

TRENDS

IN MARITIME HIGHER EDUCATION

Volume 2 , number 1

October 2003

PROFILE OF MARITIME UNIVERSITY STUDENTS: ENROLMENT, PARTICIPATION, AND DEGREE COMPLETION

Introduction

In 2000-01, total enrolment in Canadian universities reached 861,600 students.¹ It is predicted that a continuing increase in the typical university aged (18-24 years) population, as well as predicted increases in participation rates, will combine to place unprecedented demand upon the nation's universities. While the bulk of the population growth is expected to occur in Ontario, Alberta and British Columbia,² populations in Prince

Edward Island and New Brunswick are actually facing declines.

As these predicted changes will likely impact upon enrolment trends in the Maritimes, it is important to establish an accurate picture of enrolments in the region. This bench-mark can then be used to plan for potential demands arising from within and outside the Maritimes.

This article will begin by looking at trends in enrolment, will proceed to examine trends in participation rates, and conclude by looking at the number of graduates. Where appropriate, regional data will be compared against national data.

Highlights

- Since 1980-81, full-time enrolment has grown 64% in the Maritimes; part-time enrolment has increased 19% over the same interval.
- The last two decades have seen a slight age shift among full-time undergraduates, with the proportion aged 21 years old and younger declining by 6.5 percentage points.
- Between 1980-81 and 2000-01, the proportion of full-time male students in Maritime universities declined by 9 percentage points.
- Nova Scotia universities have the lowest proportion of home province enrolment (66.5% in 2000-01) of the three provinces.
- Participation in university education is greatest among Nova Scotia residents (26.4%), followed by Prince Edward Island (24.2%) and New Brunswick (22.0%) (1999).
- Total growth in the number of undergraduate credentials granted by Maritime universities amounted to 39.5% between 1980 and 2000.
- Overall university enrolment in the Maritimes has followed national trends over the last twenty years, with the exception of participation rates, which are higher in the Maritimes than nationally.

Data and Methods:

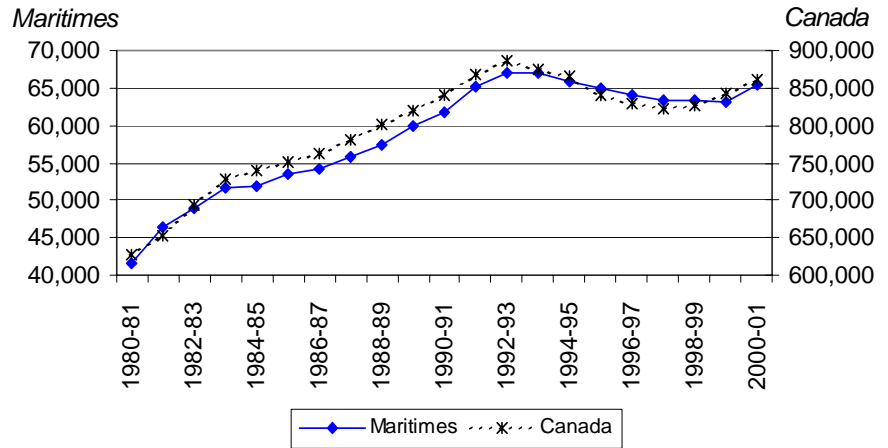
Maritime data: This study used data from the MPHEC's University Student Information System (USIS) (1980-81 to 1998-99) and the Enhanced Student Information System (ESIS) (2000-01). Due to the transition from USIS to ESIS, data from 1999-00 onward are currently designated preliminary pending further validation, and are included in the analysis to indicate trends. *National data:* ESIS Data provided by Statistics Canada for 1999-00 and 2000-01 are estimates.



Total University Enrolment

Enrolment in Maritime universities (Figure 1) increased 60.9% between 1980-81 and 1993-94; after this interval, the total number of students declined. Between 1993-94 and 2000-01, the overall decrease was 4.4 %. Over the past twenty years, the trend in Maritime university enrolment has followed very closely the overall national trend. Much of the similarity between regional and national trends can be accounted for by similar changes in undergraduate enrolment, which comprises the bulk of total enrolment. In 2000-01, the total undergraduate enrolment was 57,093 in the Maritimes and 735,300 in Canada.

Figure 1
Total enrolment (undergraduate and graduate, full- and part-time) in Canadian and Maritime universities, 1980-81 to 2000-01



Enrolment in Graduate Programmes

A comparison of enrolment trends in Master's and Doctoral degree programmes revealed significant differences between the Maritimes and Canada as a whole. Total enrolment in Master's programmes (Figure 2a) increased 11.7% across Canada between 1990-91 and 1993-94, and 12.6% in the Maritimes during the same interval. Master's enrolment declined in the Maritimes during the period 1993-94 to 1996-97, while they remained

fairly steady at the national level. Following 1997-98, enrolment increased sharply both in the Maritimes and across Canada. By 2000-01, Master's degree enrolment reached 5,189 students in the Maritimes and 76,748 in Canada. Over the ten-year interval from 1990-91 to 2000-01, enrolment at this level increased 34.3% in the Maritimes and 22.5% in Canada.

Doctoral level enrolment in the Maritimes increased early in the 1990s (up 10.6% between 1990-91 and 1993-94), and went

into a four-year decline (down 12.0% between 1993-94 and 1997-98 (Figure 2b). Overall, enrolment in 2000-01 was up slightly (5%) from numbers recorded in 1990-91. In contrast, doctoral enrolment for Canada as a whole increased sharply (23.6%) between 1990-91 and 1995-96, levelled out somewhat, and then declined sharply between 1997-98 and 1999-00. The total increase between 1990-91 and 2000-01 was 21.7%. In 2000-01, doctoral enrolment stood at 713 in the Maritimes and 27,344 in Canada.

Figure 2a
Enrolment (full- and part-time) in Master's programmes in the Maritimes and Canada, 1990-91 to 2000-01

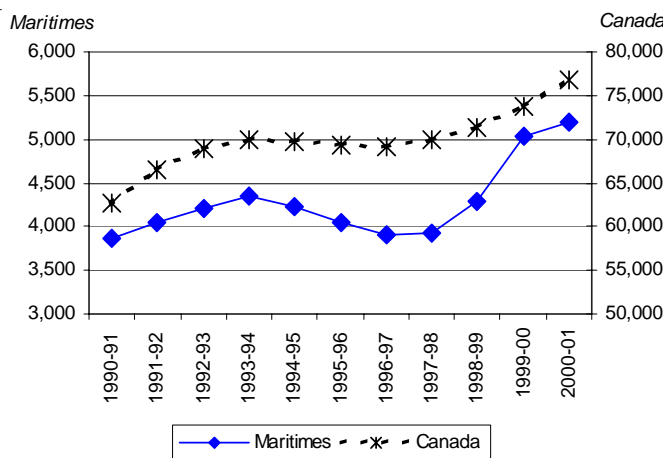
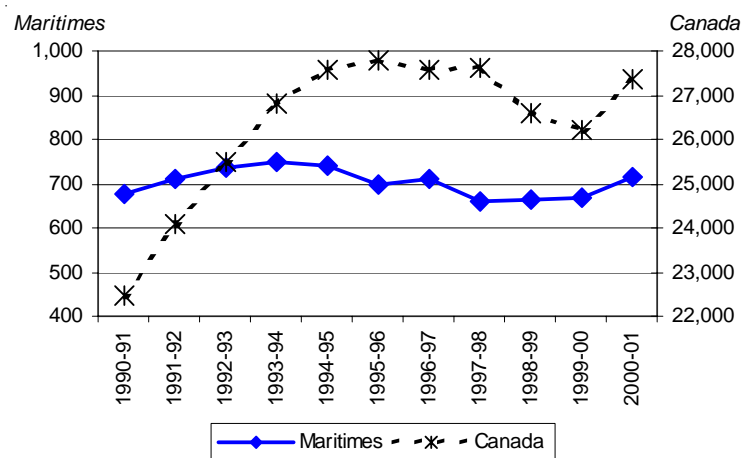


Figure 2b
Enrolment (full- and part-time) in Doctoral programmes in the Maritimes and Canada, 1990-91 to 2000-01



Undergraduate and Graduate Enrolment

Comparing enrolment activity at the undergraduate and graduate level at three points in time illustrates fundamental differences. Figures 3a and 3b illustrate net changes in undergraduate and graduate

enrolment over ten-year intervals. While there was a net growth in enrolments at the graduate level between 1980-81 and 2000-01, amounting to a total increase of 71.5%, undergraduate enrolments took their greatest jump between 1980-81 and 1990-91 (45.8%), and increased only

slightly (3.1%) in the interval between 1990-91 and 2000-01. As explored in Figures 2a and 2b, gains in graduate level enrolment were driven by changes at the Master's level.

Figure 3a
Number enrolled full- and part-time at the graduate level (degrees and diploma/certificate programmes at the Master's or doctoral level) in Maritime universities, 1980-81, 1990-91, and 2000-01

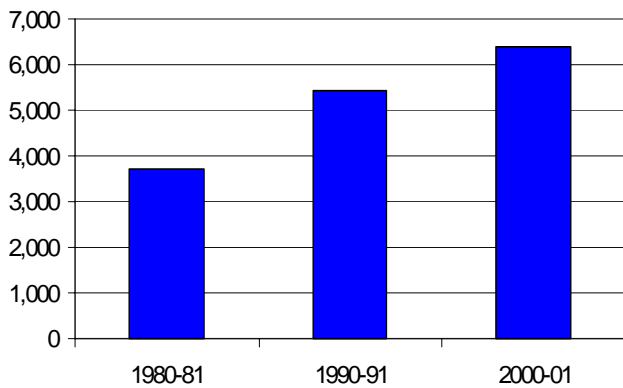
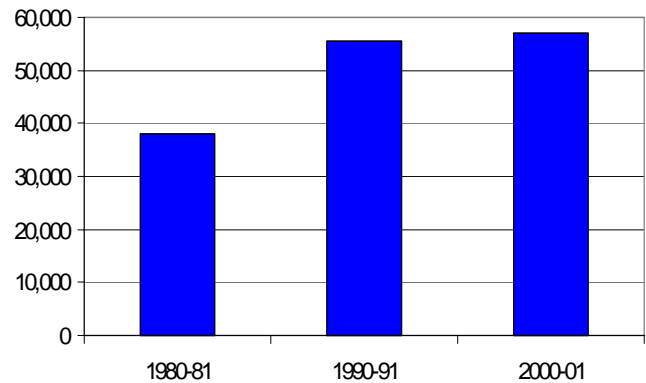


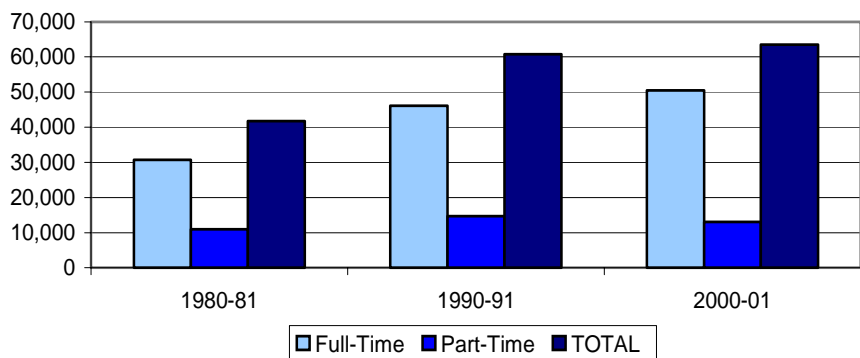
Figure 3b
Number enrolled full- and part-time at the undergraduate level in Maritime universities, 1980-81, 1990-91, and 2000-01



Full- and Part-time Enrolment

Overall, part-time enrolments increased 19.1% between 1980-81 and 2000-01. The majority of total enrolment growth can be primarily attributed to full-time students: their numbers increased 64.1% over the same interval (Figure 4).

Figure 4
Total enrolment by registration status (full- and part-time) in Maritime universities, 1980-81, 1990-91, and 2000-01



Full-time Enrolments by Province

Full-time enrolment trends over the last decade vary by province. The universities in New Brunswick (Figure 5a) and Prince Edward Island (Figure 5b) both experienced declines beginning in the early to mid-1990s. Prince Edward Island has

recently shown recovery to 1992 numbers; New Brunswick has recently (2000-01) regained some lost ground. Nova Scotia enrolment (Figure 5a), like Prince Edward Island and New Brunswick, experienced growth early in the decade, followed by a relatively static period. Over the period 1991-92 to 2000-01, full-time

enrolments increased 1.1% in New Brunswick, 4.3% in Nova Scotia, and 5.1% in Prince Edward Island.

Figure 5a
Number enrolled full-time in New Brunswick and Nova Scotia universities, 1991-92 to 2000-01

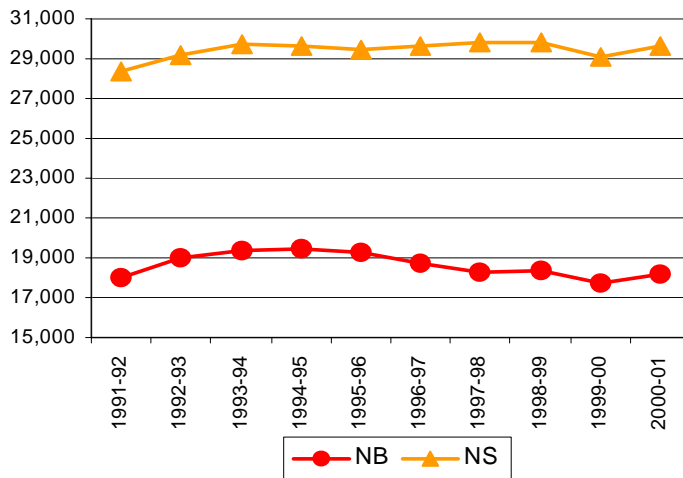


Figure 5b
Number enrolled full-time in Prince Edward Island, 1991-92 to 2000-01

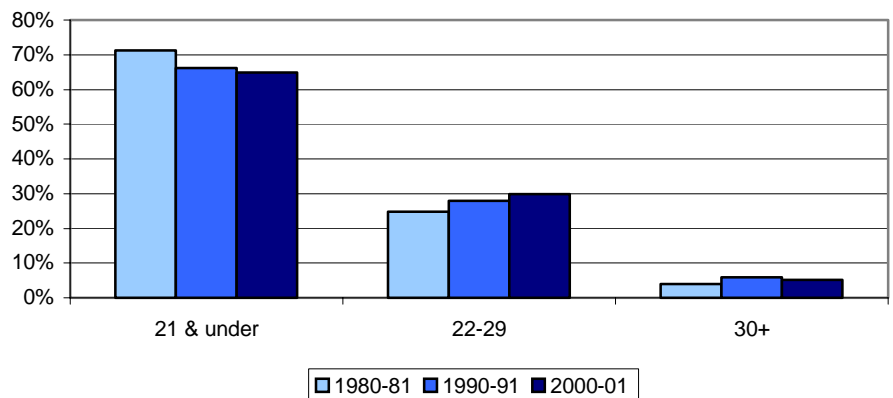


Enrolment Demographics

Age

The majority of students in university are enrolled in full-time undergraduate programs, and most (85.9%) of these students were 24 years old or younger in 2000-01. However, the age profile for full-time undergraduates has not been static over the last twenty years; between 1980-81 and 2000-01, increasing numbers of older students enrolled (Figure 6). In 1980-81, students aged 21 and under comprised 71.3% of full-time undergraduates; by 2000-01, this proportion had fallen to 64.8%, representing a decline of 6.5 percentage points. The greatest gains over this interval were observed within the group aged 22-29; their representation among full-time undergraduates increased 5 percentage points.

Figure 6
Proportion enrolled full-time in undergraduate level programmes by age group, in Maritime universities, 1980-81, 1990-91, and 2000-01



Gender

The number of women attending university full-time in the Maritimes has increased by 79.9% over the last two decades, from 20,899 in 1980-81 to 37,601 in 2000-01. The bulk of the increase (63.0%) took place between 1980-81 and 1990-91, followed by an increase of 10.4% between 1990-91 and 2000-01. While women now (2000-01) make up 49.1% of the population aged 18-24, they comprise 59.3% of full-time students in the Maritimes (Figure 7). Among the three provinces, the greatest increase in the proportion of female enrolment occurred in Prince Edward Island, where it now stands at 65.1%.

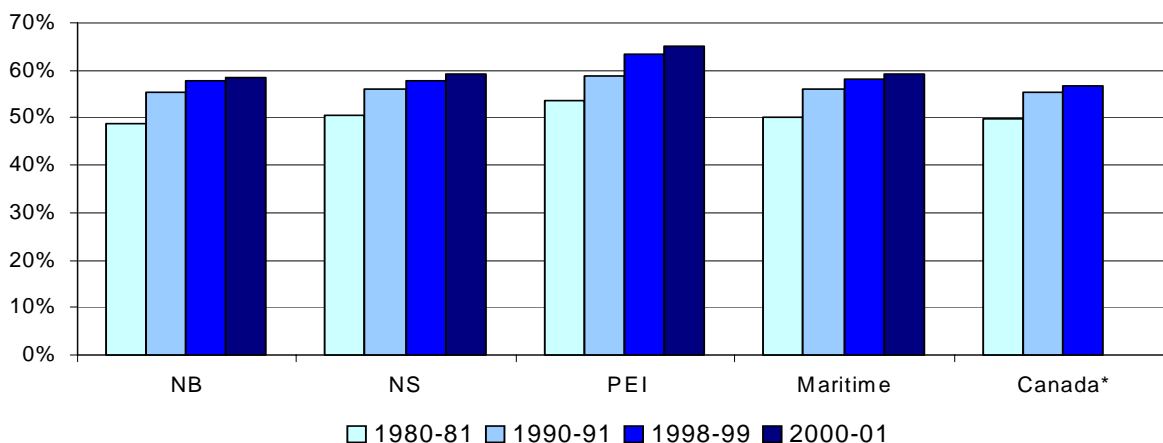
With women comprising ever greater proportions of Maritime university

enrolment, male students are losing ground. Between 1980-81 and 1990-91, the actual number of men (20,805 in 1980-81) increased, but at a lower rate than the number of women. From 1990-91 to 2000-01, however, the number of men enrolled in Maritime universities actually declined, from 26,765 to 25,791, or 3.6%. The overall result was that between 1980-81 and 2000-01, the proportion of full-time male students in Maritime universities declined by 9 percentage points.

The phenomenon of declining male enrolment observed among Maritime universities is not unique to this region; it is happening across Canada and the United States. A few factors are often cited to explain declining male enrolment,

including that women are better prepared for a university education by the educational (public) process than are men;³ and that men are more likely than women to drop out of high school, and therefore fewer of them are eligible to enroll in university in the first place.⁴ However, the main reason appears to be economic. Specifically, evidence points to the fact that women achieve a greater return on their university education than do men. On average, “male university graduates earn 25% more with just a high school diploma,” while “women who have completed university earn 50% more than female high school graduates.”⁵

Figure 7
Proportion of female students among full-time Maritime university enrolments by province, 1980-81, 1990-91, 1998-99, and 2000-01



*Note: 1998-99 is the latest year available

Student Origins

Where do students in Maritime universities come from? In 1980-81, students originally from outside the Maritimes made up 19.1% of full-time enrolment at Maritime universities. By 2000-01 this value had increased slightly to 21.8%.

In 2000-01, Nova Scotia universities had the greatest (25.3%) proportion of full-time students coming from outside the region, a consistent trend over the last two decades (Figure 8). Prince Edward Island, on the other hand, has consistently had the lowest proportion of these students. In 2000-01, just 11.6% were from outside the Maritimes. This difference is likely due to the fact that Nova Scotia houses 11 degree-granting institutions, as compared to one in Prince Edward Island.

Further examination of these data shows some variation in the origin of full-time students by province (Table 1). Nova Scotia has consistently had the lowest proportion of home province enrolment (province of residence and province of study are the same) - in 2000-01, just over 66.5% of its students were Nova Scotia residents. This proportion was down slightly (2.3 percentage points) from 1980-81. The next most common province of origin among students studying in Nova Scotia in 2000-01 was Ontario (8.7%), followed by New Brunswick (6.5%). The proportion of students coming to study from Ontario has increased by 4.5 percentage points over the past twenty years in Nova Scotia.

Students studying in New Brunswick in 2000-01 were most likely to have come from New Brunswick (70.4%), Nova Scotia (9.0%) or outside the country (5.7%). The proportion of New Brunswick students studying in their home province has not changed significantly from 1980-81.

Figure 8
Geographic origin (Maritime resident or non-Maritime resident) of full-time Maritime university students by province, 1980-81, 1990-91, and 2000-01

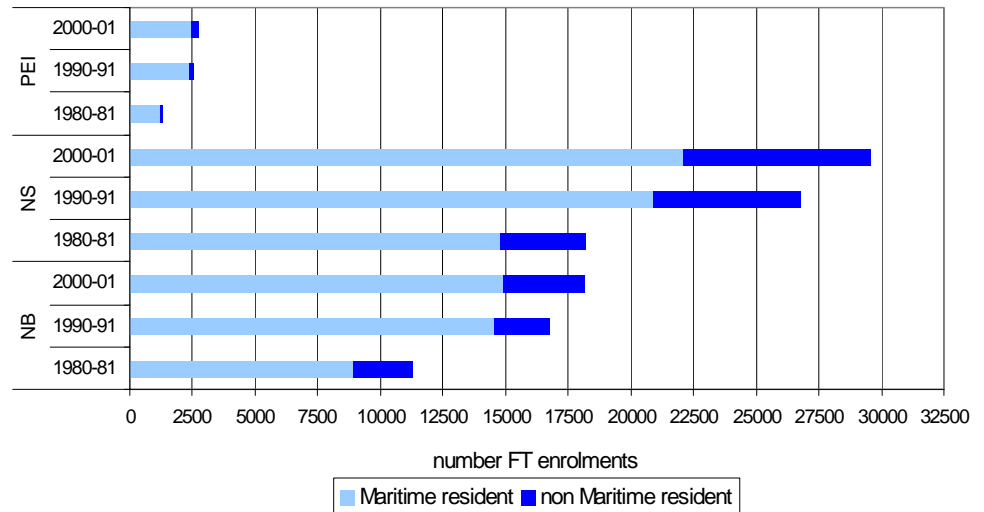


Table 1: Distribution of Full-time Enrolment* by province of residence for New Brunswick, Nova Scotia, and Prince Edward Island, 1980-81, 1990-91 and 2000-01

	1980-81	1990-91	2000-01
New Brunswick			
New Brunswick	70.1%	78.1%	70.4%
Nova Scotia	6.6%	6.0%	9.0%
Non-Canadian	4.1%	3.7%	5.7%
Ontario	4.0%	3.5%	4.5%
Newfoundland	1.1%	1.6%	3.5%
Prince Edward Island	2.4%	2.7%	2.7%
Quebec	10.1%	3.3%	2.1%
Nova Scotia			
Nova Scotia	68.8%	68.3%	66.5%
Ontario	4.2%	6.5%	8.7%
New Brunswick	9.2%	7.7%	6.5%
Non-Canadian	7.2%	6.1%	5.9%
Newfoundland	2.1%	4.8%	5.4%
Prince Edward Island	3.2%	2.4%	2.1%
British Columbia	0.6%	0.9%	1.5%
Alberta	0.9%	1.1%	1.4%
Quebec	2.2%	1.2%	1.0%
Prince Edward Island			
Prince Edward Island	86.5%	81.5%	73.9%
Nova Scotia	1.4%	5.8%	7.9%
New Brunswick	4.4%	5.2%	6.6%
Non-Canadian	1.9%	1.9%	3.3%
Newfoundland	0.2%	2.1%	3.0%
Ontario	2.3%	2.2%	2.4%
Unknown	0.8%	0.0%	1.4%
Quebec	2.0%	1.0%	0.7%

* provinces of residence accounting for less than 1% of enrolments in all three years not shown

Students studying in Prince Edward Island in 2000-01 were most likely to have come from Prince Edward Island (73.9%), Nova Scotia (7.9 %) or New Brunswick (6.6%). The proportion of Prince Edward Island students studying in their home province declined by 12.6 percentage points from 1980-81, the greatest change among all three provinces.

Participation in Post-secondary Education

Participation in universities can be defined in several different ways. The MPHEC has historically relied on two definitions to build a more accurate picture of participation, accounting for both general enrolment burdens on the region's institutions arising from participation by students regardless of their geographical origin, as well as the propensity of the resident (provincial or regional) population to attend university, whether within their home province or elsewhere in Canada. The first definition of participation rate measures the total full-time enrolment in provincial institutions expressed as a proportion of the provincial population aged 18-24 (Figure 9).

The second definition of participation rate is the ratio of the number of provincial residents enrolled in universities anywhere in Canada against the provincial population aged 18-24 (Figure 10).

A comparison of the two participation rates shows that the variation in participation rates among the provinces under the first definition is considerably reduced under the second. This is due to the variation among the provinces in the proportion of students enrolled who come to study from outside the province (Table 1).

Of the three provinces, Nova Scotia has the greatest number of universities and

they attract greater numbers of students from outside the province relative to the base population. As a result, Nova Scotia posts the highest participation rates of the three Maritime provinces under both definitions. Under the first definition (Figure 9), the rate was 34.1% in 1999 (in 2000, the rate was 34.1%), an increase of 10 percentage points from 1988; under the second, the participation rate (Figure 10) for Nova Scotia residents in 1999 was 26.4%.

Following sharp gains between 1988 and 1993, the participation rate measuring enrolment pressures at New Brunswick universities (Figure 9) remained relatively

steady since 1993 and stands at 25.0% in 2000. This represents an increase of 6.9 percentage points over 12 years. In 1999, the university participation rate for New Brunswick under the first definition (Figure 9) was 24.1% and under the second definition, was 22.0% (Figure 10).

Prince Edward Island's participation rate under the first definition reached 19.8 % in 1992, went through a period of decline and has only just regained lost ground, reaching 19.3% in 1999 and 20.2% in 2000 (Figure 9). Compared to the other two provinces, Prince Edward Island has consistently posted the lowest participation rate, and from 1994 to 1998,

Figure 9
Participation Rate 1: Ratio of full-time provincial university enrolments to the provincial population aged 18-24

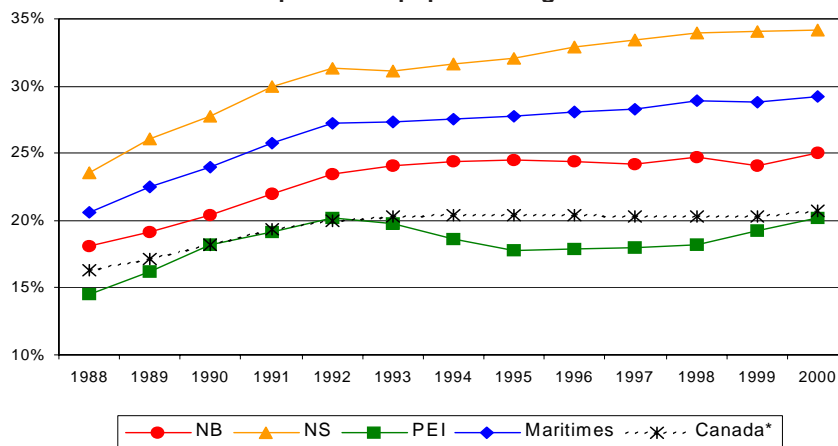
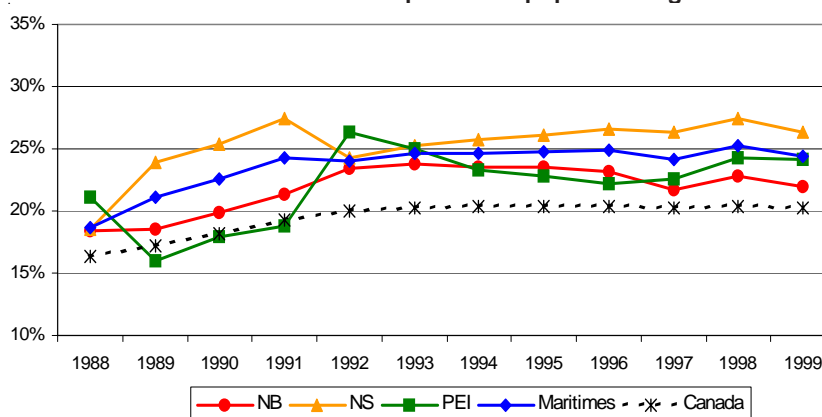


Figure 10
Participation Rate 2: Ratio of provincial residents enrolled full-time in Canadian universities to the provincial population aged 18-24



Note: At the time of writing, total enrolments broken down by province of residence and province of study were unavailable for 2000-01.

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the province's participation rate was below the national average. Whether or not this continues to be the case is uncertain, as national enrolment data from 1999-00 and 2000-01 were unavailable at the time of writing. It is important to note, however, that the first participation rate definition (Figure 9) does not account for the fact that, with only one primarily undergraduate university within its borders, many Island residents must leave their home province to enroll in certain programmes of study not available in their home province. Therefore, under the second definition, Prince Edward Island's participation rate is higher than under the first, reaching 24.2% in 1999, or 4 percentage points higher than the national average.

The overall Maritime participation rate (Participation Rate 1) climbed steadily from 1988, where it stood at 20.6%, and has recently (2000) reached just over 29.2%, a difference of 8.6 percentage points (Figure 9). Under the second definition, the Maritime participation rate was 24.4% in 1999, an increase of 5.7 percentage points over the 1988 rate of 18.7%. Regardless of the definition used, the overall participation rate for the region has been consistently higher than the national rate.

The national trend in participation rates (it should be noted that both definitions produce the same results for national level data) shows an increase between 1988 and 1992 (Figure 9). Following this increase, participation rates remained relatively static from 1992 to 1998. The overall participation rate for Canada in 1999 was 20.3%, lower than the Maritime rates which stood at 28.8% (Participation Rate 1) and 24.4% (Participation Rate 2) in the same year.

Figure 11 illustrates the trends in the population aged 18-24 for the three Maritime provinces. Both Nova Scotia and New Brunswick have posted steady

declines over the last decade, while Prince Edward Island experienced earlier (1988 to 1992), sharper declines followed by a relatively stable period. It is predicted⁶ that this population will continue to decline in numbers in Prince Edward Island and New Brunswick. By contrast, after earlier declines, 18-24 year-olds have been increasing in number in Canada overall since 1996 (Figure 12).

Two factors will impact upon participation rates (Participation Rate 1)

in the region: decreasing numbers of the typical university-aged population, and predicted increases in university participation. The combined effect that these two factors will have on the overall participation rates in the Maritimes is unknown, however, the predicted growth of the population elsewhere in Canada will likely contribute to an increase in participation rates (Participation Rate 1) in this region as students move from regions of higher demand to lower demand.

Figure 11
Population aged 18-34 by province, 1988-2000

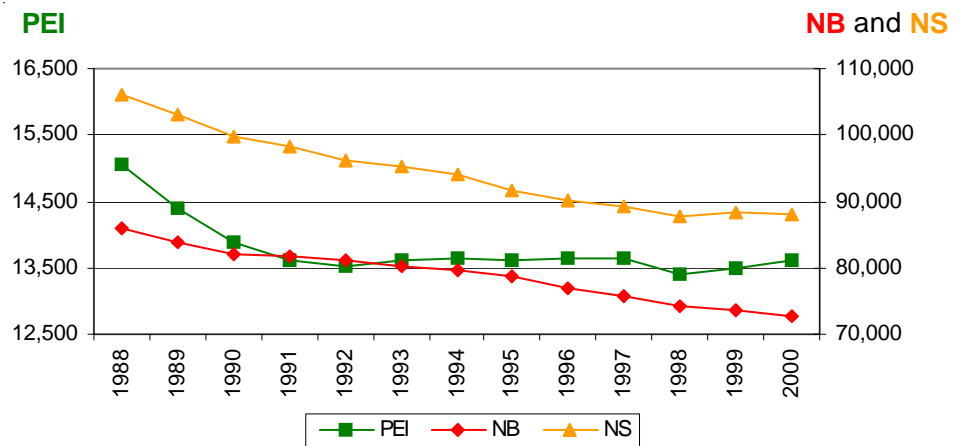
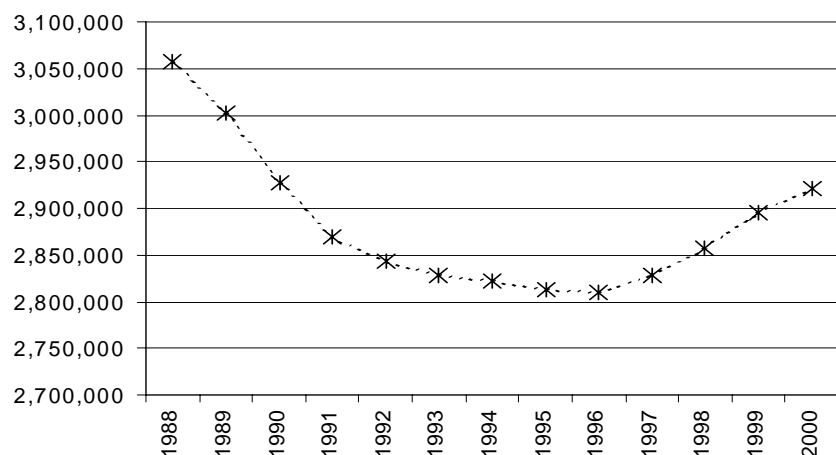


Figure 12
Population aged 18-24 - Canada



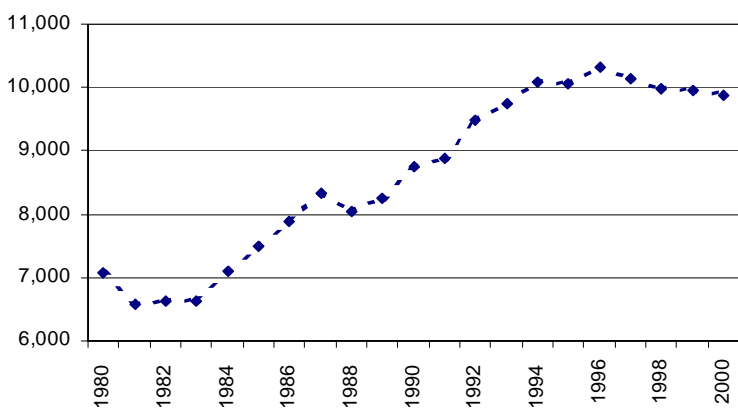
Graduates

The number of undergraduate credentials granted by Maritime universities (Figure 13a) increased fairly steadily from 1982 to 1996, and declined slightly thereafter. Total growth between 1980 and 2000 was 39.5%. A similar trend is apparent among the number of Master's graduates (Figure 13b), but with growth in the number

of graduates levelling out earlier, beginning in 1992. More recent trends show an increase in the number of Master's graduates, reaching a high of 1,547 in 1999. Over the interval 1980 to 2000, the number of Master's graduates increased 76.5%. The greatest increase in the number of First Professional graduates

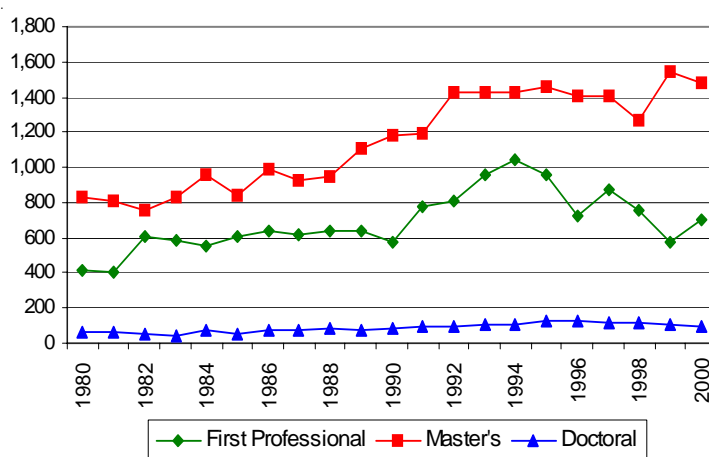
occurred between 1990 and 1994, but numbers have since declined to below 1991 levels. Overall, between 1980 and 2000, the number of First Professional graduates increased by 69.3%. The number of doctoral graduates increased 56.4% (from 62 to 97 graduates) over the same interval.

Figure 13a
Number of undergraduate (Bachelor's degrees and undergraduate diplomas and certificates) granted in the Maritimes, 1980-98



Source: Statistics Canada

Figure 13 b
Number of First Professional, Master's and Doctoral degrees granted in the Maritimes, 1980-1998



Source: Statistics Canada

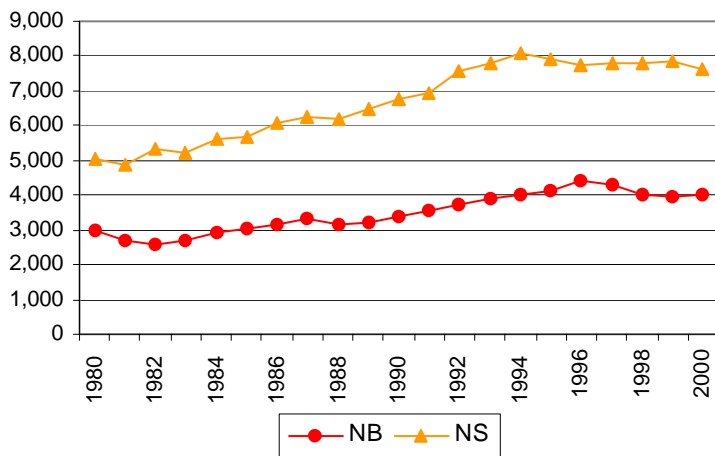
Degrees Granted

Figures 14a and 14b show the trends by province for the total number of degrees granted at all levels. Between 1980 and

2000, the number of degrees granted increased by 34.0% for New Brunswick, 51.5% for Nova Scotia, and 44.0% for

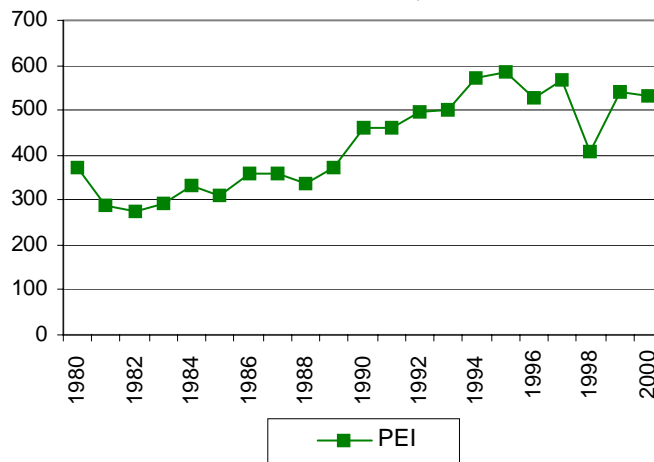
Prince Edward Island.

Figure 14a
Total number of degrees granted in New Brunswick and Nova Scotia, 1980-2000



Source: Statistics Canada

Figure 14b
Total number of degrees granted in Prince Edward Island, 1980-2000



Source: Statistics Canada

Conclusion

Overall, enrolment in Maritime universities has followed the same general trend as observed for Canada as a whole: an early period of steady growth between 1980-81 and 1992-93 was followed by a general decline spanning six years and ending in 1998-99. Maritime level data indicate that enrolment numbers are now beginning to recover. While there has been very little growth in enrolment in doctoral level programmes in the Maritimes, enrolment in these programmes across Canada has increased sharply.

Evidence shows that the student profile is undergoing some changes. Notably, the proportion of women has increased nearly 10 percentage points over the last 20 years. This trend is not unique to the Maritimes. In addition, the proportion of full-time undergraduate students who are 21 years old or under has declined somewhat over the same interval.

The continued slow and steady increase in Participation Rate 1 (which measures the total full-time enrolment in provincial institutions expressed as a proportion of the provincial population aged 18-24) seems to be largely driven by increasing numbers of students coming to study in the Maritimes from outside the region, and is most pronounced in Nova Scotia, where one-quarter of full-time students came from outside the region. The predicted increase in the university-aged population across Canada may result in larger numbers of students coming to study in the Maritime provinces from outside the region. This may therefore raise the participation rate (Participation Rate 1) particularly in Nova Scotia, and to a lesser extent, New Brunswick and Prince Edward Island, if historical patterns of enrolment of out-of-Maritime students continue.

The trends in Participation Rate 2 (ratio of the number of provincial *residents* enrolled in universities anywhere in Canada against the provincial population aged 18-24) indicate that there is less variation between the Maritime provinces in the propensity of residents to attend university, and that all three provinces show higher participation rates than the national average. While Nova Scotia currently has the highest participation rate, future trends in this rate will depend on the combined effects of provincial university-aged population dynamics, and the general tendency for this population to attend university.

The number of degrees granted has followed a trend similar to overall enrolments, with the overall number of degrees granted increasing over the past 20 years.

Endnotes

¹Statistics Canada. *The Daily* (Ottawa, Thursday, April 17, 2003).

²Association of Universities and Colleges of Canada. *Trends* (Ottawa, 2002).

³Easton, S. "Do We Have a Problem Yet?" Women and Men in Higher Education" in Laidler, D. (Ed.) *Renovating the Ivory Tower: Canadian Universities and the Knowledge Economy* (Toronto: C.D. Howe Institute, 2002).

⁴Mandel, C. and Berkowitz, P. 1999. "Gender Gap". *University Affairs* (Toronto: Association of Universities and Colleges of Canada. August/September 1999).

⁵Ibid.

⁶Association of Universities and Colleges of Canada. *Trends* (Toronto, 2002).

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