at or above the national average. As shown in Figure 3.5, although full-time participation rates remained higher, a large proportion of PSE participants aged 25 to 29 were enrolled part-time. In Canada, the trend has been towards an increase in full-time participation, rising from 3 per cent in 1976 to 7 per cent in 1997, while the part-time rate has remained steady at about 4.5 per cent. In B.C, part-time rates experienced large fluctuations, from a low of 3 per cent in 1979, to a high of 7 per cent in 1997. The full-time PSE participation rate in BC for this older group increased from 3 per cent to 8 per cent.

Figure 3.5: Full-time and Part-time PSE Participation Rates, Canada and BC Ages 25 to 29



Source: Statistics Canada, Labour Force Survey

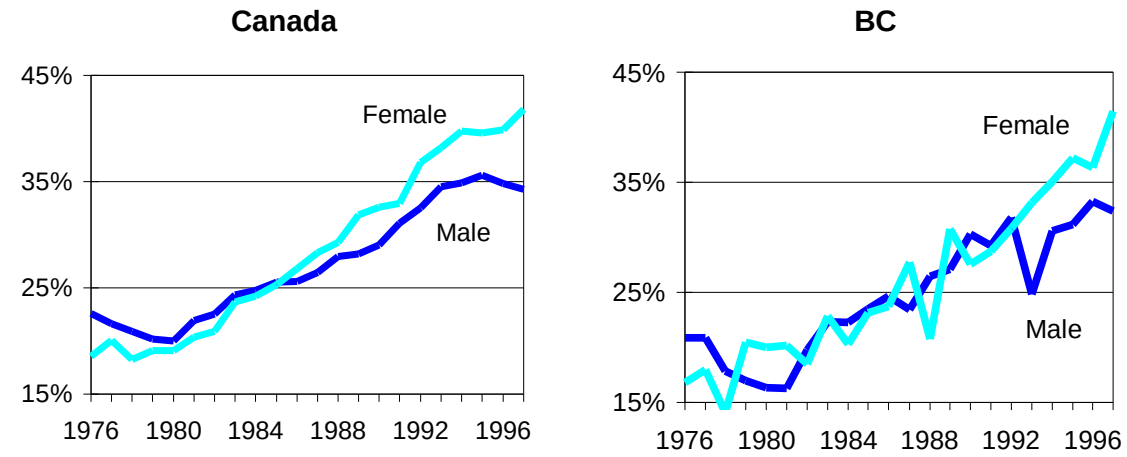
3.2.4 PSE Participation by Women and Men

Figure 3.6 breaks down PSE participation by gender for Canada and BC from 1976 to 1997, highlighting a trend toward higher participation rates for women, relative to men, yet both have been trending upward. In Canada, up until 1985, the participation rate for men was higher than for women. However, beginning in 1986, the PSE participation rate for women surpassed that of men. By 1997, the national participation rate for women was 42 per cent compared with a rate of only 34 per cent for men. Since 1995, the gap between the sexes widened notably, as male participation fell slightly and female participation continued to surge ahead.

In BC, the experience was similar to that of Canada. Between 1992 and 1993, participation by men decreased from 32 per cent to 25 per cent, but this decline was reversed, rising to an all-time high for men of over 33 per cent in 1996. Since 1993, participation by women has remained well above that for men in BC By 1997, the PSE participation rate for women aged 18 to 24 was 41 per cent compared with a rate of 32 per cent for men.

It should be noted that, due to small sample sizes and high variation associated with more focused analysis (e.g. breaking down attendance by gender in BC for certain age groups), some of the following graphs are subject to a certain amount of "bumpiness". True rates will fall in some range around the LFS estimates. Caution should be exercised when drawing conclusions based on estimates with high variability , therefore, an effort is made to limit analysis to trends over time and not short term fluctuations from one year to the next.

Figure 3.6: Post-Secondary Education Participation Rate, Age 18-24 Canada and BC

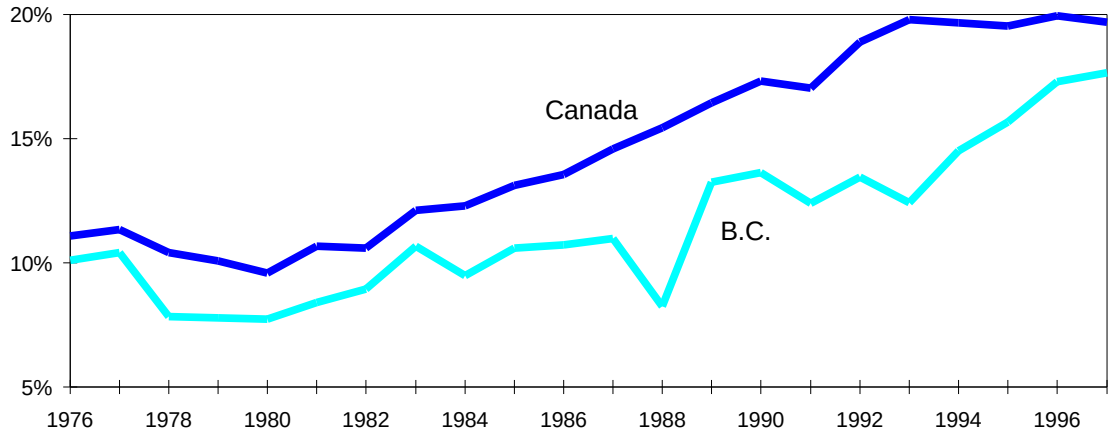


Source: Statistics Canada, Labour Force Survey

3.2.5 University vs. College Participation

Figures 3.7 and 3.8 further explore differences in PSE participation, looking separately at university and college attendance. In Figure 3.7, university participation in Canada and BC is presented for those aged 18 to 24. In Canada, university participation increased from 11 per cent in 1976 to 20 per cent in 1997, compared with an increase in BC from 10 per cent to 18 per cent. Since 1988, participation in university in BC has accelerated compared to growth in the late 1970s and early 1980s. Since 1993, university participation rates for those aged 18 to 24 in Canada have been fairly steady, at around 20 per cent. In contrast, the participation rate in BC has increased significantly during the same time period, from 12 per cent to 18 per cent.

Figure 3.7: University Participation Rate, Age 18 to 24, Canada and BC

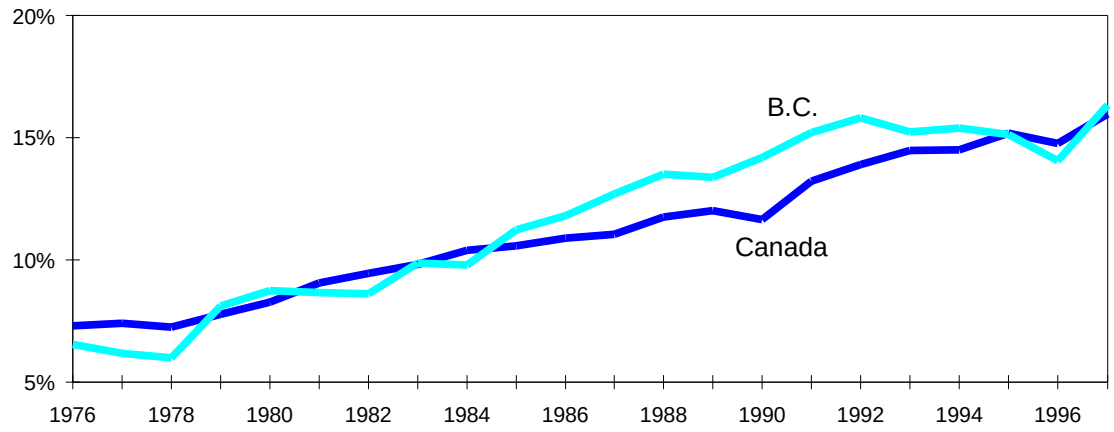


Source: Statistics Canada, Labour Force Survey

Figure 3.8 looks at college participation rates for those aged 18 to 24 in Canada and BC As with the university rates, both BC and Canada experienced significant increases in college participation rates between 1976 and 1997. In both BC and Canada, the college participation rate increased from approximately 7 per cent in 1976 to 16 per cent in 1997.

However, as a result of relatively larger increases in participation rates in BC throughout most of the 1980s, the rate in BC remained above the national average for most of the period. In contrast to the story with BC's university participation, which experienced the fastest growth in the 1990s, college participation rates in BC slowed and even decreased slightly for a period during the 1990s.

Figure 3.8: College Participation Rate, Age 18 to 24, Canada and BC



Source: Statistics Canada, Labour Force Survey

3.3 Inter-Provincial Comparison of PSE Participation Rates - 1976 to 1997

3.3.1 Participation Rates by Age Group

Figure 3.9 includes a breakdown of PSE participation rates for those aged 18 to 21, 18 to 24 and 25 to 29 in Canada and the provinces for the years 1976 and 1997. As would be expected, for both years, participation rates were highest for those aged 18 to 21, slightly lower for those aged 18 to 24 and substantially lower for those aged 25 to 29. PSE participation rates varied from province to province, with Quebec having the highest participation rate for those aged 18 to 21 and 18 to 24, likely due to the CEGEP system. Participation rates for all of Canada, and for Canada excluding Quebec, are included in the table. The gap in rates between Canada and Canada (excluding Quebec) is much wider in later years, with barely any difference between the two rates in 1976.

For those aged 18 to 21, the Atlantic region experienced the greatest increase in PSE participation; their rate increasing from less than 20 per cent in 1976 to over 45 per cent in 1997, second only to Quebec. BC also saw substantial increases in participation between 1976 and 1997, increasing from 22 per cent to 43 per cent, while Manitoba's rate increased the least over this time period falling from 2nd place in 1976 to last place in 1997. The rate of increase in BC kept pace with the rate of increase in the rest of Canada, with the attendance rate gap narrowing to within 1 percentage point in 1997.

For both years, Canadian PSE participation rates for those aged 18 to 24 were approximately 5 percentage points lower than they were for those age 18 to 21, perhaps indicative of a proportion of students finishing school and entering the job market in the 22 to 24 year age range. For those aged 18 to 24, the PSE participation rate was highest in Quebec in 1997, at 45 per cent, well ahead of any other province. Further discussion of this age cohort is reserved for a more in-depth graphical analysis later in this section.

For those aged 25 to 29, BC had the highest PSE participation rate, rising to over 14 per cent in 1997, from 8 per cent in 1976. The province with the smallest increase in participation rate for those aged 25 to 29 between 1976 and 1997 was Alberta, remaining fairly steady at just under 10 per cent.

Figure 3.9: PSE Participation Rates by Age, Canada and Provinces

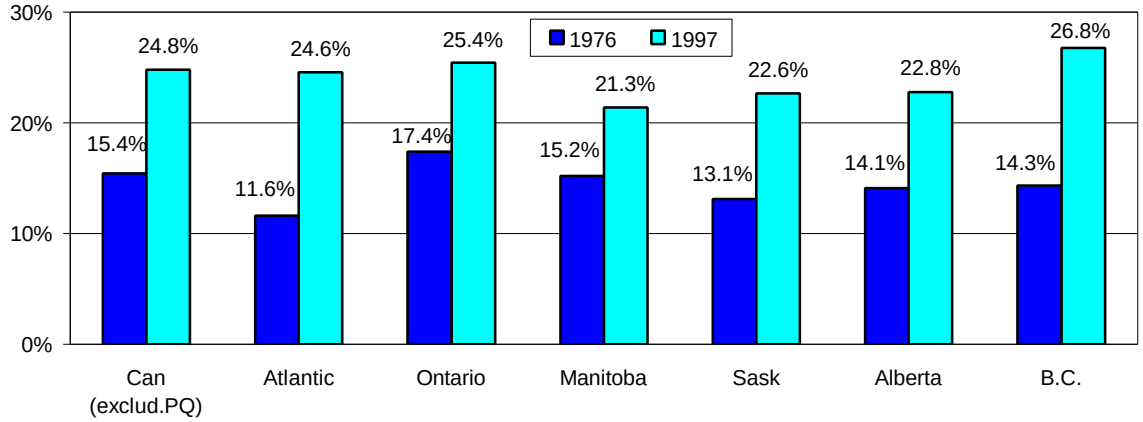
	1976				1997			
	Age 18-21	**Age 18-24**	**Age 25-29**	**Age 18-29**	**Age 18-21**	**Age 18-24**	**Age 25-29**	**Age 18-29**
Canada	**25.4%**	**20.6%**	**7.4%**	**15.4%**	**44.1%**	**38.0%**	**11.2%**	**26.3%**
Canada (excluding Quebec)	**24.8%**	**20.4%**	**7.7%**	**15.4%**	**40.8%**	**35.6%**	**11.2%**	**24.8%**
BC	22.4%	18.8%	7.7%	14.3%	43.1%	36.8%	14.4%	26.8%
Alberta	20.8%	17.0%	9.6%	14.1%	39.4%	32.8%	9.7%	22.8%
Sask.	22.3%	17.6%	5.0%	13.1%	38.8%	31.9%	8.3%	22.6%
Manitoba	27.4%	20.9%	6.1%	15.2%	34.7%	29.8%	9.9%	21.3%
Ontario	27.8%	23.3%	8.5%	17.4%	40.2%	36.8%	11.5%	25.4%
Quebec	27.0%	21.1%	6.7%	15.4%	53.6%	45.2%	11.5%	31.1%
Atlantic	19.7%	15.5%	5.4%	11.6%	45.7%	36.3%	8.9%	24.6%

Source: Statistics Canada, Labour Force Survey

Figure 3.10 displays PSE participation rates for the all inclusive age group (ages 18 to 29) for Canada (excluding Quebec) and the provinces. BC had the highest participation rate in 1997, at 27 per cent, up from 14 per cent in 1976. With Quebec excluded from the totals, the national average in 1997 drops from 26 per cent (Figure 3.9) to 25 per cent. Manitoba was the province with the smallest increase in participation rates for those aged 18 to 29 between 1976 and 1997, and the lowest participation rate of all the provinces in 1997, at 21 per cent.

Results from this section are considerably different than the combined college and university participation rates from Section 2 (Figure 2.8). Results from the administrative data indicate that the PSE participation rate in BC is below that of Ontario, Alberta, and the national average. As mentioned in the introduction, the reason for this discrepancy is likely differences in measurement, with the administrative data not capturing enrolments in trade/vocational programs.

Figure 3.10: PSE Participation Rates, Canada (excluding Quebec) and Provinces Aged 18 to 29, 1976 and 1997



Source: Statistics Canada, Labour Force Survey

3.3.2 PSE Participation for Women and Men

Figure 3.11 includes the participation rates of men and women aged 18 to 24 for Canada, Canada (excluding Quebec), and the provinces in 1997, for the all post-secondary, university, and college categories. In 1997, PSE participation rates were higher for women than for men in Canada and all of the provinces. The province with the largest gap between male and female PSE participation rates was Quebec, with a rate of 40 per cent for men and over 50 per cent for women. Despite this gap, Quebec had the highest participation rates for both men and women.

In BC, the PSE participation rate for women was second only to Quebec, at 41 per cent, compared with a national average of 42 per cent including Quebec and 39 per cent excluding Quebec. The province with the lowest participation rate for both men and women was Manitoba, with 28 per cent for men and 32 per cent for women. For men, BC had the fourth highest rate, at 32 per cent, following Quebec, Ontario, and Alberta.

In the university only category, on average nationally, men had a participation rate over 4 percentage points lower than women. Men in Alberta had the overall lowest university participation rate, at 13 per cent, followed by BC at 16 per cent and Quebec at 17 per cent. Alberta was also the province with the lowest participation rate for women in 1997,

at 18 per cent. BC had the second lowest rate, at 19 per cent. Women in the Atlantic provinces were the most likely to be attending university, with a participation rate of 29 per cent, well above the national average of 22 per cent.

In terms of college participation rates for those aged 18 to 24 in 1997, women once again had higher rates than men . Women in Canada attended college at a rate of 18 per cent including Quebec students, and 15 per cent excluding Quebec, compared with male participation rates of 14 per cent and 13 per cent, respectively. The province with the highest female college participation rate was Quebec, at 26 per cent, followed by BC at 19 per cent. Quebec also had the largest spread between male and female college participation, with a rate of only 18 per cent for men in 1997. With the exception of Quebec, Alberta had the highest college participation rates for men, followed by Ontario and BC

Figure 3.11: PSE Participation Rates in 1997 by Gender, Aged 18 to 24 Canada and Provinces

	All PSE		University		College	
	Male	**Female**	**Male**	**Female**	**Male**	**Female**
Canada	**34.3%**	**41.8%**	**17.7%**	**21.8%**	**14.2%**	**17.8%**
Canada (Excluding Quebec)	**32.4%**	**39.0%**	**18.0%**	**21.7%**	**12.9%**	**15.2%**
BC	32.4%	41.4%	16.0%	19.4%	13.7%	19.2%
Alberta	29.1%	36.6%	12.7%	18.1%	15.3%	17.6%
Saskatchewan	29.0%	35.3%	21.8%	24.9%	5.1%	6.9%
Manitoba	27.6%	32.4%	19.6%	20.4%	6.6%	9.0%
Ontario	34.1%	39.5%	18.8%	21.8%	14.1%	15.7%
Quebec	40.0%	50.7%	16.7%	21.9%	18.2%	26.1%
Atlantic	32.5%	40.3%	21.6%	28.5%	9.5%	9.7%

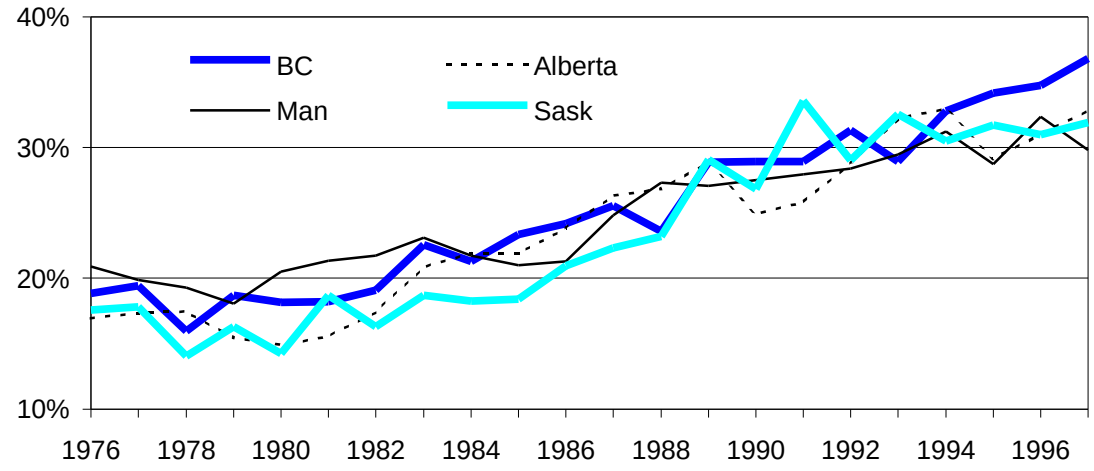
Source: Statistics Canada, Labour Force Survey

The remainder of Section 3 compares PSE participation rates for all of the provinces and the Atlantic region from 1976 to 1997. For illustrative purposes, Canada is split into two areas: 1) the Western provinces - including Alberta, Saskatchewan, and Manitoba, and 2) the Eastern provinces - including Ontario, Quebec, and the Atlantic provinces. This segmentation allows for a more manageable comparison of BC's PSE participation rates with the other provinces. Comparisons are made for the "all PSE" (Section 3.3.3), "university" (Section 3.3.4), and "college" (Section 3.3.5) categories. The focus is on those aged 18 to 24, a decision based on the fact this is the bulk of students in post-secondary education.

3.3.3 "All PSE" Participation Rates

Figure 3.12 shows PSE participation rates for BC and the three other western provinces for 18-24 year olds. Every province experienced a marked increase in school attendance for this age group over the past 21 years. B.C's participation rate generally tracked that of the other three provinces until 1995, and has notably exceeded all of the western provinces since. In 1997, BC had the highest overall PSE participation rate of all the western provinces, at 37 per cent.

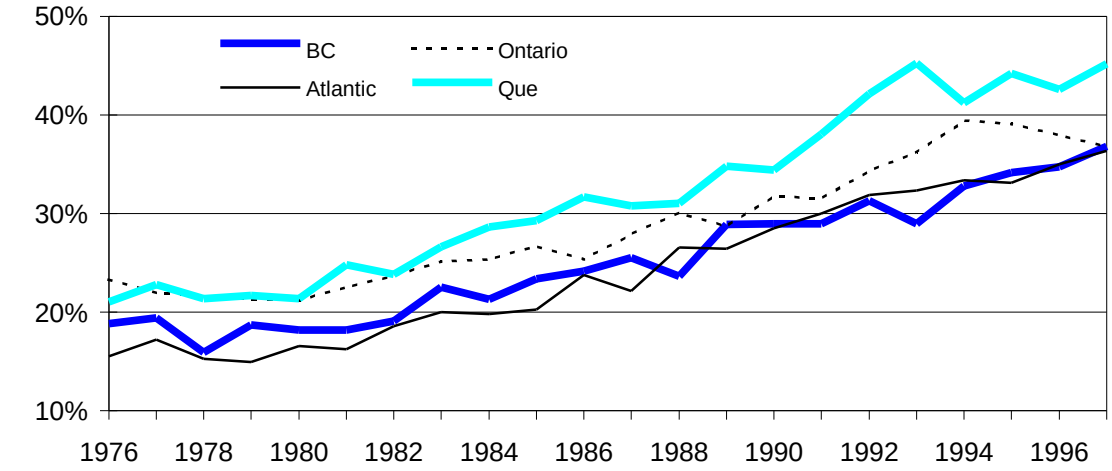
Figure 3.12: PSE Participation, BC and Western Provinces, Age 18-24



Source: Statistics Canada, Labour Force Survey

Figure 3.13 shows PSE participation rates for BC vs. Ontario, Quebec, and the Atlantic provinces for 18 to 24 year olds. Quebec's PSE participation rate was consistently above that of the rest of the other provinces since the early 1980s, peaking at over 45 per cent in 1993. As explained earlier, Quebec's high participation rates are bolstered by its unique college system. The participation rate in Ontario remained above B.C's over the last 20 years, only recently declining to equal levels.

Figure 3.13: Post-Secondary Education Participation BC and Eastern Provinces Age 18-24



Source: Statistics Canada, Labour Force Survey

3.3.4 "College" Participation Rates

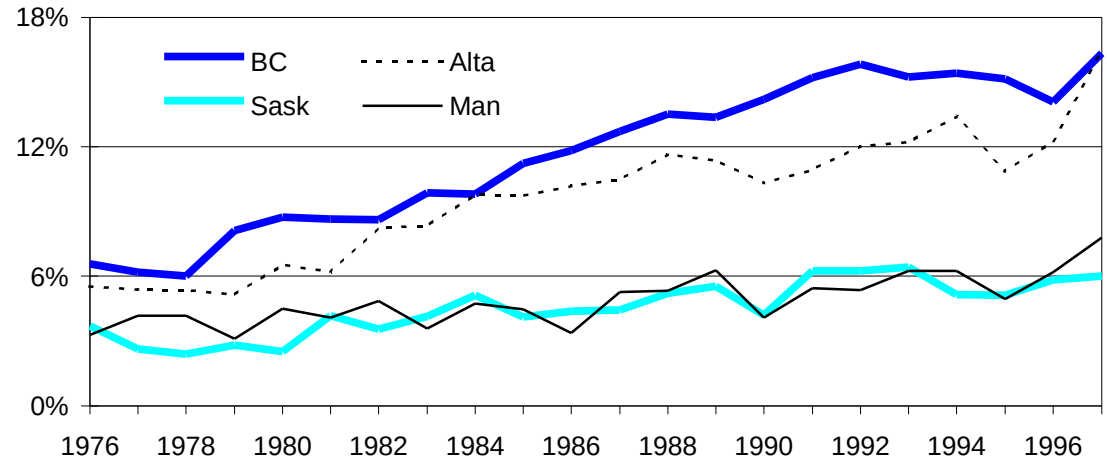
In order to further expand the analysis of inter-provincial differences in PSE participation rates, it is useful to look separately at university and college rates. Traditionally, the perception has been that BC has relatively high college participation rates and relatively low university participation rates. When examining the LFS data which breaks down attendance by college and university, it is important to keep in mind that the catagorization is subject to some challenges, as mentioned in the introduction to this section. However, comparison of these results with the results in Section 2 may help to shed some light on the issue of systematic differences between differing provincial college and university systems.

In BC, the existence of University-Colleges makes interpretation of participation rates with the other systems a challenge. Also, the only other provinces to offer what is considered by Statistics Canada to be university transfer programs (in any significant numbers) are Alberta and Quebec. The difficulty in comparing Quebec with the other provinces has already been discussed. Ontario has a large college system, with over 150 thousand students between 18 and 24 attending in 1997, but has no university transfer students according to Statistics Canada. In part this is reflective of articulation problems between colleges and universities in that province.

In Figure 3.14, college only participation rates for those aged 18 to 24 are presented for BC and the other western provinces. The most apparent trend is the widening gap between both BC and Alberta rates to the rates of Manitoba and Saskatchewan. Both BC and Alberta experienced steady and significant growth in college participation rates between 1976 and 1997, while Manitoba and Saskatchewan experienced only slight

increases in participation. In addition, the participation rate in BC has been equal, to or greater than, that of Alberta since 1976, with the exception of a recent surge in college participation in Alberta in the last 2 years, allowing Alberta's participation rate to slightly exceed BC's in 1997.

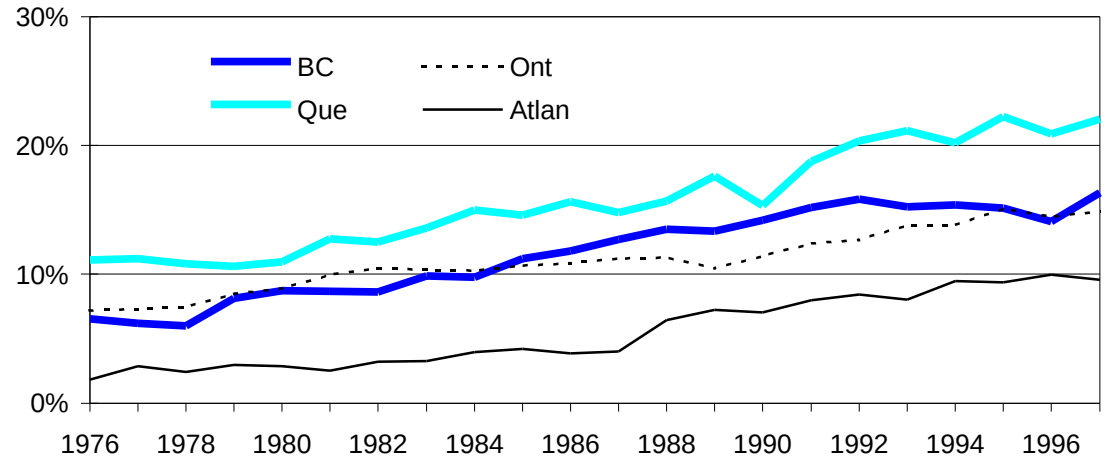
Figure 3.14: College Participation, BC and Western Provinces, Age 18-24



Source: Statistics Canada, Labour Force Survey

Similar to the comparison with the western provinces, BC stands out as having had higher than average college participation rates compared with the eastern provinces, with the exception of Quebec. In contrast, participation rates in BC and the eastern provinces have grown at about the same rate since 1976. In Figure 3.15 we see that B.C's participation rate for those aged 18 to 24 compares favourably with Ontario's, exceeding it since 1984 with only one exception, in 1996. The college participation rate in the Atlantic provinces was below the BC rate for the entire time period.

Figure 3.15: College Participation, BC and Eastern Provinces, Age 18-24

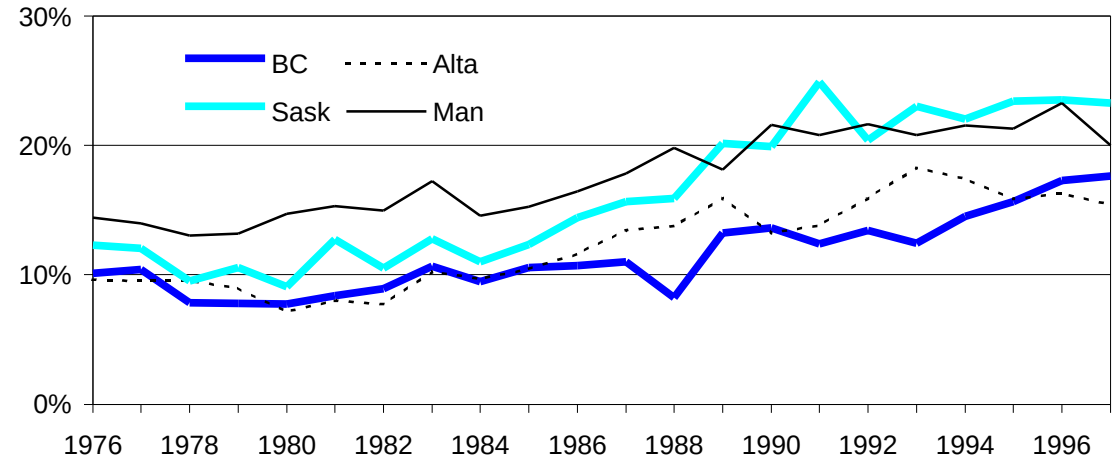


Source: Statistics Canada, Labour Force Survey

3.3.5 "University" Participation Rates

Unlike college participation, BC has generally been lower in university participation compared to the other three western provinces, with rates consistently below those of Manitoba and Saskatchewan. BC compares closely with Alberta in university attendance, pulling ahead in 1997 to 18 per cent, compared to 15 per cent in Alberta. Note that since 1993, participation rates for the other three western provinces leveled off or declined while BC's university participation rate continued to increase.

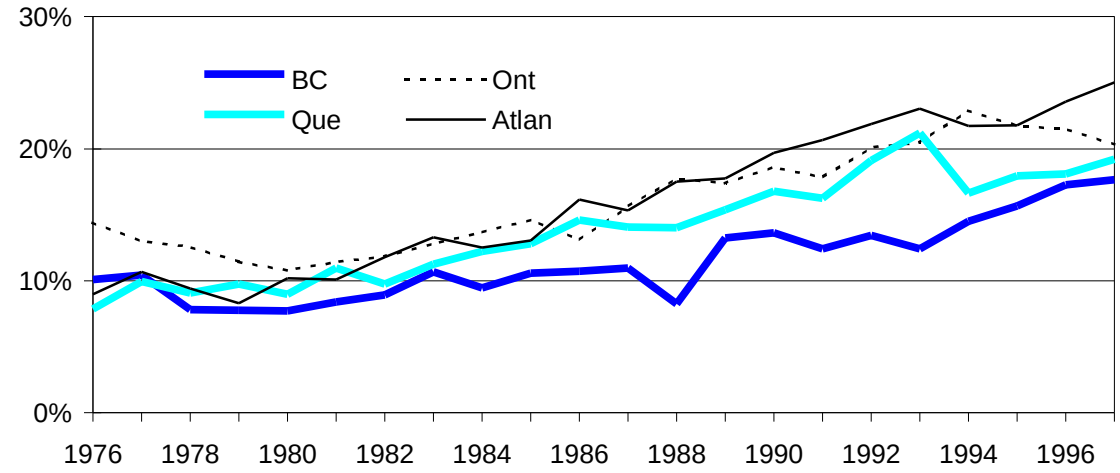
Figure 3.16: University Participation, BC and Western Provinces, Age 18-24



Source: Statistics Canada, Labour Force Survey

In Figure 3.17, university participation rates for those aged 18 to 24 in BC are compared with the eastern provinces. Since 1978, BC has had consistently lower university participation rates than the eastern provinces. However, with the decline in participation rates in Ontario and the leveling off of rates in Quebec, the gap has virtually closed between Canada's three largest provinces in 1997. In the Atlantic provinces, university participation rates increased at a relatively rapid pace compared with BC and the other eastern provinces, with particularly strong growth from 1983 to 1993.

Figure 3.17: University Participation, BC and Eastern Provinces, Age 18-24



Source: Statistics Canada, Labour Force Survey

4. Other Issues Related to Post-Secondary Education Participation – Educational Attainment, Inter-Provincial Mobility, and University and College Expenditures

4.1 Introduction

Up to this point, the analysis has focused primarily on systematic differences in PSE between BC and the other provinces as a clue to understanding differing participation rates. In this section, other factors which are related to trends in PSE participation rates are considered; including educational attainment levels and inter-provincial mobility patterns throughout Canada. In addition, PSE expenditure data from Statistics Canada's Financial Management System are summarized. Examination of expenditure data in the context of relatively large increases in university and college enrolments helps to clarify some of the reasons behind PSE spending patterns in BC

4.2 Educational Attainment

4.2.1 BC and Canada

In addition to examining PSE participation rates among the provinces, it is useful to get an idea of how BC compares with the rest of Canada in terms of educational attainment. Figure 4.1 presents a break down of the population by highest degree, certificate or diploma held in 1996 for Canada and BC for selected age groups. The population aged 20 to 54 is included, with each category being mutually exclusive (no individual is included in more than one category, i.e. a high school graduate with a university degree will show up only in the university degree category, not in the high school graduate category).

Based on this evidence, it appears that in 1996, BC residents were relatively well educated compared to the national average (highlighted proportions in Figure 4.1 indicate where BC compares favourably with the national average). With the exception of those aged 20 to 24 (suggesting a possible lag in BC compared with the national average in terms of when PSE is completed), the proportion of the BC population with no degree, certificate or diploma was lower than the national average. The disparity in educational attainment between BC and Canada seems to increase with age. In BC, only one quarter of those aged 45 to 54 had no degree, certificate or diploma, compared with a national average of 31 per cent.

In terms of the proportion of the population with education beyond secondary school, BC compares well with the overall Canadian average. Some 55 per cent of those aged 45 to 54 and 54 per cent of those aged 35 to 44 had a trade, other non-university or university degree, certificate or diploma in 1996. In Canada, only 49 per cent of those aged 45 to 54

and 51 per cent of those aged 35 to 44 had similar credentials. In ranking provinces, BC is generally the second highest province in terms of adult educational attainment (after Ontario).

Figure 4.1: Proportion of Population for Selected Age Groups with Highest Degree, Certificate or Diploma, Canada and BC, 1996

	Canada				BC			
	Aged 20-24	Aged 25-34	Aged 35-44	Aged 45-54	Aged 20-24	Aged 25-34	Aged 35-44	Aged 45-54
No degree, certificate or diploma	21.2%	21.1%	24.4%	30.5%	21.7%	**20.8%**	**22.5%**	**24.9%**
High-school Graduate	41.7%	24.4%	24.6%	21.1%	46.7%	25.1%	**24.0%**	**20.6%**
Trade certificate or diploma	7.5%	12.4%	13.0%	12.9%	7.6%	**13.0%**	**14.5%**	**15.0%**
Other non-university certificate or diploma	16.7%	20.3%	18.2%	15.1%	12.2%	19.6%	**19.4%**	**17.5%**
University Degree	13.0%	21.8%	19.7%	20.5%	11.8%	21.6%	**19.7%**	**22.0%**
Total	100%	100%	100%	100%	100%	100%	100%	100%

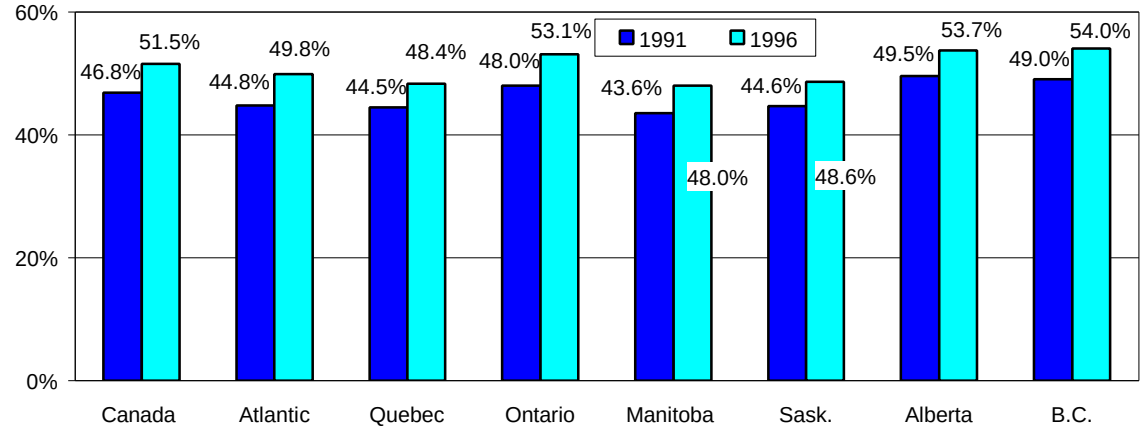
Source: Statistics Canada, 1996 Census

4.2.2 BC and the Provinces

Of the various methods used to compare educational attainment levels for Canada and the provinces in the 1996 Census, perhaps the one that serves the purpose of this paper most effectively is the one that asks respondents their highest degree, certificate or diploma attained. In order to compare the PSE attainment of BC residents with those of the other provinces, the bottom three categories of Figure 4.1 (those with trade certificates, other non-university certificates and university degrees) are combined into one category, which measures the proportion of their respective populations with PSE credentials. Figure 4.2 presents this measure for those aged 25 to 54 for BC and the provinces in 1991 and 1996.

In 1991, 49.0 per cent of BC residents had a trade certificate or higher, second only to Alberta, at 49.5 per cent. In 1996, BC was first in the country in terms of educational attainment (as measured by the selected criteria), at 54 per cent, compared with national average of 51.4 per cent. The province with the lowest proportion in 1996 was Manitoba, at 48 per cent, followed by Quebec at 48.4 per cent and Saskatchewan at 48.6 per cent. Overall, BC had the highest proportion of adults with PSE completion of all provinces in 1996.

Figure 4.2: Proportion of Population Aged 25 to 54 with a PSE Certificate, Diploma or Degree, 1991 and 1996



Source: Statistics Canada, 1996 Census

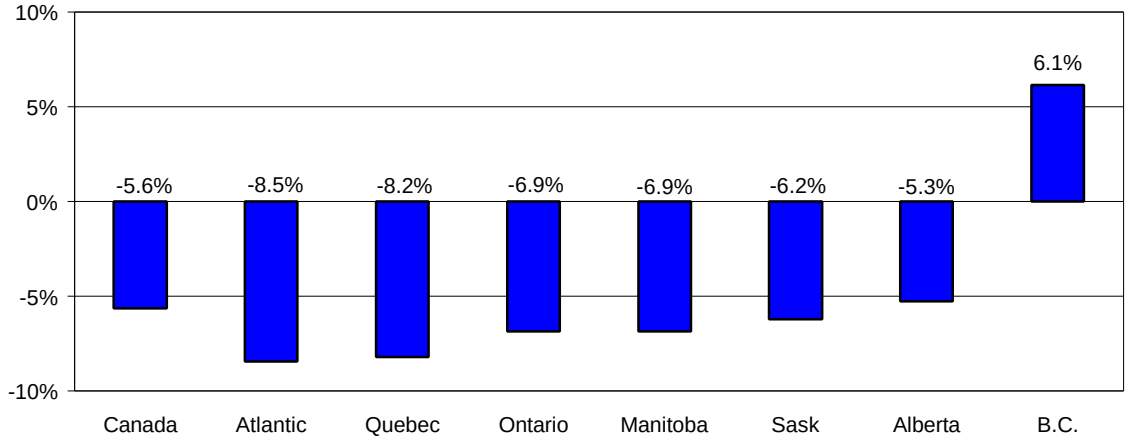
4.3 Impact of Inter-Provincial Mobility on PSE Participation

In this section, we examine population and net inter-provincial movements of persons aged 18 to 29, to see how this may be impacting population and hence PSE participation measures. Based on data on educational attainment and labour force status of inter-provincial migrants, it would appear that a large proportion of those who migrated to BC between 1991 and 1996 came to take advantage of job opportunities, not to go to school. This means that despite strong net in-migration during the 1990s, which put downward pressure on participation rates in BC, it is remarkable that participation rates have increased.

4.3.1 Population Changes in BC between 1991 and 1996

Figure 4.3 shows the proportional change in population for those aged 18 to 29 from 1991 to 1996. The number of those aged 18 to 29 in Canada decreased by 5.6 per cent between 1991 and 1996. Population decreases for that age group were largest in the Atlantic provinces, at 8.5 per cent, followed closely by Quebec, which experienced a decline of 8.2% for those aged 18 to 29. Demographic impacts from the "Baby Bust" partly drove these declines, but were added to by net inter-provincial out-migration in some provinces. In contrast, BC experienced a 6.1 per cent increase in this age group between 1991 and 1996. Most of this increase was due to positive net in-migration. Despite large increases in the population of those aged 18 to 29 in BC, the accompanying stronger increases in university and college enrolments led to an increase in participation rates.

Figure 4.3: Percentage Change in Population between 1991 and 1996, Age 18 to 29, Canada and Provinces



Source: Statistics Canada, 1996 Census

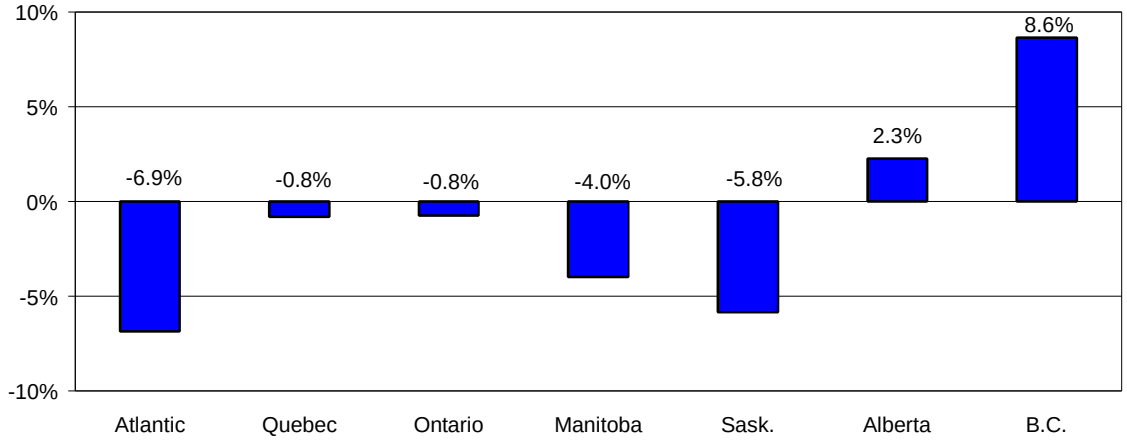
4.3.2 Inter-Provincial Migration

The changes in population illustrated in Figure 4.3 are due not only to demographic changes as a result of an aging population, but to migration to and from other countries and other provinces. The decreases in population of those aged 18 to 29 between 1991 and 1996 for a number of provinces are due in part to inter-provincial net outflows of individuals. If the perception is that the opportunities in one province are better than in another, there is often a flow of individuals from the province with less opportunities to the one with more. An individual may leave a province to seek better employment or educational opportunities.

Figure 4.4 displays the ratio of net inter-provincial migration between 1991 and 1996 to population in 1996 for those aged 20 to 29. For example, in BC in 1996, there were 68 thousand individuals aged 20 to 29 who did not live in BC in 1991 but did in 1996, and 24 thousand individuals who lived in BC in 1991 but no longer lived there in 1996. This translates into 44 thousand net new residents of BC for this age cohort, equaling 8.6 per cent of the population of 20 to 29 year olds.

Between 1991 and 1996, the only two provinces with net inter-provincial "inflows" of individuals aged 20 to 29 were BC and Alberta. The region that lost the largest proportion of those aged 20 to 29 was the Atlantic provinces, with a 6.9 per cent drop, followed by Saskatchewan, down 5.8 per cent. In Ontario and Quebec, for 18 to 29 year olds, the difference between in and out migrants was less than 1 per cent of the total population in that age group. Yet owing to the large size of those provinces, the net declines were still substantial, at 11,100 and 7,500, respectively.

Figure 4.4: Ratio of Net Inter-Provincial Migration to Population Aged 20 to 29, 1996



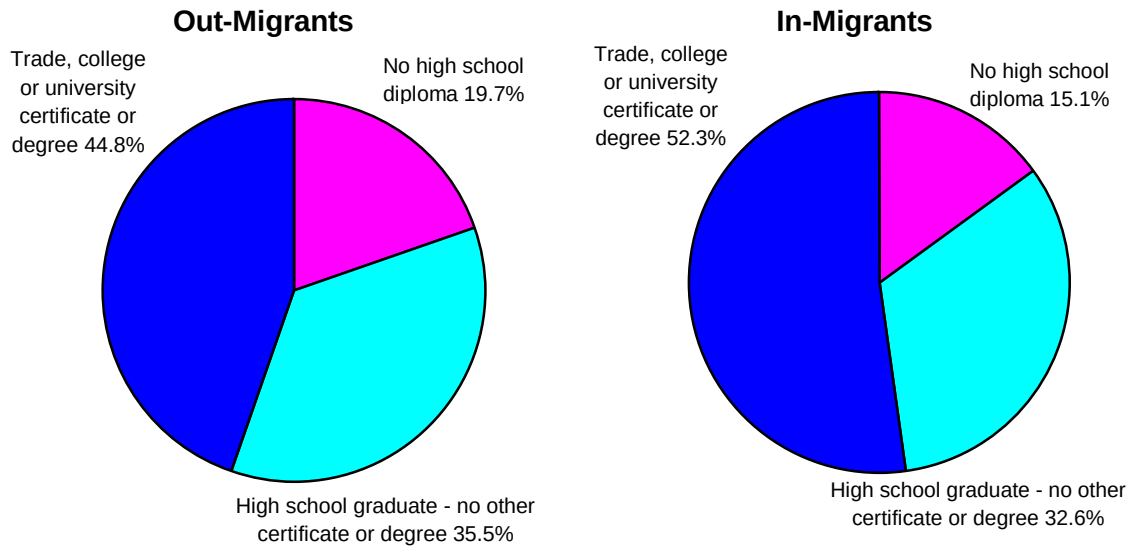
Source: Statistics Canada, 1996 Census

4.3.3 BC Migrants by Education Level

In terms of the effects of inter-provincial migration on PSE participation rates, it is helpful to examine the migrants' education level and labour force status. This is done in order to strengthen the proposition that a large proportion of the growth in BC's population aged 18 to 29 was of post-secondary educated individuals, who moved to BC to work and not to attend university or college. The result of such additions would be to put downward pressure on the BC ratio of PSE enrolments as a percentage of the population aged 18 to 29.

Figure 4.5 shows a breakdown of inter-provincial in and out migrants by educational attainment for those aged 20 to 29. Of the three categories, the one most likely to include potential PSE participants is the *high school graduate - no other certificate or degree* category. Based on this criteria, it appears that there were relatively more potential students leaving the province than entering it. Furthermore, of the in-migrants aged 20 to 29, over 52 per cent had a trade, college, or university certificate or degree, compared with less than 45 per cent of those who left BC Clearly, those arriving or leaving the province are generally quite likely to have post-secondary credentials.

Figure 4.5: Inter-Provincial Migrants by Education Level in BC
Age 20 to 29, 1996



Source: Statistics Canada, 1996 Census

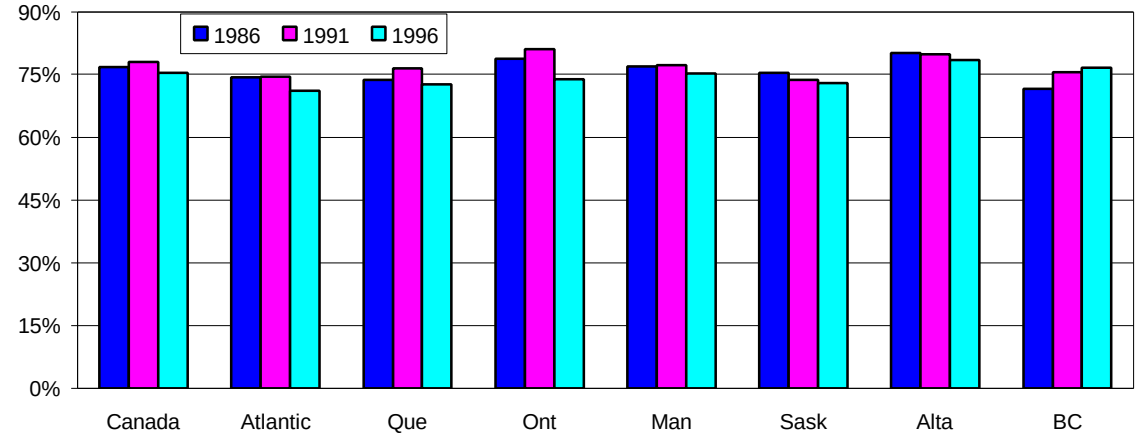
4.3.4 Inter-Provincial Migrants by Labour Force Status

The data on mobility from the 1996 Census only breaks down the labour force status of inter-provincial migrants for those aged 15 and over, therefore, it is not possible to look at specific age groups in this category. Nonetheless, examination of the data that is available may shed some light on the main activities of individuals moving to BC from the other provinces.

Figure 4.6 displays the labour force status of inter-provincial in-migrants for the three previous census years. In BC in 1996, 77 per cent of in-migrants were in the labour force, compared to a national average of 75 per cent and second only to Alberta, at 78 per cent. BC was the only province to see an increase in the proportion of migrants who were labour force participants. Furthermore, this labour force participation rate was 10 percentage points higher than the overall BC average for persons aged 15+ in 1996.

The region with the lowest proportion of migrants in the labour force in 1996 was the Atlantic provinces, at 71 per cent. The province that experienced the largest decline in the proportion was Ontario, falling from 81 per cent in 1991 to 74 per cent in 1996. This decline partly reflects the impact of the 1991/92 recession which left Ontario's labour market much weaker in 1996 than at the start of the decade. As in BC, overall for Canada, the labour force participation rate of movers was also higher than the 1996 Canadian average of just over 65 per cent for all persons (movers and non-movers).

Figure 4.6: Proportion of Inter-Provincial In-Migrants Aged 15 + in the Labour Force, Canada and the Provinces, 1986, 1991 and 1996



Source: Statistics Canada, 1996 Census

In Section 2, it was noted that total university and college enrolments as a percentage of the population aged 18 to 29 in BC increased slightly between 1992/93 and 1996/97, after seeing a stronger jump between 1987/88 and 1992/93. It is likely that the gains realized in participation rate measures during the 1990s for BC were limited by the strong net inter-provincial in-migration that BC experienced in the early to mid 1990s. For others, like the Atlantic Provinces, participation rates by the mid 1990s were likely boosted due to net inter-provincial out-migration.

4.4 PSE Finance

4.4.1 University and College Expenditures

Figure 4.7 includes expenditures on colleges and universities as a percentage of gross domestic product (GDP), per capita expenditures, and per student expenditures from 1992/93 to 1996/97. Expenditures in Canada have dropped for two consecutive years from a high of $16.561 billion in 1994/95 to $16.263 billion in 1996/97.

As would be expected, in absolute terms, the province with the highest expenditures on colleges and universities was Ontario, with spending reaching almost 6 billion in 1994/95. In British Columbia, expenditures have moderately continued to grow over the last few years after experiencing relatively large increases throughout the late 1980s and early 1990s, almost doubling from $1.230 billion in 1988/89 to a high of $2.226 billion in 1995/96. By contrast, college and university expenditures have declined or stayed flat in all other nine provinces since 1992/93 as enrolments saw much slower or little growth when compared to BC.

In terms of college and university expenditures' share of GDP, it has decreased across the country during the 1990s. As a percentage of provincial GDP, expenditures in BC have fallen to only 2% of GDP in 1996/97. The fall in BC mirrors quite closely what has happened in Canada on average since the early 1990s.

Figure 4.7: Expenditures on Colleges and Universities in Relation to Population and GDP

Province	Academic Year	Expenditure ($millions)	% of GDP	Per Capita (dollars)	Per Student (dollars)
	1992/93	16,035	2.30	562	11,168
	1993/94	16,453	2.27	569	11,562
Canada	1994/95	16,561	2.17	566	11,762
	1995/96	16,558	2.07	559	11,839
	1996/97	16,263	1.98	543	11,775
	1992/93	1,955	2.24	564	13,528
	1993/94	2,093	2.24	588	14,398
BC	1994/95	2,159	2.14	590	14,987
	1995/96	2,226	2.12	593	14,616
	1996/97	2,153	2.03	560	13,913
	1992/93	1,597	2.15	605	14,000
	1993/94	1,590	1.98	594	14,079
Alberta	1994/95	1,546	1.82	571	13,864
	1995/96	1,566	1.79	571	13,611
	1996/97	1,549	1.65	556	13,084
	1992/93	536	2.53	533	14,438
	1993/94	542	2.37	538	14,912
Saskatchewan	1994/95	550	2.27	545	15,626
	1995/96	602	2.36	594	17,276
	1996/97	591	2.11	581	16,640
	1992/93	515	2.12	462	11,899
	1993/94	507	2.06	452	11,869
Manitoba	1994/95	523	2.02	464	12,727
	1995/96	551	2.03	486	13,848
	1996/97	584	2.06	514	15,493
	1992/93	5,874	2.06	551	10,686
	1993/94	5,953	2.04	551	10,895
Ontario	1994/95	5,956	1.95	543	11,078
	1995/96	5,802	1.80	522	10,803
	1996/97	5,649	1.71	501	10,632

Source: Statistics Canada, Financial Management System

Figure 4.7: Continued

Province	Academic Year	Expenditure ($millions)	% of GDP	Per Capita (dollars)	Per Student (dollars)
	1992/93	4,410	2.79	616	9,818
	1993/94	4,608	2.84	637	10,460
Quebec	1994/95	4,642	2.73	636	10,549
	1995/96	4,628	2.61	630	10,950
	1996/97	4,571	2.55	618	11,232
	1992/93	269	1.89	357	9,580
	1993/94	279	1.87	370	9,836
New Brunswick	1994/95	299	1.90	396	10,549
	1995/96	291	1.74	384	10,381
	1996/97	281	1.68	369	10,079
	1992/93	324	3.40	556	14,270
	1993/94	326	3.34	557	14,437
Newfoundland	1994/95	330	3.22	569	14,148
	1995/96	331	3.06	576	14,434
	1996/97	323	3.03	566	14,332
	1992/93	71	3.04	542	15,547
	1993/94	69	2.79	517	14,302
P. E. I.	1994/95	64	2.53	480	14,866
	1995/96	66	2.43	487	14,621
	1996/97	67	2.35	491	15,072
	1992/93	485	2.67	525	11,768
	1993/94	488	2.66	525	11,842
Nova Scotia	1994/95	492	2.62	527	12,221
	1995/96	495	2.54	528	12,374
	1996/97	496	2.52	526	12,444

Source: Statistics Canada, Financial Management System

With the exception of New Brunswick, the Atlantic Provinces had relatively high expenditures on colleges and universities as a percentage of GDP. Expenditures as a share of GDP in Newfoundland were higher than any other province, still above 3 percent in 1996/97. The province with the lowest expenditures as a percentage of GDP in 1996/97 was Alberta followed closely by New Brunswick, both at around 1.7 percent. Both Manitoba and Saskatchewan experienced moderate increases in absolute expenditures between 1992/93 and 1996/97. During the same time period, increases in GDP were proportionately higher in the two provinces, resulting in declines in expenditures as a percentage of GDP.

Figure 4.7 also includes college and university expenditures on a per capita and per student basis, allowing for a more direct comparison of the different provincial systems. However, it should be noted that "students" includes only those that are non-vocational,

so comparisons do not fully account for all students served. For example, as noted in Section 3, BC has relatively more trade/vocational students than in most other provinces.

For Canada on average, per capita spending and per student spending has remained fairly steady from 1992/93 to 1996/97 with small decreases per capita and small increases per student. In BC, per capita expenditures were only slightly higher than the Canadian average, while per student spending was substantially higher, reaching almost $15,000 in 1994/95, compared with less than $12,000 in Canada on average. Per student spending in BC did, however, fall to less than $14,000 in 1996/97.

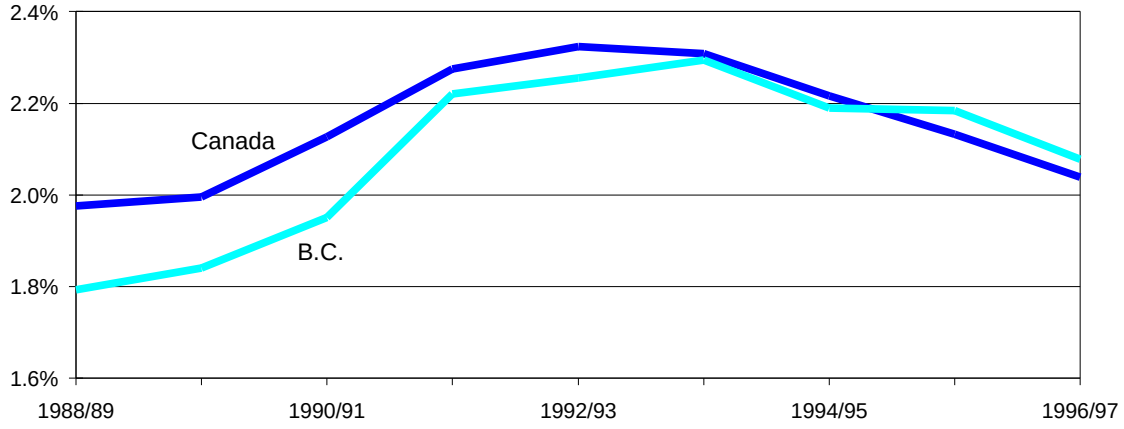
The province with the lowest per capita college and university expenditures was New Brunswick, below $400 per person during the reference period, compared with a Canadian average above $550. Quebec had the highest per capita spending, with a high of $637 in 1993/94.

Manitoba and Saskatchewan experienced the largest increases in per student spending. In Saskatchewan, per student expenditures were above $17,000 in 1995/96, up from $14,438 in 1992/93. Per student college and university expenditures in Manitoba increased from less than $12,000 in 1992/93 to over $15,000 for the 1996/97 school year, a gain of over $3,500, or 30 per cent, per student. This increase in per student spending was primarily a result of large drops in university and college enrollments in Manitoba, especially part time university enrollments, which fell from over 17,000 in 1992/93 to 10,000 in 1996/97.

4.4.2 Expenditures as a Percentage of GDP, BC and Canada

In order to further examine trends over time, data going back to the 1988/89 academic year is examined. Figure 4.8 shows college and university expenditures as a percentage of GDP for Canada and BC On average, Canada has experienced increases in spending as a percentage of GDP until the early 1990s, reaching a peak in 1992/93. BC experienced larger increases than many of the other provinces. Since 1993/94, university and college expenditures in both BC and Canada have not kept pace with overall economic growth.

Figure 4.8: College and University Expenditures as a Percentage of GDP 1988/89 to 1996/97, Canada and BC



Source: Statistics Canada, Financial Management System

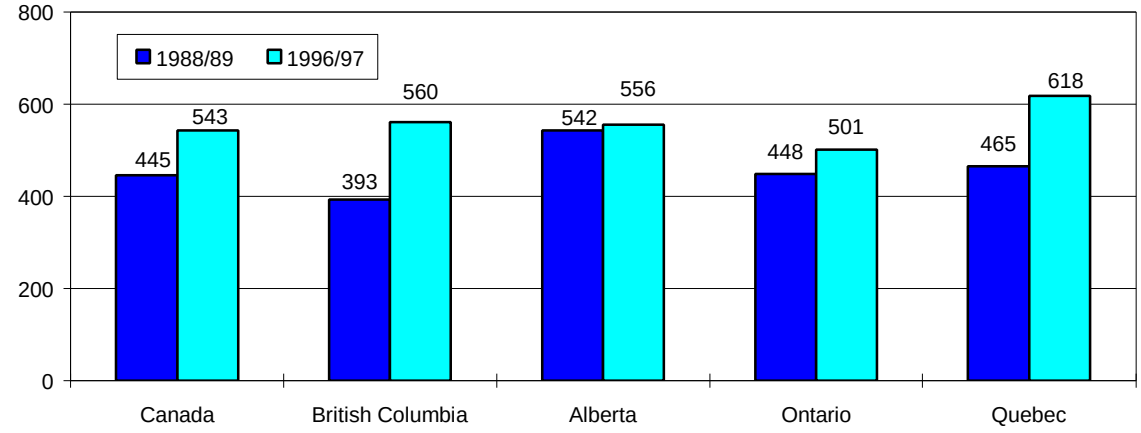
For the 1996/97 academic year, 88 per cent of all post-secondary students were enrolled in schools in BC, Alberta, Ontario, and Quebec. Furthermore, 86 per cent of all college and university expenditures occurred in those provinces. For this reason, most of the following analysis will focus on those four provinces. Of the four highlighted provinces, Alberta had the lowest expenditures in 1996/97, both in absolute numbers and as a percentage of provincial GDP, followed closely by Ontario. The province with the highest expenditures on PSE as a percentage of GDP was Quebec, at just over 2.5% in 1996/97.

4.4.3 Per Capita and Per Student Expenditures, BC and Selected Provinces

Figure 4.9 illustrates changes in per capita college and university expenditures between 1988/89 and 1996/97. All of the selected provinces saw increases in per capita expenditures throughout the late 1980s and early 1990s. The province with the largest increase in per capita expenditures on PSE between 1988/89 and 1996/97 was BC with a 42 per cent rise, up from $393 to $560 per person. In contrast, the province with the least variability in per capita expenditures was Alberta.

Much of the increase in expenditures in BC relates to increases in capital spending required to accommodate the fast growth in enrolments in BC. However, even with the increases experienced in BC during this time period, per capita expenditures on PSE for the 1996/97 academic year were at the same level as in Alberta, and lower than in Quebec. In Canada on average, PSE expenditures rose almost $100 per capita between 1988/89 and 1996/97, peaking at $569 per person in 1993/94, before dropping to $543 per capita in 1996/97.

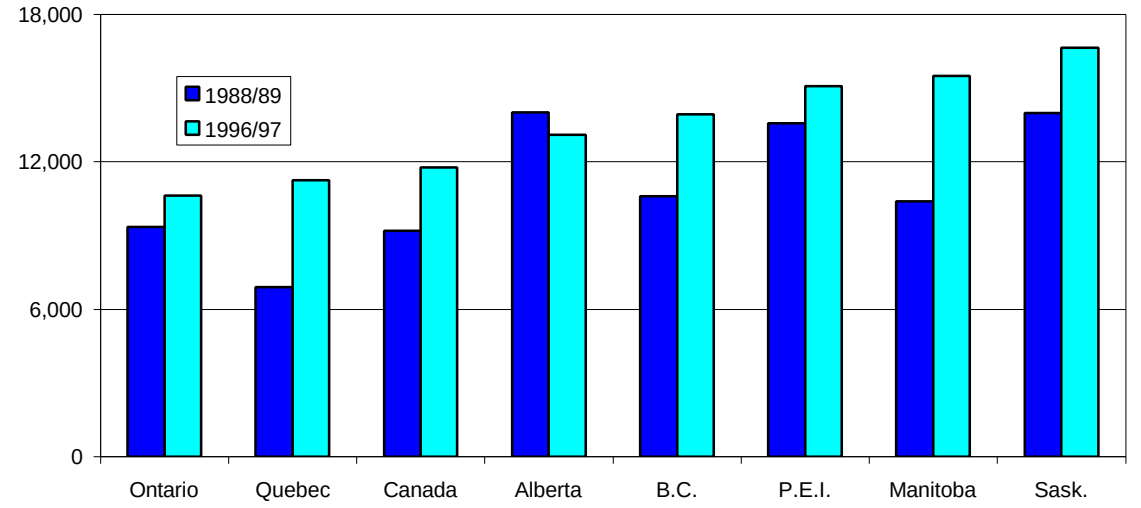
Figure 4.9: Per Capita College and University Expenditures in Dollars 1988/89 and 1996/97, Canada and Selected Provinces



Source: Statistics Canada, Financial Management System

Figure 4.10 displays selected provinces' per student college and university expenditures for 1988/89 and 1996/97 ranked in ascending order from lowest expenditures per student to highest in 1996/97. With the exception of Alberta, all of the provinces experienced per student increases in expenditures. Of the selected provinces, Manitoba experienced the largest per student rise in expenditures, followed by Quebec, with increases of over $5000 and over $4000, respectively. The increase in BC partly occurred due to the ramping up of capital spending and the introduction of many new program offerings.

Figure 4.10: College and University Expenditures per Student 1988/89 and 1996/97, Canada and Selected Provinces



Source: Statistics Canada, Financial Management System

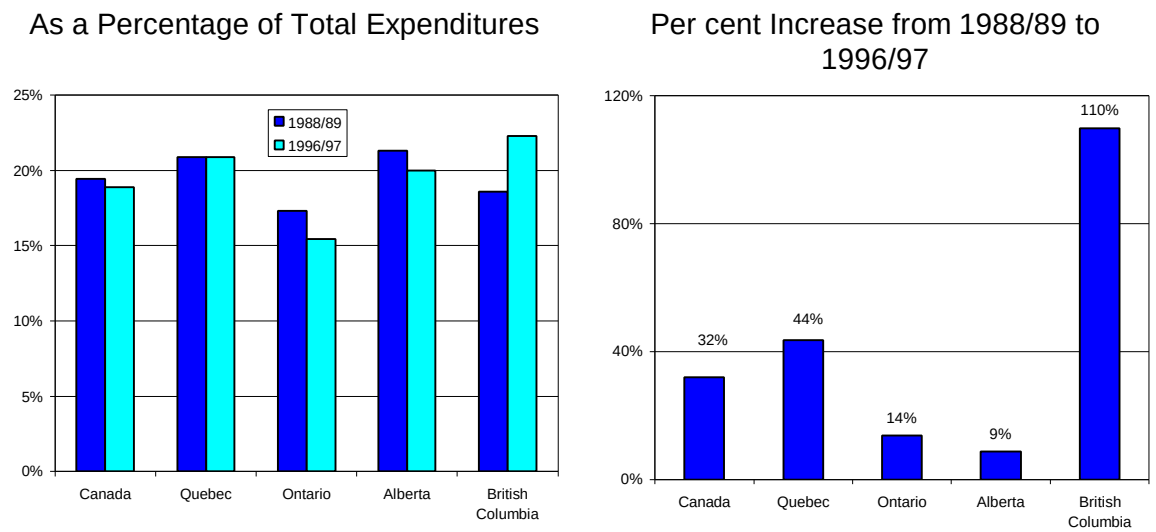
4.4.4 Sources of Expenditures in BC

In BC, increases in total college and university expenditures are largely due to stronger increases in spending on "administration" (which in Statistics Canada figures includes capital expenditures) and "education proper" (including wages and salaries). These increases in BC are not surprising given the faster growth in enrolments relative to nearly all other provinces, as noted in Section 2.

Figure 4.11 includes administration expenditures as a percentage of total expenditures. Of the provinces highlighted below, BC was the only province to experience increases in the share of administration to total expenditures, increasing from 18.6 percent in 1988/89 to 22.3 per cent in 1996/97.

Also included in figure 4.11 is the increase in administration expenditures between 1988/89 and 1996/97. Administration expenditures in BC rose by 110 per cent between the 1988/89 and 1996/97 academic years, compared with an increase of 32 per cent for Canada on average. Reasons for this increase in "administration" expenditures in BC were capital expenditures on new institutions, such as the University of Northern British Columbia, and expansions to existing institutions. These expenditures on capital were undertaken with the purpose of increasing access to education for BC residents outside southern Vancouver Island and the Lower Mainland regions. Unfortunately, the categorization labeling by Statistics Canada of "administration" is less than ideal in what it actually covers.

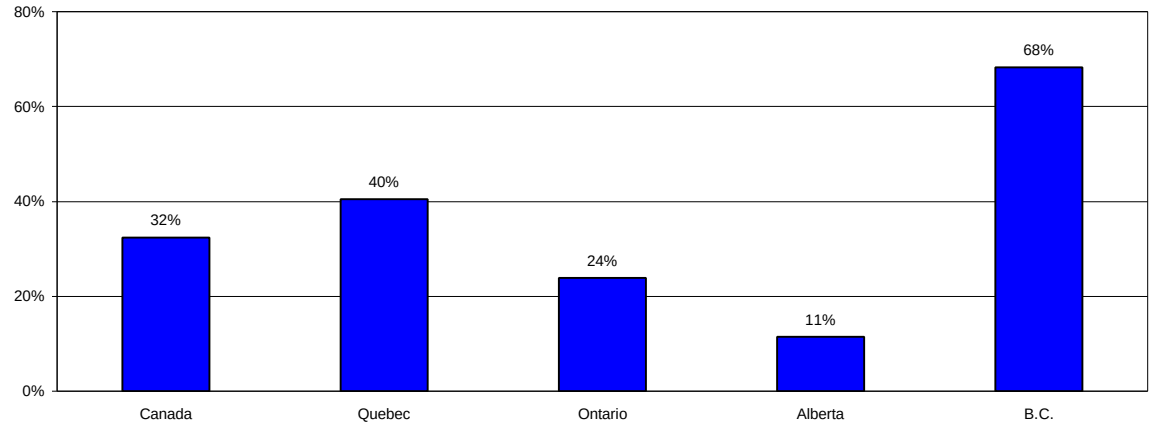
Figure 4.11: College and University Expenditures on Administration (including Capital Expenditures), Canada and Selected Provinces



Source: Statistics Canada, Financial Management System

In addition to administration expenditures, spending on "education proper" has also increased faster in BC over the ten years. Figure 4.12 presents the increases in education expenditures for Canada and selected provinces from 1987/88 to 1996/97. BC experienced an increase in education expenditures of 68 per cent, compared with a national average of 32 per cent and an increase of only 11 per cent in Alberta. According to Statistics Canada, the largest factor driving increases in this category were increases in the total wage and salary bill in BC, due to increases in the number of professors and instructors needed to accommodate the relatively larger growth in university and college enrolments.

Figure 4.12: Increases in Expenditures on Education Proper (including Wages and Salaries) from 1987/88 to 1996/97, Canada and Selected Provinces



Source: Statistics Canada, Financial Management System

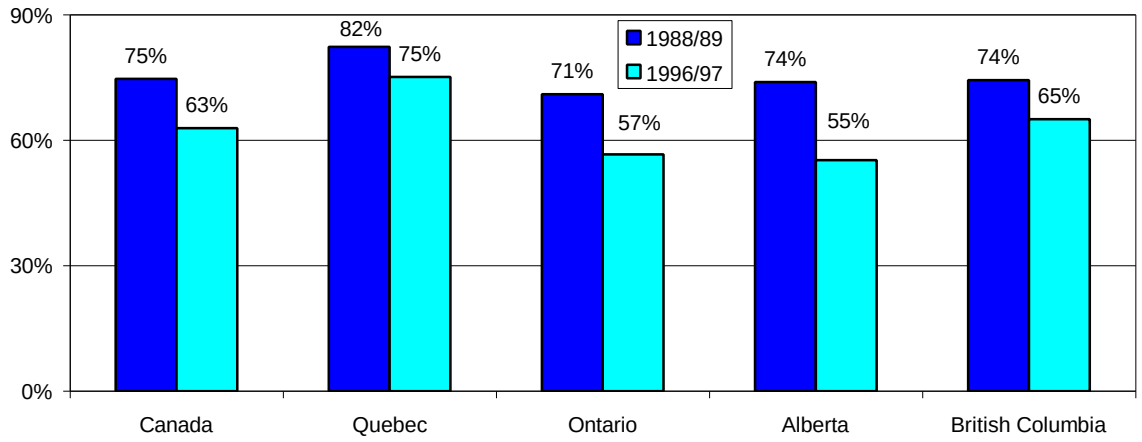
Overall, these expenditure data appear to reflect the relative changes in college and university enrolments examined in section 2. In terms of participation rates, in BC's case, these increased investments in PSE appear to have enabled the rises in PSE participation that were noted in both Sections 2 and 3.

4.4.5 Costs to Students

Figure 4.13 shows the proportion of total expenditures on colleges and universities covered by the public sector, including the federal, provincial and local governments. As PSE is the responsibility of the Provinces, it is not surprising that they were the source of over 90 per cent of transfers to the colleges and universities in Canada on average. In all of the selected provinces, the proportion of expenditures covered by government transfers decreased between 1988/89 and 1996/97.

The ratio of transfers to expenditures was the highest in Quebec at 75 per cent for the 1996/97 academic year, down from over 80 per cent in 1988/89. Alberta was the province with the lowest share of expenditures covered by the government, at 55 per cent and BC was close to the national average, at 65 per cent for the 1996/97 school year. The transfers to total expenditures ratio may be considered an indication of the relative share of the burden of education costs on students and non-students. These ratios are likely expected to further change in the future in provinces like Ontario and Alberta with the ongoing increases in tuition in university and college programs.

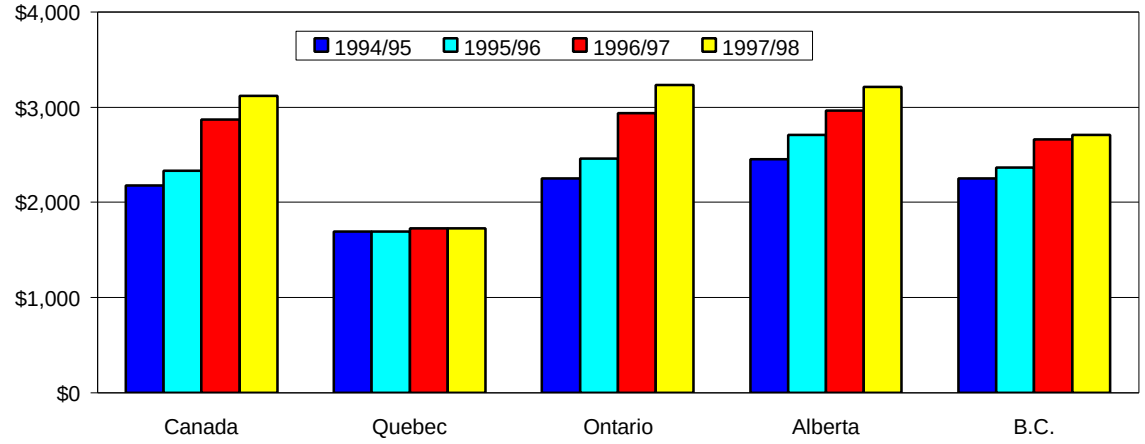
Figure 4.13: Government Transfers to Colleges and Universities as a Proportion of Expenditures, Canada and Selected Provinces, 1988/89 and 1996/97



Source: Statistics Canada, Financial Management System

Figure 4.14 presents the average tuition fee for undergraduate arts students in selected provinces from 1994/95 to 1997/98. As is expected, the selected provinces with low government transfer to PSE expenditure ratios had relatively high average tuition fees compared with other provinces. In 1997/98, the provinces with the highest average tuition fees were Ontario, at $3,234, and Alberta, at $3,211. Part of the reasoning behind rising tuition fees in these provinces is that students should be responsible for a larger proportion of the costs of their education, considering the private benefits (in terms of increased future incomes) associated with increased educational attainment. In BC in 1997/98, the average undergraduate arts tuition was $2,705, over $400 less than the Canadian average of $3,117.

Figure 4.14: Average Undergraduate Arts Tuition, 1994/95 and 1997/98 Canada and Selected Provinces

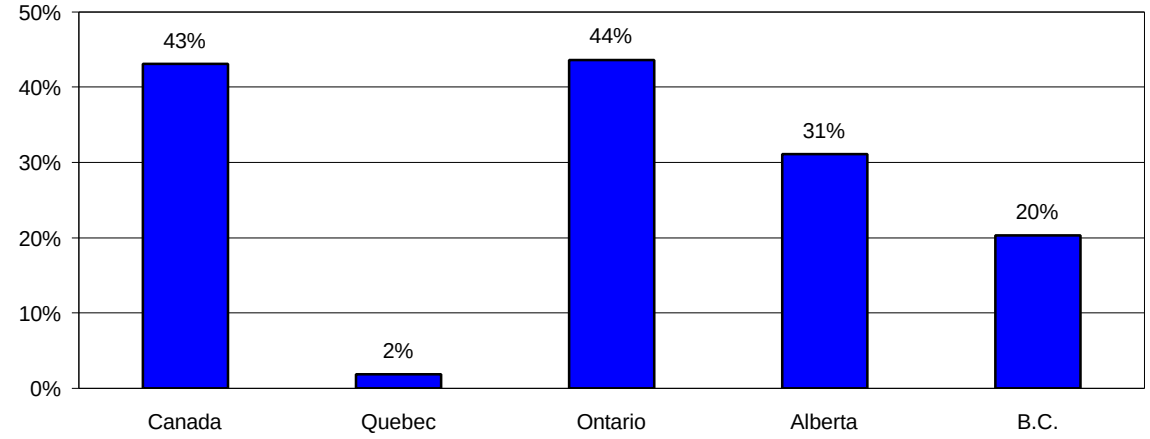


Source: Statistics Canada, Education Quarterly Review

As illustrated in Figure 4.15, tuition fees for undergraduate arts students in Canada increased by 43 per cent between 1994/95 and 1997/98. Although not included below, relatively large tuition increases in the Atlantic provinces were partly responsible for pushing up the national average. Of the selected provinces, the one that experienced the largest increase was Ontario, rising by 44 per cent. BC experienced an increase of only 20 per cent, and tuition fees in Quebec remained relatively flat, increasing only marginally by 2 per cent. BC currently has a tuition freeze, set to continue into the next century.

The affect of changes in tuition fees on PSE participation rates is not straightforward. Tuition fees are only a portion of the expenses incurred while pursuing a university or college degree. Other expenses include living accommodations and opportunity costs in terms of forgone earnings while in school. In Ontario and Alberta, relatively large increases in university tuition fees between 1994/95 and 1997/98 accompanied drops in university participation in Ontario, and Alberta (as noted in Section 3.3.5) At the same time, it should be noted that the lower than average increase in tuition fees in BC (and the freeze in the last two years) may in part have helped to increase university participation rates in the last several years.

Figure 4.15: Increase in Average Undergraduate Arts Tuition from 1994/95 to 1997/98, Canada and Selected Provinces



Source: Statistics Canada, Education Quarterly Review

5. Conclusion

Consistently comparing post-secondary education participation rates between the provinces is a challenge. Perhaps the biggest hurdle to be overcome in undertaking such an exercise is the formulation of a comparison method that transcends the structural differences between the provincial PSE systems.

In the past, judging enrolment solely on administrative data may have under-represented BC's PSE participation rates compared with other provinces. Quebec's unique CEGEP system results in very high college participation rates in that province. Ontario's lack of articulation between universities and colleges results in a more sharply defined college/university system, unlike BC. Much of the discrepancy in university participation rates between BC and the rest of Canada may be due to the large proportion of BC students taking university transfer credits in community colleges and university colleges. Also, the differing age structure of the PSE system in each province affects post-secondary attendance results. When these structural differences are taken into account, the results more accurately represent PSE participation rates in BC.

Household survey data (Labour Force Survey) allows us to include alternate PSE structures. The Labour Force Survey is based on a large survey sample, and has asked consistent questions over the past 20 years. It also allows for a more complete comparison, including private and public PSE attendance.

The popular perception that BC is lagging behind other provinces in terms of PSE participation is subject to question: using household survey data, BC had the second highest participation rate in Canada in 1997, second only to Quebec. If other measures besides participation are used in comparing BC with other provinces, such as expenditures on PSE or educational attainment, a more complete picture of post-secondary education participation is obtained.

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