MIGRATION AND SETTLEMENT IN CANADA:
DYNAMICS AND POLICY

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Preface

To promote international scientific cooperation and to
disseminate research results, the Migration and Settlement Task
of the Human Settlements and Services Area at IIASA initiated a
comparative analysis of patterns of interregional migration and
spatial population growth in National Member Organization Coun-
tries. To carry out the study, a network of national scholars
was established, an integrated methodology for multiregional
demographic analysis was developed and a package of computer
programs to implement this methodology was written. The contri-
butors were invited to prepare reports on migration and settle-
ment in their respective countries. An outline was provided and
computer analysis was done by IIASA. The results of the various
case studies will be discussed at a conference to be held at
IIASA in September 1978.

In this report, Professor Marc Termote of the Institut
National de la Recherche Scientifique in Quebec analyzes the
regional demographic changes in Canada. The investigation on a
provincial basis leads him to draw attention to some very impor-
tant implications of recent demographic behavior of the popula-
tion and to propose a more rigorous population distribution
policy.

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Frans Willekens
Leader
Migration & Settlement Task
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1. SHORT HISTORICAL INTRODUCTION

Like most other immigrant countries, Canada has experienced
a rather high rate of growth of its population. In 1851, the
total population (excluding Newfoundland, which became part of
Canada only in 1948) was only 2.4 million, but it had more than
doubled 50 years later (5.4 million), and almost doubled again
in the next 30 years (10.4 million in 1931). It took only 35
years more to have it doubled again (20 million in 1966), but
in the last decade the growth rate declined markedly: while the
population had increased by 30% between 1951 and 1961, it in-
creased only by 15% between 1966 and 1976. In absolute numbers,
however, the increase did not drop in the long run; 3 million
were added to the Canadian population over the last 10 years
(1966-1976), while a comparable 9.6 million were added over the
preceding 35 years (1931-1966).

This high growth rate was accompanied by a considerable re-
distribution of the population of Canada among its provinces[1],
(see map of territorial deliniations) characterized mainly by
a marked Westward shift, particularly to the two most western
provinces, Alberta and British Columbia: as shown in Table 1,
the share of these two provinces was only 4.7% in 1901, but was
four times larger three quarters of a century later (18.3% in
1976). The two other western provinces (the so-called Prairie
·provinces of Manitoba and Saskatchewan), experienced a rapid
growth during the first decades of the century (particularly
Saskatchewan, the share of which increased from 17% in 1901 to
8.9% in 1931) but have seen their share steadily decreasing since
1931 (from 15.7% to 8.5% in 1976).

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[1] It should be emphasized that this study will be limited to
analyzing migration and population redistribution among provinces:
the dynamics of population redistribution for other spatial units
has been considered elsewhere. See for instance, C. Dionne and
M. Termote, The Interregional Redistribution of the Population
of Canada (Statistics Canada, forthcoming); where the spatial
units are the 67 "economic regions" : and L.O. Stone, Migration
in Canada, Regional Aspects (Statistics Canada, 1969) and Migra-
tion Profiles, (Statistics Canada, 1977), where the urban-rural
dimension is included.

The two most populous provinces of Canada have always been Ontario and Quebec: those two provinces contained 71% of the total population in 1901, but this heavy concentration dropped to 63% between 1901 and 1911, a share which remained almost constant since then (in 1976, their share was still 63%); since the end of the last world war, the share of Ontario is constantly increasing (from 32.8% in 1951 to 36.0% in 1976). With the exception of Newfoundland (the share of which remained almost-constant since the entrance of this province in the Canadian Confederation), all other maritime provinces (Prince Edward Island, Nova Scotia and New Brunswick) experienced a continuous decline in their share of Canada's population (taken together, the share of these three provinces decreased from 16.6% in 1901 to 7.0% in 1976). Summarizing the westward shift of the population since the beginning of this century, we may conclude that the Maritime provinces lost half of their share, mainly in favor of the two most western provinces which had their share increased fourfold, while the two central and also, most populous provinces since 1911 contain an almost constant part of the total population of Canada.

This important shift in the distribution of the population among provinces does, however, not imply a smaller concentration. In order to obtain an index of concentration, the observed percentage of population in each province was subtracted from the percentage expected in case of equal distribution among provinces (10% for the 1901-1941 period and 9.1% afterwards), and the positive differences were summed, the index so obtained for each census year represents the percentage of Canada's population that would have to be redistributed to obtain equal population numbers in all the provinces. The indices for the 1901-1976 period are:

1901	51.2	1951	43.6
1911	43.0	1961	44.8
1921	40.3	1966	45.7
1931	40.9	1971	46.4
1941	42.0	1976	46.4

Province or Territory	1901	1911	1921	1931	1941	1951	1956	1961	1966	1971	1976
Newfoundland	-	-	-	-	-	2.6	2.6	2.5	2.5	2.4	2.4
Prince Edward Island	1.9	1.3	1.0	0.9	0.8	0.7	0.6	0.6	0.5	0.5	0.5
Nova Scotia	8.5	6.8	6.0	4.9	5.0	4.6	4.3	4.0	3.8	3.7	3.6
New Brunswick	6.2	4.9	4.4	3.9	4.0	3.7	3.4	3.3	3.1	2.9	2.9
Quebec	30.7	27.8	26.9	27.7	29.0	29.0	28.8	28.8	28.9	27.9	27.1
Ontario	40.7	35.1	33.4	33.1	32.9	32.8	33.6	34.2	34.8	35.7	36.0
Manitoba	4.7	6.4	6.9	6.8	6.3	5.5	5.3	5.1	4.8	4.6	4.5
Saskatchewan	1.7	6.8	8.6	8.9	7.8	5.9	5.5	5.1	4.8	4.3	4.0
Alberta	1.4	5.2	6.7	7.0	6.9	6.7	7.0	7.3	7.3	7.6	8.0
British Columbia	3.3	5.5	6.0	6.7	7.1	8.3	8.7	8.9	9.3	10.1	10.7
Yukon and Northwest Territories	0.2	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3
Canada	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Sources: Statistics Canada, 1971 Census (catalogue 92-702 and 99-701) and 1976 Census.

Table 1: Percentage Distribution of Population, by Provinces 1901-1976

These indices show that during the first two decades of this century, there was an important decrease in the concentration of population, but that since 1921, there has been a steady movement towards a greater concentration, with however, an apparent stabilization since the 1970's.

The interprovincial redistribution of Canada's population is mainly due to fertility and migration. Historically, there have undoubtedly been important differences in the mortality conditions among provinces; for instance, in 1931 the expectation of life at birth was 60.0 years for males and 62.1 for females, but in Manitoba, Saskatchewan and Alberta, expectations of life were respectively 635 for males and 65.5 for females, which, at the other extreme, was only 56.2 for males and 56.8 for females in Quebec. In 1971, the expectation of life for the whole of Canada had increased to 69.3 years for males and 76.4 for females; Quebec still had the lowest expectation of life, but the difference with the Canadian average was considerably reduced (1.0 years instead of 3.8 for males and 1.1 instead of 5.3 for females); at the other extreme, Saskatchewan (followed by Alberta and Manitoba) still had the highest expectation of life, and here again the difference with the Canadian average is considerably lower, for males 0.8 years instead of 3.5 and for females 1.2 instead of 3.4). The intrinsic mortality rate is, however, a more significant measure of the impact of mortality on population redistribution: in 1971, this rate for males was 14.4 for the whole of Canada, with 14.6 (in Quebec) at one extreme and 14.1 (in Saskatchewan) at the other; for females, the rates were respectively 13.1, 13.3 and 12.9. With differences being so small, the impact of mortality on population redistribution has to be negligible.

Fertility differentials, however, have undoubtedly played an important role in the redistribution of Canada's population. Table 2 not only shows that gross fertility rates may be, even in the 1970's, almost twice higher from one province to another, but also illustrates the considerable disparities in the evolution of these rates: Quebec which had the highest gross fertility

	Canada	Highest provincial rate	Lowest provincial rate
1931	32	40 (Quebec)	22 (British Columbia)
1941	28	37 (New Brunswick)	23 (British Columbia)
1951	35	44 (New Brunswick)	32 (British Columbia)
1961	39	56 (Newfoundland)	37 (Ontario)
1971	22	34 (Newfoundland)	19 (Quebec)

Note: see notes at the end of table 6.

Table 2: Gross Fertility Rate (in %) of Women, 1926-1971

rate in 1931, had the lowest rate in 1971. The decrease of
Quebec's rate was particularly rapid; starting at 40% in 1931,
it was still at 38% in 1946 and remained constant at the 38% -
39% level for each year during the whole 1946-1960 period; but
in only 10 years, from 1961 to 1971, it decreased to a level
twice smaller. On the other side, Ontario, which in 1931 had
a gross fertility rate of 26% (the second lowest rate) had in
1971 a rate which was only slightly smaller (22%).

This considerable and rapid convergence in fertility rates,
as well as the already negligible differences in the mortality
conditions, will give to migration an increasing impact on popu-
lation redistribution. This is why the historical analysis of
this component will be a little less sketchy.

International migration has been an important source of
demographic growth not only for Canada as a whole, but also for
most of its provinces. However, precise historical data are hard
to find; some rough estimates[2] indicate that during the last de-
cades of the 19th century, the Prairie provinces (Manitoba and
Saskatchewan) received a fair amount of international migrants,
probably as large an amount as inmigration from other parts of
Canada: these two provinces had received almost twice as many

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[2]See L.O. Stone, Migration in Canada, Regional Aspects, op.cit.
pp. 140-141.

immigrants (85,000) than Ontario (44,000) or British Columbia
(43,000); their share in the total number of immigrants (223,000)
was 38%. This 1891-1901 period (and the 1901-1911 period, for
which no data on international migration exist) corresponds to
the peak of the western settlement. During the 1911-1921 period
the share of the Prairie provinces in the total immigration flow
(855,000) was still considerable, but declining (30%), while
Ontario, which had received only 20% of immigrants in 1891-1901,
emerges as the main pole of attraction, with a share of 35%.
The Great Depression reduced considerably the flow of international
migration: there were 750,000 of them during the 1921-1931 de-
cade (with 40% going to Ontario), but only 190,000 in 1931-1941
(Ontario still receiving 40% of them). After a slow increase
during the 1941-1951 period, immigration became very large in
1951-1961, with a total inflow of 1,2 million people, 55% of
them settling in Ontario, 17% in Quebec and 12% in British Columbia.
Finally, the immigration figure reached a new peak (1.4 million)
in 1961-1971, with Ontario still receiving more than half of the
inflow (53%).

Using rough estimates of emigration (for which no data exist)[3],
one may obtain some indication on the contribution of international
migration to total demographic growth. For the whole of Canada,
this contribution represents 25% (30% in the second half of the
decade). But, as we indicated previously, the provinces did not
receive a share which was proportional to their share in Canada's
population. Table 3 presents the provincial shares in immigra-
tion and emigration and in total population for the 1961-1971
period (the 1966-1971 period will be considered in the next chap-
ter.

The results presented in this table indicate the direction
of the bias which is introduced in our multiregional analysis
by eliminating international migration. For instance, it is
obvious that the share of Ontario (and to a lesser degree British
Columbia) in the stable population distribution, as obtained by

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[3]We adopted the emigration estimates prposed by Statistics
Canada in its Technical Report on Population Projection for Canada
and the Provinces, 1971-2001, Ottawa 1975, p. 197-201.

	Immigration	Emigration	Population (average) 1961-71
Newfoundland	0.5	2.7	2.5
Prince Edward Island	0.1	0.5	0.6
Nova Scotia	1.2	3.8	3.8
New Brunswick	0.7	3.7	3.1
Quebec	20.3	29.7	28.4
Ontario	53.3	36.1	35.0
Manitoba	3.6	4.2	4.8
Saskatchewan	1.6	4.2	4.6
Alberta	6.2	6.3	7.4
British Columbia	12.4	8.6	9.6
Yukon and NorthwestTerritories	0.1	0.2	0.2
Canada	100.0	100.0	100.0

Table 3: Share (in %) of Provinces in International Migration and Total Population 1961-1971

Source: Statistics Canada, Technical Report...op.cit. p. 201, table 7.4.

considering only mortality, fertility and interprovincial migration, will be underestimated: these provinces receive a share of the international migration inflow which is much larger than their share in the total population, while their share in the emigration flow corresponds more or less to their share in the total population. Correlatively, all 8 other provinces receive less than their share--their share in emigration being close to their share in total population, this implies that their share in the stable population distribution will be over-estimated (this is particularly valid for Quebec).

The pattern of interprovincial migration is not very different from the one shown by international migration. Since the beginning of this century, Ontario and British Columbia have been

the gaining provinces, in the same way as they are the main bene-
ficiaries of international migration. The Prairie provinces
(Manitoba and Saskatchewan) made large gains through interpro-
vincial migration, in the first decades of this century, but
started to lose during the 1921-1931 period and since then, their
net interprovincial migration figures are continuously negative;
we have seen that the same historical pattern is valid, on the
whole, for the international migration flows of these two pro-
vinces. Alberta benefited from the "go west" movement longer
than the Prairie provinces: its net interprovincial migration
became negative only in the 1930's- since the 1950's, mainly
thanks to its important natural resources (oil), Alberta has
again been attracting more interprovincial migrants than it had
been losing (the gain is particularly considerable since 1974
as a result of the "energy crisis"). The four Maritime provinces
have consistently been losing population through interprovincial
migration. Finally, Quebec was able to balance more or less out-
migration with inmigration, at least until the 1940's. Since
the end of the Second World War, however, Quebec's net interpro-
vincial migration has been negative for almost each year.

An analysis of the evolution of interprovincial migration
over the last 25 years is obviously not feasible with census
migration data, which are available only for the 1956-1961 and
1966-1971 periods. Such an analysis is, however, meaningful,
because it is important to know whether the interprovincial mi-
gration pattern observed through 1971 census for the 1966-1971
period, and which will be projected in our multiregional demo-
graphic analysis, may be representative for a longer period, or
reflects an exceptional situation. In order to have some indi-
cations on the evolution of interprovincial over the 1951-1975
period, we will use yearly migration estimates obtained by
Statistics Canada from data on family allowance transfers. These
estimates are based on some assumptions which are, of course,
always disputable--moreover, they are not comparable to migra-
tion data obtained from the census, because of multiple migra-
tions, mortality and emigration among interprovincial migrants
and because of underenumeration. Actually, for the 1966-1971

period, the number of interprovincial migrants estimated from
the data on family allowance transfers is twice as large as the
number of interprovincial migrants enumerated at the census.
But, if the level of the yearly rates of migration so obtained
is disputable, the evolution of these rates may be considered
as correctly respresenting the real trend. As the census data
on migration, used in our multiregional analysis, are for a five-
year period, we will present, in table 4, only the evolution over
the five five-year periods from 1951-1976.

From the rates presented in Table 4, we may derive some
interesting results:

(a) Three provinces have a lower than average outmigration
rate: Quebec has the lowest rate (linguistic and cultural dis-
tance is probably the main factor), followed by Ontario (which
has the strongest and most advanced economy among all provinces)
and Newfoundland (physical distance is here the main factor,
this province being a large island in the Atlantic far from any
other province). Prince Edward Island has the highest outmigra-
tion rates, which is not surprising, this province being a small
island, close to Quebec, Nova Scotia and New Brunswick. The
latter two provinces plus the two Prairie provinces (Manitoba
and Saskatchewan) and Alberta, have also high outmigration rates,
almost twice as high as the Canadian average; these provinces
are all industrially underdeveloped (with the exception of Alberta
in the last periods).

(b) There is a strong correlation between inmigration rates
and outmigration rates: on the whole, the higher the outmigra-
tion rate the higher the inmigration rate. The most striking
exception to this rule are British Columbia and Alberta, which
have the highest inmigration rates but only middle range out-
migration rates (even if these are above average), and Ontario
(which has an inmigration rate twice that of Quebec, while
it has an outmigration rate only slightly larger). These three
exceptions are also the three only provinces which are benefiting
from interprovincial migration.

(c) Over the long period (1951-1976), the province which
has the highest net interprovincial migration rate is British
Columbia, but Ontario is the province that benefits most from

	IN-MIGRATION					OUT-MIGRATION					NET MIGRATION				
	(1)	(2)	(3)	(4)	(5)	(1)	(2)	(3)	(4)	(5)	(1)	(2)	(3)	(4)	(5)
Newfoundland	1.2	1.4	1.3	1.6		2.0	2.4	1.7	2.2		-0.8	-1.0	-0.4	-0.6	
Prince Edward Island	4.7	5.1	3.6	3.6		6.8	5.7	4.1	4.0		-2.1	-0.6	-0.5	-0.4	
Nova Scotia	3.9	4.2	3.0	3.3		4.7	4.9	4.0	3.9		-0.8	-0.7	-1.0	-0.6	
New Brunswick	3.1	3.9	2.9	3.2		5.2	5.2	3.6	3.6		-2.1	-1.3	-0.7	-0.4	
Quebec	1.1	1.2	0.9	0.7		1.5	1.3	0.9	1.1		-0.4	-0.1	0.0	-0.4	
Ontario	2.5	2.2	1.7	1.8		1.7	1.7	1.5	1.5		0.8	0.5	0.2	0.3	
Manitoba	3.8	3.8	3.3	3.3		4.6	4.5	4.0	4.4		-0.8	-0.7	-0.7	-1.1	
Saskatchewan	3.5	3.5	2.8	2.6		5.0	4.9	3.7	4.4		-1.5	-1.4	-0.9	-1.8	
Alberta	5.1	5.1	3.6	4.1		4.7	4.6	3.8	3.8		0.4	0.5	-0.2	0.3	
British Columbia	4.3	3.8	4.0	4.6		3.3	3.2	2.7	3.0		1.0	0.6	1.3	1.6	
Canada	2.6	2.6	2.0	2.0		2.6	2.6	2.0	2.0		-	-	-	-	

Table 4: Interprovincial Migration Rates (in %); Yearly Average for Five-Year Periods, 1951-76

Source: Statistics Canada, Technical Report ..., op.cit. pp. 204 and 207 (the rates for 1966-71 have been corrected), and Statistics Canada, Interprovincial Migration ..., Ottawa, 1977, pp.

these migrations, as its net gain represents more than half (53%)
of the total net gain received by all provinces having a positive
net interprovincial migration. Alberta has had a small (but re-
cently increasing) positive net migration, in numbers as well
as in rates. All other provinces have been consistently losing
population through interprovincial migration the most disfavor-
able situation being that of Saskatchewan (which takes 27% of
the total net loss) followed by a group comprising all 4 of the
Maritime provinces and Manitoba; Quebec's migration rates are
only slightly below zero, its share (22%) is the total net loss
being, however, second only to that of Saskatchewan.

(d) Let us consider the 1966-1971 period with regard to the
general evolution over the whole 1951-1976 period. It is indeed
important for assessing the significance of our multiregional
analysis which uses 1966-1971 data to note that the 1966-1971
outmigration rates are close to the 1951-1976 average rates,
with a difference not exceeding 10% (except for Prince Edward
Island, where however the absolute number of migrants is small).
Of course, net migration rates being much smaller, are much
more sensitive to a particular situation, so that these rates
for 1966-1971 may be quite different than those estimated for
the whole 1951-1976 period (see for instance, the figures for
New Brunswick and British Columbia). On the whole, it appears
that for the 7 provinces which have higher than average out-
migration rates (and also negative outmigration, except for the
two Western provinces, Alberta and British Columbia), there
has been a steady decline in these rates as well in the net mi-
gration rates (the Prairie provinces being an exception for the
latter), so that in 1971-1976, some of these previously perma-
nent losers have even become winners: this is the case for all
four Maritime provinces and since 1974 even Saskatchewan is a
winner. The main victim of this reversal in migration trends
is Ontario which, after having been for half a century the
main beneficiary of interprovincial migration, is now a province
of net outmigration. Whether this considerable reversal in the
interprovincial migration pattern of Canada is only temporary
and exceptional (i.e. due to conditions which are particular
to the period), or whether it marks the beginning of a new trend

(possibly towards a more balanced pattern of interprovincial migration flows) remains an open question.[4]

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[4]The causes of this reversal in interprovincial migration trends are presently being investigated through a simultaneous equation model, by M. Termote and R. Frechette in a study commissioned by the Canadian Ministry of Urban Affairs.

2. CURRENT PATTERN OF SPATIAL POPULATION GROWTH

The main purpose of this chapter is to describe the most important demographic characteristics of the 1966-1971 period. Before that, a short critical presentation of the data used is in order. The basic data themselves being presented in the appendix.

A. The Data

2.1 Regional Disaggregation

As mentioned previously, the spatial units used in this multiregional population analysis of Canada are the ten provinces (see map) [5]. The Yukon and Northwest Territories were left out, as data for these regions are either nonexistent or highly unreliable; the impact of this exclusion should, however, be negligible as together these two regions represent only 0.3% of the total population of Canada.

2.2 The Choice of the Period

Only the census is able to provide reliable data on the age structure of migrants. The first time in the census history of Canada that a specific question on migration was introduced in the census questionnaire was in 1941. The 1951 census had no migration question, but detailed data relating to the 1956-1961 period were collected in the 1961 census on a 20% sample basis for persons aged 5 years and over in 1961 and residing in private households (including of course one-person households). The sample was increased to 30% in the 1971 Census, and all households (private and public) were considered: the head of each household had to answer the question "where did you stay 5 years ago (on June 1, 1966)". The 1976 Census also contained a question on the place of residence 5 years earlier, but the results are as yet not tabulated. The 1971 Census being the most recent one for which data are available, the choice was clear: our multi-regional population analysis will refer to the demographic conditions observed during the two-year period from June 1, 1966 to

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[5]
See note 1 , page 1.

PACIFIC OCEAN

CANADA

Federal Capital
Railways
Air Routes, Canadian

Provincial Capital

DEPARTMENT OF
ENERGY, MINES AND RESOURCES
SURVEYS AND MAPPING BRANCH

1970

HUDSON BAY

ATLANTIC OCEAN
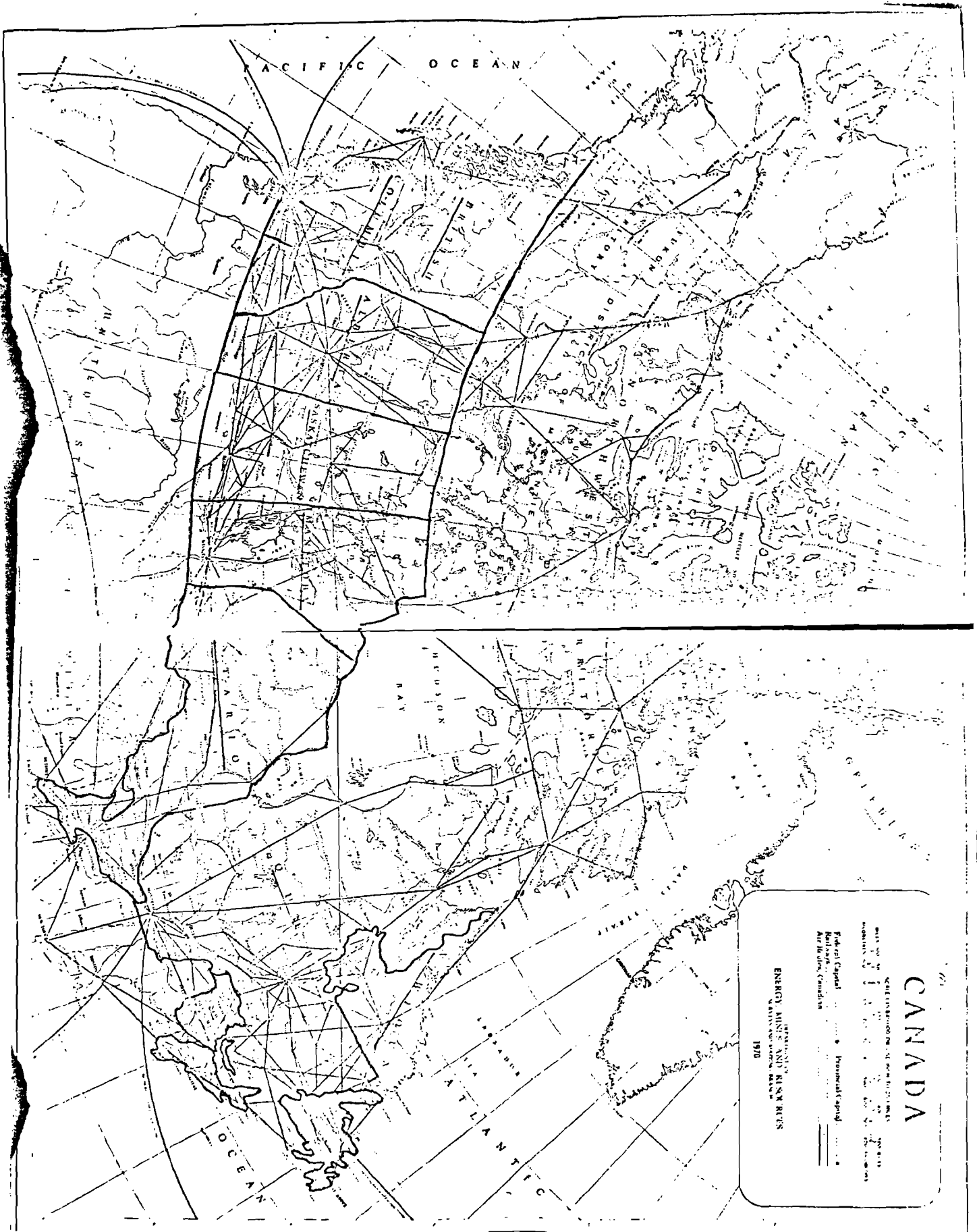
May 31, 1971.

2.3 Births

Vital statistics data on the number of births by sex,
and by age (five-year age groups) of the mother, are available
for each province and by civil year (from January 1 to December
31)[6]. In order to translate these data into census years, we
had to use monthly data for 1966 and 1971. The monthly data,
however, are not disaggregated by age of mother, and by sex, so
that we had to apply the distribution (by sex, and by age of the
mother) observed for the whole year 1966 to the total number of
births registered from June to December 1966; the same was done
for the sub-period January 1971 - May 1971. By doing this, we
may of course introduce some errors, but it seems fairly well
acceptable to assume that the impact of these disaggregation
errors will be negligible since they refer only to a short sub-
period, we may suppose that they will be dissolved when the
data for the sub-periods are added to the "correct" data obser-
ved for 1967-1970.

A more important problem results from the fact that for
Newfoundland, no disaggregation by age of the mother exists.
As Newfoundland has the highest fertility rate among all provin-
ces, we estimated the number of births by age of the mother by
adopting the age-specific fertility rates observed for Prince
Edward Island, which has the second largest total fertility rate
and which is also an island in the Atlantic Ocean. The differ-
ence between the total number of births so estimated and the ob-
served total number of births was then distributed over the five-
year age groups of the mother proportionately to the percentage
of each age group in the total number of births previously esti-
mated. By applying the structure of age-specific rates of one
province to another province, we may of course introduce some
errors. It is, however, highly probable that these errors will
be small. Indeed, it has been found that "..even under greatly
differing conditions of fertility, the relative levels of

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[6]Statistics Canada, *Vital Statistics*, Yearly. For the 1966-
1971 period, the exact references are: catalogue No   , pp

age-specific rates for women in the age group from 15-19 to
40-44 are not very different".[7]   We may thus be confident that
the estimated disaggregation by age of the mother of the total
number of births observed in Newfoundland will be an acceptable
one.[8]

2.4   Deaths

Vital statistics data on the number of deaths are available
by sex and age, for each province.   There was therefore no parti-
cular problem, except for the translation from civil years to
census years.   The procedure which was used for solving this
problem was similar to the one adopted for the data on births.

2.5   Migration

As mentioned before, only interprovincial migration is con-
sidered here.   Besides the well-known limitations inherent to
census data on migration which are derived from a question on
the place of residence "five years ago" (limitations related to
underenumeration[9], multiple migration, return migration, emigra-
tion and mortality among migrants) and which are always to be
kept in mind in interpreting the results, there are a number of
particular problems which had to be solved in order to make these

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[7]Methods for Population Projections by Sex and Age, United
Nations, 1957, Population Studies No. 25, St/SOA/Series A, p.44.

[8]Note that Statistics Canada, in projecting the population
over the 1971-2001 period, chose to apply to Newfoundland the
age-specific fertility rates observed in Nova Scotia, modified
by a ratio equal to 1.35, representing the excess fertility of
Newfoundland. The choice of Nova Scotia was justified by the
fact that the 1.35 ratio between the total number of actual
births in Newfoundland and the total number of births estimated
using Nova Scotia fertility rates was more or less constant over
the 1961-1971 period. Such a constant ratio is an important cri-
terion when fertility projections have to be made (this was the
case for Statistics Canada) but is not relevant for us, as we
consider only the characteristics of a single period. As a check,
we compared Newfoundland's fertility rate as obtained by our way of
disaggregating by age of mother with the rate obtained by Statis-
tics Canada: our figure is 38% while Statistics Canada obtains
37%.

[9]As is well-known, the rate of underenumeration is usually
larger at the ages of high mobility. This is also the case for
the 1971 Canadian census: the underenumeration rate for migrants
between municipalities has been estimated by Statistics Canada to
be 1.9% for all ages, but 2.6% for the 15-19 age group, 4.5% for the
20-24 age group, and 2.5% for the 25-39 age group.

data useful and more meaningful for our analysis. Most of these problems relate to the age of the migrant.

(a) Migrants in the 0-4 age group (age at the end of the census period) are not enumerated, since they were not alive on June 1, 1966 and therefore had no place of residence at the time. In order to obtain migration data for this age group, we had to rely on the results of the question on the place of birth: those residing in 1971 in one province and born between 1966 and 1971 in another province are by definition migrants. Data obtained by this way are not strictly comparable to data directly obtained from the migration question, because rates of underenumeration may differ from one question to another, but it may be believed that differences are small.

Another way to obtain migration estimates for the 0-4 age group, would have been to assign to the children aged 0-4 the mobility status observed for the head of the family (or household in the case of non-family members), or to apply the adequate fertility rates to the observed number of female migrants (assuming no fertility differentials between female migrants and female non-migrants). The advantage of the latter method is that one is insured that the number of projected migrants in the 0-4 age group is always in conformity with the numbers of mothers or household heads who are projected to move. But, on the other hand, one has to assume that these children in the 0-4 age group who are assigned to a migrant mother or household head were all born before the migration of the mother of the household head.

(b) Migrants in the 5-14 age group had not to answer, for obvious reasons, the census questionnaire, and therefore the question on migration. Statistics Canada assigned to the population in this age group the mobility status of the head of the family (for the family members) or of the household (for non-family members). The procedure seems acceptable, but again, as in the case of the number of 0-4 migrants, the data are not strictly comparable with those obtained directly from answering the migration question.

(c) Only the total number of <u>migrants aged 65 years and over</u> was tabulated by Statistics Canada. For the purpose of our multi-regional demographic analysis, it was, however, more meaningful to use age-disaggregated data for this population. The disaggregation procedure[10] which has been adopted is based on a linear extrapolation within the 65 years and over age group, with the following rule: if x represents the total number of enumerated migrants in the 65 years and over age group, then the number of migrants in the 65-69 age group is estimated to be equal to $5\frac{x}{15}$; the number for the 70-74 age group equal to $4\frac{x}{15}$, the number for the 75-79 age group equal to $3\frac{x}{15}$, the number for the 80-84 age group equal to $2\frac{x}{15}$, and the number for the 85 years and over age group equal to $\frac{x}{15}$ (the number 15 in the denominator being of course obtained by summing the weights given to each age group, from 1 to 5).

This procedure is clearly rather arbitrary, but probably no more so than any other procedure which could have been adopted. In the case of Canada, it seems to lead to a slight over-estimation of migration for the oldest age group, and a slight underestimation of migration for the 65-69 age group, but at these ages the migration figures are so small that it is in any case preferrable to abstain from interpreting the results.

(d) <u>Migrants with unknown place of previous residence</u> are quite numerous: in the 1971 Census, 279,300 persons (7.1% of the total number of intermunicipal migrants aged 5 years and over) reported that they had moved between 1966 and 1971, but did not indicate their 1966 place of residence. Some of these migrants did, however, report their previous province of residence, leaving unknown only the previous municipality of residence, so that we had only to distribute part of the migrants with unknown previous place of residence; this distribution was done proportionately to the number of known interprovincial

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[10]This disaggregation procedure was suggested and realized by Dimiter Philipov, from IIASA.

migration flows.[11]

(e) Because of <u>random rounding</u> applied to all 1971 census
data, the number of migrants summed over all age groups does not
correspond to the total (i.e. all age groups) of migrants tabula-
ted directly; the difference between both figures has been redis-
tributed proportionately to the age group data.

2.6 Population Data

The 1966 and 1971 Census data on population were used. These
census figures are available for each of the 10 provinces by 5-
year age groups, and were averaged in order to obtain the neces-
sary estimates of the population figure at mid-period.

B. The 1966-1971 REGIONAL GROWTH PATTERN

The purpose of this section is to describe the pattern of
each of the various components of multiregional demographic
growth as well as the resultant age and sex structure. First,
the relative importance of each component of growth should be
investigated.

2.7 Relative Importance of Components of Regional Growth

Table 5 presents a decomposition for each province of the
total increase in population between 1966 and 1971, into its
three components: natural growth (difference between number of
births and number of deaths), net interprovincial migration (dif-
ference between number of inmigrants and number of outmigrants),
and net international migration (difference between number of
immigrants and number of emigrants). These data suggest the
following comments:

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[11]This is one of the three factors which explains why the
total number of interprovincial migrants (980,160) used in our
analysis differs from the figure published by Statistics Canada
(1971 Census, catalogue no. 92-719, table 32). According to
this publication, the total number of interprovincial migrants
aged 5 years and over was 851,495. To this figure we added
52,600 "unknown migrants", and 85,160 migrants aged between 0 and
4 years; by subtracting the 9,095 migrants who had left either
Yukon or the Northwest Territories (which are excluded from our
study), we obtain a total number of interprovincial migrants
equal to 980,160.

(a) Two-thirds of Canada's increase in population is due to natural growth and half of Canada's demographic growth is concentrated in Ontario, which represents only 35% of the total population--half of Ontario's demographic growth is due to migration, mainly international migration. British Columbia and Alberta, which in 1966 contained respectively 9% and 7% of Canada's total population, took respectively 20% and 11% of the total increase, while Quebec, with a share in total population of 29% had only 16% of the total increase.

(b) The relative contribution of each component of growth differs considerably among provinces. Natural growth is the only source of growth in the Maritime provinces, representing in some cases (New Brunswick and Newfoundland) almost twice the total increase of population. The same is valid for the two Prairie provinces (except for the not negligible role of international migration in Manitoba's growth). Ontario, Alberta and British Columbia are benefiting from all three sources of demographic growth, but the role of migration (particularly interprovincial migration) is by far dominant in British Columbia (where natural growth represents only 28% of total growth) while it is only secondary in Alberta (where the contribution of migration was only 36%, at least in 1966-1971; as mentioned before, since the oil crisis of 1973-1974, migration to Alberta has become very important). Quebec's growth is due mainly to natural growth, but international migration compensated for 50%, a considerable loss due to interprovincial migration..

(c) Seventy percent of Canada's natural growth is concentrated in 3 provinces: Ontario (34%), Quebec (27%) and Alberta (11%). But 2/3 of Canada's growth due to international migration goes to Ontario, and 18% to British Columbia: all 8 other provinces have to share the remaining 15%. And as far as interprovincial migration is concerned, it is the same pattern: Ontario and British Columbia receive 87% of the total gain through interprovincial migration, but in this case, it is British Columbia which is the main beneficiary (it received 60% of total interprovincial gains). On the negative side, the two main losers from interprovincial migration in 1966-1971 are Quebec and Saskatchewan which both take 1/3 of total interprovincial losses.

	(1) Total increase	(2) Natural growth	(3) Net interprovincial migration	(4) Net international migration
Newfoundland	28,708	49,096	- 17,589	- 2,799
Prince Edward Island	3,106	5,211	- 1,139	- 966
Nova Scotia	32,921	37,411	- 8,790	4,300
New Brunswick	17,769	35,233	- 8,764	- 8,700
Quebec	246,919	288,727	- 78,404	36,596
Ontario	742,236	373,072	60,757	308,407
Manitoba	25,181	49,259	- 34,535	10,457
Saskatchewan	- 29,102	50,868	- 79,309	- 661
Alberta	164,671	105,295	26,423	32,953
British Columbia	310,947	88,494	138,215	84,238
Yukon and Northwest Territories	10,075	6,500	3,135	440
Canada	1,553,431	1,089,166	-	464,265

Table 5: Components of Multiregional Demographic Growth 1966-1971

Sources: (1) Statistics Canada, 1966 and 1971 Census. Total increase is the difference between total population enumerated at the 1971 Census and total population enumerated at the 1966 Census; (2) Statistics Canada, Vital Statistics; (3) Statistics Canada, 1971 Census; data corrected for migrants of unknown origin and for rounding errors; (4) obtained as a residual, by subtracting the sum of column (2) and (3) from column (1).

As mentioned before, international migration is not accounted for in our multiregional analysis. Given its considerable share in the total growth of some provinces, and the very uneven inter-provincial distribution of the gains from international migration, one may, however, assume that the impact of international migra-tion on population redistribution must be far from negligible[12].

2.8 Regional Fertility Differentials

It is not surprising that in a country extending over such a wide area and where considerable socio-economic regional dis-parities exist, the differences in fertility may be quite large. Table 6 presents the age-specific fertility rates for each pro-vince observed in 1966-1971 (by lack of space, and because of the negligible role of the 10-14 and 45-49 age groups, these groups were left out), as well as the resulting total ("gross") ferti-lity and reproduction rates, the crude birth rate and the mean age of fertility.

Quebec has the lowest total fertility rate, and the lowest rates for the three youngest age groups (as mentioned before, the decrease in fertility in Quebec was particularly rapid and is quite recent) it also has the lowest crude birth rate and the highest mean age of fertility, and is the only province where the 25-29 fertility rate is significantly higher than the 20-24 rate, while still being the lowest of all 25-29 provincial rates. Quebec's gross fertility rate implies that if the 1966-1971 rates continue to prevail, the population is just about to re-produce itself (but Quebec's fertility has continued to decline during the 1970's, so that presently it does not insure its own reproduction: in 1976, the gross fertility rate was 16%. The only other province which has a fertility level significantly be-low average is British Columbia (except for the younger age groups; this would be partially due to immigration). Ontario has a fer-tility regime which is about average. Manitoba and the Maritime province of Nova Scotia have almost the same, slightly above aver-age fertility level, which the three other Maritime provinces and Saskatchewan have all four relatively high rates, the highest rates being those of Newfoundland, which in 1966-1971 had still a gross fertility rate of 38% and a crude birth rate of 2.6%.

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[12]Some considerations on the impact of international migration on the interprovincial redistribution of the Canadian population are presented below, in chapter 4.

Table 6. Provincial fertility differentials 1966-1971

	Age-specific fertility rates (%)						Total fert. rate %	GRR	Crude birth rate %	Mean age of fertility	
	15-19	20-24	25-29	30-34	35-39	40-44				Observed 1	Pure 2
Newfoundland	2.8	11.4	10.9	6.7	4.3	1.7	38.0	1.9	25.5	26.5	28.1
Prince Edward Island	2.2	8.8	8.6	5.5	3.5	1.4	30.1	1.5	18.7	26.8	28.1
Nova Scotia	2.8	8.4	7.5	4.4	2.5	0.9	26.5	1.3	18.3	26.0	27.1
New Brunswick	2.7	8.7	7.9	4.8	2.9	1.0	28.2	1.4	19.1	26.1	27.4
Quebec	1.1	6.5	7.0	4.2	2.4	0.8	22.0	1.1	16.5	27.3	28.2
Ontario	2.5	7.7	7.4	4.2	2.0	0.6	24.5	1.2	17.8	26.4	27.0
Manitoba	2.5	8.0	8.1	4.7	2.4	0.8	26.6	1.3	18.2	26.4	27.3
Saskatchewan	2.7	9.5	8.6	5.0	2.8	0.9	29.5	1.5	18.7	26.3	27.3
Alberta	2.9	9.1	8.0	4.4	2.2	0.7	27.4	1.4	20.0	26.0	26.9
British Colombia	2.8	7.8	7.1	3.8	1.7	0.5	23.7	1.2	17.0	25.8	26.6
Total Canada	2.2	7.7	7.5	4.3	2.2	0.7	24.7	1.2	17.8	26.5	27.3

Table 6 Notes:

(1) The total (or "gross") fertility rate is the sum of the age-specific fertility rates; when the total fertility rate is multiplied by five (the width of the age groups) one obtains the gross reproduction rate (GRR), which, when larger than 1.05 (1.05 instead of 1.0 because of mortality before the last age of reproduction), indicates that the population is reproducing itself.

(2) Rates and mean ages were computed directly from vital statistics data published yearly by Statistics Canada. They refer to a yearly average reflecting the whole 1966-1971 period (and not to the arithmetic mean of the yearly figures). All rates are obtained by dividing one fifth of the number of births observed between 1966 and 1971, by the arithmetic mean of the 1966 and 1971 relevant female population.

(3) The observed mean age of fertility has been computed with the formula:

$$\bar{m} = \sum_x (x+2.5) \cdot p(x)100$$

where p(x) is the percentage share observed for age x; the mean age depends thus on the age structure of the female population. In order to eliminate the effect of the age structure, one has also computed a "pure" mean age, i.e., the mean age of the fertility schedule, by using the formula:

$$\bar{m}^* = \sum_x (x+2.5) \cdot r(x) \sum_x r(x)$$

where r(x) is the age-specific rate.

In order to illustrate the importance of the fertility differentials among provinces, we present in graph I, the pattern of age specific fertility rates of the two extreme cases (Quebec and Newfoundland) compared to the Canadian average.

The comparison between pure and observed mean ages does not bring much, the difference between both measures being small; only in the 4 Maritime provinces is there more than one year difference, the difference being the largest in Newfoundland, which has also the lowest mean age of female population (26.4 years).
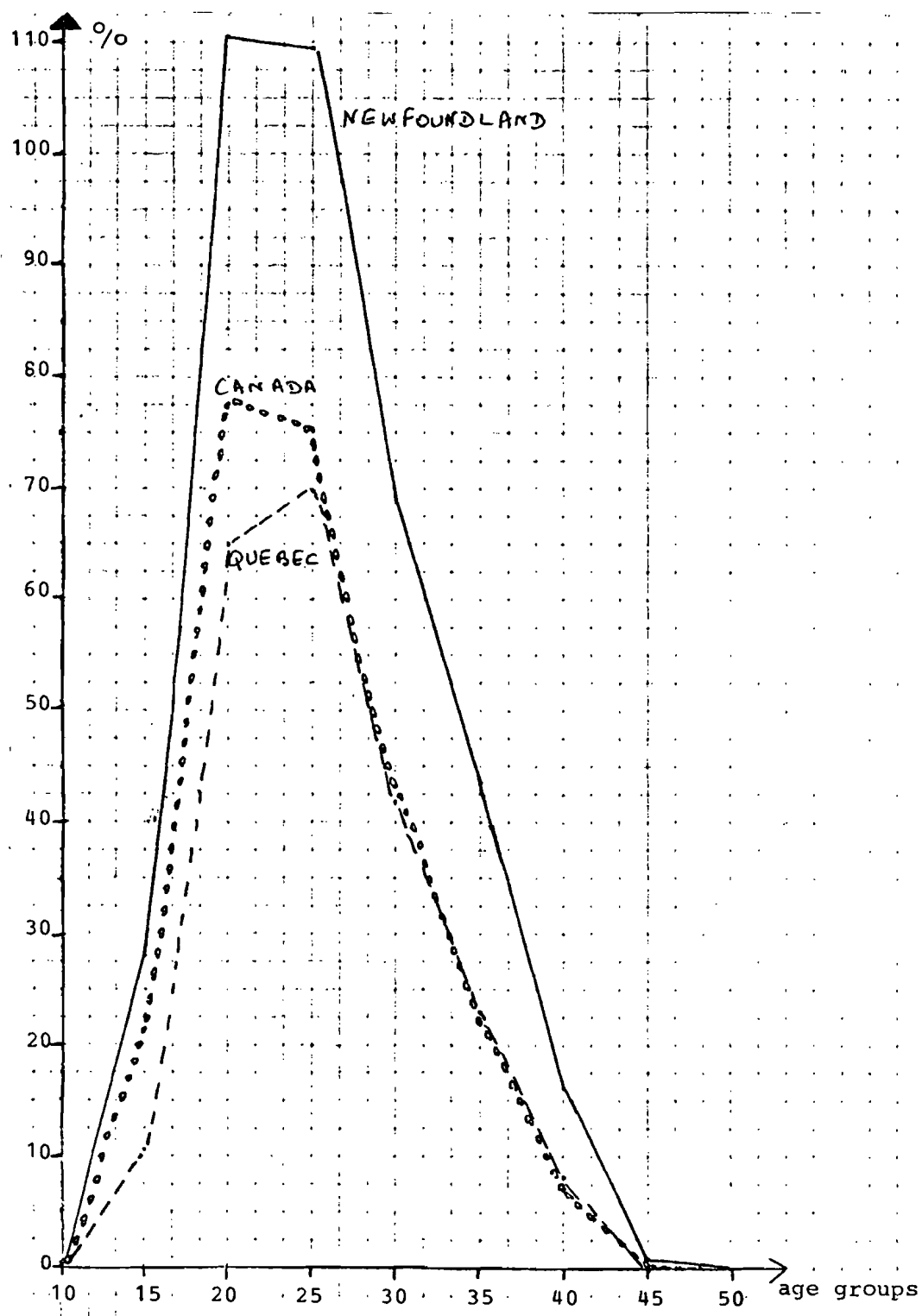
Graph I. Age-specific fertility rates (in %) for Quebec, Newfoundland and Canada, 1966-1971

3. Regional Mortality Differentials

It would be rather fastidious to present for each province the observed death rates at each age group; this would moreover not be very useful, as mortality differences among provinces are rather small, except for infant mortality and for mortality at the older ages. This is why we will present, in Table 7, for each sex, only the death rates for the 0-4 and 60-64 age groups, as well as the total death rate (sum of the age-specific death rates), the crude death rate and expectation of life at birth. The mean age at death is almost the same in each province: it is 77.4 for Canada as a whole, with a range going from 77.2 (in Prince Edward Island) to 77.6 (in Ontario).

Infant mortality is still quite high in Canada (which has 4.5 deaths per thousand in the 0-4 age group), and the differences among provinces are quite significant: for males as well as for females, the highest rate (in Newfoundland) is 44% higher than the lowest rate (in Ontario), the range going from 4.5 per thousand to 6.5 per thousand and from 3.5 per thousand to 5.0 per thousand respectively.

On the whole, the provinces with the lowest infant death rate have also among the highest death rates in the older age groups (as an example, we present the rate for the 60-64 age group). This is, of course, not quite unexpected: in regions with high infant rates, only the fittest do survive, and may be able to benefit from a more healthy environment because of the lack of industrialization often correlated with high infant mortality. The highest death rate for the 60-64 age group is found in Quebec (which has also one of the lowest infant mortality rates), where the figures for males and females respectively are 25.8 and 12.8 per thousand, which is more than 40% higher than the lowest rates (observed in Saskatchewan).

It is striking that the 4 Maritime provinces, plus Quebec have all infant mortality rates which are higher and life expectancies which are lower than the Canadian average, while all the 5 provinces west of Quebec have all infant mortality rates which are below average and life expectancies which are above average, this being true for males as well as for females.

Table 7. Provincial mortality differentials 1966-1971

	0-4 death rate (per thousand)		60-64 death rate (per thousand)		Total death rate (per thousand)		Crude death rate (per thousand)		Life expectancy	
	M	F	M	F	M	F	M	F	M	F
Newfoundland	6.5	5.0	21.1	11.8	550.0	422.2	7.2	5.1	69.1	75.7
Prince Edward Island	6.2	4.1	22.8	10.1	534.2	363.2	10.6	7.8	68.8	76.2
Nova Scotia	5.1	3.9	23.9	12.4	569.2	401.7	9.9	7.3	68.9	76.1
New Brunswick	5.2	4.2	22.5	11.6	556.6	399.0	9.0	6.6	69.0	75.9
Quebec	5.0	4.1	25.8	12.8	606.2	438.8	7.8	5.6	68.6	75.4
Ontario	4.5	3.5	24.7	11.6	583.4	390.3	8.7	6.5	69.5	76.4
Manitoba	5.4	4.0	20.0	10.4	529.6	369.0	9.5	6.6	69.7	76.6
Saskatchewan	5.9	4.6	17.5	9.1	490.5	341.8	9.6	6.1	69.8	76.6
Alberta	4.9	3.9	19.1	9.7	508.2	357.3	7.8	5.0	70.1	76.8
British Colombia	5.0	3.9	21.6	10.6	531.5	361.1	9.8	6.7	69.7	76.7
Total Canada	5.0	3.9	23.4	11.5	563.0	392.2	8.6	6.1	69.3	76.2

Source: Calculation of rates and life expectancy is based on data published in Statistics Canada, Vital Statistics (Annual), and refers to a yearly average reflecting the whole 1966-1971 period (and not to the arithmetic mean of the yearly figures). All rates are obtained by dividing one fifth of the number of deaths observed between 1966 and 1971 by the arithmetic mean of the 1966 and 1971 relevant population.

Because of differences in age structure, it is of course, not very meaningful to compare crude death rates among provinces. But a comparison with crude birth rates may be interesting. The three provinces with the youngest age structure (Newfoundland, Alberta and Quebec (see below, Section 5) have quite normally the lowest crude death rates, but Newfoundland's and Alberta's crude birth rates are the highest among all provinces while Quebec's are the lowest.

If crude death rates may not be compared between provinces, "pure" mean ages may be, as they eliminate the effect of age structure on the mortality level; correlatively, a comparison of observed and pure mean ages permits to measure the impact of the age structure. Table 8 presents these various mean ages.

Table 8. Observed and pure mean ages of death

Provinces 1966-1971

	Observed		Pure	
	M	F	M	F
Newfoundland	57.9	61.5	77.6	79.3
Prince Edward Island	64.5	69.8	77.2	78.8
Nova Scotia	63.4	68.4	77.2	79.1
New Brunswick	62.4	66.9	77.4	79.1
Quebec	59.9	64.2	77.5	79.2
Ontario	63.2	68.0	77.6	79.3
Manitoba	64.6	67.9	77.5	79.1
Saskatchewan	65.1	66.6	77.4	78.9
Alberta	62.2	64.0	77.6	79.1
British Colombia	64.9	68.0	77.3	78.9
Total Canada	62.5	66.6	77.4	79.1

Source: see notes at the end of Table 6.

From these results we may conclude that if the age structure is not taken into account, no significant disparities subsist: for males, the range of the pure mean age goes from 77.2 to 77.6, and for females from 78.8 to 79.3, while the range of observed mean age goes respectively from 57.9 (Newfoundland) to 65.1 (Saskatchewan) and from 61.5 (Newfoundland) to 69.8 (Prince Edward Island). For males as well as females, the difference is the largest in Newfoundland and Quebec, reflecting their younger age structure, resulting from their previous high fertility rates.

Finally, despite all these differences, the number of years a baby born in 1966-1971 may expect to live does not vary much: the range goes from 68.8 to 70.1 for males and from 75.4 to 76.8 for females, the lowest life expectancy being observed in Quebec and the highest in Alberta.

4. REGIONAL MIGRATION DIFFERENTIALS

It is obviously impossible to analyse here all migration rates, by age and sex for each origin-destination flow (these data are presented in the Appendix).Considering that the age and sex structure of these rates is rather similar for all flows, we will analyze only total (i.e. for all ages and sexes) migration rates between provinces. We will, however, also present the mean age for each migration flow and discuss the migration rates by age and sex for all flows. (In the next chapter, when constructing the multiregional life table, we will of course introduce a disaggregation by age and sex).

From Table 9 it is seen that, as far as total migration rates are concerned, provinces could be classified in 3 groups.

(a) Three provinces have a small rate of total out-migration: two of them (Ontario and British Columbia) are also the main beneficiaries of inter-provincial migration (see Table 5, column 3) while the third one (Quebec) is also (with Saskatchewan) the main loser from inter-provincial migration. The low rates of Ontario and British Columbia are mainly due to their favorable economic situation (for British Columbia, its peripheral location may also play a role) while in the case of Quebec

Table 9. Total migration rates (per thousand) between provinces 1966-1971

FROM: \ TO:	NFD	PEI	NS	NB	QUE	ONT	MAN	SAS	ALB	BC	TOTAL
Newfoundland	---	0.2	1.7	0.8	1.0	8.4	0.3	0.1	0.4	0.7	13.5
Prince Edward Island	0.5	---	4.6	2.9	1.4	7.7	0.6	0.3	1.1	1.3	20.3
Nova Scotia	0.8	0.6	---	2.4	1.4	7.8	0.5	0.2	1.0	1.8	16.5
New Brunswick	0.4	0.5	3.2	---	3.1	7.0	0.5	0.2	0.8	1.2	16.9
Quebec	0.1	0.0	0.2	0.4	---	3.9	0.2	0.1	0.3	0.7	5.9
Ontario	0.2	0.1	0.6	0.4	1.6	---	0.6	0.2	0.7	1.5	6.0
Manitoba	0.1	0.1	0.5	0.3	1.1	5.7	---	2.4	4.2	6.3	20.7
Saskatchewan	0.0	0.0	0.2	0.1	0.4	2.9	4.1	---	10.6	7.4	25.8
Alberta	0.1	0.0	0.3	0.2	0.5	2.7	1.1	1.7	---	8.9	15.5
British Columbia	0.1	0.1	0.3	0.1	0.5	2.4	0.7	0.7	3.2	---	8.2

Source: Migration rates are obtained by dividing one fifth of the 1966-1971 migrants enumerated at the 1971 census, by the arithmetic mean of the population enumerated in 1966 and 1971 in the province of origin. Because of rounding, the total out-migration rate is not necessarily equal to the sum of the destination-specific rates.

(which is in a relatively poor economic condition), the low
rate of out-migration may be explained by cultural hetero-
geneity. The fact that Quebec is 80% French speaking and
that there are only small French speaking minorities in the
other provinces, constitutes a formidable cultural barrier
which is difficult to overcome. Quebec's only relatively
large migration rate is with Ontario, and this is for a
large part the reflection of an urban growth phenomenon,
(Canada's capital city, Ottawa, is located on the border be-
tween Ontario and Quebec, but on Ontario's side). All pro-
vinces east of Ontario have their highest out-migration rates
with this province, and all provinces west of Ontario have
their second highest rate with Ontario: being centrally lo-
cated and economically dominant, this province is able to
attract large numbers of migrants from all over Canada.
Actually, 37% of the migrants who left a province other than
Ontario went to Ontario.

(b)   Four provinces have middle range out-migration rates: three
of the four Maritime provinces are in this group, and they
are also provinces of net out-migration: Newfoundland (13.5
per thousand), Nova Scotia (16.5 per thousand) and New
Brunswick (16.9 per thousand). The fourth province in
this middle range group is the Prairie province of Alberta,
which, on the contrary, is gaining from interprovincial
migration. The relatively low rate of Newfoundland island
(which is, from the economic point of view, a depressed
area, with a very high unemployment rate), may be explained
by its location in the Atlantic Ocean, far from the main
economic centers of Canda. In such a case, once the decision
to move has been made, distance is not a major factor in the
choice of destination; this is why it is not surprising to
find that almost two-thirds of Newfoundland's out-migrants
went to Ontario, more or less 3,000 kilometers away. Ontario
is also the main destination of the migrants from Nova Scotia
and New Brunswick (almost half of them went to Ontario) and it
attracts a sizable number of out-migrants from Alberta, coming
second only to British Columbia which received almost 60% of
Alberta's out-migrants.

(c) Finally, three provinces have relatively high out-migration
rates. All three of them have a level of economic develop-
ment which is well below average, and are located so as to
make it easier for potential out-migrants to actualize their
propensity to leave: Prince Edward Island is a tiny island
with an economy based on fishing, located close to Nova
Scotia, New Brunswick and Quebec, while Manitoba and
Saskatchewan are both agricultural regions which are located
between Canada's two main poles of economic growth, Ontario
on one side and Alberta-British Columbia on the other side.

Instead of analyzing these "crude" out-migration rates (which
are obtained by dividing the total number of out-migrants by the
total population, in the same way as the "crude" birth rate is
obtained by dividing the total number of births by the total
population), one may calculate "gross" migration rates by summing
the age-specific migration rates, and multiplying this sum by five
(the width of the age-groups) to obtain (similarly to the gross
reproduction rate) what has been called the "gross migraproduction
rate" (GMR), which shows the number of out-migrations per person,
in the absence of death. Table 10 presents, for each migration
flow and for the total out-migration of each province, the result
of these calculations.

It is clear that Ontario occupies a dominant position in the
inter-provincial migration pattern: its GMR to each province of
destination is always much lower than the one of the corresponding
counter-flow. The reverse is true for Prince Edward Island's GMR's.
The two Prairie provinces have the highest expected number of inter-
provincial out-migrations per person. A person born in Saskatchewan
(which has also one of the highest gross fertility rates), is even
expected to leave his province twice over his entire life span.
For reasons already mentioned, it is not surprising that a person
born in Prince Edward Island is also expected to leave his province
more than once. At the other end, we find the smallest number of
out-migrations per person in Quebec, Ontario and British Columbia,
which again is not unexpected. These three provinces are the only
three provinces where the GMR is below the Canadian average (0.72);

Table 10. Gross migraproduction rates between provinces 1966-1971

FROM: / TO:	NFD	PEI	NS	NB	QUE	ONT	MAN	SAS	ALB	BC	TOTAL
Newfoundland	--	0.01	0.12	0.06	0.08	0.58	0.02	0.01	0.03	0.05	0.96
Prince Edward Island	0.04	--	0.35	0.22	0.10	0.56	0.04	0.02	0.08	0.10	1.50
Nova Scotia	0.06	0.05	--	0.17	0.10	0.55	0.03	0.01	0.07	0.13	1.18
New Brunswick	0.03	0.04	0.24	--	0.23	0.49	0.04	0.01	0.06	0.09	1.23
Quebec	0.01	0.00	0.02	0.03	--	0.29	0.01	0.00	0.02	0.05	0.44
Ontario	0.02	0.01	0.04	0.03	0.12	--	0.04	0.02	0.05	0.12	0.44
Manitoba	0.00	0.01	0.03	0.02	0.08	0.42	--	0.17	0.30	0.52	1.56
Saskatchewan	0.00	0.00	0.02	0.01	0.03	0.22	0.30	--	0.78	0.61	1.97
Alberta	0.00	0.00	0.02	0.01	0.04	0.19	0.08	0.12	--	0.74	1.20
British Columbia	0.00	0.00	0.02	0.01	0.04	0.18	0.06	0.06	0.24	--	0.60

Source: The gross migraproductin rate is obtained by summing the age-specific out-migration rates and multi-
plying the result by five (the width of the age group); this rate represents the number of out-migra-
tions a person should make over his entire life span if he was not submitted to mortality.

all other provinces have an expected number of out-migrations
per person equal or superior to one. These GMR's show therefore,
the high geographical mobility of the Canadian population, even
over such large distances as those which exist between provinces.
(As a point of reference, let us mention that the lowest GMR in
Canada--0.44 for Ontario-- is almost equal to the highest GMR
in Bulgaria--0.46 for the North-West region, with Canadian dis-
tances very much larger indeed).[13]

As far as mean age of migration is concerned, table 11 re-
veals wide disparities among provinces, for total migration as
well as for the out-migration flows originating from a given
province. Because of the age selectivity of migration, and the
significant provincial disparities in the age structure (see
below, next section of this chapter), it is, of course, not surpris-
ing to find a considerable difference between pure and observed
mean age: on the whole, this difference represents 10 years
(observed mean age of all inter-provincial migrants is 26 years,
but the pure mean age is 36).

The lowest "pure" mean age of migration (about 30 years) are
those of the out-migrants from the four Maritime provinces, while
the highest are those of Quebec (36) and Alberta (38). It is in-
teresting to note that on the matrix of table 11, the highest
mean ages are generally close to the diagonal: the mean age of
migration seems to be higher for short distances than for long dis-
tances. There is, however, one main exception to this apparent
rule: British Columbia receives among the oldest migrants from
every province of origin, and more precisely, from all pro-
vinces west of the Maritimes, which all seem to send their
"oldest" migrants to the west coast; this could be related to re-
tirement.

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[13] See D. Philipov, Migration and Settlement in Bulgaria. Environ-
ment and Planning, 1978.

Table 11. Mean age of interprovincial migration flows 1966-1971

FROM: / TO:	NFD	PEI	NS	NB	QUE	ONT	MAN	SAS	ALB	BC	TOTAL
Newfoundland	--	29 (43)	23 (31)	24 (32)	25 (35)	23 (30)	23 (31)	26 (32)	25 (32)	24 (34)	23 (31)
Prince Edward Island	25 (30)	--	25 (32)	25 (31)	22 (26)	23 (28)	22 (27)	27 (38)	25 (30)	26 (31)	24 (30)
Nova Scotia	24 (31)	26 (34)	--	25 (31)	23 (30)	24 (30)	23 (27)	22 (26)	24 (28)	25 (30)	24 (30)
New Brunswick	22 (27)	27 (36)	26 (34)	--	24 (32)	24 (30)	23 (29)	23 (29)	23 (29)	25 (32)	24 (31)
Quebec	24 (30)	28 (40)	26 (35)	26 (37)	--	27 (36)	26 (33)	27 (37)	25 (32)	29 (40)	27 (36)
Ontario	24 (31)	25 (32)	25 (31)	24 (31)	25 (32)	--	26 (34)	26 (34)	25 (31)	29 (37)	26 (33)
Manitoba	22 (25)	23 (30)	22 (26)	23 (27)	26 (31)	26 (32)	--	25 (32)	25 (31)	30 (39)	27 (34)
Saskatchewan	26 (32)	25 (30)	23 (28)	24 (31)	26 (33)	26 (31)	25 (31)	--	24 (30)	29 (38)	26 (33)
Alberta	26 (31)	23 (30)	23 (29)	24 (31)	26 (32)	26 (33)	24 (31)	25 (34)	--	29 (41)	27 (38)
British Columbia	24 (29)	23 (28)	24 (30)	26 (31)	27 (32)	26 (32)	26 (33)	29 (38)	26 (32)	--	26 (33)

Table 11 note:

> The figures without brackets refer to observed mean
> ages, while the figures between brackets refer to the
> pure mean age of migration (i.e. excluding the effect
> of the age structure). Being based on census data,
> the "observed" mean age does however, not correspond
> to the mean age at the moment of migration, but is
> the mean age of the migrant at the moment of the cen-
> sus; if we assume a uniform distribution of the num-
> ber of migrants over the census period, about 2,5 years
> should be subtracted in order to obtain an estimate
> of the mean age at migration. See also note 3 at the
> end of Table 6.

Finally, we present in graph II, the age structure of all
interprovincial migrants. As expected, the rates for females
are close to those of males, with females having slightly,
higher rates until the 20-24 age group (the higher rate at this
age could be partially explained by nuptiality, but we doubt
this would be of any significance for interprovincial migration);
all other age groups have lower rates for females, except for
the 55-74 age groups (this could be related to widowship), but
there are at least two features of the age profile which are
not quite in conformity with the "standard" profile as obtained
in other countries.[1]

The first, and less significant, difference to be mentioned
is the increase in the out-migration rate at the older ages:
one should expect a small peak at the 65-69 age group, followed
by a slight decrease of the rate for the subsequent age groups,
but it seems to be the reverse in Canada. One should, however,
remember that in the absence of any age disaggregation of migra-
tion flows for the population aged 65 years and over, one has
to estimate the number of migrants in each age group older than
65 years. This is why we prefer to disregard this peculiarity
of the Canadian age profile.

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[1] See A. Rogers, *The Formal Demography of Migration and Redistri-
bution: Measurement and Dynamics,* IIASA, 1978, p.

The second particular feature of the curve seems to be more worthwhile of investigation. Graph II shows indeed that the out-migration rate for the 0-4 age group is lower than the one observed for the 5-9 age group, a feature which does not conform to what we may expect from the "standard" profile obtained in most other countries. Again, this may be due to an estimation error. Indeed, as we already mentioned, the use of census data on migration (data obtained from the question "where did you live five years ago?") did not allow us to obtain data directly on migration for the 0-4 age group, so that for this age group we had to use data obtained from a comparison between the place of residence at the census date and the place of birth. It could be that the percentage of under-enumeration is not the same for the migration question and for the place of birth question, but if this was the case, the rates for the 0-4 age group should be even lower compared to the rates for the 5-9 age group, because it is quite probable that people will be more able to answer a question on place of birth, than a question on place of previous residence.

One possible explanation is that the lower rates for the 0-4 age group is the result of a lower mobility over large distances for families with small children. It has to be remembered that interprovincial migration flows in Canada usually imply very large distances. In order to see whether migration distance could have an impact on the shape of the age profile, we chose to analyze the age profile of the migration flows between two provinces which are contiguous, relatively equal as far as area and population are concerned, and for which the number of migrants in each age group is large enough to produce significant results. The two flows which meet the most successfully these criteria are those between Ontario and Quebec (these two flows represent 18 percent of all interprovincial migrants); the age profile (for males only) of these two flows has been added to graph II.

Results are somewhat contradictory: the rate for the 0-4 age group is in fact higher than the rate of the subsequent younger age groups as far as migration from Ontario to Quebec
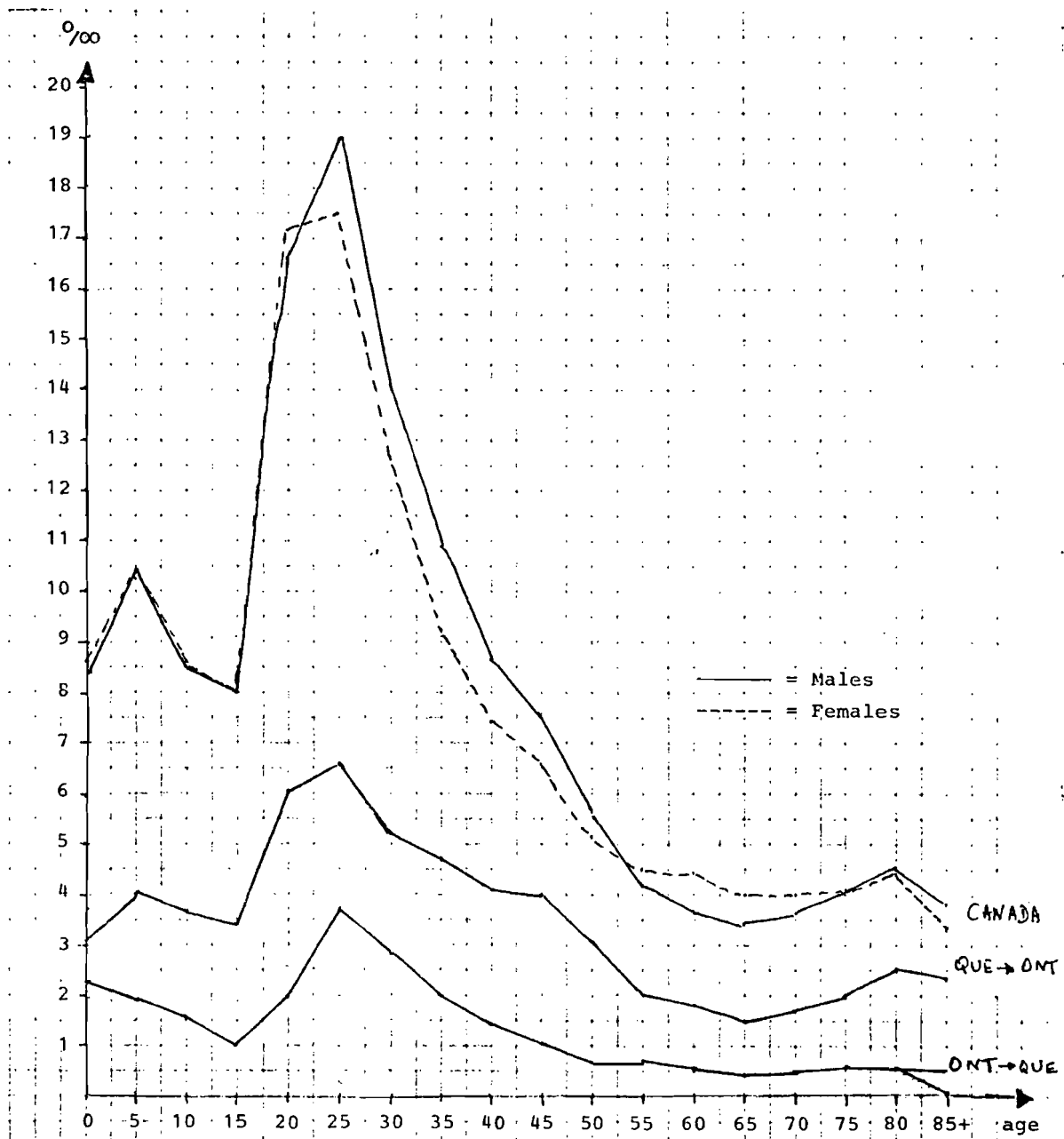
Graph II. Interprovincial migration rates (per thousand)
by age and sex, 1966-1971

is concerned, but this is not true for the flow in the reverse
direction. Moreover, the general shape of the curve for these
two flows is not quite similar to the one obtained for all inter-
provincial flows; particularly the decrease in the out-migration
rate after 25-29 years, is much slower for these flows than for
all interprovincial migration flows. The main lesson to be de-
rived from this analysis is that one should be very cautious
when adopting a "standard" age profile: there are very many
specific conditions which could produce an age profile different
from the one which is valid for the whole population of migrants.

5. REGIONAL DIFFERENCES IN THE AGE-SEX STRUCTURE

As a result of the long-run evolution of fertility, mortal-
ity and migration, briefly described in chapter I, and of the
current pattern of fertility, mortality and migration, as ana-
lyzed in the previous sections of this chapter, each province
has inherited in 1966-1971 a particular age-sex structure; this
final section of chapter II will be devoted to the analysis of
this structure (the regional structure of the total Canadian
population has already been described in chapter I).

Table 12 presents, for each province and for the whole pop-
ulation of Canada, the percentage of the 0-19, 20-64 and 65 and
over age groups, as well as the mean observed age of the total
population; the "rate of masculinity" (percentage of males in
total population) is not significantly different among provinces
(the rate varies between 50% and 51%) and is, therefore, not
presented.

Percentages of broad age groups are, of course, rather
rough measures of the age structure of a population, but they
may give a first idea of the age profile of the population. If
one defines as "young" a population which has a relatively large
percentage of its population in the 0-19 age group, and simi-
larly, as "old" a population which has a relatively large per-
centage in the 65 and over age group, then it appears that the
"youngest" populations are not always the less "oldest".

Table 12. Age structure and mean age of the population
of each province 1966-1971.

	% 0-19	%20-64	%65+	Mean age
Newfoundland	50	44	6	26.4
Prince Edward Island	43	46	11	31.0
Nova Scotia	42	49	9	30.6
New Brunswick	45	47	8	29.4
Quebec	42	52	6	29.2
Ontario	39	53	8	31.0
Manitoba	40	51	9	31.5
Saskatchewan	42	48	10	31.3
Alberta	43	50	7	29.2
British Columbia	38	53	9	31.9
Canada	41	51	8	30.8

Prince Edward Island for instance has the third largest per-
centage of its population in the 0-19 age group, but has the high-
est percentage in the "old age" group; the same is true for
Saskatchewan. Both provinces are regions of heavy out-migration,
as we have mentioned, and this should explain to a great extent
the higher percentage of older people.

On the other hand, Ontario, which is the main beneficiary
of migration (international as well as internal), has a relative-
ly small percentage of young people as well as old people: in-
migrants and particularly immigrants are mostly in the 20-64 age
group. On the whole, if we consider simultaneously the percen-
tage of "young" and "old" age groups, one may state that

Newfoundland is by far the youngest province, followed by Alberta and New Brunswick, while the Prairie provinces (which are regions of heavy out-migration) and British Columbia (where fertility is low and the mean age of in-migration relatively high), are the three "oldest" provinces,

Correlatively to these differences in the percentages of "young" and "old" age groups, there are significant differences among provinces in the percentage of the "supporting" age groups (20-64). All Maritime provinces, plus Saskatchewan, have a percentage of "supporting" population well below the Canadian average: they are all regions of important and continuous net out-migration, and age selectivity of migration has undoubtedly shown its effects. At the other side, the provinces of Ontario, British Columbia and Quebec have the highest percentages of population in the 20-64 age group: they are also the provinces with the lowest fertility rate and they are the main beneficiaries of international and internal migration (except for Quebec which benefits only from international migration).

Canada being an immigrant country, where fertility was until recently, relatively high and mortality relatively low, it is not surprising to find that its population is young compared to other "economically advanced" countries: almost half of the population is less than 25 years old, and the mean age is 31, with no major disparities in the mean age among provinces (except for Newfoundland, which has a markedly lower mean age).

CHAPTER III - MULTIREGIONAL ANALYSIS

In this chapter, we present the main results obtained by applying the multiregional model and programs developed at IIASA by A. Rogers and F. Willekens, to the Canadian data presented and analyzed in the previous chapter. The three most important outputs of this analysis are the multiregional life table (section A), the population projection and the stable equivalent population (section B) and some measures of the role of fertility and migration in population redistribution (section C).

A. THE MULTIREGIONAL LIFE TABLE

Using the above described data on the number of deaths in each province, by age and sex, and on the number of surviving (census) migrants to each province of destination from each province of origin, also disaggregated by age group and sex, one is able to compute age-sex specific probabilities of dying and migrating. These probabilities allow us to determine the number of survivors, deaths and migrations expected at each age in each region, for a given set of regional radices (here put equal to 100,000), i.e., the hypothetical multiregional cohort.

From this, we may compute the number of years lived in each region by the initial cohort, the survivorship proportions and the life expectancies by place of residence.

1. The Life History of the Birth Cohort

It would obviously be a very tedious task to analyze all probabilities of dying and migrating (between all provinces) and the corresponding expected number of survivors at each age group and for each sex (the complete set of probabilities and numbers of survivors is, however, presented in the Appendix). We will therefore, only present (in table 13), the probabilities that an individual born in a particular province will still be there at exact age 20 (which could be considered as the age of entry

in the labor market), at exact age 35 (because it is in the 20-
35 age span that mobility is the highest), and at exact age 65
(retirement age at least for males). This is a way to see
whether a baby born in a given province will spend all his "ac-
tive" (i.e. "working") life in his province of birth.

The figures of table 13 show once more how mobile the Cana-
dian population may be. Some provinces (Saskatchewan, Manitoba
and Prince Edward Island) will have lost one third or more of
their new-born babies even before they enter the labor market;
in other words, one third of these new-born babies will have to
be supported for at most 20 years by a local "active" (20-65 years
old) population which, as we have seen, is relatively smaller
than in the other provinces (precisely because of out-migration)
and they will never contribute to the labor force of their pro-
vince of birth. But things are even worse if we consider what
happens between the ages 20 and 35: half of those who re-
mained until 20 will leave the province before reaching 35 (in
Manitoba however, only 40% will have left), so that finally
only 20% (in Saskatchewan, 15%), of those born in these provin-
ces will still be there at age 65.

At the other extreme, the provinces of Ontario, Quebec and
British Columbia are able to retain a relatively large part of
their newborn babies, so that more than half of them will still
reside in their province of birth by age 65. For Ontario and
British Columbia, this is mainly due to a favorable economic
situation, while the relative spatial inertia of people born in
Quebec is probably to be explained less by economic conditions
(which are rather poor), than by cultural factors.

Not surprisingly, the probabilities of surviving in the pro-
vince of birth are always higher for females than for males, re-
flecting the lower spatial mobility of women and their higher
probabilities of survival. The difference is, however, particu-
larly high in the case of Ontario, Quebec and British Columbia;
this could be related to the fact that the economic structure of
these provinces provides relatively more jobs for women, and to

the fact that, being provinces of heavy international immigra-
tion, with a relatively high "rate of masculinity", women born
in these regions have a higher probability to find a partner in
their province of birth.

Table 13. Probabilities (in %) of surviving at exact ages
20, 35 and 65 in the province of birth.

	At age 20		At age 35		At age 65	
	Males	Females	Males	Females	Males	Females
Newfoundland	78	79	48	51	29	34
Prince Edward Island	67	69	32	33	17	20
Nova Scotia	71	71	42	44	24	28
New Brunswick	72	72	42	43	23	28
Quebec	87	88	74	77	47	57
Ontario	86	87	74	77	49	60
Manitoba	65	66	38	39	19	23
Saskatchewan	61	61	27	28	14	16
Alberta	73	74	53	54	30	34
British Columbia	83	84	66	68	45	54

2. The Life Expectancies

One of the most useful products of the multiregional life
table is undoubtedly the disaggregation of life expectancy (at any
age) by province of residence. With the multiregional life table
one can calculate the number of years to be lived in every pos-
sible region of residence, for a person of a certain age present-
ly residing in a given region, or for a baby to be born in a
given region. Only the latter, i.e., the disaggregation of life
expectancy at birth will be analyzed, as the pattern described
in the previous section for ages 20-35-65 is quite similar to the
one for life expectancy at these ages. Table 14 presents for

each province of birth the expectation of life in each province of residence, for each sex separately.

As we have already shown, the total number of years a new-born baby may expect to live is very similar among provinces of birth. There are, however, striking differences in. the share of this total life expectancy which will be spent in the province of birth. For males, as well as females, this share may vary by as much as 100% from one province to another: babies born in Saskatchewan will spend only about 40% of their life in this province, while babies born in Quebec and Ontario may expect to live about 80% in their province of birth. The figures illustrate, once more, the high mobility over long distances of Canada's population. As a reference mark, we could compare with the figures obtained by D. Philipov for Bulgaria, where, even if the regions are of a much smaller area than Canada's provinces, the lowest percentage of life expectancy to be spent in the region of birth is 74%, a figure which would put a province of Canada as one of the most spatially inert.[1]

Finally, it seems worthwhile to mention that every baby boy born in any province east of Quebec or in Manitoba, will spend at least 10 years (in most cases, about 15 years) in Ontario; for baby girls, the corresponding figures are even higher: they vary from 12 to 18. If all provinces of birth are considered, one may state that the "average" boy born out of Ontario will spend at least 6 years in this province - 7 years for females. The economic impact of such a phenomenon on these provinces of birth on one side, and on Ontario on the other side, is of course, far from negligible.

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[1] D. Philipov, op.cit.

Table 14A. Life Expectancies at birth, by province of residence. MALES

PROVINCE OF BIRTH:	PROVINCE OF RESIDENCE:										
	NFD	PEI	NS	NB	QUE	ONT	MAN	SAS	ALB	BC	TOTAL
Newfoundland	42.0	0.3	2.5	1.4	2.7	15.6	0.7	0.4	1.1	2.4	69.1
Prince Edward Island	1.0	32.5	5.7	4.0	3.2	15.2	1.1	0.5	2.1	3.5	68.8
Nova Scotia	1.2	0.7	37.9	3.2	3.3	14.6	1.0	0.5	2.2	4.4	68.9
New Brunswick	0.8	0.6	4.0	37.6	5.6	13.6	0.9	0.4	1.9	3.4	69.0
Quebec	0.2	0.1	0.6	0.7	55.3	8.3	0.4	0.2	0.9	1.9	68.6
Ontario	0.5	0.2	1.2	0.8	3.6	56.1	1.0	0.5	1.8	3.8	69.5
Manitoba	0.2	0.2	0.9	0.6	2.4	10.5	34.4	2.7	6.8	11.0	69.7
Saskatchewan	0.2	0.1	0.6	0.4	1.4	7.0	4.4	29.4	13.1	13.2	69.8
Alberta	0.2	0.1	0.7	0.4	1.4	6.3	1.9	2.0	43.0	14.2	70.1
British Columbia	0.2	0.1	0.6	0.4	1.5	5.9	1.4	1.2	5.8	52.7	69.7

Table 14B. Life Expectancies at birth, by province of residence. FEMALES

PROVINCE OF BIRTH:	PROVINCE OF RESIDENCE:										
	NFD	PEI	NS	NB	QUE	ONT	MAN	SAS	ALB	BC	TOTAL
Newfoundland	45.3	0.3	2.8	1.5	3.0	17.8	0.8	0.3	1.3	2.7	75.7
Prince Edward Island	0.9	34.8	6.1	3.9	4.2	17.3	1.1	0.6	2.8	4.5	76.2
Nova Scotia	1.3	0.8	40.4	3.5	4.0	17.0	1.1	0.5	2.5	5.1	76.1
New Brunswick	0.8	0.7	4.6	40.1	6.9	15.4	1.0	0.4	2.1	3.9	75.9
Quebec	0.2	0.1	0.6	0.8	60.5	9.5	0.4	0.2	0.9	2.1	75.4
Ontario	0.4	0.2	1.2	0.9	4.1	61.9	1.1	0.5	1.9	4.2	76.4
Manitoba	0.2	0.2	1.0	0.7	2.9	12.3	36.5	2.9	7.4	12.6	76.6
Saskatchewan	0.2	0.1	0.6	0.4	1.6	8.1	4.9	30.7	14.7	15.4	76.6
Alberta	0.2	0.1	0.7	0.4	1.7	7.2	2.0	2.3	45.6	16.7	76.8
British Columbia	0.2	0.1	0.7	0.4	1.7	7.0	1.5	1.2	6.4	57.6	76.7

Note: Because of rounding, the total life expectancy may not be exactly equal to the sum of the life expectancies in each province of residence.

B. POPULATION PROJECTION AND STABILITY

It is well known that if a population is exposed to an un-
changing regime of fertility, mortality and interregional migra-
tion, it will ultimately increase at a constant rate of growth
and reach a stable age-sex structure and a stable regional dis-
tribution. This stable structure and distribution are indepen-
dent from the initial structure and distribution and are a func-
tion only of the regime of fertility, mortality and migration.[1]
Besides analyzing the stable equivalent of the 1966-1971 popula-
tion, we will also briefly discuss the time pattern and the re-
sults obtained for three intermediate years: 1976 (because of
the possibility of comparing with the 1976 census data), 2001
(because this year is the end-year of the population projections
made by Statistics Canada), and 2021 (because this year - or one
close to this - has been chosen as a reference mark for all IIASA
comparative studies).[2]

Table 15 presents, for these three years and for the stable
equivalent of the 1966-1971 population, as well as for 1971 (the
initial year of projection), the following characteristics:
total population in absolute numbers, provincial share, rate of
growth of population, mean age of population, percentage of popu-
lation less than 20 years old and percentage of population aged
65 and over.

1. In interpreting the figures produced in table 15, it
   should be emphasized that they are no more than the
   result of a pure projection, and by no way may be con-
   sidered as a forecast of the future evolution of the
   population of Canada and its provinces. Yet it may be

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[1]This is why a critical analysis of the data used in the project-
ion is so important (see section A of chapter 2). In order to
see the sensitivity of the results with respect to the data used
one may compare the results presented in this paper with those
obtained by C. Dionne and M. Termote in *The Interregional Redis-
tribution of the Population of Canada,* op.cit., see also section
C of this chapter.

[2]Actually, because projection has been made with 1966-1971 data,
with rates computed on the arithmetic mean of the 1966 and 1971
populations, one should subtract two and a half years from the
years which have been chosen as a reference mark.

Table 15. Population projection and stable equivalent.
Some characteristics of the total population

		NFD	PEI	NS	NB	QUE	ONT	MAN	SAS	ALB	BC	CAN
ABSOLUTE NUMBERS (in '000)	1971	508	110	773	626	5,904	7,332	976	941	1,546	2,029	20,743
	1976	543	115	805	656	6,134	7,801	996	918	1,690	2,272	21,929
	2001	768	147	1,019	844	7,312	10,535	1,136	855	2,537	3,715	28,868
	2021	978	176	1,200	993	7,845	12,691	1,261	854	3,226	4,964	34,188
	STAB.	1,171	98	670	497	1,991	6,863	618	391	2,136	3,681	18,116
SHARE (in %)	1971	2.4	0.5	3.7	3.0	28.5	35.3	4.7	4.6	7.5	9.8	100.0
	1976	2.5	0.5	3.7	3.0	28.0	35.6	4.5	4.2	7.7	10.3	100.0
	2001	2.7	0.5	3.5	2.9	25.3	36.5	3.9	3.0	8.8	12.9	100.0
	2021	2.9	0.5	3.5	2.9	23.0	37.1	3.7	2.5	9.4	14.5	100.0
	STAB.	6.5	0.5	3.7	2.7	11.0	37.9	3.4	2.2	11.8	20.3	100.0
GROWTH RATE (over 5 years) (in %)	71-76	6.9	4.2	4.3	4.8	3.9	6.4	2.1	0.98	9.3	12.0	5.7
	96-01	6.4	4.8	4.2	4.4	2.3	5.1	2.2	0.99	6.8	8.5	4.6
	16-21	6.1	4.5	4.1	4.0	1.5	4.4	2.8	1.01	5.7	6.9	4.1
	STAB.	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
MEAN AGE	1971	26.4	31.0	30.6	29.4	29.2	31.0	31.5	31.3	29.2	31.9	30.3
	1976	27.0	31.5	31.2	30.2	30.5	31.7	32.1	32.3	29.9	32.6	31.2
	2001	27.8	32.0	32.5	31.7	34.2	33.6	33.0	33.7	31.3	34.4	33.4
	2021	28.4	33.0	33.6	33.0	36.2	34.7	33.6	33.7	33.4	35.7	34.6
	STAB.	28.5	33.4	33.7	33.2	35.8	34.9	33.7	33.8	33.0	36.3	34.5
% < 20 YEARS OLD	1971	50.0	43.4	42.1	44.8	41.7	39.0	39.9	41.7	42.6	38.0	40.7
	1976	47.8	41.3	39.7	41.8	38.2	37.1	37.9	39.8	40.5	36.1	38.2
	2001	45.9	38.8	36.3	38.0	32.0	33.6	35.8	37.5	37.1	32.4	34.1
	2021	44.8	37.1	34.7	36.2	29.6	32.1	33.9	36.7	35.7	30.8	32.5
	STAB.	45.0	36.8	34.7	36.0	30.0	32.0	34.4	36.4	35.4	30.5	33.1
% 65 YEARS AND OVER	1971	6.0	10.9	9.0	8.4	6.5	8.3	9.5	9.8	7.2	9.5	7.9
	1976	6.3	11.0	9.3	8.7	7.2	8.7	10.1	10.8	7.5	9.7	8.4
	2001	7.2	10.6	10.1	9.6	10.1	10.5	11.2	13.9	8.5	11.2	10.3
	2021	7.6	11.4	11.0	10.7	12.6	11.4	11.1	12.6	9.5	12.4	11.5
	STAB.	8.3	12.5	11.7	11.5	12.4	12.2	11.7	12.8	10.9	14.3	12.2

worthwile to compare our projection for 1976 with the results
of the 1976 census. In order to do this, we have, however, to
take the average of the 1971 and 1976 census figures, because
our projection is based on the average of the 1966 and 1971
population census figures. Table 16 shows the results of this
comparison, and presents estimates of net international migration,
because this was excluded from the projection.

It is rather amazing to see how close the projected figures
are to the enumerated figures: in 7 of the 10 provinces the
difference is inferior to 10.000, and the largest difference
does not represent more than 2.3% of the concerned population.
The only provinces from which the difference is considerable
(in absolute numbers) are those which are the main beneficiaries
of international migration, which has been excluded from our
projection procedure: this is the case for Ontario, Alberta and
British Columbia. It may therefore be concluded that for a
short term (5 years) period, the multi-regional population
projection model could also be useful as a forecasting model,
at least if abstraction is made of international migration
(which has to be considered separately anyway, because of its
cyclical and political characteristics). This conclusion is,
however, valid only for total population.

Indeed, international migration does not explain all of the
difference between enumerated and projected population. These
usually small differences refer only to total population, but
they are not valid for each age group. More particularly,
significant differences between the enumerated population
and the projected population do exist in each province for
the 0-4 age group, the projected figure being higher by about
10% in all cases; this reflects of course the decline in ferti-
lity which took place during the period of projection. On the
other hand, the projected figures are always smaller than the
enumerated figures, for all provinces and for each of the 4
five years age-groups between 20 and 39; this reflects pro-
bably for a large part the impact of international migration,
but is of course also due to a change in the regime of inter-

Table 16. Comparison between projected and observed figures, 1971-1976.

	Enumerated population (in '000) average 1971-1976	Difference between enumerated and projected ('000)	Net international migration 1971-1976 ('000)
Newfoundland	540	-3	-8
Prince Edward Island	115	0	0
Nova Scotia	809	4	4
New Brunswick	656	0	3
Quebec	6.131	-3	68
Ontario	7.984	183	361
Monitoba	1.005	9	27
Saskatchewan	924	6	4
Alberta	1.733	43	54
British Columbia	2.326	54	109
TOTAL CANADA	22.280	351	624

Sources: Statistics Canada, 1971 and 1976 Census, and International and Interprovincial Migration in Canada 1961-1962 to 1975-1976, Catalogue 91-208, July 1977, pp. 41-42.

provincial migration. The under-estimation of the population
in the 20-39 age group is much larger (in absolute numbers)
than the over-estimation of the population in the 0-4 age
group; this explains for a large part the fact that net inter-
national migration (column 3 of table 16) is markedly larger
than the difference between enumerated population and projected
population (column 2 of table 16) in the provinces for which
the problem is significant (Quebec, Ontario, Alberta and
British Columbia). We have thus to conclude that if the
multi-regional projection model did produce good results
in forecasting the growth of the total population over a
short period (5 years), it did perform poorly for forecasting
the changes in the age structure of this population.

It may be of some interest to compare also the results of the
projection for the year 2001 obtained respectively by the multi-
regional model developed by Rogers and Willekens, with the results
obtained by Statistics Canada for the same year of projection,
but by applying a completely different approach.[1] Actually,
Statistics Canada did offer a large number of projections, each
projection being characterized by a different set of assumptions
on the anticipated evolution of the components of demographic
growth. Among the set of assumptions considered as "the most
probable", we chose the one based on the assumption of a low
fertility, a gross reproduction rate of 0.9 instead of the 1.2
figure observed in 1966-1971, a relatively small net inter-
national migration (60,000 yearly instead of the observed
90,000), and a level of interprovincial migration equal to the
one observed for 1966-1971.

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[1]The approach adopted by Statistics Canada is mainly character-
 ized by the use of absolute numbers (instead of rates) for
 projecting migration and by the fact that each component of
 demographic growth is projected separately. See Technical
 Report..., op.cit., pages 13-55.

As table 17 shows the results obtained by Statistics Canada by using this set of basic assumptions are not very different from those obtained by using the multi-regional model, at least as far as the share of each province in the total population is concerned. The difference in the projected absolute numbers is surprisingly small: Statistics Canada projected that the population of Canada would reach 28.4 million by the year 2001, while we obtained 28.9 million (it is probable that in Statistics Canada's projection, the impact of a lower than observed level of fertility has been neutralized by the impact of a positive international migration, assumed to be inexistent in our case).

2. The evolution of the share of each province in the total population of Canada is obviously more meaningful to analyze than the evolution of the absolute numbers. Because of lack of space, we could not present all relevant intermediate years between the initial year of projection and stability. We may, however, summarize the general time pattern by stating that, with the fertility, mortality and migration regime of 1966-1971, stability will be reached after 627 iterations, i.e. after 3135 years, thus in the year 5103 (the initial year of projection being at mid-period between 1966 and 1971). Actually, stability is almost completed by 2968, thus after exactly one millenium (200 iterations). A separate analysis of the male population and of the female population, shows that males reach stability well before females: 493 iterations suffice for males to realize perfect stability, while females need 663 iterations.

As table 15 shows, some provinces have already in 1971 a share of the total population which is equal or very close to their equilibrium share; this is the case for Prince Edward Island, Nova Scotia, New Brunswick and Ontario. The latter, which in 1966-1971 was a province with low out-migration rates and net in-migration, but low fertility, increases however its share slightly.

Table 17 - Comparison between two 2001 projections. Share of

each province (in %)

	(1) Statistics Canada	(2) IIASA
Newfoundland	2.4	2.7
Prince Edward Island	0.4	0.5
Nova Scotia	2.9	3.5
New Brunswick	2.4	2.9
Quebec	22.5	25.3
Ontario	41.0	36.5
Manitoba	3.4	3.9
Saskatchewan	1.9	3.0
Alberta	8.7	8.8
British Columbia	14.0	12.0
Total population of Canada (in millions)	28.4	28.9

Sources: Column (1) - Statistics Canada, Population Projection for Canada and the Provinces. 1972-2001; Ottawa, 1974, Catalogue number 91-514, page 93, table 9.3, projection C, and page 15.

Column (2) - see table 15 of this chapter.

Three provinces show a steady decline in their projected
share: Saskatchewan and Manitoba, which in 1966-1971 had both
the highest out-migration rates and a net out-migration,
but "benefited" from a relatively high fertility level,
so that at least for Manitoba, the decline was relatively
small); Quebec, which represented 28% of Canada's population
in 1971, but would contain only 11% of the total population at
equilibrium. This province has everything against it: it has
not only the lowest out-migration rates, its in-migration
rates are even lower, that is why it experiences an important
loss in interprovincial migration (see Column 3 of table 5);
Quebec has also the lowest fertility rates, barely reproducing
itself (see table 6); and even as far as mortality is concerned,
this province is in an unfavorable position, having the highest
death rates from older age-groups and the lowest life expectat-
ions at birth.

Finally, there are three provinces which show a marked
increase in their share of the total population. British
Columbia increases by 50% its share during the first 50 years
of projection and reaches an equilibrium share twice as large
as its initial share (this province has a low rate of out-
migration and a considerable positive net-migration, with
fertility rates which are about average). Alberta shows a
smaller increase of its share in total population: its rate
of out-migration is twice as large as that of British Columbia,
but it has the benefit of relatively high fertility rates.
The third province with an increase in its share of total
population comes rather as a surprise: Newfoundland, which
started as the second smallest province of Canada, with only
2.4% of the total population, ends up as being the fifth
largest province, with 6.5% of Canada's population. This
is to be explained by its relatively low out-migration rates,
mainly by the fact that this province has by far the highest
fertility rates and the youngest age structure.*

3. The evolution of the (five year) <u>rate of demographic
   growth</u> in each province is markedly different. As is

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*In a recent paper, K. Liaw (Dynamic Properties of the 1966-1971
 Canadian Spatial Population System, Environment and Planning A,
 1978, volume 10, p. 394), obtained, after applying a variation
 of A. Rogers' model to data slightly different from those used
 in the present report, stable provincial shares relatively close
 to those we obtained: 34.9% for Ontario instead of our 37.9%;
 9.1% for Quebec instead of our 11.0%; and 25.5% for British
 Columbia instead of our 20.3%.

well known, stable population theory requires that, at equilibrium,
each region experiences the same growth rate. In the case of
Canada as a whole, and in the case of Nova Scotia and New Bruns-
wick as well, this rate is reached after only 50 years, while
all other provinces would experience this growth rate (or a rate
very close to it) by the year 2971. Most provinces show a wave-
like evolution of their growth rate: their peak appears
in 1976-1981, with the exception of Prince Edward Island (peak
reacted in 1981-1986) and Alberta (peak reached in 1971-1976).
Saskatchewan, however, shows a continuouly increasing rate of
growth; British Columbia shows a steady decline in its growth
rate.

4. Stable population theory not only requires that, at
   equilibrium, each region has a constant share in the
   total population and a constant and equal rate of demo-
   graphic growth, but also that its age structure remains
   constant. It is obviously not possible in this brief
   report to analyze in detail the projected evolution of
   the age structure and the stable age structure of each
   province. We will limit our discussion to three aspects
   of this age structure: the mean age of the population,
   the percentage of the population less than 20 years old,
   and the percentage of the population aged 65 and over.

   Table 15 shows that all provinces will have an aging
   population, and that there are wide disparities in the
   rate of aging. Newfoundland, which was the "youngest"
   province in1971, with the lowest mean age, the highest
   percentage of people less than 20 years old and the
   lowest percentage of people aged 65 and over will
   be aging at a much smaller rate than than any other
   province. At the other extreme, the province of
   Quebec, which had the second lowest mean age in 1971,
   an above average percentage of young people and the
   second lowest percentage of old people, would, by the
   year 2021, become the oldest province of Canada, with
   the highest mean age, the lowest percentage of young

people and the highest percentage of old people (the latter
percentage would double in these 50 years). The socio-economic
implications of so deep a change in the age structure are
clearly important.

At equilibrium, however, British Columbia would take
Quebec's place as the oldest province of Canada, with New-
foundland still being-byfar-the youngest province; all other
provinces would have an age structure close to the national
average.

One of the interesting features of the stable equivalent
population, when compared to the observed population, is that
the effect of the age structure on the growth of the population
is eliminated. We chose three provinces to show how important
this age structure effect may be: Quebec, Ontario and Newfound-
land. The first has low fertility, low out-migration rates and
a negative net migration; the second has low fertility, low out-
migration rates but a sizable positive net migration; and the
third has a very high fertility, relatively low out-migration
rates and negative net migration. As is shown in graph III,
the age structure profile is much smoother in the stable equi-
valent population of all these three provinces. More parti-
cularly, the "gap" in the years 25-39 (related to the second World
War years) disappears. Moreover, the changes in the age pro-
files illustrate how various populations may be aging in a
different way and at a different rate. For instance, Quebec had
a very young age structure in 1966-1971, with a high "peak"
at the 5-14 age groups (the 0-4 age group is well below the
5-14 age group because the drop in Quebec's fertility started
only in the 1960's) and a sharply declining curve, while its
stable equivalent population shows an age profile with an
almost horizontal line until age 40 and a relatively slow de-
crease in the curve afterwards, the general level of the curve
being very much lower. On the other hand, Ontario, which started
with an age profile relatively similar to the one observed for
Quebec, keeps at stability a sharply declining curve which is

much closer to the initial level than in the case of Quebec;
the "stable curve" is actually very close to the initially
observed curve, except for the 0-25 age groups (this except-
ion reflects Ontario's decline in fertility) for which the
difference is much smaller than in the case of Quebec.
Finally, Newfoundland shows an important increase in the
level of its curve, doubling more or less its figures at
each age group.

C. SPATIAL REPRODUCTION AND MIGRAPRODUCTION LEVELS

One of the many important "by-products" of the multi-
regional life table lies in the fact that it allows for com-
puting some refined measures of spatial fertility levels, such
as the the spatial net reproduction rate[1] which is defined as

$$_i NRR_j = \sum_{x = 0}^{z} {_iL_j}(x) f_j(x)$$

where $_iL_j(x)$ = the number of persons from the multiregional
life table population aged (x) in region $_j$,
that were born in region $_i$

$f_j(x)$ = the age-specific fertility rate in region j .

It is clear that when the NRR's are summed up over all regions
of residence for a given region of birth, the resulting total
NRR is not equal to the traditional NRR, because this spatial
NRR does include the impact of migration on fertility (assuming
a migrant adopts the fertility regime of its region of residence):
on the whole, the spatial NRR for a region of high fertility and

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[1] See ROGERS, A., Spatial Migration Expectancies, IIASA, Laxenburg
(Austria), RM-75-57.

Table 18. Spatial net reproduction rates 1966-1971

Region of Residence

Region of Birth	NFD	PEI	NS	NB	QUE	ONT	MAN	SAS	ALB	BC	TOTAL
Newfoundland	1.16	0.00	0.04	0.02	0.03	0.25	0.01	0.00	0.02	0.03	1.57
Prince Edward I.	0.02	0.70	0.11	0.08	0.05	0.24	0.02	0.01	0.04	0.04	1.31
Nova Scotia	0.03	0.01	0.75	0.06	0.05	0.23	0.02	0.01	0.04	0.06	1.25
New Brunswick	0.02	0.01	0.07	0.78	0.09	0.21	0.02	0.01	0.03	0.04	1.28
Quebec	0.00	0.00	0.01	0.01	0.89	0.12	0.01	0.00	0.01	0.02	1.07
Ontario	0.01	0.00	0.02	0.01	0.05	1.00	0.02	0.01	0.03	0.04	1.19
Manitoba	0.00	0.00	0.02	0.01	0.03	0.16	0.69	0.05	0.12	0.15	1.24
Saskatchewan	0.00	0.00	0.01	0.01	0.02	0.10	0.09	0.62	0.27	0.18	1.30
Alberta	0.00	0.00	0.01	0.01	0.02	0.09	0.03	0.04	0.88	0.20	1.28
British Columbia	0.00	0.00	0.01	0.01	0.02	0.08	0.02	0.02	0.10	0.90	1.17

Note: Because of rounding, the total is not necessarily equal to the sum of the columns

heavy out-migration (to regions of lower fertility) will be lower than the traditional (non spatial) NRR, while the total spatial NRR for a region of low fertility and heavy out-migration will be higher; of course, even with zero out-migration, the NRR will be lower than the GRR (gross reproduction rate), because of mortality.

A comparison between the GRR's of table 6 and the total spatial NRR's presented in table 18 brings a confirmation of this reasoning; because of heavy out-migration to provinces of lower fertility, the total spatial NRR of Newfoundland, Prince Edward Island and Saskatchewan are significantly lower than their GRR. On the other hand, there is almost no difference in the case of provinces of low out-migration, like Quebec, Ontario and British Columbia. The result of taking into account migration (and mortality) is that the range of the reproduction rates is reduced (the range goes from 1.1 to 1.6 instead of 1.1 to 1.9).

From the figures of tables 6 and 18 we may conclude that, at least for the 1966-1971 period, the population of each province is able to reproduce itself (the GRR's of table 6 are all above replacement level, 1.05) and does not induce through migration the population of other provinces to fall below replacement level (the total spatial NRR's of table 18 are all larger than one). Note, however, that only two provinces, Newfoundland and Ontario, are able to reproduce their own population without the "help" of in-migrants. The figure on the diagonal from these two provinces is equal or larger than one. It is also interesting to see how Ontario benefits from the spatial diffusing of reproduction: from 100 persons born in Ontario, only a very small number give birth to babies in another province (from 0 in Prince Edward Island to 5 in Quebec), but 100 persons born in any other province give birth to at least 8 babies in Ontario (this is the case for the natives of British Columbia), and this figure may reach 25 (for the natives of Newfoundland).

The impact of migration on reproduction is even more striking if one considers the <u>spatial allocation of the net reproduction levels</u>, i.e. the share of each province of residence in the total number of babies to be born from a person in a given province. These shares are presented in table 19, which shows that three provinces are particularly unattractive for childbearing for its natives. Persons born in Saskatchewan, Manitoba and Prince Edward Island have only about a fifty-percent chance to give birth in their province than in another province; in other words, these three provinces will receive only about fifty-percent of the expected number of offsprings of their natives. At the other extreme, Quebec and Ontario will receive almost all the number of babies born from their natives; moreover, Ontario will also receive a large part (from 16% to 19%) of the total lifetime births from the natives of the Maritime provinces.

Just as in the analysis of gross migraproduction rates (table 10), we may compare the two elements symmetrical to the main' diagonal of table 19, in order to look for the preference of a "parent" (mother or father) between two provinces. From this point of view, it is not surprising that Ontario gains from all the provinces and Prince Edward Island loses from all the provinces. On the whole, it is obvious that the hierarchy of "preferences" for provinces of childbearing is similar to the hierarchy of preferences for provinces of in-migration. This link between both patterns is expected: it is due mainly to the fact that the ages of heavy migration (20-29 years) correspond to the ages with the highest fertility rates.

In a way similar to the spatial net reproduction rate, one may define the <u>net migraproduction rate</u>[1] as being equal to

$$_i\text{NMR}_j = \sum_{x=0}^{z} {}_iL_j(x)\, m_j(x)$$

where $m_j(x)$ = the out-migration rate of region j for persons aged (x)

$_iL_j(x)$ = as in the spatial net reproduction rate .

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[1] A. Rogers, <u>op.cit.</u>

Table 19. Net Reproduction Allocations (in %)
1966-1971

Region of Residence

Region of birth	NFD	PEI	NS	NB	QUE	ONT	MAN	SAS	ALB	BC	TOTAL
Newfoundland	74	0	3	1	2	16	1	0	1	2	100
Prince Edward Island	2	54	8	6	4	19	1	0	3	3	100
Nova Scotia	2	1	60	5	4	19	1	1	3	4	100
New Brunswick	2	1	6	61	7	16	1	1	2	3	100
Quebec	0	0	1	1	83	11	1	0	1	2	100
Ontario	1	0	2	1	4	84	1	1	2	4	100
Manitoba	0	0	1	1	3	13	55	5	10	12	100
Saskatchewan	0	0	1	0	1	8	7	48	21	14	100
Alberta	0	0	1	0	1	7	3	3	69	16	100
British Columbia	0	0	1	0	2	7	2	2	9	77	100

Source: table 18

These net migraproduction rates are an important com-
plement to the regional life expectancies as defined and ana-
lyzed in section A of this chapter (see table 14). The latter
are based on duration times, i.e. the expected number of years
to be lived in a particular region j by an individual born in
region i. But migration being also a recurrent event, it is
important to know the expected number of migrations to region j
to be made during a lifetime by an individual born in region i.
This is what the NMR's are measuring. Table 20 presents the results
of the computation of the NMR's for all pairs of provinces; as the
differences between the NMR's for males and females are rather
small, only the NMR's for the total population will be analyzed.

The total column shows that, when the effect of mortality is
taken into account, an individual born in Prince Edward Island,
Manitoba or Saskatchewan will be a migrant at least once during
his lifetime, while it takes at least two individuals born in
Quebec, or Ontario to find one migrant. If we take a cohort of a
hundred persons born in any of the Maritime provinces, at least
seven will make a migration to Ontario during their lifetime.
Alberta and British Columbia are also very attractive for persons
born in Manitoba and Saskatchewan. The figures of table 20 are,
however, more significant once they are transformed in relative
numbers: table 21 presents the net migraproduction allocations
for all provinces, i.e. the share of each province of residence
in the total number of migrations expected to be made by an in-
dividual born in a given province.

The figures of table 21 show rather surprisingly that once
mortality is taken into account and when lifetime migration is
considered, the differences for staying in the region of birth
(figures along the main diagonal) are not very large: the range
goes from 65% (for an individual born in Saskatchewan) to 77%
(for an individual born in Quebec). In other words, whatever
his province of birth, an individual will spend at least 2/3 of
his life in the province where he was born. But he will also
make a number of migrations to other provinces, the largest part
of these expected migrations being made to adjacent provinces.
Once non-contiguous provinces are considered, the numbers become
very small and are rather identical.

Table 20. Spatial Net Migraproduction Rates
1966-1971

Region of Birth	Region of Residence										
	NFD	PEI	NS	NB	QUE	ONT	MAN	SAS	ALB	BC	TOTAL
Newfoundland	0.58	0.00	0.04	0.02	0.01	0.08	0.01	0.01	0.02	0.02	0.79
Prince Edward Island	0.01	0.74	0.08	0.06	0.02	0.08	0.02	0.01	0.03	0.02	1.08
Nova Scotia	0.01	0.01	0.66	0.05	0.02	0.08	0.02	0.01	0.03	0.03	0.92
New Brunswick	0.01	0.01	0.06	0.67	0.03	0.07	0.02	0.01	0.03	0.02	0.93
Quebec	0.00	0.00	0.01	0.01	0.32	0.04	0.01	0.00	0.01	0.01	0.42
Ontario	0.00	0.00	0.02	0.01	0.02	0.33	0.02	0.01	0.03	0.02	0.47
Manitoba	0.00	0.00	0.01	0.01	0.01	0.06	0.76	0.07	0.10	0.07	1.10
Saskatchewan	0.00	0.00	0.01	0.00	0.01	0.04	0.09	0.84	0.20	0.09	1.28
Alberta	0.00	0.00	0.01	0.01	0.01	0.03	0.04	0.05	0.67	0.10	0.91
British Columbia	0.00	0.00	0.01	0.00	0.01	0.03	0.03	0.03	0.09	0.43	0.62

Note: Because of rounding, the total is not necessarily equal to the sum of the columns.

Table 21. Net Migraproduction Allocations (in%)
1966-1971

Region of Birth	Region of Residence										TOTAL
	NFD	PEI	NS	NB	QUE	ONT	MAN	SAS	ALB	BC	
Newfoundland	74	1	4	2	2	10	2	1	2	2	100
Prince Edward Island	1	69	8	5	2	7	2	1	3	2	100
Nova Scotia	2	1	72	5	2	8	2	1	4	3	100
New Brunswick	1	1	6	72	4	8	2	1	3	2	100
Quebec	0	0	2	2	77	10	2	1	3	3	100
Ontario	1	1	3	2	4	72	4	2	6	5	100
Manitoba	0	0	1	1	1	5	69	6	10	7	100
Saskatchewan	0	0	1	0	1	3	7	65	16	7	100
Alberta	0	0	1	1	1	3	4	5	74	11	100
British Columbia	0	0	2	1	1	5	4	4	14	69	100

Source: Table 20

This could mean that once the decision has been made to move over a large distance (i.e. beyond adjacent provinces), the distance in itself is not important any more: the marginal cost of moving a few more hundred miles becomes negligible. As the empirical results of many migration models have shown, when large distance migration is considered, economic factors become dominant; this helps to explain the relatively large number of expected migrations to Ontario for persons in the Maritime provinces. In the Canadian case, however, linguistic and cultural factors play also a role: these migrants from the Maritimes tend to by-pass Quebec.

Finally, after analyzing the implications of the 1966-1971 migration regime, as far as duration of stay (regional life expectancies) and frequency (gross and net migraproduction rates) are concerned, one may look for the equilibrium implications of this migration regime, i.e. the stable population equivalent which would be obtained if only migration differentials were in effect. In order to obtain this type of result, we put age-specific mortality and fertility rates equal in each province, and keep only the observed age-specific interprovincial migration rates. The differences between the stable population equivalent obtained previously (with fertility, mortality and migration differentials being considered) and the stable population equivalent obtained with only migration differentials taken into account, are a measure of the impact of fertility (and for a small part mortality) on population redistribution (mortality differentials being rather small and negligible, the difference between the two stable equivalents may be viewed as measuring the impact of fertility differentials only).

As far as the Canadian case is concerned, this impact is rather important. Let us analyze the figures of table 22 which presents the characteristics of the stable equivalent obtained by considering only migration differentials and putting fertility and mortality conditions equal over all provinces. These figures should be compared to the corresponding figures of table 15.

Table 22. Stable Equivalent with Migration Differentials Only

	NFD	PEI	NS	NB	QUE	ONT	MAN	SAS	ALB	BC	CAN
Absolute numbers (in '000)	283	98	726	536	4,482	9,491	783	457	2,588	5,653	25,095
Share (in %)	1.1	0.4	2.9	2.1	17.9	37.8	3.1	1.8	10.3	22.5	100
Mean age	34.9	35.7	35.3	35.1	34.9	35.3	34.6	35.5	34.2	35.9	35.2
% Less 20 years	32.9	32.5	32.3	32.7	32.3	31.7	32.6	32.7	32.8	31.2	31.9
% 65 years and over	12.6	13.9	13.1	13.3	12.4	12.9	12.2	13.6	11.4	13.8	12.9

If, in 1966-1971, the fertility and mortality conditions had been the same in all provinces, and had been equal to the Canadian average, then the stable equivalent to the initial Canadian population would have been 25 million instead of 18 million. Three provinces would have benefited considerably from the situation: Quebec, Ontario and British Columbia. As expected, these are also the three provinces which in 1966-1971 had below average fertility rates (see table 6): by attributing to these provinces the national (average) fertility rates, one allows them to increase markedly their demographic "performance". This is, however, not necessarily reflected in the share of each province in the total population. Because the total population of Canada has increased also, the share of Ontario and British Columbia are only marginally affected by their fertility regime. This is not the case for Quebec, the share of which increases from 11% to 18% once fertility (and mortality) differentials are excluded. Note, however, that this 18% share of Quebec is still much lower than the initial 29% share. Thus, even if Quebec had had a fertility regime identical to the Canadian average, it would still - at equilibrium - experience a substantial reduction in its population figure (from 6 million to 4.5 million) and in its relative share (29% to 18%). Actually, Quebec's below-average fertility accounts for about 40% in the decline of its relative share (7% divided by 18%) as far as the stable equivalent to initial population is concerned. Interprovincial migration is thus the dominant factor in this projected evolution. The policy implications of this kind of result are of course important, and will be discussed later, in the next and final chapter of this report.

All other provinces benefit also (but only slightly) from the increase in the stable total population, except Newfoundland, which has four times less inhabitants once its over-fertility is eliminated.

The effects of fertility (and mortality) differentials on the mean age and on the age structure of each province in the stable equivalent are not less striking. As expected, the mean age of population increases markedly in all provinces that have an above average fertility level (for Newfoundland, the mean age

increases from 28.5 to 34.9 once fertility rates are put iden-
tical in all provinces), while the mean age decreases (but only
slightly) in those provinces which have a fertility level below
average (Quebec and British Columbia). It is also not surpris-
ing to see the percentage of persons less than 20 years old
decreasing in the provinces which had above average fertility
(from 45% to 33% in the case of Newfoundland) and increasing in
the provinces that had below average fertility (but here again,
the increase is small in Quebec and Ontario). The reverse is
true for the percentage of persons aged 65 and over.

By eliminating fertility (and mortality) differentials
the stable state is reached much more rapidly:"only" 308
iterations (i.e. 1540 years) are necessary, instead of 627; and
convergence towards stability is also much faster: after 100
iterations (i.e. 500 years, which corresponds to the year 2468),
one has reached a state which is very close to stability (200
iterations were needed when fertility differentials were taken
into account). Finally, these fertility differentials have also a
considerable impact on the stable national (and thus provincial)
rate of growth: this rate (over five-years) drops from 4% to 3.2%
once fertility and mortality differentials are eliminated.

It has often been stated that we may expect a continuation
of the trend towards convergent fertility rates (mortality rates
are already almost identical among provinces). Based on the
results just discussed, one may conclude that provincial fer-
tility rates which converge towards the national average imply
a lower rate of demographic growth, a population which is older
(i.e. with an higher mean age, a lower percentage of young people
and a larger percentage of old people) and an important redis-
tribution of the population among provinces, benefiting to the
provinces which have below average fertility levels. But the
main conclusion is probably that the interactions - both at the
regional level and from the multiregional point of view - between
fertility and migration need to be investigated more in depth.
This, however, goes beyond the scope of this short report.[1]

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[1]For a more detailed analysis of the spatial interactions between
   fertitity, mortality and migration, Lee C. DIONNE and M. TERMOTE,
   op.cit.

4. CONCLUSION: SOME POLICY ASPECTS

Canada has a number of basic features which explain why the spatial distribution of its population represents for its future a highly challenging problem.

The fact that Canada is a confederation implies that the spatial distribution of political power is with it as a fundamental issue. Some fields (defense, money) are clearly of the exclusive competence of the federal government; others (education, for instance) are solely a provincial domain, but in most cases there is an overlapping of competence. It is quite obvious that in this "struggle" between the two levels of government (i.e. federal and provincial), the demographic weight of a province (i.e. its share in the total population) is a prime factor.

A second feature rests in the fact that the spatial distribution of its population is basically linear and multipolar. Canada's territory is second in size only to that of the Soviet Union, but its total population figure reaches only the 91st rank. This relatively sparse population is, however, distributed as a "long, thin ribbon" along the 6,500-km border with the United States, with half a dozen points of heavy concentration: in the west, on the Pacific Ocean, Vancouver (British Columbia); Edmonton and Regine (Alberta); Winnipeg (Manitoba); Windsor-Toronto-Ottawa (Ontario); Montreal-Quebec (Quebec); and finally, a relatively small pole on the Atlantic Ocean, Halifax (Nova Scotia). As often emphasized, "The narrowness and length of this band of habitation deprives Canada of a point of gravity and a corresponding point of identification."[21] Any important shift of population along this line is therefore first viewed as a regional (provincial) problem, and only marginally as a national (dis-) equilibrium process.

This line, "a mari usque ad mare" (Canada's motto, meaning "from ocean to ocean"), is particularly dense between Windsor

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[21] R. Beaujot, *Canada's Population: Growth and Dualism*, Population Reference Bureau, Washington D.C., 1978, p. 4.

(Ontario) and Quebec City: between these two cities, in a rect-
angle about 1,000 km long and 150 km deep, live 55% of the
country's total population. It could be said that there is a
"knot" in the ribbon, and that this knot lies between Ontario
and Quebec. The strength of this knot depends on the equilib-
rium between the demographic weights attached to its two sides.
This leads us to the last,[22] but certainly not the least, of
the factors we want to mention, namely, the Anglo-French antago-
nism. Canada's prime issue, and much of its future, resides in
this demographic "tête-à-tête" between the two founding "races".

And yet despite all this, Canada still has no population
policy, and more particularly, no policy of spatial redistribu-
tion of the population. In a recent analysis of Canada's popu-
lation trends and public policy issues, Stone and Marceau had
to conclude in the following way: "It can be said generally
that few public policies have been adopted to reach demographic
objectives. Those that seem closely related to demographic
objectives, such as the Immigration Act, have in fact been
adopted most often to meet a great number of needs which are
quite different and sometimes contrary to the requirements of a
certain control of demographic evolution."[23] Beaujot arrives at
the same conclusion: "Like the U.S., Canada has no national pop-
ulation policy in the sense of a coherent set of programs delib-
erately aimed at influencing the size, rate of growth, distribu-
tion, and composition of the country's population."[24]

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[22] There is, of course, another important phenomenon which should
be mentioned, namely, the rapid growth of several large cities
and the depopulation of many small communities. But as this
report is limited to the population redistribution between
provinces, we have to neglect this rural-urban dimension.

[23] L.O. Stone and C. Marceau, *Canadian Population Trends and Public
Policy Through the 1980's*, Institute for Research on Public Policy,
Montreal, 1977, p. 57.

[24] R. Beaujot, op. cit., p. 38.
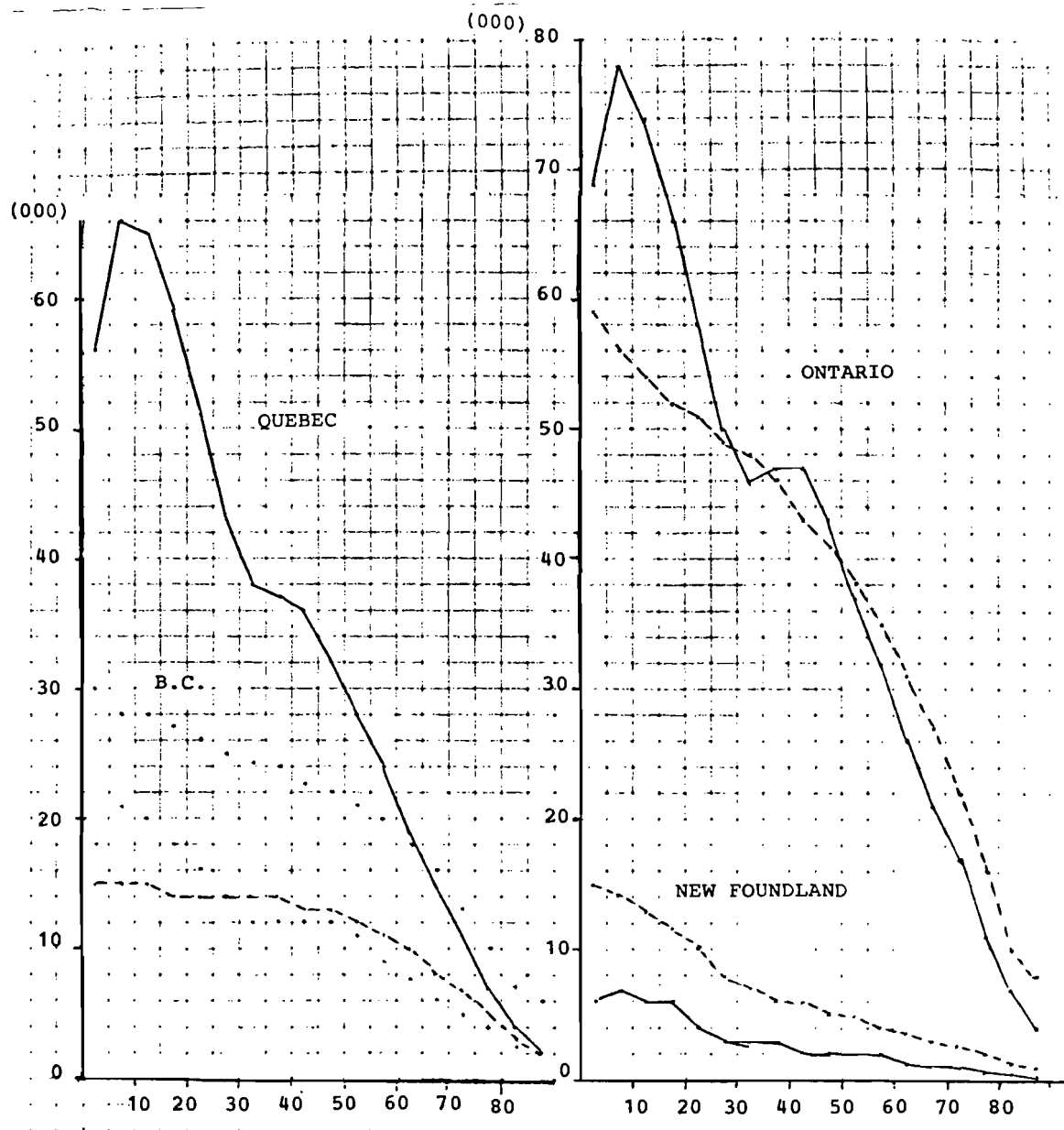
Graph III. Observed (-) and stable equivalent (---) populations in each age group

The need for a policy of direct intervention in the spatial redistribution of the population has, however, become even more apparent, at least to the author of this report, if we consider the results of our multiregional analysis. It is obvious, and we have emphasized it more than often, that projecting the 1966-1971 multiregional demographic rates until a stable equilibrium is reached, does not represent a forecast of the future. But the behavioral characteristics implied in this type of multiregional projection may, however, help the policy-makers in formulating the objectives and means of a long-range population policy.

One of the main results of our multiregional projection has been to show how negligible the share of Quebec's population (and thus of the French component) will be in the long run if the 1966-1971 fertility, mortality and interprovincial migration rates are kept fixed: Quebec's share in the total population of Canada would be reduced from the present 27% to 11% at equilibrium. It is clear that if Canada wants to remain a truly bilingual country (or, more exactly, a country where two languages and two cultures coexist), some measures are needed today (the long run starts today...). These measures may influence directly the components of regional demographic growth, or they may influence them indirectly. Let us first consider the first type of intervention.

The 11% figure of Quebec's long run share in the total population of Canada was obtained by assuming that the fertility level would remain constant. But Quebec's fertility level continued to decline markedly in the 1970's relatively to the fertility level of the other provinces and is now well below replacement level. In order to estimate the impact of fertility differentials, we have put the fertility rates in each province equal to the Canadian figure and so obtained an increase of Quebec's long run share from 11% to 18%, which shows how sensitive the results are to the fertility regime, but which also indicates that with a declining fertility level in Quebec, its

already low (11%) long run share would probably be significantly reduced if our multiregional projection was based on 1978 figures.

Direct interventions in the field of fertility seem, however, considered with great reluctance (Canada has never had a national fertility survey and did not join the countries participating in the World Fertility Survey), and it is doubtful whether they would produce any sizable result. (A fertility survey made in Quebec showed that even with extremely pro-natalist policy measures, the women of Quebec would increase only marginally their fertility level).[25]

The impact of <u>international migration</u> seems to be at least as important as the impact of fertility differentials. As we showed in the second chapter of this report, international migration represents about 30% of Canada's total population growth, and most of the gain from migration between Canada and the rest of the world benefits Ontario and British Columbia: 85% of the total net gain went to these two provinces. A recent article by K.-L. Liaw shows that by taking international migration into account, Ontario's long run share increases from 35% to 41%, and British Columbia's share from 25% to 30%, while Quebec's long run share decreases from 9.1% (compared to our 11%) to 6.6%. It is clear from these figures that Canada's international migration policy has strongly influenced the interprovincial redistribution of its population, and, if maintained, will represent an additional source of decrease in the French component of Canada's population. Once a group feels that it is going to represent only 6% of the total community, it is not surprising that it starts to question the survival of its distinct culture and to ask for some policy measures.

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[25] J. Henripin and E. Lapierre-Adamcyk, *La fin de la revanche des berceaux: qu'en pensent les Quêtiecoises?* Presses de l'Université de Montréal, 1974, p. 164.

Fertility being disregarded as a field of direct intervention because it is viewed as a personal and confidential question, and a direct intervention on internal mobility being excluded for much the same reasons (it would be considered an attack on the personal freedom of the Canadian citizens), it is not surprising that the prime - and more precisely - sole domain where a national population policy seems to have taken shape is international migration. It does not seem exaggerated to state that the essential content of the Canadian population policy will be put into force through immigration policies. This is indeed the conclusion reached by the Department of Manpower and Immigration: "There are few firm handholds for policy in the field of demographic planning. One...can be furnished through the control of immigration volume."[26]

If controlling the volume of immigration means reducing the number of immigrants, then the provinces which receive the main bulk of these immigrants (Ontario and British Columbia) will see a decrease in their relative share of the population to the benefit of those provinces which do not gain from international migration: immigration policy measures have then a direct influence on population redistribution.[27] One should, however, also take into consideration the capacity of each province to retain these immigrants. Not only do Ontario and British Columbia receive much more than their share of immigrants, but they also receive after a few years immigrants who at their entrance into Canada had chosen another province. At the other extreme, Quebec loses about one third of its immigrants three years after their arrival.

The spatial distribution of the population may be influenced not only by a control of the volume of immigration, but it may also be affected by the choice of the selection criteria for

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[26] Department of Manpower and Immigration, *Report of the Canadian Immigration and Population Study*, Ottawa, 1974, Volume 1, p. 7.

[27] This is, of course, even more valid if we introduce the urban dimension, as most immigrants settle in metropolitan areas.

immigrants. The fact that in 1974 these selection criteria were modified to disfavour immigrants whose occupation "is not in demand in Canada" has given an advantage to the provinces which are the economic leaders of the country: it is highly probable that most of the "occupations which are in demand in Canada" are located in Ontario and British Columbia.

Both these direct and indirect influences of immigration on the interprovincial redistribution of population, and more particularly on the linguistic "balance" (and thus on Quebec versus the rest of Canada), have received in recent years a lot of attention among policy-makers and have led in 1977 to an un-precedented agreement between the federal government (which has always considered immigration a domain of exclusive federal com-petence) and Quebec: an agreement whereby Quebec is allowed to intervene in the selection (and thus also in the number) of immigrants who have chosen to settle in this province.

This kind of measure is probably the closest the federal government has come to intervening in the spatial redistribution of the population. A recommendation by the Special Joint Com-mittee of the Senate and by the House of Commons on Immigration Policy (in 1975), that "area demand be...used experimentally to encourage prospective immigrants to settle in communities where population growth is desired and is compatible with regional development plans" has - to date - not been more than a sugges-tion. Even if this type of recommendation was adopted by the legislative body, its impact may be doubted (because of the internal mobility of these immigrants), and its result would probably be an increase in the relative attractiveness of the provinces which are already receiving the largest part of the immigration flow, because it is precisely in these provinces that "area demand" is the strongest.

As already mentioned, there is no direct intervention by the federal government in the field of internal migration. Freedom of movement on Canadian territory is considered a basic right which may not be affected in any way. (This is probably

the main reason why the principle of an "identity card", adopted
in most European countries, has never been accepted in Canada).
Provincial governments may, however, also try to influence the
geographic mobility of the population. The Quebec government
has been particularly active during the last years in developing
policies which, directly or indirectly, have had a strong impact
on interprovincial migration flows.

A direct interference in the field of fertility and internal
migration being excluded, the Quebec government has chosen, be-
sides the above mentioned measures concerning international mi-
gration, to influence lingusitic mobility in order to try to
protect the survival of the French culture. The most striking
policy measure in this field has been to allow (since 1977)
into English schools only those children whose parents themselves
went to an English school in Quebec. The immediate result of
this kind of policy has been to reduce considerably the amount
of in-migration from the other provinces (which are all English-
speaking), and to increase (actually, to double) the number of
out-migrants. Of course, the volume and composition of the flow
of international immigration in Quebec has also been affected.

This type of policy measure represents probably the most
striking example where intervention in one domain (education, in
this case) has had a considerably indirect impact on the spatial
redistribution of population. Indeed, even if there is no di-
rect intervention in the spatial redistribution of population,
there are a great number of policy measures which have an indi-
rect influence on this redistribution. And even if there were
a population redistribution policy, it is highly probable that
its effects would be more than offset by those resulting from
other policy measures. It may be said that almost all policy
measures, in every field, have an indirect impact on population
redistribution. Let us mention only a few of them.

As mentioned, there is no direct intervention in the field
of fertility. But the modifications to the Criminal Code
adopted in 1969 in order to allow doctors to practice abortions

once a committee has accepted for therapeutic reasons the request for abortion, may have had an important - and yet difficult to estimate - impact on provincial fertility differentials, and thus on population redistribution, because the number of these committees and their readiness to accept abortion greatly vary from one province to another.

Any employment policy obviously has regional implications and has therefore, in some way or another, an impact on the spatial distribution of the population. Recognizing that migration is one of the main adjustment processes to regional labor market disequilibria, the Economic Council of Canada recently recommended that "Canadians who want to improve their financial situation must to some extent be ready to move into the regions where well-paid jobs are offered, particularly if these jobs are located in the social and cultural environment where these migrants come from."[28]

In order to help the functioning of this spatial adjustment process, the federal government has subsidized moving expenses of workers and their dependents who move from "labor surplus areas", but this help was authorized only when the worker was unemployed, had a job to go to, and was unable to pay the costs himself. The impact of this kind of intervention has, however, been negligible: only about one hundred workers and their families were assisted in this way each year. Moreover, helping people to move does not represent a policy of spatial redistribution of population as long as no objectives in spatial terms are defined.

This kind of spatial objective is by definition present, at least implicitly, in a regional development policy. "Since the birth of the Confederation, a balanced regional development has always been implicitly, if not explicitly, one of the

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[28]Economic Council of Canada, *Living Together - A Study of Regional Disparities*, Ottawa, 1977, Catalogue No. EC 22-54/1977. See summary, p. 10.

objectives of national policy."[29] The first problem, of course,
is to define what is understood by a "balanced" regional devel-
opment. Equilibrium is a relative concept: it depends on what
we put into it. From what we may infer from the activities of
the various agencies set up by the federal government in the
last two decades, balanced regional development means improving
the economic viability of some regions that are considered "poor"
and suffering from lagging growth.

It is obviously not possible in this short review to give
a detailed account of Canada's regional development policy.[30]
Besides, the usefulness of this exercise would be disputable.
As concluded by Brewis in his study of regional economic policies
in Canada: "There is a serious lack of co-ordination among the
various bodies concerned...and it is often difficult to know who
is responsible for doing what...there seems to be something for
everybody. But how effective are these various incentives, and
what sort of a pattern of regional development is likely to
emerge from them? No one is sure...to a very large extent the
government is still operating in the dark."[31]

Things have, however, improved since the creation, in
1969, of the Department of Regional Economic Expansion (DREE).
This department tries to co-ordinate various regional programs
and, with a relatively small budget, attempts to influence re-
gional economic growth differentials. The financial help provid-
ed by this department has been about equally divided between
three programs: infrastructure works (particularly roads, water
distribution and sewers in urban regions), rural development and

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[29]Economic Council of Canada, *First Annual Review*, Ottawa, 1964.

[30]For a detailed analysis of regional economic policies in the
1960's, see T.N. Brewis, *Regional Economic Policies in Canada*,
Macmillan, Toronto, 1969, p. 303. For the 1970's, see the
Annual Reports of the Department of Regional Economic Expansion.

[31]T. Brewis, op. cit., p. 247.

subsidies intended to promote the establishment of new plants or the expansion of existing ones in regions with a low economic growth rate.

Among the criticisms which have been directed towards the activities of DREE, one may mention the large spatial dispersion of the help which is provided, the fact that a large part of this help goes to urban regions which have problems of industrial concentration, and the fact that most of the aid goes to small private industries which are rarely the most polarizing, having often a rather low "multiplier effect".

One of the regional development policy measures which may have a significant and immediate impact on regional development, and thus on population redistribution, consists of the policy of the federal government intended to decentralize some of its services. The first step in this way had been taken about ten years ago when it was decided to move some federal agencies, previously located in Ottawa, to Hull, which is in fact a suburb of Ottawa but located on Quebec territory, on the other side of the Ottawa River, which constitutes the border between Ontario and Quebec. This kind of policy measure, which actually is in line with the suburbanization of the capital city of Canada, has clearly had an important impact on migration flows between Ontario and Quebec. In the last years, the federal government has started to move some of its services to far remote, under-developed regions of the country, but the impact of this measure is as yet rather negligible.

Many other policy measures having an indirect effect on population redistribution should be mentioned: transportation policy, export policy, federal and provincial taxation policy, defense policy, housing policy, and so on. Moreover, one should not forget that each province may have its own policy measures.

The main conclusion of this highly sketchy review of some policy aspects related to the spatial (interprovincial) redistribution of population in Canada, is probably that no conclusion can be made: there are too many interrelations between

different policy measures taken at various government levels, and there are too many indirect influences to be considered besides the direct impact of a given policy measure. It is hoped that this brief report on the spatial redistribution of the Canadian population will, however, have contributed to stimulate further studies of all these interrelations.

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Appendix A

Observed demographic rates (1966-1971). Total population.

OBSERVED RATES
****

DEATH RATES
****

AGE	NW.FOUND	P.EDOUAR	N.SCOTIA	BRUNSWIC	QUEBEC	ONTARIO	MANITOBA	SASKATCH	ALBERTA	B.COLUMB
0								0.005286	0.004395	0.004435
5								0.000396	0.000386	0.000506
10									0.000396	0.000383
15										
20										
25										
30										
35										
40										
45										
50										
55										
60										
65										
70										
75										
80										
85										
GROSS	0.484137	0.440652	0.478021	0.471208	0.512941	0.471838	0.444437	0.417619	0.433200	0.441596
CRUDE	0.006168	0.009238	0.008568	0.007808	0.006720	0.007582	0.008069	0.007923	0.006388	0.008293
M.AGE	78.2644	77.6789	77.0980	78.0104	78.1734	78.1757	78.1293	78.0374	78.1635	77.8811

FERTILITY RATES
****

AGE	NW.FOUND	P.EDOUAR	N.SCOTIA	BRUNSWIC	QUEBEC	ONTARIO	MANITOBA	SASKATCH	ALBERTA	B.COLUMB
0										
5										
10										
15										
20										
25										
30										
35										
40										
45										
50										
55										
60										
65										
70										
75										
80										
85										
GROSS						0.244962	0.265702	0.294742	0.273985	0.237451
CRUDE						0.017759	0.018167	0.018737	0.020013	0.017016
M.AGE					28.1602	26.9885	27.3269	27.2997	26.7874	26.5383

OUTMIGRATION RATES
****

MIGRATION FROM NW.FOUND TO

AGE	TOTAL	NW.FOUND	P.EDOUAR	N.SCOTIA	BRUNSWIC	QUEBEC	ONTARIO	MANITOBA	SASKATCH	ALBERTA	B.COLUMB
0	0.010630	0.000000	0.000108	0.001444	0.002445	0.000630	0.006236	0.002046	0.000092	0.000154	0.000476
5	0.010770	0.000000	0.000125	0.001609	0.004437	0.001108	0.005707	0.000300	0.000113	0.000255	0.000716
10	0.007413	0.000000	0.000062	0.000879	0.005519	0.000777	0.004207	0.000283	0.000034	0.000242	0.000410
15	0.013202	0.000000	0.000078	0.001313	0.006628	0.000839	0.009122	0.000165	0.000088	0.000309	0.000748
20	0.022663	0.000000	0.000338	0.004664	0.011464	0.002615	0.034416	0.000624	0.000392	0.000983	0.001673
25	0.018703	0.000000	0.000433	0.004664	0.012074	0.002278	0.017090	0.000659	0.000108	0.000910	0.001273
30	0.018205	0.000000	0.000226	0.002226	0.011416	0.001969	0.014078	0.000411	0.000242	0.000560	0.000931
35	0.012492	0.000000	0.000285	0.001628	0.011154	0.001828	0.006363	0.000353	0.000206	0.000458	0.000877
40	0.010694	0.000000	0.000050	0.001175	0.006563	0.001301	0.005454	0.000261	0.000193	0.000353	0.000966
45	0.007409	0.000000	0.000182	0.001025	0.004460	0.000625	0.004317	0.000094	0.000208	0.000278	0.000243
50	0.006580	0.000000	0.000235	0.002732	0.002421	0.000554	0.003803	0.000122	0.000169	0.000235	0.000253
55	0.005605	0.000000	0.000122	0.000421	0.003336	0.000496	0.003535	0.000056	0.000073	0.000349	0.000111
60	0.002245	0.000000	0.000132	0.003353	0.001112	0.000316	0.001098	0.000071	0.000000	0.000038	0.000242
65	0.004360	0.000000	0.000132	0.000476	0.001136	0.000354	0.001252	0.000068	0.000000	0.000037	0.000283
70	0.003914	0.000000	0.000178	0.000643	0.001175	0.000498	0.001428	0.000117	0.000000	0.000024	0.000340
75	0.003062	0.000000	0.000234	0.000000	0.001175	0.000526	0.001811	0.000000	0.000000	0.000034	0.000350
80	0.000000	0.000000	0.000129	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000058	0.000000
85	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
GROSS	0.192228		0.002960	0.023608	0.011919	0.015853	0.115798	0.004542	0.001919	0.005234	0.010301
CRUDE	0.013548		0.000161	0.001665	0.006822	0.001047	0.008353	0.000317	0.000129	0.000359	0.000695
M.AGE	31.2855		42.6203	31.4624	31.8710	34.5498	30.1758	31.3636	32.2950	31.5676	34.0269

MIGRATION FROM P.EDOUAR TO

AGE	TOTAL	NW.FOUND	P.EDOUAR	N.SCOTIA	BRUNSWIC	QUEBEC	ONTARIO	MANITOBA	SASKATCH	ALBERTA	B.COLUMB
0	0.017797	0.000620	0.000000	0.003099	0.003010	0.000885	0.006995	0.000620	0.000443	0.001151	0.000974
5	0.025565	0.000375	0.000000	0.005424	0.003663	0.001469	0.006721	0.000860	0.000281	0.000868	0.001532
10	0.015606	0.000195	0.000000	0.004232	0.002350	0.001402	0.005681	0.000225	0.000264	0.000274	0.001062
15	0.016877	0.000172	0.000000	0.003533	0.002548	0.001024	0.006953	0.000354	0.000230	0.000637	0.001398
20	0.059953	0.001042	0.000000	0.011481	0.007113	0.003769	0.027555	0.001498	0.000100	0.000468	0.002047
25	0.057573	0.000159	0.000000	0.009546	0.006276	0.003865	0.019719	0.001420	0.000760	0.000642	0.002543
30	0.033227	0.000336	0.000000	0.004930	0.004691	0.002239	0.019940	0.001142	0.000817	0.002274	0.001356
35	0.021717	0.000108	0.000000	0.005791	0.003372	0.002239	0.007040	0.000880	0.000147	0.001567	0.001567
40	0.017717	0.000336	0.000000	0.004961	0.002499	0.000895	0.005558	0.000336	0.000000	0.002274	0.002336
45	0.014129	0.000198	0.000000	0.004599	0.002448	0.000188	0.003560	0.000334	0.000148	0.000556	0.001127
50	0.014401	0.000245	0.000000	0.003231	0.001014	0.000446	0.002179	0.000000	0.000188	0.000564	0.000852
55	0.024424	0.000000	0.000000	0.002446	0.000892	0.000446	0.001541	0.000000	0.000000	0.000446	0.000245
60	0.004908	0.000000	0.000000	0.002785	0.000834	0.000143	0.001865	0.000000	0.000196	0.000736	0.000055
65	0.003851	0.000165	0.000000	0.001265	0.000877	0.000163	0.000935	0.000110	0.000220	0.000110	0.000063
70	0.003021	0.000125	0.000000	0.001378	0.000491	0.000063	0.000972	0.000063	0.000251	0.000263	0.000081
75	0.003069	0.000162	0.000000	0.001377	0.000491	0.000081	0.000160	0.000081	0.000243	0.000081	0.000129
80	0.004897	0.000129	0.000000	0.001675	0.000168	0.000129	0.000000	0.000129	0.000258	0.000129	0.000000
85	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
GROSS	0.300751		0.000000	0.069958	0.043919	0.019056	0.111274	0.008010	0.004346	0.016960	0.019001
CRUDE	0.020324		0.000000	0.004629	0.002923	0.001359	0.007698	0.000556	0.000256	0.001110	0.001281
M.AGE	29.7776		0.0000	31.9454	31.4879	26.1509	27.8644	27.1604	38.0923	30.0263	31.4637

MIGRATION FROM N.SCOTIA TO

AGE	TOTAL	NW.FOUND	P.EDUUAR	N.SCOTIA	BRUNSWIC	QUEBEC	ONTARIO	MANITOBA	SASKATCH	ALBERTA	B.COLUMB
0	0.015103	0.003412	0.002515	0.000000	0.002487	0.001972	0.006572	0.000425	0.000245	0.000773	0.001302
5	0.011261	0.002419	0.001777	0.000000	0.002764	0.001622	0.008803	0.000558	0.000204	0.001203	0.002099
10	0.013497	0.001657	0.000657	0.000000	0.002138	0.002065	0.006785	0.000487	0.000191	0.000642	0.001872
15	0.013997	0.001644	0.000508	0.000000	0.002442	0.002912	0.007015	0.000448	0.000098	0.000811	0.001666
20	0.027562	0.014443	0.001136	0.000000	0.004310	0.002479	0.023782	0.001177	0.000539	0.002730	0.003467
25	0.036153	0.001447	0.000957	0.000000	0.004443	0.004133	0.017499	0.001253	0.000411	0.003341	0.004217
30	0.025017	0.000991	0.000953	0.000000	0.002754	0.002141	0.012050	0.000810	0.000398	0.001648	0.002804
35	0.016584	0.000654	0.000422	0.000000	0.003027	0.001766	0.008344	0.000486	0.000226	0.000857	0.001934
40	0.014771	0.000372	0.003784	0.000000	0.002388	0.001107	0.006721	0.000539	0.000097	0.004642	0.002370
45	0.013271	0.000312	0.000236	0.000000	0.001803	0.004552	0.005107	0.000393	0.000091	0.000715	0.001463
50	0.006617	0.000199	0.000292	0.000000	0.007825	0.004498	0.003253	0.000111	0.000146	0.000327	0.000890
55	0.005123	0.000143	0.000298	0.000000	0.007550	0.005567	0.002473	0.000063	0.000034	0.000246	0.000487
60	0.002962	0.000211	0.000268	0.000000	0.004638	0.004271	0.001810	0.000000	0.000000	0.000035	0.000412
65	0.003295	0.000215	0.000292	0.000000	0.006768	0.003301	0.001214	0.000044	0.000000	0.000096	0.000280
70	0.003592	0.000202	0.000353	0.000000	0.007774	0.003336	0.001460	0.000043	0.000000	0.000118	0.000301
75	0.003592	0.000000	0.000000	0.000000	0.008894	0.004008	0.001764	0.000047	0.000000	0.000131	0.000336
80	0.004241	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000141	0.000400
85	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
GROSS	0.236060	0.011086	0.011107	0.000000	0.034718	0.022292	0.118742	0.006928	0.002680	0.014217	0.026298
CRUDE	0.016542	0.000763	0.000603	0.000000	0.002386	0.001415	0.007824	0.000505	0.000199	0.001007	0.001841
M.AGE	30.0187	30.5635	34.2628	0.0000	31.4579	29.5026	29.6771	27.2834	25.8072	28.1771	30.4017

MIGRATION FROM BRUNSWIC TO

AGE	TOTAL	NW.FOUND	P.EDUUAR	N.SCOTIA	BRUNSWIC	QUEBEC	ONTARIO	MANITOBA	SASKATCH	ALBERTA	B.COLUMB
0	0.015347	0.002496	0.002786	0.002786	0.000000	0.003444	0.005725	0.000429	0.000214	0.000781	0.001026
5	0.016111	0.002528	0.003345	0.003449	0.000000	0.002761	0.006182	0.000587	0.000146	0.000782	0.001334
10	0.013497	0.002376	0.002436	0.002495	0.000000	0.002358	0.005502	0.000532	0.000128	0.000606	0.001063
15	0.013997	0.002241	0.002346	0.002053	0.000000	0.002449	0.006428	0.000508	0.000207	0.000656	0.001028
20	0.031454	0.011335	0.006894	0.006177	0.000000	0.007823	0.017797	0.000878	0.000494	0.002371	0.002290
25	0.036153	0.011495	0.001611	0.007291	0.000000	0.007416	0.015448	0.000974	0.000319	0.001068	0.002542
30	0.016436	0.004596	0.000816	0.004722	0.000000	0.003648	0.007679	0.000847	0.000454	0.000681	0.001645
35	0.013476	0.003311	0.000427	0.003511	0.000000	0.002134	0.005587	0.000559	0.000199	0.000546	0.001533
40	0.012166	0.000199	0.000589	0.002717	0.000000	0.001863	0.004628	0.000366	0.000031	0.000782	0.001165
45	0.009111	0.000168	0.000634	0.002627	0.000000	0.001312	0.004134	0.000326	0.000168	0.000313	0.001143
50	0.005332	0.000168	0.000286	0.001954	0.000000	0.000796	0.001981	0.000038	0.000109	0.000168	0.000632
55	0.004543	0.000197	0.000298	0.001553	0.000000	0.001173	0.001061	0.000047	0.000038	0.000150	0.000329
60	0.003773	0.000197	0.000217	0.001276	0.000000	0.001155	0.001129	0.000141	0.000014	0.000103	0.000394
65	0.004200	0.000014	0.000240	0.001283	0.000000	0.001133	0.001142	0.000069	0.000014	0.000127	0.000263
70	0.004648	0.000000	0.000273	0.001436	0.000000	0.001415	0.001269	0.000078	0.000020	0.000137	0.000296
75	0.005624	0.000432	0.000348	0.001706	0.000000	0.001359	0.001517	0.000095	0.000032	0.000158	0.000312
80	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000379
85	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
GROSS	0.245036	0.006079	0.048658	0.048658	0.000000	0.045536	0.098268	0.007035	0.002630	0.011559	0.017375
CRUDE	0.016908	0.000449	0.003190	0.003190	0.000000	0.003489	0.006962	0.000507	0.000189	0.000824	0.001198
M.AGE	31.2829	26.4504	34.3235	35.9976	0.0000	31.8675	29.7940	29.4913	28.5066	29.1344	31.7397

MIGRATION FROM QUEBEC TO

AGE	TOTAL	NS.FOUND	P.EDOUAR	N.SCOTIA	BRUNSWIC	QUEBEC	ONTARIO	MANITOBA	SASKATCH	ALBERTA	B.COLUMB
0	0.004608	0.000108	0.000121	0.000195	0.000368	0.000000	0.002058	0.000156	0.000052	0.000253	0.000431
5	0.005162	0.000103	0.000122	0.000200	0.000387	0.000000	0.002424	0.000197	0.000068	0.000359	0.000580
10	0.004517	0.000073	0.000121	0.000221	0.000287	0.000000	0.003516	0.000153	0.000042	0.000256	0.000563
15	0.004477	0.000095	0.000112	0.000241	0.000256	0.000000	0.003375	0.000139	0.000106	0.000237	0.000506
20	0.007652	0.000154	0.000048	0.000363	0.000489	0.000000	0.004238	0.000256	0.000135	0.000546	0.000945
25	0.008747	0.000150	0.000047	0.000413	0.000757	0.000000	0.005112	0.000309	0.000126	0.000610	0.001098
30	0.006747	0.000125	0.000037	0.000360	0.000577	0.000000	0.004434	0.000261	0.000067	0.000443	0.000999
35	0.005747	0.000142	0.000026	0.000321	0.000398	0.000000	0.003961	0.000195	0.000048	0.000351	0.000819
40	0.005747	0.000102	0.000044	0.000253	0.000284	0.000000	0.003782	0.000186	0.000053	0.000276	0.000660
45	0.004421	0.000097	0.000019	0.000176	0.000257	0.000000	0.002760	0.000126	0.000043	0.000168	0.000528
50	0.003972	0.000096	0.000026	0.000098	0.000181	0.000000	0.001989	0.000113	0.000031	0.000116	0.000456
55	0.003029	0.000078	0.000019	0.000107	0.000216	0.000000	0.001863	0.000074	0.000022	0.000131	0.000502
60	0.002070	0.000021	0.000018	0.000083	0.000177	0.000000	0.001912	0.000080	0.000027	0.000248	0.000300
65	0.002109	0.000012	0.000021	0.000104	0.000224	0.000000	0.001760	0.000037	0.000034	0.000058	0.000376
70	0.002629	0.000016	0.000026	0.000128	0.000270	0.000000	0.002163	0.000047	0.000044	0.000073	0.000462
75	0.003235	0.000012	0.000031	0.000167	0.000361	0.000000	0.002904	0.000058	0.000058	0.000099	0.000617
80	0.000332	0.000016	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
85	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
GROSS	0.088230	0.001244	0.000490	0.003560	0.005796	0.000000	0.058940	0.002464	0.000977	0.004266	0.010502
CRUDE	0.005465	0.000093	0.000030	0.000242	0.000376	0.000000	0.003924	0.000173	0.000063	0.000308	0.000656
M.AGE	36.3467	29.5658	39.7248	35.1608	37.2886	0.0000	36.3766	33.3372	37.1918	31.8279	39.5056

MIGRATION FROM ONTARIO TO

AGE	TOTAL	NS.FOUND	P.EDOUAR	N.SCOTIA	BRUNSWIC	QUEBEC	ONTARIO	MANITOBA	SASKATCH	ALBERTA	B.COLUMB
0	0.005909	0.000292	0.000197	0.000628	0.000483	0.002231	0.000000	0.000461	0.000184	0.000567	0.000947
5	0.007009	0.000281	0.000148	0.000429	0.000509	0.001952	0.000000	0.000696	0.000257	0.000868	0.001487
10	0.005821	0.000157	0.000115	0.000651	0.000433	0.001431	0.000000	0.000624	0.000228	0.000767	0.001414
15	0.005025	0.000126	0.000116	0.000435	0.000315	0.001496	0.000000	0.000551	0.000187	0.000663	0.001402
20	0.009369	0.000359	0.000116	0.000969	0.000523	0.002263	0.000000	0.000692	0.000365	0.001215	0.002437
25	0.012259	0.000469	0.000201	0.001327	0.000826	0.003421	0.000000	0.001083	0.000418	0.001635	0.002741
30	0.008680	0.000410	0.000157	0.000784	0.000584	0.002436	0.000000	0.000843	0.000271	0.001172	0.001928
35	0.007680	0.000261	0.000116	0.000651	0.000473	0.001757	0.000000	0.000645	0.000250	0.000805	0.001590
40	0.004960	0.000163	0.000075	0.000436	0.000363	0.001271	0.000000	0.000509	0.000151	0.000676	0.001391
45	0.004905	0.000124	0.000042	0.000445	0.000237	0.001092	0.000000	0.000458	0.000165	0.000543	0.001003
50	0.003321	0.000095	0.000035	0.000297	0.000170	0.001707	0.000000	0.000310	0.000084	0.000404	0.001142
55	0.002637	0.000071	0.000042	0.000209	0.000153	0.004685	0.000000	0.000212	0.000060	0.000242	0.000946
60	0.002459	0.000085	0.000031	0.000189	0.000156	0.000619	0.000000	0.000232	0.000079	0.000192	0.000886
65	0.001839	0.000053	0.000036	0.000131	0.000088	0.000446	0.000000	0.000190	0.000092	0.000141	0.000679
70	0.002139	0.000063	0.000042	0.000152	0.000102	0.000519	0.000000	0.000221	0.000105	0.000163	0.000789
75	0.002452	0.000071	0.000052	0.000176	0.000119	0.000594	0.000000	0.000253	0.000131	0.000188	0.000905
80	0.003044	0.000000	0.000000	0.000218	0.000145	0.000739	0.000000	0.000314	0.000000	0.000235	0.001122
85	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
GROSS	0.087723	0.003050	0.001439	0.008674	0.005755	0.023458	0.000000	0.008494	0.003170	0.010474	0.023209
CRUDE	0.006200	0.000214	0.000100	0.000617	0.000411	0.001639	0.000000	0.000580	0.000215	0.000743	0.001489
M.AGE	33.3186	30.7746	32.4897	30.7509	30.6333	31.9558	0.0000	33.6674	33.9566	31.1714	37.4615

MIGRATION FROM MANITOBA TO

AGE	TOTAL	N.FOUND	P.EDWIAR	N.SCOTIA	BRUNSWIC	QUEBEC	ONTARIO	MANITOBA	SASKATCH	ALBERTA	B.COLUMB
5						0.001075	0.008866	0.000000	0.003343	0.003354	0.003844
5						0.001553	0.006753	0.000000	0.002858	0.004958	0.006724
10						0.001030	0.005684	0.000000	0.002187	0.004151	0.005978
15						0.000747	0.004678	0.000000	0.002159	0.003722	0.005421
20						0.001397	0.009285	0.000000	0.003573	0.007975	0.009524
25						0.002368	0.012195	0.000000	0.004974	0.009251	0.010833
30						0.002164	0.007355	0.000000	0.002271	0.006894	0.008787
35						0.001592	0.005868	0.000000	0.002271	0.005300	0.007257
40						0.001058	0.004624	0.000000	0.001642	0.002618	0.005882
45						0.000846	0.003007	0.000000	0.001106	0.002384	0.006277
50						0.000713	0.002027	0.000000	0.000876	0.001517	0.005267
55						0.000663	0.001527	0.000000	0.000652	0.001257	0.004573
60						0.000454	0.001448	0.000000	0.000793	0.000852	0.004692
65						0.000164	0.001648	0.000000	0.000898	0.000972	0.003951
70						0.000189	0.001729	0.000000	0.000946	0.001022	0.004473
75						0.000196	0.002034	0.000000	0.001103	0.001190	0.004698
80						0.000241	0.000000	0.000000	0.000000	0.000000	0.005552
85						0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
GROSS	0.312648		0.001344		0.004684	0.016448	0.084164	0.000000	0.034935	0.060301	0.103732
CRUDE	0.024696		0.000096		0.000346	0.001125	0.005718	0.000000	0.002391	0.004166	0.006334
M.AGE	34.0119		30.1351		26.9376	31.3643	32.0538	0.0000	31.7902	30.9187	39.4626

MIGRATION FROM SASKATCH TO

AGE	TOTAL	N.FOUND	P.EDWIAR	N.SCOTIA	BRUNSWIC	QUEBEC	ONTARIO	MANITOBA	SASKATCH	ALBERTA	B.COLUMB
5						0.000257	0.002571	0.003675	0.000000	0.010306	0.005549
5						0.000486	0.003033	0.004112	0.000000	0.010680	0.007557
10						0.000352	0.002249	0.003112	0.000000	0.007677	0.006242
15						0.000191	0.002289	0.004059	0.000000	0.009778	0.006616
20						0.000745	0.007344	0.012168	0.000000	0.031811	0.015652
25						0.000926	0.007394	0.009075	0.000000	0.026906	0.014432
30						0.000731	0.005047	0.005698	0.000000	0.014879	0.009543
35						0.000426	0.003529	0.004226	0.000000	0.010158	0.007340
40						0.000354	0.002839	0.002539	0.000000	0.007407	0.005135
45						0.000153	0.001881	0.002036	0.000000	0.005797	0.005288
50						0.000175	0.001489	0.001601	0.000000	0.004177	0.005062
55						0.000088	0.000940	0.001175	0.000000	0.003381	0.005832
60						0.000144	0.000884	0.001015	0.000000	0.003081	0.004531
65						0.000170	0.000727	0.001144	0.000000	0.002228	0.005261
70						0.000170	0.000808	0.001144	0.000000	0.002481	0.005069
75						0.000192	0.000801	0.001263	0.000000	0.002766	0.005627
80						0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
85						0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
GROSS	0.394429				0.001698	0.005763	0.044658	0.060980	0.000000	0.156037	0.121085
CRUDE	0.025812		0.000228		0.000115	0.000370	0.002945	0.004113	0.000000	0.010560	0.007420
M.AGE	32.6153		30.4865		30.8382	33.4952	31.4062	30.6415	0.0000	29.7504	37.8582

MIGRATION FROM ALBERTA TO

AGE	TOTAL	N.FOUND	P.EDUAR	N.SCOTIA	BRUNSWIC	QUEBEC	ONTARIO	MANITOBA	SASKATCH	ALBERTA	B.COLUMB
0	0.012491				0.000129	0.000424	0.002362	0.001218	0.001919	0.000000	0.006264
5	0.016515				0.000214	0.000455	0.003041	0.001334	0.001976	0.000000	0.008918
10	0.014772				0.000263	0.000496	0.002551	0.001015	0.001476	0.000000	0.008608
15	0.012806				0.000137	0.000349	0.002126	0.000840	0.001276	0.000000	0.007890
20	0.022213				0.000263	0.000847	0.003925	0.001665	0.002358	0.000000	0.012945
25	0.025422				0.000212	0.001752	0.005088	0.002382	0.002973	0.000000	0.012456
30	0.022629				0.000231	0.000918	0.004199	0.001856	0.002629	0.000000	0.011256
35	0.016749				0.000191	0.000659	0.003291	0.001290	0.001703	0.000000	0.009081
40	0.013261				0.000116	0.000533	0.002966	0.000955	0.001339	0.000000	0.007949
45	0.014776				0.000659	0.000427	0.002317	0.000755	0.000981	0.000000	0.008560
50	0.011493					0.000338	0.001447	0.000682	0.000981	0.000000	0.007777
55	0.010847					0.000183	0.001189	0.000468	0.000827	0.000000	0.007607
60	0.009756					0.000281	0.001606	0.000295	0.000617	0.000000	0.007636
65	0.007726					0.000097	0.000724	0.000207	0.000738	0.000000	0.006114
70	0.009362					0.000131	0.000784	0.000248	0.000794	0.000000	0.007329
75	0.009915					0.000000	0.000901	0.000271	0.000930	0.000000	0.007900
80	0.011558						0.000000	0.000305	0.000000	0.000000	0.009144
85	0.009000						0.000000	0.000000	0.000000	0.000000	0.000000
GROSS	0.242557	0.007975	0.002455	0.004149	0.002401	0.007246	0.038313	0.015787	0.024023	0.000000	0.147207
CRUDE	0.015461	0.000069	0.0001633	0.000312	0.000175	0.000510	0.002699	0.001140	0.001655	0.0000	0.008868
M.AGE	37.6921	31.3285	30.4242	28.9258	31.2742	32.1606	32.5432	30.9036	33.8024	0.0000	41.0836

MIGRATION FROM B.COLUMB TO

AGE	TOTAL	N.FOUND	P.EDUAR	N.SCOTIA	BRUNSWIC	QUEBEC	ONTARIO	MANITOBA	SASKATCH	ALBERTA	B.COLUMB
0	0.007814			0.000286	0.000152	0.000505	0.002191	0.000780	0.000670	0.003146	0.000000
5	0.006040			0.000437	0.000186	0.000548	0.002616	0.000987	0.000814	0.003960	0.000000
10	0.007808			0.000334	0.000124	0.000479	0.002339	0.000683	0.000611	0.003100	0.000000
15	0.006606			0.000162	0.000125	0.000379	0.002665	0.000481	0.000668	0.002868	0.000000
20	0.013717			0.000467	0.000218	0.000918	0.003972	0.001136	0.001063	0.005059	0.000000
25	0.017750			0.000585	0.000336	0.001349	0.005668	0.001871	0.001180	0.006606	0.000000
30	0.012571			0.000532	0.000227	0.000898	0.004194	0.001196	0.000972	0.004330	0.000000
35	0.009133			0.000383	0.000114	0.000751	0.002920	0.000713	0.000603	0.003565	0.000000
40	0.007726			0.000264	0.000125	0.000572	0.002393	0.000470	0.000555	0.002512	0.000000
45	0.006563			0.000132	0.000120	0.000388	0.001855	0.000421	0.000510	0.002112	0.000000
50	0.003739			0.000068	0.000052	0.000269	0.001153	0.000357	0.000413	0.001427	0.000000
55	0.003120			0.000066	0.000072	0.000220	0.000786	0.000330	0.000266	0.001450	0.000000
60	0.002924			0.000127	0.000045	0.000174	0.000607	0.000185	0.000439	0.001075	0.000000
65	0.002742			0.000062	0.000029	0.000126	0.000684	0.000328	0.000510	0.001213	0.000000
70	0.003003			0.000073	0.000037	0.000131	0.000700	0.000370	0.000590	0.001243	0.000000
75	0.003164			0.000077	0.000039	0.000139	0.000763	0.000376	0.000640	0.001365	0.000000
80	0.003354			0.000000	0.000000	0.000000	0.000000	0.000409	0.000000	0.000000	0.000000
85	0.000000			0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
GROSS	0.120123	0.002772	0.000478	0.004121	0.002016	0.007961	0.035545	0.011092	0.011077	0.047063	0.000000
CRUDE	0.008166	0.000254	0.000035	0.000291	0.000140	0.000547	0.002448	0.000742	0.000691	0.003217	0.000000
M.AGE	32.6263	28.7797	28.2976	29.8991	31.8416	31.6436	31.6542	33.3576	38.3170	32.4286	0.0000

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Appendix B

Multiregional life table for total population:

1. Probabilities of dying and migrating (1966-1971)

2. Expected number of survivors of exact age x in each region

3. Expectations of life

REGION N.SCOTIA
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MIGRATION FROM N.SCOTIA TO

AGE	DEATH	NW.FOUND	P.EDOUAR	N.SCOTIA	BRUNSWIC	QUEBEC	ONTARIO	MANITOBA	SASKATCH	ALBERTA	B.COLUMB
0	0.023326	0.003767	0.002307	0.946645	0.011360	0.009474	0.030985	0.002007	0.001156	0.003705	0.006228
5	0.003161	0.004647	0.003532	0.911157	0.012786	0.007946	0.038078	0.002656	0.001004	0.004873	0.010161
10	0.002664	0.002566	0.003467	0.928811	0.009989	0.004779	0.032567	0.002329	0.000935	0.003175	0.009119
15	0.005535	0.002101	0.002322	0.927718	0.009536	0.004500	0.033705	0.002149	0.000505	0.003942	0.008147
20	0.005789	0.004494	0.003375	0.823021	0.017938	0.012016	0.092825	0.005355	0.002332	0.012695	0.016534
25	0.004419	0.004695	0.004439	0.821439	0.018744	0.019541	0.079363	0.005636	0.001934	0.015277	0.019750
30	0.006495	0.004341	0.004695	0.874341	0.018906	0.014468	0.051460	0.003762	0.001872	0.007796	0.013399
35	0.004094	0.003650	0.004325	0.903255	0.013813	0.008567	0.039561	0.002303	0.001083	0.004149	0.009353
40	0.115323	0.004655	0.004425	0.914748	0.010995	0.005383	0.031954	0.002529	0.000491	0.002942	0.011329
45	0.022431	0.001245	0.001945	0.924431	0.008356	0.002707	0.024260	0.001852	0.000456	0.003401	0.007090
50	0.036770	0.001555	0.001773	0.931876	0.003837	0.002383	0.015409	0.000534	0.000689	0.001558	0.004288
55	0.058271	0.002979	0.001102	0.918061	0.003466	0.002646	0.011502	0.000806	0.000164	0.001145	0.002318
60	0.071155	0.001896	0.001554	0.896467	0.002211	0.001242	0.008193	0.000806	0.000044	0.000171	0.001237
65	0.124743	0.001827	0.001103	0.867730	0.002765	0.001227	0.005281	0.000193	0.000005	0.000421	0.001255
70	0.145425	0.001103	0.001188	0.891188	0.002886	0.001230	0.025472	0.000179	0.000005	0.000485	0.001271
75	0.274442	0.001195	0.001855	0.711855	0.002833	0.001240	0.005375	0.000165	0.000005	0.000487	0.001293
80	0.405332	0.002884	0.001125	0.583184	0.002793	0.001240	0.005549	0.000152	0.000005	0.000447	0.000000
85	1.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000

REGION BRUNSWIC
****

MIGRATION FROM BRUNSWIC TO

AGE	DEATH	NW.FOUND	P.EDOUAR	N.SCOTIA	BRUNSWIC	QUEBEC	ONTARIO	MANITOBA	SASKATCH	ALBERTA	B.COLUMB
0	0.023305	0.002298	0.002162	0.012724	0.904438	0.016251	0.027077	0.002015	0.001017	0.003722	0.004952
5	0.005134	0.002529	0.002091	0.015437	0.919839	0.013274	0.029749	0.002771	0.000735	0.003843	0.006606
10	0.002953	0.001812	0.002254	0.011701	0.932079	0.011384	0.026599	0.002521	0.000641	0.002944	0.005310
15	0.005267	0.001331	0.001615	0.011454	0.927544	0.010055	0.030960	0.002423	0.000989	0.003217	0.005145
20	0.007449	0.004484	0.003577	0.025803	0.864433	0.035184	0.089877	0.004076	0.002120	0.011017	0.011319
25	0.005421	0.005541	0.004222	0.030659	0.821997	0.033932	0.070812	0.004445	0.001511	0.009252	0.012409
30	0.006520	0.002610	0.003400	0.021896	0.879642	0.022971	0.043392	0.003897	0.002087	0.005214	0.008163
35	0.006803	0.002874	0.002874	0.016640	0.903306	0.014478	0.036532	0.002617	0.000184	0.004248	0.007517
40	0.013947	0.002775	0.002775	0.012569	0.921221	0.010180	0.026784	0.002696	0.000184	0.002654	0.005746
45	0.023547	0.002991	0.001845	0.012177	0.918908	0.008808	0.021954	0.001729	0.000802	0.003707	0.005604
50	0.036621	0.002292	0.001325	0.009199	0.924452	0.006172	0.019489	0.001521	0.000520	0.001493	0.003097
55	0.057742	0.002762	0.001355	0.007165	0.923343	0.003709	0.009272	0.002009	0.000180	0.000790	0.001583
60	0.091755	0.000653	0.005702	0.005750	0.897647	0.005289	0.004851	0.000636	0.000215	0.000687	0.001831
65	0.112607	0.000653	0.000907	0.005223	0.896878	0.003957	0.004492	0.000370	0.000054	0.000451	0.001168
70	0.176130	0.000641	0.000990	0.005223	0.806684	0.004118	0.004691	0.000291	0.000062	0.000523	0.001245
75	0.275100	0.000975	0.001024	0.005144	0.707797	0.004099	0.004684	0.000289	0.000076	0.000506	0.001186
80	0.404492	0.000102	0.001104	0.005328	0.575917	0.004148	0.004776	0.000300	0.000104	0.000499	0.001229
85	1.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000

REGION   QUEBEC
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AGE	DEATH	MIGRATION FROM NF.FOUND	P.EDOUAR	QUEBEC TO N.SCOTIA	BRUNSWIC	QUEBEC	ONTARIO	MANITOBA	SASKATCH	ALBERTA	B.COLUMB
0	0.0022752	0.0000595	0.0000149	0.0000928	0.0001746	0.953953	0.0155514	0.0000753	0.0002261	0.0012243	0.0002117
5	0.0002026	0.0000605	0.0000149	0.0001429	0.0002341	0.966938	0.0195559	0.0000964	0.0002347	0.0017790	0.0002932
10	0.0001062	0.0000282	0.0000142	0.0001089	0.0001395	0.972447	0.0197151	0.0000757	0.0002222	0.0011257	0.0002830
15	0.0001126	0.0000455	0.0000164	0.0000982	0.0001237	0.971785	0.0166478	0.0000689	0.0002215	0.0011189	0.0002546
20	0.0001097	0.0000729	0.0000156	0.0001730	0.0002211	0.949906	0.0302003	0.0001257	0.0005050	0.0027754	0.0004775
25	0.0002593	0.0004729	0.0000321	0.0002011	0.0003452	0.946694	0.0300621	0.0001503	0.0004651	0.0030097	0.0005505
30	0.0004593	0.0002729	0.0000231	0.0001756	0.0002711	0.954674	0.0244617	0.0001265	0.0005027	0.0022220	0.0004954
35	0.0005443	0.0002609	0.0000127	0.0001555	0.0001555	0.957790	0.0214417	0.0000946	0.0003377	0.0017746	0.0004961
40	0.0008251	0.0002348	0.0000296	0.0001127	0.0001360	0.957790	0.0191809	0.0000897	0.0002244	0.0012229	0.0004261
45	0.0013485	0.0002225	0.0000125	0.0000854	0.0001222	0.950980	0.0181862	0.0000612	0.0002266	0.0013340	0.0003267
50	0.0021932	0.0001729	0.0000288	0.0000527	0.0000852	0.943106	0.0130995	0.0000537	0.0002210	0.0008809	0.0003249
55	0.0035355	0.0001456	0.0000178	0.0000462	0.0000976	0.925031	0.0099257	0.0000345	0.0001149	0.0005547	0.0002561
60	0.0056693	0.0001129	0.0000278	0.0000487	0.0000777	0.895689	0.0086411	0.0000367	0.0001103	0.0005597	0.0002162
65	0.0095885	0.0000456	0.0000086	0.0000362	0.0000765	0.855819	0.0076109	0.0000162	0.0001121	0.0002111	0.0002305
70	0.1287311	0.0000539	0.0000180	0.0000423	0.0000894	0.792701	0.0071125	0.0000195	0.0001163	0.0002244	0.0001557
75	0.1865634	0.0000053	0.0000180	0.0000469	0.0000978	0.691066	0.0078844	0.0000246	0.0001183	0.0002271	0.0001718
80	0.2779495	0.0000000	0.0000000	0.0000520	0.0001103	0.545604	0.0088887	0.0000000	0.0000000	0.0003513	0.0001940
85	1.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000

REGION   ONTARIO
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AGE	DEATH	MIGRATION FROM NF.FOUND	P.EDOUAR	ONTARIO TO N.SCOTIA	BRUNSWIC	QUEBEC	ONTARIO	MANITOBA	SASKATCH	ALBERTA	B.COLUMB
0	0.0020038	0.0001386	0.0000502	0.0002956	0.0002281	0.0106880	0.951772	0.0002167	0.0002879	0.0027746	0.0004586
5	0.0002168	0.0001561	0.0000649	0.0003929	0.0002829	0.0094920	0.963467	0.0003276	0.0001242	0.0042254	0.0007335
10	0.0001062	0.0000772	0.0000557	0.0003126	0.0002094	0.0066993	0.969779	0.0002628	0.0011112	0.0037754	0.0046994
15	0.0001126	0.0000699	0.0000335	0.0002091	0.0001520	0.0053355	0.972353	0.0002135	0.0000926	0.0032262	0.0006916
20	0.0001097	0.0001677	0.0000507	0.0004409	0.0002381	0.0109925	0.951535	0.0004135	0.0001610	0.0046028	0.0011876
25	0.0002593	0.0002778	0.0000897	0.0006914	0.0003782	0.0163373	0.937526	0.0049201	0.0001910	0.0079959	0.0013256
30	0.0004593	0.0001513	0.0000728	0.0004571	0.0002750	0.0126696	0.952063	0.0003687	0.0001306	0.0056653	0.0094430
35	0.0005443	0.0000929	0.0000551	0.0003688	0.0002252	0.0085083	0.960512	0.0033013	0.0011094	0.0053921	0.0007787
40	0.0008251	0.0000597	0.0000358	0.0002478	0.0001737	0.0061340	0.962416	0.0033395	0.0010734	0.0032265	0.0006796
45	0.0013485	0.0000456	0.0000294	0.0001923	0.0001133	0.0052235	0.956656	0.0021152	0.0007734	0.0026213	0.0006811
50	0.0021932	0.0000420	0.0000145	0.0001406	0.0000602	0.0033361	0.948906	0.0011453	0.0002681	0.0019923	0.0005492
55	0.0035355	0.0000330	0.0000180	0.0000970	0.0000713	0.0031189	0.931163	0.0010984	0.0000395	0.0011139	0.0004459
60	0.0056693	0.0000386	0.0000135	0.0000859	0.0000710	0.0029926	0.902926	0.0001046	0.0002741	0.0008678	0.0004060
65	0.0095885	0.0000233	0.0000158	0.0000571	0.0000384	0.0019930	0.863236	0.0000825	0.0003347	0.0006623	0.0002984
70	0.1287311	0.0000257	0.0000158	0.0000623	0.0000417	0.0021103	0.8046609	0.0000902	0.0003382	0.0006676	0.0003267
75	0.1865634	0.0000262	0.0000167	0.0000649	0.0000437	0.0022156	0.7134436	0.0000926	0.0003391	0.0006701	0.0003589
80	0.2779495	0.0000281	0.0000000	0.0000687	0.0000457	0.0022261	0.5822244	0.0000982	0.0000420	0.0000739	0.0003584
85	1.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000

REGION MANITOBA
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MIGRATION FROM MANITOBA TO

AGE	DEATH	NW.FOUND	P.EDOUAR	N.SCOTIA	BRUNSWIC	QUEBEC	ONTARIO	MANITOBA	SASKATCH	ALBERTA	B.COLUMB
0	0.023156	0.000422	0.000349	0.002677	0.001600	0.005177	0.022892	0.894847	0.014913	0.015794	0.018172
5	0.012246	0.000346	0.000906	0.003176	0.002919	0.007450	0.031882	0.885589	0.012794	0.023119	0.031773
10	0.012013	0.000193	0.000702	0.002394	0.002098	0.005015	0.028010	0.901506	0.010022	0.019475	0.028533
15	0.009009	0.000341	0.000364	0.001552	0.001264	0.036638	0.022424	0.912769	0.009839	0.017657	0.026018
20	0.006254	0.000631	0.000257	0.003783	0.001386	0.006759	0.042292	0.843472	0.014340	0.036583	0.044240
25	0.005573	0.000806	0.000662	0.004579	0.002961	0.011300	0.055463	0.807927	0.014340	0.041514	0.049174
30	0.006262	0.000487	0.000576	0.004295	0.002426	0.010281	0.043851	0.846139	0.014141	0.031135	0.040607
35	0.008984	0.000245	0.000735	0.002343	0.002786	0.007662	0.034522	0.876168	0.010122	0.022544	0.033968
40	0.013326	0.000226	0.000477	0.001459	0.001604	0.007748	0.027748	0.896794	0.010282	0.015420	0.027789
45	0.022248	0.000296	0.000348	0.004920	0.001212	0.005077	0.021615	0.901953	0.007515	0.012183	0.029548
50	0.031966	0.000123	0.000392	0.002761	0.001014	0.004334	0.014108	0.907680	0.005092	0.011043	0.024789
55	0.049441	0.000002	0.000102	0.003328	0.002209	0.003359	0.009316	0.905538	0.004930	0.006995	0.021273
60	0.073270	0.000001	0.000201	0.002012	0.000172	0.003073	0.006294	0.887654	0.002930	0.005680	0.021298
65	0.113534	0.000143	0.000143	0.002240	0.000032	0.002062	0.006294	0.854593	0.003445	0.003730	0.017249
70	0.169972	0.000002	0.000136	0.002240	0.000038	0.000778	0.006721	0.796047	0.003672	0.003997	0.018398
75	0.265878	0.000002	0.000122	0.000244	0.000044	0.000119	0.006346	0.701939	0.003479	0.003775	0.017451
80	0.395145	0.000002	0.000110	0.000222	0.000058	0.000750	0.006372	0.572537	0.003478	0.003747	0.017578
85	1.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000

REGION SASKATCH
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MIGRATION FROM SASKATCH TO

AGE	DEATH	NW.FOUND	P.EDOUAR	N.SCOTIA	BRUNSWIC	QUEBEC	ONTARIO	MANITOBA	SASKATCH	ALBERTA	B.COLUMB
0	0.025862	0.000271	0.000202	0.001048	0.000441	0.001374	0.012369	0.016466	0.869370	0.046562	0.026037
5	0.013991	0.000152	0.000241	0.001551	0.001190	0.002562	0.014938	0.019723	0.873146	0.048602	0.035963
10	0.012275	0.000325	0.000073	0.000882	0.000530	0.001813	0.011185	0.014228	0.903195	0.035582	0.034111
15	0.005378	0.000258	0.000111	0.000846	0.000158	0.000244	0.011281	0.018447	0.866095	0.044957	0.031754
20	0.007170	0.000358	0.000182	0.000182	0.000829	0.003888	0.033589	0.048510	0.703647	0.130014	0.069481
25	0.005969	0.000508	0.000208	0.002406	0.001059	0.003959	0.034689	0.036585	0.737437	0.115546	0.064506
30	0.006783	0.000614	0.000249	0.001398	0.001543	0.003327	0.024160	0.024466	0.826307	0.065128	0.044506
35	0.006268	0.000127	0.000133	0.000495	0.000688	0.002246	0.017201	0.018761	0.870404	0.045952	0.034860
40	0.013198	0.000144	0.000205	0.000534	0.000310	0.001810	0.013825	0.011988	0.892128	0.034107	0.031061
45	0.019418	0.000156	0.000191	0.000318	0.000397	0.001087	0.009184	0.011591	0.906353	0.026693	0.024640
50	0.028659	0.000219	0.000062	0.000011	0.000310	0.000771	0.007143	0.009328	0.909952	0.019240	0.025086
55	0.042626	0.000191	0.000005	0.000159	0.000234	0.000843	0.004448	0.007320	0.924978	0.015445	0.023696
60	0.065393	0.000062	0.000062	0.000154	0.000022	0.000422	0.004057	0.005249	0.884387	0.013783	0.026543
65	0.102277	0.000071	0.000001	0.000124	0.000143	0.000634	0.003207	0.004395	0.855572	0.009676	0.019903
70	0.154195	0.000079	0.000002	0.000002	0.000122	0.000703	0.003007	0.004646	0.845572	0.010102	0.021014
75	0.252454	0.000051	0.000001	0.000124	0.000104	0.000594	0.003007	0.004194	0.713667	0.009122	0.019737
80	0.376377	0.000002	0.000001	0.000107	0.000000	0.000602	0.002927	0.003967	0.589074	0.008699	0.018090
85	1.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000

REGION ALBERTA
****

AGE	DEATH	MIGRATION FROM NW.FOUND	P.EDOUAR	ALBERTA TO N.SCOTIA	BRUNSWIC	QUEBEC	ONTARIO	MANITOBA	SASKATCH	ALBERTA	B.COLUMB
0	0.221756	0.003384	0.001176	0.001238	0.000630	0.002119	0.011387	0.005680	0.008700	0.919485	0.028440
5	0.001948	0.002298	0.002212	0.002465	0.001062	0.002329	0.014672	0.006252	0.009013	0.919664	0.042083
10	0.001976	0.002266	0.001197	0.001336	0.001264	0.002478	0.012514	0.004788	0.006861	0.927442	0.040878
15	0.002286	0.000116	0.000146	0.001142	0.000664	0.001743	0.010452	0.004000	0.005901	0.933018	0.037591
20	0.005757	0.000510	0.000195	0.002186	0.000957	0.004936	0.019269	0.007729	0.009702	0.891486	0.057330
25	0.006615	0.000849	0.002246	0.002568	0.001064	0.005348	0.024743	0.010679	0.012409	0.877424	0.058914
30	0.004929	0.000673	0.002399	0.002612	0.001886	0.005591	0.020433	0.008443	0.011543	0.890846	0.051968
35	0.004902	0.000147	0.002265	0.002294	0.001112	0.003279	0.016402	0.005963	0.007717	0.912059	0.042559
40	0.009382	0.000147	0.001994	0.001094	0.000921	0.002625	0.011144	0.004445	0.006158	0.919390	0.037435
45	0.019419	0.000516	0.000776	0.000776	0.000558	0.002276	0.026914	0.003521	0.004550	0.917290	0.040176
50	0.013393	0.000246	0.000642	0.000642	0.000284	0.001580	0.005557	0.003176	0.004533	0.915695	0.036399
55	0.044264	0.000457	0.000543	0.000543	0.000116	0.002076	0.003825	0.002170	0.003779	0.904820	0.035121
60	0.074433	0.000092	0.000321	0.000324	0.000206	0.000871	0.002670	0.001336	0.002277	0.886357	0.034429
65	0.109294	0.000061	0.000146	0.000185	0.000205	0.000919	0.002995	0.000920	0.002695	0.857003	0.026613
70	0.163914	0.000042	0.000058	0.000202	0.000256	0.000369	0.002995	0.001036	0.003036	0.798066	0.030232
75	0.258016	0.000061	0.000236	0.000211	0.000202	0.000403	0.002920	0.001014	0.002938	0.704990	0.029247
80	0.399806	0.000002	0.000000	0.000188	0.000229	0.000384	0.002860	0.000976	0.002946	0.572730	0.028806
85	1.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000

REGION B.COLUMB
****

AGE	DEATH	MIGRATION FROM NW.FOUND	P.EDOUAR	B.COLUMB TO N.SCOTIA	BRUNSWIC	QUEBEC	ONTARIO	MANITOBA	SASKATCH	ALBERTA	B.COLUMB
0	0.221931	0.000126	0.000463	0.001360	0.000441	0.002492	0.010580	0.003669	0.003139	0.014776	0.949904
5	0.002517	0.000207	0.000259	0.002116	0.000927	0.002758	0.012858	0.004660	0.003845	0.018722	0.951145
10	0.001918	0.000286	0.000405	0.001603	0.000623	0.002396	0.011511	0.003260	0.002924	0.014753	0.960322
15	0.001883	0.000368	0.000213	0.002796	0.000609	0.001885	0.010101	0.002328	0.003146	0.013710	0.962012
20	0.005733	0.000666	0.000164	0.002164	0.001019	0.004536	0.019393	0.005328	0.004560	0.027219	0.928636
25	0.006259	0.000653	0.000162	0.002733	0.001586	0.006696	0.027243	0.008430	0.005208	0.030244	0.910772
30	0.007912	0.000423	0.000418	0.002523	0.001125	0.004484	0.020336	0.005528	0.004468	0.020091	0.932466
35	0.009417	0.000386	0.000257	0.001830	0.000580	0.003698	0.014244	0.003558	0.002840	0.016723	0.946431
40	0.014969	0.000076	0.000259	0.001246	0.000615	0.002801	0.011656	0.002234	0.002614	0.011846	0.951354
45	0.022451	0.000063	0.000242	0.000639	0.000577	0.001889	0.008973	0.001999	0.002407	0.009936	0.951010
50	0.034169	0.000041	0.000081	0.000329	0.000247	0.001292	0.005528	0.001665	0.001940	0.006693	0.948173
55	0.077634	0.000041	0.000054	0.000578	0.000337	0.001036	0.003335	0.001534	0.001244	0.006698	0.934612
60	0.115781	0.000029	0.000021	0.000271	0.000206	0.000799	0.003289	0.000845	0.001981	0.005563	0.929104
65	0.167181	0.000051	0.000029	0.000286	0.000153	0.000499	0.002667	0.001433	0.002229	0.004688	0.872231
70	0.253014	0.000039	0.000035	0.000274	0.000138	0.000521	0.002829	0.001523	0.002369	0.004978	0.820074
75	0.389396	0.000049	0.000021	0.000247	0.000124	0.000485	0.002619	0.001397	0.002203	0.004609	0.734401
80	0.000000	0.000000	0.000026	0.000247	0.000124	0.000435	0.002435	0.001294	0.002045	0.004307	0.599641
85	1.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000

EXPECTED NUMBER OF SURVIVORS AT EXACT AGE x IN EACH REGION
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INITIAL REGION OF COHORT NW.FOUND
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AGE AGGREGATED	AGE	TOTAL	NW.FOUND	P.EDOUAR	N.SCOTIA	BRUNSWIC	QUEBEC	ONTARIO	MANITOBA	SASKATCH	ALBERTA	B.COLUMB
1000000.	0	1000000.	1000000.	0.	0.	0.	0.	0.	0.	0.	0.	0.
970542.	5	971790.	924490.	51.	669.	304.	319.	2949.	117.	45.	81.	235.
974262.	10	969024.	873984.	107.	1334.	669.	856.	5440.	254.	99.	226.	599.
971865.	15	967723.	839840.	135.	1635.	871.	1226.	7163.	374.	119.	362.	836.
967236.	20	963363.	783334.	160.	2065.	1091.	1599.	10763.	443.	160.	528.	1221.
961222.	25	958960.	629740.	244.	3328.	1448.	2489.	21271.	723.	289.	1049.	2051.
956996.	30	954422.	543870.	353.	4432.	1933.	3569.	25498.	945.	342.	1584.	2787.
949498.	35	954873.	494370.	394.	4273.	2229.	4378.	27395.	1132.	437.	1872.	3327.
941418.	40	944819.	463845.	452.	4384.	2423.	4779.	28305.	1223.	506.	2065.	3791.
926895.	45	926479.	432319.	469.	4378.	2471.	5114.	28911.	1288.	553.	2182.	4228.
907656.	50	906648.	405450.	492.	4361.	2531.	5198.	28904.	1316.	602.	2240.	4481.
876201.	55	874768.	379150.	490.	4282.	2467.	5162.	28389.	1284.	631.	2225.	4632.
829163.	60	827721.	344470.	465.	4056.	2394.	4997.	27270.	1232.	603.	2166.	4625.
761839.	65	759066.	312280.	432.	3791.	2238.	4657.	25305.	1136.	572.	1992.	4523.
668978.	70	664663.	279060.	380.	3343.	1969.	4095.	22081.	1013.	521.	1763.	4151.
552079.	75	543576.	219210.	346.	2752.	1627.	3348.	17991.	847.	448.	1459.	3604.
401675.	80	393555.	155720.	203.	2023.	1183.	2398.	13021.	627.	343.	1071.	2813.
239720.	85	232204.	89190.		1230.	706.	1373.	7724.	385.	220.	646.	1808.

INITIAL REGION OF COHORT P.EDOUAR
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AGE	TOTAL	NW.FOUND	P.EDOUAR	N.SCOTIA	BRUNSWIC	QUEBEC	ONTARIO	MANITOBA	SASKATCH	ALBERTA	B.COLUMB
0	1000000.	0.	1000000.	0.	0.	0.	0.	0.	0.	0.	0.
5	974790.	289.	891160.	1413.	1369.	448.	3288.	289.	204.	543.	477.
10	971195.	452.	802211.	3541.	2557.	1147.	6184.	640.	316.	930.	1218.
15	964951.	458.	739900.	4929.	3724.	1918.	8462.	715.	341.	1062.	1753.
20	959941.	517.	676500.	5853.	4827.	2348.	11070.	837.	416.	1336.	2387.
25	958904.	976.	497940.	8175.	5315.	3779.	19923.	1292.	420.	2854.	3369.
30	955433.	1428.	388930.	9013.	5931.	5231.	24566.	1608.	615.	3672.	4477.
35	947800.	1496.	327520.	9359.	6301.	6032.	26717.	1790.	801.	4116.	5216.
40	930140.	1736.	292207.	9542.	6419.	6564.	27757.	1885.	838.	4172.	5794.
45	925549.	1723.	263210.	9561.	6429.	6751.	28332.	1896.	839.	4322.	6335.
50	923349.	1697.	239270.	9553.	6341.	6690.	28239.	1865.	864.	4286.	6889.
55	871122.	1597.	224930.	9375.	6423.	6516.	27533.	1805.	880.	4157.	7120.
60	822293.	1495.	204160.	8733.	5712.	6230.	26117.	1695.	843.	3934.	7118.
65	754496.	1382.	183520.	7974.	5252.	5712.	23983.	1553.	801.	3647.	6840.
70	662622.	1225.	159550.	7011.	4630.	4982.	20926.	1377.	746.	3203.	6207.
75	545390.	1011.	131280.	5751.	3828.	4033.	17042.	1140.	656.	2625.	5324.
80	440079.	736.	98250.	4199.	2783.	2857.	12323.	836.	511.	1908.	4102.
85	240078.	433.	59670.	2529.	1661.	1612.	7300.	506.	332.	1135.	2662.

INITIAL REGION OF COHORT N.SCOTIA
****

AGE	TOTAL	NW.FOUND	P.EDQUAR	N.SCOTIA	BRUNSWIC	QUEBEC	ONTARIO	MANITOBA	SASKATCH	ALBERTA	B.COLUMB
0	100000.	0.	0.	100000.	0.	0.	0.	0.	0.	0.	0.
5	97757.	377.	235.	90665.	1136.	947.	3098.	201.	116.	371.	623.
10	97463.	746.	537.	82652.	2222.	1689.	6529.	441.	206.	825.	1576.
15	97211.	978.	758.	76835.	2923.	2125.	9186.	630.	287.	1102.	2386.
20	96709.	1087.	881.	71359.	3476.	2506.	11768.	790.	326.	1433.	3082.
25	96058.	1411.	949.	58951.	4149.	3541.	18596.	1168.	466.	2478.	4391.
30	95539.	1779.	1026.	48756.	4648.	5041.	22968.	1481.	582.	3523.	5735.
35	94917.	1991.	1107.	42950.	5138.	5418.	25111.	1637.	708.	3899.	6567.
40	94178.	2099.	1206.	39633.	5343.	6294.	26453.	1695.	767.	4051.	7137.
45	92714.	2085.	1189.	35890.	5436.	6515.	27258.	1750.	789.	4097.	7705.
50	90584.	2729.	1165.	33347.	5365.	6520.	27408.	1761.	812.	4105.	8071.
55	87351.	1964.	1127.	31198.	5109.	6385.	26862.	1703.	830.	3971.	8202.
60	82476.	1853.	1096.	28718.	4858.	6119.	25590.	1608.	801.	3752.	8081.
65	75524.	1698.	1033.	25825.	4457.	5632.	23511.	1476.	748.	3429.	7717.
70	66089.	1540.	933.	22277.	3928.	4923.	20540.	1306.	685.	3017.	6979.
75	54956.	1239.	800.	17892.	3252.	3998.	16755.	1082.	592.	2483.	5962.
80	39280.	900.	625.	12775.	2369.	2841.	12137.	794.	455.	1811.	4574.
85	23373.	530.	394.	7479.	1412.	1609.	7204.	480.	292.	1081.	2887.

INITIAL REGION OF COHORT BRUNSWIC
****

AGE	TOTAL	NW.FOUND	P.EDQUAR	N.SCOTIA	BRUNSWIC	QUEBEC	ONTARIO	MANITOBA	SASKATCH	ALBERTA	B.COLUMB
0	100000.	0.	0.	0.	100000.	0.	0.	0.	0.	0.	0.
5	97665.	236.	216.	1272.	90444.	1625.	2708.	201.	102.	372.	495.
10	97363.	457.	391.	2578.	83227.	2815.	5413.	450.	169.	730.	1134.
15	97087.	623.	544.	3402.	77623.	3747.	7652.	651.	228.	986.	1651.
20	96583.	679.	634.	4081.	72059.	4491.	10109.	825.	306.	1260.	2145.
25	95912.	944.	745.	5325.	58129.	7020.	16889.	1102.	432.	2186.	3160.
30	95403.	1231.	872.	6338.	48499.	9052.	20944.	1345.	522.	2897.	4193.
35	94748.	1333.	954.	6772.	42473.	10146.	22895.	1511.	651.	3192.	4871.
40	93972.	1424.	1019.	6939.	38664.	10646.	24284.	1583.	702.	3378.	5434.
45	92662.	1431.	1008.	6939.	35684.	10822.	25061.	1648.	709.	3443.	5877.
50	90552.	1427.	1040.	6944.	32915.	10786.	25303.	1657.	742.	3496.	6262.
55	87306.	1347.	1019.	6838.	30365.	10502.	25023.	1630.	754.	3398.	6430.
60	82528.	1281.	998.	6533.	28668.	9946.	23848.	1530.	728.	3211.	6384.
65	75649.	1177.	936.	6059.	25244.	9147.	21862.	1418.	683.	2951.	6154.
70	66217.	1253.	848.	5367.	21770.	7985.	19135.	1256.	625.	2602.	5600.
75	54253.	847.	729.	4437.	17597.	6473.	15629.	1040.	540.	2143.	4817.
80	39335.	612.	571.	3270.	12485.	4590.	11342.	763.	415.	1566.	3721.
85	23298.	358.	367.	1989.	7213.	2590.	6747.	462.	267.	937.	2367.

INITIAL REGION OF COHORT   QUEBEC
****

AGE	TOTAL	NW.FOUND	P.EDOUAR	N.SCOTIA	BRUNSWIC	QUEBEC	ONTARIO	MANITOBA	SASKATCH	ALBERTA	B.COLUMB
0	100000.	0.	0.	0.	0.	100000.	0.	0.	0.	0.	0.
5	97725.	50.	15.	93.	174.	95395.	1551.	75.	26.	124.	212.
10	97440.	117.	31.	231.	390.	92261.	3379.	167.	61.	300.	503.
15	97217.	156.	43.	335.	503.	89752.	4895.	236.	85.	422.	792.
20	96777.	175.	49.	417.	591.	87256.	6292.	297.	107.	538.	1055.
25	96178.	197.	57.	547.	695.	82992.	8774.	407.	146.	825.	1538.
30	95666.	259.	85.	705.	909.	78769.	10970.	531.	207.	1147.	2073.
35	95567.	328.	106.	841.	1167.	75391.	12570.	625.	261.	1342.	2536.
40	94207.	371.	124.	947.	1155.	72381.	13858.	684.	294.	1483.	2910.
45	92466.	396.	132.	1002.	1204.	69447.	14873.	735.	315.	1560.	3203.
50	90759.	407.	135.	1038.	1223.	66148.	15612.	757.	338.	1621.	3481.
55	87393.	405.	140.	1041.	1202.	62458.	15772.	762.	351.	1610.	3651.
60	82237.	391.	141.	1012.	1187.	57842.	15326.	740.	347.	1547.	3704.
65	74965.	365.	137.	960.	1138.	51866.	14371.	702.	331.	1450.	3646.
70	65097.	323.	128.	862.	1029.	44425.	12754.	628.	310.	1287.	3352.
75	52639.	267.	113.	725.	879.	35251.	10610.	529.	276.	1070.	2919.
80	37451.	195.	92.	546.	664.	24391.	7871.	395.	218.	790.	2288.
85	21436.	116.	61.	342.	416.	13331.	4818.	245.	145.	480.	1483.

INITIAL REGION OF COHORT   ONTARIO
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AGE	TOTAL	NW.FOUND	P.EDOUAR	N.SCOTIA	BRUNSWIC	QUEBEC	ONTARIO	MANITOBA	SASKATCH	ALBERTA	B.COLUMB
0	100000.	0.	0.	0.	0.	0.	100000.	0.	0.	0.	0.
5	97996.	139.	50.	296.	228.	1069.	95177.	217.	88.	275.	459.
10	97782.	263.	111.	651.	488.	1947.	91763.	512.	203.	680.	1164.
15	97598.	328.	158.	927.	661.	2553.	89104.	748.	308.	1016.	1824.
20	97149.	355.	178.	1046.	766.	2979.	86803.	936.	368.	1300.	2457.
25	96667.	441.	183.	1297.	861.	3847.	83045.	1205.	443.	1866.	3500.
30	96229.	635.	231.	1635.	1080.	5114.	78414.	1467.	558.	2548.	4549.
35	95683.	719.	267.	1860.	1234.	5977.	75177.	1626.	643.	2920.	5259.
40	94875.	759.	296.	1974.	1340.	6449.	72675.	1714.	710.	3138.	5820.
45	93576.	766.	304.	2046.	1406.	6688.	70364.	1763.	742.	3263.	6275.
50	91519.	761.	305.	2031.	1411.	6775.	67674.	1786.	777.	3303.	6697.
55	86297.	746.	301.	2017.	1375.	6654.	64471.	1755.	793.	3247.	6938.
60	83379.	713.	295.	1933.	1333.	6389.	60207.	1680.	773.	3091.	6965.
65	76338.	665.	280.	1805.	1254.	5915.	54502.	1571.	727.	2858.	6762.
70	66600.	592.	255.	1598.	1113.	5181.	47141.	1405.	673.	2530.	6190.
75	54435.	493.	221.	1323.	929.	4220.	38026.	1178.	589.	2097.	5359.
80	39958.	362.	175.	977.	685.	3009.	27206.	876.	458.	1542.	4168.
85	23393.	216.	113.	597.	415.	1711.	15900.	538.	298.	930.	2673.

INITIAL REGION OF COHORT MANITOBA
****

AGE	TOTAL	NW.FOUND	P.EDOUAR	N.SCOTIA	BRUNSWIC	QUEBEC	ONTARIO	MANITOBA	SASKATCH	ALBERTA	B.COLUMB
0	100000.	0.	0.	0.	0.	0.	0.	100000.	0.	0.	0.
5	97664.	42.	35.	263.	160.	518.	2289.	89485.	1491.	1579.	1817.
10	97483.	77.	117.	552.	425.	1206.	5155.	79125.	2472.	3641.	4714.
15	97286.	99.	175.	741.	591.	1639.	7397.	71418.	3071.	5099.	7056.
20	96846.	126.	192.	842.	649.	1928.	9034.	65306.	3484.	6285.	9001.
25	96241.	161.	170.	1051.	694.	2490.	12005.	55398.	3510.	8772.	11991.
30	95717.	265.	194.	1288.	846.	3373.	15229.	45154.	3894.	10879.	14594.
35	95290.	319.	221.	1489.	978.	4046.	17302.	38548.	4074.	11755.	16368.
40	94250.	346.	252.	1578.	1089.	4455.	18639.	34037.	4098.	12138.	17618.
45	92956.	354.	262.	1597.	1142.	4666.	19500.	30723.	4143.	12109.	18458.
50	92947.	362.	253.	1591.	1151.	4743.	19824.	27889.	4104.	11844.	19219.
55	87958.	354.	247.	1565.	1125.	4693.	19540.	25457.	3980.	11408.	19581.
60	83438.	345.	228.	1486.	1076.	4525.	18658.	23157.	3780.	10722.	19442.
65	76951.	328.	207.	1374.	996.	4188.	17191.	20628.	3480.	9816.	18729.
70	67672.	264.	179.	1214.	878.	3653.	15097.	17695.	3138.	8624.	17082.
75	56112.	236.	140.	1001.	728.	2962.	12391.	14151.	2666.	7082.	14717.
80	41218.	173.	90.	736.	532.	2100.	9031.	9985.	2010.	5149.	11363.
85	24829.	103.	55.	447.	319.	1185.	5397.	5754.	1262.	3061.	7212.

INITIAL REGION OF COHORT SASKATCH
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AGE	TOTAL	NW.FOUND	P.EDOUAR	N.SCOTIA	BRUNSWIC	QUEBEC	ONTARIO	MANITOBA	SASKATCH	ALBERTA	B.COLUMB
0	100000.	0.	0.	0.	0.	0.	0.	0.	100000.	0.	0.
5	97414.	27.	20.	105.	44.	137.	1237.	1647.	86937.	4656.	2604.
10	97218.	44.	44.	259.	162.	394.	2654.	3216.	75984.	8601.	5862.
15	97019.	74.	55.	348.	222.	595.	3710.	4049.	68740.	10841.	8384.
20	96510.	79.	58.	418.	244.	722.	4706.	5039.	61044.	13407.	10793.
25	95496.	126.	58.	582.	301.	1127.	7309.	7397.	43215.	20447.	15326.
30	95298.	195.	90.	761.	406.	1720.	9801.	7947.	32365.	23571.	18432.
35	94605.	251.	118.	946.	541.	2183.	11432.	7863.	27227.	23793.	20292.
40	93611.	272.	137.	1046.	612.	2481.	12506.	7651.	24036.	23524.	21546.
45	92526.	246.	149.	1084.	667.	2672.	13277.	7339.	21733.	22870.	22449.
50	92599.	293.	146.	1093.	684.	2763.	13615.	7031.	19924.	21917.	23133.
55	87681.	293.	142.	1082.	674.	2763.	13514.	6699.	18301.	20717.	23496.
60	83353.	287.	146.	1030.	652.	2684.	12971.	6296.	16703.	19251.	23334.
65	77097.	265.	136.	964.	607.	2502.	12014.	5736.	14884.	17473.	22516.
70	68278.	236.	124.	855.	541.	2200.	10586.	5027.	12916.	15254.	20540.
75	56774.	196.	107.	708.	455.	1800.	8724.	4119.	10523.	12436.	17707.
80	41989.	144.	84.	524.	337.	1288.	6386.	2982.	7603.	8968.	13674.
85	25506.	86.	55.	319.	205.	736.	3836.	1771.	4547.	5278.	8675.

INITIAL REGION OF COHORT ALBERTA

AGE	TOTAL	NW.FOUND	P.EDOUAR	N.SCOTIA	BRUNSWIC	QUEBEC	ONTARIO	MANITOBA	SASKATCH	ALBERTA	B.COLUMB
0	1000000.	0.	0.	0.	0.	0.	0.	0.	0.	100000.	0.
5	972424.	39.	18.	124.	63.	212.	1139.	568.	870.	91949.	2844.
10	976631.	68.	38.	355.	167.	446.	2526.	1112.	1608.	84677.	6635.
15	974438.	94.	58.	469.	284.	690.	3661.	1461.	2067.	78721.	9937.
20	969931.	141.	66.	550.	332.	859.	4581.	1722.	2346.	73719.	12655.
25	962297.	139.	69.	648.	380.	1262.	6305.	2229.	2458.	66475.	16290.
30	957743.	218.	87.	854.	462.	1829.	8346.	2777.	2782.	59255.	19132.
35	952996.	274.	118.	1024.	598.	2272.	9859.	3065.	3123.	53501.	21261.
40	942449.	291.	137.	1133.	667.	2565.	10912.	3171.	3237.	49415.	22714.
45	929951.	308.	144.	1165.	718.	2754.	11723.	3187.	3294.	45905.	23749.
50	911013.	314.	142.	1171.	734.	2848.	12142.	3152.	3287.	42513.	24708.
55	880059.	316.	139.	1159.	716.	2847.	12097.	3090.	3255.	39222.	25218.
60	834663.	315.	129.	1105.	687.	2752.	11662.	2959.	3143.	35747.	25154.
65	773330.	292.	118.	1034.	637.	2563.	10824.	2726.	2923.	31898.	24303.
70	684022.	258.	103.	915.	568.	2247.	9546.	2416.	2666.	27497.	22190.
75	568255.	213.	81.	757.	478.	1831.	7878.	2008.	2297.	22099.	19160.
80	419908.	155.	53.	559.	355.	1306.	5777.	1476.	1757.	15703.	14828.
85	254444.	92.		340.	216.	743.	3477.	893.	1119.	9084.	9426.

INITIAL REGION OF COHORT B.COLUMB

AGE	TOTAL	NW.FOUND	P.EDOUAR	N.SCOTIA	BRUNSWIC	QUEBEC	ONTARIO	MANITOBA	SASKATCH	ALBERTA	B.COLUMB
0	1000000.	0.	0.	0.	0.	0.	0.	0.	0.	0.	100000.
5	978847.	43.	8.	136.	64.	249.	1058.	367.	314.	1478.	94090.
10	975562.	63.	34.	334.	155.	519.	2281.	782.	655.	3150.	89589.
15	973374.	90.	72.	471.	215.	752.	3338.	1030.	887.	4293.	86227.
20	968882.	94.	87.	524.	268.	928.	4240.	1186.	1096.	5260.	83199.
25	962238.	123.	74.	663.	333.	1357.	5960.	1561.	1228.	7180.	77759.
30	956654.	192.	84.	839.	453.	1992.	8147.	2075.	1445.	8919.	71506.
35	949939.	249.	117.	1005.	554.	2416.	9644.	2302.	1661.	9602.	67392.
40	940952.	290.	138.	1104.	597.	2718.	10608.	2368.	1749.	10062.	64427.
45	926607.	341.	152.	1146.	641.	2905.	11309.	2366.	1824.	10155.	61889.
50	906647.	300.	148.	1147.	648.	2981.	11659.	2345.	1877.	10048.	59480.
55	875577.	292.	143.	1124.	634.	2960.	11585.	2298.	1889.	9689.	56948.
60	830077.	279.	140.	1072.	595.	2858.	11113.	2216.	1832.	9211.	53721.
65	765582.	257.	131.	1012.	530.	2653.	10311.	2047.	1758.	8513.	49306.
70	675908.	228.	119.	898.	445.	2324.	9099.	1845.	1655.	7560.	43340.
75	560970.	190.	103.	744.	329.	1894.	7511.	1560.	1469.	6281.	35873.
80	415111.	139.	81.	550.	200.	1350.	5508.	1165.	1155.	4619.	26615.
85	251159.	83.	52.	336.		766.	3313.	717.	755.	2779.	16157.

EXPECTATIONS OF LIFE
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INITIAL REGION OF COHORT NW.FOUND
****

AGE	TOTAL	NW.FOUND	P.EDOUAR	N.SCOTIA	BRUNSWIC	QUEBEC	ONTARIO	MANITOBA	SASKATCH	ALBERTA	B.COLUMB
0	72.173508	43.540257	0.286420	2.631469	1.448190	2.812795	16.650045	0.729483	0.332254	1.197501	2.545489
5	69.196324	39.854062	0.293015	2.694647	1.482423	2.886260	17.057581	0.747641	0.340744	1.230187	2.613340
10	64.371495	35.372919	0.289716	2.646166	1.461231	2.863562	16.886106	0.740039	0.377932	1.225513	2.598711
15	59.512951	30.872446	0.284133	2.575606	1.424745	2.816247	16.598793	0.725500	0.333058	1.213111	2.567534
20	54.712329	24.872446	0.277496	2.484770	1.378877	2.752918	16.192345	0.706856	0.326991	1.194307	2.523225
25	49.963873	20.472906	0.268386	2.369985	1.319788	2.660522	15.440588	0.680994	0.316778	1.159342	2.450932
30	45.254460	17.742287	0.253996	2.179165	1.237356	2.514210	14.287555	0.639576	0.301931	1.095756	2.335608
35	40.526616	16.423446	0.235798	1.972939	1.134853	2.319353	12.976672	0.585555	0.283147	1.011014	2.188002
40	36.017301	16.634464	0.215270	1.760678	1.021447	2.096937	11.613454	0.512297	0.264643	0.914499	2.148608
45	31.290415	13.165208	0.193879	1.550324	0.904522	1.861719	10.241526	0.471426	0.235932	0.814488	1.832116
50	26.255577	11.179642	0.172755	1.335142	0.786518	1.617659	8.872961	0.410006	0.209277	0.710488	1.632350
55	22.812946	9.325425	0.151552	1.145198	0.672168	1.380196	7.557136	0.350542	0.181632	0.608639	1.431086
60	18.978546	7.668926	0.135579	0.959059	0.563915	1.152539	6.309545	0.294640	0.154783	0.510947	1.233614
65	15.452935	6.179946	0.118840	0.786720	0.461994	0.938069	5.144446	0.243092	0.129973	0.419873	1.243079
70	12.299217	4.864191	0.092864	0.630174	0.369405	0.742151	4.092996	0.196810	0.107338	0.338273	1.865015
75	9.477324	3.691793	0.076175	0.490012	0.286222	0.564905	3.160446	0.155079	0.086639	0.265341	0.700714
80	7.140452	2.719357	0.061641	0.373704	0.216965	0.414476	2.396753	0.120691	0.069430	0.205938	0.560496
85	5.370289	1.974656	0.049643	0.283357	0.164393	0.298332	1.829985	0.095750	0.057113	0.164339	0.452720

INITIAL REGION OF COHORT P.EDOUAR
****

AGE	TOTAL	NW.FOUND	P.EDOUAR	N.SCOTIA	BRUNSWIC	QUEBEC	ONTARIO	MANITOBA	SASKATCH	ALBERTA	B.COLUMB
0	72.273265	0.952929	33.578869	5.897517	3.943290	3.683463	16.206846	1.104051	0.532929	2.433836	3.947550
5	69.177906	0.976156	29.587658	6.015765	4.010141	3.767225	16.541597	1.125197	0.541474	2.482636	4.037402
10	64.272108	0.953924	25.317724	5.903922	3.920886	3.737231	16.346352	1.104593	0.529686	2.452207	4.005612
15	59.277033	0.953646	21.405140	5.750359	3.779102	3.667606	16.009824	1.104325	0.514079	2.407002	3.939272
20	54.729680	0.912541	17.846853	5.451049	3.608567	3.576460	15.588313	1.037872	0.497180	2.357571	3.852630
25	50.253360	0.874755	14.465403	5.116276	3.385511	3.437021	14.868792	0.988261	0.478201	2.261704	3.724432
30	45.556667	0.820551	12.635340	4.690863	3.107357	3.217666	13.775522	0.917089	0.453408	2.101731	3.536973
35	40.551611	0.743310	10.832678	4.238596	2.806131	2.942766	12.517761	0.833771	0.419168	1.910798	3.305688
40	35.901611	0.658415	9.283219	3.774545	2.493392	2.634618	11.183101	0.743629	0.379412	1.707788	3.043092
45	31.199948	0.575455	7.923635	3.315641	2.184043	2.314806	9.837223	0.652751	0.339875	1.504184	2.761536
50	27.201134	0.495272	6.722663	2.866006	1.842888	1.998215	8.507057	0.563727	0.300897	1.301962	2.461648
55	23.117122	0.419592	5.652359	2.429560	1.598184	1.693664	7.215412	0.478809	0.262057	1.108163	2.151320
60	19.214264	0.357155	4.691294	2.429424	1.335887	1.495423	6.015727	0.400468	0.225013	0.927118	1.844494
65	15.721542	0.283846	3.829898	1.651294	1.092234	1.364908	4.898258	0.328968	0.190813	0.759524	1.543335
70	12.563398	0.227928	3.063214	1.314753	0.871625	0.891409	3.886450	0.264243	0.159018	0.606920	1.271839
75	9.726539	0.174418	2.395831	1.012333	0.671283	0.669774	2.981447	0.205679	0.128923	0.470232	1.016610
80	7.337702	0.128378	1.828471	0.756917	0.501069	0.481621	2.225409	0.156675	0.102624	0.357121	0.795416
85	5.545955	0.092391	1.403876	0.561417	0.372632	0.337626	1.666877	0.121457	0.083249	0.278488	0.627942

AGE AGGREGATED
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AGE	AGE AGGREGATED
0	72.545418
5	69.229134
10	64.307635
15	59.536442
20	54.817974
25	50.137994
30	45.393509
35	40.673528
40	36.017301
45	31.498484
50	27.151279
55	23.245650
60	19.196682
65	15.674497
70	12.522468
75	9.664188
80	7.311501
85	5.563868

INITIAL REGION OF COHORT N.SCOTIA
****

AGE	TOTAL	NM.FOUND	P.EDOUAR	N.SCOTIA	BRUNSWIC	QUEBEC	ONTARIO	MANITOBA	SASKATCH	ALBERTA	B.COLUMB
0	72.255241	1.229305	0.763851	39.042942	3.342066	3.665537	15.764718	1.015856	0.483355	2.308320	4.679289
5	64.248152	1.247745	0.775293	35.059052	3.348424	3.725016	16.045488	1.033921	0.491436	2.351558	4.770219
10	61.255267	1.221822	0.757927	30.722790	3.272752	3.669016	15.848615	1.026681	0.484726	2.328228	4.728712
15	59.214549	1.179625	0.726591	26.748838	3.148921	3.584406	15.485538	0.995769	0.473303	2.284706	4.639070
20	54.599552	1.132368	0.646844	23.008634	2.999863	3.479324	15.024325	0.964240	0.459898	2.231041	4.521826
25	49.661549	1.075242	0.598964	19.772938	2.821729	3.345522	14.335772	0.919784	0.442398	2.144348	4.357951
30	45.118896	0.997392	0.546721	17.661993	2.606867	3.139144	13.326063	0.855466	0.417385	1.998972	4.116650
35	39.303423	0.924644	0.491137	14.758423	2.366209	2.873945	12.147083	0.778945	0.386146	1.816586	3.819606
40	35.736423	0.844643	0.432755	12.711495	2.108012	2.577945	10.865197	0.697366	0.350389	1.621529	3.489510
45	31.225362	0.703064	0.377963	10.878207	1.849171	2.270483	9.597015	0.614733	0.313578	1.425677	3.140624
50	26.437341	0.626243	0.328782	9.223157	1.594539	1.964127	8.314002	0.532863	0.276763	1.232836	2.779207
55	22.423795	0.511847	0.278282	7.717246	1.357742	1.667469	7.068478	0.452063	0.240003	1.047306	2.461191
60	19.084010	0.428424	0.233424	6.357252	1.151680	1.387039	5.896389	0.379276	0.204758	0.875090	2.065465
65	15.525111	0.350607	0.192305	5.136974	0.927511	1.125742	4.813746	0.312097	0.172341	0.717906	1.732635
70	12.442011	0.279958	0.155283	4.050718	0.742734	0.887208	3.834677	0.251413	0.142761	0.576548	1.424078
75	9.525315	0.215506	0.122731	3.094646	0.575977	0.672142	2.963475	0.196919	0.115511	0.450502	1.142553
80	7.246449	0.166419	0.096726	2.306909	0.434687	0.489703	2.239382	0.151605	0.092349	0.346642	0.901778
85	5.476566	0.114641	—	1.714488	0.326423	0.347013	1.694638	0.118569	0.075336	0.273185	0.717547

INITIAL REGION OF COHORT BRUNSWIC
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AGE	TOTAL	NM.FOUND	P.EDOUAR	N.SCOTIA	BRUNSWIC	QUEBEC	ONTARIO	MANITOBA	SASKATCH	ALBERTA	B.COLUMB
0	72.219452	0.829096	0.658090	4.310793	38.802769	6.184047	14.445432	0.968796	0.438172	1.969199	3.613056
5	64.459771	0.843713	0.648287	4.361266	34.855377	6.290267	14.721415	0.986796	0.446042	2.006742	3.686744
10	62.272411	0.828007	0.650780	4.295995	30.504234	6.195798	14.558614	0.973126	0.442462	1.984680	3.656352
15	59.565393	0.779049	0.632587	4.154217	26.449093	6.044464	14.263614	0.947549	0.431520	1.946135	3.595026
20	54.927647	0.774249	0.653379	3.981947	22.711319	5.862429	13.877491	0.914238	0.419916	1.898029	3.515300
25	49.537369	0.737119	0.573714	3.764859	19.478134	5.604283	13.271690	0.870461	0.403633	1.821586	3.401293
30	45.684110	0.681118	0.533396	3.479318	16.520684	5.213547	12.351076	0.810609	0.380707	1.548093	3.227293
35	39.764360	0.552957	0.441404	3.158683	14.521795	4.740597	11.273855	0.740843	0.352273	1.387212	3.088676
40	35.564352	0.487743	0.391918	2.818775	12.493519	4.229088	10.177774	0.665051	0.319375	1.222807	2.761172
45	31.454641	0.414473	0.303404	2.618775	10.666971	3.709667	8.929500	0.587274	0.285821	1.059714	2.495054
50	26.433285	0.353331	0.297213	2.158780	9.021609	3.199514	7.747082	0.529690	0.252409	0.901711	2.218069
55	22.433344	0.292244	0.253529	1.844395	7.545476	2.708889	6.594080	0.434512	0.218951	0.753729	1.937127
60	19.114143	0.239751	0.212449	1.546115	6.211809	2.462274	5.495427	0.363944	0.186725	0.618647	1.661100
65	15.337358	0.199408	0.175387	1.280210	5.014832	2.081949	4.483886	0.299608	0.157067	0.497215	1.377794
70	12.547735	0.145418	0.101037	0.793408	3.954165	1.431923	3.573977	0.241341	0.130256	0.388313	1.153143
75	9.215542	0.128505	0.112461	0.644506	3.012119	1.081460	2.760168	0.188777	0.105072	0.299837	0.927434
80	7.061007	0.078972	0.069201	0.456385	2.242542	0.788436	2.092798	0.145739	0.084240	0.237602	0.736558
85	—	—	—	—	1.672034	0.560604	1.592294	0.114557	0.069078	—	0.590320

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INITIAL REGION OF COHORT   QUEBEC
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AGE	TOTAL	NF.FOUND	P.EDOUAR	N.SCOTIA	BRUNSWIC	QUEBEC	ONTARIO	MANITOBA	SASKATCH	ALBERTA	B.COLUMB
0	71.449058	0.729856	0.081243	0.591871	0.733295	57.866667	8.859200	0.433813	0.196040	0.896180	2.016422
5	68.591229	0.733698	0.082806	0.603276	0.745915	54.539904	9.025770	0.441985	0.199957	0.918865	2.057953
10	63.651722	0.729875	0.081850	0.596717	0.733622	54.497372	8.925634	0.437064	0.198306	0.905650	2.045616
15	58.792058	0.723397	0.080138	0.585563	0.712339	44.936687	8.733412	0.427716	0.195007	0.889176	2.017023
20	54.483317	0.715469	0.074142	0.566639	0.687319	46.562317	8.484104	0.415890	0.198928	0.868415	1.978494
25	49.369213	0.707540	0.075896	0.545349	0.658174	36.349488	8.145298	0.400176	0.185534	0.838374	1.923419
30	44.622295	0.694975	0.072598	0.515507	0.619765	32.357128	7.672961	0.377812	0.177292	0.791319	1.839348
35	38.853349	0.182422	0.068429	0.478099	0.571705	28.506859	7.102216	0.349789	0.166092	0.730835	1.729706
40	35.226673	0.165125	0.063541	0.434999	0.517977	24.845657	6.451719	0.318237	0.152884	0.662538	1.600970
45	30.499341	0.149341	0.056592	0.388893	0.461973	21.386414	5.785643	0.284640	0.138707	0.590200	1.459534
50	26.573765	0.128806	0.050549	0.341646	0.405862	18.147825	5.080217	0.250152	0.123952	0.516289	1.309311
55	22.728808	0.109806	0.044632	0.295338	0.352129	15.167953	4.378126	0.216319	0.109017	0.437756	1.155725
60	18.512438	0.092594	0.038912	0.251445	0.301566	12.461771	3.707480	0.184223	0.094607	0.375596	1.004582
65	15.456604	0.074281	0.033416	0.210083	0.253285	10.011906	3.076480	0.154035	0.081156	0.312060	0.856904
70	11.974993	0.061439	0.028299	0.171969	0.208493	7.831660	2.501162	0.126305	0.068826	0.254200	0.718050
75	9.211934	0.047965	0.023551	0.137544	0.167247	5.901165	1.983537	0.101230	0.057285	0.204440	0.590166
80	6.938811	0.036582	0.019422	0.108109	0.132050	4.312903	1.554301	0.080575	0.047557	0.160440	0.481871
85	5.262255	0.027718	0.016119	0.085274	0.104739	3.135668	1.235710	0.066060	0.040758	0.132202	0.402000

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INITIAL REGION OF COHORT   ONTARIO
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AGE	TOTAL	NF.FOUND	P.EDOUAR	N.SCOTIA	BRUNSWIC	QUEBEC	ONTARIO	MANITOBA	SASKATCH	ALBERTA	B.COLUMB
0	72.762573	0.453376	0.149709	1.214666	0.849922	3.867349	58.859119	1.066443	0.467672	1.861865	3.941449
5	69.192249	0.450114	0.152347	1.231961	0.852298	3.919159	55.083427	1.082720	0.474993	1.892930	4.010341
10	64.351154	0.449841	0.188608	1.210449	0.835853	3.850625	50.424431	1.066465	0.468597	1.872665	3.977618
15	59.461914	0.435542	0.142281	1.172021	0.806500	3.742620	45.886681	1.036219	0.456601	1.832761	3.988587
20	54.072576	0.425406	0.174267	1.127588	0.774697	3.616059	41.554955	0.997263	0.441351	1.780906	3.814914
25	48.198856	0.413306	0.165775	1.072772	0.736644	3.458320	37.378929	0.947084	0.422693	1.708283	3.686684
30	44.022244	0.375355	0.155417	1.001730	0.689724	3.242003	33.362419	0.882199	0.398721	1.601753	3.489137
35	35.755583	0.342106	0.143687	0.916135	0.633206	2.970690	29.539591	0.806419	0.369617	1.468016	3.252782
40	31.271148	0.306843	0.130663	0.822914	0.577875	2.668565	25.893340	0.725276	0.337116	1.328892	2.988567
45	28.729955	0.269544	0.118630	0.728014	0.505334	2.354633	22.354184	0.642458	0.303204	1.182221	2.706893
50	24.872348	0.233917	0.101838	0.626099	0.439728	2.039111	19.466746	0.559972	0.268311	1.015127	2.413399
55	19.757359	0.199708	0.088379	0.526645	0.376809	1.734033	16.124660	0.480147	0.233673	0.866719	2.115410
60	15.475367	0.167800	0.075731	0.436379	0.317951	1.445225	13.337381	0.405467	0.202491	0.727810	1.823295
65	12.359742	0.138142	0.063685	0.356199	0.262572	1.175582	10.811015	0.336397	0.169853	0.600134	1.541930
70	9.571542	0.110017	0.053068	0.302697	0.211885	0.929841	8.660554	0.273521	0.141944	0.485054	1.279660
75	7.255650	0.086145	0.043142	0.236614	0.165762	0.707259	6.581554	0.216398	0.115901	0.381639	1.037107
80	5.521698	0.064722	0.034459	0.180668	0.126410	0.517727	4.946680	0.163386	0.093541	0.295913	0.827142
85		0.047452	0.027383	0.136459	0.095742	0.368846	3.737061	0.132902	0.076933	0.234899	0.664022

INITIAL REGION OF COHORT MANITOBA
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AGE	TOTAL	NM.FOUND	P.EDOUAR	N.SCOTIA	BRUNSWIC	QUEBEC	ONTARIO	MANITOBA	SASKATCH	ALBERTA	B.COLUMB
0	72.919956	0.199996	0.164131	0.953529	0.679241	2.648588	11.345778	35.383980	2.775609	7.102369	11.686851
5	69.611794	0.243650	0.167129	0.969271	0.691247	2.698123	11.556145	31.373350	2.805184	7.230311	11.917381
10	60.752644	0.201012	0.163596	0.954267	0.677665	2.659496	11.389155	27.114180	2.789357	7.111403	11.774538
15	59.876249	0.194488	0.156438	0.918962	0.652921	2.591738	11.089568	23.303180	2.572390	6.901160	11.495831
20	55.137188	0.192485	0.147692	0.882324	0.623366	2.511427	10.715837	19.876875	2.414869	6.638686	11.133633
25	50.681849	0.167797	0.139224	0.838761	0.591867	2.412454	10.236685	16.866392	2.248374	6.289390	10.658336
30	45.734652	0.176643	0.130473	0.782274	0.554865	2.272532	9.581386	14.532420	2.067306	5.810451	10.022301
35	41.711387	0.162438	0.128406	0.714363	0.516503	2.092263	8.788413	12.225123	1.871269	5.253158	9.273449
40	36.543576	0.144262	0.109406	0.639465	0.466284	1.885629	7.914252	10.409956	1.671360	4.666717	8.455516
45	31.829815	0.124961	0.096597	0.562963	0.406708	1.666541	6.998710	8.813217	1.472981	4.079585	7.603011
50	27.464598	0.112446	0.084241	0.487546	0.352519	1.444126	6.069695	7.393503	1.278247	3.509731	6.732344
55	23.324152	0.091192	0.072486	0.414634	0.299979	1.225664	5.159857	6.131847	1.092466	2.969686	5.861339
60	19.452423	0.082449	0.061430	0.345698	0.250283	1.015963	4.294903	5.047476	0.919123	2.467515	5.009682
65	15.881480	0.065548	0.051176	0.281938	0.204045	0.818484	3.492268	4.007708	0.760713	2.008282	4.191882
70	12.671411	0.052131	0.041969	0.224317	0.162294	0.639141	2.770138	3.131461	0.618708	1.597721	3.433532
75	9.823099	0.039905	0.033551	0.172663	0.124745	0.478363	2.126031	2.368871	0.489817	1.232829	2.736325
80	7.441997	0.029537	0.026317	0.129696	0.093390	0.344227	1.594968	1.760960	0.383186	0.936476	2.143240
85	5.704098	0.021297	0.020514	0.096187	0.069369	0.240689	1.195054	1.338641	0.306642	0.728034	1.687671

INITIAL REGION OF COHORT SASKATCH
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AGE	TOTAL	NM.FOUND	P.EDOUAR	N.SCOTIA	BRUNSWIC	QUEBEC	ONTARIO	MANITOBA	SASKATCH	ALBERTA	B.COLUMB
0	72.916183	0.159939	0.085137	0.615229	0.373507	1.457184	7.528881	4.648346	29.994755	13.827920	14.225282
5	69.785603	0.163491	0.086877	0.624872	0.382291	1.492340	7.697606	4.729486	25.995526	14.075569	14.536096
10	66.921013	0.162221	0.085418	0.620786	0.377769	1.481675	7.612453	4.613981	21.854323	13.762978	14.347663
15	63.432412	0.156161	0.085247	0.606430	0.368670	1.459239	7.464110	4.436266	18.172016	13.290270	14.217063
20	59.352615	0.151912	0.083571	0.589779	0.358542	1.432815	7.285416	4.224217	14.905835	12.732174	13.587101
25	56.718673	0.143393	0.074120	0.567776	0.346811	1.394506	7.022478	3.929119	12.289648	11.938378	12.999919
30	51.852237	0.136603	0.074685	0.535850	0.330303	1.327942	6.614577	3.549510	10.378516	10.854304	12.190155
35	46.290486	0.128045	0.069649	0.494397	0.307553	1.233866	6.098763	3.156072	8.875097	9.677144	11.290298
40	41.290484	0.120895	0.063528	0.445695	0.279568	1.120521	5.515082	2.770711	7.587901	8.502248	10.235373
45	36.641464	0.093737	0.056690	0.394313	0.248099	0.996832	4.895028	2.404171	6.444483	7.366759	9.188763
50	32.115406	0.080151	0.047436	0.342637	0.216927	0.868052	4.257107	2.058806	5.355773	6.287641	8.126487
55	27.745651	0.066911	0.038151	0.292050	0.185436	0.739357	3.625267	1.735848	4.721384	5.281309	7.067440
60	23.585627	0.054443	0.036790	0.243868	0.155293	0.614358	3.019126	1.436218	3.721384	4.356749	6.029817
65	19.680538	0.043136	0.030642	0.199240	0.127064	0.496039	2.453951	1.162606	2.999108	3.519445	5.032395
70	16.074734	0.032858	0.025101	0.158177	0.101461	0.387945	1.943412	0.918669	2.368568	2.775692	4.105886
75	12.420049	0.025101	0.020013	0.121424	0.078189	0.290446	1.486887	0.702077	1.816407	2.187953	3.253661
80	9.920757	0.024177	0.015641	0.090854	0.058600	0.208883	1.110793	0.526513	1.376781	1.590501	2.530923
85	5.786791	0.017291	0.012121	0.066945	0.043385	0.145491	0.826781	0.400986	1.075642	1.222110	1.976040

AGE
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INITIAL REGION OF COHORT   ALBERTA
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AGE	TOTAL	NW.FOUND	P.EDOUAR	N.SCOTIA	BRUNSWIC	QUEBEC	ONTARIO	MANITOBA	SASKATCH	ALBERTA	B.COLUMB
0	73.176882	0.176652	0.062203	0.679843	0.449162	1.522246	6.726973	1.929784	2.151224	44.178387	15.322210
5	69.745565	0.179586	0.055626	0.691798	0.416652	1.548640	6.847479	1.958187	2.176832	40.255474	15.592290
10	64.835514	0.177212	0.043368	0.689903	0.411598	1.534839	6.767172	1.919048	2.176674	35.812298	15.378389
15	60.047095	0.173438	0.082555	0.661108	0.409962	1.588788	6.621831	1.856831	2.027558	31.690905	14.983676
20	54.367996	0.169327	0.079284	0.638202	0.387284	1.476677	6.443880	1.784430	1.924328	27.925013	14.479382
25	50.456417	0.164212	0.076330	0.610340	0.371351	1.431341	6.203724	1.693637	1.812278	24.469467	13.823368
30	46.930698	0.155442	0.072656	0.573610	0.351501	1.358899	5.857041	1.572728	1.685919	21.328011	12.978402
35	41.230152	0.143973	0.067750	0.528149	0.326007	1.260325	5.418291	1.429851	1.542154	18.508835	12.024810
40	36.581867	0.130301	0.061596	0.475724	0.295406	1.143455	4.916489	1.277413	1.387450	15.946750	10.947282
45	32.543386	0.116023	0.054778	0.420509	0.262247	1.016243	4.375883	1.124180	1.231043	13.604126	9.849405
50	27.543750	0.101417	0.047796	0.365292	0.227448	0.840005	3.313540	0.973941	1.076506	11.465104	8.728101
55	23.524420	0.086027	0.041374	0.311412	0.194450	0.751979	3.253318	0.829390	0.926907	9.529206	7.603436
60	19.635516	0.072642	0.035168	0.261141	0.162754	0.624198	2.714337	0.692232	0.784455	7.789792	6.497805
65	16.356730	0.058901	0.029369	0.212281	0.133278	0.503491	2.209666	0.565150	0.652592	6.240850	5.431067
70	12.799979	0.045592	0.024123	0.168671	0.146595	0.393293	1.753016	0.450851	0.533312	4.883140	4.439365
75	9.970739	0.035384	0.019319	0.129504	0.082307	0.294156	1.344196	0.348237	0.423780	3.697698	3.526158
80	7.513520	0.025949	0.015140	0.096873	0.061769	0.211244	1.005954	0.263013	0.332060	2.752882	2.747836
85	5.775552	0.018562	0.011783	0.071521	0.045870	0.147301	0.751257	0.202701	0.265492	2.108529	2.152535

AGE
***

INITIAL REGION OF COHORT   B.COLUMB
****

AGE	TOTAL	NW.FOUND	P.EDOUAR	N.SCOTIA	BRUNSWIC	QUEBEC	ONTARIO	MANITOBA	SASKATCH	ALBERTA	B.COLUMB
0	72.808519	0.162344	0.065836	0.664939	0.371823	1.600567	6.433576	1.435009	1.189112	6.034574	54.910740
5	69.466782	0.164896	0.067508	0.676373	0.378522	1.630086	6.550787	1.457807	1.207752	6.132114	51.180897
10	64.634434	0.162510	0.066683	0.666034	0.373865	1.614492	6.481675	1.432014	1.185944	6.028919	46.602596
15	59.747760	0.158906	0.064414	0.646649	0.365083	1.584977	6.349939	1.388239	1.148645	5.849471	42.178623
20	55.045444	0.155452	0.062472	0.622274	0.354457	1.549659	6.186644	1.338103	1.103318	5.632668	38.028817
25	50.396976	0.151457	0.059760	0.597600	0.341212	1.546260	5.963604	1.275711	1.058320	5.347203	34.093937
30	45.639616	0.143149	0.076421	0.561963	0.322752	1.422268	5.630827	1.188474	0.986884	4.959130	30.461197
35	41.019912	0.132623	0.073149	0.517640	0.248766	1.316885	5.204716	1.082143	0.912526	4.508737	26.972486
40	36.378250	0.119817	0.068386	0.466413	0.271092	1.192849	4.715475	0.968213	0.830513	4.028574	23.723049
45	31.876999	0.105928	0.062250	0.412536	0.241689	1.058765	4.193720	0.854788	0.746380	3.542583	20.665255
50	27.553899	0.091731	0.055361	0.358574	0.211185	0.920284	3.654633	0.744109	0.661096	3.065130	17.083022
55	23.416846	0.078455	0.048334	0.346366	0.181181	0.782966	3.119239	0.637669	0.576752	2.609181	14.082938
60	19.094760	0.065128	0.041718	0.256796	0.152234	0.653304	2.625152	0.536364	0.496015	2.181754	12.569617
65	15.994760	0.051228	0.035051	0.210542	0.125234	0.525568	2.126686	0.442669	0.420903	1.788160	10.272262
70	12.788280	0.042248	0.029542	0.167907	0.100295	0.411346	1.691478	0.357529	0.350642	1.431378	8.211138
75	9.903578	0.032266	0.024317	0.129229	0.077448	0.307848	1.298641	0.279216	0.283438	1.108579	6.367493
80	7.560255	0.023725	0.019421	0.096594	0.057956	0.220494	0.970071	0.213046	0.224796	0.840982	4.837441
85	5.750034	0.017019	0.015150	0.071327	0.042988	0.153551	0.724043	0.164528	0.181099	0.652431	3.731287

Appendix C

Stable equivalent population by province and age, Canada, 1971.

STABLE EQUIVALENT TO ORIGINAL POPULATION
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AGE	TOTAL	NW.FOUND	P.EDOUAR	N.SCOTIA	BRUNSWIC	QUEBEC	ONTARIO	MANITOBA	SASKATCH	ALBERTA	B.COLUMB
0	1607123.	149469.	9565.	61877.	47781.	153730.	586087.	57553.	38033.	207420.	295228.
5	1526644.	136106.	9673.	59118.	45552.	151191.	580091.	54386.	36229.	193825.	283099.
10	1444124.	125658.	8814.	56998.	43937.	148577.	536067.	51649.	34763.	182242.	276216.
15	1343545.	115342.	8425.	54315.	41807.	144555.	516758.	49039.	33002.	171595.	269697.
20	1243447.	97633.	7337.	50799.	37878.	144059.	509960.	46853.	29060.	163706.	263163.
25	1265325.	79972.	6266.	47298.	33927.	141517.	494483.	44770.	25890.	157129.	254853.
30	1229100.	69907.	5912.	44770.	32029.	141539.	475417.	42404.	23649.	148223.	245251.
35	1173217.	62989.	5749.	42622.	30677.	138557.	455249.	39839.	22860.	138262.	236414.
40	1115530.	57244.	5537.	40185.	29208.	133321.	434508.	37239.	21861.	128794.	227619.
45	1053713.	53361.	5196.	37635.	27516.	126456.	411581.	34701.	20609.	119201.	218655.
50	983441.	47305.	4837.	35141.	25447.	118090.	384717.	32098.	19839.	108766.	208722.
55	904941.	42057.	4503.	32265.	23271.	108494.	352842.	29213.	18468.	97990.	196266.
60	812484.	37275.	4105.	24912.	20955.	96315.	314845.	26195.	16729.	86524.	180229.
65	701627.	31755.	3610.	25029.	16148.	82343.	270678.	22662.	14805.	74100.	159288.
70	574425.	25755.	3001.	20456.	14890.	66258.	218872.	18646.	12615.	60297.	133554.
75	430733.	19019.	2416.	15319.	11119.	48310.	162260.	14035.	9886.	44846.	103466.
80	278805.	12000.	1609.	9957.	7214.	29837.	103883.	9125.	6734.	28740.	69648.
85	223236.	8673.	1417.	7692.	5593.	20707.	81499.	7615.	6077.	24219.	59743.
TOT	18115636.	1171234.	97512.	670387.	497006.	1990792.	6863196.	618123.	390616.	2135660.	3681111.

PERCENTAGE DISTRIBUTION

AGE	TOTAL	NW.FOUND	P.EDOUAR	N.SCOTIA	BRUNSWIC	QUEBEC	ONTARIO	MANITOBA	SASKATCH	ALBERTA	B.COLUMB
0	8.8715	12.7958	9.8087	9.2300	9.6139	7.7221	8.5396	9.3110	9.7366	9.7113	8.0201
5	8.4273	11.6243	9.3205	8.8185	9.1653	7.5945	8.1316	8.7986	9.2750	9.0756	7.6906
10	7.9676	10.7458	9.0389	8.5023	8.8404	7.4632	7.8108	8.3559	8.8996	8.5333	7.5036
15	7.7532	9.8479	8.6492	8.1020	8.4119	7.2612	7.5294	7.9335	8.4488	8.0347	7.3265
20	7.4182	8.3359	7.5243	7.5775	7.6212	7.1057	7.3721	7.5798	7.4395	7.6654	7.1490
25	7.0951	6.8286	6.4468	7.0553	6.8263	7.1086	7.2048	7.2429	6.4232	7.3574	6.9233
30	6.7847	5.9684	6.0625	6.6742	6.4444	7.1097	6.9271	6.8601	6.0542	6.9424	6.6624
35	6.4763	5.3780	5.8940	6.3578	6.1724	6.9599	6.6332	6.4452	5.8522	6.4739	6.4223
40	6.1579	4.8875	5.6782	5.9943	5.8767	6.6969	6.3310	6.0246	5.6017	6.0306	6.1834
45	5.8166	4.4467	5.3519	5.6139	5.5364	6.3520	5.9999	5.6140	5.3498	5.5721	5.9399
50	5.4367	4.0409	4.9601	5.2410	5.1208	5.9288	5.6055	5.1928	5.0789	5.0929	5.6701
55	4.9982	3.5906	4.6121	4.8124	4.6823	5.4295	5.1411	4.7422	4.7279	4.5883	5.3317
60	4.4828	3.1826	4.2121	4.3127	4.2143	4.8380	4.5874	4.2378	4.2627	4.0514	4.8961
65	3.8742	2.7113	3.7115	3.7735	3.6514	4.1362	3.9352	3.6663	3.7900	3.4697	4.3272
70	3.1722	2.1998	3.1391	3.0514	2.9959	3.3262	3.1891	3.0165	3.2295	2.8233	3.6281
75	2.3777	1.6239	2.4779	2.2851	2.2487	2.4266	2.3642	2.2706	2.5310	2.0999	2.8107
80	1.5390	1.0245	1.7112	1.4852	1.4514	1.4987	1.5136	1.4763	1.7239	1.3457	1.8920
85	1.2323	0.7435	1.4535	1.1475	1.1253	1.0401	1.1875	1.2320	1.5558	1.1340	1.6230
TOTAL	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000
M.AGE	34.4900	28.5271	33.4471	33.7342	33.2103	35.7944	34.8899	33.7153	33.7606	33.0003	36.3460
SHA	100.0000	6.4653	0.5383	3.7006	2.7435	10.9894	37.8855	3.4121	2.1562	11.7890	20.3201
LAM	1.039695	1.039695	1.039695	1.039695	1.039695	1.039695	1.039695	1.039695	1.039695	1.039695	1.039695