

# Notes and Comments

## Notes et commentaires

### WHITHER UNIVERSITY ENROLMENTS? – AN ALTERNATIVE VIEW

The conventional wisdom is that university full-time undergraduate enrolment in Ontario will increase from the present level to a peak in the early 1980s and then decline through the remainder of the 1980s. The projections are heavily influenced by demographic projections of the age-profile of the Ontario population.

The Ontario Council on University Affairs (OCUA) has presented a range of projections (OCUA, 1977). These show the peak in full-time undergraduate enrolment occurring in either 1981-82 or 1982-83 at a level 12.3% to 27.5% higher than the enrolment in 1975-76 of 141,400 full-time undergraduates.

Projections published by Statistics Canada show the peak occurring in 1982-83 at a level 15.2% to 35.2% higher than the 1975-76 enrolment (Zsigmond, 1976).

Both sets of projections show enrolment declining from the peak through the remainder of the 1980s to a level which might be slightly lower than or higher than the 1975-76 enrolment.

The trends that are starting to emerge and the policies which are being implemented suggest that the peak enrolment has been overstated.

### Techniques of Forecasting

In projecting enrolment most attention has been given to the size of the "university age group", which was defined as the group of age 18 to 24 by OCUA and 18 to 21 for undergraduates by Statistics Canada, and to participation rates in terms of the university age group.

One group of techniques might be classified as "the future is a continuation of the past". The approach is mechanistic and is most applicable in a growth situation such as existed in the 1960s. However, it fails to take account of the impact of institutional and public policies which are being developed in an environment where it is known that there may be a decline in enrolment in the 1980s, and where there is a hesitancy to overexpand facilities and resources.

Another technique has been termed "the railway approach" – someone has travelled this road before and we may expect to follow. Canadian thinking has been conditioned by this attitude, because of comparisons to the United States. This is typified by statements such as, "Participation rates in post-secondary education are much higher in the United States so that we may expect them to rise in Canada." This approach may be applicable in the short term, particularly in identifying or anticipating new trends, but again may be expected to fail in an environment where policies are being designed to moderate fluctuations in enrolment.

The forecasts of the 18 to 20 age group made by Statistics Canada show a growth of only 8.2% between 1976 and 1982 (Zsigmond, 1976), the year for which the peak in

Table 1

## MODEL OF UNDERGRADUATE ENROLMENT ASSUMING CONSTANT RETENTION RATES

Year	Change in level 1 enrolment	Level				Total	Change in total enrolment
		1	2	3	4		
		100					
		100	80				
		100	80	70			
A		100	80	70	40	290	
B	+ 5.0%	105	80	70	40	295	+ 1.7%
C	+ 4.8%	110	84	70	40	304	+ 3.1%
D	+ 4.5%	115	88	74	40	317	+ 4.3%
E	0	115	92	77	42	326	+ 2.8%
F	0	115	92	81	44	332	+ 1.8%
G	- 4.3%	110	92	81	46	329	- 0.9%
H	- 4.5%	105	88	81	46	320	- 2.7%
I	- 4.8%	100	84	77	46	307	- 4.1%
J	0	100	80	74	44	298	- 2.9%
K	0	100	80	70	42	292	- 2.0%
L	0	100	80	70	42	290	- 0.7%

undergraduate enrolment is projected, and a decline by 1986 to the level of 1974. In view of the relative stability of the size of the university age group, the impact of participation rates on enrolment will be greater than in periods when the size of the age group was growing.

### The Nature of University Enrolments

The prediction of university enrolment is more complex than the prediction of enrolment in earlier grades, because attendance is not compulsory. Undergraduate enrolment is dependent on:

1. the level of intake of new students,
2. the retention of students already enrolled, and
3. the number of former students who re-enter.

The impact of the level of intake is often not well understood; it is possible for the intake to remain constant or even decline, while the total enrolment continues to increase in the short term. To illustrate the impact of intake a model of enrolment is shown in Table 1.

The model assumes a mix of three-year and four-year programmes and constant retention rates. "Level" is used to describe the academic level or year in a programme in order to avoid ambiguity. It is assumed that level 2 enrolment is 80 per cent of the previous year's

level 1 enrolment; that level 3 enrolment is 70 per cent of the level 1 enrolment of two years previously; and that level 4 enrolment is 40 per cent of the level 1 enrolment of three years previously.

For the three years preceding the base year, Year A, it was assumed that the level of intake was constant; this was similar to the experience of many Ontario universities in the early 1970s. In Years B,C, and D the level of intake increased, and, while total enrolment increased, the rate of increase for total enrolment was less than the rate of increase in the intake. In Years E and F there was no increase in intake, and yet total enrolment continued to increase, albeit at a slower rate. In Year G the intake decreased and yet there was little change in overall enrolment; in fact, had the decrease in intake been limited to 2%, the total enrolment would have increased, notwithstanding the decreased intake. In Years H and I further decreases in intake occurred, but the rates of decrease in total enrolment were less. In the final three years (Years J, K, and L) there was no change in intake, but the total enrolment continued to decline, but at decreasing rates.

Obviously the model has limitations; no account was taken of changing retention rates nor of changes in the number of students who were re-entering the system. However, it serves to illustrate that there is a lag between changes of total enrolment and changes in the level of intake. Changes in total enrolment tend to be more moderate than the fluctuations in the level of intake. These inferences might be applied to the situation that is faced today and as universities approach the projected peak of 1982-83. It was noted above that undergraduate enrolment projections have been derived from participation rates and the size of the university age group, rather than by a flow-through procedure. It is suggested that, had flow-through techniques been used, the projected fluctuations would have been more moderate than have been projected.

### **The Data Available**

For the purpose of developing enrolment projections, data may be drawn from a variety of sources, although difficulties may result from the nature of definitions, from the assumptions that have been or have to be made, and from the way in which data are organized.

Since 1971 data on students enrolled in Ontario universities have been collected by Statistics Canada through the Universities Student Information System (USIS). The data are limited by the quality of the reporting and some of the definitions, such as the definition of an undergraduate. Also available from Statistics Canada are demographic data on population and the projected population of the Province of Ontario. One assumption in population projections which may warrant critical examination is the level of net migration to the Province.

In Ontario since 1973 applicants for admission to undergraduate studies have applied through the Ontario Universities' Application Centre (OUAC). From this source data are available on applicants and those who registered in universities. Again the quality of reporting has varied among institutions, and the different reporting dates in the past have made it difficult to obtain data which are compatible with those from other sources.

Data from both USIS and OUAC suffer from the fact that the time period for which they are available is relatively short.

Secondary school enrolment data may be obtained from the Ontario Ministry of

Education. Projections of secondary school enrolment have been made both by the Ministry of Education and by the Ontario Institute for Studies in Education.

Annually the universities report enrolment to the Ministry of Colleges and Universities for the allocation of operating grants, but the data are of limited value in projecting future enrolments. Within institutions resides much data, and the data of one particular institution will be used in part in this paper.

### **Participation Rates**

It was noted above that, in a period where the size of the 18 to 21 age group is relatively stable, the participation rate will influence heavily the level of intake. It is the level of intake which will in large part determine the total enrolment in the long term, although retention rates and the number of students re-entering the system will also affect the total enrolment. In order to estimate future rates of participation it is necessary to analyze the factors that appear to influence participation rates.

### *The mix of applicants*

The majority of students in Year I programmes of Ontario universities completed their secondary school programmes in the previous year. These applicants are categorized by the Application Centre as "secondary school applicants"; other applicants are termed "regular applicants". It was reported by the Application Centre (OUAC, 1976) that, of the 36,409 applicants who registered in 1976, 75.5 per cent were from the secondary school stream.

Statistics on the number of applicants and registrants from the two sources are displayed in Table 2.

In the period 1974 to 1976 an increasing number of institutions were limiting enrolment in Year I programmes. Early in 1977 the Committee on Enrolment Statistics and Projections of the Council of Ontario Universities surveyed the universities of the Province. The results of this survey revealed that a large proportion of the places in Year I programmes are restricted, and that a number of universities which are not now restricting enrolment are considering doing so.

In examining Table 2 it should be noted that the count date was November 1 in 1976, whereas it had been October 1 in preceding years. In a brief to the Ontario Council on University Affairs (OCUA) from the Council of Ontario Universities it was estimated that Year I enrolment had increased by less than one per cent in 1976 (COU, 1977). Preliminary application statistics for 1977 show no growth in the number of applications, so that Year I enrolment in 1977-78 may differ little from the two preceding years. Reference to the model presented in Table 1 suggests that at least a temporary steady state in total enrolment has been attained or that the state could be a prelude to a decline in total enrolment.

From the data presented in Table 2 a number of inferences might be drawn, even though trends are not consistent in the period 1974 to 1976. One inference might be that universities in the light of the projected peak and subsequent decline in enrolment are being more restrictive in granting admission to all applicants in order to reduce the size of the peak. In 1977 OCUA recommended that commencing 1978-79 incremental basic income units resulting from enrolment increases or decreases be funded only at the 50%

Table 2  
APPLICANTS AND NEW REGISTRANTS, 1974-76

Year	Secondary School			Regular		
	1. Applicants	2. Registrants	%(2 of 1)	3. Applicants	4. Registrants	%(4 of 3)
1974	36,943	26,219	71.0	19,557	8,628	44.1
1975	36,680	27,008	73.6	22,648	8,630	38.1
1976	39,596	27,505	69.5	22,669	8,904	39.3
Change 1974-76	+ 7.2%	+ 4.9%		+ 15.9%	+ 3.2%	

(Source: Admission Data System Report, OJAC, 1974, 1975, 1976)

level, thus removing for many institutions the incentive to increase enrolment. The combination of these factors and the statistics presented in the previous paragraph suggest that there will be little, if any, growth in full-time undergraduate enrolment between now and 1982-83.

Another inference which might be drawn from the data in Table 2 is that it is becoming increasingly difficult for regular applicants to gain admission in comparison to the secondary school applicants. This might be expected to continue to 1980, at which time the level of intake might otherwise have been expected to peak in an unconstrained environment. From 1980 onwards as the number of secondary school graduates starts to decrease, the pool of regular applicants may serve to moderate or offset the decline in the number of secondary school graduates who are admitted.

### Age

Projections of the level of intake have normally been related to the size of the 18 to 21 age group. The profile of the Year I class of 1975-76 at McMaster University, displayed in Table 3, suggests that the use of the 18 to 21 group may result in the date of any peak in intake being projected later than it might be expected to occur were a weighted

Table 3  
AGE PROFILE OF McMASTER YEAR I CLASS, 1975-76

<u>Age</u>	<u>Number</u>	<u>Percentage of Total</u>
18	588	18.9%
19	1494	48.0%
20	522	16.7%
21	203	6.5%
Other	307	9.9%
	3114	100.0%

(Source: Registrar's Report, McMaster University, 1976).

grouping based on the age-profile of entering students used. Thus the number of years over which increases in intake would have to operate would be reduced, so that the peak both would be smaller in size and would occur earlier.

It has been suggested that an increase in the incidence of older students entering universities might serve to increase participation rates. An examination of the data available for McMaster University for the period 1969-70 to 1975-76 provides no evidence to substantiate this view.

### *Sex*

The participation rates for females have been below those for males, but the difference has been decreasing (Zsigmond, 1976: 92-93). It is probable that the gap will continue to decrease, as female participation increases. It is suggested that in the period to 1982-83 an increased female participation rate will be at the expense of the male rate, but that thereafter an increased male participation rate might be expected as admission becomes less restricted.

### *Standards and retention rates*

Evidence on the grading practices of secondary schools and universities tends to be impressionistic and anecdotal. Generally it is conceded that the phenomenon of "grade inflation" occurred both in the secondary schools and universities during the late 1960s and early 1970s. As evidence one might cite the proportion of secondary school graduates qualifying for Ontario scholarships. There are reasons to believe that the trend is being halted or even reversed. One impact of the publication of the Interface Report (Government of Ontario, 1977) appears to have been to focus attention on standards. An increasing number of boards of education are increasing the weight given to examination marks. At the post-secondary level admission standards are being raised, and at some universities there is evidence that grade inflation is being replaced by deflation. The number of students at McMaster University qualifying for the Deans' Honour list dropped in 1976 and again in 1977.

The trends which appear to be developing may only be short-term in nature, but would serve also to reduce the peak, if fewer students qualify to continue their studies. The long-term trends are almost impossible to predict.

### *Mix of programmes*

Most undergraduate programmes are either of three years or four years duration. Should more students opt for four-year programmes, there would be a tendency for enrolment to increase. Conversely, more students in three-year programmes would tend to depress enrolment.

Conflicting influences may be at work, and analysis of the available data is difficult. The poor employment prospects for those with postgraduate qualifications may serve to decrease enrolment in four-year honours programmes. On the other hand more students may seek to enter vocationally-oriented programmes which tend to be of four-years duration – whether they will gain admission is another matter. In 1974 there were 12,204 applicants to Engineering programmes and 3,005 registered; by 1976 there were 15,895 applicants, but only 2,879 registered (OUAC, 1974, 1976). In contrast the

comparable figures for Commerce programmes were 9,409 and 2,438 in 1974, and 13,296 and 2,925 in 1976. In the case of Physical Education the situation is comparable to that in Engineering; in 1974 there were 6,619 applicants and 1,672 registrants, and, in 1976, 8,409 applicants and 1,672 registrants.

It appears that in some four-year programmes limits have been placed, and that there will be no or little growth. The students who fail to gain admission presumably register in other programmes (most probably three-year programmes) or do not register at universities. As the university age-group continues to grow, this will tend to limit the growth of university enrolment. Conversely, after the size of the university age group peaks, it will tend to slow the rate of decline. A greater proportion of applicants will be able to register in the programmes of their choice, so that fewer will fail to register and a greater proportion will be able to register in four-year programmes.

### *Economic Factors*

The relationship between economic factors and the intake to post-secondary institutions has yet to be established. Once again conflicting arguments are presented. On the one hand there are those who argue that the relatively poorer employment prospects for university graduates than existed in the 1960's will serve to depress enrolment. On the other hand the high incidence of unemployment among young workers and the prospect that this may well increase may serve to increase enrolment. Even if the nature of the relationships of economic factors and university intake can be established, it would be necessary to have reliable economic forecasts in order to project enrolment.

### *Institutional and Public Policy*

Perhaps the most under-rated factor that determines enrolment is the establishment of policies by institutions and government. The advice of the Ontario Council on University Affairs to the provincial government is that both incremental and decremental basic income units be funded at the 50 per cent level. This will serve both to limit growth and to limit decline. It was noted above that an increasing number of universities have taken or are taking measures that will serve to limit growth in the near term; this should also mean that any subsequent decline will be less than it would otherwise have been.

It is evident that many universities are attempting to contain enrolment growth by restricting admission. Through the remainder of the 1970's one may expect admission standards to increase, and it will become more difficult to gain admission to universities, particularly for those with non-standard qualifications. During the 1980's it is probable that the admission of this latter group will increase in order to offset the decrease in those with the standard qualifications.

University enrolment can be influenced by government policy in a number of ways. It can be achieved through changes in the funding mechanism, such as the institution of a higher formula fee for foreign students commencing 1977. It can be achieved through the level of assistance that is paid directly to students, or through the level of summer employment available. In the short term policy will probably be set to minimize additional spending and to contain growth so that no new physical facilities need be constructed. In the longer term unemployment among the young may become a social issue. Unemployment of the 14 to 24 age group has risen from 8.8 in 1961 to 11.1 in 1975, and the rate of

entry of this group into the labour force is projected to increase during the remainder of the 1970's. (Zsigmond, 1976). It is questionable as to whether a sufficient number of new jobs might be created, so that unemployment among the young might continue to increase. An alternative for such persons might be entry to or continuance in university education so that there may be no decline in university enrolment.

## CONCLUSION

Projections of full-time university undergraduate enrolment by OCUA and Statistics Canada shows a peak in enrolment around 1982-83 at a level 12.3 to 35.2 per cent higher than 1975-76. Some of the assumptions made for these projections and the available data have been examined. While there may be some small growth between now and 1982-83, there appears little evidence to suggest that the growth will be of the magnitude projected.

Beyond 1982-83 it has been projected that enrolment will decline throughout the remainder of the 1980's. Since enrolment growth is being contained as a matter of policy, unsatisfied demand may be building up and, since there will be no "peak" in 1982-83, it is quite probable that there will be little, if any, decline during the 1980's.

For the next ten-year period it appears that the most probable pattern for full-time undergraduate enrolment in Ontario will be one of slight growth followed by a period of comparative stability, a pattern which might be changed only by some substantial change in the socioeconomic system or in public policy.

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