

### 1.0 INTRODUCTION

In Canada, international migration has been an important component of total population growth. During the 1970's the estimates of immigration to Canada indicated that approximately 1.4 million persons entered the country. This represented nearly 6% of Canada's total population in 1981. Emigration was approximately 635,000, less than half the immigration level. During the decade, net international migration accounted for nearly 30% of the growth in Canada's total population.

Clearly, accurate data on the levels of immigration and emigration are required for estimating and projecting the size and composition of the Canadian population and are also important in setting immigration policy. In Canada, desired immigration levels for the next three years are set and updated each year. The determination of desired levels is based on a wide range of factors including demographic trends and labour market conditions.

Traditionally, data on immigration to Canada have been obtained from administrative data on "landed immigrants" collected by immigration authorities. Although these data are used as the official estimates of immigration to Canada and form the immigration component for population estimates and projections, there are clearly other persons who enter Canada each year. For example, there are Canadian citizens who return after living abroad and persons who come to Canada temporarily to work or study. Data on the latter groups are very limited.

For emigration, there is even less data available. Until 1981, annual estimates of emigration were produced using data on emigrants to the United States and the United Kingdom, collected by immigration authorities in those countries. These were supplemented by an estimate of emigration to all other countries that was derived using residual techniques for the most recent intercensal period (for a description see Statistics Canada, 1982). Evaluations following the 1981 Census showed this method of estimation to have serious shortcomings and changes have been made using some of the data to be discussed below.

One approach to the development of improved data on international migration is the exploration of existing administrative records. This paper is concerned with two such administrative record sets, individual income tax records and family allowance records.

### 2.0 DEFINITIONS AND TRADITIONAL SOURCES OF DATA

The United Nations has recognized the problems with data on international migrants, in particular the lack of comparability of coverage and definitions across countries. Specific recommendations have been made for the collection of immigration and emigration statistics (United Nations, 1980). Kelly (1981) has considered these recommendations from a Canadian perspective and Kraly (1981) has done a similar analysis in the case of the United States.

Basically, the United Nations' recommendations recognize two types of international migrants, short term and long term. Short term migrants are those who enter or leave a country for less than one year and long term migrants are those who enter or leave a country with the intention of staying more than one year. This paper is restricted to a consideration of long-term migrants. Before discussing new data sources, it is appropriate to consider certain migrant categories that

have been identified by the United Nations and are applicable to Canada.

#### 2.1 Persons Entering Canada

Persons entering Canada with the intention of staying at least a year can be divided into five main classes:

##### - Landed Immigrants

Landed immigrants are essentially non Canadian citizens who are legally admitted to Canada for the first time and have the intention of establishing permanent residence in Canada. Data on the number and characteristics of landed immigrants are collected and tabulated by immigration authorities. Data on the stock of immigrants in Canada are also available from the Census of Population.

##### - Returning Canadians

This group includes Canadian citizens and landed immigrants who have been away from the country for at least one year. However, this group excludes government workers temporarily posted abroad (4th group) who are generally counted (e.g., in the census) as permanent Canadian residents. Some data on returning Canadians can be derived from the Census of Population by combining data on immigrant/not immigrant status, year of immigration, and place of residence five years earlier. However, in general, there is a lack of data on this group of persons entering Canada.

##### - Temporary Residents

This group includes persons who are legally admitted to Canada, perhaps for work or study, for temporary periods of time amounting to more than one year. Data on these persons are collected when visas are issued, however such data have not been tabulated on a regular basis.

##### - Canadian Residents Temporarily Posted Abroad

This group includes Canadian diplomats, councillor representatives, members of the armed forces and other government representatives (and their dependents) returning from posting abroad. No data are available on the movement of this group, however Census provides data on the size of the population abroad as of the Census date. In the Census of Population these persons are counted as Canadian residents and are allocated to their "usual place of residence".

##### - Foreign Residents Temporarily Posted to Canada

This includes foreign diplomats, consular representatives, military attachés to Canada and their dependents coming to Canada for a temporary posting. Again, no data are available on this group.

#### 2.2 Persons Leaving Canada

Long term migrants leaving Canada are those persons who have been in Canada for at least one year and who are leaving with the intention of staying away at least a year. Such persons can be divided into four main groups. The only data available on any persons leaving Canada are limited immigration statistics (by country of origin) collected by various recipient countries. The coverage of such data differs depending on the definition of immigrant used in each country. Historically, data on Canadians migrating to the U.S. and U.K. have been tabulated on a regular basis (see Statistics Canada, 1982, Table 2).

##### - Canadian Residents

This group includes both Canadian citizens and landed immigrants who are leaving Canada for at least one year.

Again, as with immigrants, diplomats and other government representatives are not included.

- **Temporary Residents in Canada**  
These are persons who have been legally in Canada for more than one year on a temporary basis.
- **Canadian Residents Temporarily Posted Abroad**  
These persons are Canadian diplomats, councillor representatives, members of the armed forces and their families who temporarily leave Canada for a posting abroad.
- **Foreign Residents Temporarily Posted to Canada**  
These persons are generally government employees (e.g. foreign diplomats, councillor representatives, members of the armed forces of a foreign country) and their families who are leaving Canada after completing a temporary posting in Canada.

### 3.0 NEW SOURCES OF DATA

#### 3.1 Tax Records

Individual income tax records represent one potential source of data on international migration. In summary, the methodology(1) identifies migrant taxfilers by comparing mailing addresses in successive years, imputes dependents to these taxfilers and makes allowance for the 5 to 10% of the population that is still not covered. Persons who file from outside Canada and who filed from within Canada the year before are counted as emigrants. Immigrants are identified in one of two ways. Those who immigrate to Canada and, in the previous year, were not subject to Canadian income tax (e.g. landed immigrants) are identified on the tax record as having entered Canada during the year. Other persons who enter Canada but who were subject to Canadian income tax in the previous year (e.g. armed forces personnel) are identified by a change in mailing address from outside Canada to within Canada.

Since the geographic coding of the tax files is based on the mailing address, the period of migration is generally defined by the filing dates of successive tax years. In practice this is approximately one year, from April to April. An exception is the immigrants identified by an immigrant code on the tax file and not by a change of address. For these immigrants the migration period is the calendar year.

In Table 1 are estimates of total immigration and emigration derived from tax records for each of the years 1976-77 to 1980-81. In terms of the classes of immigrants and emigrants delineated earlier, the tax records theoretically cover all classes except employees of foreign governments or agencies who are not subject to Canadian income tax.

**TABLE 1**  
Estimates of International Migration Derived From Income Tax Records  
Census Years(2), 1976-77 to 1980-81 Canada

| Census Year | Immigration | Emigration |
|-------------|-------------|------------|
| 1976-77     | 111,505     | 42,525     |
| 1977-78     | 91,982      | 47,205     |
| 1978-79     | 78,542      | 46,607     |
| 1979-80     | 93,238      | 38,121     |
| 1980-81     | 128,772     | 33,631     |

#### 3.2 Family Allowance Records

The Family Allowance Program provides a monthly payment for virtually all children under the age of 18 years. The main exclusions are persons earning a minimum income and this only affects a small proportion of 16 and 17 year olds.

Since a cheque is mailed to each family every month, the addresses of recipients are carefully monitored and in particular, any changes of address are carefully followed-up. In fact, the Post Office is not permitted to forward cheques to new addresses but rather they are returned for follow-up. Following a move, if no change of address is received from recipients, an investigation is made to determine the status of the account and the reason for the change in address (e.g., left the country).

The family allowance records have been used since the 1950s to estimate interprovincial migration. Recent changes to the administrative system and development work by both Statistics Canada and Health and Welfare Canada have resulted in a number of new statistical systems that provide data on the population and migration of children. In the case of migration, data are available for international, intraprovincial and interprovincial migration. For a description of the data series at the provincial level, see Health and Welfare Canada (1981), and Hache (1983); for a discussion of work on the development of small area data, see Norris (1983).

The family allowance records provide data by single years of age on both international immigration and emigration of children. For immigrants, there are four categories: (1) landed immigrants, (2) returning Canadian residents, (3) "visitors" who have been residing in Canada for at least 12 months and (4) foreign transfers. The first two classes are essentially the first two classes of long term migrants discussed earlier. In the case of visitors, eligibility for family allowance is established only after residency in the country for 12 months and the payment of Canadian income taxes. At that time a retroactive payment is made and this payment procedure continues on a year by year basis. This class of "visitors" is essentially the group of temporary residents discussed above. Finally, the foreign transfers are persons who are temporarily out of the country but who continue to pay Canadian income tax (e.g., military personnel).

For emigrants there are three categories: (1) Canadian residents, (2) "visitors" and (3) foreign transfers. Note that the data on both immigration and emigration of children cover all the classes outlined earlier with the exception of employees of foreign governments. A small caveat is that in the family allowance data the difference between short term and long term is not recognized, although the majority of moves are probably for at least 12 months.

The family allowance system that produces data on international migrants at the provincial level is known as M0024. Data from this system have been available since 1978. Monthly data for January to June or July to December are produced from this system every six months. In addition to producing data for the most recent six month period, data are revised for the three previous six month periods. The revisions to the data account for late changes of address, corrections to the file due to follow-ups, etc. In other words there are four versions of data for every six month period. The completeness of each of the versions for both immigration and emigration is shown in Table 2. For emigrants, the first version is approximately 97% complete although the "visitors" are actually overestimated and the foreign transfers underestimated by about 16%. These larger discrepancies may be due to changes in status that take a number of months to uncover (e.g. visitors may leave the country). In the second and third versions, the level of emigration is still overestimated mainly due to the "visitor" category. For immigration the first

**TABLE 2**  
Comparison of Family Allowance Counts of Children 0-17 by Version  
(Ratio of Counts to Version 4 Counts), June 1979 to May 1981

**Immigrants**

| Version No | Total | Landed Immigrants | Returning Canadians | Visitors | Foreign Transfers |
|------------|-------|-------------------|---------------------|----------|-------------------|
| Version 1  | .60   | .59               | .63                 | .31      | .92               |
| Version 2  | .96   | .99               | .95                 | .41      | 1.01              |
| Version 3  | .99   | 1.00              | .98                 | .79      | 1.00              |
| Version 4  | 1.00  | 1.00              | 1.00                | 1.00     | 1.00              |

**Emigrants**

| Version No | Total | Canadian Residents | Visitors | Foreign Transfers |
|------------|-------|--------------------|----------|-------------------|
| Version 1  | .97   | .97                | 1.24     | .84               |
| Version 2  | 1.07  | 1.03               | 1.69     | .99               |
| Version 3  | 1.01  | 1.00               | 1.20     | .99               |
| Version 4  | 1.00  | 1.00               | 1.00     | 1.00              |

**TABLE 3**  
Family Allowance Data on Immigration and Emigration by Category  
Ages 0-15, Canada, Census Years 1978-79 to 1981-82

**Immigrants**

| Census Year | Landed Immigrants | Returning Canadians | Visitors | Foreign Transfers | Total  |
|-------------|-------------------|---------------------|----------|-------------------|--------|
| 78-79       | 16 938            | 9 271               | 2 203    | 2 130             | 30 542 |
| 79-80       | 32 983            | 9 613               | 2 035    | 2 373             | 47 004 |
| 80-81       | 28 686            | 9 722               | 2 182    | 1 782             | 42 372 |
| 81-82       | 26 206            | 8 315               | 2 283    | 1 973             | 38 777 |

**Emigrants**

| Census Year | Canadian Residents | Visitors | Foreign Transfers | Total  |
|-------------|--------------------|----------|-------------------|--------|
| 78-79       | 19 970             | 1 571    | 3 393             | 24 934 |
| 79-80       | 16 421             | 1 332    | 2 636             | 20 389 |
| 80-81       | 13 774             | 1 413    | 2 827             | 18 014 |
| 81-82       | 12 669             | 1 043    | 2 508             | 16 220 |

version is very incomplete but version 2 is about 96% complete and version 3, 99% complete. Again "visitors" present special problems. Data on immigration and emigration of children

by category of migrant is shown in Table 3. An important observation is that two thirds of all immigrants are landed immigrants and about 20% of immigrants are returning Canadians.

#### 4.0 DATA COMPARISONS

Since the family allowance data provide estimates of landed immigrant children, these can be directly compared to estimates of landed immigrant children from immigration authorities. Table 4 shows a comparison for the years 1978 to 1981. Results indicate that the family allowance data are lower than the immigration data. One reason for these differences may be that some immigrants to Canada emigrate shortly after arriving in Canada and never apply for family allowance payment. It is not clear why the relationship between the two data sources varies over time, however one explanation may be that during recent years, the composition of the population of immigrants has been changing and the rate of short term return migration may have also fluctuated. Recent 1981 census data on year of immigration will provide an opportunity to investigate this possibility further.

TABLE 4

Comparison of Estimates of Landed Immigrants from Family Allowance Records and Immigration Statistics, Ages 0-15, Canada Census Years 1978-79 to 1981-82

| Census Year | Family Allowance | Immigration Data | Percentage Difference |
|-------------|------------------|------------------|-----------------------|
| 78-79       | 16 938           | 19 430           | 14.71                 |
| 79-80       | 32 983           | 36 633           | 11.07                 |
| 80-81       | 28 686           | 31 720           | 10.58                 |
| 81-82       | 26 206           | 30 823           | 17.63                 |

The tax based migration estimates of international migration of children can also be compared to the family allowance estimates for the years 1978-79, 1979-80 and 1980-81. In this comparison all types of international migrants are included. As indicated above, part of the tax data on immigrants are collected on a calendar year basis. The results are shown in Table 5. On a census year basis(2), the tax data on immigrants are 68% of the family allowance figure. On a calendar year basis, it is 69% but there is a much better relationship between the two series on a year to year basis. For emigration the discrepancy is even larger and the tax data are only 57% of the family allowance data. It is clear that the tax based migration estimates of international migration substantially underestimate true levels of migration.

One important aspect of migration is the distribution of migrants by province. Comparisons from a number of provincial distributions for children and the total population are shown in Table 6. In general, the distributions from different sources are reasonably consistent considering the differences in coverage. For the tax data the distributions for children and adults are also similar.

#### 5.0 ESTIMATING INTERNATIONAL MIGRATION

The comparisons above indicate that the family allowance data provide reasonably good measures of the levels of immigration of children. On the other hand, the tax records underestimate migration levels but do provide data for the entire population. In particular the tax data can be used to estimate the ratio between the migration rate of children and the migration rate of adults. This ratio in turn can be used with the family allowance data on child migrants, in particular the child migration rate, to estimate adult migration and therefore total

TABLE 5

Comparison of Estimates of International Migration Children Aged 0-15, from Tax and Family Allowance Records 1978-79 to 1980-81

Immigrants, by Census Year

| Census Year | Tax    | FA     | Ratio (%) Tax/FA |
|-------------|--------|--------|------------------|
| 78-79       | 21 334 | 30 542 | 69.9             |
| 79-80       | 26 392 | 47 004 | 56.1             |
| 80-81       | 34 328 | 42 372 | 81.0             |

Immigrants, by Calendar Year

| Calendar Year | Tax    | FA     | Ratio (%) Tax/FA |
|---------------|--------|--------|------------------|
| 1978          | 21 334 | 33 544 | 63.6             |
| 1979          | 26 392 | 38 343 | 68.8             |
| 1980          | 34 328 | 47 579 | 72.1             |

Emigrants, by Census Year

| Census Year | Tax    | FA     | Ratio (%) Tax/FA |
|-------------|--------|--------|------------------|
| 1978-79     | 14 159 | 24 934 | 56.8             |
| 1979-80     | 11 953 | 20 389 | 58.6             |
| 1980-81     | 9 953  | 18 014 | 55.3             |

migration. An example of this methodology is given in the appendix. This method was used to derive annual intercensal estimates of emigration for the period 1976-77 to 1980-81 and in the future it will be used to produce annual estimates of emigration (Raby et Parent, 1983 and Statistics Canada, 1983). For purposes of population estimation, the emigration estimates are based only on the class "Canadian residents" (and not visitors or foreign transfers). This is done for comparability since the estimates of immigration used in the population estimates continue to be the landed immigrants reported by immigration authorities.

For illustrative purposes, the above ratio methodology was used to make estimates of immigration and emigration by type for each of the years 1978-79 to 1980-81. The results are shown in Table 7.

#### 6.0 SOME COMMENTS ON THE DATA

The data on international migration presented in this paper provide a number of new insights into the recent levels and trends in international migration. Prior to the recent work on revising the methodology of producing estimates of emigration, estimates of the emigration of Canadian residents were approximately 75,000 per year for each of the years 1976-77 through 1980-81. The data reported here, and in the revised official estimates, indicate that the levels of emigration for the period since 1978 were substantially lower than this, and moreover there was a clear downward trend in emigration. Note that the downward trend was evident in both the family allowance and tax data although the latter source underestimates the true level of emigration (see Tables 1 and 7). A second important finding is that there is a substantial number of migrants who are not reflected in the traditional estimates of immigration and emigration. In the case of immigration, the traditional measure is the number of landed

immigrants and the family allowance data suggest these make up only about two thirds of all immigrants. For emigrants, Canadian residents make up close to 80% of all emigrants. Although landed immigrants make up 65 per cent of all immigrants at the national level, there are wide variations at the provincial level. In particular, as indicated in Table 8, in the Atlantic provinces landed immigrants make up less than one

half of all immigrants and in New Brunswick only 30% of all immigrants. For emigrants the situation is similar and again in the Atlantic provinces, foreign transfers, probably military transfers, are an important aspect of international migration. Although the decision as to what types of international migrants to include in any analysis will depend on the purpose of the study, the exclusion of certain groups will alter the estimated levels of population growth.

**TABLE 6**  
Distribution of International Migrants by Province,  
1978-79 to 1980-81, (Per 1,000 Migrants)

**Immigration**

| Canada and Provinces  | Tax<br>All Ages | Tax<br>0-15 | FA<br>All Classes |
|-----------------------|-----------------|-------------|-------------------|
| Newfoundland          | 7               | 7           | 6                 |
| Prince Edward Island  | 2               | 2           | 2                 |
| Nova Scotia           | 19              | 20          | 16                |
| New Brunswick         | 15              | 17          | 15                |
| Quebec                | 124             | 128         | 174               |
| Ontario               | 462             | 450         | 457               |
| Manitoba              | 52              | 48          | 46                |
| Saskatchewan          | 21              | 22          | 23                |
| Alberta               | 140             | 142         | 128               |
| British Columbia      | 157             | 161         | 132               |
| Yukon                 | 1               | 1           | 1                 |
| Northwest Territories | 1               | 1           | 1                 |
| <b>Canada</b>         | <b>1,001</b>    | <b>999</b>  | <b>1,001</b>      |

**Emigration**

| Canada and Provinces  | Tax<br>All Ages | Tax<br>0-15  | FA<br>All Classes |
|-----------------------|-----------------|--------------|-------------------|
| Newfoundland          | 11              | 12           | 10                |
| Prince Edward Island  | 4               | 4            | 3                 |
| Nova Scotia           | 32              | 33           | 21                |
| New Brunswick         | 26              | 27           | 23                |
| Quebec                | 156             | 152          | 169               |
| Ontario               | 472             | 470          | 484               |
| Manitoba              | 42              | 43           | 41                |
| Saskatchewan          | 23              | 25           | 20                |
| Alberta               | 119             | 124          | 112               |
| British Columbia      | 112             | 107          | 114               |
| Yukon                 | 1               | 1            | 1                 |
| Northwest Territories | 3               | 3            | 2                 |
| <b>Canada</b>         | <b>1,001</b>    | <b>1,001</b> | <b>1,001</b>      |

**TABLE 7**  
Illustrative Estimates of International Immigration and Emigration  
by Category of Migrants, Canada, Census Years 1978-79 to 1980-81

**Immigration**

| Census Year | Returning Canadians | Landed Immigrants | Visitors | International Transfers | Total   |
|-------------|---------------------|-------------------|----------|-------------------------|---------|
| 78-79       | 33 086              | 60 596            | 7 992    | 7 530                   | 109 204 |
| 79-80       | 33 063              | 113 306           | 7 075    | 8 043                   | 161 487 |
| 80-81       | 35 263              | 103 875           | 8 119    | 6 426                   | 153 683 |

Emigration

| Census Year | Canadian Residents | Visitors | International Transfers | Total  |
|-------------|--------------------|----------|-------------------------|--------|
| 78-79       | 63 559             | 5 112    | 10 761                  | 79 433 |
| 79-80       | 51 087             | 4 202    | 8 132                   | 63 422 |
| 80-81       | 44 809             | 4 658    | 9 145                   | 58 613 |

**TABLE 8**  
Percentage Distribution  
of Illustrative Estimates of International Migrants by Type  
For Each Province, 1978-79 to 1980-81, All Ages  
Immigration

| Provinces | Canadian Residents | Landed Immigrants | Visitors | Foreign Transfers | Total |
|-----------|--------------------|-------------------|----------|-------------------|-------|
| Nfld.     | 36                 | 42                | 14       | 8                 | 100   |
| P.E.I.    | 23                 | 59                | 7        | 11                | 100   |
| N.S.      | 34                 | 43                | 5        | 18                | 100   |
| N.B.      | 54                 | 30                | 7        | 10                | 101   |
| Quebec    | 23                 | 64                | 6        | 6                 | 99    |
| Ontario   | 23                 | 66                | 6        | 5                 | 100   |
| Manitoba  | 28                 | 64                | 3        | 5                 | 100   |
| Sask.     | 20                 | 70                | 5        | 5                 | 100   |
| Alberta   | 26                 | 65                | 4        | 4                 | 99    |
| B.C.      | 21                 | 73                | 4        | 3                 | 101   |
| Yukon     | 26                 | 73                | 1        | 0                 | 100   |
| N.W.T.    | 18                 | 65                | 0        | 17                | 100   |
| Canada    | 24                 | 65                | 5        | 5                 | 99    |

Emigration

| Provinces | Canadian Residents | Visitors | Foreign Transfers | Total |
|-----------|--------------------|----------|-------------------|-------|
| Nfld.     | 70                 | 9        | 21                | 100   |
| P.E.I.    | 57                 | 0        | 43                | 100   |
| N.S.      | 47                 | 5        | 48                | 100   |
| N.B.      | 63                 | 7        | 30                | 100   |
| Quebec    | 79                 | 7        | 14                | 100   |
| Ontario   | 80                 | 8        | 12                | 100   |
| Manitoba  | 79                 | 4        | 17                | 100   |
| Sask.     | 77                 | 0        | 23                | 100   |
| Alberta   | 81                 | 8        | 11                | 100   |
| B.C.      | 85                 | 3        | 12                | 100   |
| Yukon     | 91                 | 0        | 9                 | 100   |
| N.W.T.    | 62                 | 2        | 36                | 100   |
| Canada    | 79                 | 7        | 14                | 100   |

**7.0 SUMMARY AND CONCLUSIONS**

In this paper two new data sources of international migration were described. The family allowance records provide detailed data on the migration of children, including classes of migrants (returning Canadians, visitors and foreign transfers) for which data had not been previously available. The second source of data, individual income tax records, were at first glance more comprehensive in that data were available for the entire population. However, comparisons to family allowance

data indicated substantial undercoverage by the tax records, possibly due to lower levels of tax filing or mailing address problems for immigrants and emigrants. Although each data source has a number of limitations, the strengths of both can be combined to estimate levels of international migration for the total population. The tax data also have the further potential of providing more data on the characteristics of migrants, including age, sex, marital status and income.

The detailed family allowance data on international migrants by type indicated that sizeable numbers of migrants are not landed immigrants but rather returning Canadians. Furthermore, there are also significant numbers of Canadians temporarily posted abroad or "visitors" who remain in Canada for an extended time period. The relative importance of these groups also varies by provinces. These persons are not counted in official migration statistics. The family allowance data offer one indication of the size of these different groups entering and leaving Canada. The family allowance and tax data taken together provide improved estimates of levels of emigration. These new estimates of emigration indicate that emigration levels have been substantially lower than what was previously estimated. Moreover, levels of emigration have been declining. These trends should be carefully monitored as they may have an impact on levels of population growth and desired levels of immigration.

**A P P E N D I X**

*Calculating Total Number of Migrants from Child Migrants*

The following is a description of the methodology used to estimate the total number of migrants from the number of child migrants (obtained from the family allowance file M0024). The number of adult migrants is estimated in the following way:

$$M^a = \frac{M^c}{P^c} * Fc * P^a$$

$$M^t = M^c + M^a$$

where:

$M^a$  = Adult migrants

$M^c$  = Child migrants (0-15)

$P^c$  = Child population (0-15)

$Fc$  = Correction factor: This factor is calculated by dividing the migration rate of adults by the migration rate of children as calculated from income tax estimates.

$P^a$  = Adult population (16 +)

$M^t$  = Total migrants (all ages)

The following tables are an illustration of the above calculation in the case of emigrants. Table 1 is an example of the calculation of the correction factor and Table 2 is an illustration of the remainder of the formula. Similar calculations are made for immigrants.

**TABLE A.1**

**Fc Factors Calculated from Tax Migration Data, Years 1978-79 to 1980-81, Emigrants**

| Census Year | Child Emigrants<br>(1) | Child Population<br>(2) | Rate of Emigration Children<br>(3) = (1) / (2) |
|-------------|------------------------|-------------------------|--|
| 1978-79     | 14 349                 | 6 159 140               | 0.00233  |
| 1979-80     | 11 955                 | 6 042 695               | 0.00198  |
| 1980-81     | 8 910                  | 5 951 794               | 0.00150  |

| Census Year | Adult Emigrants<br>(4) | Adult Population<br>(5) | Rate of Emigration Adults<br>(6) = (4) / (5) | Fc Factors<br>7 = (6) / (3) |
|-------------|------------------------|-------------------------|--|-----------------------------|
| 1978-79     | 32 609                 | 17 316 480              | 0.00188                                      | 0.808                       |
| 1979-80     | 26 169                 | 17 638 617              | 0.00148                                      | 0.750                       |
| 1980-81     | 20 790                 | 17 984 548              | 0.00116                                      | 0.772                       |

TABLE A.2

An Example of the Calculation to Estimate Total Emigration  
by Category of Migrants

| Census Year | Category of Emigrants | Child Emigrants F.A.<br>(8) | Population of children F.A. (0-15)<br>(9) | Rate of Emigration Children F.A.<br>(10) = (8) / (9) |
|-------------|-----------------------|-----------------------------|---|--|
| 1978-79     | Canadians             | 19 437                      | 6 179 548                                 | .00315   |
|             | Visitors              | 1 563                       | 6 179 548                                 | .00025   |
|             | Transfers             | 3 291                       | 6 179 548                                 | .00053   |
| 1979-80     | Canadians             | 16 003                      | 6 057 846                                 | .00264   |
|             | Visitors              | 1 316                       | 6 057 846                                 | .00022   |
|             | Transfers             | 2 547                       | 6 057 846                                 | .00042   |
| 1980-81     | Canadians             | 13 427                      | 5 974 243                                 | .00225   |
|             | Visitors              | 1 396                       | 5 974 243                                 | .00023   |
|             | Transfers             | 2 740                       | 5 974 243                                 | .00046   |

| Census Year | Category of Emigrants | Adult Population 16 +<br>(11) | Adult Emigrants (11) * (10) 7<br>(12) | Emigrant All ages<br>(13) = (8) + (12) |
|-------------|-----------------------|-------------------------------|---------------------------------------|--|
| 1978-79     | Canadians             | 17 354 314                    | 44 122                                | 63 559                                 |
|             | Visitors              | 17 354 314                    | 3 549                                 | 5 112                                  |
|             | Transfers             | 17 354 314                    | 7 470                                 | 10 761                                 |
| 1979-80     | Canadians             | 17 710 828                    | 35 084                                | 51 087                                 |
|             | Visitors              | 17 710 828                    | 2 886                                 | 4 202                                  |
|             | Transfers             | 17 710 828                    | 5 585                                 | 8 132                                  |
| 1980-81     | Canadians             | 18 083 383                    | 31 382                                | 44 809                                 |
|             | Visitors              | 18 083 383                    | 3 262                                 | 4 658                                  |
|             | Transfers             | 18 083 383                    | 6 405                                 | 9 145                                  |



## NOTES AND REFERENCES

- (1) A detailed description of the methodology and an evaluation of the data is presented elsewhere (Norris and Standish, 1983).
- (2) The census being held on June first, the Census Year is the twelve months period covering June 1 of a year to May 31 of the following year.

HACHE, J.-G., 1980

*Le volume de la migration internationale, quelques résultats touchant le Québec et le Canada.* Communication présentée à la section Démographie de l'ACFAS, Trois-Rivières, mai 1983.

HEALTH AND WELFARE CANADA, 1981

*A network of Social Security Information Resources (ANSIR) Extra Micro Data, Vol.2, Ottawa, 1981.*

KELLY, J. J., 1981

"The United Nations' Recommendations for Immigration and Emigration Statistics, and Their Applications to Canada". In *Demographic Trends and Their Impact on the Canadian Labour Market*. Statistics Canada and Employment and Immigration Canada, 1981, pp.37-60.

KRALY, E. P., 1981

*Available data, problems and Strategies for Meeting United Nations' Recommendations on International Migration Statistics: The Case of the U.S.A.* United Nations Document

ESA/STAT/AC.12/4/Add.2. United Nations Statistical Office, 1981.

NORRIS, D. and L. STANDISH, 1982

*A Technical Report on the Development of Migration Data from Taxation Records.* Administrative Data Development Staff, Statistics Canada, 1983.

NORRIS, D., 1983

"New Sources of Canadian Small Area Migration Data". *Review of Public Data Use.* January 1983.

RABY, R. et P. PARENT, 1983

*Estimations postcensitaires de l'emigration, 1981-1986.* Document de travail (mimeographic), Division de la démographie, Statistique Canada, Décembre 1983.

STATISTICS CANADA, 1982

*International and Interprovincial Migration in Canada: 1980-81.* Statistics Canada, Ottawa. November 1982, Catalogue No. 91-208, 27 pages.

STATISTICS CANADA, 1983

*Population Estimation Methodology for Postcensal Estimates 1981-1986, Intercensal Estimates 1977-1981: Recommendations.* Working Paper (mimeographed), Demography Division, Statistics Canada, April 1983.

UNITED NATIONS, 1980

*Recommendations on Statistics of International Migration.* Statistical Papers, Series M, No.58, New York, 1980, ST/ESA/STAT/SER.M/58, 74 pages.

