



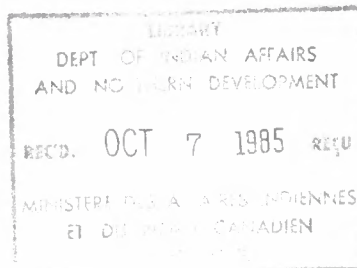
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Migration Projections of Registered Indians, 1982 to 1996

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MIGRATION PROJECTIONS OF REGISTERED INDIANS, 1982 TO 1996

by

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STATISTICS CANADA

For
Research Branch, Corporate Policy,
INDIAN AND NORTHERN AFFAIRS CANADA

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This publication is one of four reports on the documentation of
population projections of registered Indians, 1982 to 1996. The other
three reports are:

- Population Projections of Registered Indians, 1982 to 1996
- Fertility Projections of Registered Indians, 1982 to 1996
- Mortality Projections of Registered Indians, 1982 to 1996

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SUMMARY

This report describes the development of interregional migration projections of registered Indians. It is based on a comparative analysis of status Indian and Canadian migration patterns over the 1976-81 period, using 1981 Census data. The study used status Indian customized population and residence variables which were developed by Indian and Northern Affairs Canada (INAC) from 1981 Census data. An assessment of data limitations and projection methodology is also provided along with an evaluation of projection results.

The 1981 Census question on place of residence 5 years ago provided the only source of data on interregional migration of Indians. Unlike fertility and mortality, data on migration were not available from the Indian Register. In the Register, movement between regions is not recorded and place of residence for Indians living off reserve is recorded as being in the same district or region as those of on-reserve band members. However, according to census data about 8,000 status Indians residing off reserve in 1981 (5 years of age and over) had changed regions during the 1976-81 period. Comparison of Register and census data indicated that discrepancies exist between their regional populations.

The comparative analysis of Indian and Canadian interregional migration patterns over the 1976-81 period provided the basis for the projections of Indian migration. The main findings of this analysis can be summarized as follows:

- . While the absolute number of Indian migrants, 10,000, is relatively small as compared to over a million migrants for the Canadian population in general, the proportion of the 1981 Indian population that migrated interregionally, 3.6%, is almost 3/4 of the corresponding Canadian share of 4.9%.
- . For both populations, the regional migration patterns of the 1976-81 period were characterized by a westward flow with Alberta and British Columbia showing overall net gains and the remaining regions, with the exception of the Territories (Yukon and Northwest Territories combined) indicating net losses. The Territories showed a net inflow of Indian migrants but a net outflow of migrants in general. Alberta had the largest net gain of Indian migrants, of about 1,500, while Ontario and Manitoba were the largest losers, with net outflows of about 700 migrants each.
- . Indians moved between geographically contiguous regions to a greater extent than Canadians with Manitoba, Saskatchewan and the Territories receiving larger shares of Indian than Canadian migrants.

- . Female Indians in high mobility age groups, 20-34, migrated to a greater extent than their male counterparts, a sex differential not common to the Canadian population in general.

Only one migration scenario was selected for the registered Indian projections. For the future it was assumed that the migration of registered Indians would reflect the internal migration scenarios already developed by Statistics Canada for the total Canadian population. This assumption was based on the observation from the 1976-81 period that although Indian migration patterns had some differences they were similar overall to those observed for Canadians in general. Of the three internal migration assumptions used in the projection of the Canadian population, the scenario that was selected represents a continuation of the most recent trends, from 1981 on, characterized by a reversal of the earlier westward flow. A ratio technique was used to transform projected Canadian patterns of annual migration into patterns for the Indian population, based on the similarities and differences observed in migration rates and proportions for the two populations.

There are limitations inherent in the migration projection approach which is based on some simplified assumptions. For example, migration projections developed for the Canadian population are assumed to be applicable to registered Indians on the basis of a similar westward flow in their interregional migration over the 1976-81 period, as recorded by the 1981 Census.

The paper concludes with an evaluation of projected migration and its impact on population growth. Unlike the Canadian population in general the role of internal migration in regional population growth is minimal for registered Indians. Due to high fertility levels of the Indian population, natural increase far outweighs the impact of migration on regional population growth.

1. INTRODUCTION

Although the impact of interregional migration¹ on the growth of the registered Indian population is low, it is treated as a component in the projections of registered Indians, 1982 to 1996. The 1981 Census recorded that during 1976-81 about 10,000 status Indians², 5 years of age and over in 1981, migrated among the 8 regions, compared to just over one million interregional migrants for the total Canadian population. Even though the absolute number of interregional migrants was relatively small, their proportion to the total Indian population was about 3/4 of the proportion of the Canadian population that migrated interregionally.

For projections of registered Indians at the national level the population is not affected by international migration since registered Indian status cannot be gained through immigration. Some movement of the registered population does occur across the Canada - United States border, but it is not regarded as international migration.

Another form of migration among Indians is the movement between on- and off-reserve locations. This migration was not treated as a separate component since projections of on- and off-reserve population were derived from regional level projections using a ratio technique.

-
1. In these projections, the Atlantic provinces and the Yukon and Northwest Territories were grouped to form two regions, resulting in 8 projection regions. Migration among these regions will be referred to as 'interregional' migration. The 8 regions for which migration data and projections are developed are based on provincial boundaries and therefore do not strictly correspond to those regions of Indian and Northern Affairs Canada (INAC) in which certain areas overlap provincial boundaries. However the same set of projected migration rates and proportions were applied to both the INAC regional and provincial-based populations.
 2. In the Census, the term 'status Indian' is used for registered Indian. The figure of 10,000 is based on the status Indian population as defined by INAC using 1981 Census data (for details see Klein, S., Wright, W., 1985).

2. DATA SOURCES

For the Canadian population in general there are a number of different data sources on internal migration, such as census and administrative data, which are used to obtain estimates of annual migration. For the registered Indian population, the only data source on interregional movement³ is the 1981 Census 5-year migration question. An examination of some possible administrative sources indicated that estimates of Indian migration could not be obtained or could be derived only for certain regions.⁴

As well, an investigation of INAC's Register and vital events system indicated that there was no possibility of obtaining migration data either directly or residually for this project. Thus, no annual estimates of Indian migration exist.

The discussion of data sources for Indian migration is followed by an evaluation of census migration and population data that are used for developing migration projections. Since these data are used for projections of registered Indians, a comparison of some of the differences in population between the census and Register is also provided.

-
3. For certain types of Indian migration, other data sources apart from the census exist. For example, a study of Winnipeg's native population used survey data on patterns of native migration to the city (see Clatworthy, 1980).
 4. One source of administrative data, from which migration estimates could be derived but only for certain provinces was that of provincial medicare insurance. According to medicare officers in Manitoba and Saskatchewan, annual estimates of the number of Indian migrants by origin and destination could be developed.

2.1 Data Sources Considered

(i) Administrative Data

The two major administrative data sources - family allowance data and income tax records - which have been used for producing annual estimates of interprovincial migration for the Canadian population cannot be utilized for estimating numbers of Indian migrants. The use of income tax data is not applicable since, in general, Indians residing on reserves do not file income tax. Family allowance data were considered a possibility on the basis of matching postal codes to reserve locations but postal code categories do not correspond to just the reserve area. Furthermore there is no means of identifying Indian recipients.

(ii) Indian Register Data

The Indian Register was examined for the possibility of retrieving regional migration data residually, but this proved impossible since information on actual place of residence was maintained only for the on-reserve population. When an Indian resides off reserve, the actual place of residence is not recorded, only the fact that the residence is off reserve. Place of residence is not a legal requirement, and on- or off-reserve residency is recorded once a year, generally by the band⁵. For regional population counts the residence of an Indian band member living off reserve is reported by INAC to be in the same district and region as that of other band members residing on reserve, although the actual off-reserve location could be in a different region. This limitation is especially relevant to retrieving interregional migration data since, according to 1981 Census data, almost 3/4 of the 10,000 interregional Indian migrants had moved between off-reserve locations over the 5-year period.

5. Discussions with INAC officers (February, 1984) indicate that data for on- and off-reserve locations are unreliable due to late and underreporting. The annual residency survey has a fairly low response rate.

The vital events coding system which updates the Register was also considered a possible source. The system covers all those events which can cause an increase, decrease, or no change at all to the population size, such as births, deaths, marriages and adoptions. But there is no separate category for recording migration events.

2.2 Census Migration Data

The answer to the 1981 census mobility question on place of residence "5 years ago" provided migration data on the Indian population, five years of age and over, during 1976-81. While similar migration questions were asked in previous censuses, the data were not available for status or registered Indians, but instead for band and non-band Indians.⁶ For the first time in 1981, the ethnic question specified the "status or registered Indian" category of Native persons.

Both the ethnic and mobility 1981 Census questions were asked of 20% of the population. Unlike the Canadian population in general, total population counts produced for status Indians are derived from the ethnicity question and consequently are a 20% sample count, except for remote areas which were covered on a 100% basis.

The limitations of a 5-year census migration question as a direct source of migration data have been well documented (see United Nations, 1970; Raby, 1976). The main limitations of census migration data are related to factors of: under-enumeration, multiple migration, return migration, emigration and mortality. The impact of these limitations is associated with the length of the period over which migration is measured. Consequently, census data cannot give a

6. The 'band' classification is only an approximation to the 'status' Indian category. Some of the 1966-71 migration patterns of 'band' Indians have been examined. (Siggner, 1977).

reliable measure of the actual 5-year volume of annual migration that occurred over the intercensal period. The understatement of migration volume derived from census data in terms of annual movement should be considered in relation to estimates or projections of annual migration.

For example, the extent to which census data understate the 5-year volume of annual interprovincial migration of Canadians can be determined by comparing aggregated estimates of annual migration over the 1976-81 intercensal period with the volumes derived from 1981 Census data.⁷ This comparison indicates that for Canada as a whole, the annual-based estimate of 1.8 million interprovincial migrants is one and a half times as large as the 1.2 million based on a 5-year movement from the census. The extent of this difference varies by province for the numbers of total in and out migrants.

Without annual estimates the extent to which census data understate the 5-year volume of annual migration cannot be determined for the Indian population. It has been assumed that the Census understates the 5-year volume of annual migration for the Indian population to the same extent⁸, by region, as that indicated for Canadians as a whole (see Section 4). Under this assumption the number of status Indians who migrated interregionally, over the 5-year period, was estimated to be about 18,000.

-
7. An approximation of the number of interprovincial migrants aged 0-4 for the 5-year period was obtained from a cross-classification of the population by place of birth by place of residence. This estimate was incorporated with that for migrants aged 5 and over.
 8. The extent of understatement could differ between Indians and Canadians in general due to the difference in factors, between the two populations, such as: multiple and return migration, mortality and underenumeration. Also, gains or losses in registered Indian status during the 5-year period could have some effect on the volume of Indian migration as recorded by the census.

Apart from the understatement of annual migration volume, other considerations in the use of census migration data are related to sample⁹ data.

Despite these limitations, census migration data can be used to examine and compare interregional migration patterns between status Indians and Canadians, in terms of a 5-year movement. This comparative analysis, presented in Section 3, provides the basis for the development of migration projections of registered Indians.

2.3 Differences Between Census and INAC Register Data

Because Census data on status Indians are used to develop migration projections of registered Indians an examination of some of the differences between these two data sources on the Indian population is in order. There were some anomalies in the status Indian data in the 1981 Census. These were created by self-identification, such as "native persons" with a place of birth outside Canada and whose home language was neither English or French nor an aboriginal language (for details see Boxhill, W., 1985). Also the non-response rate on Indian reserves may be higher than that off reserve due to refusal, in some cases, to be enumerated. As a result of these problems the status Indian population from the 1981 Census does not completely correspond to the population from the Indian Register. Therefore, the analysis of Indian migration in Section 3 is based on customized population and residence variables developed by INAC using 1981 Census data (for details see Klein, S., Wright, W., 1985).

9. The sample population used in the census excludes the inmate population, a population in which registered Indians were found to be more representative (see Kralt et al, 1983).

However, discrepancies exist between INAC's customized 1981 Census population and Indian Register counts as indicated in Table 1. At the Canada level, the census population is lower, by about 5%.

Table 1. Comparison of the 1981 Registered Indian Population with the 1981 Census Status Indian Population, by Region(1)

REGION	Population		
	1981 Adjusted(2) Registered Indian Population	1981 Census(2) Status Indian Population (INAC Customized Data)	
		Deviation(3) from Register	
		Number	%
ATLANTIC(4)	13,003	11,605	-10.8
QUEBEC	34,888	37,985	8.9
ONTARIO	74,126	77,145	4.1
MANITOBA	49,621	43,310	-12.7
SASKATCHEWAN	51,140	40,125	-21.5
ALBERTA	40,730	39,920	- 2.0
BRITISH COLUMBIA	60,512	59,655	- 1.4
TERRITORIES(5)	11,455	10,415	- 9.1
CANADA	335,475	320,160	- 4.6

- (1) For comparison, both INAC Register and Census populations are presented for 8 provincial-based regions which do not correspond to INAC regions.
- (2) Indian Register population as of December 31, 1981, Census status Indian population as of June 3, 1981.
- (3) Percentage deviation from Register is calculated as the difference between Census and Register populations, divided by the Register population, multiplied by 100.
- (4) The Atlantic region does not include Newfoundland.
- (5) Yukon and Northwest Territories combined.

Source: Indian Register data: adjusted for late-reporting of births and deaths by Projections Section, Demography Division, Statistics Canada. Census Status Indian data: based on REGIND variable developed by INAC using 1981 Census data.

At the regional level (provinces or aggregates of provinces) the largest discrepancies between the census and Register are in Saskatchewan and Manitoba. The fact that the census count excludes inmates in institutions probably accounts for a significant part of the underenumeration. In particular the number of inmate admissions of Indians in the prairie provinces has shown a fairly steady increase (Kralt, et. al., 1983).

An additional source of discrepancy between census and Register regional populations could be the interregional movement of the off-reserve population which is not recorded in the Register. According to 1981 Census data, about 8,000 status Indians residing off reserve in 1981 had changed regions during the 1976-81 period. The net effect of this redistribution of regional population is not reflected in the Register's off-reserve population.

Regional discrepancies in the off-reserve population between the census and Register may be greater than those for the on-reserve population because of such factors as the exclusion of inmates, migration and self-identification, which are more likely to affect the measurement of the off-reserve population and probably vary by region in their impact. Table 2 provides a comparison of the 1981 regional populations between Register and census data, using INAC defined population and residence variables. Differences between the two data sets in the regional distribution of the on-reserve population are practically negligible, unlike those for the off-reserve populations. For example, 18% of the total off-reserve population as recorded by INAC's Register resides in Saskatchewan compared to about 11% based on Census data.

Differences in regional population between census and Register data have some implications for the application of census-based migration rates to the Register population (see Section 4.3).

Table 2. Regional Distribution of Indian Register and Census Status Indian Populations, by On- and Off-Reserve Locations(1) 1981(2)

Region (3)	On-Reserve Population				Off-Reserve Population			
	Indian Register		Census Status Indian		Indian Register		Census Status Indian	
	Number	%	Number	%	Number	%	Number	%
Atlantic(4)	9,815	4.2	8,000	4.1	3,188	3.2	3,610	2.9
Quebec	28,680	12.1	26,930	13.8	6,208	6.2	11,055	8.9
Ontario	49,543	21.0	42,640	21.8	24,583	24.8	34,510	27.7
Manitoba	35,992	15.2	29,290	15.0	13,629	13.7	14,015	11.2
Saskatchewan	33,581	14.2	26,650	13.6	17,559	17.7	13,480	10.8
Alberta	30,838	13.1	24,860	12.7	9,892	10.0	15,060	12.1
British Columbia	37,679	16.0	29,500	15.1	22,833	23.0	30,155	24.2
Territories(5)	10,017	4.2	7,675	3.9	1,438	1.4	2,740	2.2
Canada	236,145	100.0	195,545	100.0	99,330	100.0	124,625	100.0

- (1) Census on- and off-reserve locations are based on the INAC defined variable, NEWRES. On reserve includes crown lands and settlements for both Register and Census data.
- (2) Adjusted Indian Register population as of December 31, 1981; INAC customized Census Status Indian population as of June 3, 1981.
- (3) Both INAC Register and Census populations are distributed by provincial-based regions.
- (4) Atlantic region does not include Newfoundland.
- (5) Yukon and Northwest Territories combined.

Source: Same as Table 1.

3. COMPARATIVE ANALYSIS OF INTERREGIONAL MIGRATION, 1976-81

As indicated in Section 2 the only source of migration data for the Indian population is the 1981 Census question on place of residence 5 years ago. Unlike the mortality or fertility components, it is not possible to assess past trends for the purpose of developing projections. A comparative analysis of status Indian and Canadian interregional migration was undertaken to provide a basis for projections. This analysis is limited to the 1981 population 5 years of age and over.

3.1 Data Adjustments

Regions of Origin and Destination

For both status Indians and Canadians in general, migration and population data were adjusted to exclude Newfoundland, and to create 8 origin-destination regions, based on provincial boundaries. The Atlantic provinces and the Yukon and Northwest Territories were grouped to form two regions. Although it was recognized that some status Indians resided in Newfoundland in 1981, at that time INAC did not recognize the "Mic Macs" of Newfoundland as having status.¹⁰ Consequently, the Register did not include Newfoundland as a province of residence.

10. As of June, 1984 the approximately 600 Mic Macs of Newfoundland were recognized by the Government of Canada as being status or registered Indians.

Population At Risk

In order to calculate a regional out-migration rate the "population at risk" to migration over the period should be used. A simple method of obtaining this population is to average the region's population at the beginning and end of the census period. The lack of 1976 Census data on status Indians precludes the use of this approach. In order to compare migration rates between Indians and all Canadians, their populations at risk were estimated the same way. Adjustments for migration over the 1976-81 period were made to the 1981 regional populations (5 years of age and over) by subtracting the region's in-migrants and immigrants from its 1981 population and adding the region's out-migrants and emigrants¹¹ to obtain an estimated 'population at risk'. The calculation of regional migration rates for both populations is illustrated in Table 3.

The same procedure which was used to calculate total migration rates for the population 5 years of age and over was also applied in obtaining age-sex specific rates. However, Indian age-sex specific rates at the regional level were unreliable due to the effects of small numbers. Therefore, age-sex specific patterns of migration were analyzed and compared only at the national level.

11. Although movement of status Indians across international boundaries is not regarded as international migration, it is included here to obtain a population at risk. 1981 Census data indicated that about 2,000 of Canada's status Indians resided outside Canada 5 years ago. The number of Indian migrants leaving Canada, was estimated for each region by applying the Indian share of total movement into Canada to the estimate of Canadian emigration for that region.

Table 3. Calculation of Out, In and Net Interregional Migration Rates for Total Canadian and Status Indian Populations, 5 Years of Age and Over, 1976-81

Region	Population Age 5+, 1981	In Migrants Age 5+, 1976-81	Out Migrants Age 5+, 1976-81	Immigration ⁽¹⁾ (migrants from Outside Canada) Age 5+, 1976-81	Emigration ⁽¹⁾ Age 5+, 1976-81	Estimated Population at risk (7)=(2)-((3)+(5)) +((4)+(6))	Out Migration Rate (8) = (4)/(7) x 1000	In Migration Rate (9) = (3)/(7) x 1000	Net Internal Migration Rate (10) = (9)-(8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Rates per 1000 population									
Atlantic (2)									
Total Canadian	1,515,100	72,370	93,420	17,030	15,437	1,534,557	60.88	47.16	-13.72
Status Indian	10,005	430	520	260	236	10,071	51.63	42.70	- 8.93
Quebec									
Total Canadian	5,890,825	59,885	201,565	84,700	39,643	5,987,448	33.66	10.00	-23.66
Status Indian	33,670	440	740	615	288	33,643	22.00	13.08	- 8.92
Ontario									
Total Canadian	7,919,705	237,315	318,920	245,265	116,576	7,872,621	40.51	30.14	-10.37
Status Indian	67,425	1,455	2,155	670	318	67,773	31.80	21.47	-10.33
Manitoba									
Total Canadian	934,770	52,580	96,905	24,405	10,323	965,013	100.42	54.49	-45.93
Status Indian	36,845	930	1,665	30	13	37,563	44.33	24.76	-19.57
Saskatchewan									
Total Canadian	873,700	62,700	69,045	11,275	5,976	874,746	78.93	71.68	- 7.25
Status Indian	33,525	1,365	1,410	65	34	33,539	42.04	40.70	- 1.34
Alberta									
Total Canadian	2,015,510	327,990	138,415	75,485	31,039	1,781,489	77.70	184.11	+106.41
Status Indian	33,590	3,145	1,680	210	86	32,001	52.50	98.28	+ 45.78
British Columbia									
Total Canadian	2,517,875	231,470	123,030	94,445	31,001	2,345,991	52.44	98.67	+ 46.23
Status Indian	52,105	1,805	1,510	250	82	51,642	29.24	34.95	+ 5.71
Territories (3)									
Total Canadian	60,220	14,175	17,185	1,025	1,053	63,258	271.67	224.08	- 47.59
Status Indian	9,135	460	350	30	31	9,026	38.78	50.96	+ 12.19
Canada									
Total Canadian	21,727,705	1,058,485	1,058,485	553,630	251,048	21,425,123	49.40	...	...
Status Indian	276,300	10,030	10,030	2,130	1,088	275,258	36.44	...	...

(1) Note that for status or registered Indians movement of population across international boundaries is not regarded as international migration, but some movement does occur and its effect is estimated towards obtaining a population at risk.

(2) The Atlantic region does not include Newfoundland.

(3) Yukon and Northwest Territories combined.

... Not applicable.

Source:

Column 2 - Based on 1981 '2B' Census population (total Canadian and INAC customized) which excludes inmates and population stationed outside Canada. Data adjusted to exclude Newfoundland from current and previous place of residence.

Column 3,4,5 - Special 1981 Census tabulation of mobility data for 8 regions, excluding Newfoundland from current and previous place of residence.

Column 6 - Data on emigration for the total Canadian population are an aggregation of annual estimates prepared by Estimates Section, Demography Division, Statistics Canada. Emigration levels for status Indians were generated for each region by applying the Indian share of total Canadian migrants from outside Canada (column 5) to official emigration levels estimated for Canadians.

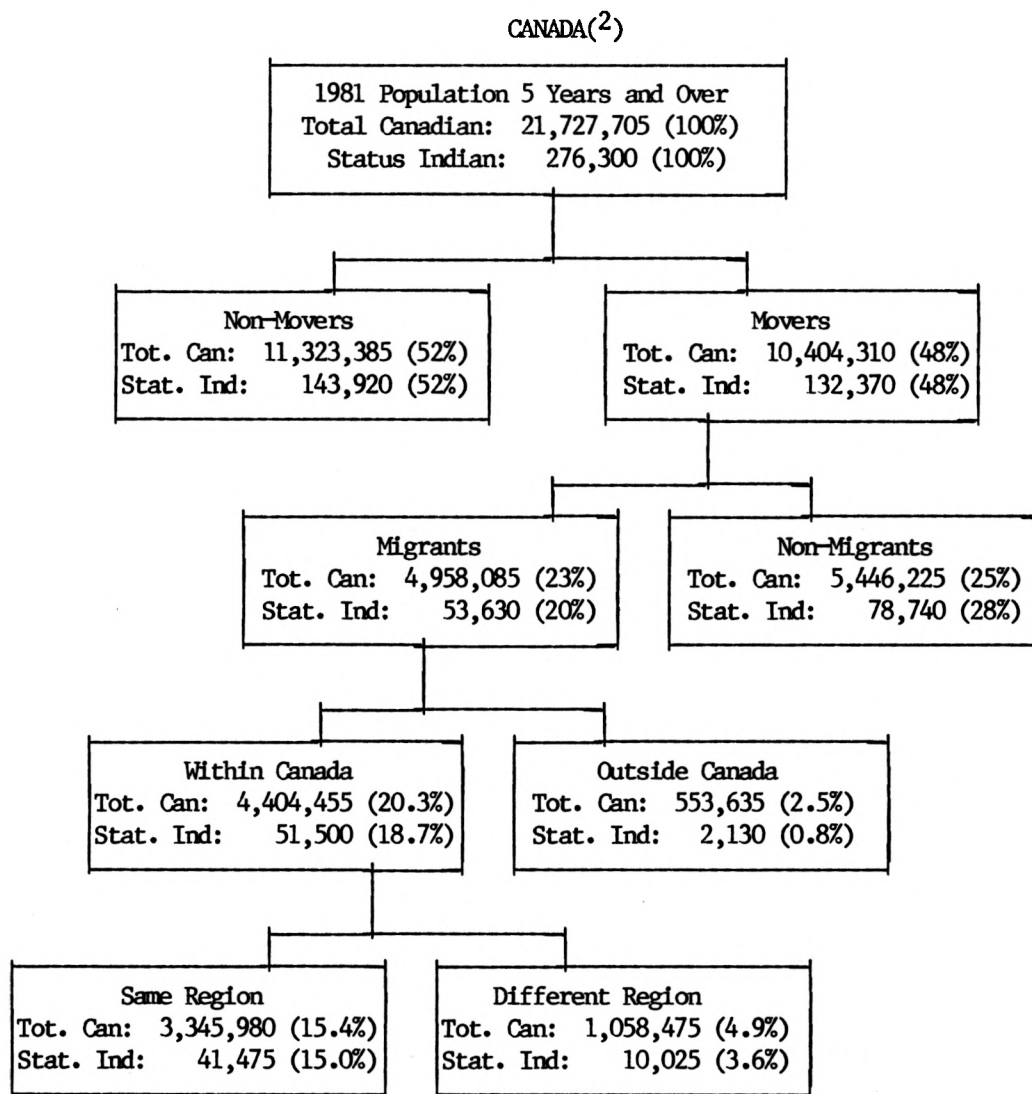
3.2 Migration of Indians versus All Canadians

The mobility status of the population aged 5 years and over, as derived from the 1981 Census data on 'place of residence' 5 years ago is summarized at the national level for both status Indian and Canadian populations in Chart 1. The chart indicates that both populations are equally mobile - 48% of both status Indians and Canadians in general had changed dwellings in the 1976-81 period. But a higher proportion, 23%, of all Canadians had migrated (changed CSD location) compared to 20% of status Indians. Similarly, a higher proportion, 4.9%, had migrated between different regions, compared to 3.6% of the Indian population. Thus, while both populations were equally mobile in changing dwellings over the 1976-81 period, Canadians in general migrated to a greater extent than Indians. This would suggest that, on average, Indians, while equally mobile, tend to move shorter distances than Canadians.

3.2.1 Regional Migration Patterns

Total out, in and net regional migration rates of Indians and all Canadians, over the 1976-81 period, are provided in Table 3. Regional net migration rates are portrayed in Figure 1 for both status Indian and Canadian populations. With the major exception of the Territories, the patterns of loss and gain in Indian net migration are similar to those shown for the total Canadian population. These are characterized by a westward flow with Alberta and British Columbia showing overall net gains, and the remaining regions, with the exception of the Territories, indicating net losses, for both populations. If the Territories are excluded, the correlation between the two sets of net migration rates is about .96.

Chart 1: Mobility Status of the 1981 Total Canadian and Status Indian⁽¹⁾ Populations, 5 Years of Age and Over

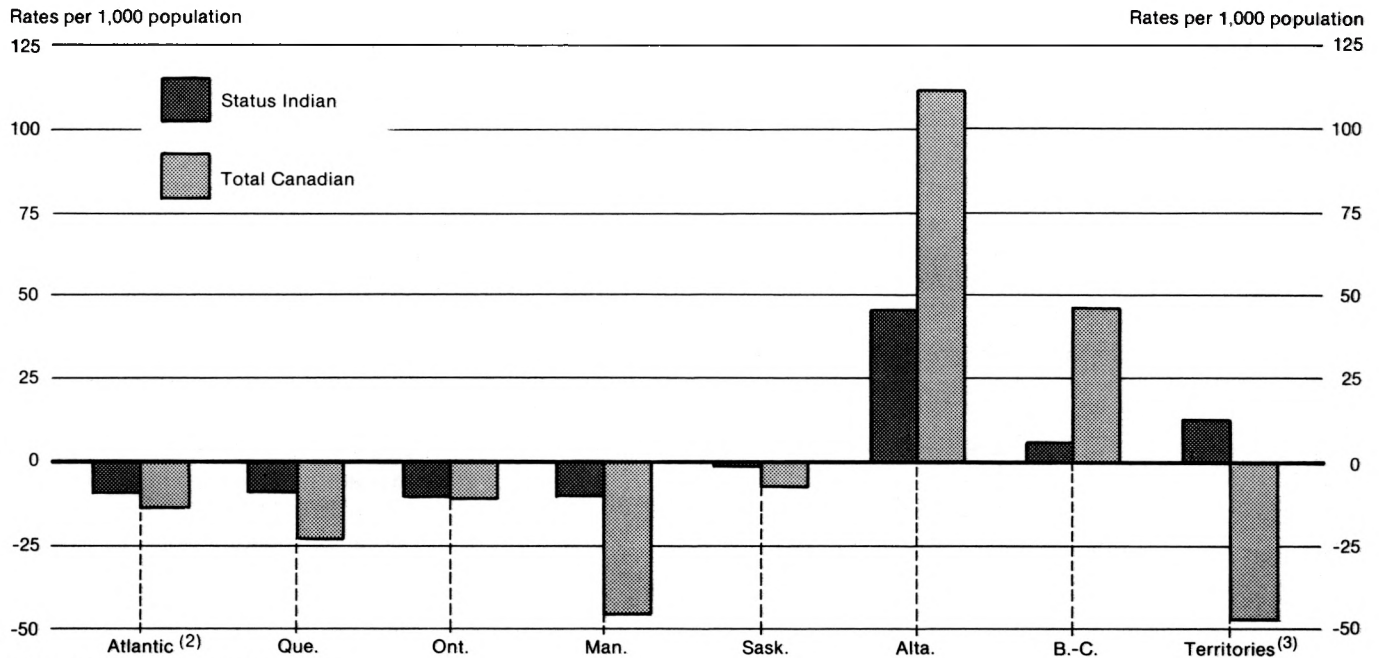


(1) INAC customized census data.

(2) Newfoundland has been excluded from current and previous place of residence.

Source: Special 1981 Census tabulations of mobility data based on 8 regions.

Figure 1
Interregional Net Migration Rates⁽¹⁾ for Status Indian and
Total Canadian Populations, 5 Years of Age and Over, 1976-81



(1) See Table 3 for calculation of rates.

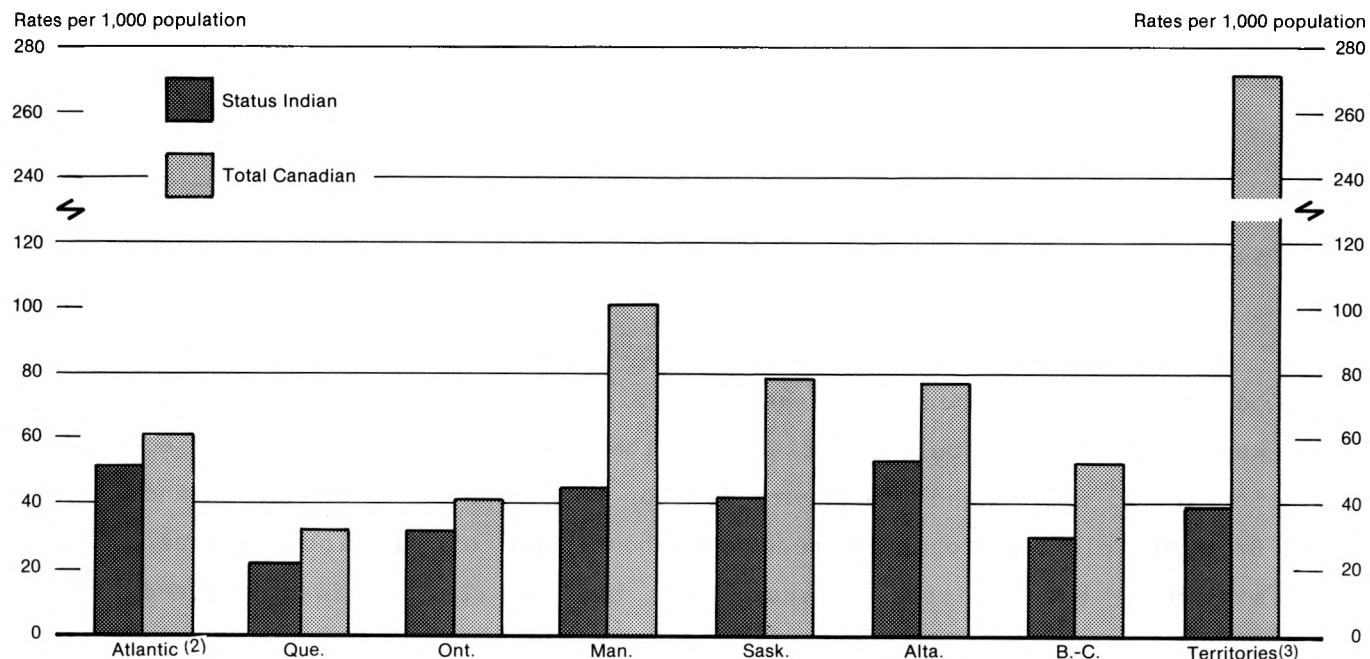
(2) The Atlantic region does not include Newfoundland.

(3) Yukon and Northwest Territories combined.

Source: 1981 Census special tabulations.

The out-migration rates and in-migration proportions are also compared since migration projections are developed in terms of projected rates and proportions. This analysis provides the Indian to Canadian ratios which are used in migration projections. A comparison of out-migration rates between status Indian and total Canadian populations shows a similar pattern in regional out-migration rates with the major exception of the Territories (Figure 2 and Table 4). If the Territories are excluded, the correlation coefficient between the Indian and Canadian out-migration rates is .70. For the Territories, the out-migration rate for the total Canadian population was seven times greater than that for status Indians. For both Indian and Canadian populations out-migration rates were lowest for Quebec followed by Ontario and British Columbia. Excluding the Territories,

Figure 2
Interregional Out-Migration Rates⁽¹⁾ for Status Indian and
Total Canadian Populations, 5 Years of Age and Over, 1976-81



(1) See Table 3 for calculation of rates.
(2) The Atlantic region does not include Newfoundland.
(3) Yukon and Northwest Territories combined.
Source: 1981 Census special tabulations.

Table 4. Interregional Out-Migration Rates for Status Indian and
Total Canadian Populations, 5 Years of Age and over, 1976-81

Region	Out-migration Rates (per 1,000 population)		Ratio of Indian to Canadian Rates (3) = (1)/(2)
	Status Indian (1)	Total Canadian (2)	
Atlantic(1)	51.6	60.9	0.85
Quebec	22.0	33.7	0.65
Ontario	31.8	40.5	0.79
Manitoba	44.3	100.4	0.44
Saskatchewan	42.0	78.9	0.53
Alberta	52.5	77.7	0.68
British Columbia	29.2	52.4	0.56
Territories(2)	38.8	271.7	0.14

(1) The Atlantic region does not include Newfoundland.
(2) Yukon and Northwest Territories combined.
Source: Table 3, Column 8.

the highest out-migration rates for the Canadian population were observed in Manitoba followed by Saskatchewan and Alberta, while for the Indian population the highest out-migration rates were seen in Alberta and the Atlantic regions.

Ratios of Indian to Canadian out-migration rates for each region range from 0.14 to .85, with a regional average of about 0.60. This set of ratios is used to obtain projected Indian out-migration rates.

In-migration proportions which have been calculated for both populations, represent the share of migrants each region receives. Regional in-migration proportions for the two populations are compared in Table 5 and graphed in Figure 3. For both populations, Alberta and British Columbia together received about half of all interregional migrants, but Manitoba, Saskatchewan and the Territories received larger shares of Indian than of Canadian migrants.

Table 5. Interregional In-Migration Proportions(1) for Status Indian and Total Canadian Populations, 5 Years of Age and Over, 1976-81

Region	In-Migration Proportions		Ratio of Indian to Canadian Proportions (3) = (1)/(2)
	Status Indian (1)	Total Canadian (2)	
	Expressed as %		
Atlantic(2)	4.3	6.8	0.63
Quebec	4.4	5.7	0.77
Ontario	14.5	22.4	0.65
Manitoba	9.3	5.0	1.86
Saskatchewan	13.6	5.9	2.31
Alberta	31.3	31.0	1.01
British Columbia	18.0	21.9	0.82
Territories(3)	4.6	1.3	3.54
Canada	100.0	100.0	...

... Not applicable

(1) An in-migration proportion represents the proportion of total interregional migrants who migrated to a particular region during the 1976-81 period.

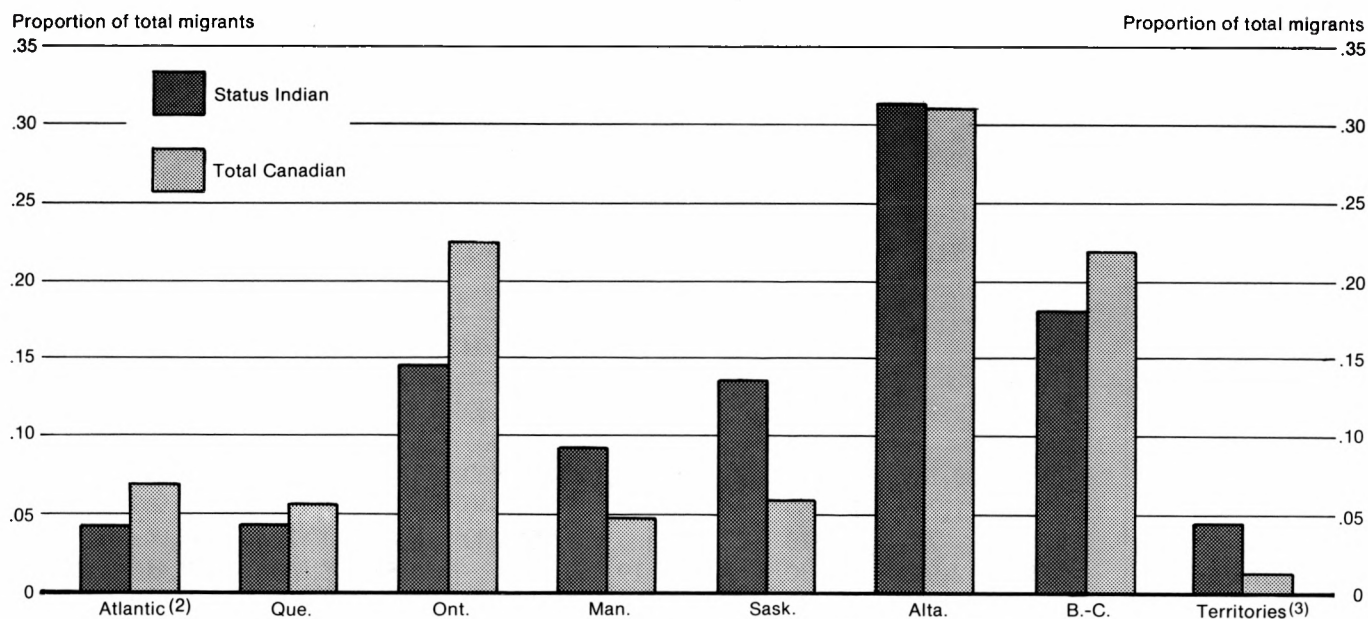
(2) The Atlantic region does not include Newfoundland.

(3) Yukon and Northwest Territories combined.

Source: Same as Chart 1.

Ratios of Indian to Canadian proportions are also presented in Table 5 and range in value from 0.6 for the Atlantic to 3.5 for the Territories. For example, they indicate that the proportion of Indian migrants which Manitoba and Saskatchewan received was about twice as large as that of Canadian migrants.

Figure 3
Interregional In-Migration Proportions⁽¹⁾ for Status Indian and Total Canadian Populations, 5 Years of Age and Over, 1976-81



(1) An in-migration proportion represents the proportion of total interregional migrants who in-migrated to a particular region during the 1976-81 period.

(2) The Atlantic region does not include Newfoundland.

(3) Yukon and Northwest Territories combined.

Source: 1981 Census special tabulations.

These in-migration proportions are further analyzed for each region of origin. The number of migrants, by region of origin and region of destination are given in Table 6 and corresponding proportions are provided in Table 7. These proportions represent the regional distribution of each region's out-migrants. For both

Table 6. Number of Interregional Migrants for Status Indian and Total Canadian Populations, 5 Years of Age and Over, by Region of Origin and Region of Destination, 1976-81

1976 Region of Residence	1981 Region of Residence								
	Atl.(1)	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Terr. (2)	Total Out-migrants
	Status Indian Population								
Atlantic(1)	-	25	320	40	10	80	30	15	520
Quebec	55	-	395	20	15	175	40	40	740
Ontario	245	295	-	340	150	535	520	70	2,155
Manitoba	20	50	300	-	380	555	325	35	1,665
Saskatchewan	15	0	125	200	-	880	155	35	1,410
Alberta	40	50	120	150	595	-	590	135	1,680
British Columbia	45	20	185	165	205	760	-	130	1,510
Territories(2)	10	0	10	15	10	160	145	-	350
Total In-migrants	430	440	1,455	930	1,365	3,145	1,805	460	10,030
Net migration	- 90	-300	-700	-735	- 45	1,465	295	110	0
	Total Canadian Population								
	Atl.(1)	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Terr. (2)	Total Out-migrants
	Total Canadian Population								
Atlantic(1)	-	9,545	36,020	3,570	2,630	28,130	12,425	1,100	93,420
Quebec	17,265	-	123,705	4,260	2,385	31,305	21,760	885	201,565
Ontario	38,235	39,385	-	21,745	13,145	126,730	75,825	3,855	318,920
Manitoba	3,050	1,795	17,850	-	13,525	34,640	24,885	1,160	96,905
Saskatchewan	1,555	770	6,770	7,330	-	35,030	16,665	925	69,045
Alberta	6,085	2,990	24,670	8,110	19,860	-	73,865	2,835	138,415
British Columbia	5,615	4,745	26,675	7,025	10,145	65,410	-	3,415	123,030
Territories(2)	565	655	1,625	540	1,010	6,745	6,045	-	17,185
Total In-migrants	72,370	59,885	237,315	52,580	62,700	327,990	231,470	14,175	1,058,485
Net migration	-21,050	-141,680	-81,605	-44,325	-6,345	189,575	108,440	-3,010	0

(1) The Atlantic Region does not include Newfoundland.

(2) Yukon and Northwest Territories combined.

Source: Special 1981 Census tabulation of mobility data for 8 regions, excluding Newfoundland from current and previous place of residence.

Table 7. Origin-Destination Migration Proportions(1) for Status Indian and Total Canadian Populations, 5 Years of Age and Over, 1976-1981
(Expressed as Percentage)

1976 Region of Origin	1981 Region of Destination								Total out migrants
	Atl.(2)	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Terr(3)	
	Status Indian Population								
Atlantic(2)	-	4.8	61.5	7.7	1.9	15.4	5.8	2.9	100.0
Quebec	7.4	-	53.4	2.7	2.0	23.7	5.4	5.4	100.0
Ontario	11.4	13.7	-	15.8	7.0	24.8	24.1	3.2	100.0
Manitoba	1.2	3.0	18.0	-	22.8	33.3	19.5	2.1	100.0
Saskatchewan	1.1	0.0	8.9	14.2	-	62.4	11.0	2.5	100.0
Alberta	2.4	3.0	7.2	8.9	35.4	-	35.1	8.0	100.0
British Columbia	3.0	1.3	12.3	10.9	13.6	50.3	-	8.6	100.0
Territories(3)	2.9	0.0	2.8	4.3	2.9	45.7	41.4	-	100.0
Total	4.3	4.4	14.5	9.3	13.6	31.3	18.0	4.6	100.0
	Canadian Population								
Atlantic(2)	-	10.2	38.6	3.8	2.8	30.1	13.3	1.2	100.0
Quebec	8.6	-	61.4	2.1	1.2	15.5	10.8	0.4	100.0
Ontario	12.0	12.4	-	6.8	4.1	39.7	23.8	1.2	100.0
Manitoba	3.1	1.9	18.4	-	14.0	35.7	25.7	1.2	100.0
Saskatchewan	2.3	1.1	9.8	10.6	-	50.7	24.1	1.3	100.0
Alberta	4.4	2.2	17.8	5.9	14.3	-	53.4	2.0	100.0
British Columbia	4.6	3.9	21.7	5.7	8.3	53.2	-	2.8	100.0
Territories(3)	3.3	3.8	9.5	3.1	5.9	39.2	35.2	-	100.0
Total	6.8	5.7	22.4	5.0	5.9	31.0	21.9	1.3	100.0

(1) Origin-destination proportions represent the regional distribution (by destination) of each region's out-migrants.

(2) The Atlantic region does not include Newfoundland.

(3) Yukon and Northwest Territories combined.

Source: Table 6.

populations, the major regions of destination for Atlantic and Quebec out-migrants were Ontario, followed by Alberta, which together received 69 to 77 per cent of all migrants. Alberta was the major destination of both Indian and Canadian migrants from the other regions. While British Columbia received more than half of the total Canadian migrants leaving Alberta, the major destinations of Alberta's Indians were both Saskatchewan and British Columbia which together received 70% of the Indian migrants.

Table 8 presents the Indian to Canadian ratios of the regional destination proportions which are used to obtain projected origin-destination proportions. As an illustration of their use, these ratios indicate that compared to the proportion of all Albertans who migrated to Saskatchewan that of Albertan Indians who moved to Saskatchewan was double.

Table 8. Indian to Canadian Ratios of Origin-Destination Proportions of the Migrant Population 5 Years of Age and Over, 1976-1981

Region of Origin	Region of Destination							
	Atlantic(1)	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Territories (2)
Atlantic(1)	-	0.47	1.59	2.03	0.68	0.51	0.44	2.42
Quebec	0.86	-	0.87	1.29	1.67	1.53	0.50	13.50
Ontario	0.95	1.10	-	2.32	1.71	0.62	1.01	2.67
Manitoba	0.39	1.58	0.98	-	1.63	0.93	0.76	1.75
Saskatchewan	0.48	0.00	0.91	1.34	-	1.23	0.46	1.92
Alberta	0.55	1.36	0.40	1.51	2.48	-	0.66	4.00
British Columbia	0.65	0.33	0.57	1.91	1.64	0.95	-	3.07
Territories(2)	0.88	0.00	0.29	1.39	0.49	1.17	1.18	-
Ratio for Total In-Proportions(3)	0.63	0.77	0.65	1.86	2.31	1.01	0.82	3.54

(1) The Atlantic region does not include Newfoundland.

(2) Yukon and Northwest Territories combined.

(3) Same as Table 5.

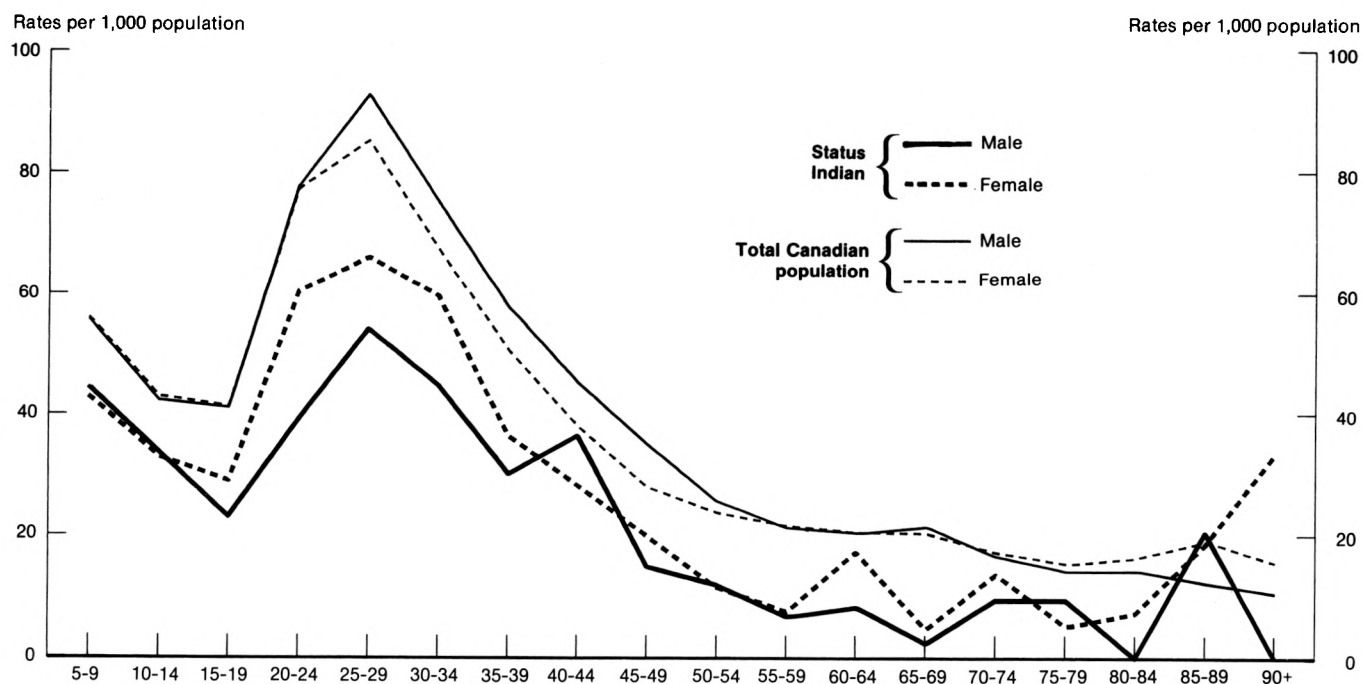
Source: Origin-destination proportions of Table 7.

An examination of origin-destination flows reveals that Indians migrated between geographically contiguous regions to a greater extent than did Canadian migrants. About 55% of Indian migrations occurred between contiguous regions compared to 45% of Canadian migrations.

3.2.2 Age-Sex Patterns of Migrants

As indicated in Section 3.1, regional age-sex specific migration rates are not reliable for Indian migrants owing to their small numbers. But age-sex specific migration rates can be compared at the national level for both status Indians & total Canadians, 5 years of age and over (Figure 4). For both populations the highest migration rates were experienced in the highly mobile 25-29 age group. But the rates for Indian males aged 20-34 did not peak to the same extent relative to other age groups, as observed for the Canadian population. There is more similarity in age patterns of migration between Indian and Canadian females than there is for males. For both sexes, patterns of Indian migration become erratic in the older age groups.

Figure 4
Age-Sex Specific Interregional Migration Rates⁽¹⁾ for Status Indian and Total Canadian Populations, 5 Years of Age and Over, Canada, 1976-81



(1) Rates have been calculated by dividing the number of interregional migrants of each age group 5-9 through 90+ (age at end of 1976-81 period) by the corresponding 1981 population.
Source: 1981 Census special tabulations.

Comparisons between male and female age-specific rates for Indian migrants indicate that females in the age groups 20-34 had higher rates than those of males. For example, the 5-year migration rate for Indian females in the age group 25-29 was about 66 migrants per thousand population, compared to a corresponding 54 per thousand for Indian males. In contrast, for the Canadian population in general, males tended to be slightly more mobile than females. The migration rate for Canadian females aged 25-29 was about 85 per thousand, compared to a rate of 93 per thousand for males of the same age.

Table 9 provides the percentage distribution of population and interregional migrants, by selected age groups and sex. Indian and Canadian females aged 20-34 represent about 26% and 23% respectively of the migrant population aged 5 and over. In contrast, Indian males in the same age group represent only 15% of the migrant population compared to 24% for Canadian males. Female migrants aged 20-34 and children aged 5-14 together represent almost 60% of Indian migrants, compared to 40% for Canadian migrants.

The age distribution of Indian migrants partly reflects the fact that the Indian population has a younger age structure than the Canadian population in general. About a third of both the Indian population and its migrants, 5 years of age and over, are children aged 5-14 as compared to 16% for Canadians in general. With its younger age structure, a much higher proportion of the Indian population is in the 5-19 age groups, compared to the Canadian population.¹²

12. The standardized Indian rate of total interregional migration was about 32 migrants per 1,000 population using the age-sex structure of the Canadian population, compared to 36 or 3.6% for the unstandardized rate as indicated in Chart 1.

Table 9. Percentage Distribution of Population and Interregional Migrants by Selected Age Groups(1) and Sex for Status Indian and Total Canadian Populations, 5 Years of Age and Over, 1981

Age ¹ and Sex	Percentage Distribution			
	Status Indian		Total Canadian	
	Population	Interregional Migrants 1976-81	Population	Interregional Migrants 1976-81
	%	%	%	%
5-14 M.	16.3	17.4	8.4	8.4
F.	15.8	16.4	8.0	8.0
15-19 M.	7.4	4.6	5.3	4.4
F.	7.6	6.0	5.0	4.3
20-24 M.	5.3	5.7	5.2	8.3
F.	6.1	10.2	5.2	8.3
25-29 M.	3.9	5.8	4.8	9.2
F.	5.1	9.3	4.9	8.5
30-34 M.	3.2	3.9	4.6	7.0
F.	4.1	6.8	4.6	6.3
35-44 M.	4.5	4.0	6.7	7.1
F.	5.7	5.1	6.6	6.1
45-54 M.	3.1	1.2	5.6	3.5
F.	3.6	1.6	5.6	2.9
55-64 M.	2.0	0.4	4.6	2.0
F.	2.2	0.7	5.0	2.2
65+ M.	2.1	0.4	4.3	1.5
F.	2.0	0.5	5.6	2.0
TOTAL	100.0	100.0	100.0	100.0

(1) Age as of June 1, 1981. Note, age of migrant in 1981 is not necessarily age at time of migration.

Source: Same as Table 6.

These figures, which show that a third of the Indian migrant population were aged 5-14 and that females outnumbered males in the age group 20-34, could indicate that a large segment of Indian migrants may have comprised young families headed by a female lone parent. Clatworthy (1980), in his study of Indian migrants in Winnipeg noted that the majority by household type, were single parent families. His study and that of Gerber's (1977) on Indian community characteristics and out-migration also found that females outnumber males in the migrant population. Further research on the sex differential in Indian migration would be helpful in understanding the causes behind this phenomenon. Perhaps the observed sex differential results from a variation by sex in the census enumeration of the mobile Indian population. It could be that young male Indians who are highly mobile are missed by the census. Also, some bias may be created by the fact that the inmate population, one in which Indians are over-represented, is not included in the 20% sample collected by the census for the ethnic and mobility questions.

The methodology used in projection of migrants by age and sex (see Section 4) incorporates the younger age structure of the Indian population noted here. But because Indian age-sex specific rates were unreliable at the regional level and rates at the national level became erratic in older age groups, adjusted Canadian rates were used as input. However, adjustments for the noted sex differential were not incorporated into these rates due to some uncertainty about the actual extent of this differential and the marginal impact it would have in population projections. Thus, the number of male migrants in certain age groups (20-34) could be overestimated. But, given the low impact of interregional migration on projected population growth, this bias is not considered serious for projection purposes.

4. PROJECTION METHODOLOGY

The approach to the projection of interregional migration of registered Indians is severely restricted by the fact that the only data available are the 1981 Census estimates of migration for the 1976-81 period. From these estimates, projections of annual migration are developed on the basis of the comparative analysis presented in Section 3.

4.1 Approach

Migration analysis of status Indians and Canadians (in Section 3) indicated similar patterns, overall, for out-migration and destination. On the basis of these similarities, it was assumed that projected trends in annual migration for all Canadians would be applicable to the Indian population (see Section 5 for assumptions). Projections of annual migration flows for each province had already been developed by Statistics Canada in its projections for Canada and the provinces, 1984-1996 (Statistics Canada, 1985). These projections of Canadian annual migration may not be totally appropriate for registered Indians. However, given the lack of other data on Indian migration and the similarity in 5-year migration patterns between the two populations, they represent a reasonable choice.

The Indian to Canadian ratios of migration rates and proportions given in Section 3 were applied to these projected migration streams in order to obtain annual migration projections for Indians. In order to apply these ratios, projections of Canadian interprovincial migration were adjusted to correspond to the 8 regions (provincial aggregates and separate provinces) as described in Section 3. Although Canadian projections are based on the Census year period (June 1 - May 31) data were not adjusted to correspond to the calendar year period of Indian projections. For example, the 1983-84 Canadian

projection year was used as the 1984 calendar year of the Indian projection. For the first two years of the Indian projection period, 1982 and 1983, the 1981-82 and 1982-83 annual estimates of Canadian interprovincial migration were used.

There are a number of ways in which migration projections can be developed, such as: projecting numbers of total out-migrants and in-migrants; projecting levels of net migration; or, projecting out-migration rates and in-migration proportions. The approach in the projections for Canada and the provinces utilized projected out-migration rates and origin-destination proportions. In order to easily convert scenarios of Canadian migration into corresponding scenarios for the Indian population, the same approach, modified for the 8 regions, was also used. It can be summarized at the regional level as follows:

- (i) Annual out-migration rates are projected for each region, (1982-96).
- (ii) For each region annual proportional distributions of its out migrants by province of destination are projected.
- (iii) These projected out-migration rates are applied to corresponding projected populations. This gives the projected number of total out migrants for each region of origin. These migrants are then distributed by region of destination using the projected origin-destination proportions. Thus the total number of out and in migrants by region are obtained for each year.
- (iv) The projected number of total out-migrants from each region are further distributed by age and sex using age-sex distributions of migrants. These proportional distributions are obtained indirectly, at each projection year, through the application of assumed age-sex specific regional out-migration rates to the projected annual survivor population.

4.2 Steps in Projection of Registered Indian Migrants

The main steps in projecting interregional migration of registered Indians can be summarized as follows:

- (i) Development of ratios to reflect Indian/Canadian differentials in out-migration rates and destination proportions. The two sets of ratios, calculated from 1981 Census migration data, were presented in section 3.2. One set for out-migration rates and the second set for origin-destination proportions were given in Tables 4 and 8 respectively. These ratios are assumed to be constant throughout the projection period.
- (ii) Adjustment of data on Canadian interprovincial migration to correspond to the 8 regions of origin and destination. These regions consist of 6 separate provinces and 2 regions - Atlantic and Territories (see Section 3).
- (iii) Application of ratios to Canadian annual out-migration rates and proportions to obtain corresponding projected rates and proportions for Indians. The application of regional out-migration ratios adjusts Canadian regional rates downward by the same factors for each projection year. The application of origin-destination ratios increases or decreases Canadian destination proportions for each region of origin by the same factors for each projection year.
- (iv) Projections of the number of registered Indian migrants by region of origin and destination. Projected annual rates and proportions are applied to projected population to obtain numbers of in and out migrants by region.
- (v) Distribution of migrants by age and sex. Adjusted Canadian age-sex specific regional out-migration rates were used as input to obtain the required proportional distributions of Indian migrants by age and sex.

4.3 Test of Projection Methodology

The ratio technique outlined in the projection procedure in Section 4.2 was tested with the 1976-80 annual population (as at December 31st) from the Indian Register using annual estimates of Canadian interprovincial migration for the 1976-81 period. Steps (ii) to (iv) were carried out for the 1976-81 period with the same set of ratios indicated in Step (i), (see Section 4.2), to obtain the number of total in and out migrants by region, for each of the 5 years. These annual numbers were then aggregated over the 5-year period. The aggregated levels of net migration are presented in Table 10 of Section 6. The annual levels of net migration are plotted in Figure 5 of Section 6 for selected regions.

The resulting volume and patterns of interregional migration estimated by the ratio technique for registered Indians were compared with those indicated by adjusted 1981 Census data for status Indians. For this comparison census data were adjusted to offset the effect of the deficiencies of census migration data, discussed in Section 2. It was assumed that the census understates the 5-year volume of annual migration for the Indian population to the same extent, by region, as that indicated for all Canadians. As well, an approximation of Indian migrants aged 0-4 was also incorporated into the census-based estimate.

At the national level, about 17,400 interregional migrants were obtained with the ratio technique using the population from the Indian Register, over the 5-year period. Census data adjusted for understatement yielded about 18,400 status Indian migrants over the 1976-81 period. These figures can only be treated as rough estimates of the five-year volume of annual Indian migration. The extent of understatement assumed at the regional level in calculating the total census-based figure of 18,400 may have been overestimated, as the

registered Indian population which is larger produced a smaller estimate (17,400).

Relative to their respective 1981 populations, the 17,400 migrants represented about 5.2% of the registered Indian population, while the 18,400 migrants represented about 5.7% of the census status Indian population. The 1.7 million Canadian migrants, derived from annual estimates, represented about 7% of the total 1981 Census population. Thus Register and census-based Indian migration rates were about 75% and 80% of the Canadian rate respectively.

At the regional level, the greatest deviations in terms of net migration were observed for Quebec, Ontario and Saskatchewan. Given the differences in 1981 regional population between the Census and Register, these deviations are not surprising. However, the basic westward flow of the 1976-81 period is maintained with this procedure. Overall, the ratio technique, when applied to the Register population for the 1976-81 period, gives results which appear reasonable when judged against 1981 census-based migration volumes and patterns of status Indians.

4.4 Limitations of Procedure

There are obviously a number of limitations with this projection procedure. It is based on some simplified assumptions. Migration projections developed for the Canadian population are assumed to be applicable to registered Indians on the basis of a similar westward flow in their interregional migration over the 1976-81 period, as recorded by the 1981 Census. Observed similarities and differences in 1976-81 migration between the two populations, are assumed to remain the same throughout the projection period. Also, it is assumed that census migration data on status Indians is applicable to INAC's registered Indian population, although there are differences in Indian regional population data between the Census and Register.

The methodology does have the advantage of allowing the changing age-sex structure of the projected Indian population to be reflected in the migrant population. But the Canadian age-sex specific migration rates assumed for the Indian population may have produced an overestimate of male migrants for certain age groups, depending on the actual extent of the sex differential discussed in Section 3.

In addition, Census migration data on status Indians pose some problems of reliability because of the small numbers which result from the disaggregation of data. For example, age-sex specific migration rates become erratic in older age groups. Some of the origin-destination flows of Indians are small, although the majority are large enough to be considered reliable.

These limitations, though, have to be considered in light of the marginal impact migration has on regional growth of the Indian population. The main advantage of this method is that it allows projected annual flows of Canadian interregional migration to be easily converted into corresponding scenarios for the Indian population.

5. MIGRATION ASSUMPTIONS

It was assumed that projected migration of registered Indians would reflect the migration patterns already developed for the total Canadian population. This assumption was based on the observation that the westward flow of Canadian migrants during the 1976-81 period also occurred for Indian migrants. This provided some indication that the push and pull factors behind the interregional migration of Canadians in general, may operate as well with the Indian population. According to 1981 Census data, almost 75% of status Indian migrants moved between off-reserve locations over the intercensal period. Thus they could be exposed to similar economic forces motivating Canadian migrants unlike those Indians residing on-reserve.

The major difference in migration patterns between Indian and Canadian migrants is that Indian migrants moved between geographically contiguous regions to a greater extent than Canadians with Manitoba, Saskatchewan and the Territories receiving larger shares of Indian than of Canadian migrants. This difference and the lower rate of Indian out-migration were incorporated into the Canadian migration projections to obtain corresponding scenarios for the registered Indians.

Three possible migration scenarios were available for the Indian projections. These can be characterized as follows:

- Scenario A A continuation of the most recent trends in interregional migration into the early nineties. These are characterized by a general reversal of the mid 1970's westward migration flow. A reversal of this westward pattern started during the years 1981-83.
- Scenario B Recent observed trends in migration are maintained for a short-term period until the mid 1980's, followed by a gradual return to a westward flow.

Scenario C A 2-year average of interregional migration rates and proportions based on 1981-82 and 1982-83, which was kept constant over the migration projection period.

Scenario A was selected for the current projections. Only one scenario was chosen since the impact of the different scenarios on projected population was minimal for most regions with the exceptions of Ontario and Alberta. Scenario A is currently considered the 'most likely' scenario in the Canadian projections for the next few years i.e. that recent trends and patterns will continue until the early nineties.

Indian out-migration rates and in-proportions based on Scenario A were applied to the population of the 8 regions (separate provinces and provincial aggregates). The same sets of projected rates and proportions were also applied to regions whose populations were adjusted to correspond to INAC's administrative regions. These were: Quebec, Ontario, British Columbia and the Territories (Yukon only).

6. PROJECTION RESULTS AND EVALUATION

Projected net migration for each region is summarized in Table 10, by 5 year intervals, 1982-86, 1987-91 and 1992-96. Net migration aggregated over the 1977-81 period, based on annual levels estimated for registered Indians, is also presented. For both registered Indian and Canadian populations, annual net migration patterns over the 1977-81 period, are illustrated for selected regions in Figure 5. As expected, patterns of migration are similar for both populations, highlighted by Alberta changing from a net flow of migrants during 1976-81 to a net outflow until the early nineties with the complete reverse occurring for Ontario.

Table 10. Estimated and Projected Net Migration of Registered Indian Population by 5-year Intervals, 1977-96, by Regions

Region	Estimated Migration			Projected Migration 'Scenario A'		
	1977-81			1982-86	1987-91	1992-96
	In	Out	Net Migration	Net Migration		
Atlantic(1)	760	900	- 140	60	130	210
Quebec	870	920	- 50	220	120	240
Ontario	2,690	2,960	- 270	890	790	500
Manitoba	1,850	2,790	- 940	- 90	- 70	-610
Saskatchewan	2,430	2,900	- 470	210	270	260
Alberta	4,950	3,370	1,580	-1,130	-1,140	-550
British Columbia	2,840	2,770	70	- 450	- 400	-390
Territories(2)	980	760	220	290	300	340
Canada	17,370	17,370	0	0	0	0

(1) The Atlantic region does not include Newfoundland.

(2) Yukon and Northwest Territories combined.

Source: Projections Section, Demography Division, Statistics Canada.

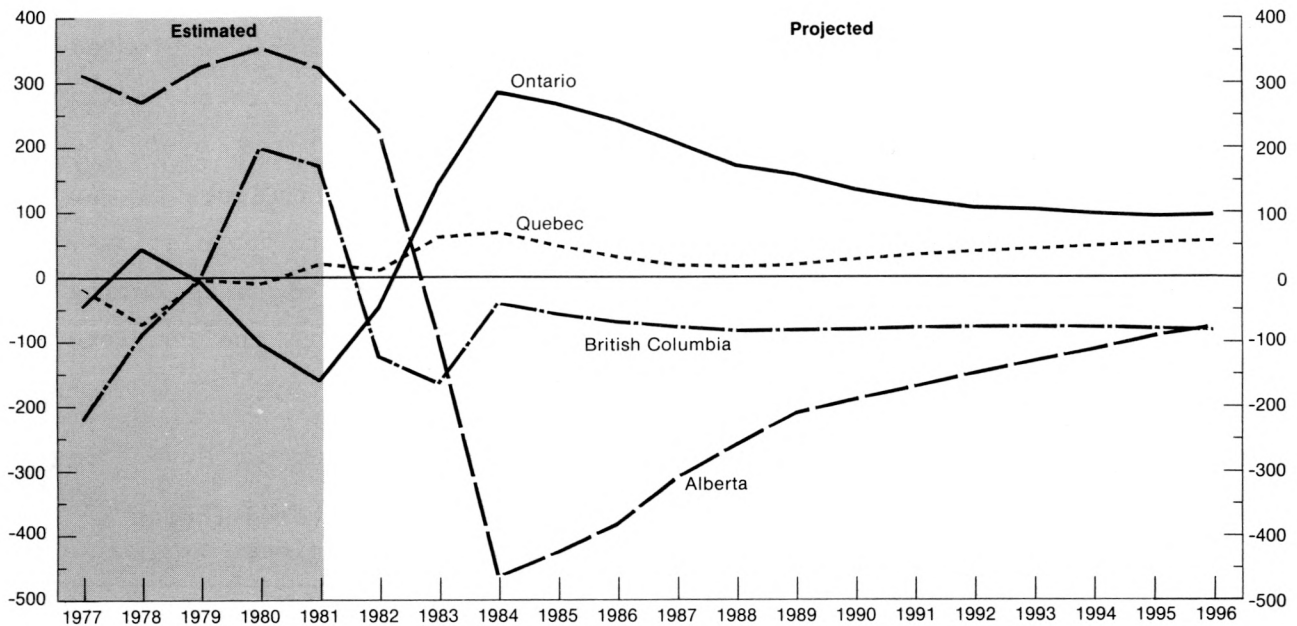
Estimated 1977-81: based on annual levels estimated for population from Indian Register

Projected 1982-96: from the medium growth scenario for registered Indians (Projection 3), based on a slow decline in fertility, decreasing mortality and migration Scenario A.

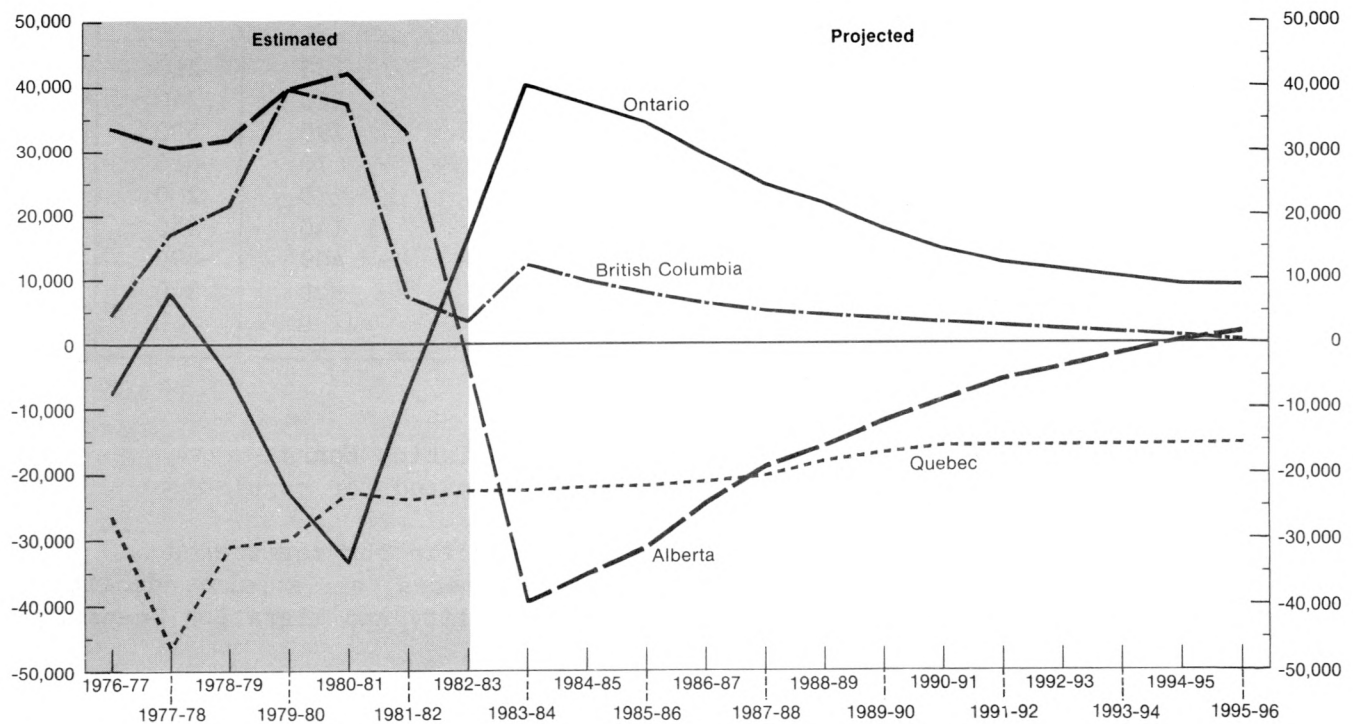
Figure 5

Estimated and Projected Annual Volume of Total Interregional Net Migration for Registered Indian and Total Canadian Populations, for Selected Regions, 1976-96⁽¹⁾

Registered Indian Population



Total Canadian Population



1) Data are presented by calendar years 1977-96, for Registered Indian population and by census years (June 1 — May 31) 1976-77 to 1995-96, for the total Canadian population.

Sources: Data for Registered Indian population: Same as Table 10.

Data for total Canadian population: Statistics Canada, Demography Division; 1976-77 to 1982-83 adjusted migration estimates, Estimate Section; 1983-84 to 1995-96, adjusted population projection No. 1. Projection Section.

Relative to the total Canadian situation, interregional migration represents a much smaller component of regional population growth for registered Indians. Its impact on regional population growth is less than that of Canadian interregional migration because of the considerably higher fertility of the Indian population. Natural

Table 11. Projected Annual Rates of Natural Increase and Net Internal Migration Based on 15-Year Average(1) for Registered Indian and Total Canadian Populations

Region or Province/ Territory	Annual Rate of Natural Increase(2)		Annual Rate of Net Internal Migration(2)	
	Total Canadian	Indian	Total Canadian	Indian
	Average Rate (per 1,000)		Average Rate (per 1,000)	
Atlantic(3)	...	18.2	...	2.2
Newfoundland	8.7	...	2.7	...
Prince Edward Island	4.7	...	4.0	...
Nova Scotia	3.8	...	2.4	...
New Brunswick	4.8	...	3.4	...
Quebec	4.6	13.7	2.6	1.2
Ontario	4.2	16.5	2.1	1.7
Manitoba	4.6	23.9	2.1	0.9
Saskatchewan	6.5	27.4	2.9	0.9
Alberta	7.9	25.7	6.0	4.7
British Columbia	4.4	16.7	1.4	1.1
Territories(4)	...	19.5	...	3.8
Yukon	9.6	...	16.2	...
Northwest Territories	15.5	...	8.3	...
Canada	5.0	20.5	...	...

- (1) The 15-year averages for the Indian population are based on calendar years, 1982-96 and on Census years, 1983-84 to 1997-98, for the total Canadian population.
- (2) Annual rates are calculated by dividing annual natural increase and the absolute value of net migration by population at the beginning of year, multiplied by 1,000.
- (3) The Atlantic region does not include Newfoundland.
- (4) Yukon and Northwest Territories combined.
- ... Not applicable.

Source: Data for registered Indian population: same as Table 10.

Data for total Canadian population: population projection

No. 1, based on low fertility, declining mortality and migration scenario A, Demography Division, Statistics Canada.

increase accounts for almost all of regional Indian population growth. Registered Indians have a much higher annual rate of natural increase (births minus deaths) compared to Canadians in general (see Table 11). For example, the 15-year average of the projected annual rate of natural increase for the total Canadian population for 1983-84 to 1997-98 is 5 per thousand compared to 20.5 for the total Indian population for 1982-96, based on assumptions of declining fertility in both populations¹³. These average projected rates vary by region (see Table 11).

Relative to projected Indian rates of natural increase, migration rates are almost negligible. As seen in Table 11, for the Canadian population, net migration rates are at least half of the corresponding rate of natural increase in most provinces. In contrast, for the registered Indian population, migration rates represent at most 20% of the corresponding rate of natural increase, in the case of Alberta and the Territories, and as little as 3% in other regions.

Table 12 provides the projected percentage change of registered Indian and total Canadian populations by natural increase and net internal migration for the 1983-88 period. A comparison between the two populations serves to illustrate the relatively small impact internal migration is expected to have on regional growth of the Indian population, even for regions such as Alberta and Ontario in which migration is the most significant. For example, in Ontario the projected percentage changes of the total population over the 1983-88 period, due to natural increase and net migration are roughly 3% and 2% respectively, compared to a corresponding 9% and 1.4% for its

13. The Canadian projection referred to is projection No. 1, based on migration Scenario A, and assumptions of low fertility and declining mortality. The registered Indian projection used here is medium growth (Projection 3), also based on migration Scenario A, a slow decline in fertility, and declining mortality.

registered Indian population. Of the total 6% increase projected for Ontario's population over the 5-year period, which includes growth due to international migration, internal migration accounts for approximately 31%. In contrast, migration represents 13% of the projected 11% increase in Ontario's registered Indian population.

Table 12. Projected Percentage Change of Registered Indian and Total Canadian Populations Due to Natural Increase and Net Internal Migration 1983-88(1)

Region or Province/ Territory	Projected Percentage Change in Population(2)					
	Registered Indian			Total Canadian		
	Total Change %	Natural Increase %	Net Internal Migration %	Total(3) Change %	Natural Increase %	Net Internal Migration %
Atlantic(4)	11.6	10.5	1.1	...	...	...
Newfoundland	...	...	...	6.7	5.6	1.3
Prince Edward Island	...	...	...	4.3	3.1	1.4
Nova Scotia	...	...	...	4.2	2.8	1.7
New Brunswick	...	...	...	4.7	3.4	1.7
Quebec	8.3	7.4	0.9	2.6	3.5	- 1.7
Ontario	10.8	9.4	1.4	6.2	3.1	1.9
Manitoba	13.3	13.3	0.0	4.9	3.3	0.5
Saskatchewan	16.5	15.8	0.7	6.8	4.6	1.7
Alberta	10.5	14.3	- 3.8	- 0.2	5.6	- 6.7
British Columbia	9.0	9.7	- 0.7	6.5	3.4	1.5
Territories(5)	13.0	12.2	0.8	...	...	...
Yukon	...	...	...	- 6.3	6.0	-12.5
Northwest Territories	...	...	...	9.1	10.8	- 1.2

- (1) Data are based on calendar year, 1983-88, for the registered Indian population and on census years, 1983-84 to 1988-89 for the total Canadian population.
- (2) Percentage change is obtained by dividing total change or change due to natural increase or migration for the period, by the population at the beginning of the period, multiplied by 100.
- (3) Total percentage change for the Canadian population in general includes growth due to international migration.
- (4) The Atlantic Region does not include Newfoundland.
- (5) Yukon and Northwest Territories combined.
- ... Not applicable.
- Source: Same as Table 11.

Thus, although the proportion of the Indian population that migrated interregionally during 1976-81 is about 3/4 of that of the Canadian population, the impact of migration on Indian population growth in the regions is considerably less than its impact on the regional growth of

the Canadian population in general. The relatively small impact of interregional migration on regional population growth of registered Indians is due to high levels of Indian fertility, resulting in the greater contribution of natural increase to total growth.

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