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1998-1999

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Demography Division

Report on the Demographic Situation in Canada

1998-1999

Alain Bélanger
avec la collaboration de Stéphane Gilbert

Published by authority of the Minister responsible for Statistics Canada

September 2006

Catalogue no. 91-209-XIE
ISSN 1718-7788

Catalogue no. 91-209-XPE
ISSN 0715-9293

Frequency: Annual

Ottawa

Cette publication est aussi disponible en français (nº 91-209-XIF au catalogue)

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Preface

The first part of the ***Report on the Demographic Situation*** provides a complete review of current demographic change in Canada. It contains a detailed analysis of the most recent trends in fertility, mortality and migration in Canada. The emphasis is on commentary and explanations of the changes observed.

As to the second part, the ***Report on the Demographic Situation*** has changed its form somewhat. This year, the second part consists of three articles, and hence it deals with more than one topic. The first article looks at changes in fertility in relation to changes in the relative incomes of young males and the wage of young females. The second article takes stock of the change in dependence-free life expectancy in Canada over the past decade, a topical issue in light of our rapidly aging population. The last article examines the components of the sizable increase in Canada's aboriginal populations during the period 1986-1996.

Ivan P. FELLEGI

Chief Statistician of Canada

Current Demographic Analysis

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Acknowledgements

The author is grateful to all those who have contributed to this publication. In particular, the author addresses his thanks to professors Roderic Beaujot and Robert Bourbeau for their complete revision of the two parts of this ***Report*** and also Réjean Lachapelle, Don Kerr, Denis Morissette, Jean-Marie Berthelot, Russel Wilkins, Jean Dumas and René Morissette for their comments and suggestions on different sections. Claude Langlois of Immigration and Citizenship Canada has read and commented the section on international immigration. Specials thanks are addressed to Carol D'Aoust, research assistant, for his dedication and initiative which are fully appreciated.

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Highlights

PART I

- Population growth in 1997 (10.7 per thousand) was the lowest in Canada since 1985. Nevertheless, Canada's population growth is high compared to its political and economic partners, chiefly because of the importance that it assigns to immigration.

- Alberta, and to a lesser extent Ontario, are the Canadian provinces with the strongest growth; by contrast, Newfoundland is steadily losing population.

- In 1998, the new territory of Nunavut had just over 26,400 inhabitants, most of them Inuit.

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- Even fewer Canadian women and men married or remarried in 1997 than in 1996, continuing the downward trend. Furthermore, those who did so were older on average.

- The number of marriages fell the most in the Maritime provinces, British Columbia and Ontario. On the other hand, the number remained practically stable in Quebec and Alberta and rose slightly in Newfoundland and Saskatchewan.

- It is in Quebec that the first marriage rate has fallen the most since the mid-1970s. Quebec is also the province in which common-law unions are the most popular; approximately 25% of Quebec couples opt for this conjugal way of life.

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- The number of divorces fell again in 1997, reaching its lowest level since 1985; this trend affected all provinces.

- Divorce is higher in the West. Year after year, the Atlantic provinces, especially Newfoundland, post the lowest rates. On the other hand, Alberta and British Columbia have the highest rates.

- Having fallen since 1969, the average length of marriage at the time of divorce has been rising since 1995. This situation could be due to the popularity of common-law unions as well as the increase in the average age at marriage.

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- There were 348,598 births in Canada in 1997, down 4.8% from the previous year.
- The downward trend was observed throughout Canada but was greater for the provinces of Eastern and Central Canada. In 1997, Quebec registered the greatest percentage change in the number of births: -6.4%.
- This decline in births is partly due to a structural effect of the make-up of Canada's population: women currently in their childbearing years belong to the small cohorts of the baby bust.
- Canada's total fertility rate was 1.55 children per woman in 1997, the lowest level ever recorded in Canada.
- The fertility of women between 15 and 30 years of age has been dropping in Canada for the past two decades. For some time, this decrease was partially offset by an increase in the fertility of women between 30 and 49 years of age. This is no longer the case today; the recent decline in fertility now affects all age groups.
- Newfoundland had the lowest total fertility rate in Canada: 1.27 children per woman. In 1997, Saskatchewan and Manitoba were the most fertile provinces, with respectively 1.83 and 1.82 children per woman.

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- There were 215,699 deaths in Canada in 1997. While the number was up (there were 2,810 more deaths than in the previous year), this does not indicate an increase in mortality. It is merely that the population is aging.
- The life expectancy of Canadian females in 1997 was 81.4 years, a gain of 0.18 years over the previous year. Males can expect to live an average of 75.8 years, a gain of 0.33 years over 1996.
- Gains in live expectancy during the period 1991-1996 were greater for males than for females, but the gap (5.6 years in 1997) was still in favour of females.
- With an infant mortality rate of 5.5 per 1,000, Canada ranks among the top ten countries worldwide in this regard.
- Standardized mortality rates for diseases of the circulatory system and cerebrovascular diseases continue to fall.
- Standardized mortality rates for tumours or cancers in males are at their lowest level since 1976. For females, the increase in tumours and cancers, especially malignant tumours of the respiratory tract, has been much greater than for males in the past twenty years, but it seems to be slowing.

- The number of deaths attributable to HIV fell by 54% for males and 32% for females between 1996 and 1997, partly because affected individuals are surviving longer.

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- Canada received 174,143 immigrants in 1998, a decrease of nearly 42,000 from the previous year. This is the largest drop in immigration in 40 years.
- The number of immigrants from Asian countries fell sharply in 1998 (-27%), especially from Hong Kong (-64%), Taiwan (-46%) and Pakistan (-31%). Even so, Asia is still the main source of immigrants admitted to Canada.
- In 1998, British Columbia and Ontario, the main beneficiaries of Asian immigration, suffered the steepest declines in the number of immigrants received (respectively -25% and -21%). However, Ontario was still the province most preferred by immigrants. Quebec and Alberta were relatively untouched by this decrease.
- The greatest drop was in the "economic migrant" category (-24%). The "family" and refugee" categories also registered losses, although they were smaller (-15% and -6% respectively).
- International adoption has been increasing in Canada for the past ten years, especially in Ontario, Quebec and British Columbia. The adoption of Chinese girls is especially popular in Quebec.

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- The Atlantic provinces, especially Newfoundland, as well as Quebec and the Prairie provinces except for Alberta, continued to have a negative interprovincial migration balance in 1997. At the same time, Ontario had a positive balance in its exchanges with the other provinces, for the first time since 1988. In the West, British Columbia seemed much less attractive in 1997, to the advantage of Alberta.
- Ontario seems to be the hub of Canada's migration system, since it is the origin or destination of half of interprovincial migrants.

PART II

- In Canada, the theoretical link thought to exist between the size of a cohort and its average fertility seems to hold only for the period of the baby boom and baby bust (1946-1980). Both before and after that period, there is no evidence of such a link in Canada.

- There is an excellent fit between the change in fertility and the change in the average annual wage in Canada, suggesting that the two are closely linked.

- There is also a very good fit between fertility and the relative income of young males aged 20 to 34, which tends to confirm the economic theory of relative income for Canada.

- The relative income of young males and the weekly wage of young females follow a similar downward trend during the period 1976-1996 in Canada when education and work experience levels are held constant.

- Fertility at ages 20-29 in Canada is linked to young couples' economic situation. The curve representing the change in the fertility rate for the 20-29 age group can be reproduced almost perfectly using an econometric model that includes young males' relative income and young females' weekly wage. The use of this model for projection purposes suggests that an increase in young males' relative income would lead to a recovery of fertility in Canada.

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- Canadian females and males are not only living longer, but they are living longer in good health.

- At the start of the century, scarcely 38% of Canadian males and 44% of Canadian females lived to age 65; in 1996, the corresponding proportions were respectively 81% and 89%.

- Before age 65, 90% of the Canadian population lives independently with respect to daily domestic activities. If there is dependence, it is usually moderate. Beyond that age, the average health status of the population deteriorates rapidly, and severe dependence increases, especially after age 70, as does institutionalization after age 75.

- In 1996, dependence-free life expectancy at age 15 was 58.9 years for females and 57.0 for males. This represents respectively 88% and 93% of their total life expectancy at that age.

- The burden of years lived with dependence after age 65 has diminished considerably. For men, the gains in life expectancy at that age amounted to 1.1 years between 1986 and 1996; two-thirds of those gains were in years lived dependence-free. For women, the gains in life expectancy over the same period were 0.6 years; their dependence-free life expectancy grew more (1.1 years).

- Health-adjusted life expectancy also increased during the period 1986-1996, for both sexes. Males can expect to live the equivalent of 91% of their total life expectancy in perfect health, while the corresponding figure for females is 89%.

- The findings presented in this ***Report on the Demographic Situation in Canada*** concerning dependence-free life expectancy contradict those recently published by the OECD for the period 1978-1991. Contrary to what the OECD states, dependence-free life expectancy is increasing in Canada.

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- Between 1986 and 1996, the Census count of the population with aboriginal origin went from 711,000 to 1,102,000 persons. A large part of this growth occurred between 1986 and 1991. The average annual growth rate reached 7% during this period.

- This fast growth cannot be explained by natural and migratory increases alone. A component analysis shows mainly that the change is in the declarations of aboriginal origin, a phenomenon called *ethnic mobility*.


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Part I


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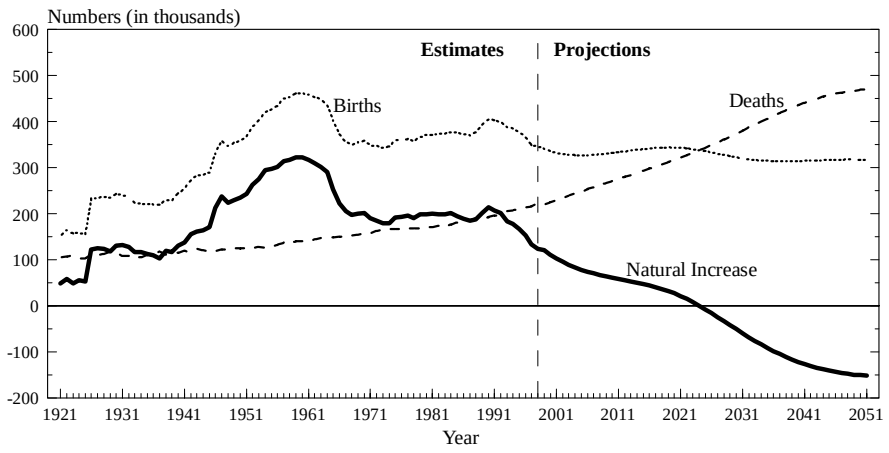
DEMOGRAPHIC ACCOUNTS

As of January 1, 1998, the population of Canada was estimated at 30,155,300 persons.[1] ***The total increase during 1997 was 320,800 persons, which represents a growth rate of 10.7 per 1,000***. While relatively high when compared to the rate observed in other industrialized countries, ***this growth is the lowest that Canada has experienced since 1985***. It results from the accelerated decline of natural increase and a slight reduction in immigration. In 1997, the balance of births over deaths sagged by 13.2%, dropping from 153,300 persons in 1996 to 133,000 persons only in 1997. According to preliminary estimates, this balance will fall to 122,900 in 1998, thus continuing its decline, which results from the contemporary low fertility and the aging of the population. Without an appreciable rise in fertility, the arrival of the reduced baby-bust cohorts to childbearing ages, replacing the large baby boom cohorts, can only mean a drop in births. The arrival of the large cohorts of the baby boom at ages where the risks of death start to rise will increase the gross mortality rate and the number of deaths (Figure 1). As a result, Canada will not sustain its population growth without substantial levels of immigration to offset the slowing of natural increase.

Figure 1. Births, Deaths and Natural Increase, Canada, 1921-2051



Sources: Statistics Canada, Health Statistics Division, Health Status and Vital Statistics Section and Demography Division, Population Projections Section, special scenario.

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[1] The numbers included in the 1998 accounting, unless otherwise specified, are those which were available on March 22, 1999. They may differ from those contained in other tables on population components where more recent statistics are available.

Table 1. Population as of January 1st and Population Growth Components, Canada, 1972-1999
NUMBERS (in thousands)

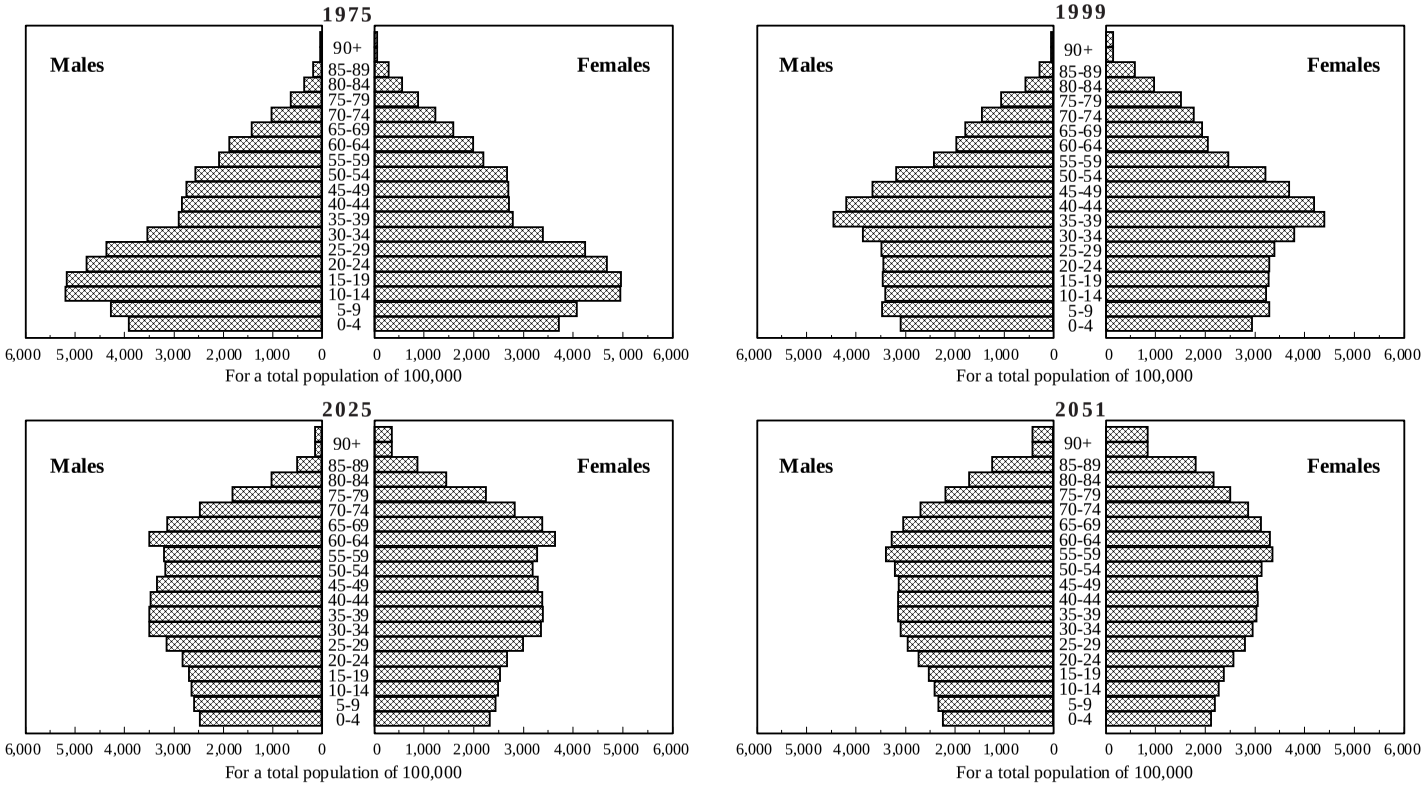
Year	Population as of January 1st	Growth			Births	Deaths	Immigration	Emigration	Returning Canadians	Non Permanent Residents (net)	Residual [1]
		Total	Natural	Migratory							
1972	22,093.1	256.0	184.9	98.8	347.3	162.4	122.0	63.2	37.1	3.0	-27.7
1973	22,349.2	303.0	179.3	151.4	343.4	164.0	184.2	78.5	37.8	7.9	-27.7
1974	22,652.2	325.6	178.9	174.5	345.6	166.8	218.5	78.0	36.0	-2.0	-27.7
1975	22,977.8	326.0	192.1	161.5	359.3	167.2	187.9	70.7	36.4	7.9	-27.7
1976	23,303.8	288.0	193.0	118.2	360.0	167.0	149.4	64.4	36.1	-3.0	-23.1
1977	23,591.8	258.7	194.7	83.8	362.2	167.5	114.9	61.4	32.3	-2.0	-19.8
1978	23,850.5	222.0	190.2	51.7	358.4	168.2	86.3	63.5	31.8	-3.0	-19.8
1979	24,072.6	273.6	197.9	95.5	366.1	168.2	112.1	54.7	30.3	7.9	-19.8
1980	24,346.2	319.8	199.2	140.4	370.7	171.5	143.1	45.2	27.6	14.9	-19.8
1981	24,665.9	313.9	200.3	134.3	371.3	171.0	128.6	50.1	25.4	30.3	-20.8
1982	24,979.8	263.6	198.7	86.4	373.1	174.4	121.1	59.4	28.3	-3.7	-21.4
1983	25,243.4	239.5	199.2	61.7	373.7	174.5	89.2	58.6	26.8	4.4	-21.4
1984	25,482.9	238.7	201.3	58.8	377.0	175.7	88.2	55.2	26.2	-0.3	-21.4
1985	25,721.6	241.4	194.4	68.4	375.7	181.3	84.3	54.2	27.3	11.0	-21.4
1986	25,963.1	297.1	188.7	122.1	372.9	184.2	99.2	49.1	25.4	46.5	-13.7
1987	26,260.1	349.5	184.8	172.9	369.7	185.0	152.1	44.3	24.2	40.9	-8.2
1988	26,609.7	432.2	186.8	253.6	376.8	190.0	161.9	38.7	21.5	108.9	-8.2
1989	27,041.9	433.3	201.7	239.7	392.7	191.0	192.0	40.7	21.1	67.4	-8.2
1990	27,475.2	388.4	213.5	183.1	405.5	192.0	214.2	39.6	19.4	-11.0	-8.2
1991	27,863.6	319.7	207.0	137.3	402.5	195.6	230.8	48.0	22.7	-68.3	-24.6
1992	28,183.3	365.1	202.1	199.2	398.6	196.5	252.8	44.6	22.9	-31.9	-36.3
1993	28,548.3	317.5	183.5	170.3	388.4	204.9	255.7	44.6	22.4	-63.3	-36.3
1994	28,865.8	325.3	178.0	183.6	385.1	207.1	223.8	46.2	22.5	-16.5	-36.3
1995	29,191.1	318.3	167.3	187.3	378.0	210.7	212.0	47.5	22.7	0.2	-36.3
1996	29,509.4	325.1	153.3	186.9	366.2	212.9	226.1	48.2	22.9	-13.8	-15.1
1997 PR	29,834.6	320.8	133.0	187.7	348.6	215.5	216.1	50.0	23.0	-1.4	...
1998 PR	30,155.3	262.8	122.9	140.0	345.7	222.8	174.0	50.5	23.7	-7.3	...
1999 PP	30,418.1	..	..	..	..	..	..	..	..	..	...

RATES (for 1,000)

Year	Population as of January 1st (in thousands)	Growth			Fertility	Death	Immigration	Emigration	Returning Canadians	Non-permanent Residents
		Total	Natural	Migratory						
1972	22,093.1	11.52	8.32	4.45	15.63	7.31	5.49	2.85	1.67	0.13
1973	22,349.2	13.47	7.97	6.73	15.26	7.29	8.19	3.49	1.68	0.35
1974	22,652.2	14.27	7.84	7.65	15.15	7.31	9.58	3.42	1.58	-0.09
1975	22,977.8	14.09	8.30	6.98	15.53	7.22	8.12	3.06	1.57	0.34
1976	23,303.8	12.28	8.23	5.04	15.35	7.12	6.37	2.74	1.54	-0.13
1977	23,591.8	10.91	8.21	3.53	15.27	7.06	4.84	2.59	1.36	-0.08
1978	23,850.5	9.27	7.94	2.16	14.96	7.02	3.60	2.65	1.33	-0.12
1979	24,072.6	11.30	8.17	3.95	15.12	6.95	4.63	2.26	1.25	0.33
1980	24,346.2	13.05	8.13	5.73	15.13	7.00	5.84	1.85	1.13	0.61
1981	24,665.9	12.64	8.07	5.41	14.96	6.89	5.18	2.02	1.03	1.22
1982	24,979.8	10.50	7.91	3.44	14.86	6.95	4.82	2.37	1.13	-0.15
1983	25,243.4	9.44	7.85	2.43	14.73	6.88	3.52	2.31	1.06	0.17
1984	25,482.9	9.32	7.86	2.30	14.73	6.86	3.45	2.16	1.02	-0.01
1985	25,721.6	9.34	7.52	2.65	14.54	7.02	3.26	2.10	1.06	0.42
1986	25,963.1	11.38	7.23	4.68	14.28	7.06	3.80	1.88	0.97	1.78
1987	26,260.1	13.22	6.99	6.54	13.99	7.00	5.75	1.68	0.92	1.55
1988	26,609.7	16.11	6.96	9.45	14.05	7.08	6.04	1.44	0.80	4.06
1989	27,041.9	15.89	7.40	8.79	14.41	7.01	7.04	1.49	0.77	2.47
1990	27,475.2	14.04	7.72	6.62	14.65	6.94	7.74	1.43	0.70	-0.40
1991	27,863.6	11.41	7.39	4.90	14.36	6.98	8.24	1.71	0.81	-2.44
1992	28,183.3	12.87	7.13	7.02	14.05	6.93	8.91	1.57	0.81	-1.13
1993	28,548.3	11.06	6.39	5.93	13.53	7.14	8.91	1.55	0.78	-2.20
1994	28,865.8	11.21	6.13	6.32	13.27	7.13	7.71	1.59	0.77	-0.57
1995	29,191.1	10.85	5.70	6.38	12.88	7.18	7.22	1.62	0.77	0.01
1996	29,509.4	10.96	5.17	6.30	12.34	7.17	7.62	1.63	0.77	-0.47
1997 PR	29,834.6	10.69	4.44	6.26	11.62	7.18	7.20	1.67	0.77	-0.05
1998 PR	30,155.3	8.68	4.06	4.62	11.41	7.36	5.75	1.67	0.78	-0.24
1999 PP	30,418.1	..	..	..	..	..	..	..	..	..

[1] The residual consists of the distribution over five years of the error of closure at the end of the intercensal period.
(PR) Revised postcensal estimates; (PP) Preliminary postcensal estimates, based on 1996, as of March 22 1999.
Sources: Statistics Canada, Demography Division, Population Estimates Section and Research and Analysis Section.

Figure 2. Canadian Population Age Pyramids, 1975, 1999, 2025 and 2051



Sources: Statistics Canada, Demography Division, Population Estimates Section and Population Projections Section, special scenario.

While Canada's population growth remains at a relatively high level compared to its main political and economic partners, this is due mainly to strong international immigration. In 1997, Canada received 216,100 immigrants, representing a rate of 7.2 per 1,000[2]. In the United States, a similar calculation yields a rate of 2.9 per 1,000. Since 1990, the surplus of births over deaths has fallen from 213,500 to 122,900, a decrease of 42%! During the same period, the flow of international immigrants remained above 200,000 persons per year. Thus, during the past 10 years (1989-1998), Canada's population increased by 1,815,100 persons as a result of its migration exchanges with other countries and by 1,762,300 persons as a result of the surplus of births over deaths. This pattern is already incorporated into the aging structure and appears difficult to reverse (Figure 2).

Provincial Demographic Accounting

In 1997, population growth declined for all provinces except Ontario and especially Alberta, the big winner in the interprovincial migration exchanges that took place during the year (Table A1, appendix). For the first time since 1982, Alberta ranked first in growth. It stood out in 1997 with a growth rate of 22.8 per 1,000, more than double the rate for Canada as a whole. Its growth rate exceeded that of its neighbour to the west, British Columbia, which since 1988 had registered the highest growth rates in Canada. This strong growth is mainly due to the entry of a large number of Canadians from other provinces. It is estimated that 79,200 interprovincial migrants settled in Alberta in 1997, an increase of nearly 30% over the previous year. Preliminary data indicate that ***the favourable demographic situation that Alberta experienced in 1997 continued during 1998***. If the preliminary data are confirmed, the interprovincial migration balance will reach 45,700 persons in 1998 (97,900 in-migrants and 52,200 out-migrants). This level is extremely high, but it has been previously attained; in 1980, at the height of the oil boom, when Alberta registered a positive balance of 46,900 persons.

Ontario is the only other province to have a rate of population growth above the Canadian average in 1997 and 1998. As in the past, it continues to attract a high share of new immigrants (international balance of +96,200 and +71,200 persons respectively in 1997 and 1998). Ontario also saw its interprovincial migration balance become positive in 1997 (+5,100 persons), after experiencing a negative net internal migration in the previous eight years. The preliminary data for 1998 indicate that the balance will improve further and in fact double (+10,200 persons). On the other hand, the reduction in 1998 in the number of international immigrants received by Canada affects this province more than any other. This results in a slowing of its rate of population growth, from 14.3 per 1,000 in 1997 to 11.9 per 1,000 in 1998.

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[2] In 1998, immigration has considerably declined in Canada (174,000 immigrants). This number is well below what was anticipated in the annual immigration plan.

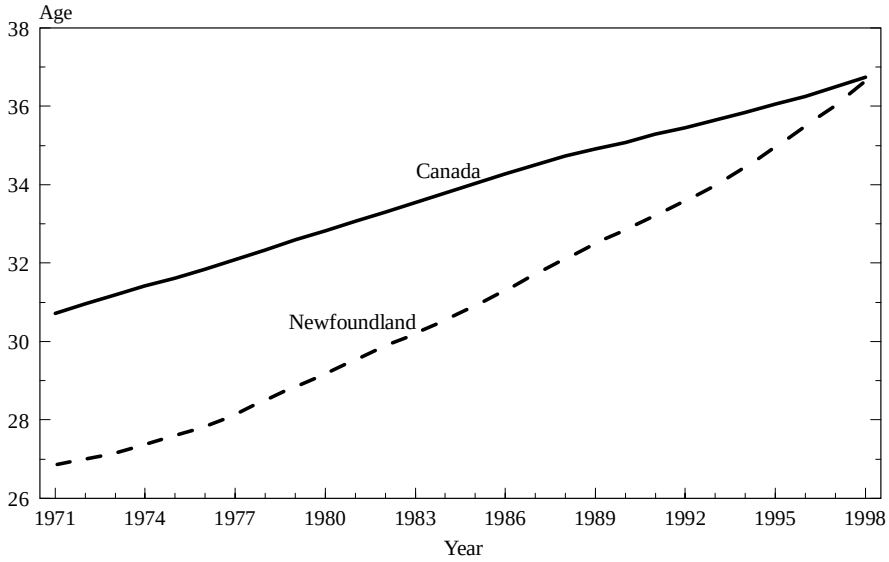
British Columbia will conversely see its situation further deteriorate, in both internal and international exchanges. Its population growth will reach 7.0 per 1,000 in 1998, thus trailing behind the growth of Canada. The situation is worth noting, since this is only the fourth time since 1921 that British Columbia's growth rate has been lower than that of the Canadian population as a whole. Long favoured in its migration exchanges, British Columbia has since 1993 seen its exit numbers increase while its entry numbers have declined. This has meant an accelerated reduction in its interprovincial migration balance, which fell from 37,600 persons in 1993 to only 5,600 persons in 1997. Preliminary data for 1998 indicate a negative balance (-18,800 persons), the first since 1985. Added to these unfavourable internal migration exchanges is a decrease in the attractiveness of this province for the smaller number of immigrants received by Canada, causing the province's total population growth to plummet from 108,700 persons in 1994 to 27,900 persons in 1998.

The other Prairie provinces — Manitoba and Saskatchewan — have also experienced a declining growth rate. While there were few changes in terms of natural increase, the interprovincial exit rates of these two provinces increased considerably in 1997 and 1998. Reflecting geographic proximity, the pull exerted by Alberta's economic growth is strongest on residents of nearby provinces.

The situation in also continuing to deteriorate in Newfoundland, but there the picture is much more extreme. Negative growth for that province notched upward again and reached 14.5 per 1,000 in 1997 and 14.8 per 1,000 in 1998, if preliminary estimates are confirmed. Newfoundland's population has been dropping by more than 1% each year since 1995 (-1.5% in 1998). Its total fertility rate has been less than 1.5 children per woman since 1991, and each year establishes a new floor (1.27 in 1997). The interprovincial exit rate, by far the highest in Canada, reached 35.1 per 1,000 in 1998. More than elsewhere in Canada, the gross mortality rate is trending upward because of the accelerated aging of the population (Figure 3), induced by a very low fertility rate and the very strong propensity of younger people to leave the province. Of all provinces, Newfoundland has the lowest life expectancy. At 74.5 years for males and 80.0 for females, the average life expectancy of Newfoundland males and females is nearly a year and a half lower than that of Canadian males and females generally (75.8 and 81.4 years respectively). While the life expectancy of males is improving, this is occurring much less rapidly than in the rest of Canada. The life expectancy of females remains unchanged.

The demographic situation of the other Atlantic provinces is much more stable. More than all other provinces in Canada, these provinces are approaching zero growth. Admittedly, all three posted migration balances that were negative in 1997 and 1998, but these balances were small, and they were generally offset by rates of natural increase that were still slightly positive. But as elsewhere

Figure 3. Average Age of the Population of Newfoundland and Canada, 1971-1998



Source: Statistics Canada, Demography Division, Population Estimates Section.

in Canada, natural increase is bound to decrease because of population aging and barring an unlikely reversal of migration flows, the population of these provinces may soon begin to decline. Already in 1998, the population of New Brunswick showed a slightly negative growth rate (-1.3 per 1,000).

Quebec is also approaching zero growth. While it attracts far fewer international immigrants than neighbouring Ontario, ***Quebec has benefited from a positive international migration balance of approximately 20,000 per year over the past five-year period***. This gain more than offsets its losses in interprovincial migration (-17,800 persons in 1997). Without international immigration, Quebec's population growth would be comparable to that of its Maritime neighbours.

Nunavut

Under an agreement between the federal government and representatives of the Inuit people of the Northwest Territories, a new territory — Nunavut — came into being on April 1, 1999. It results from splitting the former Northwest Territories in two. The central and eastern parts are Nunavut, while the western part retains the former name. It's a huge (more than 2 million square miles), sparsely populated territory (1 person per 100 square miles).

Table 2. Population Distribution of the Old Northwest Territories, the New Northwest Territories and Nunavut, July 1st, 1991 and 1998

	Old Northwest Territories	Nunavut		*New* Northwest Territories	
		Number	Percentage	Number	Percentage
1991	60,930	22,241	36.5	38,689	63.5
1998	67,468	26,453	39.2	41,015	60.8
Average Annual Growth Rate (per 1,000)	14.67	25.09		8.38	
Median Age in 1998	26.8	21.8		29.1	
Average Age in 1998	27.8	24.6		29.4	

Source: Statistics Canada, ***Annual Demographic Statistics 1998***, Catalogue no. 91-213-XPB.

As of July 1, 1998, the population of the two parts was estimated at 67,500 persons. Approximately 40% of this population, 26,500 persons, were living within the boundaries of what is now Nunavut, compared to some 41,000 persons residing in the western part (Table 2). Nunavut's population is growing faster than that of the Northwest Territories. Between July 1, 1991 and July 1, 1998, Nunavut's population grew by an annual rate of 2.5% on average, compared to 0.8% for the population within the new boundaries of the Northwest Territories.

The two populations are quite different, not only in ethnicity, but also in their demographic structure. Nunavut's population, made up primarily of Inuit (84%), has a younger age structure than the population of the Northwest Territories. The average age of Nunavut's population is 24.6 years, nearly 5 years younger than that of the Northwest Territories' population (29.4 years). Even so, both populations are much younger than the Canadian population as a whole, whose average age is 36.7. The gap between the median ages of the two populations is even larger. The median age of a population is the age that divides that population in two so that half is younger than that age and the other half is older. The median age of Nunavut's population is 21.8, meaning that half the population of the territory is under 22 years of age! The median age in the Northwest Territories is 29.1, and in Canada as a whole it is 36.0.

Intercensal Estimates from 1991 to 1996 and the Residual Difference

Each year, Statistics Canada's Demography Division produces population estimates. These result from a demographic accounting exercise based on the counts from the last available census, corrected for net undercoverage, to which births and international immigrants are added and from which deaths

and emigrants are substracted.[3] These can be classified as — preliminary, revised or final postcensal estimates, depending on the quality of the sources used to estimate the components of demographic change. Subsequently, a new census makes it possible to assess their accuracy through comparison to new census counts. With each new census, the population base on which these estimates are calculated changes, and to ensure continuity of the time series, new estimates are produced, incorporating the differences observed between the new census figures corrected for net undercoverage and the postcensal estimates as of Census Day. These are the intercensal estimates.

The difference between the postcensal estimates and the numbers enumerated on May 14, 1996 represents what is called closure error. Distributed by year over the period between this census and the previous one, closure error corresponds to the residual difference for the period 1991-1996, shown in the right-hand column of Table 1. This table, reproduced and updated with each edition of the ***Report on the Demographic Situation***, includes for the first time intercensal estimates and the residual for the period 1991-1996. Admittedly, the residual difference of -36,300 persons per year for the period 1991-1996 is the largest since 1971, and it seems especially large when compared to the small residual for the previous period. Its size deserves an explanation.

Sources of Closure Error

The three largest components of population growth — births, deaths and international immigrants — are considered reliable. Therefore, most of closure error results, firstly, from differences in the quality of the census counts corrected for undercoverage, and secondly, from errors in the estimates of the other components (emigrants, returning Canadians and non-permanent residents). These estimates are less satisfactory, being derived indirectly (from administrative files). It is impossible to estimate precisely how much of the error should be attributed to each of these components, but the evidence seems to point to the estimation of international emigration.

It seems certain that international emigration was underestimated during the period 1991-1996. This may be seen by comparing the estimate of this component, produced annually by Demography Division using administrative data, with the estimates obtained from the Reverse Record Check (RRC) conducted after the Census. This survey, which measures net undercoverage by tracing persons who should have been enumerated in the census, estimated significantly more permanent emigrants than the current demographic estimate. It also showed a major increase in the number of Canadians temporarily abroad, whereas an implicit assumption of the current estimate was that the number

[3] This is a simplification, since over the years, new components have been added to this accounting exercise: returning Canadians, non-permanent residents, and soon, non-permanent emigrants.

of such persons remained fairly constant from one census to another. Furthermore, in comparison with the census data and new administrative data, the estimate of the number of returning Canadians appears to have been too high. Thus, with an underestimation of emigrants and an overestimation of returning Canadians, much of the closure error in 1996 results from a sizable overestimate of net international migration, amounting to approximately 170,000 persons.

The residuals as documented in Table 1 are actually smaller than first documented at the time of the initial release of 1996 Census based figures. As a result of a thorough review of procedures used in the evaluation and estimation of Census coverage error, net undercoverage rates have recently been revised downward from 1971 onward. This has led Demography Division to develop new population estimates for this period.[4] For example, a net undercoverage rate initially estimated at 2.82% in the 1991 Census has recently been revised downward to 2.52%. This correspondingly had the effect of reducing closure error as initially documented in 1996 at 289,000, to its current level of 181,000. These revisions have greatly improved census comparability, but the quality of corrections for each census still differ somewhat. Furthermore, the estimates of net undercoverage still contain sampling errors that can influence the size of closure error. Thus, in the 1996 Census, while the estimate of the net number of persons missed is 723,000,[5] the actual number may vary by plus or minus 60,000 persons.

Provincial Variations in the Residual Difference

In addition to these two main sources of error responsible for the residual at the national level, there is, at the provincial level, some errors associated with the estimation of interprovincial migration and the distribution of net international migration. Furthermore, the size of the sampling error is greater owing to smaller sample sizes in the Reverse Record Check survey. Nevertheless, several conclusions emerge from the coverage studies concerning the last census. The estimate of net migration was likely too low for Ontario (by at least 39,000 persons) and Quebec, and too high for British Columbia and Alberta. It is also possible that the interprovincial migration balance was underestimated for British Columbia (-23,400 persons) and overestimated for Alberta (+17,500 persons) and Newfoundland (+9,700 persons). Once these phenomena are taken into account, the closure error is smaller; however, for New Brunswick, Quebec and British Columbia, possible biases and random variation in the estimation of net undercoverage appear to have predominated.

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[4] All demographic indicators presented in this edition of the ***Report on the Demographic Situation*** were recalculated on the basis of the new population estimates for the period 1971-1996.

[5] The figure is 773,000 persons when Indian reserves are included.

Hence, not all the provinces are equally affected by closure error. Whereas closure error is generally negative, provinces sometimes see their population corrected upward. For example, the estimate as of July 1, 1996, based on the results of the last census, adds nearly 40,000 persons to the population of British Columbia in comparison to the postcensal estimate based on the previous census (Table A1, appendix). For its part, Saskatchewan gains approximately 5,000 persons. All the other provinces see their population numbers decrease through the establishment of a new base for their population estimates. Ontario and Quebec, the two most populous provinces, lose respectively 110,000 and 95,000 persons.

Summary Table, Rates and Principal Demographic Indicators, Canada, Provinces and Territories, 1981-1998

	Year	New-foundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario
Birth Rate (per 1,000)	1981	17.7	15.4	14.1	14.9	14.6	13.9
	1986	14.1	15.0	13.9	13.5	12.6	14.2
	1991	12.4	14.4	13.1	12.7	13.8	14.5
	1994	11.0	12.8	12.0	12.0	12.6	13.6
	1995	10.3	13.0	11.6	11.4	12.1	13.3
	1996	10.2	12.5	11.3	10.9	11.7	12.6
	1997	9.8	11.6	10.7	10.5	10.9	11.8
	1998 (P)	9.4	11.4	10.5	10.3	10.3	11.8
Mortality Rate (per 1,000)	1981	5.6	8.0	8.1	7.3	6.5	7.1
	1986	6.1	8.7	8.2	7.5	7.0	7.2
	1991	6.6	9.1	7.9	7.3	7.0	7.0
	1994	7.1	8.3	8.4	7.9	7.1	7.2
	1995	6.9	8.5	8.3	7.9	7.3	7.2
	1996	7.0	9.3	8.3	7.8	7.2	7.1
	1997	7.8	7.5	8.6	7.9	7.4	7.1
	1998 (P)	8.0	8.5	8.8	8.2	7.3	7.3
Total Fertlity Rate (number of children per women aged 15-49)	1981	..	1.88	1.62	1.68	1.57	1.58
	1986	..	1.79	1.59	1.53	1.38	1.60
	1991	1.44	1.86	1.59	1.55	1.65	1.67
	1993	1.32	1.76	1.57	1.53	1.64	1.67
	1994	1.34	1.73	1.54	1.55	1.64	1.67
	1995	1.28	1.79	1.52	1.51	1.61	1.67
	1996	1.30	1.73	1.52	1.46	1.60	1.61
	1997	1.27	1.63	1.45	1.44	1.52	1.53
Total First Marriage Rate (per 1,000) (males aged 17-49, females aged 15-49)	1981 M	653	701	686	660	546	692
	F	631	668	672	649	560	685
	1986 M	589	711	595	600	430	623
	F	580	742	631	626	442	658
	1991 M	600	727	575	581	381	610
	F	613	730	606	608	427	653
	1993 M	546	721	547	538	330	568
	F	560	733	574	570	370	609
	1994 M	592	673	559	551	339	572
	F	611	711	582	574	380	609
	1995 M	629	695	566	559	331	584
	F	649	734	592	594	370	618
	1996 M	607	747	586	581	327	579
	F	624	782	597	618	363	609
	1997 M	630	685	556	550	329	567
	F	653	718	583	587	362	597
Rate of Natural Increase (per 1,000)	1981	12.0	7.3	6.0	7.6	8.0	6.7
	1986	7.9	6.3	5.7	6.0	5.6	7.0
	1991	5.8	5.3	5.2	5.4	6.8	7.5
	1994	4.0	4.5	3.6	4.1	5.4	6.4
	1995	3.4	4.5	3.3	3.5	4.8	6.2
	1996	3.2	3.1	3.0	3.0	4.5	5.5
	1997	2.0	4.1	2.0	2.6	3.5	4.8
	1998 (P)	1.5	3.0	1.7	2.1	3.0	4.4
Total Growth Rate (per 1,000)	1981	-1.1	1.7	3.9	0.1	6.5	10.7
	1986	-2.8	1.1	4.8	1.7	9.1	18.3
	1991	2.1	0.9	5.5	4.8	7.1	12.2
	1994	-11.1	10.6	1.7	1.8	4.8	12.8
	1995	-11.8	8.5	2.8	0.9	4.7	12.7
	1996	-12.2	7.3	4.0	1.3	4.8	13.0
	1997 (PR)	-14.5	0.7	1.5	0.7	4.0	14.3
	1998 (PR)	-14.7	1.8	0.8	-1.3	3.7	11.9

See notes at the end of this table.

Summary Table, Rates and Principal Demographic Indicators, Canada, Provinces and Territories, 1981-1998 - Continued

	Year	Manitoba	Saskatch-ewan	Alberta	British Columbia	Yukon	Northwest Territories[4]	Canada
Birth Rate (per 1,000)	1981	15.5	17.6	18.6	14.7	21.9	27.5	15.0
	1986	15.6	17.0	18.1	14.0	19.5	27.6	14.3
	1991	15.6	15.3	16.5	13.5	19.8	26.9	14.4
	1994	14.7	13.9	14.7	12.8	14.7	24.2	13.3
	1995	14.3	13.3	14.2	12.4	15.2	24.3	12.9
	1996	13.7	13.1	13.6	11.9	13.9	23.2	12.3
	1997	12.9	12.6	13.0	11.3	14.8	21.8	11.6
	1998 (P)	13.0	12.5	13.0	11.1	14.1	21.2	11.4
Mortality Rate (per 1,000)	1981	8.3	7.7	5.6	7.0	5.8	4.1	6.9
	1986	8.2	7.8	5.6	7.1	4.6	4.3	7.1
	1991	8.1	8.1	5.6	7.1	4.0	3.9	7.0
	1994	8.1	8.2	5.8	7.0	4.1	3.7	7.1
	1995	8.6	8.4	5.8	7.0	5.1	3.4	7.2
	1996	8.4	8.6	5.9	7.1	3.8	4.0	7.2
	1997	8.4	8.4	5.8	6.9	3.9	3.8	7.2
	1998 (P)	8.6	8.8	6.0	7.3	4.0	4.1	7.4
Total Fertlity Rate (number of children per women aged 15-49)	1981	1.83	2.12	1.87	1.64	2.07	2.86	1.65
	1986	1.83	2.03	1.86	1.62	1.95	2.85	1.60
	1991	1.97	2.04	1.90	1.69	2.15	2.88	1.71
	1993	1.97	1.98	1.82	1.64	1.89	2.69	1.69
	1994	1.97	1.97	1.82	1.64	1.73	2.73	1.69
	1995	1.95	1.91	1.79	1.61	1.82	2.77	1.67
	1996	1.90	1.89	1.74	1.55	1.67	2.70	1.62
	1997	1.82	1.83	1.68	1.48	1.82	2.57	1.55
Total First Marriage Rate (per 1,000) (males aged 17-49, females aged 15-49)	1981 M	722	710	644	684	693	457	645
	F	712	698	689	695	715	474	651
	1986 M	615	588	566	582	484	351	558
	F	660	628	616	623	573	399	589
	1991 M	600	622	597	601	470	284	548
	F	651	656	643	661	521	311	594
	1993 M	592	616	592	577	401	276	513
	F	638	648	634	627	464	309	555
	1994 M	592	632	604	571	430	298	520
	F	637	663	652	629	464	333	562
	1995 M	607	641	611	556	541	282	524
	F	657	665	649	607	543	315	563
	1996 M	582	628	569	521	453	268	512
	F	626	653	613	563	486	282	548
	1997 M	573	633	565	502	409	260	505
	F	611	655	607	540	422	310	539
Rate of Natural Increase (per 1,000)	1981	7.2	9.9	13.0	7.7	16.1	23.3	8.1
	1986	7.4	9.2	12.5	6.9	14.9	23.3	7.2
	1991	7.5	7.2	10.9	6.4	15.8	23.0	7.4
	1994	6.5	5.7	8.9	5.7	10.5	20.5	6.1
	1995	5.7	4.9	8.4	5.4	10.1	20.9	5.7
	1996	5.3	4.5	7.7	4.8	10.2	19.2	5.2
	1997	4.5	4.1	7.2	4.3	10.9	18.0	4.4
	1998 (P)	4.4	3.6	7.0	3.9	10.2	17.2	4.1
Total Growth Rate (per 1,000)	1981	7.4	11.4	39.2	22.9	-22.7	37.0	12.6
	1986	6.3	2.6	6.0	11.5	31.5	-1.7	11.4
	1991	3.6	-1.2	15.9	25.3	41.4	31.7	11.4
	1994	5.1	4.2	12.4	29.5	9.9	23.8	11.2
	1995	4.4	4.3	14.0	25.6	38.6	14.7	10.8
	1996	4.0	4.4	16.8	23.3	20.3	7.8	11.0
	1997 (PR)	0.8	2.4	22.8	17.3	-1.5	0.7	10.7
	1998 (PR)	3.5	3.6	25.3	7.0	-35.6	2.5	8.7

See notes at the end of this table.

Summary Table, Rates and Principal Demographic Indicators, Canada, Provinces and Territories, 1981-1998 - Continued

	Year		Newfoundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario
Population Aged 65 + as a Percentage of the Total Population on July 1	1981		7.7	12.1	10.9	10.0	8.8	9.9
	1986		8.7	12.6	11.8	11.0	9.8	10.7
	1991		9.6	13.1	12.5	12.0	11.1	11.6
	1994		10.1	13.0	12.8	12.3	11.6	12.0
	1995		10.4	13.0	12.8	12.4	11.8	12.1
	1996		10.7	12.9	12.9	12.5	12.0	12.2
	1997 (PR)		11.0	12.9	13.1	12.7	12.2	12.3
	1998 (PR)		11.4	13.0	13.2	12.9	12.4	12.4
Total Age Dependency Ratio (in %)[1]	1981		78.2	76.0	67.0	69.5	55.9	58.9
	1986		68.1	68.6	61.1	62.5	52.2	55.0
	1991		59.7	67.3	59.1	59.7	53.5	55.5
	1994		55.9	65.3	58.1	57.7	54.3	56.8
	1995		55.1	64.5	57.9	57.0	54.2	57.0
	1996		54.3	63.5	57.7	56.5	54.2	57.4
	1997 (PR)		53.4	62.5	57.3	56.0	54.0	57.4
	1998 (PR)		52.7	61.9	56.8	55.4	53.6	57.2
Life Expectancy at Birth (in years)	1986	M	72.8	72.8	72.4	72.7	72.2	73.8
		F	79.2	...[2]	79.5	80.1	79.7	80.0
	1991	M	73.7	73.2	73.7	74.2	73.8	75.0
		F	79.6	...[2]	80.3	80.9	80.9	80.9
	1993	M	73.9	74.3	74.0	74.4	74.1	75.2
		F	79.9	...[2]	80.4	80.7	81.0	81.0
	1994	M	73.9	...[2]	74.4	74.4	74.1	75.4
		F	79.9	...[2]	80.4	80.7	81.0	81.0
	1995	M	74.2	...[2]	74.5	74.6	74.5	75.6
		F	80.2	81.1	80.6	81.0	81.0	81.1
	1996	M	74.4	...[2]	74.8	74.8	74.6	75.9
		F	80.2	...[2]	80.6	81.2	81.0	81.3
	1997	M (P)	74.5	...[2]	75.0	75.2	74.9	76.2
		F (P)	80.0	...[2]	80.6	81.2	81.2	81.5
Infant Mortality Rate (per 1,000)	1981		9.7	13.2	11.5	10.9	8.5	8.8
	1986		8.0	6.7	8.4	8.3	7.1	7.2
	1991		7.8	6.9	5.7	6.1	5.9	6.3
	1993		7.8	9.1	7.1	7.2	5.7	6.2
	1994		8.2	6.4	6.0	5.3	5.6	6.0
	1995		7.9	4.6	4.8	4.8	5.5	5.9
	1996		6.6	4.7	5.6	4.9	4.6	5.7
	1997		5.2	4.4	4.4	5.7	5.6	5.5
Rate of Pregnancies Terminated (per 1,000 births)[3]	1981		3.5	0.3	14.1	4.1	9.5	25.0
	1986		3.4	...	14.1	3.3	14.7	20.2
	1991		6.0	...	15.1	6.2	15.1	20.7
	1993		7.2	...	16.8	7.0	18.3	20.7
	1994		7.3	...	16.6	6.6	19.2	20.3
	1995		8.6	...	17.1	7.1	20.8	19.9

See notes at the end of this table.

Summary Table, Rates and Principal Demographic Indicators, Canada, Provinces and Territories, 1981-1998 - Concluded

	Year		Manitoba	Saskat-chewan	Alberta	British Columbia	Yukon	Northwest Territories[4]	Canada
Population Aged 65 + as a Percentage of the Total Population on July 1	1981		11.8	11.9	7.2	10.7	3.3	3.0	9.6
	1986		12.4	12.6	8.0	11.9	3.7	2.9	10.5
	1991		13.3	14.1	9.0	12.7	3.9	2.7	11.5
	1994		13.5	14.4	9.5	12.6	4.2	2.8	11.8
	1995		13.5	14.5	9.6	12.6	4.3	2.9	12.0
	1996		13.5	14.5	9.8	12.5	4.4	3.0	12.1
	1997 (PR)		13.6	14.5	9.8	12.6	4.6	3.1	12.2
	1998 (PR)		13.6	14.6	9.9	12.7	4.9	3.3	12.3
Total Age Dependency Ratio (in %)[1]	1981		67.7	73.3	57.4	58.6	53.4	77.9	59.8
	1986		64.0	70.7	56.2	57.4	50.3	69.0	56.3
	1991		65.5	73.8	58.1	57.7	47.5	65.9	56.8
	1994		65.5	73.7	58.3	56.9	47.8	66.5	57.2
	1995		65.5	73.2	58.0	56.4	47.8	66.4	57.2
	1996		65.2	72.5	57.7	55.9	47.2	66.3	57.1
	1997 (PR)		65.0	71.7	57.2	55.6	47.2	66.4	56.9
	1998 (PR)		64.7	70.8	56.5	55.2	46.8	66.4	56.6
Life Expectancy at Birth (in years)	1986	M	73.2	73.8	73.7	74.4	...	...	73.3
		F	79.9	80.5	80.2	80.7	...	...	80.0
	1991	M	74.6	75.2	75.1	75.3	...	...	74.6
		F	80.7	81.5	81.2	81.4	...	...	81.0
	1993	M	74.7	75.5	75.4	75.5	...	...	74.9
		F	80.9	81.8	81.1	81.4	...	...	81.0
	1994	M	74.7	75.1	75.5	75.7	...	...	75.0
		F	80.9	81.8	81.1	81.4	...	...	81.0
	1995	M	75.0	75.1	75.6	75.9	...	...	75.2
		F	80.6	81.5	81.3	81.7	...	...	81.1
	1996	M	75.1	75.4	75.9	76.2	...	...	75.5
		F	80.5	81.4	81.3	81.8	...	...	81.2
	1997	M (P)	75.5	75.7	76.3	76.5	...	...	75.8
		F (P)	80.6	81.4	81.5	82.1	...	...	81.4
Infant Mortality Rate (per 1,000)	1981		11.9	11.8	10.6	10.2	14.9	21.5	9.6
	1986		9.2	9.0	9.0	8.5	24.8	18.6	7.9
	1991		6.4	8.2	6.7	6.5	10.6	12.2	6.4
	1993		7.1	8.1	6.7	5.7	7.9	9.6	6.3
	1994		7.0	8.9	7.4	6.3	2.3	14.6	6.3
	1995		7.6	9.1	7.0	6.0	12.8	13.0	6.1
	1996		6.7	8.4	6.2	5.1	0.0	12.2	5.6
	1997		7.5	8.9	4.8	4.7	8.4	10.9	5.5
Rate of Pregnancies Terminated (per 1,000 births)[3]	1981		10.0	9.5	15.8	30.8	20.9	10.8	17.5
	1986		15.9	5.5	14.4	27.3	22.8	12.2	17.0
	1991		15.2	8.1	14.9	23.7	27.5	17.7	17.5
	1993		16.2	11.2	15.9	23.7	33.5	15.6	18.7
	1994		17.9	12.3	16.9	20.8	33.0	15.1	18.6
	1995		18.2	13.5	17.0	18.4	27.7	14.9	18.7

[1] Ratio between population aged 0-17, 65+ and 18-64.
[2] Because of an absence of deaths in certain age groups, the mortality table could not be calculated.
[3] Practised in hospitals in Canada.
[4] Nunavut included.
(P) Preliminary.
(PR) Updated postcensal estimates based on 1996, as of March 22 1999.

Sources: Statistics Canada, Health Statistics Division, Health Status and Vital Statistics Section, ***Births***, catalogue no. 84-210, ***Deaths***, catalogue no. 84-211, ***Marriages***, catalogue no. 84-212, ***Therapeutic Abortions***, catalogue no. 82-219 and Demography Division, Population Estimates Section.

CANADA IN THE WORLD

Global demographic trends have resulted in a world population approaching 6 billion, distributed unequally among 225 sovereign states and territories. Marked by a period of major transition[6] and by various geopolitical upheavals, the world population has undergone demographic changes that are both spasmodic and irregular over time and space. One of the most imperative challenges facing modern societies is to maintain a demographic balance, or rather to tend toward such a balance. This necessity, the various aspects of which will not be elaborated on here, is causing some countries to adopt population policies that are either expansionist (boosting the birth rate and opening the doors to immigrants) or restrictive (limiting births and immigration).

Policies to reduce population growth are being applied primarily in densely populated countries and those with an undesirable growth rate, such as is observed in some countries (Burundi, Mozambique, Ethiopia, etc.) where famine and poverty may be linked with population growth. By contrast, the most industrialized countries are experiencing low growth or even negative growth, and are striving to increase their population by a combination of pro-natalist and pro-immigration programs. To date, pro-natalist programs have not yielded the desired results. In particular, Canada and all other G7 countries[7] have a birth rate below replacement level (2.1 children per woman).

Among the main industrialized countries in Table 3, only Mexico has a total fertility rate greater than the replacement level, with 2.73 children per woman. The United States and Iceland follow at some distance with respectively 2.06 and 2.04 children per woman. ***Italy and Spain have the lowest total fertility rates, with respectively 1.22 and 1.15 children per woman***. However, this current low fertility should be interpreted with caution, since it might be partly due to a deferral of births by new cohorts reaching childbearing age. This phenomenon of an increase in the age at which women bear children is tending to become fairly widespread in the industrialized countries. In Canada, for example, mothers are on average older now than they were in previous generations. While trends can reverse unexpectedly, it is unlikely that Canadian fertility will rebound back up to replacement level. As a result, immigration is becoming the preferred solution of some industrialized countries coping with low birth rate.

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[6] The shift from a pattern of high fertility and high mortality to a pattern of relatively low fertility and low mortality has been a transition period without precedent in world demographic history. In some less developed countries, this transition is still not completed.

[7] The G7 is made up of the seven most industrialized countries (Australia, Canada, France, Germany, Japan, the United Kingdom and the United States). At the 23rd G7 summit held in Denver in 1997, Russia joined the group.

Table 3. Population Change (in Thousands) and Demographic Indicators for the Main Industrialized Countries, 1997 or the most recent year available

Country	Population as of January 1, 1997	Births	Deaths	Natural Increase	Net Migration	Population as of January 1, 1998	Total Growth
Austria	8,067.8	84.0	79.4	4.6	2.6	8,075.0	7.2
Belgium	10,170.0	116.2	104.2	12.0	10.3	10,192.3	22.3
Denmark	5,275.1	67.6	59.9	7.7	12.1	5,294.9	19.8
Finland	5,131.2	59.3	49.1	10.2	5.9	5,147.3	16.1
France	58,490.0	725.5	531.2	194.3	40.7	58,725.0	235.0
Germany	82,012.0	812.2	860.4	-48.2	93.2	82,057.0	45.0
Greece	10,486.6	102.0	101.0	1.0	20.0	10,507.6	21.0
Ireland	3,652.2	52.3	31.6	20.7	20.0	3,692.9	40.7
Italy	57,461.0	528.9	553.1	-24.2	126.0	57,562.8	101.8
Luxemburg	418.3	5.5	3.9	1.6	3.8	423.7	5.4
Netherlands	15,567.2	191.0	136.0	55.0	27.9	15,650.1	82.9
Portugal	9,934.1	112.9	104.8	8.1	15.1	9,957.3	23.2
Spain	39,298.6	358.2	356.3	1.9	47.4	39,347.9	49.3
Sweden	8,844.5	90.4	93.3	-2.9	6.0	8,847.6	3.1
United Kingdom	58,901.8	726.8	632.5	94.3	87.7	59,083.8	182.0
Europe (15)	**306,740.8**	**3,222.0**	**2,984.8**	**237.2**	**428.4**	**307,406.4**	**665.6**
Iceland	269.9	4.2	1.8	2.4	0.1	272.4	2.5
Norway	4,392.7	59.7	44.6	15.1	9.8	4,417.6	24.9
Switzerland	7,081.3	80.6	62.8	17.8	-5.6	7,093.5	12.2
Albania	3,167.2	61.7	18.2	43.5	..	..	..
Bosnia-Hercegovina	4,570.3	62.9	29.8	33.1	..	..	..
Bulgaria	8,339.8	64.1	121.9	-57.8	1.2	8,283.2	-56.6
Croatia	4,597.0	51.8	51.6	0.2	..	..	..
Czech Republic	10,307.1	90.7	112.7	-22.0	14.0	10,299.1	-8.0
Hungary	10,174.4	100.5	139.5	-39.0	-0.4	10,135.0	-39.4
Poland	38,639.3	412.6	380.2	32.4	-11.7	38,660.0	20.7
Romania	22,581.9	226.9	279.3	-52.4	-3.4	22,526.1	-55.8
Slovakia	5,378.9	59.1	52.1	7.0	1.8	5,387.7	8.8
Slovenia	1,987.0	18.2	18.9	-0.7	-1.4	1,984.9	-2.1
Yugoslavia	..	131.8	111.3	20.5	..	10,614.7	..
Central Europe	**…**	**1,280.3**	**1,315.5**	**-35.2**	**…**	**…**	**…**
Belarus	..	89.5	136.9	-47.4	..	10,203.8	..
Estonia	1,462.1	12.6	18.6	-6.0	-2.3	1,453.8	-8.3
Latvia	2,479.9	18.8	33.5	-14.7	-6.8	2,458.4	-21.5
Lithuania	3,707.2	37.8	41.1	-3.3	0.1	3,704.0	-3.2
Moldavia	4,320.0	49.8	50.6	-0.8	..	..	..
Ukraine	51,339.0	442.6	754.1	-311.5	..	..	..
Eastern Europe	**…**	**651.1**	**1,034.8**	**-383.7**	**…**	**…**	**…**
Russia	147,502.4	1,259.9	2,015.8	-755.9	358.1	147,104.6	-397.8
Canada	29,834.6	348.6	215.5	133.1	187.7	30,155.3	320.8
Mexico	94,356.1	2,258.7	421.6	1,837.1	-294.4	95,898.8	1,542.7
United States	266,487.0	3,915.0	2,322.3	1,592.7	842.3	268,922.0	2,435.0
North America	**390,677.7**	**6,522.3**	**2,959.4**	**3,562.9**	**735.6**	**394,976.1**	**4,298.5**
Australia	18,423.6	251.8	129.4	122.4	77.0	18,623.0	199.4
Japan	125,755.8	1,203.6	918.8	284.8	69.1	126,109.7	353.9
New Zealand	3,781.3	57.6	27.5	30.1	-7.5	3,803.9	22.6

See notes at the end of the table.

Table 3. Population Change (in Thousands) and Demographic Indicators for the Main Industrialized Countries, 1997 or the most recent year available - Concluded

Country	Total Fertility Rate	Total Growth Rate (per 1,000)	Infant Mortality Rate (per 1,000)	Life Expectancy (in years)		Total First Marriage Rate (per 1,000)		Total Divorce Rate (per 100)	Births Out of Wedlock (for 100 births)	Legal Abortions (for 100 live births)
				Males	Females	Males	Females			
Austria	1.36	0.9	4.7	73.9	80.2	498	554	38.0	28.0	20.5
Belgium	1.55	2.2	6.1	73.8	80.5	522	570	58.1	15.0	9.6
Danemark	1.75	3.8	5.3	72.9	78.0	647	707	40.0	46.3	25.4
Finland	1.75	3.1	3.9	73.0	80.5	523	568	48.0	35.3	15.7
France	1.71	4.0	5.1	74.1	82.0	520	540	38.7	37.9	21.4
Germany	1.36	0.5	4.9	73.6	79.9	500	575	32.4	17.0	16.4
Greece	1.32	2.0	6.3	75.1	80.4	730	758	14.0	3.3	9.9
Ireland	1.91	11.1	6.2	73.3	78.7	..	..	..	24.8	..
Italy	1.22	1.8	5.5	74.9	81.3	598	625	10.0	8.3	25.4
Luxemburg	1.71	12.9	4.2	73.3	79.9	500	560	37.0	15.0	..
Netherlands	1.57	5.3	5.2	74.7	80.3	505	547	33.0	16.9	11.0
Portugal	1.46	2.3	6.8	71.1	78.6	716	731	17.9	19.5	..
Spain	1.15	1.3	5.7	74.4	81.6	570	589	12.0	10.8	12.9
Sweden	1.52	0.4	3.6	76.5	81.5	418	442	53.9	53.9	33.8
United Kingdom	1.71	3.1	5.9	74.3	79.5	..	..	46.0	35.5	23.9
Iceland	2.04	9.3	5.5	75.9	80.0	..	..	..	60.7	18.9
Norway	1.85	5.7	4.1	74.8	80.8	500	540	44.0	48.3	22.8
Switzerland	1.48	1.7	4.8	75.7	81.9	585	640	39.0	7.3	..
Canada	1.55	10.8	5.5	75.8	81.4	502	537	33.5	..	10.4
Mexico	2.73	16.3	28.1	72.0	76.6	..	..	..	..	..
United States	2.06	9.1	7.5	73.0	79.0	584	595	..	32.2	38.7
Australia	1.78	10.8	5.3	75.6	81.3	560	580	..	28.1	..
Japan	1.44	2.8	4.3	76.6	83.0	..	..	..	1.2	29.4
New Zealand	1.97	6.0	6.5	74.3	79.6	..	..	48.9	41.8	26.4

Sources: The data comes mainly from an article by Alain Monnier (***Population***, Volume 53, Number 5, 1998) and in others cases directly from the various national statistical agencies. Life expectancy comes from annual tables, sometimes from biennial or triennial tables.

Canada, after the United States and Russia, has the greatest positive balance of international migration of the industrialized countries. According to the figures in Table 3, the places with negative net migration appear to be mainly certain countries in Central Europe (Poland, Romania, Switzerland) and Eastern Europe (Estonia, Latvia). For its part, Mexico has a strikingly negative balance of migration (-294,400 individuals). Even though Mexico quickly recovered from its 1995 financial and monetary crisis, the migration of thousands of Mexicans to the United States has not fallen off.

An examination of the growth rate of the main industrialized countries shows that only five countries have a rate exceeding 10.0 per 1,000. Despite an exodus of its population to the United States, Mexico is far out in front with a growth rate of 16.3 per 1,000, followed by Luxembourg (12.9 per 1,000), Ireland (11.1 per thousand), and Canada and Australia with identical rates of 10.8 per 1,000.

Sweden, Germany and Austria have a growth rate approaching zero, with less than 1.0 per 1,000. The situation in Bulgaria (-6.8 per 1,000) and the Baltic states of Latvia (-8.7 per 1,000) and Estonia (-5.7 per 1,000) is troubling. These countries have experienced a loss of population for the second consecutive year, and their negative growth puts them far behind the other industrialized countries.

Russia is also experiencing a period of depopulation, with a negative overall growth of -2.7 per 1,000. The number of returning migrants, primarily from other republics of the former USSR, has not been sufficient to offset the excess of deaths over births (amounting to 755,900 persons). Apart from the sizable number of deaths in relation to births, Russians' life expectancy is closer to that of countries of Southeast Asia and south central Europe than that of the G7 countries. For example, the life expectancy of Russian males is 14 years lower than that of Canadian males. For females the difference is not as great but is nevertheless sizable (8 years in favour of Canadian females). Briefly put, the difficult and lengthy economic transition that Russia is experiencing is certainly not unrelated to this ongoing demographic deterioration.

As to life expectancy in the main industrialized countries, the Japanese of both sexes still have the greatest life expectancy, with an average of 76.6 years for males and 83.0 for females. ***Canadian males rank fourth with an average life expectancy of 75.8 years, behind their Swedish and Icelandic counterparts (76.5 years and 75.9 years respectively). For their part, Canadian females rank sixth, with a life expectancy of 81.4 years***. On this score, Canada is in a favourable position in relation to its neighbour to the south: the United States barely ranks among the top 20 industrialized countries, for both sexes.

Although the difference in life expectancy between males and females has decreased in some countries (including Canada), it is still sizable. Ranking

first in this regard, France has an average life expectancy gap that is of special note (7.9 years). In Iceland, excess male mortality is the lowest of all industrialized countries: the gap between males and females (4.1 years) is only slightly more than half the gap in France. In Canada, the difference is 5.6 years, roughly half a year under the average gap in the main industrialized countries (6.0 years). Finland, Portugal and Spain, like France, stand out as having gaps greater than seven years between male and female life expectancies.

The demographic dissimilarities of the most industrialized countries are not limited to life expectancy. The total first-marriage and divorce rates are especially noteworthy in this regard. It is in Greece (730 per 1,000 males and 758 per 1,000 females) and Portugal (716 per 1,000 males and 731 per 1,000 females) that marriage holds the greatest attraction. Canada's total first-marriage rate barely exceeds 500 per 1,000, and it therefore ranks 13th for males and 16th for females, whereas the United States ranks respectively 6th and 5th. While fertility has fallen sharply in Italy, marriage continues to play a major social role there: Italy's total first-marriage rates are nearly 600 per 1,000 for both males and females, making it one of the top-ranking countries in this regard. Furthermore, as a bastion of Catholicism, Italy has the lowest total divorce rate, with 10.0 divorces per 100 marriages, despite a slight increase over the previous year. Belgium has the highest rate, with 58.1 divorces per 100 marriages. Canada is midway between the two extremes (33.0 divorces per 100 marriages).

For most industrialized countries, fertility outside marriage has increased slightly over last year, while the rankings have remained unchanged. The data show that it is still the Japanese who appear to assign the greatest importance to establishing legal bonds between partners prior to family formation (1.2 births outside marriage per 100 births). By contrast, more than half of births in Iceland take place outside marriage (60.7 per 100). The trends shaping up for the decade 1990-2000 do not suggest a slackening in births outside marriage, particularly since the phenomenon of common law union, which accounts for a sizable proportion of births outside marriage, is increasingly part of the way of life in many industrialized countries.

NUPTIALITY

The number of marriages again declined in Canada in 1997, reaching 153,306 (Table A2, appendix). The 1997 statistics confirm that after a short upward interlude in 1994 and 1995, the number of marriages resumed its downward trend in 1996. As in 1996, the number of marriages in 1997 fell by nearly 3,400 (2.2%) in relation to the previous year. Not since 1966 has there been such a small number of marriages (155,596), but at that time, Canada's population was much smaller. Unlike in previous years, the drop in the number of marriages equally affected first marriages and remarriages (Table 4).

The decline in nuptiality is reflected in curves showing the distribution of first marriage rates among cohorts (Figures 4a and 4b). The curves for successive cohorts have increasingly lower peaks and are skewed increasingly to the right. This indicates both a decline in the intensity of cohort nuptiality and a tendency for people to marry later in life.

Provincial Variations

Not all provinces were affected to the same extent by the drop in the number of marriages. Some, like Newfoundland and Saskatchewan, registered a few more marriages in 1997 than in 1996. However, while the change was positive, it was negligible both in absolute numbers (an increase of 33 and 36 marriages respectively) and in relative terms (the increase was less than 1%). By the same token, the change in Quebec and Alberta was negative but was so slight as to be practically nil.

In Ontario, the number of marriages fell by nearly 1,700 in one year, going from 66,208 in 1996 to 64,535 in 1997. This was the largest provincial decrease in absolute numbers, but that is only because of Ontario's demographic weight within Canada; in percentage terms the decrease was 2.5%, comparable to the rate for Canada as a whole.

By contrast, the declines were much steeper in British Columbia and the Maritime provinces. In British Columbia, for example, there were nearly 1,000 fewer marriages in 1997 than in the previous year; this was a decrease of 4.3%, roughly double the Canadian average. In the Maritime provinces, owing to their small populations, the changes in absolute numbers were much less sizable: marriages were down by 227 in New Brunswick, 215 in Nova Scotia and 48 in Prince Edward Island. Nevertheless, these provinces as a group registered the largest relative declines in the number of marriages, namely 6.3%, 4.0% and 5.2% respectively.

Table 4. Marriages, First Marriages and Remarriages, Canada, 1970-1997

Year	Number of Marriages	Number of First Marriages		Number and Proportion of Marriages in which at least one Spouse has been Previously Married		Number and Proportion of Remarriages in which both Spouses had been Previously Married	
		Males	Females	Number	Percentage	Number	Percentage
1970	188,428	167,267	167,421	29,975	15.9	12,193	40.7
1971	191,324	168,944	169,072	31,698	16.6	12,934	40.8
1972	200,470	176,537	177,155	33,582	16.8	13,666	40.7
1973	199,064	173,355	174,135	36,047	18.1	14,591	40.5
1974	198,824	170,678	172,107	39,063	19.6	15,800	40.4
1975	198,085	167,022	168,817	42,300	21.4	17,031	40.3
1976	193,343	155,679	157,412	43,098	22.3	17,499	40.6
1977	187,344	154,906	156,854	44,750	23.9	18,178	40.6
1978	185,523	151,884	154,016	46,254	24.9	18,892	40.8
1979	187,811	152,731	154,982	48,309	25.7	19,600	40.6
1980	191,069	154,138	156,918	50,600	26.5	20,422	40.4
1981	190,082	151,978	154,506	52,340	27.5	21,340	40.8
1982	188,360	149,419	152,825	52,979	28.1	21,438	40.5
1983	184,675	144,960	147,968	53,342	28.9	22,080	41.4
1984	185,597	144,674	147,907	55,436	29.9	23,177	41.8
1985	184,096	144,009	146,718	54,632	29.7	22,833	41.8
1986	175,518	137,665	138,523	52,678	30.0	22,170	42.1
1987	182,151	138,454	139,324	60,106	33.0	26,529	44.1
1988	187,728	142,956	143,943	61,665	32.8	26,892	43.6
1989	190,640	145,733	146,242	62,276	32.7	27,029	43.4
1990	187,737	143,637	145,350	60,393	32.2	26,094	43.2
1991	172,251	131,996	133,584	55,278	32.1	23,644	42.8
1992	164,573	125,505	126,955	53,547	32.5	23,139	43.2
1993	159,317	121,104	122,479	52,406	32.9	22,645	43.2
1994	159,958	121,497	122,641	52,758	33.0	23,020	43.6
1995	160,251	121,312	122,131	53,477	33.4	23,582	44.1
1996	156,691	117,574	118,285	53,481	34.1	24,042	45.0
1997	153,306	115,186	115,875	52,217	34.1	23,334	44.7

Sources: Statistics Canada, Health Statistics Division, Health Status and Vital Statistics Section and Demography Division, Population Estimates Section.

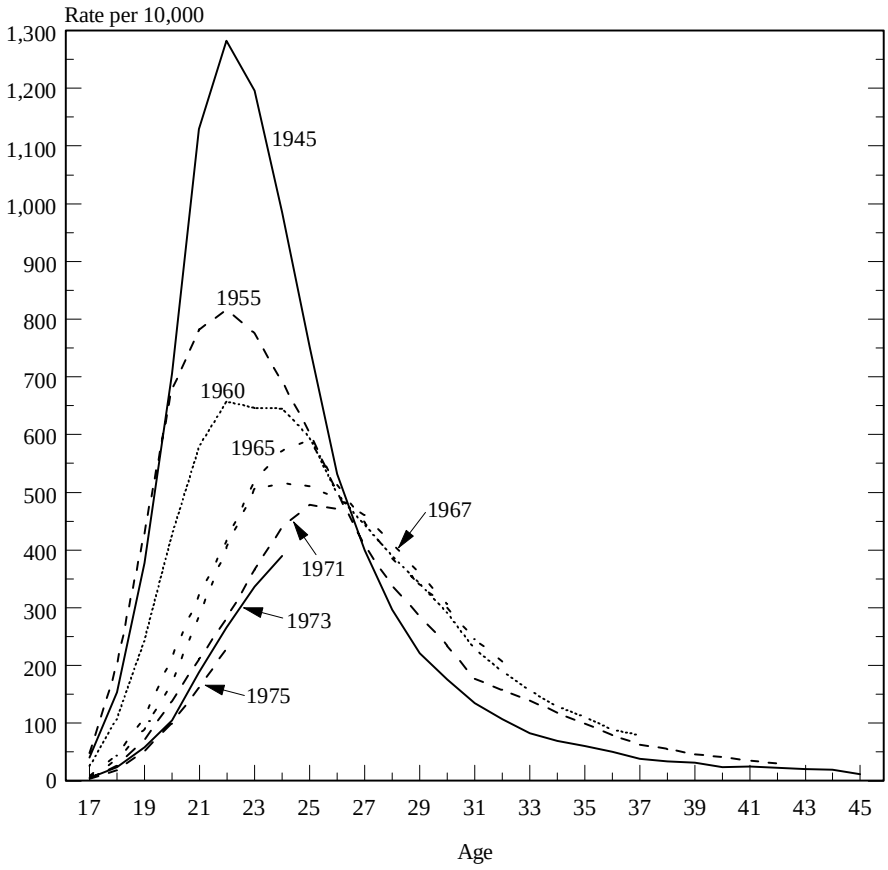
Table 5. Total First Marriage Rate, Canada, Provinces and Territories, 1976-1997 (per 1,000)[1]

Province	1976	1981	1986	1991	1992	1993	1994	1995	1996	1997
	Males									
Newfoundland	755	653	589	600	558	546	592	629	607	630
Prince Edward Island	880	701	711	727	690	721	673	695	747	685
Nova Scotia	743	686	595	575	556	547	559	566	586	556
New Brunswick	772	660	600	581	554	538	551	559	581	550
Quebec	637	546	430	381	338	330	339	331	327	329
Ontario	756	692	623	610	590	568	572	584	579	567
Manitoba	767	722	615	600	604	592	592	607	582	573
Saskatchewan	816	710	588	622	610	616	632	641	628	633
Alberta	765	644	566	597	590	592	604	611	569	565
British Columbia	707	684	582	601	596	577	571	556	521	502
Yukon	600	693	484	470	538	401	430	541	453	409
Northwest Territories[2]	482	457	351	284	269	276	298	282	268	260
CANADA	721	645	558	548	526	513	520	524	512	505
CANADA LESS QUEBEC	755	682	603	604	588	573	578	585	571	559
	Females									
Newfoundland	721	631	580	613	576	560	611	649	624	653
Prince Edward Island	828	668	742	730	703	733	711	734	782	718
Nova Scotia	736	672	631	606	586	574	582	592	597	583
New Brunswick	760	649	626	608	584	570	574	594	618	587
Quebec	640	560	442	427	380	370	380	370	363	362
Ontario	745	685	658	653	633	609	609	618	609	597
Manitoba	748	712	660	651	651	638	637	657	626	611
Saskatchewan	787	698	628	656	640	648	663	665	653	655
Alberta	768	689	616	643	633	634	652	649	613	607
British Columbia	711	695	623	661	646	627	629	607	563	540
Yukon	634	715	573	521	567	464	464	543	486	422
Northwest Territories[2]	561	474	399	311	293	309	333	315	282	310
CANADA	715	651	589	594	570	555	562	563	548	539
CANADA LESS QUEBEC	746	685	640	648	630	614	619	623	605	592

[1] Males aged 17 to 49 and females aged 15 to 49.
[2] Nunavut included.

Sources: Statistics Canada, Health Statistics Division, Health Status and Vital Statistics Section and Demography Division, Population Estimates Section.

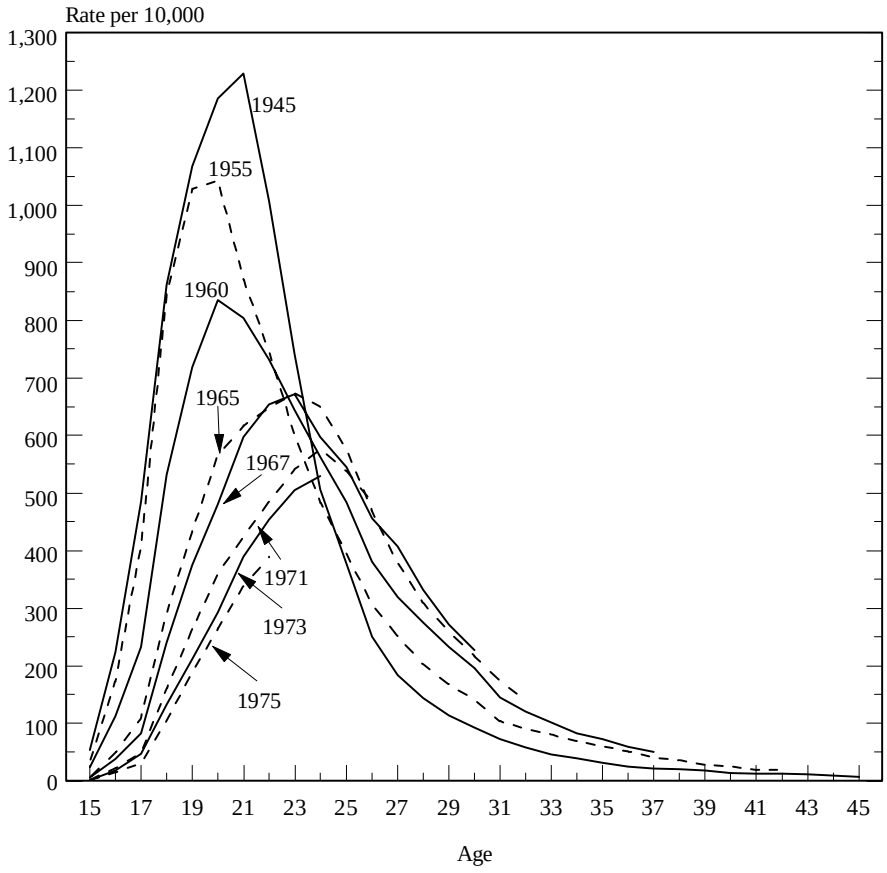
Figure 4A. First Marriage Rates, Males, Canada
(Some Recent Cohorts)



Source: Table A3.1, appendix.

Table 5, which shows the total first marriage rate, illustrates the decline of marriage since the mid-1970s. Nuptiality is declining throughout Canada, but in the past two decades, the drop was greater in Quebec than elsewhere. Already in 1976, Quebec's total marriage rate of 640 per 1,000 was lower than that of the other provinces. However, Quebec's rate fell by nearly half in some twenty years, while the other provinces' rates fell by roughly 25% in the same period. In 1997, the rate in Quebec was 329 and 362 marriages per 1,000 for men and women respectively. Although not on the scale seen in Quebec, the drop in nuptiality was nevertheless sizable in the other provinces, with the rate standing at roughly 560 marriages per 1,000 for men and 600 per 1,000 for women.

Figure 4B. First Marriage Rates, Females, Canada
(Some Recent Cohorts)

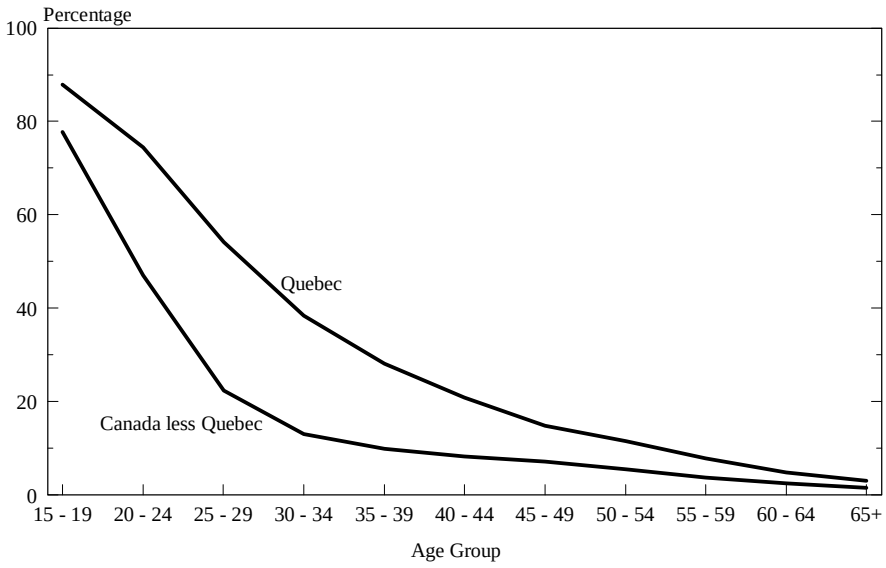


Source: Table A3.2, appendix.

By contrast, the recent situation seems to indicate a stabilization of nuptiality in Quebec and a continuing decline elsewhere in Canada. Since 1992, Quebec's total marriage rate has varied no more than 10 points, either upward or downward depending on the year. In the other provinces, the trend is more clearly downward, and during the same period the total marriage rate fell on average 30 points for men and nearly 40 points for women.

The decline in nuptiality is due to the growing popularity of common-law unions as a conjugal way of life. That phenomenon occurred earlier in Quebec and has been more widespread there than in the other provinces. According to data from the 1996 Census, which is the most recent source

Figure 5. Proportion of Couples Living in Common Law by Age of the Female Partner, Quebec and Canada Less Quebec, 1996



Source: Statistics Canada, 1996 Census of Canada, unpublished data.

of information on common-law unions, 25% of Quebec couples were living in common-law relationships. For the other provinces combined, the corresponding proportion was only half that figure (12%). The proportion of couples living in common-law relationships is much higher among the population aged 25 to 29. It is estimated that 54% of Quebec couples in which the female partner was aged 25 to 29 were living in common-law relationships, as compared to 22% of comparable couples in the other provinces (Figure 5).

In general, the spread of a new behaviour within a society may be broken down into three stages. Initially, the new behaviour is adopted by only a few pioneers, and it spreads slowly. Then, if it survives, the new behaviour is adopted by a growing number of individuals, and the proportion of persons who have adopted it grows quickly. However, after some time, most and then all of those who were likely to adopt it have done so, and its spread within the population slows. It is impossible to determine in advance the length of each of these stages, or the levels that will be reached at each inflection point on the curve representing the change over time in the proportion of participants within the population. But sooner or later the saturation point is reached, and the phenomenon ceases to grow.

It is possible that the phenomenon of common-law unions may be approaching a leveling off point in Quebec. In that province, the proportion of persons living in common-law relationships has reached a level comparable to that of Northern European countries where common-law unions made their appearance much earlier as a conjugal way of life. A stabilization of the phenomenon in Quebec might explain the relative stability recently exhibited by the first marriage rate for that province, but it will be necessary to wait for data from the next census to confirm this.

DIVORCE

The number of divorces, which stabilized at around 80,000 per year at the start of the 1990s, has been dropping steeply since 1995. In three years, the number went from 78,900 to 67,400, a decrease of 11,500 divorces or 15% (Table A4, appendix). ***The decrease of some 4,100 divorces in 1997 is a 6% decline from the previous year and a continuation of the drop registered in 1996 (-8%)***. The most recent data available thus seem to confirm a new trend identified in the last edition of the ***Report on the Demographic Situation***. The decrease in the number of divorces also affects the total divorce rate, which was down nearly 6% in 1997 (Table A5, appendix).

At the level of 67,400, the number of divorces is at its lowest point since 1985. However, 1985 was an exceptional year in this regard, since many divorces that should have been granted during that year were postponed to the following year in anticipation of changes to the Divorce Act, which were designed to make divorce easier. With the exception of 1985, the number of divorces registered in 1997 is the lowest since 1980.

The emergence of this new trend may be explained by two factors. First, much of this drop in the number of divorces is due to the sizable decrease in the number of marriages in Canada several years earlier. Between 1990 and 1997, the annual number of marriages declined by nearly 35,000 owing to the growing popularity of common-law unions in conjugal life. This significantly reduced the number of potential candidates for divorce. Second, there was also an increase in the average age at marriage, and marriages entered into by older persons tend to be of longer duration.

Provincial Variations

The fall in the number of divorces affected almost all provinces. Only Prince Edward Island and Manitoba registered slightly more divorces than in the previous year (Table A4, appendix), but these changes were practically nil — respectively 6 and 22 divorces more than in the previous year. While for all practical purposes the number of divorces was down in all regions of the country, the size of the decrease varied greatly from one province to another.

Three provinces stand out with decreases in 1997 that in relative terms were two to three times greater than at the national level. Newfoundland registered the greatest relative decrease. The 820 divorces in that province in 1997 represent a decline of 22% from the previous year. This follows a major increase (8%) registered in that province in 1996, in contrast to the strongly downward trend at the national level. In British Columbia and Nova Scotia, the number of divorces was down 11% from 1996, twice the decrease

at the national level. In these provinces, 1996 was also characterized by either an increase in the number of divorces (British Columbia), or a smaller decrease than at the national level (Nova Scotia). In Ontario (-6%), New Brunswick (-5%) and Alberta (-4%), the relative changes were of the same magnitude as for Canada as a whole, while Quebec (-3%) and Saskatchewan (-1%) registered smaller declines.

At the provincial level, annual variations in the number of divorces are often due to administrative factors. The courts' fluctuating ability to handle cases or changes made to legal aid can have an impact on the number of divorces granted during the year. These factors explain why, at the provincial level, a fluctuation in one direction is often offset by a fluctuation in the other direction the following year. We should therefore refrain from interpreting the sometimes-sizable annual variations in the number of divorces at the provincial level as actual changes in behaviour. It is better to observe trends over a longer period before drawing such conclusions. On this score, it is noteworthy that for most provinces, the number of divorces in 1997 was at its lowest point since at least 10 years.

While divorce is thus declining throughout Canada, it should be kept in mind that there are still sizable variations from one province to another. These variations appear in Table 6, which presents crude divorce rates by province. As the table shows, the rates are generally much lower in the Atlantic provinces than elsewhere in Canada. Newfoundland in particular stands out as having the lowest divorce rate of all provinces, year after year. The divorce rate is also generally lower in the Prairie provinces (except for Alberta), but the difference is not as great as in the Atlantic provinces. As for the central provinces, Quebec and Ontario, each year they register rates quite similar to those for Canada as a whole. At the western extremity of the country, Alberta and British Columbia stand apart with a higher divorce rate than the other Canadian provinces.

While major differences still exist between provinces, the general trend seems to be toward a convergence in divorce rates in Canada. For example, in the early 1980s, the crude divorce rate was 2.5 times higher in Canada as a whole than in Newfoundland, the province with historically the lowest rates. Today the corresponding ratio is only 1.5. Similarly, in the early 1980s, Alberta and British Columbia, the provinces with the highest divorce rates, had crude rates nearly 40% higher than Canada as a whole. In 1997, the difference between their crude divorce rate and that of Canada as a whole was only about 13%.

Duration-Specific Divorce Rates

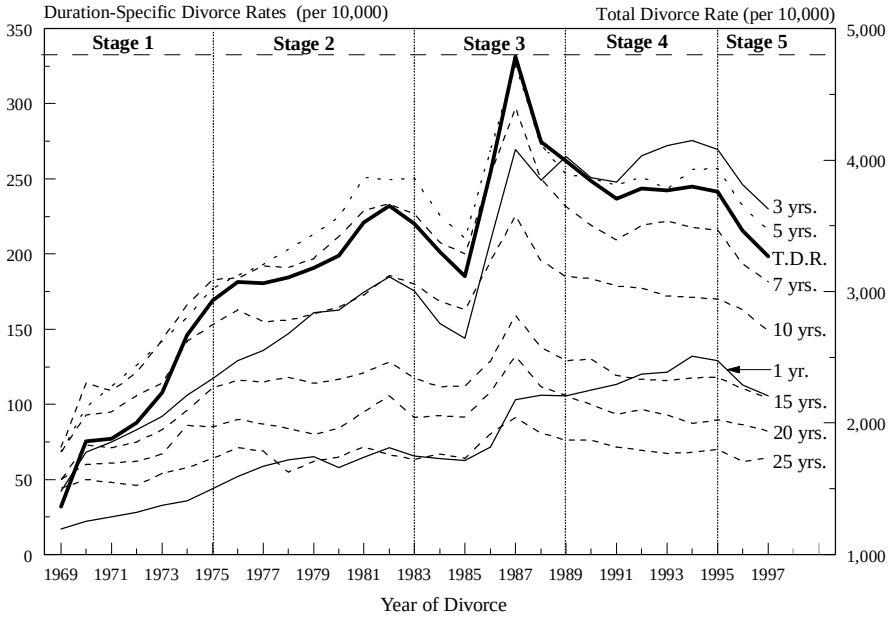
The total divorce rate is a cross-sectional measure (for a specific year) of the intensity of divorce, net of annual fluctuations in the number of marriages. It represents the number of marriages which, within a fictitious cohort, would

Table 6. Crude Divorce Rate (per 10,000), Canada and Provinces, 1980 to 1997

Year	New-foundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskat-chewan	Alberta	British Columbia	Canada
1980	9.69	13.17	27.13	18.78	21.36	25.66	22.06	18.98	34.57	34.50	25.30
1981	9.90	15.11	26.74	18.89	29.31	24.60	23.15	19.80	36.69	33.76	27.26
1982	10.88	16.55	26.52	23.48	28.24	26.50	22.85	18.38	37.50	35.38	28.04
1983	12.27	17.14	26.92	27.15	26.30	25.52	24.90	19.96	36.64	32.17	27.03
1984	10.17	15.40	25.80	19.79	25.40	23.59	24.36	19.58	35.37	30.51	25.45
1985	9.68	16.68	26.40	18.79	23.72	22.43	21.37	18.79	33.72	28.01	23.98
1986	11.92	15.50	29.34	23.84	28.36	29.19	27.32	24.09	39.31	37.61	30.00
1987	19.42	21.39	30.88	27.41	32.58	40.53	35.73	28.74	39.15	39.95	36.37
1988	15.76	20.81	27.79	22.91	29.74	33.04	28.15	24.33	35.62	34.54	31.16
1989	17.44	19.06	27.96	22.43	28.62	30.96	26.39	24.14	33.00	33.32	29.68
1990	17.58	21.53	26.59	22.96	29.23	28.13	25.31	23.47	33.32	29.69	28.33
1991	15.74	20.64	24.92	22.16	28.70	26.56	25.14	22.34	32.35	30.73	27.48
1992	14.94	17.34	25.06	21.82	27.69	28.82	23.87	23.16	31.19	30.06	27.85
1993	16.03	17.15	25.72	21.43	27.44	27.04	23.12	22.24	32.25	30.49	27.25
1994	16.23	18.63	24.68	20.91	25.29	28.37	24.43	23.31	30.22	31.06	27.17
1995	17.29	19.29	24.73	19.37	27.80	26.77	23.70	22.88	27.74	27.37	26.45
1996	18.91	17.40	23.93	19.26	24.85	22.55	22.95	21.74	27.00	28.07	24.11
1997	14.83	17.75	21.21	18.21	23.92	20.98	23.09	21.50	25.31	24.46	22.46

Sources: Statistics Canada, Health Statistics Division, Health Status and Vital Statistics Section and Demography Division, Population Estimates Section.

Figure 6. Duration-Specific Divorce Rates for Various Durations of Marriage, by Year of Divorce and Total Divorce Rate, Canada, 1969 to 1997



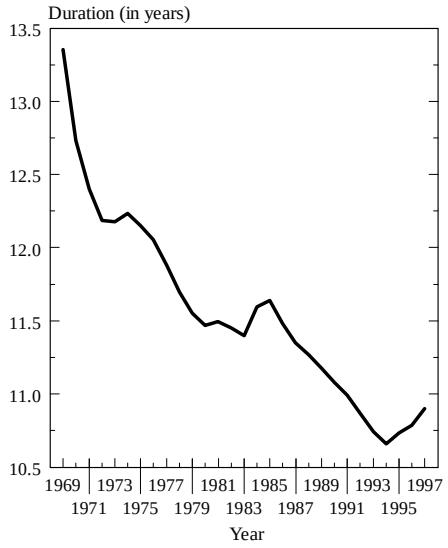
Source: Table A5, appendix.

end in divorce if divorce rates by length of marriage, observed in a given year, were applied to that cohort. In other words, the total divorce rate summarizes the annual variations in all divorce rates by length of marriage.

It is useful to determine whether annual change in the total divorce rate reflect similar changes for all rates by length of marriage, or whether, on the contrary, annual changes in the total rate result from changes in rates for particular lengths of marriage while the rates for other lengths of marriage remain stable or even move in the opposite direction. From an examination of Figure 6, several observations may be made on this subject. In particular, we can identify five stages in the recent history of divorce in Canada:

1) Before the passage of the Divorce Act in 1968, it was difficult to terminate a marriage legally. Thus, during a first period that extended roughly from the year of adoption of the Divorce Act to 1975, divorce became more widespread and met with growing acceptance within society. The period was also marked by a catch-up effect, with divorces sometimes serving to legalize long-standing separations. Accordingly, divorce rates increased

Figure 7. Average Duration of Marriage at Time of Divorce, Canada, 1969-1997



Sources: Statistics Canada, Health Statistics Division, Health Status and Vital Statistics Section and Demography Division, Population Estimates Section.

for all lengths of marriage. This period is characterized by a rapid increase in the total divorce rate, which rose from 1,400 divorces per 10,000 marriages in 1969 to approximately 3,000 divorces per 10,000 marriages in 1975. Furthermore, the average length of marriage at the time of divorce fell sharply (Figure 7).

2) Compared to the stages preceding and following it, the second stage, which began in 1975 and ended in 1983, was characterized by a relative stabilization in the total divorce rate. To be sure, the rate continued to rise, but much more slowly, going from roughly 3,000 divorces per 10,000 marriages in 1975 to approximately 3,500 divorces per 10,000 marriages in 1983. This very slow increase is due to the near stabilization of the rates for those married longer (more than 10 years), whereas the divorce rates for couples married more recently continued to climb. In combination, these two patterns obviously brought about a decrease in the average length of marriages ending in divorce, but the decrease was less rapid than in the preceding stage.

3) The following stage, which extended from 1984 to 1989, was a time of some upheaval associated with the reform of the Divorce Act, passed in 1985. It is characterized by sudden changes in the total divorce rate, which first fell slightly, then increased sharply following the passage of the new Act. The fluctuations in rates by length of marriage were greater for intermediate lengths (3 to 10 years of marriage) than for more recent marriages or older marriages. In particular, only the rates for intermediate lengths of marriage fell substantially before 1985. After 1985, the rise in the rates by length of marriage was especially great since there was a "backlog" of divorces facilitated by the reform. Over the period as a whole, the total rate is a poor measure of the intensity observed in the marriage cohorts, because it is overly disrupted by the period effects associated with the changes to the Act. Thus, the total divorce rate for 1987, which stood at 4,800 divorces per 10,000 marriages, cannot be interpreted as meaning that nearly one marriage in two ended in divorce.

4) In the fourth stage, which according to our time scheme would extend from 1990 to 1995, the total divorce rate almost achieved stability at approximately 3,800 divorces per 10,000 marriages. However, this stability masks major changes in divorce rates by length of marriage. As Figure 6 shows, the divorce rates for older marriages (marriages of more than 7 years' duration) declined steadily throughout the period. The decreases can be substantial for specific lengths of marriage, while by contrast, the divorce rates for more recent marriages (those with durations of 1 to 3 years) increased. The modal length of marriage fell from five years to three years during this period. This clearly indicates a new drop in the average length of marriage at the time of divorce.

5) The fifth and final stage, which is probably not yet completed, corresponds to the recent decline in divorce observed in 1996 and 1997. It is worth noting that ***during this period, all rates by length of marriage evolve in the same direction as the total divorce rate. This is the first time that this convergence has occurred*** without it being due to changes to the Act. ***As a result, for the first time since 1969, there is a clear increase in the average length of marriages ending in divorce*** (Figure 7).

Conclusion

The number of divorces peaked at 96,200 in 1987 as a consequence of changes to the Divorce Act. After a period of adjustment, it stabilized at approximately 78,000 per year between 1990 and 1995. In 1996 and again in 1997, the number of divorces dropped sharply, by 8% and 6% respectively, reaching a level of 67,400 in 1997. ***There is every indication that a new downward trend in divorce has recently begun in Canada. The number of divorces and crude divorce rates are down in most provinces of Canada, and an analysis of the number of divorces by length of marriage shows that this new trend results from a decrease in the rates for all lengths of marriage***. Furthermore, this is the first time since the passage of the Divorce Act of 1969 that for three consecutive years there has been an increase in the average length of marriages ending in divorce.

This decline in divorce could be due to a selection effect associated with the increase in common-law unions (there is a growing tendency for unions most likely to end in a breakdown not to be legalized), and also to the increase in the average age at marriage. Nevertheless, it is hard to predict when this downward trend will end and at what level a new stage of stability will be reached.

BIRTHS AND FERTILITY

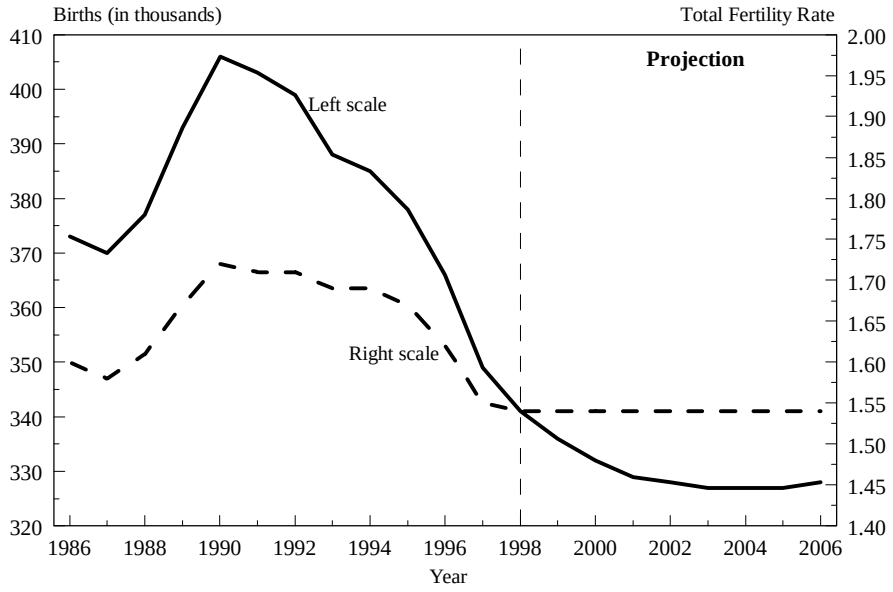
The number of births fell by just over 17,600 in 1997 to 348,598 (Table A6, appendix). Since the number of births is declining and the population is continuing to grow, the crude birth rate is falling even more rapidly, and it stood at 11.6 per 1,000 in 1997 (Table 1). ***The total fertility rate also fell sharply, reaching 1.55 children per woman in 1997, the lowest level ever recorded in Canada***. The downward movement of these two indicators is observed in all provinces, but it appears to be greater in the eastern and central provinces.

This was the seventh consecutive year for which a decrease in the number of births was registered in Canada, but 1997 stands out by the size of the drop. That decrease of 4.8% in relation to the previous year is the greatest since 1966, both in numbers and percent. This decline in the number of births results from both a structural effect, namely changes in the numbers of women of childbearing age, and the effect of actual changes in the fertility behaviour of Canadians, reflected in a sizable drop in period fertility observed in 1996 and 1997. The former effect is itself the result of the decline in fertility that Canada experienced some thirty years ago. As a consequence of this decline, large cohorts of the baby boom have been replaced in the main childbearing years by much smaller cohorts of the baby bust. This effect is therefore structural in nature, and is largely responsible for the annual decrease in the number of births since 1991.

All things being otherwise equal, this structural effect will favour a continuing decline in births for a few more years yet. According to a population projection scenario whereby age specific fertility rates remain at current levels, the number of births will decline until 2002-2003 (Figure 8).

The second effect, the behavioural change or the real decline in fertility, is more troubling for those interested in the future direction of births in Canada. This may best be demonstrated by following the recent trend in the total fertility rate. The advantage of this indicator is that it is not affected by fluctuations in the size and structure of the population. The total fertility rate represents the average number of children that a woman would have if throughout her life she experienced the fertility observed in a given year. Since births of males always slightly outnumber births of females, and to take account of mortality up the childbearing age, it is calculated that the total fertility rate has to reach 2.1 children per woman to ensure that replacement levels are maintained. In actual fact, after falling rapidly at the end of the 1960s, the total fertility rate has remained below replacement level since 1971. However, it exhibited some stability starting at the end of the last decade, fluctuating between 1.72 and 1.67 children per woman from 1989 to 1995. In dropping to 1.62 in 1996 and 1.55 children per woman in 1997, the total fertility rate registered two

Figure 8. Births and Total Fertility Rate, Canada, 1986-2006



Sources: Statistics Canada, Demography Division, Population Estimates Section, Research and Analysis Section and Population Projections Section, special scenario and Health Statistics Division, Health Status and Vital Statistics Section.

successive decreases, of 3.0% and 4.3% in 1996 and 1997 respectively, even though the levels were already very low. According to the most recent data available, the rate could continue to drop in 1998.

This period indicator is sensitive to changes in the timing of births, and it is therefore important to determine which age groups are responsible for the observed decrease. As may be seen from Table 7, ***this decrease affects all rates below the 35 to 39 age group***. Among the youngest (15 to 19 years of age), the drop in the fertility rate is approximately 9%, both in 1996 and 1997. A low fertility rate among teenage girls is generally a desirable objective in modern societies, where more years of education are becoming increasingly necessary for successful integration into the labour market. At 20 per 1,000, the fertility rate of Canadian females aged 15 to 19 is well below the figure observed in the United States (54.0 per 1,000).

While the drop in fertility in 1997 affected almost all age groups, it was greater among young women than among older ones. The decrease was 6.5% for women aged 20 to 24 and 4.9% for those aged 25 to 29, thus continuing a trend that has persisted since the end of the baby boom. On the other hand, the decrease of 3.0% in the fertility rate of women aged 30 to

Table 7. Recent Fluctuations in Fertility Rates, by Age Group, Canada, 1995-1997

Age Group	Fertility Rate			Variations (%)	
	1995	1996	1997	1995-1996	1996-1997
15-19	24.3	22.1	20.0	-9.1	-9.6
20-24	71.9	68.4	64.0	-4.8	-6.5
25-29	112.5	109.1	103.8	-3.0	-4.9
30-34	88.0	87.0	84.4	-1.1	-3.0
35-39	31.5	32.6	32.5	3.6	-0.2
40-44	4.9	5.1	5.2	4.7	2.1
45-49	0.2	0.2	0.2	2.1	1.7
Total Fertility Rate	1.67	1.62	1.55	-2.6	-4.5

Sources: Statistics Canada, Health Statistics Division, Health Status and Vital Statistics Section and Demography Division, Population Estimates Section.

34, by continuing the slump observed the previous year, seems to confirm the reversal of an upward trend in fertility at those ages, a trend that began nearly twenty years ago. As to the fertility rates of women aged 35 to 39 and 40 to 44, they are almost unchanged.

In part then, the recent changes described above are in keeping with the longer-term evolution of fertility in Canada. In the past two decades, the fertility of younger women gradually decreased while a trend reversal was taking place among women aged 30 and over (Figure 9). Over a period of twenty years — that is, starting in the mid-1970s, when fertility at higher ages began to rise — the fertility rates for young women aged 15 to 19 and 20 to 24 fell by 40% and the rate for those aged 25 to 29 decreased by 20%.

These decreases were formerly offset by increases in the fertility of women aged 30 to 34 and 35 to 39, which kept the total fertility rate relatively stable over the period. For example, the fertility of Canadian women aged 30 to 34 rose by 38% between 1976 and 1995, and in the early 1990s it even exceeded the fertility of those in the 20 to 24 age group. It is in this respect that the last two years are a break with the recent past. ***Since the trend reversal among women aged 30 to 34 no longer serves to offset the decrease observed among younger women, the total rate can no longer be maintained, and it too is now falling***.

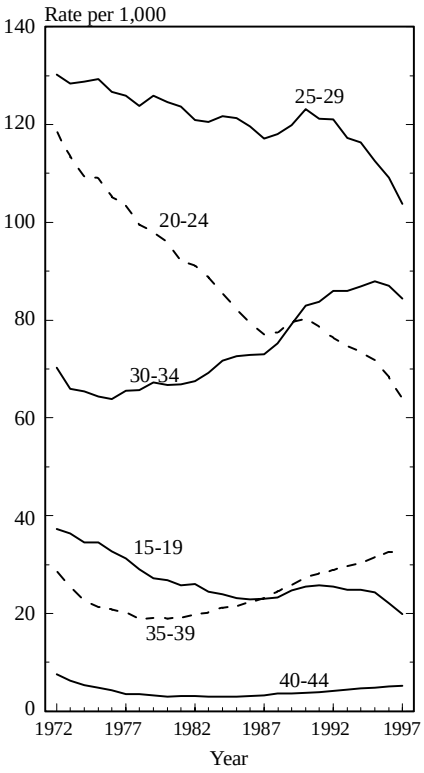
Provincial Variations

The number of births has fallen in all provinces, but the declines are steeper in the eastern and central provinces than in those in the West. While the drop is 4.8% nationally, all provinces east of Saskatchewan except for New Brunswick saw a decrease in births of more than 5% between 1996

and 1997. Ontario, owing to its size, registered the greatest numerical decrease (-7,000 births), but it is in Quebec, where the decrease was -5,500 births, that the percentage change was the greatest (-6.4%). The Western provinces, especially Alberta, saw smaller declines in birth numbers: 2.5% in Alberta, 3.3% in Saskatchewan and 3.4% in British Columbia.

The total fertility rate is also dropping throughout Canada. The rate for Newfoundland, which recovered slightly in 1996, fell back in 1997 (-5.4%), and with a rate of 1.27 children per woman, that province has set a new record for low fertility in Canada. New Brunswick and Nova Scotia follow with total fertility rates of 1.44 and 1.45 children per woman respectively. Whereas ten years ago, the fertility of Quebec women, at 1.37 children per woman, was considerably lower than that of other Canadian women, the gap narrowed during the past decade, with the result that in 1996, the rates for the two regions were quite similar: 1.60 children per woman in Quebec compared to 1.63 in the rest of Canada (see Table A7, appendix). By contrast, in 1997, the total fertility rate fell more steeply in Quebec than elsewhere in Canada, dropping from 1.60 children per woman to 1.52 (-5.0%). With a rate of 1.83 children per woman, Saskatchewan regained its ranking as the most fertile province, a title that Manitoba (1.82 children per woman in 1997) had captured in 1995.

Figure 9. Fertility Rate by Age Group, Canada, 1972-1997



Sources: Statistics Canada, Health Statistics Division, Health Status and Vital Statistics Section and Demography Division, Population Estimates Section.

Conclusion

Owing to a slight increase in fertility, which was itself more attributable to a shift in the timing of births[8] than to an actual change in fertility behaviour,

[8] In particular an increase in fertility at higher ages at a time when the largest cohorts of the baby boom were approaching age 40.

the birth rate rose slightly in Canada in the early 1990s. Some observers saw this as the anticipated "echo" of the baby boom, that is, an increase in births resulting from the increase in the population of childbearing age. While the anticipated echo was greatly muted by the drop in Canadian fertility since 1960, the echo of the baby bust could actually be intensified by a further drop in fertility if trends of the past two years were to continue. This fear is amplified by the fact that this drop in fertility is widespread: it affects all provinces, all birth ranks and all age groups under age 35 (Table A6, appendix), at a time when Canada's economy is improving.

This new drop in fertility to historically low levels is therefore arousing renewed interest in its causes and consequences, not only among experts (demographers, economists, sociologists and policy analysts) but also in the general public, as evidenced by the recent success of books such as ***Boom, Bust and Echo***.[9] Readers wishing to learn more about this issue will be interested in the article dealing with economic theories of fertility in Part II of the current report.

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[9] D.K. Foot (1996). ***Boom, Bust and Echo***. MacFarlane Walter and Ross. 245 pages.

MORTALITY

In 1997, 215,669 Canadians died, an increase of 2,810 or 1.3% over the previous year (Table A8, appendix). But it would be a mistake to interpret this increase in absolute numbers as synonymous with an increase in mortality, since the number of deaths is partly due to the aging of the Canadian population. The best way to get a grasp of this is to look at life expectancy.

In relation to 1996, life expectancy at birth was higher in 1997, continuing a long term upward trend. The gains registered in 1997 were 0.33 of a year for males and of a 0.18 year for females (Table A9, appendix). These are sizable if compared to the average gains over the five-year period 1991-1996. The greater increase for males is consistent with trends observed since the late 1970s. It is also worth noting that for all the provinces observed, male gains are greater than female gains. But while the gap in life expectancy between the sexes is narrowing, females may nevertheless still expect to live an average of 5.6 years longer than males (81.4 years and 75.8 years respectively).

An examination of recent changes in life expectancy for each of the provinces (Table 8) shows that some provinces registered a lower life expectancy than in 1996. In particular, this is case for females in some Atlantic provinces. Despite this decrease, there is no cause for alarm, since lower life expectancy in some cases probably results less from a decline in social and health conditions than from circumstantial events (viral or bacterial infections) or the effect of small numbers. Furthermore, during a five-year period, the average annual gains in female life expectancy for those provinces remain positive, and in fact they are slightly higher than the Canadian average. The negative changes in life expectancy between 1996 and 1997 could therefore be due to the random variations associated with low population figures of those provinces.

By contrast, it is the males of New Brunswick and Alberta who show the greatest increase in life expectancy. The same is not true for the women where the gains are highest in Ontario and British Columbia. These gains are especially remarkable since those are the provinces with the highest life expectancies at birth. Some demographers believe that the maximum life expectancy of the human species is roughly 85 years.[10] Therefore, as this limit is approached, gains should be harder to achieve. Recent trends in female mortality in Ontario and British Columbia would appear to contradict these expectations.

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[10] Fries, S.F. (1983). The Compression of Morbidity: Near or Far? ***Milbank Quaterly***. 67(2) : 208-232.
Olshansky, S.J., Carnes, B.A. and C. Cassel (1990). In Search of Mathuselah : Estimating the Upper Limits of Human Longevity. ***Science***. 250 : 634-640.

Table 8. Life Expectancy at Birth and Average Annual Change, by Sex and Province, Canada, 1991, 1996 and 1997

Province	1991	1996	1997	Average Annual Change	
				1996-1997	1991-1996
	Males				
Newfoundland	73.74	74.42	74.54	0.12	0.14
Nova Scotia	73.21	74.81	74.99	0.18	0.32
New Brunswick	74.25	74.79	75.23	**0.44**	0.11
Quebec	73.76	74.62	74.91	0.29	0.17
Ontario	75.01	75.90	76.23	0.33	0.18
Manitoba	74.60	75.15	75.45	0.30	0.11
Saskatchewan	75.24	75.36	75.69	0.33	0.02
Alberta	75.05	75.95	76.35	**0.40**	0.18
British Columbia	75.26	76.19	76.48	0.29	0.19
Canada	**74.61**	**75.45**	**75.78**	**0.33**	**0.17**
	Females				
Newfoundland	79.56	80.16	80.04	**-0.12**	0.10
Nova Scotia	80.32	80.60	80.59	**-0.01**	0.05
New Brunswick	80.89	81.23	81.22	**-0.01**	0.06
Quebec	80.92	81.01	81.19	0.18	0.02
Ontario	80.95	81.26	81.50	**0.24**	0.05
Manitoba	80.75	80.53	80.61	0.08	-0.04
Saskatchewan	81.54	81.40	81.45	0.05	-0.02
Alberta	81.18	81.32	81.47	0.15	0.02
British Columbia	81.37	81.84	82.07	**0.23**	0.08
Canada	**80.96**	**81.21**	**81.39**	**0.18**	**0.04**

Sources: Statistics Canada, Health Statistics Division, Health Status and Vital Statistics Section and Demography Division, Population Estimates Section and Research and Analysis Section.

Possibly these impressive results are partly due to a population selection effect. More than all others, the populations of Ontario and British Columbia include a sizable contingent of international migrants and Canadians born in another province. It may be assumed that persons who migrate are in above-average health and that their chances of dying are therefore lesser. As to international migrants, they must undergo a medical examination before being admitted to Canada, which may explain their higher life expectancy. What demographers call the "perturbation effect" of migration on the estimation of mortality is greater where migration is more recent; and up to 1998, the 1990s have been characterized by strong immigration favouring those two provinces.

In comparison with the average annual gains for 1991-1996, the gains observed in 1997 are greater for males in all provinces except for Newfoundland and Nova Scotia. Females also increased their gains everywhere except in the three Atlantic provinces. ***In short, for 1997, the gains in life expectancy for Canada as a whole are considerable, in continuation of the long-term trend***.

What are Canadians Dying Of?

Before examining the causes of death, it should be noted that for 1997, mortality rates by cause of death were standardized on the basis of the 1991 population, whereas earlier editions of the ***Report*** used the 1976 population as the standard. The reasons that lay behind this change are of a structural nature. Since the age distribution of the 1976 population bears less and less resemblance to the one taking shape at the dawn of the new millennium, it made good sense to use a more current standard population. While this adjustment altered the data, it has had no significant effect on the interpretation of the results.

The increase in life expectancy in industrialized countries — due in part to the reduction or even eradication the certain causes of death such as cholera or smallpox — has greatly progressed during the 20th century. Advances in medicine and health and social services have succeeded in at least partially eliminating some causes of death. The decline in early childhood diseases during the first two-thirds of the century is an eloquent example. In this regard, ***Canada is one of the top ten countries in the world and the leader in North America, with an infant mortality rate of 5.5 per 1,000, 2 points lower than the United States (7.5 per 1,000)***. Mexico is behind with a rate of 28 per 1,000. Sweden (3.6 per 1,000) and Finland (3.9 per 1,000) have the lowest infant mortality rates in the world. For the past few years, advances against infant mortality have slowed in Canada, which is not necessarily the case with other causes of death.

In recent decades, a more dominant trend has been the decline in fatal consequence of diseases of the circulatory system, especially ischemic heart disease and cerebral-vascular disorders. As Table 9 shows, ***the mortality rates for diseases of the circulatory system and cerebral-vascular disorders declined steeply from 1977 to 1997, falling respectively 41.4% and 53.9% in males***. Nevertheless, since 1976, deaths from tumours and cancer in males rose, reaching a peak of 222.2 per 100,000 in 1988. Today, the mortality rate for tumours and cancer is at its lowest level since 1976 at 200.5 per 100,000. Again looking at the figures for males, the rate for malignant tumours of the respiratory tract has seesawed since 1976. It went from 63.2 per 100,000 in 1976 to a peak of 76.5 per 100,000 in 1988, then fell back to 64.3 per 100,000 in 1997.

With few differences, deaths attributable to ischemic heart disease, diseases of the circulatory system and cerebral-vascular disorders have followed the same pattern over time for males and females, falling respectively by 49.9%, 43.3% and 43.5%. By contrast, ***the increase in tumours and cancer — especially malignant tumours of the respiratory tract*** — has been much greater for females. The tumour and cancer rate went from 165.3 per 100,000 to 170.2 per 100,000 ***in the space of 20 years***, while ***the rate for malignant***

Table 9. Evolution of Mortality from Diseases of the Circulatory System and from Tumours, by Sex, Canada, 1976-1997[1]

Year	Diseases of the Circulatory System[2]	Ischemic Heart Diseases[3]	Cerebro-vascular Diseases[4]	Tumors and Cancers[5]	Malignant Tumors of the Respiratory System[6]
	Males				
1976	483.42	325.55	79.33	203.39	63.24
1977	471.61	318.87	75.58	205.87	65.32
1978	453.26	303.98	72.53	207.88	66.72
1979	436.71	286.05	69.82	210.47	68.28
1980	428.48	280.73	66.36	212.06	70.70
1981	411.99	272.00	63.87	209.92	69.44
1982	402.81	264.74	59.66	213.74	73.33
1983	387.30	253.67	56.18	213.11	74.05
1984	370.19	242.32	54.66	217.52	75.60
1985	361.19	236.15	51.80	217.79	73.55
1986	351.83	227.36	50.11	218.55	74.39
1987	333.96	216.33	48.96	217.48	74.15
1988	325.48	210.16	46.80	222.20	76.49
1989	312.07	198.42	47.22	218.56	75.90
1990	288.48	181.90	45.20	216.10	74.84
1991	281.59	176.31	43.43	216.31	73.84
1992	275.35	171.72	42.36	214.14	72.33
1993	276.86	171.67	44.18	212.61	72.30
1994	265.92	163.69	42.77	211.50	70.40
1995	260.37	158.37	42.52	208.91	67.83
1996	253.51	154.15	40.90	206.30	67.25
1997	244.51	146.68	40.63	200.36	64.27
	Females				
1976	426.87	239.99	103.36	164.50	14.24
1977	412.37	232.56	97.36	165.26	16.01
1978	398.90	226.75	94.34	165.90	17.05
1979	381.56	208.64	90.12	169.24	18.55
1980	380.04	207.20	86.21	167.51	19.48
1981	361.41	197.39	82.89	167.81	20.40
1982	356.35	194.77	79.65	168.20	22.34
1983	339.19	183.88	75.20	168.56	22.55
1984	328.23	180.79	71.13	171.59	25.20
1985	319.47	172.65	69.75	174.92	27.04
1986	315.86	170.83	69.03	174.88	27.16
1987	299.24	161.74	64.54	174.17	28.72
1988	293.75	156.76	64.85	176.05	30.64
1989	280.83	148.58	62.82	173.87	30.54
1990	265.75	141.56	58.32	173.78	31.20
1991	261.09	137.91	57.71	174.73	33.42
1992	253.03	130.83	57.64	173.93	33.20
1993	255.25	130.98	59.42	176.83	35.79
1994	249.94	127.23	57.12	176.87	35.92
1995	244.67	123.98	55.90	173.63	35.64
1996	240.27	120.53	55.22	177.35	37.85
1997	233.43	116.38	54.99	170.12	36.60

[1] Rate per 100,000, standardized on the structure by age and sex of the 1991 population.
[2] Causes 390-459, 9th Revision of the I.C.D.
[3] Causes 410-414, 9th Revision of the I.C.D.
[4] Causes 430-438, 9th Revision of the I.C.D.
[5] Causes 140-239, 9th Revision of the I.C.D.
[6] Causes 160-165, 9th Revision of the I.C.D.

Sources: Statistics Canada, Health Statistics Division, Health Status and Vital Statistics Section and Demography Division, Population Estimates Section.

Table 10. Deaths Due to HIV (Causes 042-044 in the I.C.D.) by Broad Age Group and Sex, Canada, 1987-1997

Year	0-14	15-29	30-44	45-59	60 +	Total	Variation from the previous year (%)
	Males						
1987	1	85	293	87	22	488	...
1988	2	96	361	126	29	614	25.8
1989	3	124	485	164	21	797	29.8
1990	3	109	575	215	35	937	17.6
1991	3	129	698	233	42	1,105	17.9
1992	4	161	783	305	35	1,288	16.6
1993	7	159	924	330	54	1,474	14.4
1994	4	127	954	350	54	1,489	1.0
1995	9	129	1,041	409	49	1,637	9.9
1996	6	79	754	315	44	1,198	-26.8
1997	3	45	322	144	39	553	-53.8
	Females						
1987	5	7	12	8	5	37	...
1988	3	10	18	7	9	47	27.0
1989	2	10	20	10	12	54	14.9
1990	1	14	19	7	4	45	-16.7
1991	4	15	25	14	7	65	44.4
1992	4	10	38	11	7	70	7.7
1993	2	19	49	13	7	90	28.6
1994	14	16	77	26	6	139	54.4
1995	5	24	68	20	10	127	-8.6
1996	2	24	63	14	5	108	-15.0
1997	2	7	48	12	4	73	-32.4

Source: Statistics Canada, Health Statistics Division, Health Status and Vital Statistics Section.

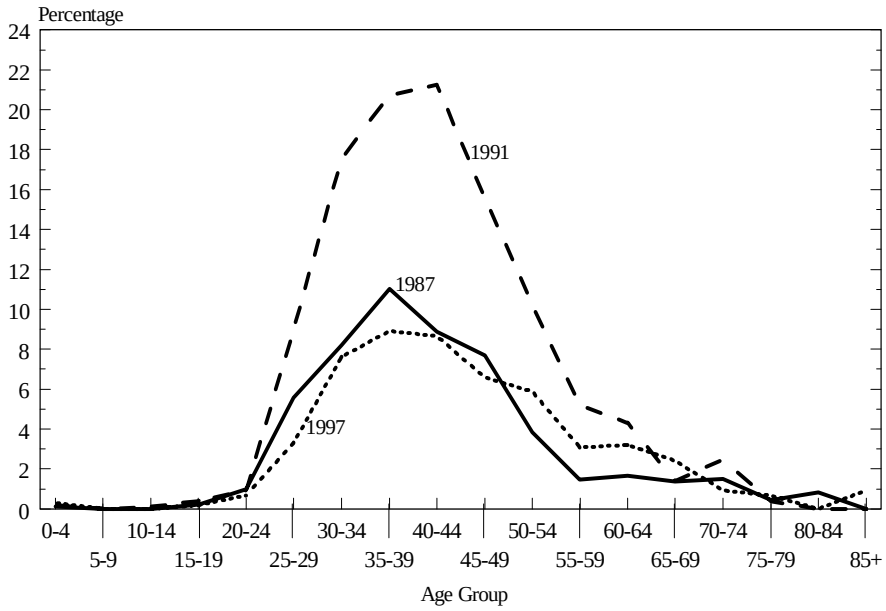
tumours of the respiratory tract more than doubled over the same period. Most of this rapid rise may be attribuable the increase in smoking among women since the 1950s.

The HIV phenomenon

There are now nearly 33.4 million persons infected with HIV worldwide. Again on a worldwide basis, it is estimated that since the start of the epidemic, a total of 13.9 million deaths are attributable to HIV. In 1998, new cases of infection totalled 5.8 million, or roughly 11 new cases every minute, with 95% of them concentrated in developing countries.[11] Of every 100 deaths from HIV, some 80 are in sub-Saharan Africa. In those regions, HIV contributes to the increase in not only in the overall mortality rate, but also in the infant mortality rate. In general, the poorest and less educated segments of the

[11] Estimate of UNAIDS and the World Health Organization for 1998.

Figure 10. Percentage Distribution of HIV Deaths, by Age Group, Males, Canada, 1987, 1991 and 1997



Source: Statistics Canada, Health Statistics Division, Health Status and Vital Statistics Section.

population are the hardest hit. Therefore the major scope of the epidemic has quickly led to vast international education and prevention campaigns that are beginning to have an impact on some population groups.

In Canada, despite a resurgence in rates during the three-year period from 1993 to 1995, ***HIV showed a remarkable slowdown in 1997, especially among males. From 1996 to 1997, the number of deaths attributable to the human immunodeficiency virus fell by 53.8% in males and 32.4% in females***. Since this decline is partly due to the success of efforts to keep patients alive for longer periods, it cannot long continue. The increased use of a "cocktail" of antiretroviral drugs serves to prolong the life of persons who are HIV-positive, with the result that prevalence of the disease has not necessarily declined. However, improvements in detection and treatment have helped to improve the quality of life for persons affected.

As Table 10 shows, one fact remains unchanged in the history of HIV: more males than females are afflicted with this disease. In 1997, the number of deaths attributed to HIV in males was more than seven times greater than the number for females. In general, HIV victims tend to be males aged 25 to 50 (Figure 10).

INTERNATIONAL IMMIGRATION

Compared to the numbers from past years, the 174,143 immigrants admitted by Canada in 1998 seem very few (Table A10, appendix). Indeed, this number is well below those of previous years, since on average, between 1990 and 1997, Canada granted permanent resident status to some 230,000 persons per year. ***Between 1997 and 1998, the number of immigrants to Canada fell by nearly 42,000 persons, the steepest one-year drop since 1958***. This brought the international immigration rate back down to its level of 1987, when the most recent wave of immigration began (Figure 11).

This decrease seems both surprising, in light of recent trends, and unexpected, considering that the annual immigration plan[12] for 1998 anticipated 200,000 to 225,000 immigrants.[13] The number of immigrants admitted is 18% lower than the objective set at the start of the year by Citizenship and Immigration Canada (Table 11). The gap is greater for the refugee and economic classes (-20% and -22% respectively) than for the family class (-9%), for which other admission criteria apply.

A Primarily Asian Decline

In the past few years, nearly two-thirds of immigrants were from Asia. It is therefore not surprising that much of the decrease observed in 1998 is due to a sizable drop in the number of immigrants from that continent. In 1997, there were 139,700 Asian immigrants; in 1998, the number fell by 37,900 to 101,900 persons (Table A10, appendix). While the total number of immigrants decreased by 19% between the two years, the number of Asian immigrants fell more steeply (27%). The proportion of the total represented by immigrants from Asia therefore declined from 65% to 59% between 1997 and 1998.

The impact of the enduring financial crisis that has been affecting the "Asian tigers" since 1997 is probably largely responsible for this decrease. An additional factor may be the easing of fears that the People's Republic of China would pursue an interventionist policy following the handover of Hong

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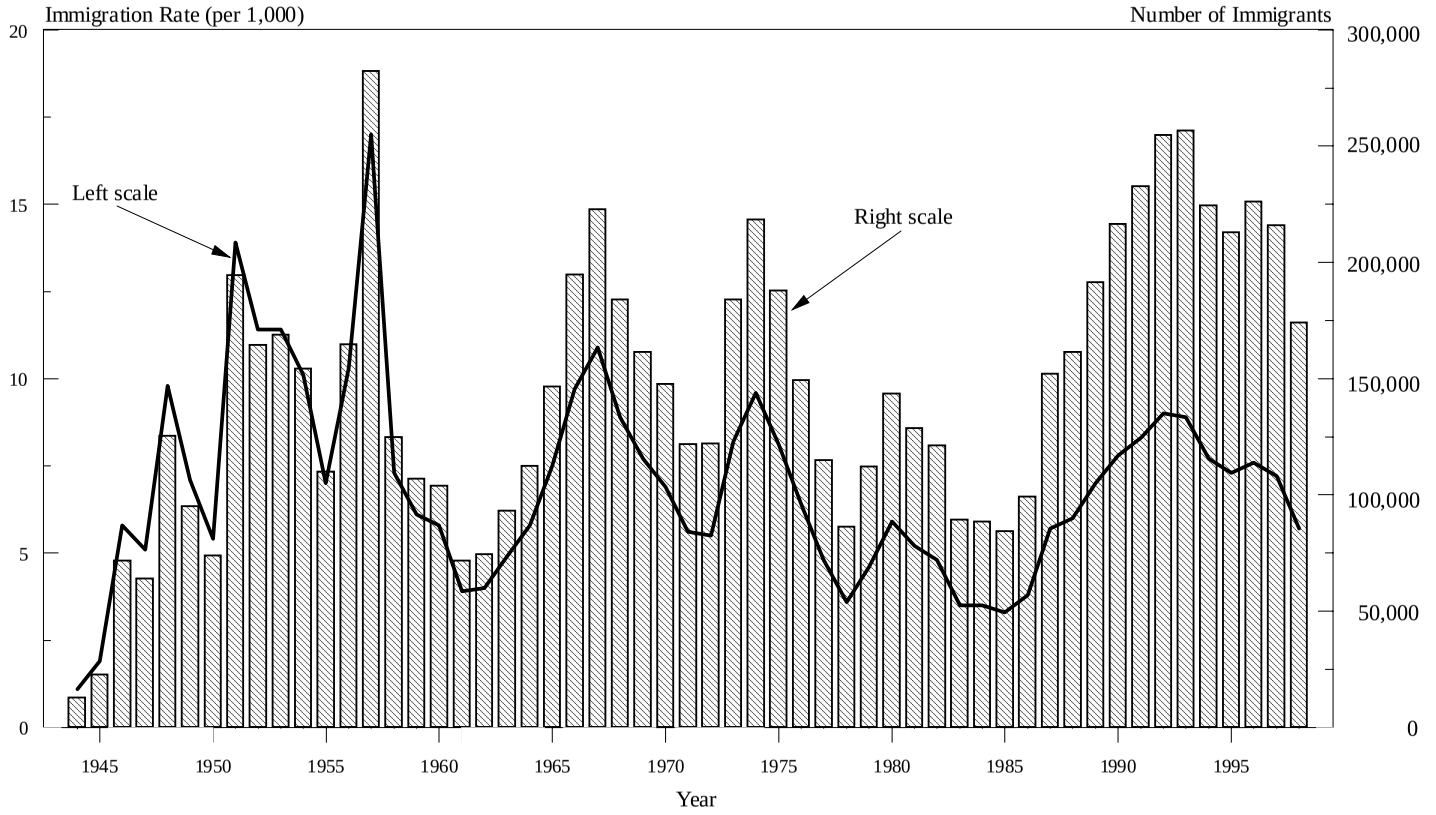
[12] Under subsection 7(1) of Canada's Immigration Act, the Minister of Citizenship and Immigration must, no later than November 1 of each calendar year, table the immigration plan for the following year. The plan must contain the estimated total number of immigrants (for each class), refugees and other persons who will be admitted to Canada for humanitarian reasons in the coming year.

[13] Citizenship and Immigration Canada distinguish between immigrants and refugees. The annual immigration plan called for a range of 175,900 to 192,700 immigrants and from 24,100 to 32,300 refugees. While the distinction is important from a policy analyst's standpoint, it is not significant for the purposes of the demographic accounts. In order to lighten the text, no distinction will be made here between immigrants and refugees except when analysing classes of immigrants.

Figure 11. Number of Immigrants and Immigration Rate, Canada, 1944-1998



Sources: Employment and Immigration Canada, ***Immigration Statistics*** and after 1980, Citizenship and Immigration Canada, unpublished data.

Table 11. Number of Observed Immigrants and Number Planned by Class According to the Immigration Plan, Canada, 1998

Class	Number Planned	Observed Number		
		Number	Difference[2]	
			Number	Percentage
Family	53,500 - 58,300	50,872	-5,028	-9.0
Economic	115,900 - 127,900	94,954	-26,946	-22.1
Other[1]	6,500	5,651	-849	-13.1
Total immigrants	175,900 - 192,700	151,477	-32,823	-17.8
Total refugees	24,100 - 32,300	22,666	-5,534	-19.6
Total	200,000 - 225,000	174,143	-38,357	-18.1

[1] Includes live-in caregivers, special categories and provincial/territorial nominees.
[2] The difference is calculated using the average number planned for each class.
Source: Citizenship and Immigration Canada, ***A Stronger Canada: 1998 Annual Immigration Plan***, catalogue no. Ci1-1998.

Kong to China on July 1, 1997. Over several years, the number of immigrants from Hong Kong has plummeted. In the space of one year (from 1997 to 1998), arrivals from Hong Kong dropped by 64%, and there were nearly 11,500 fewer Hong Kong residents in the 1998 contingent of immigrants compared to the 1997 contingent. ***Whereas Hong Kong residents were the largest group from 1992 to 1995, only 6,300 of them settled in Canada in 1998; four years earlier, 33,700 had obtained permanent resident status***.

The numbers of immigrants from Taiwan and India have also fallen remarkably, with decreases of respectively 46% (-5,900) and 23% (-4,900) for 1998. Pakistan, with a 31% decrease in the number of its nationals immigrating to Canada, has also greatly contributed to the decline in Asian immigration. The sudden drop in Pakistani emigrants to Canada (-3,800), contrasts with the increase (+3,600) in the previous year (Table 12).

In a context of lower immigration, some source countries nevertheless managed to increase their contribution slightly in 1998. The main ones are South Korea (+765), France (+673), Russia (+479) and Algeria (+441). The number of immigrants from the former socialist republics (including Russia) is rising sharply; with 11,900 immigrants, this region appears to be the third largest contributor, after China (22,600) and India (16,800). Also noteworthy is a slight upturn in the number of immigrants from Bosnia-Herzegovina. During the conflict from 1992 to 1995 between Serbs, Croats and Bosnians, the number of Bosnians arriving in Canada reached unprecedented levels. More specifically, nearly 4,700 Bosnians chose Canada as their adopted country in 1994, with the numbers falling to just under 2,200 in 1997 and 2,500 in 1998.

Table 12. Countries of Birth from Which more than 2,000 Immigrants Came to Canada in 1996, 1997 and 1998

Country of Birth	1996	1997	1998	Difference between 1996 et 1997	Difference between 1997 et 1998
AFRICA					
Algeria	2,042	1,798	2,239	-244	441
Egypt	2,375	2,043	1,297	-332	-746
AMERICA					
Guyana	2,392	1,841	1,272	-551	-569
Jamaica	3,309	2,870	2,252	-439	-618
Trinidad and Tobago	2,205	1,760	1,196	-445	-564
United States	5,051	4,402	4,140	-649	-262
ASIA					
Afghanistan	2,002	2,308	2,054	306	-254
Bangladesh	2,754	3,273	2,099	519	-1,174
China	24,986	24,750	**22,622**	-236	**-2,128**
Hong Kong [1]	24,143	17,805	**6,343**	-6,338	**-11,462**
India	23,388	21,711	**16,814**	-1,677	**-4,897**
Iran	6,260	7,884	6,996	1,624	-888
Iraq	2,771	2,574	1,862	-197	-712
Pakistan	8,556	12,179	8,396	3,623	-3,783
Philippines	13,626	11,414	8,499	-2,212	-2,915
South Korea	3,251	4,110	4,875	859	765
Sri Lanka	6,443	5,342	3,535	-1,101	-1,807
Taiwan	12,754	12,784	**6,930**	30	**-5,854**
Vietnam	2,706	1,998	1,821	-708	-177
EUROPE					
France	2,438	2,313	2,986	-125	673
Great Britain	4,381	3,923	3,260	-458	-663
Poland	2,167	1,793	1,507	-374	-286
Romania	3,952	4,045	3,058	93	-987
Ex USSR	8,950	10,795	**11,860**	1,845	**1,065**
Russia	3,181	4,236	4,715	1,055	479
Ukraine	2,680	2,648	2,731	-32	83
Others	3,089	3,911	4,414	822	503
Ex Yugoslavia	8,444	6,786	6,425	-1,658	-361
Bosnia-Hercegovina	2,466	2,204	2,469	-262	265
Others	5,978	4,582	3,956	-1,396	-626

[1] Includes Hong Kong SAR (Special Administrative Region), since July 1, 1997.
Note: Data is preliminary as of July 12, 1999.
Source: Citizenship and Immigration Canada, unpublished data.

Even though the number of immigrants from Asia has declined, they are still the largest immigrant contingent, with nearly 102,000 individuals, compared to only 37,000 individuals from Europe. Together, the other parts of the world contributed 35,100 immigrants in 1998, with many of them coming from Africa (14,400).

Asia was not always the main source of immigrants admitted to Canada. Thirty years ago, Europe played this role. Until the end of the 1960s, the

great majority of immigrants came from either that continent or the United States. From 1964 to 1968, for example, two European countries, the United Kingdom (25%) and Italy (16%) dominated Canadian immigration much more than China, Hong Kong and India do today, since four immigrants in ten were natives of one of those two countries (Figure 12).

During the second half of the 20th century, following major changes to the Immigration Act, the geographic centre of Canadian immigration shifted from Europe to Southeast Asia. For a long time, certain countries, especially those in Asia, were little favoured. Early in the century, a head tax (of up to $500) was imposed on Chinese immigrants, and the Chinese Immigration Act (in force from 1923 to 1947) prevented Asian immigrants from coming to Canada. It was not until 1962 that these selection processes were abolished, and it was then that the makeup of immigration began to change. Today (1994-1998), without dominating the makeup of Canadian immigration as much as the British and Italians did in the early 1960s, persons from China (11%), Hong Kong (10%) and India (10%) are the largest contingents. They alone constitute more than 30% of the total.

Greater Decrease in Ontario and British Columbia

Ontario has always held considerable attraction for immigrants of all origins. Since the early 1980s, it has received 139,000 Hong Kong-born immigrants, 135,000 Chinese, 135,000 Indians and 100,000 Filipinos, to name only the main supplier countries. British Columbia is also favoured by Asian immigration, but the numbers that it receives are much more modest. Quebec, the main destination for Francophones,[14] stands out for having received, since 1980, mainly immigrants from Haiti (40,000), Lebanon (39,000) and France (34,000).

The drop in immigration in 1998 affects all provinces, but the impact is greater on the provinces that attracted the largest number of Asian immigrants. Ontario and British Columbia, with decreases of respectively 21% and 25% in the number of immigrants received, experienced larger declines than Canada as a whole (19%). However, despite a drop of 25,300 in its immigrant numbers, Ontario is still the province most selected by immigrants, and it continues to be the destination of more than half of them. British Columbia, with a decrease of 11,800 immigrants, has in relative terms been harder hit than Ontario, but it nevertheless continues to be the second-ranking destination, with nearly 21% of the total (Table 13).

While the two provinces that receive the most immigrants saw their contingents fall by more than the average, other were necessarily less affected by the drop in immigration in 1998. This was especially the case with Quebec,

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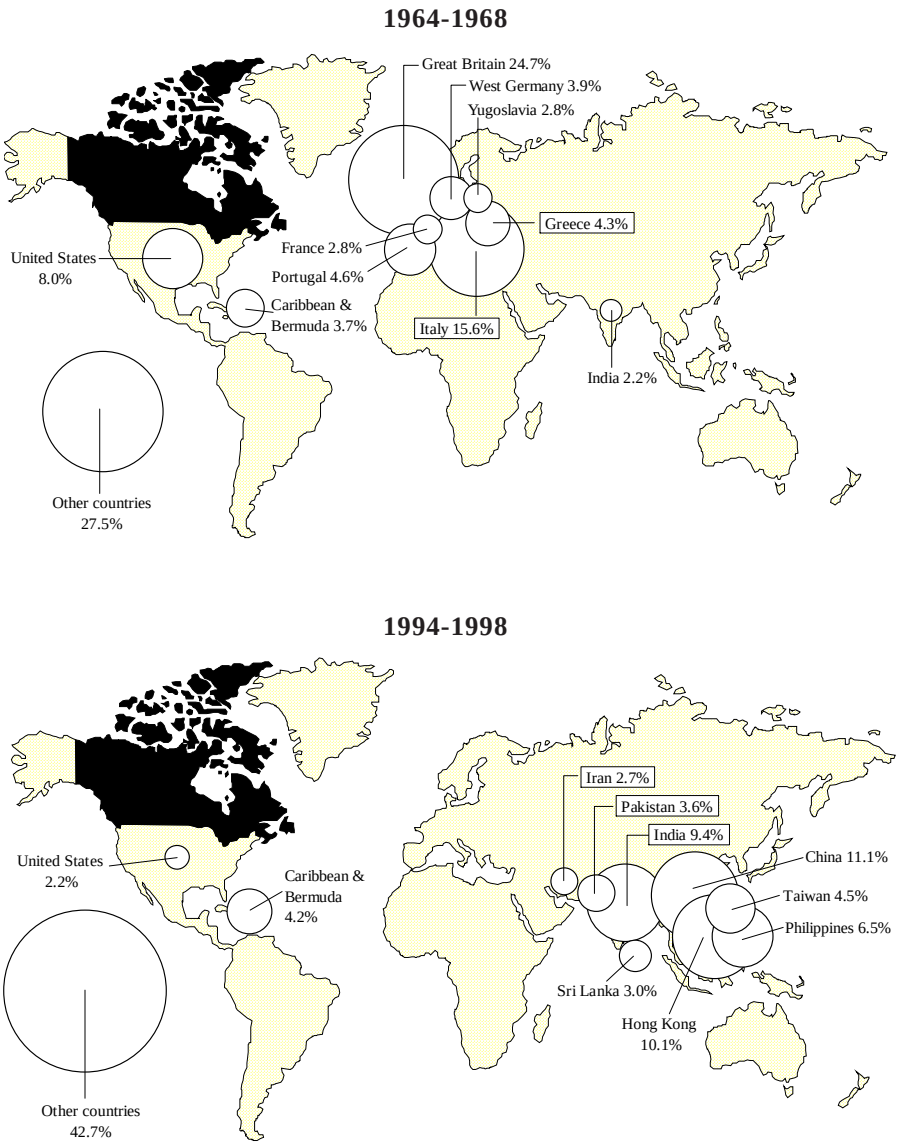
[14] Immigrants subject to the point system (economic class) obtain extra points in Quebec for knowledge of French.

Figure 12. Place of Birth of Landed Immigrants in Canada According to the 10 Main Places of Birth[1], 1964-1968 and 1994-1998



[1] The place of birth is the country of birth according to the territorial divisions of 1964-1968 and of 1994-1998.

Sources: 1964-1968: Department of Manpower and Immigration, Canada Immigration Division, ***Immigration Statistics***. 1994-1998: Citizenship and Immigration Canada, unpublished data.

where the 26,400 immigrants received this year represented a decrease of only 5% from the previous year. Historically, between 15% and 20% of all immigrants to Canada choose Quebec, but since 1993, Quebec has managed to attract no more than 12% or 13% of Canadian immigrants. ***Because of the decrease in immigration, Quebec succeeded for the first time in five years in attracting at least 15% of immigrants in 1998***. Alberta was also less affected than other provinces by the drop in immigration. The other provinces registered negligible changes, precisely because they tend to attract fewer immigrants.

Greater Drop in Numbers of Economic Immigrants

The globalization of markets has altered the demand for human capital. This has clearly increased the rivalry between countries to attract highly skilled labour. Despite Canada's efforts to bring in more economic migrants,[15] it appears that in this regard, 1998 will turn not to have met expectations. Figures on classes of immigrants[16] ***show a decrease in entries for all three classes, but a larger decrease for those in the economic class*** (Table 14). ***In 1998, Canada received fewer than 95,000 economic immigrants, down 24% from the previous year***. Admittedly, the 125,500 economic immigrants admitted in 1997 represented an all-time high for this class. And there were also decreases, albeit smaller ones, in the "family" and "refugee" classes last year. These dropped from 60,000 to 50,900 arrivals (-15%) and from 24,100 to 22,700 arrivals (-6%) respectively. ***The economic class is still the largest accounts for 55% of immigrants***. Of the three main provinces of destination, British Columbia is still the one with the largest share of its immigrants in the economic class, namely 59% of the total, compared to 55% for Ontario and 47% for Quebec (Table 15).

Update on International Adoption

International adoption grew considerably during the 1990s. In 1998, 2,223 children were adopted abroad, compared to only 320 in 1991. This large increase is mainly due to the boom in adoption of females from China, since adopted children born in that country account for 41% of all children adopted abroad, and 99% of them are females. Despite a long and complex process that can result in a wait of more than a year, China has become a major source for families wishing to adopt a child (Table 16). Between 1991

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[15] ***Not Just Numbers: A Canadian Framework for Future Immigration***. Minister of Public Works and Government Services, Canada, 1997.

[16] The Canadian Immigration Act passed in 1976 defines three classes of immigrants. Immigrants in the "economic class" are subject to the point system and must meet certain admission criteria. Neither landed immigrants in the "family class," consisting of close relatives of immigrants, nor refugees are subject to the point system.

Table 13. Percentage Distribution of Landed Immigrants by Intended Province of Destination, Canada, 1971-1998

Province	Year													
	1971	1981	1986	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Newfoundland	0.7	0.4	0.3	0.3	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2
Prince Edward Island	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Nova Scotia	1.5	1.1	1.1	0.8	0.8	0.7	0.6	0.9	1.2	1.5	1.7	1.4	1.3	1.2
New Brunswick	0.9	0.8	0.6	0.4	0.5	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4
Quebec	15.8	16.4	19.6	15.8	17.7	18.9	22.3	19.1	17.5	12.5	12.8	13.2	12.8	15.1
Ontario	52.8	42.7	50.0	55.0	54.6	52.5	51.4	54.5	52.4	52.4	54.4	52.9	54.6	53.2
Manitoba	4.3	4.2	3.8	3.1	3.2	3.1	2.4	2.0	1.9	1.8	1.7	1.7	1.7	1.7
Saskatchewan	1.2	1.9	1.9	1.4	1.1	1.1	1.1	1.0	0.9	1.0	0.9	0.8	0.8	0.9
Alberta	7.1	15.0	9.7	8.7	8.4	8.7	7.3	7.0	7.2	8.0	6.7	6.1	6.0	6.4
British Columbia	15.5	17.1	12.6	14.3	13.2	13.3	13.9	14.5	17.8	21.9	20.9	23.0	22.0	20.6
Yukon and Northwest Territories[1]	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Unknown	0.0	0.3	0.1	0.0	0.0	0.9	0.3	0.2	0.2	0.1	0.0	0.0	0.0	0.0
Total Percentage	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total Number	121,717	128,793	99,339	161,534	191,505	216,418	232,763	254,845	256,759	224,378	212,856	226,050	216,045	174,143

[1] Includes Nunavut.

Note: Preliminary data as of July 12, 1999.

Sources: Employment and Immigration Canada, ***Immigration Statistics*** and after 1980, Citizenship and Immigration Canada, unpublished data.

Table 14. Immigrants to Canada by Class, 1980-1998

Year	Family	Economic	Refugees	Others [1]	Total
	Number				
1980	49,440	46,431	40,658	6,969	143,498
1981	50,534	56,702	15,062	6,495	128,793
1982	50,186	51,148	17,002	2,994	121,330
1983	48,987	24,186	14,064	2,140	89,377
1984	44,593	26,095	15,556	2,353	88,597
1985	39,356	26,114	16,768	2,102	84,340
1986	42,465	35,840	19,199	1,835	99,339
1987	53,799	74,096	21,465	2,666	152,026
1988	51,398	80,228	26,736	3,172	161,534
1989	60,937	90,138	36,860	3,570	191,505
1990	74,366	95,636	36,100	10,316	216,418
1991	85,943	80,001	35,880	30,939	232,763
1992	96,791	82,280	37,022	38,752	254,845
1993	110,436	95,653	24,898	25,772	256,759
1994	93,715	96,561	19,750	14,352	224,378
1995	77,227	100,898	27,761	6,970	212,856
1996	68,319	120,279	28,345	9,107	226,050
1997	59,959	125,491	24,124	6,471	216,045
1998	50,872	94,954	22,666	5,651	174,143
	Percentage				
1980	34.5	32.4	28.3	4.9	100.0
1981	39.2	44.0	11.7	5.0	100.0
1982	41.4	42.2	14.0	2.5	100.0
1983	54.8	27.1	15.7	2.4	100.0
1984	50.3	29.5	17.6	2.7	100.0
1985	46.7	31.0	19.9	2.5	100.0
1986	42.7	36.1	19.3	1.8	100.0
1987	35.4	48.7	14.1	1.8	100.0
1988	31.8	49.7	16.6	2.0	100.0
1989	31.8	47.1	19.2	1.9	100.0
1990	34.4	44.2	16.7	4.8	100.0
1991	36.9	34.4	15.4	13.3	100.0
1992	38.0	32.3	14.5	15.2	100.0
1993	43.0	37.3	9.7	10.0	100.0
1994	41.8	43.0	8.8	6.4	100.0
1995	36.3	47.4	13.0	3.3	100.0
1996	30.2	53.2	12.5	4.0	100.0
1997	27.8	58.1	11.2	3.0	100.0
1998	29.2	54.5	13.0	3.2	100.0

[1] Includes live-in caregivers, deferred removal order and post determination refugees, retirees, provincial/territorial nominees, the backlog and the non stated.

Note: Preliminary data as of July 12, 1999.

Source: Citizenship and Immigration Canada, unpublished data.

Table 15. Number of Immigrants and Distribution (in Percent) by Province of Destination and Class, Canada, 1998

Province	Family	Economic[1]	Refugees	Others	Total
	Number				
Newfoundland	72	219	116	11	418
Prince Edward Island	11	54	58	5	128
Nova Scotia	234	1,601	235	6	2,076
New Brunswick	158	425	162	13	758
Quebec	6,897	12,463	6,190	824	26,374
Ontario	27,244	51,251	11,450	2,684	92,629
Manitoba	942	1,362	649	48	3,001
Saskatchewan	391	581	528	75	1,575
Alberta	3,760	5,792	1,266	372	11,190
British Columbia	11,090	21,103	2,007	1,604	35,804
Yukon	28	32	-	1	61
Northwest Territories[2]	34	27	1	4	66
Not Stated	11	44	4	4	63
Total	50,872	94,954	22,666	5,651	174,143
	Distribution by Province (%)				
Newfoundland	0.1	0.2	0.5	0.2	0.2
Prince Edward Island	0.0	0.1	0.3	0.1	0.1
Nova Scotia	0.5	1.7	1.0	0.1	1.2
New Brunswick	0.3	0.4	0.7	0.2	0.4
Quebec	13.6	13.1	27.3	14.6	15.1
Ontario	53.6	54.0	50.5	47.5	53.2
Manitoba	1.9	1.4	2.9	0.8	1.7
Saskatchewan	0.8	0.6	2.3	1.3	0.9
Alberta	7.4	6.1	5.6	6.6	6.4
British Columbia	21.8	22.2	8.9	28.4	20.6
Yukon	0.1	0.0	-	0.0	0.0
Northwest Territories[2]	0.1	0.0	0.0	0.1	0.0
Not Stated	0.0	0.0	0.0	0.1	0.0
Total	100.0	100.0	100.0	100.0	100.0
	Distribution by Class (%)				
Newfoundland	17.2	52.4	27.8	2.6	100.0
Prince Edward Island	8.6	42.2	45.3	3.9	100.0
Nova Scotia	11.3	77.1	11.3	0.3	100.0
New Brunswick	20.8	56.1	21.4	1.7	100.0
Quebec	26.2	47.3	23.5	3.1	100.0
Ontario	29.4	55.3	12.4	2.9	100.0
Manitoba	31.4	45.4	21.6	1.6	100.0
Saskatchewan	24.8	36.9	33.5	4.8	100.0
Alberta	33.6	51.8	11.3	3.3	100.0
British Columbia	31.0	58.9	5.6	4.5	100.0
Yukon	45.9	52.5	-	1.6	100.0
Northwest Territories[2]	51.5	40.9	1.5	6.1	100.0
Not Stated	17.5	69.8	6.3	6.3	100.0
Total	29.2	54.5	13.0	3.2	100.0

[1] Includes business and qualified workers.
[2] Includes Nunavut.
Source: Citizenship and Immigration Canada, unpublished data.

and 1998, the number of Chinese adoptees went from 36 to 902. Apart from China, the main countries from which children are adopted are India, with 177 children (8%), Russia, with 160 children (7%), and Haiti, with 155 children (7%).

The phenomenon of international adoption is much more widespread in the three most populous provinces — Quebec, Ontario and British Columbia — than elsewhere in Canada. Quebec families in particular adopted 920 children from foreign countries, representing more than 40% of the total. Ontario families, while more numerous, adopted somewhat fewer, namely 820 children. Quebec is especially noteworthy with respect to the adoption of children born in China. To grasp the scope of the phenomenon in Quebec, it is useful to look at the number of children adopted abroad in relation to the number of births for each region of Canada. That ratio is nearly twice as high for Quebec (12.2 children adopted abroad per 1,000 births) as for Ontario and British Columbia, which vie for second place with ratios only half as high.

While the phenomenon of international adoption has been growing since the early 1990s, it nevertheless accounts for only a minuscule portion of total immigration. In fact, of all immigrants received in Canada in 1998, only 1.3% were children adopted abroad.

Conclusion

In 1998, the number of international immigrants fell sharply, registering its steepest drop in forty years. This decrease in the number of immigrants

Table 16. Number of Children Adopted from Outside Canada According to the Country of Birth and the Region of Destination, Canada, 1998

Country	Atlantic	Quebec	Ontario	Prairies	British Columbia	Total[1]	Percentage
China	24	497	289	39	52	902	40.6
India	0	5	93	22	57	177	8.0
Russia	8	51	81	4	16	160	7.2
Haiti	3	111	12	8	21	155	7.0
Roumania	1	43	22	23	2	91	4.1
Jamaica	0	0	81	2	2	85	3.8
Phillipines	4	8	32	18	17	80	3.6
Vietnam	1	61	12	2	3	79	3.6
United States	1	2	33	8	34	78	3.5
Guatemala	1	14	39	3	13	70	3.1
Others	2	128	127	29	60	346	15.6
Total	45	920	821	158	277	2,223	100.0
Percentage	2.0	41.4	36.9	7.1	12.5	100.0	-
International Adoption for 1,000 Births	1.9	12.2	6.1	2.4	6.2	6.4	-

[1] Total includes Yukon, Northwest Territories and Nunavut.
Source: Citizenship and Immigration Canada, unpublished data.

affected all provinces, but the greatest impact was on the two provinces most favoured by immigration: Ontario and British Columbia. It also affected all classes of immigrants, but especially the economic class, considered a priority group in the immigration plan. Whereas Canada expected to admit between 115,900 and 127,900 economic immigrants, it admitted only 95,000. While the number of immigrants from all regions of origin was down, the number of Asians dropped much more sharply. In fact, all these findings are inter-related, since Ontario and British Columbia traditionally receive more Asian immigrants than the other provinces as well as a large proportion of immigrants in the economic class. Furthermore, most Asian immigrants, and more especially those from Hong Kong, belong to the economic class.

Preliminary data for 1999 suggest that Canada may have some difficulties achieving its immigration objectives. The annual immigration plan for 1999 maintains the objectives of the previous year and situates the expected level of immigration at between 200,000 and 225,000 persons.[17] The data available for the first five months of 1999 are comparable to those for the first five months of 1998, suggesting that the number of immigrants may be similar to the figure for 1998, that is, approximately 175,000 persons.

[17] Citizenship and Immigration Canada (1998). ***Canada – A Welcoming Land***. 1999 Annual Immigration Plan. Catalogue no. Ci1-1999, tabled in October 1998.

INTERNAL MIGRATION

A comparison (Table 17) of 1997 interprovincial migration balances with those of the recent past brings out three major trends that could well characterize Canada's migration system in the last five years of the century:

1. in Eastern Canada and on the Prairies except for Alberta, a continuation or indeed an acceleration of migration losses;
2. in Central Canada, a reversal of Ontario's migration balance, which has become positive for the first time since 1988; and
3. in Western Canada, the consolidation of a recent flow favouring Alberta at the expense of British Columbia.

Quebec and Newfoundland, the two provinces with the largest negative balances every year since 1994, are also the most representative of the first of these trends. ***Quebec's migration losses have exceeded 10,000 persons per year since 1994, and according to preliminary estimates they reached 17,800 in 1997***. Of course, Quebec is traditionally on the losing end in its migration exchanges with other provinces, but the recent losses are larger than those of the previous two five-year periods. Between 1985 and 1993, Quebec had only one year with a migration deficit exceeding 10,000. The average annual loss during the five-year period 1985-1989 was only 6,400 persons per year. What is happening is definitely not an exodus, and the situation is much less worrisome than in 1970 or 1977, but it is certainly a source of concern for this province whose demographic weight within Canada is steadily declining.

In Newfoundland, all things considered, the situation is much more serious. In 1997, this relatively unpopulous province (with a population of 554,400 on July 1, 1997) appears to have lost 9,300 persons in its exchanges with other provinces. Whereas the population of Newfoundland is one-thirteenth that of Quebec, its losses were half those of the latter province. ***The number of out-migrants was especially large, reaching 17,400 for the year*** (Table 19). ***This reflects an interprovincial out-migration rate of more than 3%, a slight increase over the previous year*** (Table A1, appendix), ***thus continuing an upward trend now in its a fifth straight year***. In Newfoundland, as elsewhere, young people entering the labour market show the greatest propensity to migrate. The construction of the Hibernia drilling platform and its subsequent operation, along with financial assistance programs for fishermen affected by the moratorium on fishing in the Grand Banks off Newfoundland, were not enough to prevent the increasing exodus of this region's population. While a reversal of the migration trend seems unlikely in the short run, the situation can hardly worsen, since the population at risk of migrating is diminishing year after

Table 17. Net Migration for Provinces and Territories, 1972-1997

Year	New-foundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Yukon and Northwest Territories	Total Number of Interprovincial Migrants
1972	-189	858	2,845	241	-19,891	8,227	-7,735	-17,296	6,538	24,927	1,475	375,184
1973	-2,510	478	2,107	2,841	-14,730	-5,275	-2,200	-13,261	2,698	30,537	-685	433,992
1974	-618	1,386	1,576	4,192	-11,852	-22,163	-5,400	-4,835	14,810	22,655	249	421,336
1975	915	814	4,454	7,572	-12,340	-25,057	-4,134	6,555	23,463	-2,864	622	385,330
1976	-2,732	309	361	1,640	-20,801	-10,508	-3,655	3,819	34,215	-1,490	-1,158	376,970
1977	-4,009	614	-1,277	-886	-46,536	8,596	-3,789	384	32,344	15,507	-948	366,918
1978	-3,540	25	-109	-1,644	-33,424	415	-9,557	-3,701	31,987	20,698	-1,150	348,929
1979	-4,217	-225	-1,840	-2,219	-30,025	-15,317	-13,806	-3,510	39,212	33,241	-1,294	370,862
1980	-3,082	-1,082	-2,494	-4,165	-24,283	-34,919	-11,342	-4,382	46,933	40,165	-1,349	372,167
1981	-6,238	-783	-2,465	-4,766	-22,549	-19,665	-3,621	-520	40,243	21,565	-1,201	380,041
1982	261	-6	1,591	2,183	-28,169	19,614	1,498	1,743	3,961	-2,019	-657	322,634
1983	-1,092	799	3,861	2,296	-19,080	32,825	950	2,501	-26,246	4,029	-843	285,599
1984	-3,585	524	2,963	812	-10,943	36,691	-49	733	-30,591	3,505	-60	273,323
1985	-5,019	-13	-234	-1,559	-6,023	33,414	-1,755	-5,014	-9,568	-3,199	-1,030	281,275
1986	-4,682	-493	-739	-2,897	-3,020	42,916	-3,039	-7,020	-20,293	910	-1,643	302,352
1987	-4,374	301	-2,183	-1,762	-7,410	40,278	-4,751	-9,043	-27,595	17,618	-1,079	318,890
1988	-2,154	424	71	-1,215	-7,003	14,898	-8,584	-16,338	-5,535	25,865	-429	323,685
1989	-2,606	-102	572	-21	-8,379	-1,205	-10,004	-18,589	3,366	37,367	-399	347,990
1990	-1,137	-273	-106	1,014	-9,567	-15,117	-8,613	-15,928	11,055	38,704	-32	332,637
1991	-1,084	-415	1,039	-79	-13,047	-9,978	-7,581	-9,499	5,511	34,572	561	315,420
1992	-2,563	232	355	-1,087	-9,785	-13,530	-6,417	-7,727	1,030	39,578	-86	309,261
1993	-3,397	532	-1,143	-492	-7,426	-12,771	-5,206	-4,543	-2,355	37,595	-794	283,297
1994	-6,204	694	-2,694	-505	-10,252	-4,527	-4,010	-3,958	-2,684	34,449	-309	286,370
1995	-6,566	368	-1,972	-931	-10,248	-1,764	-3,344	-3,190	4,251	23,414	-18	286,259
1996	-7,945	401	-1,064	-910	-15,358	-1,706	-3,738	-1,871	15,069	17,798	-676	283,999
1997	-9,279	-466	-3,355	-1,688	-17,789	5,149	-7,008	-3,288	33,834	5,554	-1,664	315,364
Total	-78,367	5,367	3,475	-2,347	-402,141	44,372	-129,882	-134,490	191,819	515,127	-12,933	8,700,084

Note: Nunavut is included in the Northwest Territories.
Source: Statistics Canada, Demography Division, Population Estimates Section.

Table 18. Annual Number of Interprovincial Migrants According to Revenue Canada Tax Files

January to December 1996

Number of Migrants: 283,999

Province of Origin	Province of Destination											
	Nfld	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta	B.C.	Yukon	N.W.T.[1]
Newfoundland	...	294	1,861	694	304	5,210	288	130	3,446	1,791	67	428
Prince Edward Island	161	...	610	338	110	561	34	38	241	212	7	14
Nova Scotia	1,070	667	...	2,331	1,029	6,457	522	217	2,441	2,147	71	145
New Brunswick	401	498	2,172	...	1,699	3,789	292	155	1,763	1,113	■	95
Quebec	165	126	1,045	2,015	...	22,733	606	249	3,716	5,353	78	120
Ontario	2,971	728	5,797	3,494	13,423	...	4,289	2,003	13,231	22,121	158	476
Manitoba	112	58	490	239	503	4,771	...	2,491	4,967	4,273	70	125
Saskatchewan	22	23	266	111	319	2,192	2,296	...	9,552	3,626	91	155
Alberta	748	120	1,560	877	1,202	8,926	3,027	7,677	...	20,752	482	765
British Columbia	751	200	2,036	901	2,077	11,723	2,736	3,413	19,927	...	749	417
Yukon	22	■	16	15	30	148	41	69	477	824	...	49
Northwest Territories[1]	145	13	180	52	152	475	230	340	1,444	516	133	...
In	6,568	2,727	16,033	11,067	20,848	66,985	14,361	16,782	61,205	62,728	1,906	2,789
Out	14,513	2,326	17,097	11,977	36,206	68,691	18,099	18,653	46,136	44,930	1,691	3,680
Net Migration	-7,945	401	-1,064	-910	-15,358	-1,706	-3,738	-1,871	15,069	17,798	215	-891

[1] Nunavut included.

Source: Statistics Canada, Demography Division, Population Estimates Section.

Table 19. Annual Number of Interprovincial Migrants According to Revenue Canada Tax and Child Tax Credit Files

January to December 1997

Number of Migrants: 315,364

Province of Origin	Province of Destination											
	Nfld	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta	B.C.	Yukon	N.W.T.[1]
Newfoundland	...	191	2,114	836	359	5,989	252	292	5,639	1,391	69	270
Prince Edward Island	169	...	649	461	86	802	70	36	619	192	3	10
Nova Scotia	1,323	613	...	2,692	1,056	6,994	458	377	3,910	2,548	37	104
New Brunswick	619	421	2,768	...	2,039	4,542	278	183	2,723	1,335	17	21
Quebec	267	114	1,100	2,742	...	26,418	673	304	4,024	5,316	46	129
Ontario	3,347	814	5,856	4,112	15,100	...	4,601	1,945	14,451	19,966	180	505
Manitoba	175	58	461	305	489	5,157	...	3,168	6,375	4,753	66	325
Saskatchewan	110	7	200	77	259	1,911	2,055	...	12,431	3,715	70	219
Alberta	999	185	1,701	1,006	1,240	9,589	2,890	7,871	...	18,642	361	901
British Columbia	908	176	1,650	857	2,507	13,974	2,789	3,196	26,565	...	792	321
Yukon	45	8	39	35	58	173	42	91	730	908	...	63
Northwest Territories[1]	161	44	219	135	151	477	216	303	1,752	523	118	...
In	8,123	2,631	16,757	13,258	23,344	76,026	14,324	17,766	79,219	59,289	1,759	2,868
Out	17,402	3,097	20,112	14,946	41,133	70,877	21,332	21,054	45,385	53,735	2,192	4,099
Net Migration	-9,279	-466	-3,355	-1,688	-17,789	5,149	-7,008	-3,288	33,834	5,554	-433	-1,231

[1] Nunavut included.

Source: Statistics Canada, Demography Division, Population Estimates Section.

Table 20. Population Ratio by Generation for Newfoundland and British Columbia, 1981-1998

Year	Newfoundland			British Columbia		
	Population Aged 15, 10 Years Earlier	Population Aged 25	Population Ratio	Population Aged 15, 10 Years Earlier	Population Aged 25	Population Ratio
1981	6,500	5,100	0.79	22,400	26,900	1.20
1982	6,400	5,000	0.78	22,400	27,100	1.21
1983	6,400	5,000	0.78	23,600	27,500	1.17
1984	6,600	5,000	0.77	24,100	27,600	1.14
1985	6,800	5,100	0.75	25,400	27,800	1.09
1986	7,000	5,000	0.72	25,500	27,400	1.08
1987	6,600	5,000	0.76	24,900	27,500	1.11
1988	6,600	4,900	0.75	25,500	28,200	1.11
1989	6,900	5,000	0.72	25,000	27,800	1.12
1990	7,000	5,000	0.71	24,200	27,100	1.12
1991	6,800	4,900	0.72	22,600	25,600	1.13
1992	6,300	4,700	0.75	21,600	25,400	1.17
1993	6,300	4,700	0.75	21,500	26,400	1.23
1994	6,300	4,600	0.73	22,300	28,100	1.26
1995	6,200	4,400	0.71	22,900	29,600	1.29
1996	6,200	4,300	0.69	22,400	30,100	1.34
1997	6,100	4,200	0.69	20,800	28,300	1.36
1998	5,800	3,900	**0.67**	20,600	27,500	**1.34**

Source: Statistics Canada, Demography Division, Population Estimates Section.

year. The other Atlantic provinces also have negative migration balances for 1997, but their out-migration rates are roughly 2% and are therefore comparable to those observed in other Canadian provinces.

A quick calculation serves to illustrate the effect of internal migration on particular segments of the Newfoundland population. Looking at different recent cohorts, Table 20 shows the ratio of the size of each cohort at age 15 to its size ten years later, when its members have reached age 25. The situation in Newfoundland is compared to that of British Columbia, which experienced strong population growth over the period. These ratios reflect not only from the effect of internal and international migration, but also mortality. Newfoundland is relatively little affected by international migration, and mortality is relatively low at these ages, and hence what this indicator primarily shows is the effect of young people's strong propensity to leave the province. The ongoing deterioration of the demographic situation since the start of the decade may be seen in the change in the cohort size ratios over time. These ratios are all less than 1! Standing at roughly 0.80 at the start of the period analysed, the ratio hovers around 0.75 until 1993, then falls steeply to 0.67 for the last cohort studied. Expressed in words, ***the latter ratio means that on average, for each 100 persons that an individual might know when completing high school, a third would have left the province ten years later***. For British

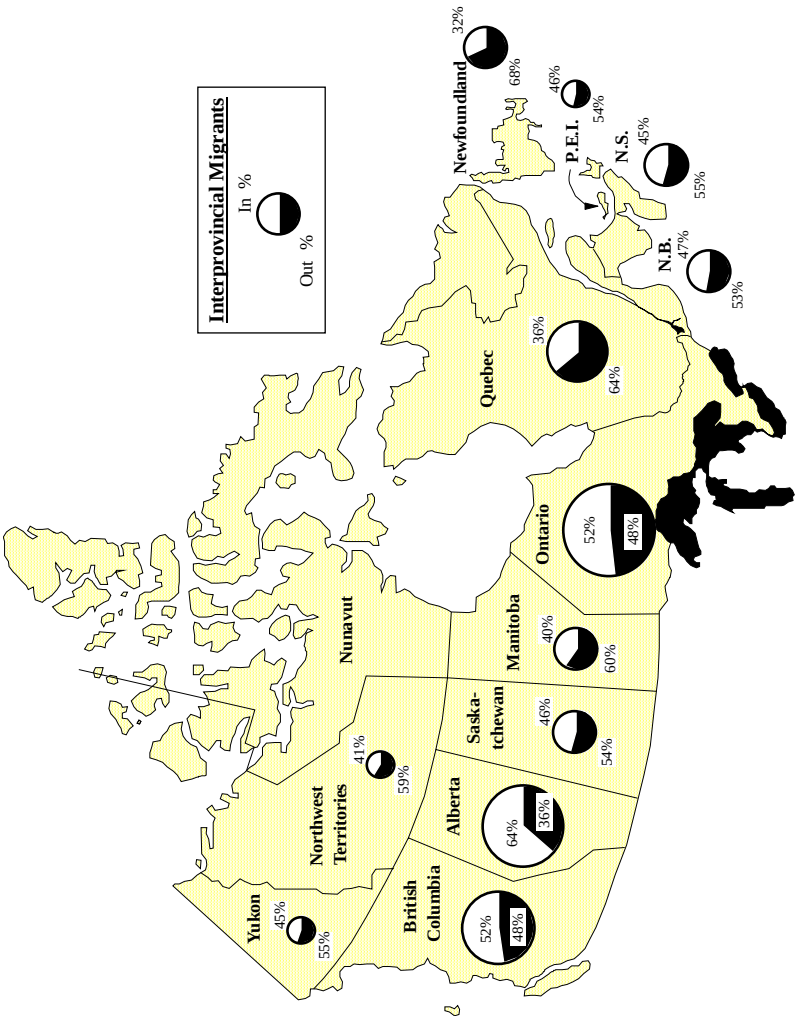
Columbia, by contrast, the corresponding ratios are all greater than 1, reflecting the strong growth resulting from largely positive balances for both internal and international migration.

After eight years of negative balances, in 1997 Ontario showed its first positive balance in its exchanges with the other provinces. The gain of some 5,100 persons resulted from a sizable increase in the number of in-migrants, with the number of out-migrants remaining stable. A detailed analysis of that province's inflows and outflows does not, however, indicate a new trend. The two main migration flows that contributed to this reversal are, in relation to the previous year (Table 18), an increase in the number of migrants arriving from Quebec and a decrease in the number of migrants departing for British Columbia, with all other flows to or from other provinces exhibiting only minor changes. It appears, then, that for the present, the reversal of Ontario's migration balance is due to phenomena external to the province: the decline in the attractiveness of British Columbia as a result of the economic slowdown in that province, which was more affected than the others by the Asian crisis, and the increase in outflows from Quebec to Ontario. Out-migration to British Columbia could increase with a recovery of that province's economy. The growing differences in taxation could continue to favour the movement of Quebecers to Ontario. It is therefore not certain that this reversal heralds the beginning of a new period highly favourable to Ontario, in which it would emerge as a winner in the Canadian migration game, as in the late 1980s.

Having started in the previous year or even at the end of 1995, a real reversal took place in 1997 in the exchanges between the two westernmost provinces. ***An analysis of migration flows for 1997 shows that for the first time since 1985-1986, Alberta had a favourable migration balance in its exchanges with its neighbour to the west***. Alberta's economic growth has led a great number of job seekers to opt for that province as a destination. In 1997, Alberta had a positive balance in its exchanges with each of the nine other provinces, and the number of arriving migrants appears to have increased by some 18,000, while the number of departing migrants has apparently decreased slightly. Alberta's boom is largely responsible for the losses experienced by the other two Prairie provinces. Saskatchewan in particular, which had a positive balance with all other provinces further east, registered losses of 4,600 persons in its exchanges with Alberta. Preliminary data obtained from child tax benefit files (data not shown) show that this province continues to attract migrants.

Conversely, ***the power of attraction that British Columbia exerted for a decade on out-migrants from all other provinces waned considerably in 1997***. With a gain of 5,600 persons over the year, that province's balance remained positive, but that gain was much lower than those observed previously. During the preceding decade, the province registered positive balances that on average exceeded 30,000 per year. Nevertheless, British Columbia continues

Figure 13. Geographical Representation of Canada's Interprovincial Migration, 1997



Source: Statistics Canada, Demography Division, Population Estimates Section.

to be in an enviable position in its migration exchanges within Canada, since its migration balance with all other provinces, with the exception of Alberta, was still positive in 1997.

An analysis of migration balances can mask some aspects of internal migration that are brought out in Figure 13. On this geographic map showing the provinces of Canada, the total number of interprovincial migrants (both arriving and departing) is represented for each province by the size of the circles. Each circle is divided into two sections, representing the proportion of in-migrants (white portion) and out-migrants (black portion). The size of Ontario's place in the Canadian migration system is clear. ***Truly the hub of the system, Ontario is the origin or destination of nearly half of all interprovincial migrants (76,000 in-migrants and 70,900 out-migrants for a total of 146,900 migrants)***. Nearly a quarter of migrants arriving in other provinces come from Ontario; similarly, nearly a quarter of migrants departing from other provinces go to Ontario. But the two flows cancel each other out, resulting in a practically nil migration balance. By contrast, Quebec, which accounts for nearly a quarter of the Canadian population, is represented by a much smaller circle than Alberta and British Columbia, which are considerably less populous provinces. This is because the language barrier operates in both directions, limiting both the number of migrants entering Quebec from the other, predominantly English-speaking provinces and the opportunities of unilingual Francophone Quebecers to migrate to other provinces.

Appendices

Table A1. Population as of January 1st and Population Growth Components, Provinces and Territories, 1972-1999

NEWFOUNDLAND

NUMBERS (in thousands)

Year	Population as of January 1st	Growth			Births	Deaths	Immigration	Emigration	Returning Canadians	Non-permanent Residents (net)	Interprovincial Migration			Residual [1]
		Total	Natural	Migratory							In	Out	Net	
1972	535.9	7.5	9.5	0.4	12.9	3.3	0.7	0.4	0.3	0.0	11.2	11.4	-0.2	-2.4
1973	543.4	4.4	8.5	-1.7	11.9	3.4	1.0	0.5	0.3	0.1	13.0	15.5	-2.5	-2.4
1974	547.8	4.7	7.0	0.1	10.2	3.3	1.0	0.5	0.2	0.0	12.4	13.0	-0.6	-2.4
1975	552.5	7.5	8.0	1.9	11.2	3.2	1.1	0.5	0.2	0.1	12.3	11.4	0.9	-2.4
1976	559.9	4.0	7.8	-2.2	11.1	3.3	0.7	0.4	0.2	0.0	9.7	12.4	-2.7	-1.6
1977	563.9	2.6	7.3	-3.6	10.4	3.1	0.6	0.4	0.2	0.0	8.1	12.2	-4.0	-1.1
1978	566.5	2.0	6.4	-3.4	9.5	3.1	0.4	0.4	0.2	0.0	8.1	11.7	-3.5	-1.1
1979	568.4	2.2	7.0	-3.7	10.2	3.1	0.6	0.4	0.2	0.1	8.9	13.1	-4.2	-1.1
1980	570.7	3.4	7.0	-2.5	10.3	3.3	0.6	0.3	0.2	0.1	9.3	12.4	-3.1	-1.1
1981	574.1	-0.6	6.9	-5.9	10.1	3.2	0.5	0.3	0.2	0.1	8.5	14.8	-6.2	-1.7
1982	573.5	4.2	5.8	0.5	9.2	3.4	0.4	0.5	0.2	0.1	10.6	10.3	0.3	-2.1
1983	577.7	2.0	5.4	-1.3	8.9	3.5	0.3	0.5	0.2	-0.2	7.6	8.7	-1.1	-2.1
1984	579.7	-0.5	5.0	-3.4	8.6	3.5	0.3	0.4	0.2	0.1	5.7	9.3	-3.6	-2.1
1985	579.2	-2.0	4.9	-4.9	8.5	3.6	0.3	0.4	0.2	0.0	6.0	11.0	-5.0	-2.1
1986	577.2	-1.6	4.6	-4.5	8.1	3.5	0.3	0.5	0.2	0.2	7.7	12.4	-4.7	-1.7
1987	575.6	-1.0	4.1	-3.8	7.8	3.6	0.5	0.4	0.2	0.3	8.4	12.8	-4.4	-1.3
1988	574.6	1.1	3.9	-1.5	7.5	3.6	0.4	0.2	0.2	0.3	10.0	12.2	-2.2	-1.3
1989	575.7	0.9	4.0	-1.8	7.8	3.7	0.5	0.2	0.1	0.4	10.1	12.7	-2.6	-1.3
1990	576.5	1.7	3.7	-0.7	7.6	3.9	0.5	0.2	0.1	-0.1	10.2	11.4	-1.1	-1.3
1991	578.2	1.2	3.4	-0.6	7.2	3.8	0.6	0.3	0.1	0.0	9.9	10.9	-1.1	-1.6
1992	579.4	1.6	3.1	0.2	6.9	3.8	0.8	0.3	0.1	2.1	8.1	10.7	-2.6	-1.8
1993	581.0	-3.6	2.5	-4.3	6.4	3.9	0.8	0.3	0.1	-1.6	6.9	10.3	-3.4	-1.8
1994	577.4	-6.4	2.3	-6.9	6.3	4.1	0.6	0.3	0.1	-1.2	6.3	12.5	-6.2	-1.8
1995	571.0	-6.7	1.9	-6.9	5.9	3.9	0.6	0.3	0.1	-0.8	7.0	13.5	-6.6	-1.8
1996	564.3	-6.8	1.8	-7.9	5.7	3.9	0.6	0.3	0.1	-0.4	6.6	14.5	-7.9	-0.7
1997 PR	557.5	-8.0	1.1	-9.1	5.4	4.3	0.4	0.3	0.1	-0.1	8.1	17.4	-9.3	...
1998 PR	549.4	-8.0	0.8	-8.8	5.1	4.3	0.4	0.3	0.1	0.0	10.0	19.1	-9.2	...
1999 PP	541.4	..	..	..	..	..	..	..	..	..	..	..	..	...

RATES (per 1,000)

Year	Population as of January 1st (in thousands)	Growth			Fertility	Death	Immigration	Emigration	Returning Canadians	Non-permanent Residents	Interprovincial Migration		
		Total	Natural	Migratory							In	Out	Net
1972	535.9	13.91	17.70	0.66	23.90	6.21	1.27	0.78	0.47	0.06	20.72	21.07	-0.35
1973	543.4	8.02	15.58	-3.16	21.82	6.24	1.80	0.96	0.46	0.13	23.85	28.45	-4.60
1974	547.8	8.52	12.63	0.25	18.61	5.97	1.88	0.94	0.44	-0.01	22.50	23.62	-1.12
1975	552.5	13.42	14.37	3.36	20.16	5.79	1.99	0.84	0.44	0.13	22.20	20.56	1.65
1976	559.9	7.08	13.89	-3.93	19.81	5.91	1.29	0.76	0.42	-0.02	17.28	22.14	-4.86
1977	563.9	4.58	12.86	-6.41	18.42	5.55	1.03	0.71	0.38	-0.01	14.41	21.51	-7.09
1978	566.5	3.46	11.30	-5.96	16.79	5.49	0.66	0.72	0.37	-0.02	14.36	20.59	-6.24
1979	568.4	3.92	12.35	-6.56	17.86	5.51	0.97	0.62	0.35	0.14	15.66	23.07	-7.40
1980	570.7	5.98	12.21	-4.37	18.05	5.84	0.96	0.50	0.31	0.24	16.19	21.58	-5.38
1981	574.1	-1.13	12.03	-10.27	17.65	5.63	0.84	0.61	0.28	0.09	14.89	25.76	-10.87
1982	573.5	7.38	10.06	0.95	15.94	5.88	0.71	0.82	0.39	0.22	18.40	17.94	0.45
1983	577.7	3.51	9.38	-2.27	15.43	6.04	0.48	0.88	0.36	-0.34	13.08	14.97	-1.89
1984	579.7	-0.84	8.70	-5.94	14.77	6.07	0.52	0.73	0.29	0.17	9.84	16.03	-6.19
1985	579.2	-3.51	8.55	-8.45	14.70	6.15	0.56	0.76	0.38	0.05	10.31	18.99	-8.68
1986	577.2	-2.77	7.91	-7.82	14.05	6.14	0.48	0.87	0.39	0.31	13.36	21.48	-8.12
1987	575.6	-1.76	7.20	-6.63	13.51	6.31	0.80	0.63	0.36	0.45	14.69	22.29	-7.61
1988	574.6	1.84	6.77	-2.61	13.02	6.24	0.71	0.41	0.31	0.53	17.43	21.18	-3.75
1989	575.7	1.52	7.02	-3.17	13.47	6.45	0.81	0.35	0.25	0.63	17.51	22.03	-4.52
1990	576.5	2.89	6.44	-1.23	13.17	6.73	0.95	0.34	0.22	-0.09	17.75	19.72	-1.97
1991	578.2	2.08	5.82	-1.01	12.38	6.56	1.11	0.54	0.23	0.08	17.02	18.89	-1.87
1992	579.4	2.69	5.38	0.34	11.92	6.55	1.36	0.46	0.25	3.61	14.04	18.46	-4.42
1993	581.0	-6.15	4.37	-7.49	11.09	6.72	1.39	0.45	0.23	-2.81	11.87	17.74	-5.87
1994	577.4	-11.12	3.98	-12.05	11.04	7.05	0.99	0.46	0.24	-2.02	10.97	21.78	-10.80
1995	571.0	-11.83	3.39	-12.13	10.32	6.93	1.06	0.48	0.24	-1.39	12.26	23.83	-11.57
1996	564.3	-12.21	3.24	-14.15	10.25	7.00	1.04	0.50	0.25	-0.77	11.71	25.88	-14.17
1997 PR	557.5	-14.50	1.98	-16.48	9.78	7.81	0.72	0.53	0.25	-0.16	14.68	31.44	-16.77
1998 PR	549.4	-14.75	1.46	-16.20	9.42	7.97	0.78	0.54	0.25	0.09	18.28	35.07	-16.79
1999 PP	541.4	..	..	..	..	..	..	..	..	..	..	..	..

See notes at the end of Table 1.

Table A1. Population as of January 1st and Population Growth Components, Provinces and Territories, 1972-1999

PRINCE EDWARD ISLAND

NUMBERS (in thousands)

Year	Population as of January 1st	Growth			Births	Deaths	Immigration	Emigration	Returning Canadians	Non-permanent Residents (net)	Interprovincial Migration			Residual [1]
		Total	Natural	Migratory							In	Out	Net	
1972	113.0	1.3	1.0	1.0	2.0	1.1	0.2	0.1	0.1	0.0	4.2	3.4	0.9	-0.6
1973	114.3	0.9	0.9	0.7	1.9	1.0	0.3	0.1	0.1	0.0	4.8	4.3	0.5	-0.6
1974	115.2	1.8	0.9	1.6	1.9	1.1	0.3	0.1	0.1	0.0	5.2	3.8	1.4	-0.6
1975	117.0	1.2	0.9	1.0	1.9	1.1	0.2	0.1	0.1	0.0	4.6	3.8	0.8	-0.6
1976	118.3	1.1	0.8	0.5	1.9	1.1	0.2	0.1	0.1	0.0	4.3	4.0	0.3	-0.2
1977	119.4	1.7	0.9	0.8	2.0	1.0	0.2	0.1	0.1	0.0	3.9	3.3	0.6	0.0
1978	121.1	1.2	1.0	0.1	2.0	1.0	0.1	0.1	0.1	0.0	3.5	3.5	0.0	0.0
1979	122.3	1.0	0.9	0.0	1.9	1.0	0.3	0.1	0.1	0.0	3.4	3.6	-0.2	0.0
1980	123.3	0.1	0.9	-0.9	2.0	1.0	0.2	0.1	0.0	0.0	3.0	4.1	-1.1	0.0
1981	123.3	0.2	0.9	-0.7	1.9	1.0	0.1	0.1	0.1	0.0	3.5	4.3	-0.8	0.0
1982	123.5	0.9	0.9	0.1	1.9	1.0	0.2	0.1	0.1	0.0	3.4	3.4	0.0	-0.1
1983	124.5	1.6	0.9	0.9	1.9	1.1	0.1	0.1	0.0	0.0	3.3	2.5	0.8	-0.1
1984	126.1	1.3	0.8	0.6	2.0	1.1	0.1	0.1	0.0	0.0	3.1	2.5	0.5	-0.1
1985	127.4	0.9	0.9	0.1	2.0	1.1	0.1	0.1	0.0	0.0	2.8	2.8	0.0	-0.1
1986	128.3	0.1	0.8	-0.3	1.9	1.1	0.2	0.1	0.0	0.1	2.5	3.0	-0.5	-0.4
1987	128.4	0.7	0.8	0.5	2.0	1.1	0.2	0.0	0.0	0.0	3.1	2.8	0.3	-0.6
1988	129.1	0.9	0.9	0.6	2.0	1.1	0.2	0.1	0.0	0.0	3.5	3.1	0.4	-0.6
1989	130.0	0.3	0.8	0.1	1.9	1.1	0.2	0.1	0.0	0.0	3.3	3.4	-0.1	-0.6
1990	130.3	0.2	0.9	-0.1	2.0	1.1	0.2	0.0	0.0	0.0	2.8	3.1	-0.3	-0.6
1991	130.5	0.1	0.7	-0.3	1.9	1.2	0.2	0.1	0.0	0.0	2.9	3.3	-0.4	-0.2
1992	130.6	1.1	0.7	0.3	1.9	1.1	0.2	0.1	0.0	0.0	2.8	2.6	0.2	0.0
1993	131.7	1.3	0.6	0.7	1.8	1.1	0.2	0.1	0.0	0.0	2.5	1.9	0.5	0.0
1994	133.0	1.4	0.6	0.8	1.7	1.1	0.2	0.1	0.0	0.0	2.7	2.0	0.7	0.0
1995	134.4	1.1	0.6	0.6	1.8	1.2	0.2	0.1	0.0	0.1	2.6	2.2	0.4	0.0
1996	135.5	1.0	0.4	0.6	1.7	1.3	0.2	0.1	0.0	0.1	2.7	2.3	0.4	0.0
1997 PR	136.5	0.1	0.6	-0.5	1.6	1.0	0.1	0.1	0.0	-0.1	2.6	3.1	-0.5	...
1998 PR	136.6	0.2	0.4	-0.2	1.6	1.2	0.1	0.1	0.0	0.0	3.0	3.2	-0.3	...
1999 PP	136.9	..	..	..	..	..	..	..	..	..	..	..	..	...

RATES (per 1,000)

Year	Population as of January 1st (in thousands)	Growth			Fertility	Death	Immigration	Emigration	Returning Canadians	Non-permanent Residents	Interprovincial Migration		
		Total	Natural	Migratory							In	Out	Net
1972	113.0	11.56	8.43	8.77	17.69	9.26	1.54	0.92	0.56	0.03	37.36	29.81	7.55
1973	114.3	7.96	7.55	6.00	16.44	8.89	2.38	1.11	0.52	0.03	41.96	37.79	4.17
1974	115.2	15.86	7.33	14.05	16.70	9.37	2.68	1.09	0.51	0.01	44.46	32.52	11.94
1975	117.0	10.47	7.40	8.52	16.39	8.98	2.00	0.94	0.49	0.05	39.19	32.27	6.92
1976	118.3	9.33	7.12	4.21	16.34	9.22	1.98	0.85	0.49	-0.01	36.25	33.65	2.60
1977	119.4	14.42	7.68	6.34	16.38	8.70	1.60	0.80	0.43	0.00	32.30	27.20	5.11
1978	121.1	9.57	8.14	1.02	16.31	8.17	1.19	0.82	0.44	0.00	28.62	28.42	0.21
1979	122.3	8.11	7.43	0.29	15.75	8.32	2.35	0.70	0.42	0.05	27.65	29.48	-1.83
1980	123.3	0.49	7.49	-7.40	15.88	8.39	1.53	0.57	0.33	0.08	24.58	33.36	-8.78
1981	123.3	1.74	7.33	-5.29	15.37	8.04	1.04	0.69	0.41	0.30	28.12	34.46	-6.34
1982	123.5	7.52	7.61	0.70	15.52	7.90	1.33	0.76	0.48	-0.30	27.09	27.14	-0.05
1983	124.5	12.87	6.84	6.81	15.22	8.38	0.84	0.89	0.38	0.10	26.17	19.80	6.38
1984	126.1	10.38	6.67	4.48	15.42	8.75	0.86	0.72	0.34	-0.13	24.23	20.10	4.13
1985	127.4	6.70	7.02	0.45	15.71	8.68	0.88	0.67	0.34	0.00	22.13	22.23	-0.10
1986	128.3	1.05	6.29	-2.28	15.02	8.74	1.31	0.56	0.34	0.48	19.45	23.29	-3.84
1987	128.4	5.68	6.52	3.68	15.18	8.67	1.23	0.29	0.19	0.20	23.96	21.62	2.34
1988	129.1	6.71	6.68	4.52	15.26	8.58	1.18	0.49	0.37	0.19	26.86	23.59	3.27
1989	130.0	2.46	6.52	0.41	14.88	8.37	1.22	0.50	0.23	0.25	25.69	26.48	-0.78
1990	130.3	1.30	6.68	-0.92	15.44	8.77	1.35	0.25	0.11	-0.03	21.73	23.82	-2.09
1991	130.5	0.93	5.34	-2.50	14.44	9.10	1.15	0.78	0.32	-0.02	22.12	25.30	-3.18
1992	130.6	8.17	5.61	2.65	14.11	8.49	1.15	0.65	0.27	0.11	21.57	19.80	1.77
1993	131.7	9.76	4.60	5.25	13.26	8.65	1.24	0.53	0.29	0.23	18.57	14.55	4.02
1994	133.0	10.62	4.50	6.21	12.84	8.33	1.20	0.55	0.28	0.10	20.17	14.98	5.19
1995	134.4	8.49	4.45	4.13	13.00	8.54	1.19	0.56	0.28	0.49	18.96	16.23	2.73
1996	135.5	7.32	3.13	4.23	12.45	9.32	1.12	0.55	0.26	0.44	20.05	17.10	2.95
1997 PR	136.5	0.70	4.10	-3.40	11.64	7.54	1.09	0.56	0.27	-0.78	19.26	22.68	-3.41
1998 PR	136.6	1.78	2.96	-1.18	11.44	8.48	0.94	0.53	0.27	0.23	21.61	23.70	-2.09
1999 PP	136.9	..	..	..	..	..	..	..	..	..	..	..	..

See notes at the end of Table 1.

Table A1. Population as of January 1st and Population Growth Components, Provinces and Territories, 1972-1999

NOVA SCOTIA

NUMBERS (in thousands)

Year	Population as of January 1st	Growth			Births	Deaths	Immigration	Emigration	Returning Canadians	Non-permanent Residents (net)	Interprovincial Migration			Residual [1]
		Total	Natural	Migratory							In	Out	Net	
1972	800.5	8.1	6.6	4.5	13.5	6.9	1.9	0.6	0.4	0.0	22.7	19.9	2.8	-3.0
1973	808.6	7.7	6.4	4.4	13.3	6.9	2.5	0.7	0.4	0.1	26.3	24.1	2.1	-3.0
1974	816.4	6.7	6.0	3.7	12.9	6.9	2.6	0.7	0.3	-0.1	27.2	25.6	1.6	-3.0
1975	823.1	9.7	6.3	6.4	13.1	6.8	2.1	0.7	0.3	0.1	25.6	21.1	4.5	-3.0
1976	832.8	5.8	5.9	2.0	12.8	7.0	1.9	0.6	0.3	-0.1	23.0	22.6	0.4	-2.0
1977	838.6	4.1	5.4	0.0	12.4	7.0	1.6	0.6	0.3	-0.1	19.9	21.2	-1.3	-1.3
1978	842.6	4.8	5.7	0.5	12.5	6.9	1.0	0.6	0.3	-0.1	19.5	19.6	-0.1	-1.3
1979	847.5	3.6	5.6	-0.6	12.4	6.8	1.3	0.5	0.3	0.1	18.4	20.3	-1.8	-1.3
1980	851.1	3.2	5.4	-0.8	12.4	7.0	1.6	0.4	0.3	0.2	18.5	21.0	-2.5	-1.3
1981	854.3	3.3	5.1	-0.8	12.1	7.0	1.4	0.5	0.3	0.6	19.3	21.7	-2.5	-1.0
1982	857.7	7.3	5.4	2.8	12.3	6.9	1.3	0.4	0.2	0.2	18.8	17.3	1.6	-0.8
1983	865.0	9.2	5.4	4.6	12.4	7.0	0.8	0.5	0.2	0.2	18.3	14.5	3.9	-0.8
1984	874.2	8.5	5.5	3.8	12.4	6.9	1.0	0.4	0.2	0.0	17.3	14.4	3.0	-0.8
1985	882.7	4.6	5.1	0.2	12.5	7.3	1.0	0.5	0.2	-0.2	16.7	16.9	-0.2	-0.8
1986	887.2	4.3	5.1	0.1	12.4	7.3	1.1	0.5	0.2	0.0	17.1	17.8	-0.7	-0.9
1987	891.5	3.1	5.0	-0.9	12.1	7.1	1.2	0.5	0.3	0.3	17.6	19.8	-2.2	-1.0
1988	894.6	5.8	4.8	2.0	12.2	7.4	1.3	0.4	0.2	0.8	19.2	19.1	0.1	-1.0
1989	900.4	6.5	5.0	2.5	12.5	7.5	1.5	0.5	0.2	0.7	20.4	19.8	0.6	-1.0
1990	907.0	5.4	5.5	0.8	12.9	7.4	1.6	0.7	0.2	-0.2	18.6	18.7	-0.1	-1.0
1991	912.3	5.0	4.8	1.6	12.0	7.3	1.5	1.0	0.3	-0.3	19.0	17.9	1.0	-1.4
1992	917.3	4.7	4.3	2.1	11.9	7.5	2.4	0.8	0.4	-0.2	18.1	17.8	0.4	-1.7
1993	922.0	3.5	4.0	1.2	11.6	7.6	3.0	0.8	0.4	-0.2	15.5	16.7	-1.1	-1.7
1994	925.5	1.5	3.3	-0.1	11.1	7.8	3.5	0.8	0.4	-0.4	15.1	17.8	-2.7	-1.7
1995	927.1	2.6	3.0	1.3	10.7	7.7	3.8	0.9	0.4	-0.1	15.4	17.4	-2.0	-1.7
1996	929.6	3.7	2.8	1.6	10.6	7.8	3.2	0.9	0.4	-0.1	16.0	17.1	-1.1	-0.7
1997 PR	933.4	1.4	1.9	-0.5	10.0	8.0	3.1	0.9	0.4	0.3	16.8	20.1	-3.4	...
1998 PR	934.8	0.8	1.6	-0.8	9.8	8.2	2.1	0.9	0.4	0.3	16.8	19.4	-2.7	...
1999 PP	935.6	..	..	..	..	..	..	..	..	..	..	..	..	...

RATES (per 1,000)

Year	Population as of January 1st (in thousands)	Growth			Fertility	Death	Immigration	Emigration	Returning Canadians	Non-permanent Residents	Interprovincial Migration		
		Total	Natural	Migratory							In	Out	Net
1972	800.5	10.07	8.24	5.61	16.82	8.58	2.33	0.73	0.44	0.05	28.21	24.67	3.54
1973	808.6	9.52	7.83	5.44	16.36	8.53	3.14	0.90	0.44	0.17	32.31	29.72	2.59
1974	816.4	8.21	7.37	4.55	15.79	8.42	3.17	0.88	0.41	-0.08	33.15	31.23	1.92
1975	823.1	11.69	7.64	7.73	15.85	8.21	2.57	0.79	0.41	0.16	30.88	25.50	5.38
1976	832.8	6.92	7.02	2.35	15.34	8.32	2.32	0.71	0.40	-0.10	27.51	27.08	0.43
1977	838.6	4.84	6.44	-0.02	14.72	8.28	1.89	0.67	0.36	-0.08	23.69	25.21	-1.52
1978	842.6	5.74	6.71	0.60	14.85	8.14	1.16	0.68	0.34	-0.10	23.07	23.20	-0.13
1979	847.5	4.28	6.55	-0.70	14.61	8.06	1.58	0.58	0.32	0.14	21.69	23.86	-2.17
1980	851.1	3.81	6.29	-0.92	14.51	8.21	1.89	0.47	0.30	0.28	21.68	24.61	-2.92
1981	854.3	3.90	5.98	-0.88	14.11	8.13	1.64	0.63	0.29	0.69	22.51	25.39	-2.88
1982	857.7	8.52	6.25	3.21	14.31	8.06	1.46	0.51	0.22	0.20	21.87	20.03	1.85
1983	865.0	10.56	6.16	5.34	14.26	8.10	0.96	0.59	0.28	0.26	21.08	16.64	4.44
1984	874.2	9.63	6.22	4.33	14.09	7.87	1.18	0.50	0.25	0.03	19.71	16.34	3.37
1985	882.7	5.15	5.80	0.27	14.07	8.27	1.10	0.57	0.27	-0.27	18.86	19.13	-0.26
1986	887.2	4.85	5.74	0.12	13.90	8.16	1.23	0.54	0.23	0.03	19.18	20.01	-0.83
1987	891.5	3.48	5.60	-1.04	13.56	7.96	1.37	0.58	0.28	0.33	19.68	22.12	-2.44
1988	894.6	6.43	5.31	2.18	13.57	8.26	1.45	0.48	0.24	0.90	21.38	21.31	0.08
1989	900.4	7.25	5.55	2.75	13.87	8.32	1.63	0.56	0.25	0.80	22.56	21.93	0.63
1990	907.0	5.90	6.03	0.93	14.15	8.12	1.72	0.76	0.26	-0.17	20.43	20.54	-0.12
1991	912.3	5.47	5.20	1.79	13.13	7.93	1.64	1.06	0.37	-0.29	20.73	19.59	1.14
1992	917.3	5.08	4.71	2.23	12.91	8.20	2.57	0.90	0.39	-0.21	19.73	19.34	0.39
1993	922.0	3.79	4.34	1.30	12.52	8.18	3.26	0.87	0.40	-0.27	16.79	18.03	-1.24
1994	925.5	1.66	3.59	-0.09	11.98	8.39	3.74	0.89	0.41	-0.44	16.33	19.24	-2.91
1995	927.1	2.79	3.27	1.35	11.55	8.28	4.06	0.92	0.42	-0.08	16.59	18.72	-2.12
1996	929.6	4.01	3.02	1.75	11.34	8.32	3.46	0.93	0.42	-0.06	17.21	18.35	-1.14
1997 PR	933.4	1.52	2.04	-0.52	10.65	8.61	3.30	0.96	0.43	0.30	17.94	21.53	-3.59
1998 PR	934.8	0.84	1.69	-0.86	10.48	8.79	2.23	0.97	0.44	0.31	17.92	20.79	-2.87
1999 PP	935.6	..	..	..	..	..	..	..	..	..	..	..	..

See notes at the end of Table 1.

Table A1. Population as of January 1st and Population Growth Components, Provinces and Territories, 1972-1999

NEW BRUNSWICK

NUMBERS (in thousands)

Year	Population as of January 1st	Growth			Births	Deaths	Immigration	Emigration	Returning Canadians	Non-permanent Residents (net)	Interprovincial Migration			Residual [1]
		Total	Natural	Migratory							In	Out	Net	
1972	646.3	6.2	6.8	1.2	11.8	5.0	1.3	1.1	0.6	0.0	18.2	17.9	0.2	-1.8
1973	652.5	8.5	6.3	4.0	11.4	5.1	1.7	1.3	0.7	0.1	22.7	19.9	2.8	-1.8
1974	661.0	10.1	6.2	5.7	11.4	5.2	2.2	1.3	0.6	0.0	22.9	18.7	4.2	-1.8
1975	671.1	14.0	6.6	9.2	11.8	5.2	2.1	1.2	0.6	0.1	24.2	16.6	7.6	-1.8
1976	685.2	8.1	6.6	2.9	11.8	5.2	1.8	1.1	0.6	0.0	18.9	17.3	1.6	-1.4
1977	693.3	5.0	6.3	-0.2	11.5	5.2	1.2	1.0	0.5	0.0	15.5	16.4	-0.9	-1.1
1978	698.3	3.0	5.6	-1.5	10.8	5.2	0.7	1.1	0.5	0.0	14.3	16.0	-1.6	-1.1
1979	701.3	3.2	5.7	-1.4	10.8	5.2	1.1	0.9	0.5	0.1	14.3	16.5	-2.2	-1.1
1980	704.6	1.2	5.3	-3.0	10.6	5.3	1.2	0.7	0.5	0.2	13.2	17.4	-4.2	-1.1
1981	705.8	0.1	5.4	-4.0	10.5	5.1	1.0	1.1	0.5	0.4	13.8	18.6	-4.8	-1.3
1982	705.9	5.9	5.3	2.1	10.5	5.2	0.8	1.0	0.4	-0.2	14.8	12.7	2.2	-1.5
1983	711.8	6.2	5.3	2.4	10.5	5.2	0.6	0.8	0.4	0.0	13.2	10.9	2.3	-1.5
1984	718.0	4.5	5.1	0.9	10.4	5.3	0.6	0.9	0.4	-0.1	12.0	11.2	0.8	-1.5
1985	722.5	1.9	4.9	-1.5	10.1	5.2	0.6	1.0	0.5	0.0	11.5	13.1	-1.6	-1.5
1986	724.4	1.2	4.3	-2.6	9.8	5.5	0.6	0.9	0.4	0.1	11.4	14.3	-2.9	-0.5
1987	725.6	3.0	4.2	-1.4	9.6	5.4	0.6	0.8	0.4	0.1	13.2	15.0	-1.8	0.2
1988	728.6	4.0	4.2	-0.4	9.6	5.5	0.7	0.8	0.4	0.6	13.7	14.9	-1.2	0.2
1989	732.5	4.8	4.2	0.5	9.7	5.5	0.9	0.9	0.4	0.1	15.0	15.0	0.0	0.2
1990	737.4	5.9	4.4	1.3	9.8	5.4	0.8	0.9	0.4	-0.1	14.2	13.2	1.0	0.2
1991	743.2	3.6	4.0	0.1	9.5	5.5	0.7	0.9	0.4	-0.1	12.8	12.9	-0.1	-0.6
1992	746.8	1.7	3.8	-1.0	9.4	5.6	0.8	0.9	0.5	-0.2	12.0	13.1	-1.1	-1.1
1993	748.5	1.8	3.2	-0.4	9.0	5.8	0.7	0.9	0.4	-0.1	11.0	11.5	-0.5	-1.1
1994	750.3	1.4	3.1	-0.6	9.0	5.9	0.6	1.0	0.5	-0.2	10.7	11.2	-0.5	-1.1
1995	751.6	0.7	2.6	-0.8	8.6	5.9	0.6	1.0	0.5	0.0	11.2	12.1	-0.9	-1.1
1996	752.3	1.0	2.3	-0.9	8.2	5.9	0.7	1.0	0.5	-0.1	11.1	12.0	-0.9	-0.5
1997 PR	753.3	0.6	2.0	-1.4	7.9	5.9	0.7	1.0	0.5	0.1	13.3	14.9	-1.7	...
1998 PR	753.9	-1.0	1.6	-2.5	7.7	6.2	0.8	1.1	0.5	0.1	12.2	15.0	-2.8	...
1999 PP	752.9	..	..	..	..	..	..	..	..	..	..	..	..	...

RATES (per 1,000)

Year	Population as of January 1st (in thousands)	Growth			Fertility	Death	Immigration	Emigration	Returning Canadians	Non-permanent Residents	Interprovincial Migration		
		Total	Natural	Migratory							In	Out	Net
1972	646.3	9.49	10.51	1.78	18.18	7.67	2.00	1.65	0.99	0.07	28.00	27.63	0.37
1973	652.5	12.97	9.65	6.08	17.40	7.74	2.63	2.02	0.99	0.15	34.56	30.23	4.33
1974	661.0	15.19	9.37	8.55	17.18	7.81	3.31	1.97	0.92	-0.01	34.37	28.07	6.29
1975	671.1	20.67	9.79	13.56	17.38	7.59	3.09	1.75	0.91	0.15	35.63	24.46	11.17
1976	685.2	11.79	9.59	4.21	17.14	7.55	2.54	1.57	0.88	-0.03	27.47	25.09	2.38
1977	693.3	7.25	9.10	-0.31	16.55	7.45	1.66	1.48	0.78	-0.01	22.22	23.50	-1.27
1978	698.3	4.31	8.01	-2.18	15.42	7.41	0.94	1.51	0.76	-0.03	20.48	22.83	-2.35
1979	701.3	4.62	8.07	-1.94	15.43	7.36	1.63	1.29	0.72	0.16	20.29	23.44	-3.16
1980	704.6	1.76	7.57	-4.30	15.08	7.51	1.71	1.05	0.67	0.28	18.76	24.67	-5.91
1981	705.8	0.08	7.60	-5.66	14.88	7.28	1.40	1.50	0.64	0.55	19.61	26.36	-6.75
1982	705.9	8.34	7.47	2.99	14.80	7.33	1.06	1.44	0.56	-0.28	20.93	17.85	3.08
1983	711.8	8.67	7.43	3.33	14.71	7.28	0.77	1.10	0.50	-0.05	18.41	15.20	3.21
1984	718.0	6.21	7.06	1.22	14.38	7.32	0.83	1.19	0.60	-0.15	16.67	15.54	1.13
1985	722.5	2.64	6.76	-2.05	13.99	7.23	0.84	1.33	0.62	-0.04	15.94	18.09	-2.16
1986	724.4	1.67	5.97	-3.59	13.50	7.53	0.88	1.28	0.61	0.20	15.72	19.71	-4.00
1987	725.6	4.07	5.75	-1.91	13.19	7.44	0.88	1.16	0.59	0.20	18.17	20.59	-2.42
1988	728.6	5.45	5.70	-0.49	13.16	7.46	0.93	1.15	0.56	0.83	18.76	20.42	-1.66
1989	732.5	6.57	5.68	0.66	13.15	7.48	1.23	1.20	0.56	0.10	20.44	20.47	-0.03
1990	737.4	7.91	5.94	1.74	13.27	7.33	1.14	1.19	0.56	-0.14	19.13	17.76	1.37
1991	743.2	4.77	5.41	0.12	12.75	7.34	0.92	1.15	0.56	-0.10	17.24	17.35	-0.11
1992	746.8	2.28	5.06	-1.33	12.56	7.50	1.01	1.26	0.61	-0.22	16.10	17.55	-1.45
1993	748.5	2.37	4.33	-0.51	12.08	7.75	0.93	1.24	0.60	-0.15	14.73	15.39	-0.66
1994	750.3	1.83	4.08	-0.80	11.96	7.88	0.83	1.29	0.60	-0.28	14.29	14.97	-0.67
1995	751.6	0.93	3.49	-1.12	11.39	7.90	0.84	1.32	0.62	-0.01	14.90	16.14	-1.24
1996	752.3	1.28	3.03	-1.15	10.86	7.83	0.95	1.33	0.63	-0.18	14.70	15.91	-1.21
1997 PR	753.3	0.73	2.62	-1.89	10.51	7.89	0.93	1.37	0.63	0.17	17.59	19.83	-2.24
1998 PR	753.9	-1.29	2.06	-3.36	10.27	8.21	1.02	1.40	0.66	0.13	16.19	19.95	-3.76
1999 PP	752.9	..	..	..	..	..	..	..	..	..	..	..	..

See notes at the end of Table 1.

Table A1. Population as of January 1st and Population Growth Components, Provinces and Territories, 1972-1999

QUEBEC

NUMBERS (in thousands)

Year	Population as of January 1st	Growth			Births	Deaths	Immigration	Emigration	Returning Canadians	Non-permanent Residents (net)	Interprovincial Migration			Residual [1]
		Total	Natural	Migratory							In	Out	Net	
1972	6,153.4	37.5	41.3	-5.0	83.6	42.3	18.6	11.0	6.6	0.7	36.2	56.0	-19.9	1.2
1973	6,190.9	49.5	41.4	7.0	84.1	42.7	26.9	13.5	6.7	1.7	39.6	54.4	-14.7	1.2
1974	6,240.4	58.3	42.9	14.3	85.6	42.8	33.5	13.3	6.3	-0.3	39.3	51.2	-11.9	1.2
1975	6,298.7	63.1	50.2	11.8	93.6	43.4	28.0	12.0	6.3	1.7	34.5	46.8	-12.3	1.2
1976	6,361.8	52.1	53.3	3.4	96.3	43.0	29.3	10.8	6.2	-0.5	31.6	52.4	-20.8	-4.6
1977	6,413.9	12.7	53.7	-32.3	97.2	43.5	19.2	10.3	5.5	-0.3	24.4	71.0	-46.5	-8.7
1978	6,426.6	18.4	51.8	-24.8	95.4	43.6	14.3	10.5	5.4	-0.5	24.5	57.9	-33.4	-8.7
1979	6,445.0	34.0	55.3	-12.7	98.6	43.3	19.5	9.0	5.1	1.8	23.6	53.7	-30.0	-8.7
1980	6,479.0	44.0	53.9	-1.2	97.4	43.5	22.5	7.4	4.7	3.3	21.9	46.2	-24.3	-8.7
1981	6,523.0	42.3	52.6	-0.2	95.3	42.7	21.2	7.8	4.2	4.8	23.6	46.1	-22.5	-10.1
1982	6,565.3	21.8	47.3	-14.3	90.8	43.5	21.3	9.5	4.8	-2.8	19.9	48.1	-28.2	-11.2
1983	6,587.1	26.5	43.9	-6.2	88.2	44.3	16.4	9.4	4.3	1.6	22.3	41.4	-19.1	-11.2
1984	6,613.6	31.9	43.4	-0.3	87.8	44.4	14.6	8.8	4.3	0.6	25.2	36.2	-10.9	-11.2
1985	6,645.5	39.4	40.6	9.9	86.3	45.7	14.9	7.6	4.1	4.6	25.4	31.4	-6.0	-11.2
1986	6,684.9	60.9	37.7	27.3	84.6	46.9	19.5	7.0	4.0	13.9	26.0	29.0	-3.0	-4.2
1987	6,745.8	61.3	36.2	24.2	83.8	47.6	26.8	5.8	3.5	7.1	26.0	33.4	-7.4	0.9
1988	6,807.1	79.3	38.8	39.6	86.6	47.8	25.8	5.1	3.0	22.9	27.8	34.8	-7.0	0.9
1989	6,886.4	75.3	44.1	30.4	92.4	48.3	34.2	5.5	2.9	7.2	29.5	37.8	-8.4	0.9
1990	6,961.7	71.7	49.6	21.2	98.0	48.4	40.8	5.3	2.6	-7.4	26.9	36.4	-9.6	0.9
1991	7,033.4	49.9	48.2	12.4	97.3	49.1	51.7	6.6	3.1	-22.8	24.5	37.6	-13.0	-10.7
1992	7,083.3	60.5	47.3	32.0	96.1	48.8	48.4	6.1	3.2	-3.6	25.5	35.3	-9.8	-18.9
1993	7,143.7	46.6	40.7	24.8	92.4	51.7	44.9	6.0	3.1	-9.8	24.5	32.0	-7.4	-18.9
1994	7,190.3	34.6	39.2	14.3	90.6	51.4	28.0	6.2	3.1	-0.3	22.7	33.0	-10.3	-18.9
1995	7,224.9	34.1	34.7	18.3	87.4	52.7	26.6	6.4	3.1	5.3	23.1	33.4	-10.2	-18.9
1996	7,259.0	34.6	32.9	9.6	85.2	52.3	29.7	6.5	3.1	-1.3	20.8	36.2	-15.4	-7.9
1997 PR	7,293.7	29.3	25.5	3.8	79.7	54.3	27.4	6.7	3.1	-2.2	23.3	41.1	-17.8	...
1998 PR	7,323.0	27.2	22.2	5.0	75.6	53.4	26.2	6.8	3.2	-1.6	25.5	41.4	-15.9	...
1999 PP	7,350.2	..	..	..	..	..	..	..	..	..	..	..	..	...

RATES (per 1,000)

Year	Population as of January 1st (in thousands)	Growth			Fertility	Death	Immigration	Emigration	Returning Canadians	Non-permanent Residents	Interprovincial Migration		
		Total	Natural	Migratory							In	Out	Net
1972	6,153.4	6.07	6.69	-0.81	13.55	6.86	3.01	1.78	1.07	0.12	5.86	9.08	-3.22
1973	6,190.9	7.97	6.66	1.13	13.52	6.86	4.32	2.17	1.07	0.27	6.38	8.75	-2.37
1974	6,240.4	9.30	6.84	2.28	13.66	6.82	5.34	2.12	1.00	-0.04	6.27	8.16	-1.89
1975	6,298.7	9.97	7.93	1.86	14.79	6.86	4.43	1.89	0.99	0.27	5.44	7.39	-1.95
1976	6,361.8	8.16	8.35	0.53	15.08	6.73	4.58	1.70	0.97	-0.07	4.95	8.20	-3.26
1977	6,413.9	1.98	8.37	-5.04	15.14	6.77	3.00	1.60	0.86	-0.04	3.80	11.05	-7.25
1978	6,426.6	2.85	8.05	-3.85	14.82	6.77	2.22	1.63	0.83	-0.07	3.80	9.00	-5.19
1979	6,445.0	5.26	8.56	-1.96	15.27	6.70	3.02	1.40	0.78	0.28	3.66	8.30	-4.65
1980	6,479.0	6.77	8.29	-0.19	14.99	6.69	3.47	1.14	0.72	0.50	3.37	7.11	-3.74
1981	6,523.0	6.46	8.04	-0.03	14.57	6.52	3.24	1.20	0.64	0.73	3.60	7.05	-3.45
1982	6,565.3	3.32	7.19	-2.17	13.81	6.61	3.24	1.44	0.73	-0.42	3.03	7.32	-4.28
1983	6,587.1	4.01	6.65	-0.94	13.36	6.71	2.48	1.42	0.65	0.24	3.39	6.28	-2.89
1984	6,613.6	4.82	6.54	-0.04	13.25	6.70	2.21	1.33	0.64	0.09	3.81	5.46	-1.65
1985	6,645.5	5.91	6.10	1.49	12.95	6.86	2.23	1.15	0.62	0.69	3.81	4.72	-0.90
1986	6,684.9	9.07	5.62	4.07	12.60	6.98	2.90	1.05	0.59	2.08	3.87	4.32	-0.45
1987	6,745.8	9.04	5.34	3.58	12.37	7.03	3.96	0.85	0.51	1.05	3.84	4.94	-1.09
1988	6,807.1	11.58	5.67	5.78	12.65	6.98	3.77	0.75	0.44	3.35	4.07	5.09	-1.02
1989	6,886.4	10.87	6.36	4.39	13.34	6.98	4.94	0.80	0.42	1.04	4.25	5.46	-1.21
1990	6,961.7	10.25	7.09	3.03	14.01	6.92	5.84	0.76	0.38	-1.05	3.84	5.21	-1.37
1991	7,033.4	7.07	6.83	1.75	13.79	6.96	7.33	0.93	0.44	-3.24	3.47	5.32	-1.85
1992	7,083.3	8.50	6.65	4.50	13.52	6.86	6.80	0.86	0.45	-0.51	3.58	4.96	-1.38
1993	7,143.7	6.50	5.68	3.46	12.89	7.22	6.27	0.84	0.43	-1.37	3.42	4.46	-1.04
1994	7,190.3	4.80	5.44	1.98	12.57	7.13	3.89	0.86	0.43	-0.05	3.15	4.57	-1.42
1995	7,224.9	4.71	4.79	2.52	12.07	7.28	3.67	0.88	0.43	0.73	3.19	4.61	-1.42
1996	7,259.0	4.76	4.52	1.32	11.71	7.19	4.08	0.89	0.43	-0.18	2.87	4.98	-2.11
1997 PR	7,293.7	4.01	3.49	0.53	10.91	7.42	3.75	0.92	0.42	-0.30	3.19	5.63	-2.43
1998 PR	7,323.0	3.71	3.03	0.68	10.31	7.28	3.57	0.93	0.44	-0.22	3.48	5.65	-2.17
1999 PP	7,350.2	..	..	..	..	..	..	..	..	..	..	..	..

See notes at the end of Table 1.

Table A1. Population as of January 1st and Population Growth Components, Provinces and Territories, 1972-1999

ONTARIO

NUMBERS (in thousands)

Year	Population as of January 1st	Growth			Births	Deaths	Immigration	Emigration	Returning Canadians	Non-permanent Residents (net)	Interprovincial Migration			Residual [1]
		Total	Natural	Migratory							In	Out	Net	
1972	7,906.4	107.1	66.2	60.8	125.1	58.9	63.8	30.4	17.7	1.5	97.0	88.8	8.2	-19.9
1973	8,013.5	126.4	63.9	82.4	123.8	59.9	103.2	37.7	18.1	4.1	104.2	109.4	-5.3	-19.9
1974	8,139.9	120.3	63.7	76.6	124.2	60.6	120.1	37.5	17.3	-1.2	89.5	111.7	-22.2	-19.9
1975	8,260.2	106.3	65.2	61.1	125.8	60.6	98.5	33.9	17.5	4.1	80.9	106.0	-25.1	-19.9
1976	8,366.5	91.4	62.1	46.3	122.7	60.6	72.0	30.8	17.3	-1.7	88.7	99.2	-10.5	-17.0
1977	8,457.9	96.6	61.3	50.2	122.8	61.4	56.6	29.2	15.4	-1.2	98.6	90.0	8.6	-15.0
1978	8,554.5	71.0	59.8	26.1	121.0	61.1	42.4	30.1	15.2	-1.7	86.6	86.2	0.4	-15.0
1979	8,625.5	74.4	60.2	29.2	121.7	61.5	52.0	25.9	14.4	4.0	83.5	98.9	-15.3	-15.0
1980	8,699.9	72.4	60.6	26.8	123.3	62.7	62.3	21.2	13.0	7.6	74.2	109.1	-34.9	-15.0
1981	8,772.3	94.1	59.3	41.9	122.2	62.8	55.0	22.9	11.9	17.5	80.6	100.2	-19.7	-7.2
1982	8,866.4	117.8	61.2	58.3	124.9	63.7	53.0	27.7	13.4	-0.1	89.1	69.5	19.6	-1.7
1983	8,984.2	121.0	62.3	60.3	126.8	64.5	40.0	26.5	12.3	1.7	88.2	55.4	32.8	-1.7
1984	9,105.1	128.7	66.6	63.8	131.3	64.7	41.5	24.8	11.9	-1.6	89.1	52.4	36.7	-1.7
1985	9,233.9	129.6	65.5	65.8	132.2	66.7	40.7	24.1	12.4	3.4	88.4	54.9	33.4	-1.7
1986	9,363.5	172.7	66.0	107.0	133.9	67.9	49.6	21.7	11.4	24.7	100.1	57.1	42.9	-0.3
1987	9,536.2	205.8	66.5	138.7	134.6	68.1	84.8	19.4	10.8	22.2	104.7	64.4	40.3	0.6
1988	9,741.9	234.6	67.4	166.6	138.1	70.7	89.0	16.8	9.5	70.0	91.4	76.5	14.9	0.6
1989	9,976.5	218.0	74.4	143.0	145.3	70.9	104.8	17.5	9.3	47.6	87.3	88.5	-1.2	0.6
1990	10,194.5	164.8	80.1	84.1	150.9	70.8	113.4	16.6	8.4	-6.0	75.2	90.3	-15.1	0.6
1991	10,359.2	127.0	78.6	60.6	151.5	72.9	118.8	20.6	9.9	-37.5	71.2	81.2	-10.0	-12.2
1992	10,486.2	144.4	77.4	88.4	150.6	73.2	138.2	18.9	9.9	-27.2	68.0	81.5	-13.5	-21.4
1993	10,630.6	120.2	72.0	69.6	147.8	75.9	134.3	18.9	9.6	-42.6	62.3	75.1	-12.8	-21.4
1994	10,750.8	138.7	69.6	90.6	147.1	77.5	117.3	19.5	9.6	-12.2	66.0	70.5	-4.5	-21.4
1995	10,889.5	139.5	67.8	93.1	146.3	78.5	115.6	20.1	9.7	-10.2	68.5	70.3	-1.8	-21.4
1996	11,029.0	144.1	60.9	92.1	140.0	79.1	119.8	20.4	9.7	-15.3	67.0	68.7	-1.7	-8.9
1997 PR	11,173.1	161.1	53.5	107.6	133.0	79.5	117.4	21.2	9.8	-3.6	76.0	70.9	5.1	...
1998 PR	11,334.2	135.3	50.2	85.1	134.0	83.7	92.6	21.4	10.1	-6.5	83.6	73.4	10.2	...
1999 PP	11,469.4	..	..	..	..	..	..	..	..	..	..	..	..	...

RATES (per 1,000)

Year	Population as of January 1st (in thousands)	Growth			Fertility	Death	Immigration	Emigration	Returning Canadians	Non-permanent Residents	Interprovincial Migration		
		Total	Natural	Migratory							In	Out	Net
1972	7,906.4	13.45	8.31	7.64	15.71	7.40	8.02	3.81	2.22	0.18	12.19	11.16	1.03
1973	8,013.5	15.65	7.91	10.20	15.33	7.41	12.78	4.66	2.24	0.51	12.90	13.55	-0.65
1974	8,139.9	14.67	7.76	9.34	15.15	7.38	14.65	4.57	2.11	-0.14	10.91	13.62	-2.70
1975	8,260.2	12.79	7.84	7.34	15.13	7.29	11.84	4.08	2.10	0.49	9.74	12.75	-3.01
1976	8,366.5	10.86	7.38	5.51	14.59	7.21	8.56	3.66	2.05	-0.20	10.54	11.79	-1.25
1977	8,457.9	11.35	7.21	5.90	14.43	7.22	6.65	3.44	1.82	-0.14	11.59	10.58	1.01
1978	8,554.5	8.27	6.97	3.04	14.08	7.11	4.94	3.51	1.77	-0.20	10.08	10.03	0.05
1979	8,625.5	8.59	6.95	3.37	14.04	7.10	6.00	2.99	1.66	0.46	9.64	11.41	-1.77
1980	8,699.9	8.29	6.93	3.07	14.12	7.18	7.13	2.43	1.49	0.87	8.49	12.49	-4.00
1981	8,772.3	10.67	6.73	4.75	13.85	7.13	6.24	2.59	1.35	1.99	9.14	11.37	-2.23
1982	8,866.4	13.20	6.85	6.53	13.99	7.14	5.94	3.10	1.50	-0.01	9.99	7.79	2.20
1983	8,984.2	13.37	6.89	6.67	14.02	7.13	4.43	2.93	1.35	0.19	9.75	6.12	3.63
1984	9,105.1	14.04	7.26	6.96	14.32	7.06	4.53	2.71	1.30	-0.17	9.71	5.71	4.00
1985	9,233.9	13.94	7.04	7.08	14.22	7.18	4.38	2.60	1.33	0.37	9.50	5.91	3.59
1986	9,363.5	18.27	6.99	11.32	14.17	7.18	5.25	2.29	1.21	2.61	10.59	6.05	4.54
1987	9,536.2	21.35	6.90	14.38	13.97	7.07	8.80	2.01	1.12	2.30	10.86	6.68	4.18
1988	9,741.9	23.79	6.83	16.89	14.00	7.17	9.03	1.70	0.96	7.10	9.27	7.76	1.51
1989	9,976.5	21.61	7.38	14.17	14.41	7.03	10.39	1.74	0.92	4.72	8.65	8.77	-0.12
1990	10,194.5	16.03	7.79	8.18	14.69	6.89	11.04	1.62	0.81	-0.58	7.32	8.79	-1.47
1991	10,359.2	12.18	7.54	5.82	14.53	7.00	11.40	1.97	0.95	-3.60	6.83	7.79	-0.96
1992	10,486.2	13.68	7.33	8.38	14.26	6.93	13.09	1.79	0.94	-2.57	6.44	7.72	-1.28
1993	10,630.6	11.24	6.73	6.51	13.83	7.10	12.56	1.77	0.90	-3.99	5.83	7.02	-1.19
1994	10,750.8	12.82	6.43	8.37	13.59	7.16	10.84	1.81	0.89	-1.13	6.10	6.52	-0.42
1995	10,889.5	12.72	6.19	8.49	13.35	7.16	10.54	1.84	0.88	-0.93	6.25	6.41	-0.16
1996	11,029.0	12.98	5.49	8.30	12.61	7.13	10.79	1.84	0.88	-1.38	6.03	6.19	-0.15
1997 PR	11,173.1	14.31	4.75	9.56	11.82	7.07	10.43	1.88	0.87	-0.32	6.76	6.30	0.46
1998 PR	11,334.2	11.87	4.41	7.46	11.75	7.34	8.13	1.88	0.88	-0.57	7.33	6.44	0.90
1999 PP	11,469.4	..	..	..	..	..	..	..	..	..	..	..	..

See notes at the end of Table 1.

Table A1. Population as of January 1st and Population Growth Components, Provinces and Territories, 1972-1999

MANITOBA

NUMBERS (in thousands)

Year	Population as of January 1st	Growth			Births	Deaths	Immigration	Emigration	Returning Canadians	Non-permanent Residents (net)	Interprovincial Migration			Residual [1]
		Total	Natural	Migratory							In	Out	Net	
1972	998.9	3.7	9.2	-3.3	17.4	8.2	5.3	2.4	1.4	0.1	26.1	33.8	-7.7	-2.2
1973	1,002.6	9.8	8.8	3.2	17.0	8.2	6.6	2.9	1.4	0.2	33.8	36.0	-2.2	-2.2
1974	1,012.4	7.1	8.9	0.4	17.3	8.4	7.4	2.9	1.4	-0.1	30.2	35.6	-5.4	-2.2
1975	1,019.5	8.6	8.8	2.0	17.1	8.4	7.1	2.6	1.4	0.2	28.4	32.5	-4.1	-2.2
1976	1,028.1	6.3	8.5	0.7	16.7	8.3	5.5	2.3	1.3	-0.1	25.1	28.7	-3.7	-2.9
1977	1,034.5	5.3	8.5	0.2	16.7	8.2	5.1	2.2	1.2	-0.1	21.6	25.3	-3.8	-3.4
1978	1,039.8	-2.5	8.1	-7.2	16.4	8.3	3.6	2.3	1.2	-0.1	18.7	28.2	-9.6	-3.4
1979	1,037.3	-4.9	8.0	-9.5	16.2	8.2	4.9	1.9	1.1	0.2	18.8	32.6	-13.8	-3.4
1980	1,032.4	0.3	7.6	-3.8	16.0	8.4	7.7	1.6	1.0	0.4	19.0	30.4	-11.3	-3.4
1981	1,032.8	7.7	7.4	1.5	16.1	8.6	5.4	2.0	1.0	0.7	22.7	26.3	-3.6	-1.2
1982	1,040.5	13.6	7.6	5.7	16.1	8.5	4.9	1.7	0.8	0.2	20.9	19.4	1.5	0.3
1983	1,054.1	12.7	8.1	4.2	16.6	8.5	4.0	2.1	1.0	0.4	18.5	17.5	1.0	0.3
1984	1,066.7	11.6	8.4	3.0	16.7	8.3	3.9	1.6	0.8	-0.2	17.2	17.2	0.0	0.3
1985	1,078.4	9.4	8.3	0.7	17.1	8.8	3.4	1.8	0.9	-0.1	17.2	19.0	-1.8	0.3
1986	1,087.7	6.9	8.1	-0.1	17.0	8.9	3.7	1.9	0.9	0.2	17.4	20.5	-3.0	-1.1
1987	1,094.6	5.2	8.2	-1.0	17.0	8.7	4.8	2.0	0.9	0.1	18.1	22.9	-4.8	-2.1
1988	1,099.8	1.7	7.9	-4.1	17.0	9.1	5.0	2.0	0.8	0.7	16.1	24.7	-8.6	-2.1
1989	1,101.5	1.3	8.5	-5.1	17.3	8.8	6.1	2.4	1.0	0.2	17.1	27.1	-10.0	-2.1
1990	1,102.8	3.4	8.5	-3.0	17.4	8.9	6.6	2.1	0.9	0.2	16.9	25.5	-8.6	-2.1
1991	1,106.3	4.0	8.3	-3.3	17.3	8.9	5.6	2.2	1.2	-0.4	16.1	23.6	-7.6	-1.0
1992	1,110.3	4.6	7.6	-2.8	16.6	9.0	5.1	2.1	1.1	-0.4	15.9	22.3	-6.4	-0.3
1993	1,114.9	5.2	7.4	-1.9	16.7	9.3	4.9	2.2	1.1	-0.4	14.6	19.8	-5.2	-0.3
1994	1,120.1	5.7	7.3	-1.4	16.5	9.1	4.1	2.3	1.1	-0.2	15.4	19.4	-4.0	-0.3
1995	1,125.8	5.0	6.5	-1.2	16.1	9.7	3.5	2.4	1.1	-0.1	15.5	18.9	-3.3	-0.3
1996	1,130.8	4.5	6.0	-1.4	15.5	9.5	3.9	2.4	1.1	-0.3	14.4	18.1	-3.7	-0.1
1997 PR	1,135.3	0.9	5.1	-4.2	14.7	9.5	3.9	2.5	1.1	0.2	14.3	21.3	-7.0	...
1998 PR	1,136.2	4.0	5.0	-1.0	14.8	9.8	3.0	2.5	1.2	0.0	19.0	21.6	-2.6	...
1999 PP	1,140.2	..	..	..	..	..	..	..	..	..	..	..	..	...

RATES (per 1,000)

Year	Population as of January 1st (in thousands)	Growth			Fertility	Death	Immigration	Emigration	Returning Canadians	Non-permanent Residents	Interprovincial Migration		
		Total	Natural	Migratory							In	Out	Net
1972	998.9	3.68	9.17	-3.34	17.38	8.22	5.26	2.37	1.43	0.08	26.09	33.82	-7.73
1973	1,002.6	9.71	8.70	3.15	16.84	8.14	6.57	2.90	1.43	0.23	33.53	35.71	-2.18
1974	1,012.4	7.04	8.74	0.41	17.04	8.30	7.31	2.84	1.34	-0.07	29.72	35.04	-5.32
1975	1,019.5	8.40	8.56	1.95	16.75	8.19	6.97	2.53	1.33	0.22	27.72	31.76	-4.04
1976	1,028.1	6.15	8.21	0.72	16.22	8.01	5.34	2.27	1.30	-0.10	24.30	27.84	-3.54
1977	1,034.5	5.13	8.23	0.16	16.12	7.89	4.88	2.14	1.14	-0.07	20.78	24.43	-3.65
1978	1,039.8	-2.39	7.80	-6.93	15.79	7.99	3.44	2.19	1.12	-0.10	17.97	27.18	-9.20
1979	1,037.3	-4.72	7.75	-9.20	15.69	7.94	4.74	1.87	1.06	0.21	18.14	31.48	-13.34
1980	1,032.4	0.32	7.31	-3.71	15.48	8.17	7.44	1.52	0.94	0.41	18.44	29.43	-10.98
1981	1,032.8	7.44	7.16	1.46	15.51	8.34	5.18	1.90	0.96	0.71	21.87	25.37	-3.49
1982	1,040.5	13.01	7.29	5.41	15.40	8.11	4.71	1.65	0.77	0.15	19.94	18.51	1.43
1983	1,054.1	11.93	7.62	4.01	15.66	8.04	3.75	2.02	0.98	0.40	17.44	16.54	0.90
1984	1,066.7	10.85	7.80	2.75	15.52	7.73	3.64	1.46	0.79	-0.16	16.00	16.05	-0.05
1985	1,078.4	8.63	7.70	0.63	15.79	8.08	3.15	1.65	0.87	-0.12	15.90	17.52	-1.62
1986	1,087.7	6.31	7.42	-0.11	15.59	8.17	3.44	1.73	0.81	0.16	15.97	18.75	-2.79
1987	1,094.6	4.70	7.51	-0.90	15.45	7.94	4.37	1.86	0.84	0.07	16.51	20.84	-4.33
1988	1,099.8	1.58	7.20	-3.72	15.47	8.27	4.55	1.83	0.75	0.61	14.65	22.45	-7.80
1989	1,101.5	1.21	7.71	-4.60	15.72	8.00	5.57	2.20	0.90	0.21	15.48	24.56	-9.08
1990	1,102.8	3.11	7.69	-2.68	15.71	8.02	6.01	1.88	0.86	0.14	15.31	23.11	-7.80
1991	1,106.3	3.61	7.52	-2.99	15.59	8.07	5.09	1.95	1.07	-0.35	14.48	21.32	-6.84
1992	1,110.3	4.12	6.84	-2.48	14.91	8.07	4.57	1.91	0.98	-0.35	14.31	20.08	-5.77
1993	1,114.9	4.68	6.63	-1.72	14.95	8.32	4.36	1.99	0.95	-0.38	13.06	17.72	-4.66
1994	1,120.1	5.09	6.53	-1.21	14.68	8.15	3.67	2.06	0.95	-0.20	13.68	17.25	-3.57
1995	1,125.8	4.41	5.72	-1.08	14.28	8.56	3.14	2.11	0.97	-0.11	13.75	16.71	-2.96
1996	1,130.8	3.97	5.28	-1.22	13.66	8.38	3.47	2.13	0.98	-0.24	12.67	15.97	-3.30
1997 PR	1,135.3	0.80	4.53	-3.73	12.90	8.37	3.43	2.20	1.00	0.22	12.61	18.78	-6.17
1998 PR	1,136.2	3.55	4.41	-0.86	13.01	8.61	2.63	2.21	1.04	-0.02	16.70	19.00	-2.30
1999 PP	1,140.2	..	..	..	..	..	..	..	..	..	..	..	..

See notes at the end of Table 1.

Table A1. Population as of January 1st and Population Growth Components, Provinces and Territories, 1972-1999

SASKATCHEWAN

NUMBERS (in thousands)

Year	Population as of January 1st	Growth			Births	Deaths	Immigration	Emigration	Returning Canadians	Non-permanent Residents (net)	Interprovincial Migration			Residual [1]
		Total	Natural	Migratory							In	Out	Net	
1972	923.1	-9.5	7.9	-16.2	15.5	7.6	1.5	1.2	0.8	0.0	19.5	36.8	-17.3	-1.2
1973	913.6	-6.0	7.2	-12.0	14.8	7.6	1.9	1.5	0.7	0.1	26.2	39.4	-13.3	-1.2
1974	907.5	2.7	7.3	-3.3	15.1	7.8	2.2	1.4	0.7	0.0	28.0	32.8	-4.8	-1.2
1975	910.3	15.3	7.6	8.9	15.3	7.7	2.8	1.3	0.7	0.1	30.0	23.4	6.6	-1.2
1976	925.6	13.0	8.2	5.6	16.0	7.8	2.3	1.2	0.7	0.0	26.2	22.4	3.8	-0.8
1977	938.5	10.5	9.0	2.1	16.5	7.6	2.2	1.1	0.6	0.0	22.2	21.8	0.4	-0.5
1978	949.1	5.6	8.8	-2.7	16.6	7.7	1.6	1.1	0.6	0.0	19.3	23.0	-3.7	-0.5
1979	954.7	8.0	9.6	-1.1	16.9	7.4	2.8	1.0	0.5	0.1	21.1	24.6	-3.5	-0.5
1980	962.7	8.1	9.4	-0.8	17.1	7.7	3.6	0.8	0.5	0.2	20.7	25.0	-4.4	-0.5
1981	970.8	11.1	9.7	1.7	17.2	7.5	2.4	1.0	0.5	0.3	23.2	23.7	-0.5	-0.3
1982	981.9	12.6	9.5	3.3	17.7	8.2	2.1	1.1	0.5	0.0	21.0	19.3	1.7	-0.2
1983	994.5	13.8	10.2	3.7	17.8	7.6	1.7	1.2	0.5	0.1	19.5	17.0	2.5	-0.2
1984	1,008.3	12.6	10.3	2.5	18.0	7.7	2.2	1.1	0.5	0.2	17.3	16.6	0.7	-0.2
1985	1,021.0	6.3	10.1	-3.6	18.2	8.0	1.9	1.4	0.6	0.3	15.8	20.8	-5.0	-0.2
1986	1,027.3	2.7	9.5	-5.2	17.5	8.1	1.9	0.8	0.5	0.4	15.9	22.9	-7.0	-1.6
1987	1,030.0	-0.4	9.2	-7.0	17.0	7.8	2.1	1.0	0.5	0.4	15.7	24.7	-9.0	-2.6
1988	1,029.6	-8.1	8.7	-14.2	16.8	8.1	2.2	0.9	0.5	0.4	13.6	30.0	-16.3	-2.6
1989	1,021.4	-10.6	8.7	-16.7	16.7	7.9	2.1	1.0	0.5	0.2	15.3	33.9	-18.6	-2.6
1990	1,010.8	-8.4	8.0	-13.9	16.1	8.0	2.4	0.9	0.5	0.1	16.1	32.0	-15.9	-2.6
1991	1,002.3	-1.2	7.2	-7.9	15.3	8.1	2.5	0.9	0.5	-0.4	17.4	26.9	-9.5	-0.5
1992	1,001.2	2.4	7.2	-5.8	15.0	7.8	2.5	0.9	0.5	-0.1	17.3	25.1	-7.7	1.0
1993	1,003.5	4.2	6.1	-2.9	14.3	8.2	2.4	1.0	0.5	-0.3	16.3	20.8	-4.5	1.0
1994	1,007.7	4.2	5.7	-2.5	14.0	8.3	2.3	1.0	0.5	-0.2	16.9	20.8	-4.0	1.0
1995	1,011.9	4.4	5.0	-1.6	13.5	8.5	1.9	1.0	0.5	0.2	16.9	20.1	-3.2	1.0
1996	1,016.3	4.5	4.5	-0.5	13.3	8.8	1.8	1.0	0.5	0.1	16.8	18.7	-1.9	0.4
1997 PR	1,020.8	2.4	4.2	-1.8	12.9	8.6	1.8	1.1	0.5	0.3	17.8	21.1	-3.3	...
1998 PR	1,023.2	3.7	3.7	0.0	12.8	9.0	1.6	1.1	0.5	0.1	24.1	25.2	-1.1	...
1999 PP	1,026.9	..	..	..	..	..	..	..	..	..	..	..	..	...

RATES (per 1,000)

Year	Population as of January 1st (in thousands)	Growth			Fertility	Death	Immigration	Emigration	Returning Canadians	Non-permanent Residents	Interprovincial Migration		
		Total	Natural	Migratory							In	Out	Net
1972	923.1	-10.38	8.58	-17.62	16.85	8.26	1.65	1.30	0.82	0.05	21.22	40.05	-18.83
1973	913.6	-6.64	7.86	-13.16	16.26	8.40	2.05	1.59	0.81	0.14	28.75	43.31	-14.56
1974	907.5	3.00	8.04	-3.68	16.63	8.60	2.47	1.55	0.75	-0.03	30.81	36.13	-5.32
1975	910.3	16.66	8.27	9.73	16.63	8.36	3.09	1.38	0.74	0.14	32.66	25.52	7.14
1976	925.6	13.92	8.75	6.01	17.13	8.38	2.49	1.24	0.71	-0.05	28.15	24.05	4.10
1977	938.5	11.18	9.49	2.19	17.53	8.05	2.36	1.17	0.62	-0.03	23.52	23.11	0.41
1978	949.1	5.87	9.25	-2.88	17.39	8.14	1.64	1.19	0.61	-0.05	20.27	24.16	-3.89
1979	954.7	8.39	9.99	-1.10	17.67	7.69	2.88	1.02	0.57	0.13	22.01	25.68	-3.66
1980	962.7	8.36	9.73	-0.88	17.64	7.91	3.72	0.83	0.52	0.24	21.37	25.91	-4.53
1981	970.8	11.36	9.92	1.74	17.63	7.71	2.46	0.98	0.48	0.31	23.74	24.27	-0.53
1982	981.9	12.77	9.63	3.29	17.93	8.30	2.15	1.09	0.50	-0.03	21.29	19.53	1.76
1983	994.5	13.75	10.22	3.68	17.82	7.60	1.73	1.20	0.55	0.10	19.44	16.94	2.50
1984	1,008.3	12.46	10.16	2.46	17.75	7.60	2.12	1.07	0.49	0.19	17.08	16.36	0.72
1985	1,021.0	6.18	9.89	-3.56	17.73	7.84	1.86	1.41	0.62	0.27	15.39	20.28	-4.90
1986	1,027.3	2.63	9.19	-5.02	17.03	7.84	1.81	0.82	0.47	0.36	15.48	22.30	-6.82
1987	1,030.0	-0.42	8.96	-6.83	16.54	7.58	2.06	0.96	0.50	0.35	15.24	24.03	-8.78
1988	1,029.6	-7.93	8.45	-13.82	16.35	7.90	2.17	0.89	0.45	0.39	13.30	29.23	-15.93
1989	1,021.4	-10.46	8.59	-16.47	16.39	7.79	2.11	0.96	0.47	0.22	15.02	33.31	-18.29
1990	1,010.8	-8.39	7.99	-13.77	15.99	7.99	2.35	0.87	0.47	0.11	15.99	31.81	-15.82
1991	1,002.3	-1.18	7.19	-7.85	15.28	8.08	2.45	0.86	0.45	-0.40	17.38	26.86	-9.48
1992	1,001.2	2.35	7.19	-5.81	14.97	7.77	2.50	0.94	0.47	-0.14	17.30	25.01	-7.71
1993	1,003.5	4.15	6.07	-2.89	14.19	8.12	2.39	0.95	0.47	-0.28	16.20	20.72	-4.52
1994	1,007.7	4.19	5.67	-2.45	13.90	8.23	2.23	1.00	0.47	-0.24	16.72	20.64	-3.92
1995	1,011.9	4.32	4.93	-1.57	13.31	8.38	1.90	1.01	0.48	0.20	16.70	19.84	-3.15
1996	1,016.3	4.38	4.45	-0.47	13.06	8.61	1.79	1.03	0.48	0.12	16.48	18.31	-1.84
1997 PR	1,020.8	2.36	4.13	-1.77	12.58	8.45	1.72	1.06	0.48	0.30	17.38	20.60	-3.22
1998 PR	1,023.2	3.64	3.64	0.00	12.46	8.82	1.55	1.06	0.50	0.12	23.51	24.61	-1.11
1999 PP	1,026.9	..	..	..	..	..	..	..	..	..	..	..	..

See notes at the end of Table 1.

Table A1. Population as of January 1st and Population Growth Components, Provinces and Territories, 1972-1999

ALBERTA

NUMBERS (in thousands)

Year	Population as of January 1st	Growth			Births	Deaths	Immigration	Emigration	Returning Canadians	Non-permanent Residents (net)	Interprovincial Migration			Residual [1]
		Total	Natural	Migratory							In	Out	Net	
1972	1,680.0	30.9	18.6	11.9	29.3	10.7	8.4	7.8	4.5	0.3	60.5	54.0	6.5	0.4
1973	1,710.9	29.1	18.5	10.2	29.3	10.8	11.9	9.7	4.6	0.7	70.5	67.8	2.7	0.4
1974	1,739.9	42.6	18.6	23.7	29.8	11.3	14.3	9.7	4.4	-0.1	75.4	60.6	14.8	0.4
1975	1,782.6	56.6	20.2	36.0	31.6	11.4	16.3	8.9	4.5	0.7	76.7	53.2	23.5	0.4
1976	1,839.2	73.5	21.5	45.1	33.1	11.6	14.9	8.3	4.5	-0.2	83.5	49.3	34.2	6.9
1977	1,912.7	75.3	22.8	40.9	34.4	11.6	12.7	8.1	4.1	-0.1	82.8	50.5	32.3	11.6
1978	1,988.0	72.2	23.5	37.1	35.4	11.9	9.8	8.6	4.1	-0.2	82.6	50.6	32.0	11.6
1979	2,060.2	85.6	24.9	49.1	37.0	12.1	12.8	7.6	4.0	0.7	96.1	56.9	39.2	11.6
1980	2,145.7	102.9	27.0	64.3	39.7	12.7	18.8	6.4	3.7	1.2	106.7	59.8	46.9	11.6
1981	2,248.7	89.8	29.8	57.9	42.6	12.8	19.3	7.7	3.6	2.5	107.6	67.3	40.2	2.1
1982	2,338.5	43.8	32.1	16.4	45.0	13.0	17.9	9.2	4.1	-0.4	72.7	68.8	4.0	-4.7
1983	2,382.3	7.6	33.0	-20.7	45.6	12.6	10.7	9.2	4.0	0.0	45.9	72.1	-26.2	-4.7
1984	2,389.9	2.6	31.4	-24.1	44.1	12.7	10.7	8.3	3.9	0.2	39.3	69.9	-30.6	-4.7
1985	2,392.5	22.4	30.6	-3.5	43.8	13.2	9.0	8.5	4.3	1.2	49.9	59.5	-9.6	-4.7
1986	2,414.9	14.5	30.2	-11.8	43.7	13.6	9.7	7.3	3.7	2.5	49.5	69.8	-20.3	-3.9
1987	2,429.4	10.9	28.8	-14.6	42.1	13.3	12.0	7.3	3.8	4.6	45.3	72.9	-27.6	-3.3
1988	2,440.4	35.1	28.2	10.2	42.1	13.9	14.0	6.5	3.6	4.7	54.8	60.3	-5.5	-3.3
1989	2,475.5	44.6	29.5	18.4	43.4	13.9	16.2	6.4	3.3	1.9	64.7	61.3	3.4	-3.3
1990	2,520.1	51.7	28.9	26.1	43.0	14.1	18.9	6.6	3.1	-0.4	67.4	56.3	11.1	-3.3
1991	2,571.8	41.3	28.3	14.4	42.8	14.5	17.0	8.6	3.8	-3.3	61.2	55.7	5.5	-1.4
1992	2,613.1	40.7	27.4	13.5	42.0	14.7	17.7	7.5	3.8	-1.6	57.0	56.0	1.0	-0.1
1993	2,653.9	33.6	25.0	8.7	40.3	15.3	18.6	7.5	3.7	-3.7	49.7	52.0	-2.4	-0.1
1994	2,687.4	33.5	24.2	9.5	39.8	15.6	18.0	7.7	3.8	-1.8	51.0	53.7	-2.7	-0.1
1995	2,721.0	38.5	23.0	15.6	38.9	15.9	14.8	8.0	3.8	0.7	53.8	49.5	4.3	-0.1
1996	2,759.5	46.9	21.5	25.5	37.9	16.4	13.9	8.1	3.8	0.8	61.2	46.1	15.1	-0.1
1997 PR	2,806.4	64.7	20.5	44.2	36.9	16.5	13.2	8.4	3.9	1.7	79.2	45.4	33.8	...
1998 PR	2,871.0	73.6	20.3	53.3	37.8	17.5	11.2	8.5	4.0	0.9	97.9	52.2	45.7	...
1999 PP	2,944.6	..	..	..	..	..	..	..	..	..	..	..	..	...

RATES (per 1,000)

Year	Population as of January 1st (in thousands)	Growth			Fertility	Death	Immigration	Emigration	Returning Canadians	Non-permanent Residents	Interprovincial Migration		
		Total	Natural	Migratory							In	Out	Net
1972	1,680.0	18.21	10.96	7.03	17.27	6.31	4.95	4.59	2.66	0.15	35.70	31.85	3.86
1973	1,710.9	16.85	10.74	5.89	16.97	6.24	6.90	5.64	2.68	0.38	40.86	39.29	1.56
1974	1,739.9	24.21	10.54	13.45	16.93	6.39	8.11	5.51	2.52	-0.08	42.82	34.41	8.41
1975	1,782.6	31.26	11.17	19.88	17.46	6.29	8.99	4.92	2.49	0.36	42.35	29.40	12.96
1976	1,839.2	39.19	11.45	24.06	17.62	6.17	7.94	4.41	2.41	-0.12	44.51	26.27	18.24
1977	1,912.7	38.60	11.69	20.97	17.64	5.95	6.51	4.15	2.11	-0.07	42.46	25.88	16.58
1978	1,988.0	35.66	11.59	18.35	17.49	5.90	4.85	4.23	2.03	-0.11	40.79	24.98	15.80
1979	2,060.2	40.69	11.84	23.35	17.60	5.76	6.08	3.59	1.90	0.32	45.71	27.06	18.65
1980	2,145.7	46.84	12.31	29.26	18.09	5.78	8.57	2.92	1.69	0.56	48.56	27.20	21.36
1981	2,248.7	39.17	13.00	25.26	18.59	5.59	8.43	3.36	1.57	1.08	46.91	29.36	17.55
1982	2,338.5	18.55	13.59	6.95	19.08	5.49	7.60	3.88	1.73	-0.18	30.81	29.13	1.68
1983	2,382.3	3.18	13.82	-8.68	19.09	5.28	4.48	3.86	1.69	0.00	19.23	30.23	-11.00
1984	2,389.9	1.09	13.12	-10.08	18.44	5.32	4.46	3.49	1.65	0.09	16.45	29.24	-12.79
1985	2,392.5	9.33	12.72	-1.45	18.23	5.50	3.74	3.52	1.79	0.52	20.77	24.75	-3.98
1986	2,414.9	6.00	12.46	-4.86	18.06	5.60	3.99	3.02	1.53	1.02	20.44	28.82	-8.38
1987	2,429.4	4.50	11.83	-5.98	17.29	5.47	4.92	3.01	1.55	1.90	18.60	29.94	-11.33
1988	2,440.4	14.28	11.46	4.15	17.11	5.65	5.71	2.66	1.45	1.91	22.30	24.55	-2.25
1989	2,475.5	17.85	11.81	7.35	17.36	5.55	6.49	2.58	1.34	0.75	25.89	24.54	1.35
1990	2,520.1	20.32	11.37	10.25	16.89	5.53	7.44	2.59	1.21	-0.16	26.47	22.13	4.34
1991	2,571.8	15.94	10.93	5.57	16.50	5.57	6.55	3.30	1.45	-1.26	23.61	21.49	2.13
1992	2,613.1	15.47	10.39	5.13	15.96	5.57	6.72	2.84	1.45	-0.59	21.65	21.26	0.39
1993	2,653.9	12.57	9.34	3.27	15.09	5.74	6.95	2.80	1.40	-1.40	18.60	19.48	-0.88
1994	2,687.4	12.40	8.94	3.50	14.72	5.77	6.65	2.86	1.39	-0.68	18.86	19.85	-0.99
1995	2,721.0	14.04	8.40	5.69	14.20	5.80	5.41	2.91	1.38	0.26	19.63	18.08	1.55
1996	2,759.5	16.85	7.71	9.16	13.60	5.89	5.00	2.90	1.37	0.28	21.99	16.58	5.41
1997 PR	2,806.4	22.78	7.20	15.58	13.00	5.80	4.66	2.95	1.36	0.59	27.91	15.99	11.92
1998 PR	2,871.0	25.31	6.98	18.33	13.01	6.03	3.85	2.91	1.37	0.30	33.66	17.95	15.72
1999 PP	2,944.6	..	..	..	..	..	..	..	..	..	..	..	..

See notes at the end of Table 1.

Table A1. Population as of January 1st and Population Growth Components, Provinces and Territories, 1972-1999

BRITISH COLUMBIA

NUMBERS (in thousands)

Year	Population as of January 1st	Growth			Births	Deaths	Immigration	Emigration	Returning Canadians	Non-permanent Residents (net)	Interprovincial Migration			Residual [1]
		Total	Natural	Migratory							In	Out	Net	
1972	2,278.1	60.1	16.5	41.8	34.6	18.0	20.1	8.2	4.7	0.3	72.3	47.4	24.9	1.7
1973	2,338.1	71.8	16.3	53.8	34.4	18.1	27.9	10.3	4.8	0.8	87.1	56.6	30.5	1.7
1974	2,409.9	69.2	16.3	51.2	35.5	19.2	34.5	10.4	4.7	-0.2	84.2	61.5	22.7	1.7
1975	2,479.1	41.3	17.1	22.5	36.3	19.2	29.3	9.5	4.8	0.8	61.1	64.0	-2.9	1.7
1976	2,520.4	31.9	17.1	14.8	35.8	18.8	20.5	8.7	4.8	-0.3	59.3	60.8	-1.5	0.0
1977	2,552.3	43.6	18.1	26.7	36.7	18.6	15.4	8.3	4.3	-0.2	62.8	47.3	15.5	-1.2
1978	2,595.9	45.3	18.2	28.4	37.2	19.1	12.3	8.6	4.3	-0.3	65.4	44.7	20.7	-1.2
1979	2,641.2	65.2	19.2	47.3	38.4	19.2	16.6	7.4	4.1	0.8	76.6	43.4	33.2	-1.2
1980	2,706.4	83.1	20.7	63.6	40.1	19.4	24.4	6.2	3.8	1.5	80.0	39.8	40.2	-1.2
1981	2,789.6	64.7	21.6	43.7	41.5	19.9	22.1	6.6	3.4	3.3	70.4	48.8	21.6	-0.6
1982	2,854.2	34.0	22.0	12.1	42.7	20.7	19.0	8.1	3.9	-0.6	45.9	47.9	-2.0	-0.2
1983	2,888.2	37.5	23.1	14.6	42.9	19.8	14.4	8.1	3.7	0.5	43.9	39.9	4.0	-0.2
1984	2,925.7	35.2	23.2	12.1	43.9	20.7	13.2	8.7	3.8	0.4	42.0	38.5	3.5	-0.2
1985	2,960.9	27.8	21.8	6.2	43.1	21.3	12.2	8.6	3.9	1.8	42.6	45.8	-3.2	-0.2
1986	2,988.7	34.6	20.8	13.7	42.0	21.2	12.6	8.2	4.0	4.5	49.5	48.6	0.9	0.1
1987	3,023.3	59.6	20.0	39.2	41.8	21.8	18.9	6.9	3.7	5.8	60.9	43.3	17.6	0.4
1988	3,082.9	75.9	20.4	55.1	42.9	22.5	23.2	5.7	3.2	8.5	67.5	41.6	25.9	0.4
1989	3,158.8	90.1	20.8	68.9	43.8	23.0	25.3	6.0	3.2	9.0	79.4	42.0	37.4	0.4
1990	3,248.9	89.6	22.0	67.1	45.6	23.6	28.7	6.2	3.1	2.8	78.4	39.7	38.7	0.4
1991	3,338.5	85.6	21.6	59.4	45.6	24.0	32.1	6.9	3.3	-3.6	74.5	39.9	34.6	4.6
1992	3,424.1	101.4	21.5	72.2	46.2	24.6	36.7	6.7	3.4	-0.7	78.6	39.0	39.6	7.6
1993	3,525.5	103.3	20.3	75.4	46.0	25.8	45.7	6.8	3.4	-4.4	75.2	37.6	37.6	7.6
1994	3,628.9	108.7	21.1	80.0	47.0	25.9	49.0	7.1	3.4	0.2	74.5	40.1	34.4	7.6
1995	3,737.6	97.1	20.4	69.0	46.8	26.4	44.3	7.3	3.5	5.1	67.1	43.7	23.4	7.6
1996	3,834.7	90.5	18.6	68.7	46.1	27.5	52.1	7.4	3.5	2.7	62.7	44.9	17.8	3.2
1997 PR	3,925.2	68.3	17.2	51.2	44.6	27.4	47.9	7.7	3.5	1.9	59.3	53.7	5.6	...
1998 PR	3,993.5	27.9	15.5	12.4	44.6	29.1	35.9	7.7	3.6	-0.7	54.8	73.5	-18.8	...
1999 PP	4,021.4	..	..	..	..	..	..	..	..	..	..	..	..	...

RATES (per 1,000)

Year	Population as of January 1st (in thousands)	Growth			Fertility	Death	Immigration	Emigration	Returning Canadians	Non-permanent Residents	Interprovincial Migration		
		Total	Natural	Migratory							In	Out	Net
1972	2,278.1	26.02	7.17	18.10	14.97	7.81	8.71	3.56	2.03	0.13	31.34	20.54	10.80
1973	2,338.1	30.23	6.85	22.65	14.47	7.62	11.77	4.36	2.04	0.34	36.69	23.82	12.86
1974	2,409.9	28.30	6.66	20.93	14.50	7.84	14.11	4.27	1.92	-0.09	34.43	25.17	9.27
1975	2,479.1	16.54	6.85	8.99	14.51	7.66	11.71	3.81	1.92	0.32	24.46	25.60	-1.15
1976	2,520.4	12.56	6.73	5.83	14.13	7.41	8.08	3.42	1.89	-0.13	23.37	23.96	-0.59
1977	2,552.3	16.93	7.03	10.38	14.25	7.22	5.98	3.21	1.67	-0.08	24.39	18.36	6.02
1978	2,595.9	17.31	6.94	10.84	14.22	7.28	4.71	3.27	1.63	-0.12	24.98	17.07	7.90
1979	2,641.2	24.40	7.19	17.67	14.37	7.18	6.21	2.78	1.52	0.30	28.66	16.22	12.43
1980	2,706.4	30.24	7.54	23.15	14.59	7.05	8.89	2.27	1.37	0.54	29.09	14.48	14.62
1981	2,789.6	22.92	7.66	15.49	14.70	7.04	7.83	2.33	1.19	1.16	24.94	17.30	7.64
1982	2,854.2	11.83	7.68	4.23	14.89	7.21	6.62	2.81	1.34	-0.23	15.98	16.69	-0.70
1983	2,888.2	12.91	7.94	5.03	14.76	6.82	4.97	2.78	1.27	0.19	15.11	13.73	1.39
1984	2,925.7	11.95	7.89	4.12	14.92	7.03	4.48	2.96	1.28	0.12	14.27	13.08	1.19
1985	2,960.9	9.34	7.34	2.07	14.50	7.16	4.11	2.89	1.32	0.60	14.31	15.38	-1.08
1986	2,988.7	11.52	6.90	4.57	13.96	7.06	4.18	2.73	1.33	1.50	16.47	16.17	0.30
1987	3,023.3	19.53	6.55	12.85	13.70	7.14	6.20	2.26	1.22	1.92	19.95	14.18	5.77
1988	3,082.9	24.32	6.53	17.66	13.76	7.22	7.44	1.82	1.04	2.72	21.63	13.34	8.29
1989	3,158.8	28.11	6.48	21.50	13.66	7.18	7.91	1.88	1.00	2.80	24.77	13.11	11.66
1990	3,248.9	27.19	6.69	20.38	13.85	7.16	8.72	1.88	0.94	0.85	23.80	12.05	11.75
1991	3,338.5	25.33	6.40	17.56	13.49	7.09	9.49	2.05	0.98	-1.07	22.02	11.80	10.22
1992	3,424.1	29.19	6.20	20.79	13.28	7.08	10.56	1.93	0.97	-0.21	22.62	11.23	11.39
1993	3,525.5	28.89	5.66	21.09	12.87	7.20	12.78	1.91	0.94	-1.23	21.03	10.52	10.51
1994	3,628.9	29.51	5.72	21.72	12.76	7.04	13.32	1.92	0.93	0.04	20.23	10.88	9.35
1995	3,737.6	25.64	5.40	18.23	12.37	6.97	11.70	1.92	0.92	1.35	17.72	11.54	6.18
1996	3,834.7	23.33	4.79	17.71	11.89	7.10	13.42	1.90	0.90	0.70	16.17	11.58	4.59
1997 PR	3,925.2	17.26	4.34	12.92	11.26	6.92	12.09	1.93	0.89	0.47	14.97	13.57	1.40
1998 PR	3,993.5	6.95	3.87	3.08	11.12	7.25	8.96	1.93	0.91	-0.17	13.66	18.35	-4.68
1999 PP	4,021.4	..	..	..	..	..	..	..	..	..	..	..	..

See notes at the end of Table 1.

Table A1. Population as of January 1st and Population Growth Components, Provinces and Territories, 1972-1999

YUKON

NUMBERS (in thousands)

Year	Population as of January 1st	Growth			Births	Deaths	Immigration	Emigration	Returning Canadians	Non-permanent Residents (net)	Interprovincial Migration			Residual [1]
		Total	Natural	Migratory							In	Out	Net	
1972	19.7	1.1	0.3	0.7	0.5	0.1	0.1	0.1	0.0	0.0	2.8	2.2	0.6	0.1
1973	20.8	0.2	0.3	-0.2	0.4	0.1	0.1	0.1	0.0	0.0	2.3	2.6	-0.3	0.1
1974	21.0	0.6	0.4	0.1	0.5	0.1	0.1	0.1	0.0	0.0	2.8	2.7	0.1	0.1
1975	21.6	0.7	0.3	0.3	0.4	0.1	0.1	0.1	0.1	0.0	2.8	2.5	0.2	0.1
1976	22.3	0.3	0.3	-0.3	0.4	0.1	0.1	0.1	0.0	0.0	2.6	2.9	-0.4	0.3
1977	22.5	0.8	0.3	0.1	0.4	0.1	0.1	0.1	0.0	0.0	2.8	2.7	0.1	0.4
1978	23.4	0.6	0.4	-0.2	0.4	0.1	0.1	0.1	0.0	0.0	2.7	2.8	-0.2	0.4
1979	24.0	0.4	0.4	-0.4	0.5	0.1	0.1	0.1	0.0	0.0	2.4	2.8	-0.4	0.4
1980	24.3	0.4	0.3	-0.3	0.5	0.1	0.1	0.1	0.0	0.0	2.3	2.7	-0.4	0.4
1981	24.8	-0.6	0.4	-1.3	0.5	0.1	0.1	0.1	0.0	0.0	2.7	4.1	-1.4	0.3
1982	24.2	-0.6	0.4	-1.2	0.5	0.1	0.1	0.1	0.1	0.0	1.6	2.8	-1.2	0.3
1983	23.6	-0.1	0.4	-0.8	0.5	0.1	0.1	0.1	0.0	0.0	1.6	2.4	-0.8	0.3
1984	23.6	0.6	0.4	-0.1	0.5	0.1	0.0	0.1	0.0	0.0	1.6	1.7	-0.1	0.3
1985	24.2	0.2	0.3	-0.4	0.5	0.1	0.0	0.0	0.0	0.0	1.6	2.0	-0.4	0.3
1986	24.4	0.8	0.4	0.2	0.5	0.1	0.0	0.1	0.0	0.0	2.2	2.0	0.2	0.2
1987	25.1	0.7	0.4	0.2	0.5	0.1	0.1	0.1	0.0	0.0	2.3	2.2	0.1	0.2
1988	25.9	1.0	0.4	0.4	0.5	0.1	0.1	0.0	0.0	0.0	2.4	2.1	0.3	0.2
1989	26.8	0.7	0.4	0.1	0.5	0.1	0.1	0.0	0.0	0.0	2.3	2.3	0.0	0.2
1990	27.5	0.7	0.4	0.0	0.6	0.1	0.1	0.1	0.0	0.0	2.2	2.2	0.0	0.2
1991	28.2	1.2	0.5	0.6	0.6	0.1	0.1	0.1	0.0	0.0	2.4	1.9	0.5	0.2
1992	29.3	0.8	0.4	0.3	0.5	0.1	0.1	0.1	0.0	0.0	2.3	2.1	0.2	0.1
1993	30.2	-0.2	0.4	-0.7	0.5	0.1	0.1	0.1	0.0	0.0	1.6	2.4	-0.8	0.1
1994	30.0	0.3	0.3	-0.2	0.4	0.1	0.1	0.1	0.0	0.0	1.8	2.0	-0.2	0.1
1995	30.3	1.2	0.3	0.7	0.5	0.2	0.1	0.1	0.0	0.0	2.3	1.7	0.7	0.1
1996	31.5	0.6	0.3	0.3	0.4	0.1	0.1	0.1	0.0	0.0	1.9	1.7	0.2	0.1
1997 PR	32.1	0.0	0.4	-0.4	0.5	0.1	0.1	0.1	0.0	0.0	1.8	2.2	-0.4	...
1998 PR	32.1	-1.1	0.3	-1.4	0.4	0.1	0.1	0.1	0.0	0.0	1.7	3.2	-1.5	...
1999 PP	31.0	..	..	..	..	..	..	..	..	..	..	..	..	...

RATES (per 1,000)

Year	Population as of January 1st (in thousands)	Growth			Fertility	Death	Immigration	Emigration	Returning Canadians	Non-permanent Residents	Interprovincial Migration		
		Total	Natural	Migratory							In	Out	Net
1972	19.7	53.78	17.17	32.32	22.25	5.08	5.72	4.14	2.22	0.15	138.94	110.57	28.37
1973	20.8	7.61	14.79	-11.34	20.10	5.31	4.31	5.22	2.25	0.19	109.42	122.29	-12.88
1974	21.0	28.53	17.91	6.53	23.27	5.36	4.70	4.98	2.26	0.00	130.67	126.11	4.56
1975	21.6	31.02	13.50	13.50	18.61	5.11	4.43	4.47	2.28	0.23	125.46	114.42	11.04
1976	22.3	12.72	14.51	-14.15	20.00	5.49	3.26	3.97	2.19	0.00	114.32	129.95	-15.62
1977	22.5	35.21	14.29	2.92	18.87	4.58	2.27	3.70	1.87	0.00	122.28	119.79	2.48
1978	23.4	25.49	15.14	-7.10	18.90	3.76	2.41	3.76	1.78	0.00	112.16	119.69	-7.53
1979	24.0	15.82	15.49	-16.81	20.75	5.26	2.86	3.15	1.78	0.21	98.53	117.04	-18.51
1980	24.3	17.11	14.18	-13.89	19.39	5.21	3.91	2.53	1.43	0.37	93.45	110.52	-17.07
1981	24.8	-22.67	16.14	-52.21	21.90	5.76	4.49	3.51	1.67	1.35	110.58	166.79	-56.21
1982	24.2	-23.20	17.01	-51.37	21.94	4.93	2.88	4.60	2.30	-1.46	67.80	118.29	-50.49
1983	23.6	-3.52	18.09	-32.96	22.88	4.79	3.09	2.54	1.10	-0.38	65.96	100.19	-34.23
1984	23.6	24.77	17.23	-3.65	21.75	4.53	1.72	2.10	1.17	0.21	66.60	71.25	-4.65
1985	24.2	8.74	14.06	-16.36	19.13	5.07	1.48	1.77	0.95	1.32	65.37	83.71	-18.34
1986	24.4	31.47	14.95	7.55	19.51	4.56	1.98	2.14	1.37	-0.89	88.50	81.27	7.23
1987	25.1	28.73	14.50	6.82	18.74	4.23	3.14	2.31	1.49	0.59	90.50	86.59	3.92
1988	25.9	36.72	14.60	14.91	19.76	5.16	2.58	1.59	0.72	-0.04	92.90	79.66	13.24
1989	26.8	24.07	14.17	2.94	17.66	3.50	3.68	1.55	0.81	1.10	85.23	86.33	-1.10
1990	27.5	23.47	15.85	0.79	19.98	4.13	2.87	2.01	0.86	0.00	79.89	80.82	-0.93
1991	28.2	41.36	15.79	19.83	19.76	3.97	2.92	2.61	1.25	1.63	81.78	65.15	16.63
1992	29.3	28.42	13.84	9.57	17.77	3.93	4.47	2.52	1.08	-0.67	78.45	71.22	7.22
1993	30.2	-6.41	12.79	-24.13	16.88	4.09	3.42	2.13	1.10	-1.43	54.40	79.49	-25.09
1994	30.0	9.89	10.55	-5.57	14.66	4.11	3.88	2.12	1.06	-0.27	59.35	67.47	-8.13
1995	30.3	38.62	10.13	23.70	15.22	5.08	2.82	2.14	1.04	0.74	74.72	53.48	21.24
1996	31.5	20.34	10.15	8.24	13.93	3.77	2.73	2.04	1.01	-0.22	59.92	53.16	6.76
1997 PR	32.1	-1.46	10.90	-12.36	14.79	3.89	2.65	2.12	1.03	-0.44	54.78	68.26	-13.48
1998 PR	32.1	-35.62	10.15	-45.77	14.12	3.97	1.81	2.03	1.02	0.54	55.35	102.46	-47.10
1999 PP	31.0	..	..	..	..	..	..	..	..	..	..	..	..

See notes at the end of Table 1.

Table A1. Population as of January 1st and Population Growth Components, Provinces and Territories, 1972-1999

NORTHWEST TERRITORIES (Nunavut included)

NUMBERS (in thousands)

Year	Population as of January 1st	Growth			Births	Deaths	Immigration	Emigration	Returning Canadians	Non-permanent Residents (net)	Interprovincial Migration			Residual [1]
		Total	Natural	Migratory							In	Out	Net	
1972	37.8	2.2	1.0	1.1	1.2	0.3	0.2	0.0	0.0	0.0	4.4	3.5	0.9	0.1
1973	40.0	0.8	1.0	-0.3	1.2	0.2	0.2	0.0	0.0	0.0	3.6	4.0	-0.4	0.1
1974	40.8	1.3	0.8	0.3	1.0	0.2	0.2	0.0	0.0	0.0	4.3	4.2	0.2	0.1
1975	42.1	1.6	1.0	0.6	1.2	0.2	0.2	0.0	0.0	0.0	4.3	3.9	0.4	0.1
1976	43.8	0.6	1.0	-0.6	1.2	0.2	0.2	0.0	0.0	0.0	4.1	4.9	-0.8	0.3
1977	44.4	0.4	1.0	-0.9	1.2	0.2	0.1	0.0	0.0	0.0	4.4	5.4	-1.0	0.3
1978	44.8	0.5	1.0	-0.9	1.2	0.2	0.1	0.0	0.0	0.0	3.9	4.8	-1.0	0.3
1979	45.2	0.7	1.1	-0.7	1.3	0.2	0.1	0.0	0.0	0.0	3.7	4.6	-0.8	0.3
1980	45.9	0.6	1.1	-0.8	1.3	0.2	0.1	0.0	0.0	0.0	3.4	4.3	-0.9	0.3
1981	46.5	1.8	1.1	0.3	1.3	0.2	0.1	0.0	0.0	0.0	4.2	4.1	0.2	0.3
1982	48.2	2.1	1.1	0.6	1.4	0.2	0.1	0.1	0.0	0.0	3.8	3.2	0.6	0.4
1983	50.4	1.6	1.3	0.0	1.5	0.2	0.1	0.0	0.0	0.0	3.4	3.4	0.0	0.4
1984	52.0	1.7	1.2	0.1	1.4	0.2	0.1	0.0	0.0	0.0	3.5	3.5	0.1	0.4
1985	53.6	1.0	1.2	-0.6	1.4	0.2	0.1	0.1	0.0	0.0	3.4	4.0	-0.6	0.4
1986	54.6	-0.1	1.3	-1.8	1.5	0.2	0.1	0.1	0.0	0.0	3.1	4.9	-1.8	0.4
1987	54.5	0.7	1.3	-1.1	1.5	0.2	0.1	0.1	0.0	0.0	3.5	4.7	-1.2	0.5
1988	55.2	1.2	1.3	-0.7	1.6	0.2	0.1	0.1	0.0	0.1	3.5	4.3	-0.8	0.5
1989	56.4	1.4	1.2	-0.3	1.5	0.2	0.1	0.1	0.0	0.0	3.7	4.1	-0.4	0.5
1990	57.8	1.9	1.4	0.1	1.6	0.2	0.1	0.1	0.0	0.1	3.8	3.8	0.0	0.5
1991	59.7	1.9	1.4	0.2	1.6	0.2	0.1	0.1	0.0	0.0	3.7	3.6	0.1	0.3
1992	61.6	1.2	1.3	-0.3	1.6	0.3	0.1	0.1	0.0	-0.1	3.8	4.1	-0.3	0.2
1993	62.9	1.6	1.3	0.1	1.6	0.3	0.2	0.1	0.0	0.0	3.6	3.6	0.0	0.2
1994	64.4	1.6	1.3	0.0	1.6	0.2	0.1	0.1	0.0	0.0	3.7	3.8	-0.1	0.2
1995	66.0	1.0	1.4	-0.6	1.6	0.2	0.1	0.1	0.0	0.0	3.3	4.0	-0.7	0.2
1996	67.0	0.5	1.3	-0.9	1.6	0.3	0.1	0.1	0.0	0.0	3.3	4.2	-0.9	0.1
1997 PR	67.5	0.0	1.2	-1.2	1.5	0.3	0.1	0.1	0.0	0.0	3.4	4.6	-1.2	...
1998 PR	67.5	0.2	1.2	-1.0	1.4	0.3	0.1	0.1	0.0	0.0	3.7	4.7	-1.0	...
1999 PP	67.7	..	..	..	..	..	..	..	..	..	..	..	..	...

RATES (per 1,000)

Year	Population as of January 1st (in thousands)	Growth			Fertility	Death	Immigration	Emigration	Returning Canadians	Non-permanent Residents	Interprovincial Migration		
		Total	Natural	Migratory							In	Out	Net
1972	37.8	55.93	24.84	27.64	31.83	6.99	4.86	0.77	0.46	-0.03	113.20	90.07	23.12
1973	40.0	20.58	23.62	-6.36	29.78	6.16	4.40	0.96	0.47	0.02	88.53	98.82	-10.29
1974	40.8	31.21	20.15	7.83	25.11	4.96	4.82	0.92	0.36	-0.10	104.82	101.15	3.66
1975	42.1	38.36	22.32	12.92	27.35	5.03	4.49	0.84	0.42	0.00	100.13	91.29	8.84
1976	43.8	13.05	22.03	-14.73	26.84	4.81	4.02	0.75	0.45	-0.11	92.98	111.31	-18.33
1977	44.4	9.60	22.25	-20.24	26.74	4.49	2.74	0.72	0.40	-0.11	98.06	120.60	-22.55
1978	44.8	10.13	22.19	-19.55	26.74	4.55	2.53	0.71	0.33	-0.11	85.59	107.18	-21.59
1979	45.2	15.22	23.64	-15.84	28.14	4.50	3.05	0.61	0.33	-0.02	81.24	99.82	-18.58
1980	45.9	12.01	23.02	-18.30	28.17	5.15	2.01	0.50	0.28	0.02	72.96	93.08	-20.12
1981	46.5	36.98	23.35	6.33	27.49	4.14	1.92	0.36	0.17	0.91	89.30	85.60	3.69
1982	48.2	43.06	22.92	13.04	27.62	4.71	2.25	1.62	0.67	0.57	76.92	65.75	11.17
1983	50.4	31.02	24.43	-0.27	29.14	4.71	1.15	0.78	0.31	-0.27	66.41	67.10	-0.68
1984	52.0	31.26	22.87	1.74	27.36	4.49	1.42	0.85	0.36	-0.15	67.14	66.18	0.97
1985	53.6	18.54	22.60	-10.55	26.56	3.96	1.31	1.50	0.52	-0.07	63.17	73.98	-10.81
1986	54.6	-1.72	23.31	-33.01	27.62	4.31	1.23	1.39	0.51	0.04	56.61	90.01	-33.39
1987	54.5	12.70	24.17	-20.52	27.76	3.59	1.31	1.24	0.82	0.07	63.92	85.41	-21.49
1988	55.2	20.77	23.93	-12.04	27.87	3.94	1.36	0.97	0.27	1.24	63.20	77.14	-13.94
1989	56.4	24.57	21.55	-5.68	25.91	4.36	1.75	1.98	0.63	0.39	65.34	71.80	-6.47
1990	57.8	33.04	23.10	1.50	26.96	3.86	1.28	1.67	0.75	1.24	63.90	64.01	-0.10
1991	59.7	31.66	23.02	3.15	26.93	3.91	2.04	0.92	0.73	-0.07	60.19	58.82	1.37
1992	61.6	19.57	20.85	-4.76	24.97	4.11	1.78	1.03	0.58	-1.25	61.71	66.54	-4.84
1993	62.9	24.84	20.41	1.02	24.50	4.09	2.69	1.23	0.58	-0.41	55.98	56.60	-0.61
1994	64.4	23.78	20.53	-0.06	24.23	3.70	2.28	1.30	0.58	-0.64	57.32	58.30	-0.98
1995	66.0	14.68	20.85	-9.42	24.27	3.41	1.44	1.35	0.57	0.06	50.37	60.50	-10.14
1996	67.0	7.81	19.19	-12.72	23.24	4.05	1.37	1.44	0.57	0.04	48.70	61.96	-13.25
1997 PR	67.5	0.65	18.00	-17.35	21.77	3.78	1.39	1.47	0.62	0.34	50.54	68.78	-18.23
1998 PR	67.5	2.53	17.16	-14.63	21.22	4.07	0.89	1.42	0.65	0.49	54.13	69.36	-15.23
1999 PP	67.7	..	..	..	..	..	..	..	..	..	..	..	..

See notes at the end of Table 1.

Table A2. Nuptiality

Year	Nfld	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta	B.C.	Yukon	N.W.T. [1]	Canada
	Number of Marriages												
1978	3,841	939	6,560	5,310	45,936	67,491	8,232	7,139	18,277	21,388	194	216	185,523
1979	3,737	893	6,920	5,355	46,341	67,980	7,769	7,272	18,999	22,087	181	277	187,811
1980	3,783	939	6,791	5,321	44,848	68,840	7,869	7,561	20,818	23,830	200	269	191,069
1981	3,758	849	6,632	5,108	41,005	70,281	8,123	7,329	21,781	24,699	235	282	190,082
1982	3,764	855	6,486	4,923	38,354	71,595	8,264	7,491	22,312	23,831	225	260	188,360
1983	3,778	937	6,505	5,260	36,144	70,893	8,261	7,504	21,172	23,692	243	286	184,675
1984	3,567	1,057	6,798	5,294	37,433	71,922	8,393	7,213	20,052	23,397	212	259	185,597
1985	3,220	956	6,807	5,312	37,026	72,891	8,296	7,132	19,750	22,292	185	229	184,096
1986	3,421	970	6,445	4,962	33,083	70,839	7,816	6,820	18,896	21,826	183	257	175,518
1987	3,481	924	6,697	4,924	32,616	76,201	7,994	6,853	18,640	23,395	189	237	182,151
1988	3,686	965	6,894	5,292	33,519	78,533	7,908	6,767	19,272	24,461	209	222	187,728
1989	3,905	1,019	6,828	5,254	33,325	80,377	7,800	6,637	19,888	25,170	214	223	190,640
1990	3,791	996	6,386	5,044	32,060	80,097	7,666	6,229	19,806	25,216	218	228	187,737
1991	3,480	876	5,845	4,521	28,922	72,938	7,032	5,923	18,612	23,691	196	215	172,251
1992	3,254	850	5,623	4,313	25,841	70,079	6,899	5,664	17,871	23,749	221	209	164,573
1993	3,163	885	5,403	4,177	25,021	66,575	6,752	5,638	17,860	23,447	180	216	159,317
1994	3,318	850	5,373	4,219	24,986	66,693	6,585	5,689	18,096	23,739	169	241	159,958
1995	3,404	877	5,329	4,252	24,238	67,583	6,703	5,799	18,044	23,597	207	218	160,251
1996	3,194	924	5,392	4,366	23,968	66,208	6,448	5,671	17,283	22,834	197	206	156,691
1997	3,227	876	5,177	4,089	23,958	64,535	6,261	5,707	17,254	21,845	167	210	153,306

[1] Nunavut included.

Source: Statistics Canada, Health Statistics Division, Health Status and Vital Statistics Section.

Table A3.1 Age-Specific First Marriage Rates (per 1,000) for Male Cohorts, 1947-1980, Canada

Age	Year of Birth																																
	1980	1979	1978	1977	1976	1975	1974	1973	1972	1971	1970	1969	1968	1967	1966	1965	1964	1963	1962	1961	1960	1959	1958	1957	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947
	Year of 17th Birthday																																	
	1997	1996	1995	1994	1993	1992	1991	1990	1989	1988	1987	1986	1985	1984	1983	1982	1981	1980	1979	1978	1977	1976	1975	1974	1973	1972	1971	1970	1969	1968	1967	1966	1965	1964
17	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.56	0.4	0.5	0.5	0.6	0.6	0.6	0.7	0.9	1.1	1.6	1.5	2.0	2.5	3.3	3.8	4.4	4.8	4.6	4.2	4.3	4.0	3.8	3.9	3.9	3.9	4.0
18		1.4	1.6	1.7	1.7	1.8	2.2	2.3	2.7	2.6	2.7	2.8	3.3	3.6	3.9	4.4	5.9	6.6	8.3	9.3	10.7	12.6	14.6	17.8	19.0	20.0	21.2	18.4	17.9	17.2	16.9	17.8	18.1	18.3
19			4.2	4.6	5.0	5.1	5.2	5.8	6.5	7.1	7.4	8.0	8.2	9.0	10.0	11.0	13.0	16.0	19.0	21.8	24.2	27.6	31.3	35.2	39.6	42.8	45.9	46.7	42.4	41.7	39.8	41.0	44.2	44.6
20				8.8	8.9	10.0	10.8	10.5	12.4	13.8	15.1	16.5	16.8	17.0	19.4	21.4	23.8	28.0	33.6	38.6	42.5	47.3	51.2	56.3	59.0	67.7	73.4	77.5	79.7	73.7	73.6	73.4	77.4	82.8
21					15.0	16.1	18.0	18.7	18.9	21.1	23.1	26.6	29.0	28.7	29.4	32.2	36.7	40.3	45.7	52.2	58.0	64.1	68.1	71.6	75.5	78.2	90.9	94.6	103.6	110.6	110.3	114.0	120.1	127.6
22						22.9	23.7	26.6	27.7	28.2	30.6	34.9	38.3	40.5	41.2	41.6	45.5	50.4	54.5	59.0	65.7	69.2	75.9	78.4	79.1	81.7	86.0	96.2	104.1	112.1	120.1	118.3	130.3	140.0
23							31.2	33.7	35.7	36.6	37.7	39.9	45.3	50.6	50.7	51.9	53.1	55.3	60.6	63.7	64.6	69.7	72.7	76.9	76.4	77.6	79.5	81.6	90.6	95.5	104.0	111.9	110.1	130.7
24								38.9	40.8	43.9	44.8	45.0	48.5	51.6	57.1	57.2	57.9	57.5	59.3	63.4	64.5	65.3	66.2	68.0	69.7	69.2	68.6	69.3	70.6	77.9	82.7	87.5	92.7	92.8
25									44.8	47.8	48.5	49.7	49.4	51.1	54.5	59.0	60.4	58.5	56.8	57.0	59.6	60.2	57.8	59.0	60.5	60.4	59.1	58.2	59.1	58.6	63.7	65.5	69.1	71.9
26										47.2	47.2	49.6	49.6	48.9	48.9	51.4	55.0	55.3	53.8	49.5	49.8	52.4	50.1	49.9	50.8	50.0	48.7	47.8	46.4	47.4	46.3	49.1	50.3	53.0
27											44.2	45.2	45.8	46.1	44.3	44.8	45.8	49.2	48.2	46.6	44.4	42.8	44.2	42.7	40.6	40.8	40.8	39.8	38.6	37.3	37.2	36.6	38.2	39.0
28												40.8	41.3	41.2	40.1	38.6	39.3	39.3	42.5	40.9	39.0	36.3	34.6	35.9	34.5	33.8	33.1	32.4	31.6	30.6	30.2	30.1	28.6	29.5
29													36.5	35.8	35.7	34.0	33.7	33.1	33.8	35.3	34.2	32.8	30.7	28.8	29.9	28.6	28.0	26.6	26.5	25.4	24.1	22.8	22.8	22.4
30														30.6	29.9	30.0	28.9	28.3	28.3	27.4	29.1	28.2	26.6	25.0	23.7	23.4	22.7	22.2	21.1	20.3	19.9	18.9	18.3	17.8
31															25.0	24.5	24.9	23.9	23.1	22.9	22.8	23.3	22.1	21.1	20.0	17.6	18.5	18.0	17.4	16.3	15.7	15.2	14.3	13.9
32																20.7	20.4	20.3	19.5	19.0	19.0	18.2	18.4	18.0	17.5	15.8	14.6	14.9	14.8	13.1	12.9	12.1	11.7	11.0
33																	16.8	16.6	16.1	15.7	15.6	14.8	15.1	15.0	14.4	13.9	12.9	11.7	11.8	11.3	10.9	10.0	9.5	9.2
34																		13.7	14.1	13.7	12.9	12.6	12.1	11.9	12.6	11.9	11.6	10.2	9.3	9.5	8.8	8.6	7.9	7.8
35																			11.8	11.8	11.1	10.7	10.0	10.0	9.7	9.9	9.7	9.6	8.6	7.5	7.7	7.4	6.7	6.4
36																				9.7	8.9	8.9	8.3	8.4	8.2	8.0	7.9	8.0	7.3	7.1	6.5	6.2	5.7	5.5
37																					7.9	7.4	7.2	6.9	6.5	6.3	6.4	6.6	6.6	6.1	5.4	5.0	4.6	4.4
38																						6.3	6.1	5.9	5.8	5.5	5.3	5.0	5.3	5.1	5.0	4.7	3.9	3.5
39																							5.0	5.2	4.9	4.6	4.5	4.4	4.3	4.0	4.3	4.3	3.7	3.7
40																								4.4	4.2	4.1	3.9	3.5	3.3	3.2	3.4	3.5	3.4	3.3
41																									3.2	3.5	3.3	3.0	2.9	2.6	2.7	2.4	3.0	2.8
42																										3.0	2.7	2.7	2.5	2.3	2.3	2.2	2.3	2.4
43																											2.5	2.2	2.1	2.0	1.9	1.8	1.7	1.9
44																												1.8	1.9	1.7	1.7	1.7	1.7	1.7
45																													1.6	1.7	1.5	1.4	1.2	1.3

Sources: Statistics Canada, Health Statistics Division, Health Status and Vital Statistics Section and Demography Division, Population Estimates Section.

Table A3.2 Age-Specific First Marriage Rates (per 1,000) for Female Cohorts, 1948-1982, Canada

Age	Year of Birth																																						
	1982	1981	1980	1979	1978	1977	1976	1975	1974	1973	1972	1971	1970	1969	1968	1967	1966	1965	1964	1963	1962	1961	1960	1959	1958	1957	1956	1955	1954	1953	1952	1951	1950	1949	1948
	Year of 15th Birthday																																						
	1997	1996	1995	1994	1993	1992	1991	1990	1989	1988	1987	1986	1985	1984	1983	1982	1981	1980	1979	1978	1977	1976	1975	1974	1973	1972	1971	1970	1969	1968	1967	1966	1965	1964	1963
15	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.2	0.3	0.4	0.6	0.6	0.5	0.6	0.6	1.1	2.0	2.4	2.4	2.7	3.5	3.4	3.3	3.5	3.5	3.2	3.3	3.4	3.4	4.1	4.2
16		0.6	0.6	0.9	1.0	1.1	1.3	1.5	1.6	1.8	2.0	2.2	2.4	3.0	3.6	3.9	4.6	4.9	5.8	6.5	7.7	9.1	11.2	13.7	15.6	17.1	18.2	17.3	17.7	16.7	15.7	16.5	16.8	17.6	19.5
17			1.7	2.1	2.4	2.6	2.8	3.1	3.8	4.7	4.6	4.9	5.5	6.0	7.5	8.3	9.5	10.9	12.5	15.0	16.8	19.3	23.2	26.9	32.4	35.3	38.9	40.9	39.2	40.6	38.6	39.7	40.8	41.0	44.8
18				7.6	8.3	9.2	9.6	10.5	11.0	13.3	15.3	16.1	16.6	18.1	21.6	24.1	25.4	29.3	33.7	38.0	44.0	48.5	53.1	60.0	66.4	75.5	79.8	84.5	89.5	82.8	82.7	82.0	81.7	84.5	88.0
19					14.5	15.3	17.2	18.8	18.3	21.2	23.5	26.3	29.4	31.5	32.5	37.5	40.2	43.4	48.3	54.8	61.6	68.0	71.8	77.0	82.8	88.3	97.8	102.8	111.2	115.5	109.3	108.7	108.6	110.3	116.5
20						22.5	24.6	26.5	28.7	29.3	31.5	36.0	41.1	45.5	46.1	48.0	50.7	56.6	59.6	64.7	72.8	77.9	83.6	86.4	89.2	92.9	93.3	104.3	111.1	118.0	125.2	121.8	121.5	126.1	132.8
21							31.6	33.9	37.3	38.9	40.0	42.4	47.6	54.6	57.8	59.8	60.1	61.7	67.2	71.4	72.4	78.4	80.4	85.0	85.9	87.6	86.8	87.1	97.5	104.1	112.3	120.5	123.1	126.7	134.6
22								39.0	41.9	45.3	47.8	48.5	51.4	56.6	64.0	65.4	66.4	64.8	67.2	70.2	71.0	71.5	73.1	75.7	75.5	76.4	73.6	74.4	74.9	82.1	85.9	91.3	96.3	96.9	105.8
23									47.3	50.5	52.1	54.1	54.8	58.1	62.5	67.2	67.3	67.3	65.2	63.3	66.6	66.0	64.4	65.1	64.3	63.9	62.4	59.9	60.4	58.7	63.7	65.5	68.0	71.0	70.6
24										52.9	53.4	57.6	56.1	56.0	57.8	59.7	65.3	65.0	62.6	59.0	56.8	57.8	56.3	53.9	53.3	50.9	50.9	48.3	46.2	45.7	44.8	48.6	48.8	49.1	49.9
25											52.0	53.8	55.0	54.7	53.4	54.5	54.9	57.6	56.9	54.9	50.8	47.5	48.4	45.8	42.8	41.6	40.7	39.6	37.1	35.6	35.1	34.4	35.7	35.4	35.1
26												48.6	48.2	49.0	48.3	45.6	45.3	47.0	48.7	46.2	43.9	39.2	38.1	38.8	36.1	34.1	32.4	30.8	29.3	28.4	26.9	27.3	26.4	26.5	25.3
27													42.0	42.0	41.3	40.7	37.6	37.9	38.3	39.6	36.2	35.3	32.0	29.6	29.3	28.2	26.0	25.2	23.9	23.7	21.5	21.0	20.4	19.9	19.6
28														35.2	35.0	33.1	31.9	30.9	31.4	30.4	31.4	29.5	27.5	25.3	22.1	22.7	22.0	20.2	19.2	18.2	17.5	16.4	15.9	15.2	14.7
29															28.9	27.2	27.1	26.0	25.8	24.4	24.0	24.8	23.3	22.2	19.7	17.2	17.8	16.8	15.9	15.3	14.5	13.6	12.6	12.2	11.8
30																22.7	22.1	21.7	20.5	20.0	19.9	19.1	19.6	18.9	16.8	15.3	13.8	14.1	13.6	12.2	11.7	11.2	10.6	9.7	9.3
31																	17.3	17.3	16.7	16.1	16.0	15.5	14.5	15.2	14.0	13.2	11.4	10.4	10.5	10.3	9.5	8.8	8.5	7.7	7.4
32																		14.1	13.8	14.0	13.4	12.5	12.1	11.8	12.0	11.1	10.2	9.1	7.8	8.2	7.8	7.5	7.0	6.4	6.1
33																			11.6	11.2	11.1	10.2	10.1	9.9	9.4	9.1	8.8	8.1	7.2	6.5	6.7	6.4	5.8	5.4	5.4
34																				9.2	9.0	9.1	8.3	8.5	8.1	7.9	7.5	6.9	6.3	5.7	5.4	5.4	5.1	4.5	4.3
35																					7.5	7.2	7.3	7.0	6.6	6.4	6.3	6.1	5.7	5.4	5.1	4.2	4.2	3.9	3.6
36																						6.2	5.9	5.7	5.3	5.1	4.8	5.1	4.8	4.6	4.4	3.8	3.4	3.3	2.9
37																							5.0	4.8	4.6	4.2	4.2	4.0	3.7	3.8	3.7	3.5	3.2	2.6	2.5
38																								3.9	4.0	3.8	3.2	3.6	3.3	3.1	2.8	3.1	2.8	2.5	2.3
39																									3.3	3.2	3.0	2.8	2.8	2.6	2.6	2.6	2.6	2.2	2.1
40																										2.5	2.8	2.5	2.4	2.2	2.3	2.2	2.0	2.0	2.0
41																											2.2	1.9	1.8	1.8	1.9	1.7	1.7	1.6	1.6
42																												1.9	1.7	1.7	1.6	1.4	1.6	1.5	1.5
43																													1.4	1.4	1.4	1.4	1.2	1.3	1.1
44																														1.2	1.2	1.1	1.0	1.2	0.9
45																															1.1	1.1	1.0	0.9	0.8

Sources: Statistics Canada, Health Statistics Division, Health Status and Vital Statistics Section and Demography Division, Population Estimates Section.

Table A4. Divorce

Year	Nfld	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta	B.C.	Yukon	N.W.T.[2]	Canada
	Number of Divorces												
1981	569	187	2,285	1,334	19,193	21,680	2,399	1,932	8,418	9,533	75	66	67,671
1986	687	199	2,609	1,729	19,026	27,549	2,982	2,479	9,556	11,299	94	95	78,304
1987	1,117	275	2,759	1,995	22,098	39,095	3,923	2,968	9,535	12,184	142	109	96,200
1988	906	269	2,494	1,673	20,340	32,524	3,102	2,501	8,744	10,760	82	112	83,507
1989	1,005	248	2,527	1,649	19,829	31,298	2,912	2,460	8,237	10,658	82	93	80,998
1990	1,016	281	2,419	1,699	20,474	28,977	2,798	2,364	8,489	9,773	81	92	78,463
1991	912	269	2,280	1,652	20,274	27,694	2,790	2,240	8,388	10,368	67	86	77,020
1992	867	227	2,304	1,633	19,695	30,463	2,657	2,325	8,217	10,431	117	98	79,034
1993	930	227	2,376	1,606	19,662	28,903	2,586	2,239	8,612	10,889	94	102	78,226
1994	933	249	2,286	1,570	18,224	30,718	2,746	2,354	8,174	11,437	97	92	78,880
1995	982	260	2,294	1,456	20,133	29,352	2,677	2,320	7,599	10,357	112	94	77,636
1996	1,060	237	2,228	1,450	18,078	25,035	2,603	2,216	7,509	10,898	115	99	71,528
1997	822	243	1,983	1,373	17,478	23,629	2,625	2,198	7,185	9,692	101	79	67,408
	Mean Duration of Marriage for Persons Divorced in the Year[1]												
1981	11.8	12.4	11.3	11.8	11.8	11.9	11.0	10.5	10.5	11.7	11.2	9.0	11.5
1986	11.7	12.5	11.3	11.8	11.5	11.7	11.1	10.7	10.9	12.1	11.8	10.9	11.5
1987	11.3	11.7	11.1	11.7	11.3	11.6	10.5	10.4	10.9	11.8	11.7	11.0	11.4
1988	11.7	12.4	11.0	11.7	11.1	11.5	10.6	10.6	11.0	11.7	11.4	10.4	11.3
1989	11.7	11.5	11.3	11.5	11.0	11.3	10.3	10.8	11.0	11.5	11.5	10.5	11.2
1990	11.3	11.9	11.3	11.1	10.8	11.2	10.5	10.6	11.0	11.5	11.4	10.1	11.1
1991	11.4	12.8	11.0	11.4	11.0	10.9	10.3	10.8	10.8	11.3	11.1	9.0	11.0
1992	10.9	12.0	11.2	11.0	10.7	10.9	10.4	10.6	10.8	11.1	10.7	9.3	10.9
1993	11.7	11.8	10.9	11.5	10.5	10.8	10.4	10.6	10.6	10.9	10.6	10.0	10.7
1994	11.3	12.4	11.0	11.1	10.6	10.6	10.4	10.5	10.6	10.7	10.8	10.7	10.7
1995	11.2	12.1	11.1	11.5	10.4	10.8	10.5	10.6	10.8	10.6	10.1	10.1	10.7
1996	11.3	12.2	11.3	11.5	10.4	11.0	10.5	10.6	10.5	10.6	10.2	10.0	10.8
1997	12.0	11.7	11.4	11.4	10.7	10.9	10.5	10.3	10.7	10.7	11.0	9.4	10.9

[1] Excludes divorces for marriages of a duration greater than 25 years.
[2] Nunavut included.
Sources: Statistics Canada, Health Statistics Division, Health Status and Vital Statistics Section and Demography Division, Population Estimates Section.

Table A5. Duration-Specific Divorce Rate (per 10,000), Canada, Marriage Cohorts 1945-1946 to 1996-1997

Year	Number of Marriages per Year	Marriage Cohort	Cohort Marriages	Marriage Duration (in years)																										Year of Obser-vation	T.D.R.[1]
				0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25		
1947	130,400	1946-47	133,899																					48	55	49	46	1972	2,004
1948	126,118	1947-48	128,259																				47	56	50	50	54	1973	2,231
1949	124,087	1948-49	125,103																			50	58	56	52	60	58	1974	2,670
1950	125,083	1949-50	124,585																		51	60	55	58	59	68	64	1975	2,932
1951	128,408	1950-51	126,746																	51	64	61	59	60	73	69	71	1976	3,072
1952	128,474	1951-52	128,441																53	65	63	62	63	74	74	76	69	1977	3,063
1953	131,034	1952-53	129,754															54	69	70	64	67	75	80	76	69	55	1978	3,108
1954	128,629	1953-54	129,832														50	74	64	62	71	86	82	78	75	70	62	1979	3,180
1955	128,029	1954-55	128,329													57	73	65	68	69	85	85	83	75	70	68	65	1980	3,275
1956	132,713	1955-56	130,371												59	83	71	73	77	87	90	90	89	78	74	69	72	1981	3,525
1957	133,186	1956-57	132,950											67	82	76	75	78	92	105	96	87	85	84	75	75	66	1982	3,653
1958	131,525	1957-58	132,356										61	79	81	81	83	91	101	97	92	84	82	78	77	72	63	1983	3,518
1959	132,722	1958-59	132,124									68	91	82	80	86	96	105	103	92	89	80	77	84	77	68	67	1984	3,304
1960	130,338	1959-60	131,530								70	93	95	91	97	111	111	110	100	95	90	84	90	87	76	67	64	1985	3,118
1961	128,475	1960-61	129,407							73	97	95	95	97	119	119	116	108	100	95	95	95	94	81	78	64	80	1986	3,908
1962	129,381	1961-62	128,928						71	105	99	106	103	121	133	123	115	108	97	96	98	106	88	78	71	83	91	1987	4,788
1963	131,111	1962-63	130,246					71	114	113	112	114	131	133	134	124	118	104	99	108	105	91	86	79	88	102	81	1988	4,139
1964	138,135	1963-64	134,623				68	106	109	113	124	142	136	140	128	126	114	110	113	109	100	92	83	101	111	93	76	1989	3,996
1965	145,519	1964-65	141,827			61	98	112	121	134	150	153	153	139	134	124	117	118	115	104	97	92	104	123	92	83	76	1990	3,841
1966	155,596	1965-66	150,558		42	93	112	128	143	156	162	163	148	137	130	123	121	115	113	101	93	108	124	104	91	84	72	1991	3,707
1967	165,879	1966-67	160,738		31	68	102	126	139	166	177	171	155	145	136	131	132	128	118	106	94	112	132	114	97	85	78	69	1992	3,786
1968	171,766	1967-68	168,823		17	49	75	115	142	162	183	173	165	156	151	137	138	137	117	109	97	116	133	112	108	92	81	81	67	1993	3,768
1969	182,183	1968-69	176,975	3	22	53	83	122	158	182	184	171	165	160	153	148	146	133	112	103	121	139	118	106	98	89	82	73	68	1994	3,800
1970	188,428	1969-70	185,306	3	25	55	92	151	177	192	192	176	174	165	163	159	139	127	112	121	147	118	113	100	94	85	76	71	70	1995	3,761
1971	191,324	1970-71	189,876	4	28	61	106	161	186	189	191	184	180	173	166	151	132	115	129	151	121	113	101	93	90	84	81	77	62	1996	3,463

Year	Number of Marriages per Year	Marriage Cohort	Cohort Marriages	Marriage Duration (in years)																										Year of Obser-vation	T.D.R.[1]
				0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25		
1972	200,470	1971-72	195,897	4	33	74	117	174	193	196	197	191	188	186	169	145	126	145	159	131	122	111	98	97	83	87	80	72	64	1997	3,270
1973	199,064	1972-73	199,767	5	36	83	129	181	203	212	211	206	204	180	155	135	152	175	138	126	111	103	99	93	89	83	74	71			
1974	198,824	1973-74	198,944	5	44	94	136	184	213	227	229	218	189	168	146	160	184	149	129	111	106	104	97	87	89	78	70				
1975	198,085	1974-75	198,455	6	52	104	147	199	224	242	233	214	185	163	171	196	150	139	130	110	110	102	93	90	82	77					
1976	193,343	1975-76	195,714	8	59	111	161	217	251	246	227	194	165	195	207	165	152	131	119	113	112	103	98	86	80						
1977	187,344	1976-77	190,344	8	63	116	162	227	250	240	208	180	200	225	181	158	143	125	117	113	105	100	88	82							
1978	185,523	1977-78	186,434	7	65	123	175	235	250	221	200	230	248	196	175	155	135	130	116	107	107	90	80								
1979	187,811	1978-79	186,667	8	58	132	185	226	226	211	252	274	211	185	164	148	140	126	118	114	97	88									
1980	191,069	1979-80	189,440	7	65	135	176	206	210	268	297	227	207	184	165	148	142	131	118	105	92										
1981	190,082	1980-81	190,576	8	71	133	154	190	269	316	250	218	189	179	161	150	134	129	110	105											
1982	188,360	1981-82	189,221	9	65	118	144	260	326	263	232	216	190	177	160	153	135	119	104												
1983	184,675	1982-83	186,518	8	64	109	209	322	273	247	219	197	183	172	158	140	128	111													
1984	185,597	1983-84	185,136	8	63	150	270	263	253	237	209	202	184	171	151	135	117														
1985	184,096	1984-85	184,847	8	72	212	249	260	251	226	219	201	187	170	146	123															
1986	175,518	1985-86	179,807	10	103	217	265	263	246	237	222	203	182	163	143																
1987	182,151	1986-87	178,835	20	106	216	251	255	251	235	218	196	171	149																	
1988	187,728	1987-88	184,940	19	106	214	248	254	243	237	216	175	158																		
1989	190,640	1988-89	189,184	19	109	208	265	268	256	231	193	170																			
1990	187,737	1989-90	189,189	17	113	230	272	270	257	213	181																				
1991	172,251	1990-91	179,994	19	120	232	276	274	232	205																					
1992	164,573	1991-92	168,412	21	121	242	270	246	216																						
1993	159,317	1992-93	161,945	22	132	236	246	228																							
1994	159,958	1993-94	159,638	22	129	222	230																								
1995	160,251	1994-95	160,105	20	113	203																									
1996	156,691	1995-96	158,471	16	106																										
1997	153,306	1996-97	154,999	16																											

[1] Total Divorce Rate.

Sources: Statistics Canada, Health Statistics Division and Demography Division, Population Estimates Section.

Table A6. Births and Fertility

Year	Nfld	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta	B.C.	Yukon	N.W.T.[1]	Canada
	Live Births												
1981	10,130	1,897	12,079	10,503	95,322	122,183	16,073	17,209	42,638	41,474	536	1,302	371,346
1986	8,100	1,925	12,353	9,787	84,604	133,875	17,008	17,513	43,741	41,965	483	1,504	372,858
1987	7,769	1,954	12,104	9,587	83,761	134,613	16,952	17,034	42,105	41,812	478	1,520	369,689
1988	7,487	1,976	12,176	9,616	86,590	138,060	17,030	16,763	42,053	42,930	521	1,553	376,755
1989	7,762	1,937	12,530	9,666	92,354	145,327	17,321	16,651	43,351	43,768	480	1,478	392,625
1990	7,604	2,014	12,864	9,819	98,015	150,909	17,350	16,090	43,002	45,614	556	1,580	405,417
1991	7,166	1,885	12,016	9,497	97,310	151,478	17,282	15,304	42,776	45,612	568	1,634	402,528
1992	6,918	1,850	11,874	9,389	96,146	150,593	16,590	15,004	42,039	46,156	529	1,554	398,642
1993	6,421	1,754	11,568	9,049	92,391	147,848	16,709	14,269	40,292	46,026	508	1,559	388,394
1994	6,339	1,716	11,099	8,978	90,578	147,068	16,480	14,038	39,796	46,998	442	1,580	385,112
1995	5,859	1,754	10,726	8,563	87,417	146,263	16,113	13,499	38,914	46,820	470	1,613	378,011
1996	5,747	1,694	10,573	8,176	85,226	140,012	15,478	13,300	37,851	46,138	443	1,562	366,200
1997	5,416	1,591	9,952	7,922	79,774	133,004	14,655	12,860	36,905	44,577	474	1,468	348,598
	Age-Specific Fertility Rates (per 1,000)												
1995: 15-19	23.9	30.3	27.7	31.9	17.0	22.4	42.3	42.5	32.1	22.2	37.3	102.5	24.3
20-24	66.8	80.3	74.6	80.0	73.2	61.7	94.8	102.4	85.7	70.2	95.4	158.1	71.9
25-29	90.6	125.4	102.9	104.8	119.1	109.6	125.3	128.8	118.7	103.6	107.2	141.5	112.5
30-34	58.1	90.6	72.0	64.5	82.8	96.4	91.1	81.1	86.6	86.5	85.0	100.4	88.0
35-39	14.9	26.1	23.0	17.4	26.1	37.4	31.9	24.4	31.1	33.9	31.6	40.9	31.5
40-44	1.4	4.1	2.9	2.3	3.9	5.9	4.7	3.4	4.4	5.7	6.9	8.8	4.9
45-49	0.1	0.2	0.1	0.1	0.1	0.2	0.3	0.2	0.2	0.2	0.0	1.2	0.2
1996: 15-19	23.6	29.8	28.0	26.8	16.3	19.9	40.1	39.5	28.2	19.1	32.7	99.4	22.1
20-24	63.7	79.8	72.1	76.7	72.1	57.8	92.6	96.9	79.2	65.0	87.0	165.0	68.4
25-29	92.0	121.0	100.8	102.4	118.4	104.5	120.5	129.9	115.3	99.2	96.8	134.4	109.1
30-34	63.0	84.2	74.5	65.1	81.7	94.5	89.6	81.3	87.6	85.3	76.9	91.1	87.0
35-39	16.4	29.1	24.6	18.8	27.3	38.4	30.8	26.7	32.5	34.8	33.3	39.8	32.6
40-44	1.9	2.4	3.3	2.3	3.9	6.1	5.4	3.9	5.0	6.1	7.2	10.6	5.1
45-49	0.0	0.6	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.3	0.8	0.6	0.2
1997: 15-19	22.6	28.7	23.7	25.4	15.5	17.1	36.1	37.2	25.9	17.4	31.1	89.1	20.0
20-24	59.1	76.8	68.7	76.0	67.0	53.7	85.7	94.9	75.1	59.4	90.7	158.6	64.0
25-29	90.6	111.0	98.5	101.2	111.7	98.6	116.1	124.2	112.3	94.3	115.2	130.1	103.8
30-34	61.5	75.1	71.5	64.9	79.5	91.2	87.2	79.1	85.0	83.1	81.6	85.3	84.4
35-39	17.3	27.6	24.4	17.1	26.5	38.1	33.1	27.0	32.4	35.7	37.3	42.5	32.5
40-44	2.1	6.2	3.1	2.4	3.9	6.3	4.8	4.0	5.6	6.0	7.7	7.8	5.2
45-49	0.2	0.0	0.2	0.0	0.1	0.2	0.3	0.4	0.1	0.3	0.0	0.0	0.2

Year	Nfld	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta	B.C.	Yukon	N.W.T.[1]	Canada
	Fertlity Rates by Birth Order (per 1,000 women)												
1995: 1	19.8	23.3	22.3	22.7	22.9	24.6	26.6	23.5	24.2	25.0	26.0	33.0	24.0
2	15.4	19.3	17.8	17.8	19.0	20.6	20.0	20.0	20.7	18.5	19.2	26.7	19.6
3	4.9	10.2	6.8	6.1	7.4	8.2	10.3	10.6	9.3	7.1	7.8	17.9	8.0
4	1.4	3.9	2.3	1.7	2.1	2.5	4.1	4.2	3.3	2.2	4.0	9.4	2.5
5 +	0.6	1.7	0.9	0.7	1.0	1.4	3.3	3.3	2.0	1.1	2.1	10.7	1.4
1996: 1	20.1	23.2	22.3	21.6	22.6	23.4	25.7	23.1	22.9	23.5	25.8	31.4	23.1
2	16.0	19.4	17.5	16.8	18.4	19.8	19.4	19.3	20.2	18.1	17.1	26.4	19.0
3	4.7	9.1	7.0	6.4	7.2	7.8	9.7	10.6	9.0	6.9	7.0	15.8	7.7
4	1.3	3.3	1.8	1.6	2.1	2.4	4.0	4.4	3.2	2.2	2.9	9.9	2.5
5 +	0.4	1.4	0.9	0.6	1.0	1.3	3.1	3.2	2.1	1.0	1.5	10.6	1.4
1997: 1	19.7	22.8	21.0	21.4	21.5	21.9	24.1	22.0	22.2	22.1	24.6	29.1	21.9
2	15.0	17.6	16.9	16.7	17.4	18.8	18.9	18.5	19.3	17.7	20.9	24.7	18.2
3	4.5	8.9	6.3	5.8	6.6	7.4	9.1	10.3	8.3	6.4	8.2	14.3	7.2
4	1.1	2.0	1.8	1.6	1.9	2.2	3.7	4.3	3.1	2.0	3.2	9.1	2.3
5 +	0.6	1.4	0.9	0.6	0.9	1.2	3.1	3.2	2.0	1.0	1.4	11.3	1.3
	Total Fertlity Rate (women aged 15-49)[2]												
1981	..	1.88	1.62	1.68	1.57	1.58	1.83	2.12	1.87	1.64	2.07	2.86	1.65
1986	..	1.79	1.59	1.53	1.38	1.60	1.83	2.03	1.86	1.62	1.95	2.85	1.60
1987	1.53	1.83	1.56	1.51	1.37	1.58	1.83	1.99	1.83	1.62	1.90	2.86	1.58
1988	1.48	1.86	1.58	1.53	1.43	1.60	1.85	2.00	1.85	1.65	2.00	2.94	1.61
1989	1.54	1.84	1.63	1.56	1.53	1.64	1.92	2.06	1.92	1.66	1.87	2.73	1.67
1990	1.52	1.94	1.68	1.59	1.64	1.68	1.95	2.08	1.90	1.70	2.19	2.83	1.72
1991	1.44	1.86	1.59	1.55	1.65	1.67	1.97	2.04	1.90	1.69	2.15	2.88	1.71
1992	1.40	1.85	1.59	1.56	1.67	1.69	1.93	2.04	1.88	1.68	1.93	2.70	1.71
1993	1.32	1.76	1.57	1.53	1.64	1.67	1.97	1.98	1.82	1.64	1.89	2.69	1.69
1994	1.34	1.73	1.54	1.55	1.64	1.67	1.97	1.97	1.82	1.64	1.73	2.73	1.69
1995	1.28	1.79	1.52	1.51	1.61	1.67	1.95	1.91	1.79	1.61	1.82	2.77	1.67
1996	1.30	1.73	1.52	1.46	1.60	1.61	1.90	1.89	1.74	1.55	1.67	2.70	1.62
1997	1.27	1.63	1.45	1.44	1.52	1.53	1.82	1.83	1.68	1.48	1.82	2.57	1.55

[1] Nunavut included

[2] Number of children per woman.

Sources: Statistics Canada, Health Statistics Division, Health Status and Vital Statistics Section and Demography Division, Population Estimates Section.

Table A7. Age-Specific Fertility and Total Fertility Rates by Birth Order and Age of Mother for Quebec and Rest of Canada[1], 1981-1997

Birth Order	Year	15-19		20-24		25-29		30-34		35-39		40-44		Total Fertility Rate		
		Quebec	Rest of Canada	Quebec	Rest of Canada	Quebec	Rest of Canada	Quebec	Rest of Canada	Quebec	Rest of Canada	Quebec	Rest of Canada	Quebec	Rest of Canada	Canada
1	1981	12.89	24.98	55.16	53.22	54.14	47.89	16.32	16.99	3.43	3.64	0.54	0.48	0.7124	0.7360	0.7296
	1986	13.01	21.16	47.20	46.09	49.85	48.42	17.49	20.57	4.42	5.03	0.50	0.66	0.6624	0.7096	0.6975
	1987	13.47	20.51	45.69	44.25	50.95	47.73	18.50	20.91	4.45	5.40	0.66	0.72	0.6685	0.6976	0.6904
	1988	13.92	20.89	48.52	44.40	54.18	49.81	19.25	22.18	4.71	6.05	0.69	0.77	0.7064	0.7205	0.7172
	1989	14.86	22.29	51.09	45.59	57.95	50.49	21.45	23.55	5.19	6.29	0.64	0.85	0.7559	0.7453	0.7482
	1990	15.66	22.94	53.49	45.75	60.65	52.95	23.54	25.20	5.64	6.87	0.66	0.89	0.7981	0.7730	0.7794
	1991	14.93	23.67	52.62	44.41	61.47	51.22	24.25	24.97	6.20	6.99	0.73	0.93	0.8011	0.7610	0.7709
	1992	15.08	22.89	49.24	42.46	60.41	51.41	24.80	26.05	6.10	7.31	0.78	0.99	0.7821	0.7555	0.7616
	1993	14.69	22.31	47.70	41.72	56.78	50.70	24.75	27.02	6.29	7.70	0.86	1.11	0.7553	0.7528	0.7527
	1994	14.89	22.30	46.99	40.74	54.50	50.84	24.57	27.99	6.55	7.94	0.89	1.19	0.7419	0.7550	0.7510
	1995	14.29	21.92	45.30	40.07	53.94	49.35	25.42	28.95	6.52	8.37	1.00	1.23	0.7324	0.7495	0.7445
	1996	13.89	19.72	44.88	37.41	54.54	48.17	25.23	28.70	6.93	8.86	0.87	1.33	0.7317	0.7210	0.7226
	1997	13.15	17.50	41.38	34.91	51.99	46.19	25.12	28.17	6.96	8.84	0.99	1.38	0.6979	0.6849	0.6874
2	1981	1.62	4.51	24.13	31.50	52.90	47.19	27.69	25.24	6.11	5.83	0.58	0.62	0.5652	0.5745	0.5719
	1986	1.66	3.88	18.89	27.32	46.14	47.64	25.15	30.68	5.71	8.16	0.67	0.81	0.4911	0.5924	0.5656
	1987	1.86	4.05	19.25	26.05	44.08	46.67	25.44	31.30	6.06	8.79	0.68	0.96	0.4869	0.5890	0.5620
	1988	1.78	3.77	19.66	25.57	44.19	45.26	27.17	31.47	6.76	9.27	0.83	1.12	0.5020	0.5823	0.5612
	1989	1.93	4.08	20.75	25.33	45.51	45.00	28.66	32.44	7.05	9.63	0.73	1.10	0.5232	0.5879	0.5711
	1990	2.21	4.16	21.96	24.99	49.14	44.74	31.51	33.89	7.97	10.15	0.91	1.20	0.5684	0.5957	0.5886
	1991	2.10	4.32	22.29	24.48	48.52	43.82	32.14	33.28	7.80	10.40	0.88	1.20	0.5686	0.5875	0.5828
	1992	2.36	4.59	22.23	24.30	49.69	43.77	33.40	34.89	8.69	10.76	0.94	1.41	0.5865	0.5986	0.5956
	1993	2.31	4.52	22.42	23.33	48.47	42.35	33.95	34.19	8.77	11.23	1.11	1.43	0.5852	0.5853	0.5850
	1994	2.28	4.46	22.00	22.90	48.59	41.70	34.86	34.92	9.22	11.67	1.07	1.53	0.5901	0.5859	0.5866
	1995	2.36	4.20	21.30	22.54	45.56	40.07	34.77	35.81	9.64	11.96	1.19	1.59	0.5741	0.5809	0.5788
	1996	2.12	3.65	20.93	21.25	44.22	38.35	34.19	35.82	10.41	12.71	1.26	1.70	0.5656	0.5673	0.5664
	1997	2.09	3.44	19.60	20.04	41.83	36.82	33.48	35.02	10.01	12.95	1.17	1.83	0.5409	0.5505	0.5477
3	1981	0.16	0.44	4.44	8.39	17.33	19.74	16.62	15.83	4.57	4.80	0.56	0.69	0.2184	0.2494	0.2408
	1986	0.18	0.48	3.39	7.49	13.12	19.28	12.26	17.67	4.30	6.05	0.57	0.74	0.1691	0.2586	0.2347
	1987	0.18	0.43	3.52	7.32	12.22	18.62	11.64	17.64	3.88	6.34	0.57	0.76	0.1601	0.2555	0.2301
	1988	0.18	0.48	3.58	7.24	12.43	18.31	12.20	17.88	4.07	6.74	0.52	0.84	0.1649	0.2575	0.2330
	1989	0.22	0.49	4.30	7.28	13.91	17.81	13.86	18.44	4.61	7.09	0.65	0.96	0.1878	0.2603	0.2413
	1990	0.17	0.50	4.53	7.19	15.09	17.30	15.14	18.36	5.20	7.25	0.58	0.91	0.2036	0.2576	0.2436
	1991	0.19	0.51	4.64	7.11	15.13	16.91	15.73	18.54	5.44	7.19	0.68	0.92	0.2090	0.2559	0.2441
	1992	0.24	0.60	5.01	7.09	15.49	16.46	16.64	17.98	5.63	7.31	0.81	0.94	0.2191	0.2519	0.2438
	1993	0.25	0.56	5.36	7.00	15.03	15.50	16.07	17.68	5.58	7.16	0.73	0.97	0.2151	0.2444	0.2371
	1994	0.29	0.57	5.30	7.07	15.57	15.10	16.17	16.96	5.85	7.31	0.82	1.06	0.2200	0.2404	0.2354
	1995	0.33	0.54	5.31	6.69	14.93	14.53	16.06	16.66	5.97	7.41	0.80	1.09	0.2170	0.2346	0.2303
	1996	0.24	0.54	5.14	6.46	14.58	13.75	15.82	16.20	6.04	7.47	0.84	1.10	0.2133	0.2276	0.2240
	1997	0.17	0.44	4.77	6.11	13.33	12.74	14.80	15.36	5.75	7.38	0.74	1.12	0.1978	0.2158	0.2113

Birth Order	Year	15-19		20-24		25-29		30-34		35-39		40-44		Total Fertility Rate		
		Quebec	Rest of Canada	Quebec	Rest of Canada	Quebec	Rest of Canada	Quebec	Rest of Canada	Quebec	Rest of Canada	Quebec	Rest of Canada	Quebec	Rest of Canada	Canada
4	1981	0.01	0.05	0.54	1.59	2.94	5.31	4.48	5.68	2.23	2.64	0.43	0.50	0.0531	0.0788	0.0717
	1986	0.02	0.03	0.48	1.49	2.40	5.19	3.33	5.97	1.70	2.83	0.37	0.49	0.0415	0.0800	0.0697
	1987	0.02	0.04	0.50	1.52	2.22	5.04	3.20	5.73	1.68	2.87	0.35	0.46	0.0398	0.0783	0.0680
	1988	0.02	0.05	0.55	1.50	2.41	4.97	3.07	5.79	1.69	2.91	0.43	0.49	0.0409	0.0786	0.0686
	1989	0.01	0.05	0.58	1.59	2.61	4.90	3.65	6.14	1.68	3.07	0.35	0.57	0.0443	0.0816	0.0718
	1990	0.00	0.04	0.76	1.67	2.80	4.77	3.95	6.03	2.24	3.11	0.35	0.54	0.0505	0.0808	0.0729
	1991	0.01	0.05	0.82	1.68	3.23	4.73	4.18	6.04	2.11	3.21	0.37	0.49	0.0536	0.0810	0.0741
	1992	0.03	0.06	0.92	1.71	3.15	4.61	4.37	5.89	2.20	3.03	0.42	0.53	0.0554	0.0791	0.0732
	1993	0.02	0.05	0.83	1.61	3.11	4.41	4.54	5.74	2.24	3.17	0.45	0.56	0.0559	0.0777	0.0723
	1994	0.02	0.06	1.14	1.64	3.51	4.40	4.81	5.58	2.52	3.05	0.49	0.57	0.0625	0.0765	0.0731
	1995	0.03	0.06	1.06	1.64	3.56	4.43	4.65	5.30	2.38	3.18	0.48	0.56	0.0607	0.0758	0.0722
	1996	0.02	0.07	0.97	1.64	3.86	4.03	4.52	5.18	2.45	3.08	0.40	0.64	0.0611	0.0732	0.0703
	1997	0.04	0.04	1.02	1.55	3.23	3.88	4.26	4.71	2.36	3.00	0.50	0.59	0.0570	0.0688	0.0660
5 +	1981	0.00	0.01	0.12	0.35	0.77	1.83	1.54	3.17	1.54	2.60	0.57	0.93	0.0227	0.0444	0.0383
	1986	0.00	0.00	0.09	0.37	0.68	1.82	1.29	2.84	1.07	2.08	0.36	0.65	0.0175	0.0388	0.0330
	1987	0.00	0.01	0.11	0.35	0.64	1.86	1.17	2.88	0.94	2.19	0.34	0.71	0.0160	0.0400	0.0335
	1988	0.00	0.00	0.09	0.38	0.63	1.72	1.31	2.98	1.18	2.11	0.40	0.68	0.0180	0.0394	0.0337
	1989	0.00	0.00	0.13	0.41	0.77	1.77	1.60	2.88	1.30	2.15	0.35	0.63	0.0207	0.0392	0.0343
	1990	0.01	0.01	0.15	0.44	0.77	1.92	1.51	2.92	1.30	2.27	0.39	0.67	0.0206	0.0412	0.0358
	1991	0.00	0.00	0.14	0.44	0.81	1.96	1.62	3.00	1.38	2.26	0.37	0.64	0.0216	0.0416	0.0365
	1992	0.00	0.02	0.21	0.44	0.97	2.02	1.69	2.99	1.32	2.30	0.38	0.69	0.0228	0.0423	0.0374
	1993	0.00	0.02	0.17	0.48	0.95	1.99	1.80	2.96	1.48	2.23	0.47	0.65	0.0244	0.0417	0.0374
	1994	0.00	0.04	0.19	0.55	1.16	2.09	1.81	2.97	1.39	2.23	0.46	0.68	0.0250	0.0428	0.0384
	1995	0.00	0.02	0.20	0.52	1.08	2.11	1.91	2.88	1.63	2.35	0.47	0.70	0.0264	0.0429	0.0389
	1996	0.00	0.02	0.21	0.53	1.23	2.02	1.94	2.79	1.50	2.23	0.57	0.71	0.0272	0.0415	0.0381
	1997	0.00	0.01	0.21	0.44	1.30	1.87	1.85	2.67	1.43	2.31	0.48	0.71	0.0263	0.0401	0.0368
All Orders	1981	14.69	29.99	84.40	95.06	128.08	121.96	66.65	66.90	17.88	19.51	2.67	3.22	1.5718	1.6832	1.6523
	1986	14.86	25.56	70.05	82.75	112.18	122.34	59.52	77.74	17.20	24.16	2.48	3.36	1.3814	1.6795	1.6005
	1987	15.53	25.03	69.07	79.48	110.12	119.93	59.95	78.45	17.01	25.59	2.59	3.61	1.3713	1.6605	1.5840
	1988	15.90	25.19	72.39	79.08	113.84	120.07	63.00	80.31	18.41	27.08	2.87	3.90	1.4321	1.6782	1.6136
	1989	17.03	26.91	76.85	80.20	120.75	119.96	69.22	83.46	19.82	28.23	2.72	4.11	1.5320	1.7144	1.6668
	1990	18.06	27.66	80.88	80.04	128.43	121.68	75.65	86.41	22.35	29.65	2.89	4.21	1.6413	1.7483	1.7204
	1991	17.22	28.56	80.52	78.12	129.16	118.64	77.91	85.84	22.93	30.06	3.03	4.19	1.6538	1.7270	1.7083
	1992	17.72	28.15	77.60	76.01	129.71	118.26	80.89	87.81	23.94	30.71	3.33	4.56	1.6660	1.7275	1.7116
	1993	17.26	27.46	76.48	74.15	124.34	114.96	81.12	87.58	24.36	31.50	3.63	4.73	1.6360	1.7018	1.6846
	1994	17.46	27.43	75.61	72.91	123.34	114.13	82.21	88.43	25.52	32.19	3.73	5.02	1.6394	1.7006	1.6844
	1995	17.01	26.75	73.17	71.46	119.06	110.48	82.81	89.61	26.14	33.27	3.94	5.17	1.6106	1.6837	1.6647
	1996	16.27	24.01	72.13	67.29	118.42	106.32	81.69	88.68	27.33	34.35	3.94	5.47	1.5989	1.6306	1.6215
	1997	15.45	21.42	66.99	63.07	111.67	101.50	79.50	85.93	26.51	34.47	3.88	5.63	1.5200	1.5601	1.5492

[1] Excluding Newfoundland before 1991.

Sources: Statistics Canada, Health Statistics Division, Health Status and Vital Statistics Section and Demography Division, Population Estimates Section.

Table A8. Mortality

Year	Nfld	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta	B.C.	Yukon	N.W.T.[1]	Canada
	Deaths												
1981	3,230	992	6,958	5,139	42,684	62,838	8,648	7,523	12,823	19,857	141	196	171,029
1986	3,540	1,121	7,255	5,458	46,892	67,865	8,911	8,061	13,560	21,213	113	235	184,224
1987	3,629	1,115	7,112	5,408	47,616	68,119	8,710	7,808	13,316	21,814	108	197	184,952
1988	3,591	1,112	7,412	5,450	47,771	70,679	9,100	8,100	13,894	22,546	136	220	190,011
1989	3,718	1,089	7,516	5,496	48,305	70,907	8,819	7,920	13,854	22,997	95	249	190,965
1990	3,884	1,143	7,388	5,426	48,420	70,818	8,863	8,044	14,068	23,577	115	227	191,973
1991	3,798	1,188	7,255	5,469	49,121	72,917	8,943	8,098	14,451	23,977	114	237	195,568
1992	3,798	1,114	7,544	5,609	48,824	73,206	8,980	7,793	14,679	24,615	117	256	196,535
1993	3,890	1,145	7,559	5,806	51,711	75,853	9,299	8,164	15,338	25,764	123	260	204,912
1994	4,050	1,114	7,770	5,917	51,366	77,487	9,148	8,308	15,613	25,939	124	241	207,077
1995	3,935	1,153	7,687	5,938	52,734	78,479	9,658	8,495	15,895	26,375	157	227	210,733
1996	3,928	1,268	7,751	5,896	52,336	79,099	9,497	8,765	16,391	27,536	120	272	212,859
1997	4,318	1,030	8,044	5,944	54,399	79,541	9,511	8,637	16,452	27,412	123	258	215,669
	Infant Deaths (age less than 1 year)												
1981	98	25	139	114	807	1,073	191	203	452	424	8	28	3,562
1986	65	13	104	81	604	969	157	157	393	355	12	28	2,938
1987	59	13	90	67	594	888	142	155	315	359	5	19	2,706
1988	70	14	79	69	563	910	132	140	347	362	3	16	2,705
1989	64	12	73	69	632	985	115	134	325	360	2	24	2,795
1990	70	12	81	71	612	946	138	123	346	344	4	19	2,766
1991	56	13	69	58	578	953	111	126	285	298	6	20	2,573
1992	49	3	71	59	522	886	113	110	304	286	2	26	2,431
1993	50	16	82	65	529	922	118	115	268	264	4	15	2,448
1994	52	11	67	48	506	878	115	125	294	297	1	23	2,417
1995	46	8	52	41	477	870	123	123	274	280	6	21	2,321
1996	38	8	59	40	396	802	104	112	236	237	0	19	2,051
1997	28	7	44	45	444	728	110	114	178	210	4	16	1,928

[1] Nunavut included.

Source: Statistics Canada, Health Statistics Division, Health Status and Vital Statistics Section.

Table A9. Life Expectancy at Different Ages (Triennial Tables), Canada, 1971 to 1997

Year	1971	1976	1981	1986	1991	1995	1996	1997[1]
	Males							
0	69.58	70.47	72.03	73.29	74.61	75.21	75.45	75.78
1	70.00	70.49	71.82	72.92	74.14	74.71	74.92	75.22
5	66.25	66.71	67.99	69.05	70.25	70.80	71.01	71.31
10	61.43	61.86	63.10	64.14	65.32	65.86	66.07	66.37
15	56.58	56.99	58.22	59.23	60.40	60.93	61.14	61.44
20	51.97	52.39	53.57	54.52	55.66	56.16	56.36	56.66
25	47.40	47.83	48.95	49.85	50.96	51.43	51.63	51.93
30	42.72	43.15	44.26	45.12	46.24	46.70	46.88	47.16
35	38.04	38.46	39.53	40.40	41.53	41.98	42.16	42.42
40	33.42	33.83	34.85	35.69	36.86	37.31	37.47	37.71
45	28.96	29.34	30.28	31.07	32.22	32.70	32.84	33.07
50	24.71	25.08	25.92	26.62	27.73	28.17	28.31	28.52
55	20.75	21.10	21.83	22.42	23.43	23.84	23.96	24.15
60	17.11	17.45	18.06	18.54	19.44	19.75	19.86	20.03
65	13.87	14.17	14.65	15.01	15.81	16.02	16.09	16.25
70	11.05	11.26	11.66	11.90	12.55	12.69	12.73	12.87
75	8.62	8.78	9.07	9.22	9.71	9.77	9.79	9.92
80	6.59	6.72	6.92	6.99	7.36	7.33	7.31	7.38
85	5.04	5.17	5.22	5.20	5.53	5.41	5.36	5.45
90	3.92	4.30	3.95	3.82	4.28	4.07	3.94	4.00
	Females							
0	76.58	77.79	79.16	79.99	80.96	81.12	81.21	81.39
1	76.77	77.71	78.83	79.54	80.43	80.55	80.62	80.79
5	73.00	73.89	74.97	75.66	76.52	76.63	76.70	76.87
10	68.13	69.00	70.06	70.72	71.58	71.69	71.76	71.92
15	63.23	64.09	65.13	65.79	66.64	66.74	66.81	66.98
20	58.40	59.25	60.27	60.91	61.75	61.85	61.92	62.08
25	53.55	54.40	55.40	56.02	56.86	56.95	57.01	57.18
30	48.71	49.54	50.54	51.14	51.97	52.05	52.12	52.28
35	43.91	44.71	45.69	46.27	47.11	47.18	47.25	47.40
40	39.19	39.96	40.90	41.45	42.29	42.35	42.41	42.57
45	34.56	35.30	36.21	36.72	37.52	37.60	37.66	37.81
50	30.06	30.80	31.64	32.12	32.89	32.94	32.99	33.14
55	25.72	26.43	27.24	27.67	28.39	28.42	28.46	28.58
60	21.58	22.25	23.02	23.40	24.07	24.09	24.11	24.21
65	17.66	18.30	19.02	19.35	19.97	19.95	19.96	20.07
70	14.04	14.64	15.31	15.57	16.13	16.08	16.08	16.17
75	10.81	11.36	11.95	12.13	12.60	12.53	12.51	12.60
80	8.07	8.54	9.01	9.15	9.52	9.41	9.36	9.43
85	5.93	6.36	6.66	6.68	6.98	6.82	6.77	6.84
90	4.45	4.95	4.95	4.86	5.07	4.90	4.82	4.86

[1] Calculated by using the average of deaths in 1996 and twice those of 1997.

Sources: Statistics Canada, Health Statistics Division, Health Status and Vital Statistics Section and Demography Division, Population Estimates Section and Research and Analysis Section.

Table A10. Landed Immigrants in Canada by Country of Birth, 1981-1998

	1981	1986	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
ASIA	**50,894**	**42,486**	**95,098**	**115,294**	**123,463**	**143,087**	**149,883**	**143,272**	**130,590**	**145,509**	**139,738**	**101,902**
China	9,789	4,190	8,981	14,483	20,982	22,407	19,731	23,348	20,981	24,986	24,750	22,622
South Korea	1,504	1,206	3,004	2,085	2,606	3,787	3,817	3,014	3,508	3,251	4,110	4,875
Hong Kong[1]	4,040	4,316	15,728	23,741	16,589	28,266	27,320	33,728	24,883	24,143	17,805	6,343
India	9,427	7,479	10,700	12,601	14,309	14,304	21,762	18,567	18,277	23,388	21,711	16,814
Iran	1,409	2,149	4,264	3,986	6,689	7,105	4,174	3,010	4,075	6,260	7,884	6,996
Iraq	305	316	1,115	815	996	2,177	3,319	2,254	2,416	2,771	2,574	1,862
Lebanon	1,043	2,451	6,870	12,978	12,225	6,662	4,806	2,725	2,164	1,895	1,470	1,342
Pakistan	823	630	2,042	2,150	2,780	3,751	4,509	4,406	4,662	8,556	12,179	8,396
Philippines	5,986	4,215	11,888	12,608	12,741	13,805	20,551	19,499	15,825	13,626	11,414	8,499
Sri Lanka	368	1,839	2,716	3,458	7,158	12,947	9,477	7,088	9,363	6,443	5,342	3,535
Taiwan	705	643	3,162	3,592	4,299	7,079	9,382	7,007	7,429	12,754	12,784	6,930
Vietnam	8,241	6,240	9,537	9,323	8,901	7,867	8,400	6,505	4,180	2,706	1,998	1,821
Others	7,254	6,812	15,091	13,474	13,188	12,930	12,635	12,121	12,827	14,730	15,717	11,867
EUROPE	**44,817**	**22,534**	**50,751**	**51,165**	**46,921**	**43,675**	**45,719**	**38,080**	**40,314**	**39,207**	**37,952**	**37,128**
Germany	2,075	1,349	2,015	1,611	1,576	1,412	1,659	1,364	1,590	1,760	1,562	1,647
Bosnia-Hercegovina	0	0	0	0	0	347	2,747	4,723	4,194	2,466	2,204	2,469
France	1,681	1,124	2,127	2,004	2,631	3,117	3,351	2,522	3,035	2,438	2,313	2,986
Great Britain	18,920	4,610	7,365	7,074	6,444	5,919	5,954	4,771	4,564	4,381	3,923	3,260
Greece	927	553	794	609	626	597	540	341	245	239	209	143
Ireland	851	477	1,303	800	639	490	417	317	228	259	226	173
Italy	2,058	787	1,197	1,073	782	672	696	533	506	489	466	369
Poland	4,094	5,286	16,013	16,807	15,812	11,971	6,945	3,572	2,453	2,167	1,793	1,507
Portugal	3,292	2,456	7,935	7,754	5,861	2,749	1,706	819	816	711	697	431
Romania	1,004	1,003	2,205	2,976	2,600	3,314	3,787	3,596	4,342	3,952	4,045	3,058
Russia	0	0	0	0	1	161	891	1,414	2,087	3,181	4,236	4,715
Ukraine	0	0	2	2	5	113	870	1,436	1,828	2,680	2,648	2,731
Others	9,915	4,889	9,795	10,455	9,944	12,813	16,156	12,672	14,426	14,484	13,630	13,639

	1981	1986	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
AFRICA	**5,915**	**5,200**	**12,428**	**13,911**	**16,656**	**20,265**	**17,576**	**14,216**	**15,506**	**15,847**	**15,316**	**14,418**
South Africa	1,238	797	1,416	1,005	947	1,139	1,668	2,465	1,478	1,351	1,767	1,403
Algeria	128	114	465	508	913	853	751	649	1,111	2,042	1,798	2,239
Egypt	767	631	1,749	2,522	1,942	1,641	1,661	2,321	2,716	2,375	2,043	1,297
Ethiopia	152	993	2,275	2,430	2,577	2,282	1,925	1,273	952	1,043	810	654
Somalia	9	58	448	1,160	3,276	5,561	3,657	1,729	2,078	1,424	1,159	1,383
Others	3,621	2,607	6,075	6,286	7,001	8,789	7,914	5,779	7,171	7,612	7,739	7,442
NORTH AND CENTRAL AMERICA	**10,183**	**12,419**	**11,890**	**13,146**	**19,100**	**18,843**	**14,428**	**8,774**	**7,270**	**8,550**	**7,927**	**6,848**
United States	8,695	6,100	5,817	5,135	5,323	5,980	6,480	5,154	4,331	5,051	4,402	4,140
Mexico	397	675	1,030	1,205	1,150	1,200	1,154	786	764	1,247	1,690	1,381
Others	1,091	5,644	5,043	6,806	12,627	11,663	6,794	2,834	2,175	2,252	1,835	1,327
CARRIBEAN AND BERMUDA	**8,805**	**8,951**	**10,945**	**11,840**	**13,119**	**15,242**	**16,755**	**10,071**	**10,101**	**9,396**	**8,234**	**6,378**
Haiti	3,704	1,765	2,380	2,389	2,852	2,433	3,687	2,124	2,044	1,976	1,656	1,310
Jamaica	2,688	4,694	4,002	5,035	5,135	6,062	6,118	3,953	3,644	3,309	2,870	2,252
Trinidad and Tobago	949	927	3,012	2,831	2,983	4,351	4,216	2,342	2,585	2,205	1,760	1,196
Others	1,464	1,565	1,551	1,585	2,149	2,396	2,734	1,652	1,828	1,906	1,948	1,620
SOUTH AMERICA	**6,126**	**6,557**	**8,578**	**8,631**	**10,517**	**10,314**	**9,559**	**7,956**	**7,521**	**6,019**	**5,590**	**4,878**
Guyana	3,024	3,991	3,370	2,895	3,371	3,059	3,553	4,272	3,978	2,392	1,841	1,272
Others	3,102	2,566	5,208	5,736	7,146	7,255	6,006	3,684	3,543	3,627	3,749	3,606
AUSTRALASIA	**1,024**	**451**	**637**	**728**	**743**	**931**	**1,018**	**742**	**676**	**695**	**626**	**514**
OCEANIA	**726**	**387**	**751**	**1,190**	**1,626**	**1,780**	**1,335**	**1,048**	**681**	**636**	**472**	**391**
OTHERS AND NOT STATED	**303**	**354**	**427**	**513**	**618**	**708**	**486**	**219**	**197**	**191**	**190**	**1,686**
TOTAL	**128,793**	**99,339**	**191,505**	**216,418**	**232,763**	**254,845**	**256,759**	**224,378**	**212,856**	**226,050**	**216,045**	**174,143**

[1] Includes Honk Kong SAR (Special Administrative Region) since July 1, 1997.
Note: Preliminary data as of July 12, 1999.
Sources: Citizenship and Immigration Canada, unpublished data.

Table A11. Canadian Population as of July 1st, 1996, 1997, 1998, by Age and Sex (in thousands)

Age	Males			Females		
	1996	1997	1998	1996	1997	1998
0	194.8	183.1	178.8	186.2	173.3	169.4
1	198.3	196.3	184.5	187.9	188.2	175.1
2	200.2	199.9	197.7	190.1	189.6	189.6
3	204.4	201.7	201.3	194.1	191.5	190.8
4	209.4	205.9	203.0	200.0	195.6	192.8
5	212.1	211.2	207.3	201.8	201.6	197.0
6	213.2	214.2	212.7	202.9	203.5	203.1
7	205.8	214.9	215.6	195.8	204.4	204.8
8	200.0	207.5	216.2	190.8	197.4	205.7
9	202.1	201.7	208.9	192.7	192.4	198.8
10	206.2	203.8	203.2	195.5	194.2	193.6
11	207.7	207.9	205.1	196.1	196.8	195.3
12	206.3	209.5	209.3	196.0	197.7	198.2
13	205.6	208.0	210.9	195.3	197.4	198.8
14	205.6	207.5	209.5	195.0	196.7	198.8
15	208.5	207.3	209.0	197.9	196.6	198.0
16	208.9	210.3	209.0	197.3	199.7	198.2
17	206.6	210.7	211.8	194.6	199.4	201.6
18	204.7	208.3	212.2	192.7	196.5	201.0
19	206.3	206.5	209.9	195.5	195.0	198.6
20	206.7	207.5	207.4	196.8	197.7	196.9
21	206.5	208.4	208.9	198.2	199.7	200.1
22	200.9	208.3	209.8	194.2	200.3	201.5
23	202.9	202.8	209.6	196.5	196.3	202.2
24	206.9	204.9	204.2	201.0	198.6	198.1
25	216.3	208.4	206.0	211.1	203.3	200.4
26	218.7	218.1	209.7	212.5	213.4	205.2
27	216.5	220.4	219.5	211.9	214.6	215.1
28	217.3	218.6	222.1	213.7	214.3	216.6
29	224.9	219.5	220.4	220.6	216.2	216.3
30	239.4	227.2	221.7	233.9	222.9	218.4
31	258.2	241.5	228.8	252.1	236.3	224.8
32	268.3	260.2	243.0	261.3	254.4	238.1
33	272.3	270.4	261.6	266.0	263.8	256.2
34	268.0	274.1	271.6	262.9	268.3	265.4
35	270.6	269.5	275.4	267.1	265.0	270.2
36	267.8	272.0	270.6	265.2	269.3	266.7
37	262.1	269.1	273.0	261.5	267.1	270.6
38	261.2	263.6	270.3	259.2	263.3	268.5
39	256.1	262.6	264.5	255.5	260.8	264.5
40	248.5	257.3	263.4	248.8	257.1	262.0
41	247.0	249.8	258.2	247.7	250.1	257.9
42	238.7	247.9	250.3	241.0	248.7	250.8
43	228.7	239.5	248.4	231.1	242.0	249.4
44	221.7	229.4	239.9	222.2	232.0	242.6
45	217.9	222.3	229.8	218.2	222.8	232.3
46	214.2	218.3	222.5	214.2	218.6	223.0

See notes at the end of the table.

Table A12. Canadian Population as of July 1st, 1996, 1997, 1998, by Age and Sex (in thousands) - Concluded

Age	Males			Females		
	1996	1997	1998	1996	1997	1998
47	210.7	214.5	218.3	211.5	214.6	218.8
48	211.4	210.8	214.5	211.5	211.7	214.6
49	210.9	211.3	210.5	211.5	211.6	211.6
50	181.6	210.6	210.8	182.2	211.6	211.5
51	169.5	181.2	210.1	169.8	182.3	211.6
52	165.2	168.9	180.5	166.3	169.7	182.1
53	160.4	164.7	168.3	161.4	166.3	169.6
54	149.0	159.7	163.9	150.6	161.3	166.0
55	143.0	148.3	158.9	145.2	150.4	161.1
56	135.2	142.3	147.6	137.5	145.1	150.2
57	131.6	134.5	141.5	134.3	137.3	144.7
58	127.1	130.9	133.7	129.6	134.0	137.0
59	122.4	126.2	129.9	125.4	129.4	133.7
60	122.2	121.5	125.2	125.7	125.1	128.9
61	119.0	121.1	120.2	123.0	125.3	124.6
62	116.5	117.7	119.8	120.1	122.5	124.7
63	117.8	115.1	116.1	122.6	119.6	121.9
64	118.1	116.3	113.4	122.8	121.9	118.7
65	115.7	116.2	114.3	123.2	121.9	120.9
66	111.6	113.6	114.1	120.8	122.2	120.8
67	105.5	109.4	111.3	116.7	119.7	121.0
68	102.8	103.1	106.9	115.9	115.3	118.3
69	97.6	100.3	100.5	113.5	114.5	113.7
70	94.3	94.8	97.4	113.6	111.8	112.8
71	90.0	91.3	91.7	111.3	111.9	109.9
72	85.1	87.0	88.1	108.5	109.5	109.9
73	80.2	81.9	83.7	104.5	106.4	107.3
74	76.7	76.9	78.5	102.8	102.2	103.9
75	70.9	73.2	73.4	97.1	100.4	99.6
76	64.5	67.4	69.6	90.5	94.5	97.7
77	53.5	61.5	64.3	78.3	88.1	92.0
78	48.6	50.4	58.3	72.0	75.6	85.4
79	44.9	45.3	47.0	69.1	69.2	72.7
80	41.6	41.6	41.9	65.7	66.0	66.1
81	39.3	38.1	37.9	64.1	62.4	62.5
82	34.5	35.9	34.6	58.7	60.7	58.9
83	30.0	31.3	32.6	52.5	55.1	57.0
84	24.9	26.8	28.2	46.4	48.9	51.4
85	21.0	22.1	24.0	41.2	42.9	45.3
86	17.8	18.5	19.5	35.9	37.7	39.3
87	14.5	15.5	16.1	31.2	32.6	34.4
88	11.9	12.4	13.3	26.9	27.9	29.2
89	9.4	10.0	10.5	22.6	23.8	24.8
90 +	28.5	29.8	31.6	83.9	88.0	92.9
Total	14,691.8	14,857.7	14,998.9	14,980.1	15,153.3	15,302.3

1996: Final postcensal estimates from March 22, 1999.
1997: Updated postcensal estimates from March 22, 1999.
1998: Updated postcensal estimates from March 22, 1999.
Source: Statistics Canada, Demography Division, Population Estimates Section.

Glossary[1]

Age: Age at last birthday (in years).

Aging (of a Population): An increase of the percentage of old persons in the total population.

Birth Cohort or Generation: Unless otherwise specified, refers here to a group of persons born within the 12-month period between January 1st and December 31st of a given year.

Census Coverage

Net undercoverage: Difference between undercoverage and overcoverage.

Overcoverage: Number of persons who should not have been counted in the census or who were counted more than once.

Undercoverage: Number of persons not enumerated in a census (who were intended to have been enumerated).

Census Metropolitan Area (CMA): The general concept of a census metropolitan area (CMA) is one of a very large ***urban area***, together with adjacent ***urban*** and ***rural areas*** which have a high degree of economic and social integration with that urban area.

A Census Metropolitan Area is delineated around an urban area (called the ***urbanized core*** and having a population of at least ***100,000 (based on the previous census)***. Once an area becomes a CMA, it is retained in the program even if its population subsequently declines.

CMAs are comprised of one or more ***census subdivisions (CSDs)*** which meet at least one of the following criteria:

(1) the CSD falls completely or partly inside the urbanized core;

(2) at least 50% of the employed labour force ***living*** in the CSD ***works*** in the urbanized core; or

(3) at least 25% of the employed labour force ***working*** in the CSD ***lives*** in the urbanized core (***1991 Census Dictionary***, Catalogue no. 92-351-XPE, page 181).

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[1] For further information consult the following: International Union for the Scientific Study of Population (1980). **Multilingual Demographic Dictionary**, Ordina Editions, Liège and Van de Walle, Étienne. **The Dictionary of Demography**, ed. Christopher Wilson. Oxford, England, New York, New York, United States of America.

Cohort: Represents a group of persons who have experienced a specific demographic event during a given period which can be a year. Thus, the married cohort of 1996 consists of the number of persons who married in 1996. Persons born within a specified year could be referred to as a generation.

Cohort, fictitious: An artificial cohort created from portions of actual cohorts present at different successive ages in the same year.

Common-law Union: Union consisting of a male and a female living together as husband and wife, without being legally married.

Components of Demographic Change: Any of the classes of events generating population movement or variations. Births, deaths, migration, marriages, divorces and new widowhoods are the components responsible for the change in total population or in the age, sex and marital status distribution of the population.

Current index: An index constructed from measurements of demographic phenomena and based on the events reflecting those phenomena during a given period, usually a year. For example, life expectancy in 1996 is a current index in the sense that it indicates the average number of years a person would live if he or she experienced 1996 conditions throughout his or her life.

Dependency Ratio: The total population is customarily divided up into three broad age groups: 0-14 (children), 15-64 (adults) and 65 and over (older persons). The following ratios may be defined on the basis of this classification:

(a) child dependency ratio: The number of children per adult (15-64);

(b) age dependency ratio: The number of aged persons per adult (15-64);

(c) total dependency ratio: The sum of the child and the aged dependency ratios.

Error of Closure: Difference between the postcensal estimate and the population adjusted for net undercoverage according to a census for the same date.

Fertility: Relates the number of live births to the number of women, couples or, very rarely, men.

Infant mortality: Mortality of children less than a year old.

Intensity: Frequency of occurrence of an event among members of a given cohort.

Intercensal: The period between two censuses.

International Migration: Movement of population between Canada and a foreign country which involves a change in residence. A distinction is made between ***landed immigrants***, ***returning Canadians*** from other countries who settle in Canada, ***emigrants*** and the net change in ***non-permanent residents***.

Interprovincial Migration: Movement from one province to another involving a permanent change in residence. A person who takes up residence in another province is an ***out-migrant*** with reference to the province of origin, and an ***in-migrant*** with reference to the province of destination.

Life expectancy: A statistical measure derived from the life table that indicates the average years of life remaining for a person at a specified age, if the current age-specific mortality rates prevail for the remainder of that person's life.

Legal Marital Status: Indicates the conjugal status, that is whether single, married, widowed or divorced.

Single: Includes persons who have never been married and all persons under 15 years of age.

Married: Includes persons legally married and persons legally married and separated.

Widowed: A person whose spouse has died and who has not remarried.

Divorce: A person who has obtained a legal divorce and who has not remarried.

Mean Age: The mean age of a population is the average age of all its members.

Median Age: The median age is an age "x", such that exactly one half of the population is older than "x" and the other half is younger than "x".

Natural Increase: A change in population size over a given period as a result of the difference between the numbers of births and deaths.

Neonatal mortality: Mortality in the first month after birth (part of infant mortality).

Net migration: Difference between immigration and emigration for a given area and period of time.

Non-permanent Residents: The five following groups are referred to as non-permanent residents:

- persons residing in Canada claiming refugee status;

- persons residing in Canada who hold a student authorization (foreign students, student visa holders);
- persons residing in Canada who hold an employment authorization (foreign workers, work permit holders);
- persons residing in Canada who hold a Minister's permit;
- all non-Canadian born dependents of persons claiming refugee status, or of persons holding student authorizations, employment authorizations or Minister's permits and living in Canada.

Parity: A term used in reference to a woman or a marriage to denote the number of births or deliveries by the woman or in the marriage. A two-parity woman is a woman who has given birth to a second-order child.

Population: Estimated population and population according to the census are both defined as being the number of Canadians whose usual place of residence is in that area, regardless of where they happened to be on Census Day. Also included are any Canadians staying in a dwelling in that area on Census Day and having no usual place of residence elsewhere in Canada, as well as those considered "non-permanent residents".

Population Estimate:

Preliminary, Updated and Final Postcensal: Population estimates produced by using data from the most recent census adjusted for net census undercoverage and estimates of the components of demographic change since that last census.

Intercensal: Population estimate derived by using postcensal estimates and data from the most recent census counts adjusted for net undercount preceding and following the year in question.

Population Growth: A change, either positive or negative, in population size over a given period.

Population movement: Gradual change in population status over a given period attributable to the demographic events that occur during the period. Movement here is not a synonym for migration.

Population Projection: The projection differs from the estimate in that its objective is to establish what the evolution of the population will be in the future by size, geographical distribution and other demographic characteristics using selected hypotheses. A reference is made to a projection when the formulated hypotheses appear to be highly probable. Generally, population projections are restricted to a short term period.

Post-neonatal mortality: Mortality between the ages of one month and one year.

Prevalence: Number of cases existing at one point in time.

Probability of survival: Probability of a survivor of exact age *x* surviving at least to age *x+n*. Its notation is ${}_np_x$ and it is the complement of the probability of dying ($1-{}_nq_x$).

Proportion ever married: A measure of the prevalence of marriage in a generation or a fictitious cohort. It is usually equivalent to the proportion remaining single at an age such as 50 after which first marriages are rare.

Rate:

Age-Specific Fertility: Ratio of the number of births occurring in a given age group to the number of females of a given age (per 1,000).

Birth: Refers to a rate calculated by relating the number of live births observed in a population during a given period to the size of the population during that period (per 1,000).

Divorce: Refers to the number of divorces per 1,000 population.

First Marriage: Ratio of the number of first marriages observed in a population in a given period to the number of persons in that population regardless of the marital status (per 1,000).

Mortality: Ratio of the annual number of deaths occurring in a population or sub-population during a given period to the number exposed to the risk of dying during the same period (per 1,000).

Population Growth: Ratio of population growth between the year t and t+1, to the average population of that period (per 1,000).

Residual: Difference between population growth as measured by population estimates of two consecutive years and the sum of the components. This difference results from the distribution of the closure error between years within the quinquennial period.

Returning Canadians: Canadian citizens and landed immigrants who emigrated from the country and who subsequently returned to Canada to re-establish a permanent residence.

Sex Ratio: The ratio of the number of men to the number of women. This is not to be confused with the sex ratio at birth, which is the ratio of the number of liveborn boys to the number of liveborn girls. This ratio is usually expressed as an index, with the number of females taken to be a base of 100.

Standardized Rates: Mathematical transformations designed to make it possible to compare different populations with respect to a variable, e.g., fertility or mortality, where the influence of another variable, e.g., age, is held constant.

Structure: Arrangement of a population by different demographic characteristics such as age, sex or marital status.

Tempo: Distribution over time, within the cohort, of the demographic events corresponding to the investigated phenomenon.

Total Rates: A period measure obtained by the summation of the series of age-specific or duration-specific rates. It represents the behaviour of the members of the fictitious cohort.

Total Divorce Rate: Proportion of marriages that finish in divorce before the 25th anniversary according to the divorce conditions of that year. It is a result of the sum of the divorce rates by length of marriage expressed per 10,000.

Total Fertility: Average number of children per female according to the fertility in a given year computed by the summation of the series of age-specific fertility rates.

Total First Marriage: Proportion of males or females marrying before their 50th birthday according to nuptiality conditions in a given year computed by the summation of the rates by age at first marriage.

Vital Statistics: Includes all the demographic events (that is to say births, deaths, marriages and divorces) for which there exists a legal requirement to inform the Provincial or Territorial Registrar's Office.


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Part II

RELATIVE INCOME, OPPORTUNITY COST AND FERTILITY CHANGES IN CANADA

by Laurent Martel and Alain Bélanger

AN ANALYSIS OF THE CHANGE IN DEPENDENCE-FREE LIFE EXPECTANCY IN CANADA BETWEEN 1986 AND 1996

by Laurent Martel and Alain Bélanger

ETHNIC MOBILITY AND THE DEMOGRAPHIC GROWTH OF CANADA'S ABORIGINAL POPULATIONS FROM 1986 TO 1996

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RELATIVE INCOME, OPPORTUNITY COST AND FERTILITY CHANGES IN CANADA

by Laurent Martel et Alain Bélanger

Fifteen years ago in this series, A. Romaniuc published a comprehensive study of how fertility in Canada had evolved over the century (Romaniuc, 1984). It described the phenomenal increase of fertility in the postwar period, resulting in the baby boom. With the largest cohorts ever known in Canada, the baby boomers, by their numbers alone, will have left their mark on Canada's social, economic and political structure throughout their life cycle.

Paradoxically, the first cohorts of the baby boom were also the first not to be replaced. Already in 1984, Romaniuc's study measured the importance of this new fact, emphasizing the sudden decline in the various fertility indicators during the seventies. Even today, the study's first paragraph remains topical, although some uncertainties of that period regarding the replacement of generations or the increase in the number of infertile couples have now become measurable realities:

> *The rate of fertility has fallen so low in Canada that the replacement of the present generations is no longer assured. Canadians now have fewer children, later in their lives and more may choose to forgo parenthood altogether. Changes of unprecedented proportions are taking place in the dynamics of population growth, the age structure and family and household formation. Fertility is the single most important demographic factor underlying these changes. Neither mortality nor migration, the other two components of population growth, have had a comparable influence.*
>
> (Romaniuc, 1984: 7)

For nearly 30 years now, the total fertility rate in Canada has been so low that it is no longer sufficient even to replace the present generations, or in other words to renew the population. While Canada maintains relatively strong population growth when compared to the other OECD countries, especially those in Europe, this is due to immigration, which is playing an expanding role in overall population growth. But demographers have clearly shown that the impact of migration on the age structure of a population is marginal when compared with the effect of fertility.

In 1997, Canada's total fertility rate stood at 1.55 children per woman. Never before had it been so low. But Canada is not the only country in this situation; indeed, a decline in fertility has been observed in all developed countries. Europe is now experiencing the lowest levels ever recorded. Thus

in 1997 the total fertility rate stood at 1.36 children per woman in Germany, 1.15 in Spain and 1.22 in Italy (Monnier, 1998). These national averages sometimes mask even lower levels for large regions: the level for eastern Germany in 1994 was 0.77 children per woman! Such fertility levels quickly affect population growth, and some fifteen European countries already have a negative rate of natural increase. Canada should be in this situation within some 30 years.

Consequently, many social scientists—demographers, economists, sociologists, anthropologists—have tried to get a better grasp of the factors that cause fertility to rise or, as in this case, to fall. Up to now, there has been no theory or explanation to settle this universal and still-topical debate. True, demographers such as K. Davis and J. Blake (1956) have identified a set of eleven intermediate variables, classified into three categories—risks of exposure to sexual relations, risks of conception and risks of live birth—by which fertility is expressed. But while there is no question that these variables, some of which are based in biology, play a role, they are not sufficient to explain the fertility levels and behaviours observed in industrialized societies such as Canada. One of the most popular and often-used approaches to this subject is based on economic analysis, giving rise to economic theories of fertility. There are basically three such theories: the relative income model developed by Easterlin; the "*New Home Economics*", originally developed by Becker; and Caldwell's model of intergenerational flows. Since the third theory deals more with the situation of developing countries, only the first two will be considered. The objective of this study is not to subscribe to one or the other of these theories, but rather to examine whether they apply in the Canadian context, as a matter of scientific interest.

Basic Postulates of These Economic Theories

The idea that there is a link between population and economics is not new: the Mercantilists, the Physiocrats and the Classics have left us a number of writings on the relationship between the power of the state—economic power, but especially military power at the time—and the number of its subjects. But it was not really until the late 1950s that researchers undertook to explain reproductive behaviour in terms of socioeconomic variables under the postulate, inherent in the law of supply and demand, that consumers' choices are rational. One of the first to pose the problem in these terms was H. Leibenstein, in 1957, as part of his theory of the *Demographic Transition*. Seeking to explain the causes of the decline in fertility—the second stage of the Demographic Transition—he showed that couples decide whether to have an additional child on the basis of a cost-benefit analysis.

And indeed, reproduction has become a matter of choice, because of a major revolution in the history of human populations: the control of fertility

through contraception. With the development of effective birth control methods, couples were able to choose relatively accurately the maximum number of children that they wanted and the timing of the births, giving them, to a large degree, control over their fertility. Only infecundity is today still a factor that can prevent couples from achieving the desired number of children. A "demographic" hypothesis is therefore discreetly posed, namely that the fertility achieved by a couple corresponds to the fertility desired. Hence the control of fertility is a necessary condition for these models.

The child therefore becomes another *consumer durable* among others; this is the second basic postulate. This analogy between children and consumer goods has elicited numerous criticisms, especially by sociologists who see it as the ultimate expression or culmination of *homo economicus* (Blake, 1968). An important nuance should nevertheless be noted here, namely that the economic approaches to fertility do not assign children *the same value* as material goods; rather they see them as resulting from *the same decision-making process* on the part of households or couples.

Starting with these few postulates, it is hypothesized that each household tries to maximize a utility function[1] on the basis of two factors: its tastes—or its preferences or aspirations—and its limited resources. Therefore, each household has an income constraint that forces it to make choices based on decisions that are, as noted above, assumed to be rational. Since in economics, the demand for a good can vary as a function of its price and the income of individuals, the entire thrust of these theories will be to see how the demand for children varies in relation to these two parameters. Since a child is considered a superior good, any increase in the household's income should lead to an increase in the demand for children. These models therefore all suggest, at the outset, that there is a positive relationship between income and fertility. Conversely, an increase in the cost of children will have as its corollary a decrease in the number of children desired.

The "Relative Income" Model or the Pennsylvania School

Based primarily on the works of Easterlin (1961, 1973, 1975, 1978) and to a lesser extent on those of Pollack and Wachter (1975), the relative income model attempts to explain changes in fertility over time rather than differences among households at a specific point in time. The approach is therefore macroeconomic, and it calls for large aggregates that cover fairly long periods, such as half a century. Hence the longitudinal data needed to test these models empirically are scarce, hard to obtain and sometimes even totally non-existent.

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[1] A household's utility function may be seen as the satisfaction that it derives from the consumption of goods given the costs.

Unlike the "*New Home Economics*", the other theory in this field, the approach developed by Easterlin focuses on households' relative income rather than their absolute income. Echoing Durkheim and his concept of "*socialization*", Easterlin (1997) postulates that there is a process of "*economic socialization*" by which individuals define their tastes and aspirations, in particular material ones, on the basis of the milieu from which they came, that is, the socioeconomic conditions of their parents. Most often, there is a gulf between these material aspirations and the households' economic resources, forcing them to make choices based on their preferences. Income is therefore in many respects relative, since it also depends on the circumstances in which individuals operate and their aspirations to achieve a standard of living equivalent to what they experienced in their parents' home.[2]

According to Easterlin, it is possible that fertility will vary even if prices and wages remain constant from one period to another because of couples' material aspirations, which are fixed, in a sense, by their social origin. According to him, the parents of baby boomers, most of whom experienced the effects of the Crash of 1929 when they were young, grew up in difficult economic circumstances that instilled in them a more "reserved" behaviour as consumers. Many of them joined the labour force in large numbers during the war or soon afterward and found that their incomes could easily satisfy their relatively modest material aspirations, leaving room for having children. By contrast, the parents of the children born during the last two decades were reared in relatively well-off families. Encountering more difficult conditions or even unemployment on entering the labour market, they found it more difficult to satisfy their material aspirations, which were greater than those of their parents at the same age. To attempt to meet those aspirations, they therefore had to limit their number of offspring.

According to Easterlin, households' fertility depends on the gap between material aspirations and resources for satisfying them: the greater the gap, the more fertility will be reduced. Hence it is not impossible that the expected positive effect of income growth on fertility may be cancelled out by households' ever-growing material aspirations.

There are very few microeconomic studies verifying the "*relative income*" model, since it is more suited to macroeconomic analysis. Generally such analysis consists of superimposing one curve on another in the same figure,

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[2] It should be noted here that in 1975, Leibenstein incorporated this dimension into the "*New Home Economics*," which will be described in Part II. The similarities with the Easterlin approach published a year earlier suggest that Leibenstein drew heavily on the relative income model. However, he added an interesting element, namely the possibility of social mobility from one generation to the next. According to Leibenstein, an improvement in a household's' economic conditions may conceivably have the effect of changing its social status and therefore its aspirations with respect to material goods and fertility.

with one representing the change over time in a fertility rate and the other representing either a relative income index or, where necessary, a proxy of such an index. The latter option proved necessary in Easterlin's case, for he quickly ran into the problem of obtaining satisfactory income statistics covering a period long enough to test his theory empirically. He therefore suggested using, as a proxy for relative income, the size of one cohort in relation to another, with the latter generally being the one from which the former originated. Accordingly, we will first use this hypothesis of Easterlin, which utilizes demographic indicators, to test his theory with Canadian data. Since there is a sizable body of such data, long series of economic indicators, on wages and incomes in particular, may be obtained, then we will undertake to compare them directly with fertility. It should be kept in mind that the method used in this article does not allow us to identify causal links between the variables analysed, but rather to establish a correlation that will be quantified using the coefficient of correlation.[3]

The Measure of Fertility

The index used to represent the change in Canadian fertility over time is the net reproduction rate (NRR). This index reflects the number of daughters that a mother will bear in the course of her reproductive life, taking account of prevailing mortality and fertility conditions.

Figure 1 shows the change in the net reproduction rate since 1921 in Canada. Relatively high at the start of the century, it gradually fell during the first thirty years to reach its lowest level during the decade following the Crash of 1929. At that time, it stood at 1.25 daughters per mother, and thus it was nonetheless high enough for the replacement of generations. As soon as the Depression years were over—that is, at the start of the 1940s—the net rate began rising sharply, reaching 1.8 in the late 1950s. This means that during this period, each woman was replaced by 1.8 daughters, resulting in relatively robust population growth. Of course, this period corresponds to the baby boom, an especially important phenomenon in Canada.

Since the mid-1960s, the net reproduction rate has slowed considerably, falling sharply in the 1970s and then more slowly starting in the 1980s. It was in the early 1970s that it fell below the population replacement level. Without immigration, the Canadian population would be destined to start falling fairly rapidly, once population growth momentum[4] had run its course.

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[3] It should be noted here that the coefficient of correlation used (Pearson's) is a measure of linear relationship.

[4] Population growth momentum is the growth momentum acquired by a population.

The Net Reproduction Rate and the Total Fertility Rate

The most popular indicator for measuring the fertility level is the total fertility rate (TFR), which indicates the number of children that a cohort of women would have during their existence if they had the fertility rates by age that are observed in a given year. However, it is difficult to interpret this indicator. For example, why is the replacement level currently set at 2.1 children per woman?

In fact, that figure is primarily based on a biological concept: in order for a man-woman couple to provide for its replacement, an average of 2.05 births are required (this is the inverse of the proportion of female births, which for humans is 0.488). It is next necessary to take account of deaths that will occur between birth and the time when these newborns can in turn reproduce, which is approximated by the average age at motherhood. Since infant mortality has reached a very low level in Canada, few children born (scarcely 2%) will die before that age. It therefore takes 2.05 / 0.98 = 2.1 children per woman for a couple to be replaced, taking account of the biological factor and the prevailing mortality pattern within the population. In old civilizations, where infant and child mortality were high, it was not unusual for the replacement level to reach 4 children per woman.

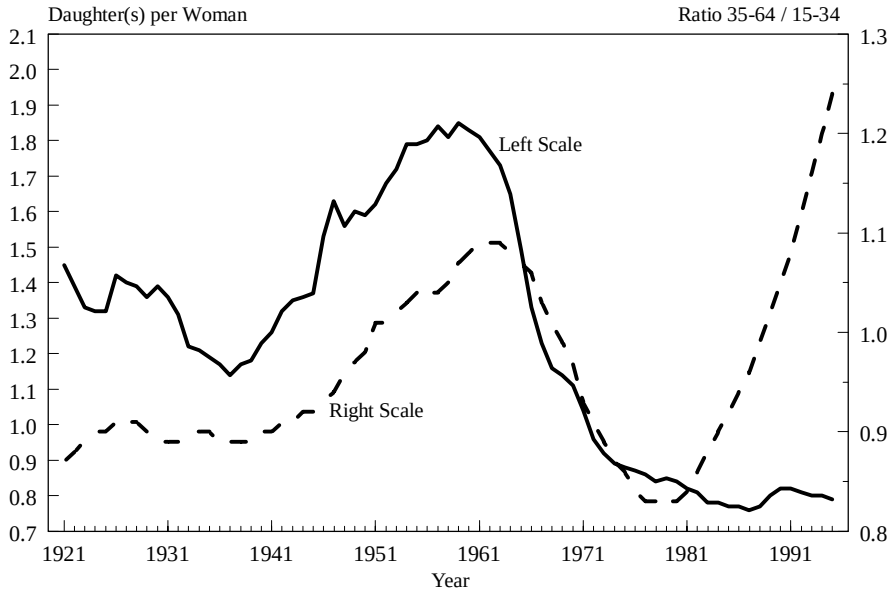
The net reproduction rate (NRR) is an easier measure to interpret, since it consists of the TFR multiplied by the proportion of female births and by females' probability of survival to the average age of motherhood. Since each mother must be replaced by a daughter, the NRR must be at least equal to one. If it falls below that level, generations will no longer be replaced. Therefore it directly incorporates mortality, which was fairly high in Canada at the beginning of the century. Like the TFR, the NRR is a cross-sectional measure, but it is sensitive to specific events such as wars or depressions, which can affect both the level and the tempo of fertility. This characteristic seems desirable here, since the economic indicators used in this article are also sensitive to these events.

Demographic indicators

Probably drawing on the works of Grauman (1960) but especially those of Kuznets,[5] Easterlin (1973) proposes that a negative relationship exists between

[5] A Nobel laureate in economics, S. Kuznets is known for having developed a theory of economic growth cycles lasting approximately 20 years; he includes population growth as a variable.

Figure 1. Comparison Between the Evolution of the Net Reproduction Rate and the Ratio of 35-64 / 15-34, Canada, 1921-1995



Sources: Statistics Canada, Demography Division, Population Estimates Section and Research and Analysis Section.

the size of a cohort and its fertility, owing to a control mechanism that could be described as neo-Malthusian. Assigning a major role to the demand for labour, Easterlin contends that a large cohort entering the labour force will necessarily bring down the price of labour because of the abundance of manpower that it generates. This drop in the price of young people's labour will have the effect of making it harder for individuals to achieve their material aspirations, and they will therefore reduce the size of their family. The smaller number of children from these families, once they in turn reach adulthood, will encounter a more favourable situation in the labour market, pushing up wages, having a positive effect on their fertility, and so forth, giving rise to a cyclical movement of fertility known as the "theory of cycles".

Figure 1 reproduces the classic demographic ratio used by Easterlin but with Canadian data. It shows the population aged 35-64 in relation to the population aged 15-34. This is intended to reflect the size of the parents' cohort in relation to the size of the cohort presumably consisting of their children. The change in this ratio since 1921 clearly illustrates recent Canadian demographic history. Relatively stable until the end of World War II, the ratio increased rapidly during the 1950s because the small cohorts of the difficult

years following the Crash of 1929 entered the 15-34 age group. In the early 1960s, this trend reversed radically, when the first baby boomers reached age 15 and the small cohorts of the Depression moved into the 35-64 age group. A few years later, between 1975 and 1980, a period when the demographic ratio reached its historic low point, the 15-34 age group was approximately 25% larger than the 35-64 age group! The striking new rise in the ratio since the start of the 1980s is of course due to the gradual entry of the oldest baby boomers into the 35-64 age group and their replacement in the 15-34 age group by the smaller cohorts that they begat.

It must therefore be concluded that over the study period, the change in this demographic ratio does indeed resemble a cyclical movement. However, it is unlikely that this pattern will extend very far into the 21st century if recent fertility trends continue. The ratio should continue to grow for a few more years, the time it takes for the last of the baby boomers to reach age 35 (in 2000), but it should then stabilize at around 1.6. At that point, the effect of the baby boomers' exit from the 35-64 age group on the demographic ratio will be cancelled out by the gradual reduction in the number of persons reaching age 15.

The fit between this ratio and the NRR is not obvious. The coefficient of correlation over the period as a whole is only 0.27, suggesting a linear relationship that is very weak. In fact, at both ends, the curve of the ratio seems to diverge markedly from the NRR curve, while toward the middle the two fit more closely. Taken separately, the coefficient of correlation for the period 1940-1980 increases to 0.83, suggesting that Easterlin's hypothesis applies fairly well to the baby boom and the early part of the baby-bust, but not so well to the periods before and after.

Between 1921 and 1945, the value of the demographic ratio shows that the younger cohorts were larger than older ones, partly because of major waves of immigration to Canada during the first twenty years of this century. While immigrants encountered favourable employment conditions during the 1920s, this was certainly not the case in the following decade. Combined with the economic problems caused by the Depression, the large number of young persons at that time may have exerted downward pressure on the net reproduction rate; from 1927 to 1938, it fell from 1.4 to 1.1.

But the closest—and the most surprising—fit between the two curves is observed for the period of the baby boom in Canada, which, it will be recalled, extended from 1946 to 1965. Starting in approximately 1940, the demographic ratio (35-64 / 15-34) began to grow, suggesting that there were few members of the young cohorts aged 15 to 34 entering the labour market. Therefore the supply of work probably exceeded the demand, causing wages and family incomes to rise. Figures 3 and 4, which appear further on in this article, clearly illustrate the sustained growth in those two factors during this period.

The general appearance of the two curves indicates a good correlation between fertility and the size of the cohorts coming into the labour market during the period extending roughly from 1940 to 1980. Throughout the entire period of decreases—that is, from the mid-1960s to the start of the 1980s—the two indicators exhibited a strong positive correlation. The massive entry of the baby boomers into the labour force may have increased the supply of workers, also increasing unemployment (see Figure 6) and therefore causing the economic status of young households to deteriorate.

Since the early 1980s, the two indicators have evolved separately, suggesting that the cycle that began in the early 1940s has been broken. According to the theory of the Pennsylvania School, fertility should have again been rising for the past two decades, since the cohorts entering the labour market are relatively smaller than in the two previous decades.

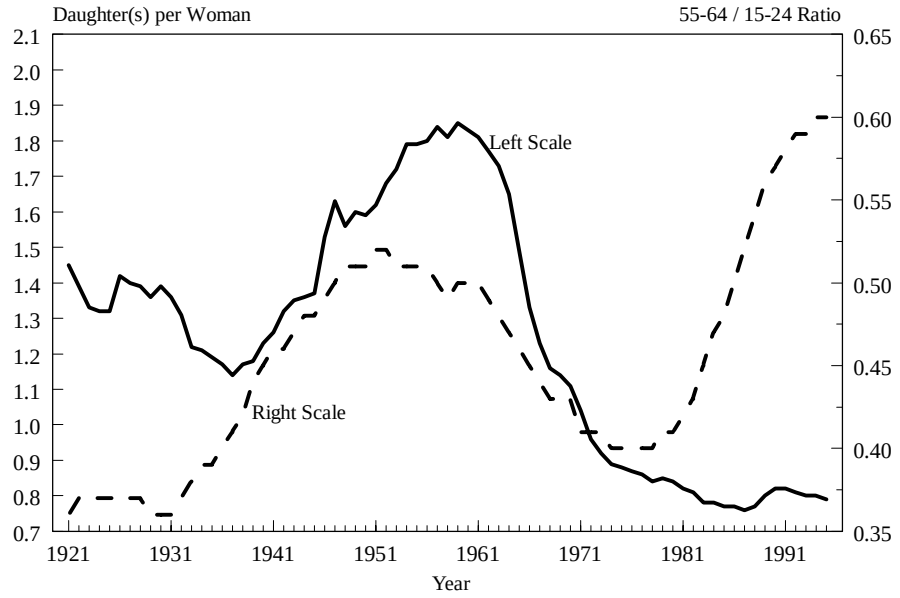
In fact, the strong increase in the demographic ratio since the start of the 1980s is due more to the sustained growth of the 35-64 age group than to the decrease in the numbers of younger persons. The number of individuals arriving at age 15 fluctuates between 350,000 and 400,000, implying that for the youngest labour force entrants, the competition remains relatively constant. The gradual entry of the overcrowded cohorts of the baby boom into the 35-64 age group, which extends to the year 2000, further explains the rapid increase in the demographic ratio. Thus, even more than serving as an indicator of the situation of the 15-34-year-olds, it appears that the demographic ratio in Figure 1 primarily reflects the aging of the Canadian labour force.

It thus seems difficult to conclude, on the basis of an analysis of the Canadian data, that there are Easterlin-type cycles based on the ratios of cohort sizes. In fact, it is not impossible that even more than the size of the cohorts, it is the entry and exit flows into and out of the labour market that have an impact on fertility.

Figure 2 provides a better illustration of this hypothesis. It shows a new demographic ratio, based on an article of Leridon (1978), which is intended to describe these labour market entry-exit flows and thereby illustrate the rate of replacement of the labour force. The 55-64 age group is made up of individuals gradually leaving the labour market. Since the retirement age has been falling steadily in Canada for twenty years (Gower, 1997), the ten-year interval used here provides a better picture of this situation. At the opposite end, the 15-24 age group may be seen as reflecting the entry flow into the labour market. The gap between the two age groups, which is greater than in the preceding figure, suggests that this is no longer a comparison between the sizes of parent cohorts and children cohorts.

In their general appearance, the two curves greatly resemble those in Figure 1, but perhaps they reflect even more the tendencies toward convergence in

Figure 2. Comparison Between the Evolution of the Net Reproduction Rate and the Ratio of 55-64 / 15-24, Canada, 1921-1995



Sources: Statistics Canada, Demography Division, Population Estimates Section and Research and Analysis Section.

the middle and divergence at the ends. The coefficient of correlation for the period as a whole is 0.0009, or nil. However, if the period 1940-1980 is examined separately, an extremely strong coefficient of 0.93 is obtained. This is another indicator that in Canada, Easterlin's cyclical hypothesis applies only to the baby boom and baby bust period.

In light of these results, the links between the age structure of the labour force and the affluence of households remain complex and inconsistent, suggesting on this score that the evolving economic situation plays a role that is probably more decisive or at least perturbative. The demographic ratios calculated in this section do not tend to confirm Easterlin's theory of cycles over the period as a whole. In Canada, only the period between 1940 and 1980 provides such confirmation. A number of factors—a buoyant economy; the smaller numbers entering the labour market; couples' probably modest aspirations regarding material goods as a result of growing up during the Great Depression of the 1930s; and the fact that men's relative incomes were more comfortable that ever before—combined to produce the baby boom in Canada.

In concluding this part, it should be noted that similar findings are reported in the literature. Using Canadian data, Abeysinghe (1991) observed a strong

correlation between a similar demographic indicator (30-64 / 15-29) and the total fertility rate only for the 1940-1976 period. After studying several developed countries, Chesnais (1986), for example, stresses that Easterlin's demographic hypotheses apply much better to Anglo-Saxon countries than to European countries in general and France in particular. It is interesting to note that Canada, the United States and Australia are the countries that experienced the greatest postwar baby boom. Does this mean that while the idea of a "law" or "principle" such as exists in the pure and applied sciences was appealing, the relative income model cannot be generalized, through demographic variables, into a theory of cycles, as Easterlin suggested? In light of our results, this is the conclusion that must be drawn, even though a relationship between income and fertility still seems possible.

In fact, what appears to be invalidated over the long term is instead the relationship between income and cohort size. Pampel and Peters (1995) suggest a few reasons that can explain the absence of an Easterlin cycle after 1980. Among others, they point out:

1) the increasing importance of business cycle on the labour force demand;
2) the growth in the number of immigrants during the last two decades that could have increase labour force competition (this reason does not seem to apply to the Canadian case);
3) changes in sex-role orientations (in particular, the increasing labour force participation of females);
4) and, finally, the exceptional size of the baby-boom generation which could have had long terms effects on the labour market.

For that reason, it is interesting to directly look at the economic variables as described in Easterlin's theory.

Economic Indicators

Using Statistics Canada data, we can directly verify whether the link between the relative income of the young and fertility really exists, since in Canada there are long series of data on wages and incomes (see Box "Income data sources used and methodology").

Figure 3 features curves showing the change over ten years in average annual wages in Canada.[6] These results were obtained taking account of the

[6] The appearance of the NRR curve may vary slightly from one figure to another, such as between Figure 3 and Figure 4. The explanation for this "anomaly" lies in the method of computing the NRR shown. This consists in calculating moving averages covering periods that are based on those of the economic index being compared to it. In Figure 3, for example, the data used to calculate changes in wages covered the period 1920-1930. We therefore calculated the average of the NRRs for the equivalent period. On the other hand, Figure 4 shows the NRRs obtained by taking the average for the period surrounding the census, such as 1946-1955 for the 1951 Census.

Income Data Sources Used and Methodology

The use of time series limits the choice regarding data sources. Very often, Statistics Canada surveys, such as the Survey of Family Expenditures (SFE), are relatively recent (since 1953 in the case of the SFE) and cannot be used to establish a very long series for a variable. Censuses, of which Canada has a long tradition, have therefore been used to construct the series of historical data needed to test Easterlin's economic hypotheses.

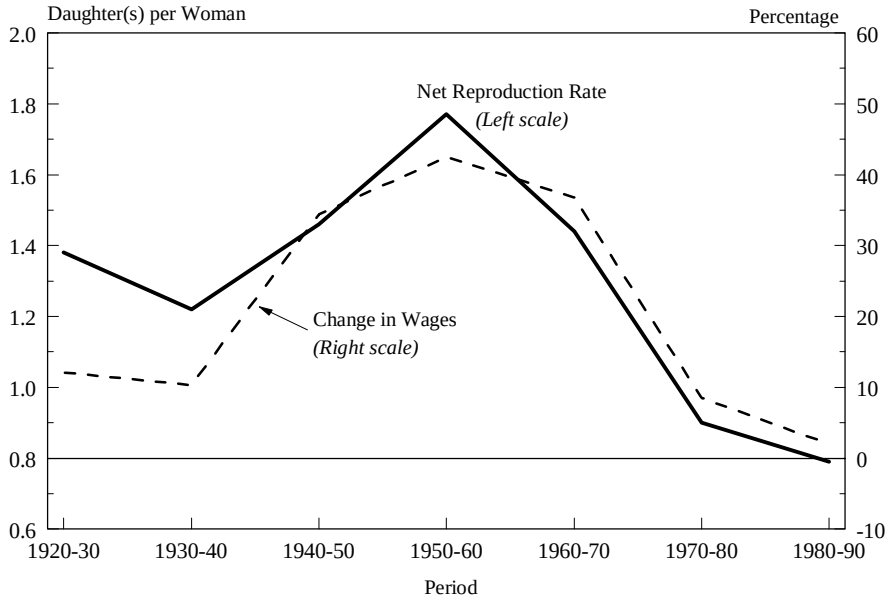
However, various problems appear. The greatest is the fact that concepts change from one census to another. From 1921 to 1961, for example, the censuses supply information on average earnings (or wages) of wage-earners over the twelve months preceding the date of the census. Since 1971, the data published instead concern individuals' income during the calendar year preceding the census (e.g., in 1970 for the 1971 Census). In one case, then, the data concern the earnings of employees, while in the other they concern the income of individuals, and moreover the periods covered are different.

While in theoretical terms is it hard to compare these two concepts that cover quite separate realities, Bourcier de Carbon (1997) recently showed, for the United States, that wages and incomes were practically the same before the 1970s. The same assumption is made here. The only adjustment made to the data starting in 1971 was therefore to determine averages only for persons who reported having an income and not for the labour force as a whole. Considering that both before and after 1971, the data cover annual wages or incomes, no correction was made to adjust the reference period. Lastly, the data prior to 1951 do not include Newfoundland, the Yukon and the Northwest Territories.

Since the value of the dollar has varied considerably over time, especially owing to the evolution of prices, it is necessary to convert current wages or income into constant dollars for purposes of comparison. To do this, the Consumer Price Index (CPI) was used (Matrix M9957 in CANSIM, which concern annual CPIs) to express all the data in 1992 constant dollars.

evolution of prices (and hence inflation) over the course of the century, so that the indicator would reflect a *real change* that could be compared with wage-earners' purchasing power. This indicator can give an initial idea of how well-off Canada's households were in different periods, and indeed of their confidence in the future.

Figure 3. Percentage Change by 10 Year Period of the Average Annual Wages, Canada, 1920-1990



Note: These percentage changes are calculated using constant 1990 dollars. Consequently, they are adjusted for price changes over the century.

Sources: Wages data: Rashid, A. (1993). Fertility data: Statistics Canada, Demography Division, Research and Analysis Section.

Figure 3 shows there is a clear similarity between the two curves, suggesting that there may be a direct relationship between the growth of wages and fertility, regardless of the sex of the wage-earners. Similar patterns (not shown) holds for males and females. The coefficients of correlation between the two indicators are high: 0.58 for women and more especially, 0.84 for men. Such values attest to the strength of the linear relationship that exists between the different curves even if there are only a few data points.

Until the early 1940s, the change in annual wages in Canada was small; in the case of women it was even negative between 1930 and 1940. The relative absence of income growth, primarily due to the Crash of 1929 and the difficult years that followed, definitely had a negative impact on period fertility, which declined during the same time period. By the start of the 1940s, a strong rebound in the growth of wages in Canada may be observed, undoubtedly due to the upswing in production during World War II. Fertility rebounded at the same time, suggesting that households took advantage of this rising income to increase not only their consumption but also their number of children. The two indexes peak at nearly the same time, during the 1950s.

Lastly, the start of the decline in wages and fertility occurs nearly simultaneously, and the pattern of change is parallel during these last two decades. The similarity between trends suggests that households may have opted to limit their number of children as a strategy for maintaining their living standard.

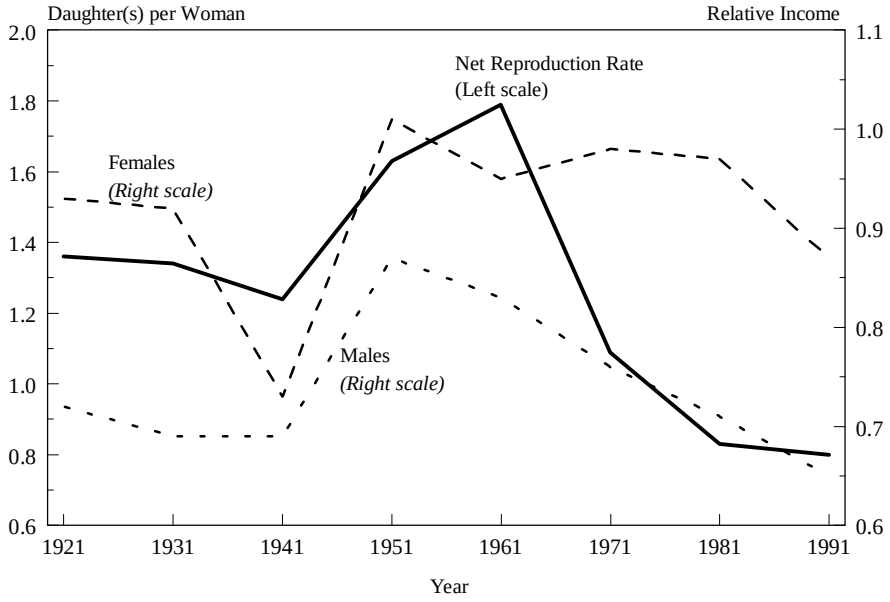
Rashid (1993) shows that in all, real wages increased by a factor of 3.6 over the period 1921-1991. Yet the fact remains that despite this additional purchasing power, today's couples are having fewer children than couples at the beginning of the century. This is a first piece of evidence supporting the hypotheses advanced by Easterlin, since the additional disposable income probably goes toward the fulfilment of material needs that are greater than in the past, such as the purchase of a second television or, even more, the purchase of a second car within the household, in place of another child. In fact, all this suggests that it is perhaps not the actual level of income, but rather changes in income that have an effect on couples' fertility.

Of course, the growth of wages is highly dependent on a country's economic situation. There are no periods during the 20th century when wage growth was sustained despite difficult economic times. If such a situation had occurred, a comparison of the period fertility rate and the growth of incomes would have given a better idea of couples' sensitivity to the growth of their wages *without* the perturbative effect of the state of the economy. But since no such situation occurred, it is difficult to go further in explaining the links between fertility and income growth. Nevertheless, Figure 3 suggests a strong positive relationship between these two elements. It therefore tends to confirm the hypothesis of the economic models of fertility, namely that fertility varies positively with income (wages). Thus far, no difference by sex has been observed.

In order to test Easterlin's hypothesis concerning the relative situation of young households, it is necessary to calculate an indicator that shows a ratio between the wages or incomes of young persons between 20 and 34 years of age and those of older persons, aged 45-64. Because wages or incomes generally increase with experience, this ratio is generally less than one. The closer the ratio comes to that value, the more favourable is the situation of the young in comparison to that of the older group, making it easier for them to achieve their parents' standard of living. Conversely, a low ratio means that the economic situation of the young is difficult and that their means of fulfilling their aspirations are more limited.

Figure 4 shows this ratio by sex, something that is fairly seldom done in the literature. Overall, the relative income of young men in 1991 was not fundamentally different from what it was in 1921 (roughly 0.7). However, between those two dates, the ratio reached more than 0.85 in the 1951 Census, suggesting that at that point, young male workers had on average 85% of

Figure 4. Relative Income of Young Adults Aged 20-34 and the Net Reproduction Rate, Canada, 1921-1991



Note: Relative incomes were computed using constant 1992 dollars.
Source: Statistics Canada, various Censuses of Canada and Demography Division, Research and Analysis Section.

the income of older male workers. Clearly, then, young households at that time were in an economically advantaged position compared to those before and after them. It is worth noting that after this peak, the decline in the ratio was continuous, attesting to the steady deterioration in the relative incomes of the young for the past three decades.

The curve for women diverges from the curve for men after 1961. Just before that, in 1951, it is also interesting to note that the ratio was greater than one, which means that at that point, young women had higher incomes than older women. Such a situation, which can only be described as exceptional, is probably explained by the sizable demand for labour in Canada during this period. Young women were relatively absent from the labour market, and employers were able to draw them into it by offering them wages that were relatively more attractive, although lower than men's. It can also be related to differentials in the number of hours worked: perhaps, young single women were working more hours than older women who were more likely to be married. Starting in 1961, the curve for women varies less than the curve for men, and the ratio remains much closer to one. This phenomenon may be explained by three interrelated factors: the more rapid increase in women's

average education level enabled the younger ones to constantly obtain better and higher-paying jobs than their mothers had; more of them worked full-time; and there were major changes in the make-up of the labour market for women at this time. All these factors tended to prevent the decline in relative incomes observable for men.

When these ratios are compared to the net reproduction rate, the first thing noticed is how well the latter matches with the curve for men: the inflection points often correspond, as do the growth and decline segments. Indeed, the coefficient of correlation of these two curves is 0.76, attesting to the strength of the linear relationship. Thus, when the relative wages of young men deteriorate, fertility stagnates or declines; when they improve, as they did over the period 1941-1951, fertility rises substantially. Only between 1951 and 1961 did men's relative income and fertility not move in the same direction, with the former declining and the latter still rising. This situation, unusual in the overall pattern of the two curves, is probably not significant, since the difference between the value of the ratio in 1951 and in 1961 is only 0.05. Probably the economic situation of the young at that time was nevertheless more favourable than that of their parents, who had lived through the difficult years following the Crash of 1929.

These results obtained from data extracted from Canadian decennial censuses tend to confirm Easterlin's hypothesis that a positive relationship exists between young men's relative income and fertility. Couples limited their family size once they felt that young men's incomes were declining in relation to their fathers' incomes. Since they could no longer fulfil their material aspirations or attain the living standards they desired, they lowered their childbearing targets.

One of the strongest criticisms of Easterlin's model in the literature is that it does not take the woman's income into account in explaining reproductive behaviour (Oppenheimer, 1976). No distinction is generally made as to the impact of the relative income of the woman on a couple's fertility. In fact, for Easterlin, the woman participates in the labour force only if the man's income is insufficient to meet the couple's material aspirations, and in so doing, she increases competition in the labour market. Otherwise she devotes herself to domestic activities, which suggests that this model subscribes to the idea of bias in gender division of labour.

With respect to this issue, a useful feature of the Canadian data is that they allow us to distinguish between the sexes, and this brings out some highly interesting points, illustrated in Figure 4. The coefficient of correlation of women's relative income to the NRR over the period is only 0.23, suggesting a very weak relationship between the two curves. However, two sub-periods appear to stand out, namely before and after the decade 1951-1961, during which the direction of the relationship reverses.

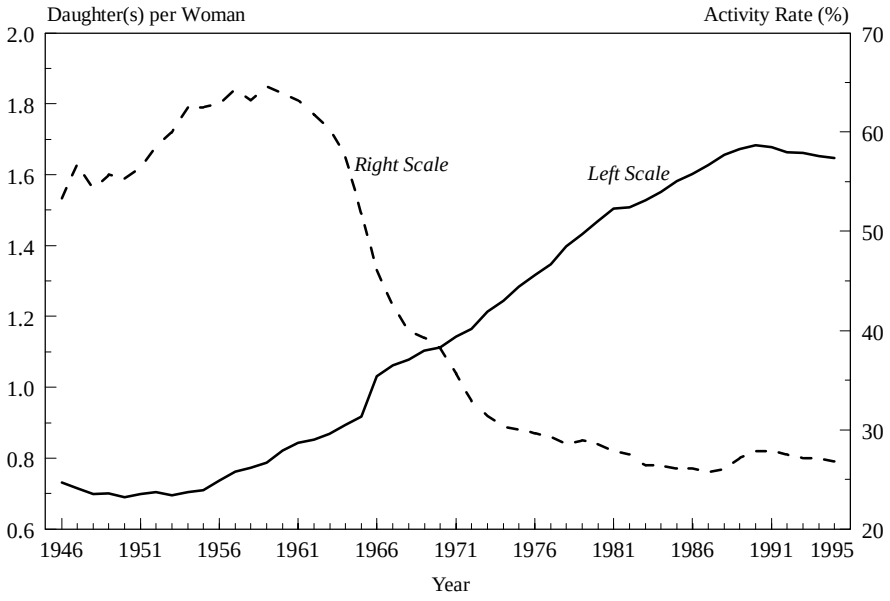
Over the period 1921-1951, women's relative income evolved along roughly the same lines as that of men, suggesting a similar relationship with the NRR. And indeed, when the coefficient of correlation is calculated solely for the period 1921-1951, it climbs to 0.84! During that period, few women in Canada were participating in the labour force, and their incomes were generally low compared to those of men. In these circumstances, it may be that there were few incentives for women to enter the working world, even though the income gap between young women and older women was narrower than for men. The opportunity cost (in terms of lost female wages) of having a child was then relatively low in Canada, and one can imagine that necessity was probably one the most common reason for women to seek paid employment.

During the 1950s, the heart of the thirty-year period of unprecedented prosperity that Canada experienced following World War II, women's relative incomes, like those of men, rose to new heights. Young couples of the day, who were basically the parents of the baby boomers, therefore enjoyed quite attractive incomes. This was undoubtedly a major factor contributing to Canada's baby boom.

Starting in 1961, the chart shows that the relationship between women's relative income and the NRR becomes nil. Probably the explanation for this interesting phenomenon lies for a good part in the strong increase in the opportunity cost of children. Influenced by a number of factors—the slowing of wage growth, steadily rising unemployment, the possibility of obtaining attractive salaries by getting a better education, and increasingly widespread employment equity programs—women entered the labour market in massive numbers in the 1970s. As a result, the opportunity cost of children increased substantially, at the very time when men's relative income was declining, causing downward pressure on fertility.

During this period, women's income became an increasingly important component of the family budgets, and couples tended to limit their number of children in order to enable the woman to carry on an occupational activity that was often seen as necessary in the prevailing economic circumstances. These findings also point in the same direction as the studies of Butz and Ward (1979a and b), who propose a model that distinguishes between couples in which the woman carries on income-earning activity in the labour market and those in which she does not. According to them, fertility is a positive function of the man's income in couples in which the woman does not work. In couples in which the woman works, fertility is still a positive function of the man's income but a negative function of the woman's income, since the opportunity cost exceeds the positive effects associated with the additional income obtained from the woman's employment. For Butz and Ward, the strong increase in fertility after World War II was due to the substantial increase in men's wages and the low participation of women in the labour force at

Figure 5. Comparison Between Female Activity Rates and Net Reproduction Rate, Canada, 1921-1991



Sources: Statistics Canada, various Censuses of Canada and Demography Division, Research and Analysis Section.

that time. As women gradually entered the labour market, the theoretical opportunity cost of children rose more rapidly than men's wages, exerting downward pressure on households' fertility.

The analysis of Figure 4 dealt with female labour force participation over the course of the century. In demography as in economics, there is a debate on the direction of the relationship between female participation in the labour force and fertility. Was it the decline in fertility which, by freeing up time for women, allowed them to join the labour force, or conversely, was it the preference for paid work that induced women to have fewer children? Recently, Blanchet and Pennec (1996), using econometric models, showed that this second hypothesis was probably the correct one. Women now participate in the labour force out of choice or necessity. While the type of analysis presented does not serve to establish causal links, as is the case in the above-mentioned study, Figure 5 nevertheless shows the negative correlation between the NRR and female participation in the labour force, at last until 1981.

Over the studied period, low participation by women in the labour force has been accompanied by much higher fertility than when they work for pay.

In Canada, the bulk of the transition took place during approximately the period 1965-1980, that is, during the slowing of economic growth. The fact that these two patterns coincided may be seen as supporting Easterlin's theory that women gradually entered the labour market out of necessity, since their spouse's income was no longer sufficient to meet the couple's material aspirations. A cycle may also have developed, as already described by Easterlin: by participating more in the labour force, women may have increased the competition for jobs, possibly worsening the economic situation of their spouses. This could be a factor explaining the stability of the fertility rates between the mid-1970s and the mid-1990s.

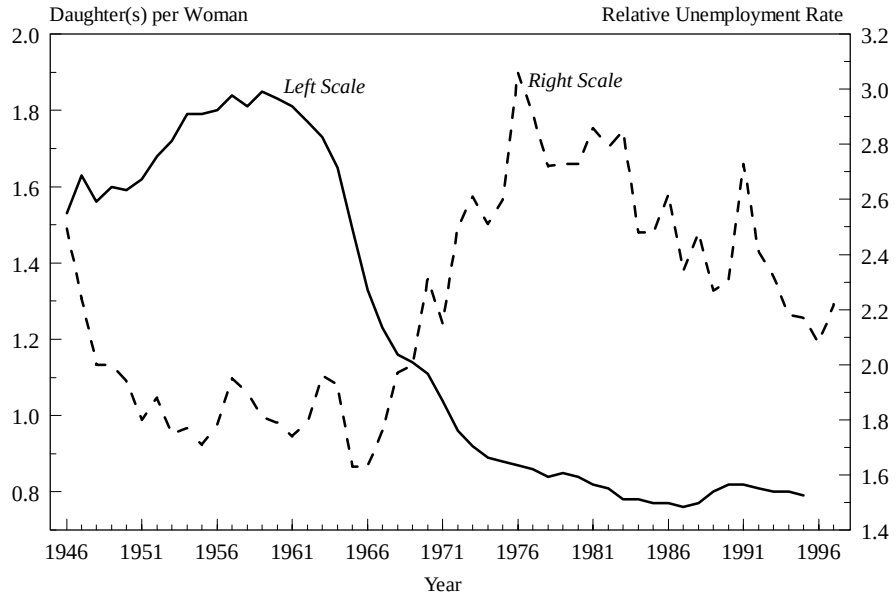
Lastly, other socioeconomic indicators such as the unemployment rate can be cited to illustrate the links between fertility and the economy. Figure 6 shows a ratio measuring the unemployment level of young adults aged 20-24 compared to that of persons aged 45-54, their parents cohort, during the same period, in relation to the net reproduction rate since 1946. This is an indicator of the difficulty of young persons' integration into the labour market; keeping in mind that the latter process is often seen as a precondition for starting a family.

By way of illustration, the figure shows the effect of the three most recent recessions, namely the ones that occurred in 1973, 1981 and the early 1990s. The young were especially affected by these events, partly because of their vulnerability due to their lack of seniority and work experience. Just as for female participation, the general appearance of the two curves clearly shows a negative relationship between fertility and unemployment. Nevertheless, caution should be exercised here, since fertility began to decline before the relative unemployment level of the young increased. On the basis of this figure, it is difficult to say whether the relative unemployment level exerted downward pressure on fertility or whether it was instead a consequence of the large number of births during the baby boom. If the latter hypothesis were correct, it would have to be concluded that this was a factor supporting Easterlin's "demographic" hypothesis, namely that the size of a cohort influences employment, at least during this period.

For the past two decades, the trend in the relative unemployment level of the young is clearly downward, while fertility has remained fairly stable at a low level. In fact, this may be further proof of the existence of a link between fertility and the labour market. The cohorts born since the end of the baby boom, who could be considered the "children of the baby boomers", are now entering the labour market. Less numerous, they exert less pressure on it, and thus, despite the economic situation, they are causing the relative unemployment of the young to gradually decline, although this is occurring too slowly to have an effect on fertility.

In conclusion, the results obtained using Canadian data support Easterlin's demographic hypothesis only for a very specific period, covering the baby

Figure 6. Comparison of Net Reproduction Rate and the Ratio of Unemployment Rate at 20-24 to Employment Rate at 45-54, Canada, 1921-1991



Sources: Statistics Canada, Labour Force Survey (LFS) and Demography Division, Research and Analysis Section.

boom and the 1970s. On the other hand, an examination of economic indicators shows some evidence for a link between the relative income of the young men and women and their fertility. These results are similar to those presented at the macroeconomic level by Kyriasis (1990) for the provinces of Quebec and Ontario. Between 1980 and 1995, Canadian males' average income fell by approximately 8% (Statistics Canada, 1998b), which did not encourage childbearing.

However, the link is complex between economic variables and fertility. Before presenting a more detailed analysis of this link for the recent period, the next section describes another major economic theory of fertility, the "*New Home Economics*". This theory is perhaps drawing more interest today than the relative income theory, since it explicitly takes account of the participation of women in the labour force and the effect of their income on fertility, and it introduces the possibility of changes over time in the opportunity cost associated with the education of children.

Theoretical issues related to the "*New Home Economics*"

The "*New Home Economics*", sometimes better known as the approach of the "*Chicago School*", counts among its adherents researchers such as Willis, Simon, Leibenstein, De Tray, Schultz and Mincer. It was founded by G.S. Becker in the early 1960s. Unlike other approaches, its purpose is not to look at major trends in relation to each other, but rather to examine the socioeconomic determinants of couples' fertility by means of an econometric analysis. In some respects, then, it is a more complete theory than Easterlin's, but it is also one that poses a number of problems.

At the outset, Becker's approach was to try to understand how the fertility behaviour of households changes when the two basic parameters of economic theory—prices and incomes—move upward or downward. While it is relatively easy to estimate the direction that households' income is moving (see Figure 1, for example), this is not the case with the "cost" of children. This subject, which is among the most controversial in the "*New Home Economics*", has led to interest in the scientific community and has given rise to a sizable body of literature in demography, economics and sociology. This aspect also serves to differentiate the two theories: whereas material aspirations are central to the relative income model, the "*New Home Economics*" puts the emphasis on the cost of children. Hence Easterlin's approach may be said to have more of a "social" dimension.

In his founding article in 1960, Becker confines himself, in his evaluation of the cost of children, to the costs incurred in bringing them into the world and rearing them to adulthood. These include expenses such as food, clothing, shelter, transportation, education, health and recreation. For Becker, and also according to microeconomic theory, the relationship between the household's income and expenditures on the child is positive: as income increases, so do the expenditures on the child. What happens then is that couples establish a trade-off between the desire to have a greater number of children (quantity) and the desire to increase the "quality" of those they already have (by allocating more resources to them). Since income/quantity elasticity is less than income/quality elasticity, Becker's originality at the time was to show that it is possible for the number of children to remain constant even if the household's income rises. The couple may, for example, opt for private school rather than public school for the first two children rather than having a third.

This first article by Becker had a major impact within that portion of the scientific community that was interested in the factors associated with human reproduction. Very soon, many other researchers, inspired by this new idea, published complementary studies. The most noteworthy contribution was probably that of Mincer (1963), who, with Becker's publication of an "update" to his theory in 1965, actually launched the "*New Home Economics*".

As a theory of household consumption, the "*New Home Economics*" postulates that on the basis of their resources of time and goods, but also on the basis of their tastes, households generate "basic commodities" that have utility, with the amount of utility depending on the qualities or attributes of those products. It should be kept in mind that initially, Becker believed that the household's utility was obtained directly from the consumption of goods, whereas here those goods are instead seen as "inputs" that are used to generate "basic commodities" or "externalities." Hence the utility (or satisfaction) that a couple derives from having a child, for example, will depend on the child's attributes or qualities, and not merely from its having come into the world.

For proponents of the "*New Home Economics*", the cost of children is therefore not limited to the expenditures made on them. There is also the price of the time—the opportunity cost—used for domestic production or, in other words, for generating and consuming "products." For Mincer (1963), for example, this price is the opportunity cost represented by a new child in terms of the woman's wages if she remains at home instead of joining the labour force. He suggests that this aspect of the cost of children has a greater influence on fertility than the expenditures devoted to them, since the expenses generated by feeding, clothing, etc. do not vary greatly over time when measured as a proportion of family income. For Mincer, the opportunity cost is therefore the factor that most influences the total price of children, especially in modern societies where the woman participates in the labour force, as was seldom the case in so-called traditional societies.

While the theory of the "*New Home Economics*" still considers fertility as a positive function of households' income, Mincer, like Becker soon afterward, introduced the idea that women's income may be negatively related to the household's fertility, unlike the men's income alone, which if it increases, has a positive influence on the demand for children.[7] This is because women have traditionally looked after the children's education. The birth of a child therefore increases women's workload (with respect to unpaid work). Since the number of hours available for work is limited, they may compensate by reducing the hours worked outside the home, thus potentially reducing the family income. This is the opportunity cost. According to the "*New Home Economics*", the effect of the opportunity cost is greater than the income effect, with the result that female income has a negative effect on fertility. This aspect, which represents the most original contribution of the "*New Home Economics*" to the study of reproductive behaviour, is the second reason why fertility may remain unchanged or even decline despite an increase in household income.

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[7] Later, other authors would instead suggest that the man's income has a positive effect on the first two children only and a negative influence on subsequent children (Seiver in Simon, 1978).

The Canadian data presented in the first section of this paper do not contradict this analysis. Figure 4, for example, eloquently attests to the effect of the opportunity cost of children expressed in terms of women's relative wages. In fact, the theory of the "*New Home Economics*" applies equally well to the postwar period in Canada, since both incomes and fertility increased strongly during that period (see Figure 3). Consequently, during the latter half of the 1960s and the entire decade that followed, many studies were published under this school. Among them were those of Simon (1969) on the role of the woman's education, Willis (1974) on the concept of child quality, and Schultz (1974).

Many authors have criticized the approach of the Chicago School because of the difficulty of measuring the utility or cost that a child represents for a household. For example, the sex of the child according to its birth rank may increase or reduce its utility to its parents. Maximization of the utility function is therefore entirely relative, varying from one couple to another depending on circumstances that Becker's theory tends to overlook.

Furthermore, the decline in fertility could well result more from a decrease in the social utility of children than from economic considerations. With the welfare state, it appears no longer to be necessary to have children to look after one in one's old age, both economically and in terms of social support, or to provide labour, functions assigned to children in traditional societies. While Becker initially used this argument to liken children to consumer durables in modern societies, he did not see in this a direct or sufficient reason for the decline in fertility. And yet the acquisition of other goods may strike some couples as more "viable" or "rational" than having children, regardless of their income level. For some authors, the growing number of childless couples reflects this choice.

There is a sizable body of literature on measuring the cost of a child, whether in terms of the expenditures devoted to them or their marginal cost. Some stress the difficulty of this measurement, and it must be admitted that there is still no consensus on the methodology to use. How, then, can it be stated with certainty that the cost of a child has increased or decreased during a given period of time? Measuring the quality of a child runs into the same problems. And why, as the "*New Home Economics*" claims, would couples now invest in the quality of their children rather than their quantity? Of course, the proponents of this school suggest that the utility of a "high-quality" child is greater, but other factors—some of them beyond the parents' control, such as health—undeniably come into play here.

Lastly, the neoclassical theory of the Chicago School has not stood up well to empirical evidence, especially in the past two decades. Researchers seeking to apply these models have many problems understanding why fertility remains below the replacement level. For example, some argue that the opportunity cost of children has recently declined, with no apparent effect

on couples' fertility. For the moment in this field, it must be concluded that the findings are often contradictory, and the results vary depending on the method used.

An Integration of the Two Economic Models of Fertility

Despite its theoretical interest, the "*New Home Economics*" has been roundly criticized. Many of the criticisms also apply to the Easterlin theory. The most important criticism to this day concerns the association—seen by some as simplistic—that is made between children and consumer durables. Probably the harshest attacks on this initial hypothesis of Becker have been mounted by sociologists. They argue, for example, that the economic approach does not take account of the non-rational nature of the decision to have children (Blake, 1968). According to Blake, other variables affect the decision to have children or the choices regarding child quality. Non-economic factors such as values, the cultural environment or social norms, for example, are not taken into account in the economic approach, yet they play an important role. As Robinson (1997) recently pointed out, many couples decide to start a family without conducting an elaborate economic analysis of their situation. In the decision to have children, a major role is played by non-rational elements that elude the theory developed in the "*New Home Economics*". The hypothesis of this school of thought, namely that households make rational decisions regarding fertility just as they do for other aspects of their lives, therefore seems imprudent in a number of respects.

Beyond the charge that the economic models of fertility are simplistic, the criticisms do not fail to point out that these two theories, however attractive they may be, have failed to fulfil their main objective: to anticipate how fertility would evolve in the 1980s and 1990s. According to Easterlin's cyclical model, there should have been a reversal of trend and fertility should have increased during the 1990s as the less numerous baby busters entered the labour market. By contrast, the proponents of Becker's theory predicted a steady decline in fertility, reflecting the increased opportunity cost associated with the rise in female income, which would itself result from the increase in women's average level of experience in the labour market, their increased education level and the changes in their employment structure. And yet as we know, fertility has remained relatively stable over the past two decades, both in the United States and in Canada.

Perhaps because these two models portray fertility as moving in different directions, they are often contrasted with each other. Some authors have tried to assess which of the two best met the test of empirical evaluation. According to a review of the literature on the subject, Easterlin's model is considered to explain only the period 1945-1980 in the United States (Pampel and Peters, 1995). As to studies focusing on the "*New Home Economics*" model, their findings have proved to be inconsistent and often contradictory.

Very few authors have tried to take the theoretical aspects of the two models and incorporate them into a single model. Among them, Abeysinghe in a paper published in 1993 and using Canadian data, proposed a model where changes in fertility rates are related to variations of the income of younger male family heads, older male family heads and the female weekly wage. More recently, Macunovich (1996) proposes a new formulation that combines the main arguments of the two theories and attempts to overcome their respective limitations. To incorporate Easterlin's hypothesis that material aspirations rise over time from one generation to the next, Macunovich includes a relative measure of young males' income in her model. To incorporate the hypothesis that women's income has a negative effect on fertility (owing to the opportunity cost), she includes a variable that takes account of changes in the female wage. An additional, and even more important, feature of a model thus constructed is that it can be used to determine whether an interaction exists between these variables: it is possible that taken independently, these variables will not stand up to empirical testing because they are linked. For example, the effect of the female wage on fertility might change following a sizable drop in young males' relative income.

The model developed by Macunovich (1996) yielded interesting results for the United States over the period 1969-1993. The variables used explain almost all the changes in fertility during the study period (R^2 = 99%). Furthermore, the coefficients of relative income (RY) and the female wage (W) move in the direction expected: a rise in young males' relative income results in a rise in fertility, and conversely, a rise in the female wage exerts downward pressure on fertility.

The most original aspect of the study undoubtedly lies in the results obtained for the variable measuring the interaction between RY and W. This interaction shows that the effect of the female wage on fertility varies according to whether male relative income is rising or falling. It suggests that in a period when male relative income is high, the opportunity cost, measured in terms of the female wage, is greater than the income effect, and the relationship between the female wage and fertility is negative (Macunovich, 1996: 239). In this situation, if the woman decides to engage in an occupation, this will be more a matter of choice, which may imply that the couple is voluntarily limiting the number of children that it will have.

As a corollary, when young males' relative income is low, an increase in the female wage will result in a sizable increase in couples' income, enabling them eventually to have the children that they desire. The "income" effect of the female wage increases relative to the "cost" effect; this may even reverse the situation, so that the female wage becomes positively associated with fertility. In this situation, couples assign more importance to this extra income in their decision as to whether to have a child, and any decrease in the female wage

will have the effect of creating downward pressure on fertility, since the combined incomes of the man and the woman are no longer sufficient to provide them with the living standard or number of children desired.

The model developed by Macunovich is probably the first evidence that the theories of Easterlin and Becker are in fact much more complementary than opposing. Using this model that includes both male relative income and the female wage, Macunovich managed to reproduce almost exactly the curve representing the change in fertility in the United States between 1969 and 1993. Surprisingly, her model was sensitive to the fertility boomlet in the late 1980s. Even the backward projection to 1955 yielded results that were surprisingly accurate. Thus it may be that such a model, if it proves accurate, can shed light on how fertility may evolve in the near future in developed countries.

Canada and the United States have many things in common. The movements in the Canadian economy tend to be closely tied to the American economy. The two countries also exhibit similar fertility patterns over time: a secular decline, the shock of the Great Depression, a substantial baby boom period, a baby bust and the same brief upturn in fertility in the late 1980s, although the levels were fairly different. The type of statistical data collected by the two countries is also similar in many respects: Canada's vital statistics, censuses, Labour Force Survey, Survey of Consumer Finances, etc. all have an American counterpart. On the other hand, the United States and Canada differ in certain respects, especially with regard to the design and application of a social safety net (unemployment insurance, health insurance, welfare, family allowances, etc.). Higher education, an important variable in the model proposed by Macunovich, may be more accessible in Canada. In these circumstances, it is tempting to examine whether the model proposed by Macunovich is as successful when tested on Canadian data.

The Model

The model proposed by Macunovich (1996) examines the relationship between two complex macroeconomic variables observed over a long period. The original model suggests that the fertility of women between 20 and 24 years of age basically depends on three parameters: young males' relative income, young females' wage (a proxy for the cost in time that the arrival of a child represents, also called the "opportunity cost"), as well as the female unemployment rate.

In accordance with the basic postulates of Easterlin's model, it is expected that young males' relative income will be positively associated with fertility; in other words, a relative increase in their income should result in increased fertility. The wage of young females serves as a proxy for measuring the opportunity cost associated with having children and educating them. The higher the wage, the greater the downward pressure on fertility. It is assumed,

firstly, in accordance with Becker's theory, that the negative effect of this opportunity cost on fertility is greater than the positive effect of the extra income associated with the woman's employment. It is also assumed that there is a possible interaction between the first two variables as noted. Lastly, the "unemployment rate" variable used in the model serves to control for the impact of economic shocks on period fertility.

Definition of the Variables Used in This Study

It is generally difficult to reproduce the original model exactly, especially because the data used are not identical. For the purposes of this study, a number of changes had to be made to the variables to adapt them to the Canadian situation. This section includes a brief description of the way these variables were constructed.

Fertility

The dependent variable in the study conducted by Macunovich was the fertility rate of women between 20 and 24 years of age. In the present study, it was considered preferable to use the fertility rate of women between 20 and 29 years of age. This decision was made in order to take account of the fact that the average age of women at the birth of their first child has been rising for the past 30 years in Canada. Factors that have contributed to this rise are more years of schooling, greater difficulty integrating into the labour force and job insecurity. Nevertheless, roughly 50% of a woman's completed fertility rate is attained before age 30, and this is an additional reason to use the fertility rate for women between 20 and 29 years of age (admittedly not the rate usually considered) as the dependent variable.

Relative Income (RY)

In Part 1 of this article, relative income was obtained using raw data from Canadian censuses. The income of young males between 20 and 34 years of age was compared to that of older males, aged 45-64. While simple, this indicator is satisfactory, since it allows for a temporal comparison over a very long period. However, it does not allow us to take account of major changes in the labour market over the past four decades. In particular, cohorts entering the labour market are increasingly educated, and this may have resulted in an increase in their incomes, without that increase indicating a real change in remuneration. Another factor is that on average, entrants are tending to be older because they have spent more years obtaining an education. Because the world of work has changed considerably in Canada in the past 40 years, it seems preferable to construct a more specific indicator that serves to separate out the effect of the increase—or decrease—of relative income, controlling for other factors.

Macunovich's Model

The model developed by Macunovich (1996) takes the following form:

$$\Lambda(f._{20\text{-}24}^{t}) = \beta_0 + \beta_1 \log RY_{(t-1)} + \beta_2 \log W_{(t-1)} + \beta_3 (\log RY_{(t-1)} * \log W_{(t-1)}) + \beta_4 U_{(t-1)}$$

where the dependent variable $\Lambda(f._{20\text{-}24}^{t})$ is a logistic transformation[8] of the fertility rate of women between 20 and 24 years of age. The coefficient β_0 represents the constant of the model, and the following coefficients, namely β_1, β_2, β_3 and β_4, are the values of the parameters estimated for each variable RY (young males' relative income), W (the wage of young females) and U (the unemployment rate of young females). The interaction term (RY * W) serves to take account of the possibility of a change in the effect of W when RY moves upward or downward. The estimate of the parameters is obtained using the ordinary least squares (OLS) method.

Macunovich proposes to measure the effect of the change in young males' relative income on fertility using a complex variable, called RY for "relative income." For the Canadian context, this variable was constructed using information from two Statistics Canada surveys, the Labour Force Survey (LFS) and the Survey of Consumer Finances (SCF). Like the variable presented in Part 1 of this article, relative income is a proportion based on the income of young males when they enter the labour market in relation to the income of age cohorts representing their fathers' generation.

In order to take account of changes in education levels in the past four decades, the numerator of the RY variable represents the average annual income of men during their first five years of potential work experience. Obviously, these first five years vary according to the number of years of education that an individual has: if he has elementary or secondary schooling with no diploma (less than 9 years of education), his first five years of potential work experience are between ages 16 and 20. By contrast, the potential first five years of work of males who hold a university degree or higher are between ages 23 and 27. Between these two extremes, two other education levels are identified: individuals with between 9 and 13 years of education, with or without

[8] Logistic transformation consists in taking the Napierian logarithm of P / (1-P) where P is the probability that the observed event will occur (in this case, P is the fertility rate).

a high school diploma, and those who have studied at the post-secondary level without obtaining a university degree. Their potential first five years of work are then respectively between ages 19 and 23 and ages 22 and 26.

The average annual incomes of the individuals in each of these four groups were obtained from the SCF and were indexed according to the Consumer Price Index (CPI) in order to convert them to 1991 constant dollars. These constant-dollar incomes were then weighted, in a sense, by an approximation of the employment rate[9] for the corresponding age group and education level, so as to take account of the effect of cohort size on labour force participation and the unemployment rate. The average of these incomes therefore gives the numerator of the RY variable, which represents the real average annual income of young men when they enter the labour force.

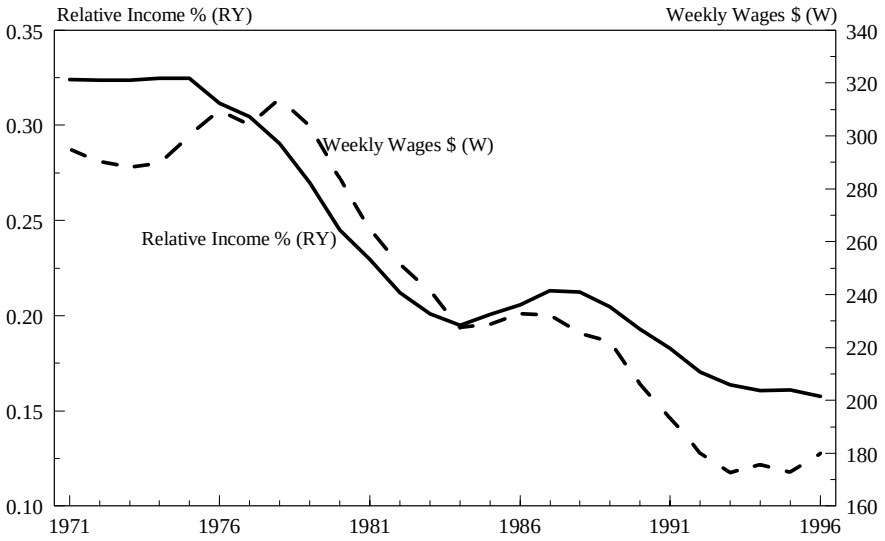
The time series that we used goes from 1971 to 1997. During that period, some concepts underwent major changes, making it difficult to compare the data. In particular, the questions for ascertaining the respondent's highest level of education, a key variable in the model that we proposed to estimate, were changed in 1975 and 1990, and it was therefore impossible to obtain fully equivalent education categories for the entire period. The four categories that we used are the most comparable groupings that we could obtain. In any event, the lack of perfect correspondence is not overly troubling, since this variable is used only to calculate ratios for certain education categories; because the numerator and the denominator both suffer from the same potential bias, that bias would seem to be largely cancelled out.

Turning to the denominator of the relative income (RY) variable, it consists of the average income of families that have at least one child 18 years of age or younger and are headed by a person between 45 and 54 years of age. By using family income, and not just the father's income, we were able to take account of how family income has been affected by increased female participation in the labour force over the past four decades in Canada. For these families to be considered representative of the families in which the young males in the numerator of the RY variable grew up, a five-year lag was introduced in relation to the numerator. This means that the material aspirations of young men are estimated on the basis of the living standard enjoyed by families whose head was between 45 and 54 years of age five years earlier. The denominator was also indexed according to the 1991 CPI to control for income variations due to inflation.

Figure 7 shows the curve of the five-year moving average of young males' relative income during their first five years of potential work experience since 1971 in Canada. The value of this ratio fluctuates between 0.33 at the start

[9] This consisted of the number of employed individuals divided by the number of individuals in the population corresponding to the age group and education level.

Figure 7. Male Relative Income (RY) and Average Weekly Wage of Women Controlling for Changes in Educational Levels (W), Canada, 1971 to 1996



Sources: Statistics Canada, calculations by the authors from the Labour Force Survey (LFS) and the Consumer Finances Survey (CFS).

of the period and 0.16 at the end of the period. If this indicator is correct, then young males' relative income in Canada has been cut by half since 1971. In other words, young males' income, expressed as a proportion of the family income of the families in which they grew up, fell substantially during the study period. The bulk of the decrease was concentrated between 1975 and 1985, suggesting that young men suffered more than older ones from the effects of the recession of the early 1980s. There is every indication that following a slight recovery that peaked just before the recession of the early 1990s, the indicator resumed its steady decline and is now levelling off. On the basis of the most recent observations, it would be tempting to conclude that young males' relative income has basically stabilized at a low level (0.16).

The results obtained here seem consistent with those in Figure 4; and they also appear to be consistent—although they are more pronounced—with findings already published by Statistics Canada (Morissette, 1997; Kapsalis, Morissette and Picot, 1999) indicating a decline in young people's real wages. Similarly, they are consistent with the trend observed in the United States in the findings reported by Macunovich (1996). The similarity with the evolution of young American males' relative income, which also showed an unexpected

rise over the period 1985-1990, tends to confirm the accuracy of the calculation using Canadian data. Since the American and Canadian economies are closely linked, the indicators for the two countries could be expected to correspond relatively closely.

The Female Wage (W)

Ideally, this variable should reflect only market wages (expressed as annual, weekly or hourly wages) for the work performed by women, with their education level, the nature of their jobs and their work experience held constant. If the model did not control for women's education level, which has risen considerably in Canada in the past 50 years, or the nature of the jobs that they hold, which has also greatly changed in recent decades, the W variable could tend more to reflect a change in these parameters than an actual change in the female wage.

The W variable is defined here as the average weekly income of women working full-time during their first five years of potential work experience. The average incomes obtained during the five years that generally follow the age at which a person completes her education for a given education level[10] were then weighted by the inverse of the unemployment rate so as to take account of possible problems integrating into the labour force. These data were then indexed to the 1991 CPI, after which they were standardized according to the education level of the female population in 1971.[11] Lastly, as with relative income, a five-year moving average was calculated to eliminate random variations in the indicator and to make it serve as a measure of the expected income of women in the labour force.

Figure 7 shows the curve of women's average annual wages during the past 25 years, controlling for changes in their education level. It appears that until the end of the 1970s, the female wage was rising very slightly. Those years were probably the end of a major growth period for this indicator, since the American data presented by Macunovich (1996) show a very strong increase between 1965 and 1973. Two periods of decrease are visible, with the greatest drop occurring during the first half of the 1980s. It should be recalled here that during the same period, young males' relative income was also steeply declining, showing the extent to which the recession of the early 1980s affected young persons—males and females alike—who were entering the labour market at that time. More recently, at the start of the 1990s, women experienced

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[10] The age groups are the same as for males: 16-20 years for individuals with less then 9 years of schooling, etc.

[11] This operation serves to control for women's increasing level of education during the period: by taking the proportions that existed in 1971 and applying them to all the years in the study, we eliminated the effect of the substantial increase in women's education level on their incomes over the period.

another period of declining wages. However, it was not as lengthy, because starting in 1993, the trend appears to have stabilized and even started to rise quite recently.

It must be concluded that between these two periods of decline, there was relative stagnation of the female wage, which—contrary to data that do not control for changes in women's level of education or experience—never moved upward between 1979 and 1996. These results differ substantially from the American data obtained by Macunovich (1996). The latter found instead that there had been cyclical fluctuations since the mid-1970s, even though the general trend was generally downward. In Canada, it must be recognized that the female wage moved in a direction similar to that of young males' relative income, with periods of decline or stagnation occurring at the same time in the two variables.

Unemployment Rate U

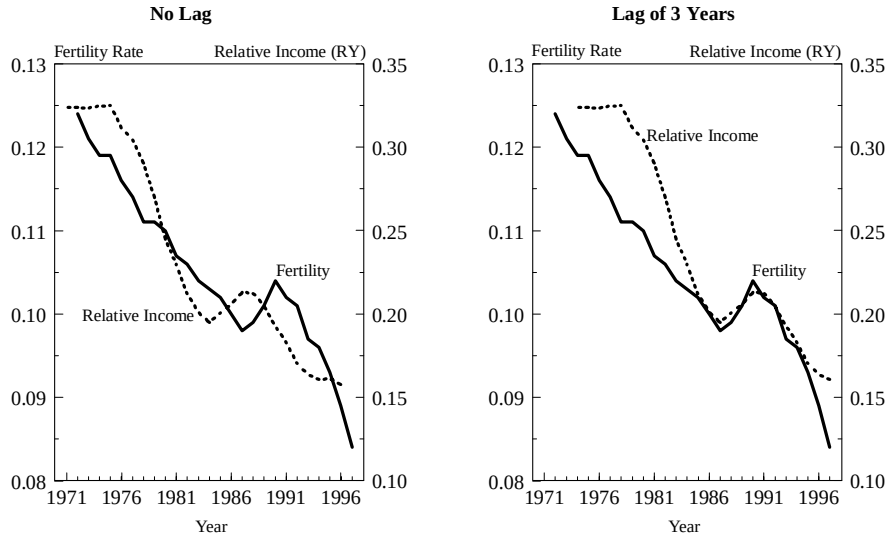
Since the model incorporates the unemployment rate of women between 20 and 24 years of age, it can take account of economic shifts in the job market, which can have a major impact on fertility. The female unemployment rate is used in preference to the male rate because studies have shown that it has a greater influence on fertility (Macunovich and Easterlin, 1988). No moving average was calculated here, so as to capture all fluctuations, even those confined to a single year, that affected the job market during the study period.

Results

As we saw previously in Figure 4, when the fertility and relative income curves are superimposed, the fit is reasonably good: the two curves are similar, with decline and growth occurring in nearly the same periods (Figure 8). Nevertheless, the apparent lag between the two curves should be noted: while male relative income started rising in 1984 following a long period of decline, the corresponding recovery in fertility did not occur until three years later, in 1987. Clearly, the increase in income did not affect fertility until three years later in Canada. If the relative income curve is shifted by three years (that is, so that relative income for 1984 corresponds to fertility for 1987), the fit between these two variables is better (Figure 8). The same phenomenon is also confirmed between the female wage and fertility.

It should be noted that Macunovich, in her model, also introduces a lag—one year in her case—between relative income and fertility. This is because couples do not immediately adjust their fertility behaviour to a more favourable financial situation. Not only is there the time it takes to conceive, but also the pregnancy period and the time required merely to decide to have a child. At this stage, however, it is not possible to say why the lag is apparently greater in Canada than in the United States.

Figure 8. Fertility Rates at Age 20-29 and Relative Income of Males in their First Five Years of Potential Work Experience (RY), Canada, 1971-1997



Sources: Statistics Canada, calculations by the authors from the Labour Force Survey (LFS) and the Consumer Finances Survey (CFS) and Demography Division.

The multivariate model presented here serves to show the effect of all the variables on fertility (Table 1). As in Macunovich's study, the model's coefficient of correlation (R^2) is extremely high for a social science study (0.95), indicating the strength of the relationships involved. It means that a remarkable 95% of the changes in fertility are explained by the variables included in the model.

The parameter estimated with respect to relative income (14.07) is highly significant and positive, confirming the directly proportional relationship that Easterlin saw as existing between this variable and fertility: a decrease in relative income leads to a reduction in fertility. Also highly significant, the parameter of the "female wage" variable is nevertheless negative, this time confirming the theories originally developed by Becker.

It may also be noted that the unemployment parameter is positive, suggesting that the higher the unemployment rate is, the higher fertility will also be. However, this result is not significant in the model.

The interaction term RY*W is also highly significant and negative. This means that in Canada as in the United States, the effect of the female wage varied during the study period as a function of changes in young males' relative income: when the latter is high, the effect of the female wage on fertility is

Table 1. Regression Model

Variables	Model's Parameters	Level of Significance
Constant ($ß_0$)	8.84	***
Relative Income (RY)	14.07	***
Female Wage (W)	-4.20	***
Interaction Term (RY * W)	-5.24	***
Female Unemployement Rate (U)	0.39	N.S.
Adjusted R^2	0.95	…
Number of observations	23	…
Durbin-Watson Statistic	1.88 [1]	…

N.S.: Not significant.

*** = Significant at < 0,001.

[1] The Durbin-Watson statistic determines whether there is autocorrelation in time series data such as these. Autocorrelation means that the value of the residual error at time t is correlated with the corresponding value at time t-1. While it does not bias the regression parameters, autocorrelation prevents us from obtaining accurate variances or significance thresholds and valid standard deviations. A first regression on the original data yielded a Durbin-Watson statistics of 1.2, which is not sufficient to prove autocorrelation but is also too high to reject this hypothesis. Therefore the Cochrane-Orcutt correction method was used. It significantly improved the Durbin-Watson statistic, which then indicated that there was no autocorrelation in the time series. The parameters shown here, while very close to the initial parameters, are nevertheless the ones obtained with the Cochrane-Orcutt procedure. For details regarding this procedure, see Neter, Wasserman and Kutner (1990).

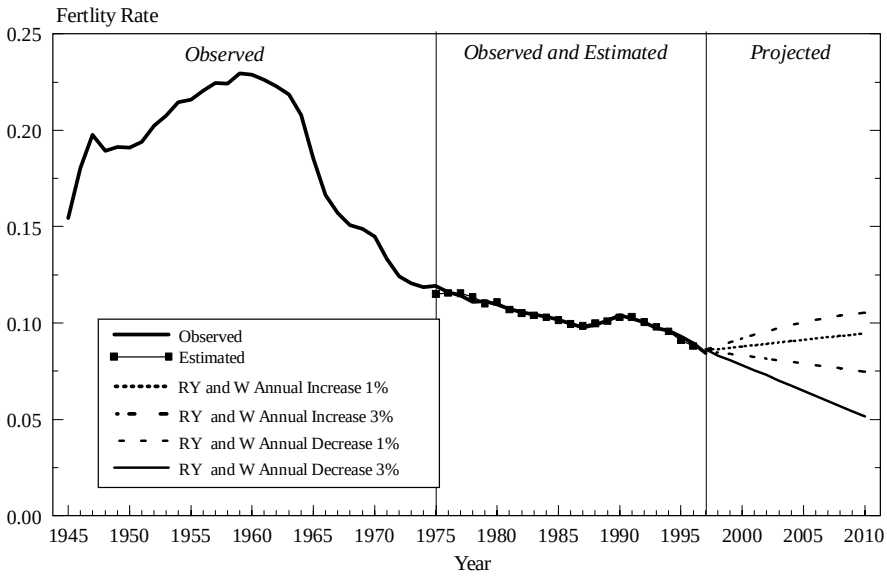
negative. Conversely, the female wage becomes important when male relative income is low. In other words, the negative coefficient means that the effect of the female wage on fertility can take different directions depending on the level of male relative income.

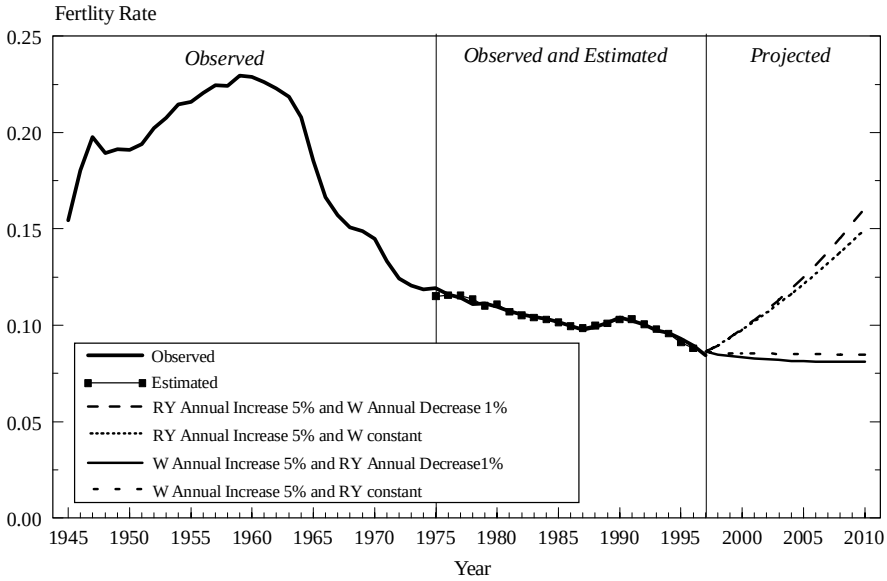
In Figure 9, the curve for fertility during the period 1975-1997 is superimposed on the curve estimated by the model; the figure shows how closely the latter manages to replicate changes in fertility. The reader can see just how strong the correlation is between the two series, since the model even manages to take account of the slight upturn in fertility in the late 1980s.

Such results suggest that the model may be used to simulate possible future changes in fertility according to various hypotheses as to the future direction of relative income and female wages. Figure 9 shows eight possible scenarios offering a range of results as to possible future directions for fertility rates between ages 20 and 29 in Canada.

Since relative income and female wages have been moving in the same direction for the past 30 years in Canada, this is how the first four scenarios also project them as moving, with average annual increases of the same magnitude for the two variables: -3%, -1%, 1% and 3%. The scenario that is undeniably the most unfavourable from a fertility standpoint is the one in which

Figure 9. Observed, Estimated and Projected Fertility Rates at Age 20-29 According to Different Scenarios of Variation in Male Relative Income (RY) and Average Weekly Wage of Women Working Full Time (W), Canada, 1945-2010





Sources: Statistics Canada, calculations with data from the Labour Force Survey (LFS) and the Consumer Finances Survey (CFS) and Demography Division.

relative income and the female wage decrease by 3% per year until 2010. Broadly speaking, this would be a continuation of the downward trend of fertility that began in the early 1990s. However, it is hard to believe that the fertility rate of women between 20 and 29 years of age could continue to decline in this manner. A threshold will probably be reached soon, beyond which further reduction would be very unlikely.

With a decrease of 1% per year between now and 2010 in young males' relative income and the female wage, the downward trend in fertility would continue, but at a slower pace. At the end of the projection period, the fertility rate of women aged 20 to 29 would be 0.075, or 75 births per 1,000. Assuming that the tempo of fertility remains the same as in 1997, this would result in a total fertility rate of approximately 1.3 children per women in 2010. At this point, such a scenario seems possible and realistic, since some regions of Western Europe—eastern Germany or northern Italy, for example—have already reached even lower fertility levels.

Once a recovery is envisaged for the model's two main variables, fertility starts back up. It rises very slightly in the case of a 1% growth in young males' relative income and the female wage, and more substantially if that growth reaches 3%. In the latter case, the fertility rate of women 20-29 would reach 110 births per 1,000 women in 2010, which is equivalent to roughly 2.0 children per woman if the tempo of fertility were to remain the same as in 1997. This threshold is very close to the replacement level.

Under the last four scenarios, young males' relative income and the female wage move in opposite directions. While these scenarios are somewhat less likely in reality, they are primarily included as a sensitivity test of the impact of the model's interaction variable. According to the model, the future trend of fertility appears to be much more sensitive to changes in young males' relative income than to changes in the female wage. A rise of 5% in the latter variable generates almost no effects, whereas a comparable increase in young males' relative income during the period 1998-2010 causes the fertility rate to reach approximately 160 births per 1,000, a level observed in the 1920s and exceeded only during the baby boom. Assuming that the tempo of fertility remained the same as in 1997, the resulting total fertility rate would be 2.9 children per woman, well above the replacement level.

The factor that distinguishes the two sharply rising curves in Figure 9 is the female wage: in one case, it falls by 1% per year, while in the other it remains stable. There are few perceptible effects on fertility, and as expected, there is a negative association between fertility and the female wage when male relative income is high. Lastly, since young males' relative income is positively associated with fertility, the scenario in which it decreases by 1% per year while the female wage rises by 5% per year would yield the lowest fertility projection of these four scenarios.

Discussion

While the results presented in this study are consistent with Macunovich's findings for the United States, they nevertheless differ in some respects. The greatest difference is definitely the importance in Canada of the variable "RY", young males' relative income. In the United States, Macunovich found that the "female wage" variable was more important.

The results obtained in Canada tend to confirm the theories advanced by Easterlin and Becker, since the direction of the relationships is as they predict. The new element contributed by the significant interaction between the two study variables suggests that the female wage not only has a negative "cost" effect on fertility but it also has an "income" effect. Which of these two effects predominates will depend on the man's relative income level. If the latter is low, the "income" effect will predominate, since the woman's wage will enable the couple to increase their total income significantly and thus give them the opportunity to have children if they so desire. Conversely, if the man's relative income is high, a couple may have less need of this second income. The latter is then a matter of choice, and the couple may opt for a second income in order to fulfil higher material aspirations, sometimes at the expense of fertility.

This research suggests that the decline in young males' relative income during the 1970s and 1980s made it more necessary for couples to be able to count on two incomes to satisfy both their constantly rising material aspirations and their aspirations with respect to fertility. Young couples adapted to this decline, and in particular they postponed their childbearing plans to later years in their lives. According to Abeysinghe (1993), changes in the timing of births are more related to the movement of female wages than to variations of the relative income of young men.

The model used in this study is of interest in many respects, since it enables researchers to reconstruct the change in fertility for ages 20 to 29 in Canada over the period 1975-1997, using only two variables. This attests to the strength of the links that exist between fertility and income. However, a few words of caution are in order here. First, other variables that are just as important can obviously influence couples' decision as to whether to have a child. Sociological or demographic variables that the model does not take into account, such as the number of children already born, the values of individuals, the norms of the society in which they live, religion, etc. can have a significant effect on fertility. Similarly, other economic variables that may play a role were not tested here. One such variable is job insecurity, which most certainly has a major effect on young couples' fertility. The birth of a child has implications over a long period, and even if a couple's current income may seem sufficient to decide to have a child, it is entirely possible that this decision will be postponed owing to uncertainty regarding the stability of the job held. Calculations based on the Survey of Consumer Finances show that between 1969 and 1996, the

proportion of young males (aged 25-29) working full-year full-time fell from 75% to 64%. The objective of this study was not to develop a general theory of fertility but rather to verify the existence of the theoretical links thought to exist between fertility and the income of young couples.

A second point to consider is that while the model yielded excellent results for Canada over the past three decades just as it did for the United States, to generalize these results into a theory of fertility requires a step that it is not appropriate to take at this stage. Other studies are necessary to test such a model on the situation of other countries that have, or have not, experienced a baby boom and a baby bust. To date, no study has been published with data from European countries, for example. It would also be useful to determine whether the model yields equally good results for different periods, such as the interwar period.

For demographers to predict the future of a population is risky. They can nevertheless develop certain possible scenarios on the basis of trends observed in the past. While keeping the limitations of the model in mind, it is interesting to look at the effect that the study variables may have on future fertility. On this subject, it seems clear that if young males' relative income and female wages were to grow at an annual rate of approximately 3% over a fifteen-year period, this would cause the total fertility index in Canada to approach replacement level by 2010.

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AN ANALYSIS OF THE CHANGE IN DEPENDENCE-FREE LIFE EXPECTANCY IN CANADA BETWEEN 1986 AND 1996

by Laurent Martel and Alain Bélanger[1]

At the beginning of this century, a Canadian male could expect to live an average of 47 years and a Canadian female, 50 years (Table 1). At that time, barely 38% of males and 44% of females reached the respectable age of 65 years. They could then expect to live for roughly another decade (11 years for males and 12 for females). The additional years were often lived in a difficult state of health, due to the harshness of life and the lack of health care and services.

Owing to several factors—firstly, social progress, especially in the field of public sanitation; secondly, medical breakthroughs, including vaccination; and thirdly, the technological advances achieved in the past century—developed societies have largely succeeded in conquering infectious and parasitic diseases. Because of this major revolution in the history of human populations, known to scientists as the "*epidemiological transition*", considerable progress has been made in terms of life expectancy. Thus in 1996, life expectancy at birth in Canada reached 75.5 years for males and 81.2 years for females. More than eight males in ten and almost nine females in ten will celebrate their 65th birthday. And at that point, they may expect to live respectively 16 and 20 more years, a period generally reserved for retirement!

On a world scale, Canadian males and females are in an enviable position as to their average length of life. While Japanese males and females currently hold the world record for longevity, only Japanese, Icelandic and Swedish males are ahead of Canadian males in this regard. For females, apart from the Japanese, only the French, Swedish, Swiss and Spanish enjoyed greater average longevity than Canadian females in 1996.

Such spectacular progress in the space of a century raises questions regarding the limits of human longevity. Is it reasonable to believe that life expectancy can long continue to grow at its present rate? Table 1 shows that the average annual gains, which were quite substantial throughout the first half of the 20th century for both sexes, began to decline two decades ago. This is especially true for females, whose life expectancy at birth is now growing more slowly than that of males. Is this slowing a sign that as some researchers believe, we are approaching the absolute limits of human longevity?

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[1] The authors wish to thank Jean-Marie Berthelot and Russell Wilkins for their invaluable comments.

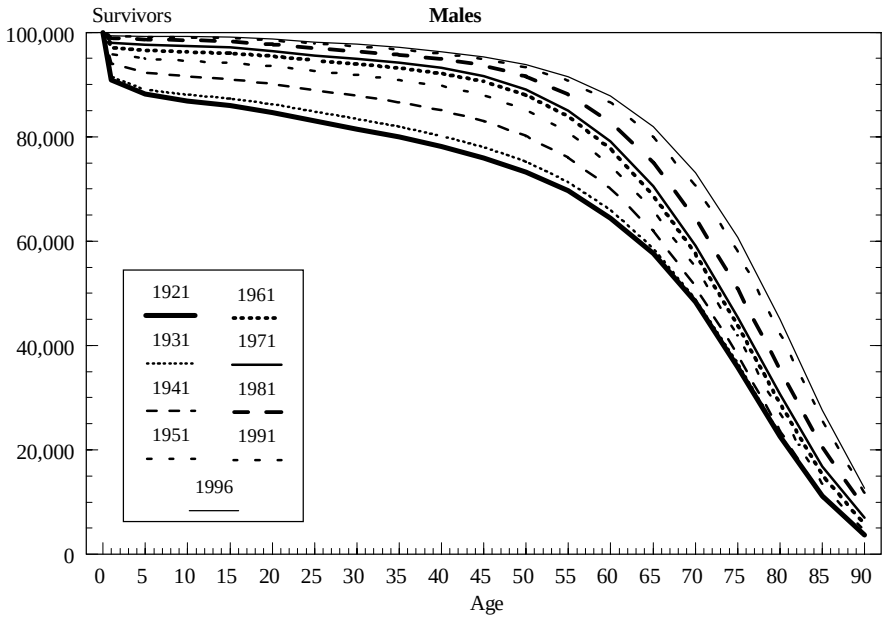
Table 1. Variations in Life Expectancy at Birth (e_0) and at Age 65 (e_{65}) during the Last Century, Canada, 1901-1996

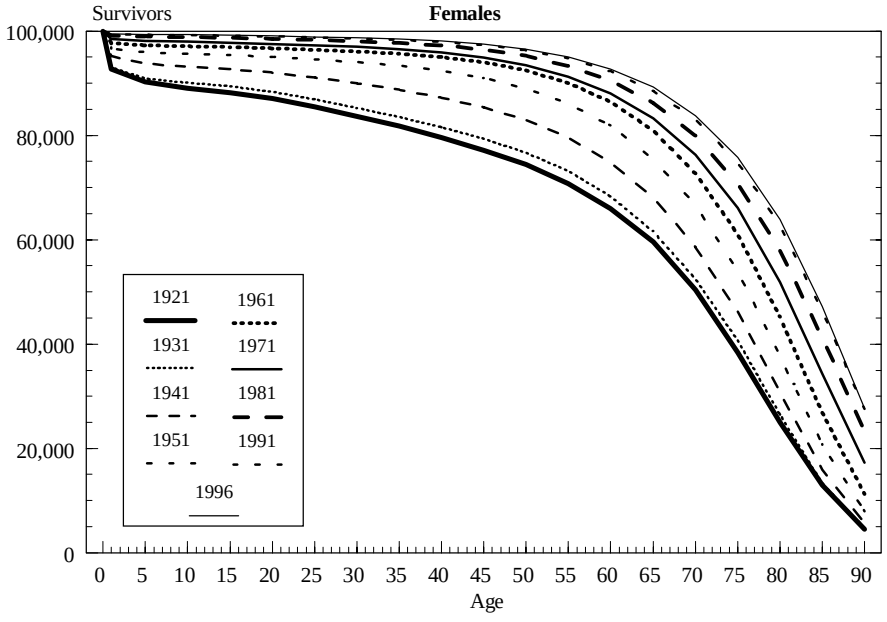
Year	Males		Females		Difference (in years) (males - females)
	Year	Average Annual Growth	Year	Average Annual Growth	
	Life Expectancy at Birth				
1901	47.1	...	50.1	...	-2.97
1911	50.9	0.37	54.2	0.41	-3.28
1921	55.0	0.41	58.4	0.42	-3.40
1931	60.0	0.50	62.1	0.37	-2.06
1941	63.0	0.30	66.3	0.43	-3.27
1951	66.4	0.34	70.9	0.46	-4.50
1961	68.4	0.20	74.3	0.34	-5.82
1971	69.6	0.11	76.6	0.23	-6.99
1981	72.0	0.24	79.2	0.26	-7.13
1991	74.6	0.26	81.0	0.18	-6.35
1996	75.5	0.17	81.2	0.05	-5.75
	Life Expectancy at Age 65				
1901	11.0	...	12.0	...	-0.96
1911	11.3	0.03	12.4	0.04	-1.02
1921	11.7	0.04	12.8	0.04	-1.10
1931	13.0	0.13	13.7	0.09	-0.74
1941	12.8	-0.02	14.1	0.04	-1.26
1951	13.3	0.05	15.0	0.09	-1.69
1961	13.6	0.03	16.1	0.11	-2.55
1971	13.9	0.03	17.7	0.15	-3.78
1981	14.6	0.08	19.0	0.14	-4.37
1991	15.8	0.12	20.0	0.10	-4.16
1996	16.1	0.06	20.0	0.00	-3.87

Sources: 1901-1921: Bourbeau, R., Légaré, J. and Émond, V. (1997). "New Birth Cohort Life Tables for Canada and Québec, 1801-1991", ***Demographic Document no. 3***, Catalogue no. 91F0015MPE, Statistics Canada. 1931-1961: Nagnur, D. ***Longevity and Historical Life Tables (abridged) 1921-1981***, Catalogue no. 89-506, Statistics Canada. 1971-1996: Statistics Canada, Health Statistics Division and Demography Division.

Various factors tend to confirm this hypothesis. An examination of the survivor curves from Statistics Canada's life tables shows a growing *rectangularization* of the curves, suggesting that it might be difficult to push the average length of life well beyond 85 years (Figure 1). Death rates before 50 years of age are reaching such low levels that further compression could prove to be impossible; this is the picture that seems to emerge when the 1996 curve is superimposed on the 1991 curve. It is after age 50 that gains against death can still potentially be substantial, even though they might very well appear to be limited, as chronic diseases replace infectious and parasitic

Figure 1. Life Table Survivors by Age and Sex, Canada, 1921-1996





Sources: Statistics Canada, Health Statistics Division, Health Status and Vital Statistics Section and Demography Division, Population Estimates Section.

diseases as the primary cause of death at this stage of the epidemiological transition. For proponents of the theory of a "limited-life-span paradigm", such as Olshansky (1990, 1994) or Fries (1980, 1983), major efforts on the part of the scientific community will now be necessary to further increase life expectancy.

Other researchers, such as Vaupel (1986, 1994) and Manton (1991) suggest that human longevity will continue to grow throughout the next century and could well reach 100 years or even more! In support of their hypothesis, these scientists cite the first, highly promising results of research currently under way on the human genome and cellular aging mechanisms. These results suggest that future gains in life expectancy will be achieved, not by means of a reduction in mortality obtained through better optimization of existing technologies or knowledge, but rather as a result of revolutionary discoveries yet to come in the field of population genetics or biology.

In any event, spectacular progress in extending individuals' longevity has been achieved in the past century; but that very progress is causing some concerns within society, in particular, in terms of increasing public health expenditures. Since fertility has almost stabilized at very low levels, the prolonging of life is now a more significant factor in the aging of populations. And old age is associated with the deterioration of health, often reflected in the appearance of activity limitations, dependence and disabilities of all kinds. Too often, advances in life expectancy have been assumed to entail equivalent progress in population health. For scientists, this positive association between a reduction in mortality and a reduction in morbidity is not evident; it seems possible or even probable that when death is postponed, there is not necessarily a corresponding postponement of disease (Verbrugge, 1984; Crimmins, 1990; Olshansky et al., 1991). In other words, it is quite possible that for most individuals, the years of life gained against death will not be lived in good health but rather in a state of disability, activity limitation or dependence.

According to this hypothesis, known as the "*expansion of morbidity*", longer life expectancy is associated with a correspondingly longer period spent in a state of dependence. With the rectangularization of mortality, more individuals are now reaching advanced ages, and at those ages, degenerative or chronic diseases are still common. Less fatal, these diseases, such as arthritis and dementia, often cause a number of limitations or forms of dependence that can go on for many years. Medicine, combined with technology, is also making it easier to prolong the life of individuals subject to these diseases. In short, under this hypothesis, people will live longer, but will also spend a longer time in a state of dependence as a result of physical and mental health problems.

However, there is a more optimistic view of the situation, basically formulated by Fries (1980, 1983, 1989): the "*compression of morbidity*". According to Fries, the appearance of chronic diseases in the life of an individual can be

Indicators of Healthy Life Expectancy

On its own, life expectancy cannot be used to obtain a measure of the morbidity within a population. For this reason, new indicators have been constructed, along similar lines: ***dependence-free life expectancy*** (DFLE) and ***health-adjusted life expectancy*** (HALE).

Dependence-free life expectancy is the number of years of dependence-free life that can be expected by a fictitious cohort of individuals subject to current mortality and morbidity conditions. Implicitly, this indicator assigns a score of one to years of life lived without disability and a score of zero to those lived in a state of dependence. Health-adjusted life expectancy corrects this implicit simplification by assigning an arbitrary score, or rather a score based on the Health Utility Index (HUI), to years spent in each health status. This score varies from one individual to another, depending on his/her set of health attributes (seeing, hearing, mental health, mobility, pain, etc.). In this article, this score is the average HUI score of each age / sex / dependence states group. A HUI equal to one represents perfect health and zero represents death. The score is, therefore, lower than one for all groups and decreases with the severity of the dependency. HALE is thus probably the best measure of the health status of a population.

These indicators are basically obtained by using three different methods: “observed prevalence tables”, “multiple decrement tables”, and “multiple increment-decrement tables”. Observed prevalence tables are easy to calculate and are currently the most widely used. The main drawback of this method is that it is based on a static measure of morbidity (prevalence) in combination with a dynamic measure of mortality (incidence). On the other hand, multiple decrement tables are strongly biased toward an overestimation of life expectancy with disability, since they consider each health status as an absorbing state, not allowing for a return to the initial state. While this characteristic poses no problem for studying mortality or chronic diseases, many individuals coping with disabilities or limitations regain their personal autonomy at some point. The last method takes this factor into account. But because it calls for calculating probabilities of transition between health states, it requires the use of longitudinal studies, which are more costly and more difficult to conduct. In this article, only the first method is used, so as to allow for comparisons over time.

postponed or even prevented by a healthy lifestyle, with regular exercise and the avoidance of tobacco, combined with the regular monitoring of health made possible by an adequate and effective health care system. In Fries’ view,

since the limits of human life are a given, future progress will cause morbidity to exhibit the same pattern of rectangularization shown by mortality. In other words, the lengthening of life will be accompanied by a reduction in the years of life spent in a state of disability or dependence.

In the context of a rapidly aging Canadian population and controlled public spending on health, it would seem essential to compare these hypotheses to reality, since they imply quite different consequences. The "*compression of morbidity*" seems a desirable objective for any society to achieve. Many researchers interested in the aging of the population have already shown how maintaining individuals' personal autonomy is an effective way to contain the anticipated rise in the demand for health care and health services. If, on the other hand, the hypothesis of an "*expansion of morbidity*" should prove to be the correct one, it will be necessary to plan for a major increase in the demand for health care and services as well as beds in institutions specializing in gerontology / geriatrics. Preserving the social balances achieved under the welfare state, especially in the health field, could then pose a major challenge for Canada at the start of the next century.

In the past three decades, the scientific community has developed a number of indicators to measure the change in morbidity over time within a population (WHO, 1997). Nearly thirty years ago, Sullivan (1971) proposed an indicator of *disability-free life expectancy* obtained using the prevalence[2] of disability, which is multiplied with the person-years (stationary population) from a life table. Since then, other indicators, more sophisticated but based on the same method, have been developed, partly owing to the work of the International Network on Health Expectancy (REVES).[3] Thus, life expectancy can now be calculated adjusting for disability as well as for status of health (see Box "Indicators of Healthy Life Expectancy"). These indicators, which are easy to obtain, can be used to make comparisons both over time and between nations. However, for the past decade, some countries including Canada have been undertaking to calculate disability-free or dependence-free life expectancies using more elaborate techniques that are based on the incidence rather than the prevalence of health states. Requiring the use of longitudinal data, the calculation of these indicators provides a better estimate of disability-free life expectancy, since it is based on dynamic models that take account of not only entries to various health states but also exits from those states (Rogers, Rogers and Bélanger, 1989; Rogers, Bélanger and Rogers, 1991; Nusselder,

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[2] Prevalence (as a static measure) refers to the number of individuals in a certain state (here a state of health) within a population, including both old cases and new cases. An opposing concept is that of incidence (a dynamic measure), which refers to the number of new cases that appeared within a population during a given period.

[3] Created by the Institut National de la Santé et de la Recherche Médicale (INSERM, France), the Conseil des Affaires Sociales (Quebec, Canada) and the Centre for Demographic Studies (Durham, USA), REVES is an international research network based in Montpellier, France, designed to develop and co-ordinate life expectancy indicators.

1998; Bélanger, Berthelot and Martel, 1999). These indicators are more complex and more costly to obtain; since the necessary data are not yet available for comparisons over time, they will not be used in this article.[4]

For many years now, studies have been done on dependence-free or health-adjusted life expectancy in Canada, based on the "Sullivan" method (Wilkins and Adams, 1983, 1992; Wilkins, 1991 and 1993; Wilkins and al. 1994; Berthelot, Roberge and Wolfson, 1993; Wolfson, 1996; Berthelot, Roberge and Cranswick, 1999). During the 1990s, however, public decision-makers have shown growing interest in these indicators, particularly in light of the recommendations of the National Task Force on Health Information.[5] Consequently, Statistics Canada created the National Population Health Survey (NPHS), which provides a complete picture of the health status of the Canadian population. This longitudinal survey, which can be used to calculate the Health Utility Index (HUI—see Box "Health Utility Index"), opens the way for calculating more complete aggregate health indicators. Because the sample size increased practically fourfold between 1994 and 1996, the estimates obtained from the NPHS in 1996 are more reliable, and when used in combination with other estimates, they serve to identify a trend in the evolution of morbidity in Canada.

This study therefore proposes to make a comparison over time between dependence-free life expectancy and health-adjusted life expectancy in Canada. For the latter indicator, the years of life lived will be weighted using average Health Utility Index values according to health state from the 1996 NPHS. These health indicators are estimated for three years, using data from three Statistics Canada surveys: the Health and Activity Limitation Surveys (HALS) of 1986 and 1991 and the National Population Health Survey (NPHS) of 1996.

Health Statuses

While it is relatively easy to define death, it is much more difficult to define good health or the absence of activity limitations and dependence within a population. The vast majority of studies conducted to date have used the questions on activity limitation and dependence in order to define two or sometimes three health states.

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[4] However, a brief description of the multiple increment-decrement tables method is available in the ***1995 Report on the Demographic Situation*** (Dumas and Bélanger, 1995).

[5] Sponsored by the Chief Statistician of Canada, the National Health Information Council and the Conference of Deputy Ministers of Health, this task force had issued the recommendation that "the health information system should include an overall aggregate index of population health—some sort of GDP [Gross Domestic Product] or CPI [Consumer Price Index] of health, which would be the culmination or aggregation of a coherent family of health status indicators" (Wilk, 1991).

Table 2. Health Status Definition

Level	Health Status	Definition
1	Dependence-free	No dependency OR needs help only for heavy housework;
2	Moderately dependent	Needs help for meal preparation OR for shopping for groceries or other necessities OR for everyday housework;
3	Severely dependent	Needs help for personal care OR for moving around the house;
4	Institutionalized	Living in a health institution

In this article, the definition of health states had to satisfy an additional condition, namely that it be the same for three different surveys. While a subset of questions on activity limitation were identical, this was not the case with the questions designed to measure dependence. In the two HALS surveys, for example, respondents were asked who usually prepared their meals. If the respondent stated that another person prepared his or her meals, an additional question was asked in order to determine whether this situation was due to a long-term health problem. Therefore the concept involved was one of *assistance received*. In the NPHS, the equivalent question instead dealt with the concept of the *need for assistance*, since respondents were asked whether they needed another person to help them accomplish a given task because of a long-term health problem. While similar, the concepts are not identical; for example, it may be that the need for assistance is generally greater than the assistance actually received.

Despite this difference, for which there is no perfect solution, we used the questions on dependence to define four health statuses, drawing on earlier studies of Wilkins (1991, 1993) (see Table 2).

These health states are of particular interest in that for levels 2, 3 and 4, they imply a daily dimension and variable costs for the health care system in Canada. For example, it seems likely that an individual at level two can easily be looked after by his or her informal support network.[6] However, where no such network exists, it will be necessary to call upon the formal home

[6] An individual's informal support network consists of the immediate family (spouse and children) and extended family (brothers and sisters, uncles and aunts, cousins, etc.) as well as friends and neighbours.

support structures set up by the government. For an individual at level three, it seems hard to imagine doing without the health care and health services system even if he or she has an excellent informal support network. The persons in that network will eventually need a respite, since the dependence is not only daily but also very onerous. Lastly, level four represents sizable costs for the health care system, even if some institutions are private.

Surveys Used

Three surveys representative of the population were used in this study: the Health and Activity Limitation Surveys (HALS) of 1986 and 1991 and the National Population Health Survey (NPHS) of 1996. In each survey, only the population 15 years of age and over was selected.

The HALS surveys are postcensal surveys, conducted after the 1986 and 1991 censuses. The goal of those surveys was to gather information on the activity limitation and dependence of the Canadian population as a whole. The target population of the surveys consisted of individuals residing in either private households or health care institutions.[7] The size of the samples in 1986 and 1991 was respectively 184,500 and 148,850 respondents.

Initiated in 1994, the NPHS is both a cross-sectional and a longitudinal survey designed to collect information on the health of the Canadian population every two years. This survey has three parts, the first concerning individuals living in private households in Canada. The second concerns residents of long-term health care institutions, and the third concerns the population living in the North (residents of the Territories and aboriginal populations of remote areas of provinces). The 1996 sample consisted of 81,804 respondents, or just over half as many as in the HALS surveys, making estimates more fragile.

However, the population living in health care institutions (level 4) was estimated from the censuses. This choice was motivated by the prospect of obtaining much more accurate estimates—based on the entire population—than those based on relatively small samples for estimating a phenomenon that is generally rather uncommon, at least under age 75.

Results

This section first presents the prevalence of each health status by age and sex, estimated by means of the surveys (for health statuses 1, 2 and 3) and censuses (for health status 4). Second, a measure of dependence-free life expectancy in 1986, 1991 and 1996 is calculated and discussed. The section ends with a discussion of health-adjusted life expectancy.

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[7] Individuals living in penitentiaries and campgrounds were excluded from the sample, as were members of the Canadian Armed Forces.

Prevalences in 1986, 1991 and 1996

Figure 2 provides a comparison by age and sex of the prevalence of each health state over ten years in Canada. For each age, the sum of the prevalences of the four health states, a value found on each of the curves for the same sex, is equal to one. The curves for the first three health states exhibit slight random variations due to sampling errors, which are unavoidable when using survey data.

Before age 65, the vast majority (at least 90%) of the Canadian population lives dependence-free (Figure 2). When there are dependencies before that age, Figure 2 shows that they are mostly moderate, with very few individuals classified in levels 3 or 4. In general, very few differences emerge from one year of observation to another, suggesting that in Canada, morbidity prior to age 65 has already reached a threshold beyond which further compression will be difficult. However, the sexes have different morbidity profiles: at each age between 15 and 64, the proportion of females coping with moderate dependence is nearly two times greater than the corresponding proportion of males.

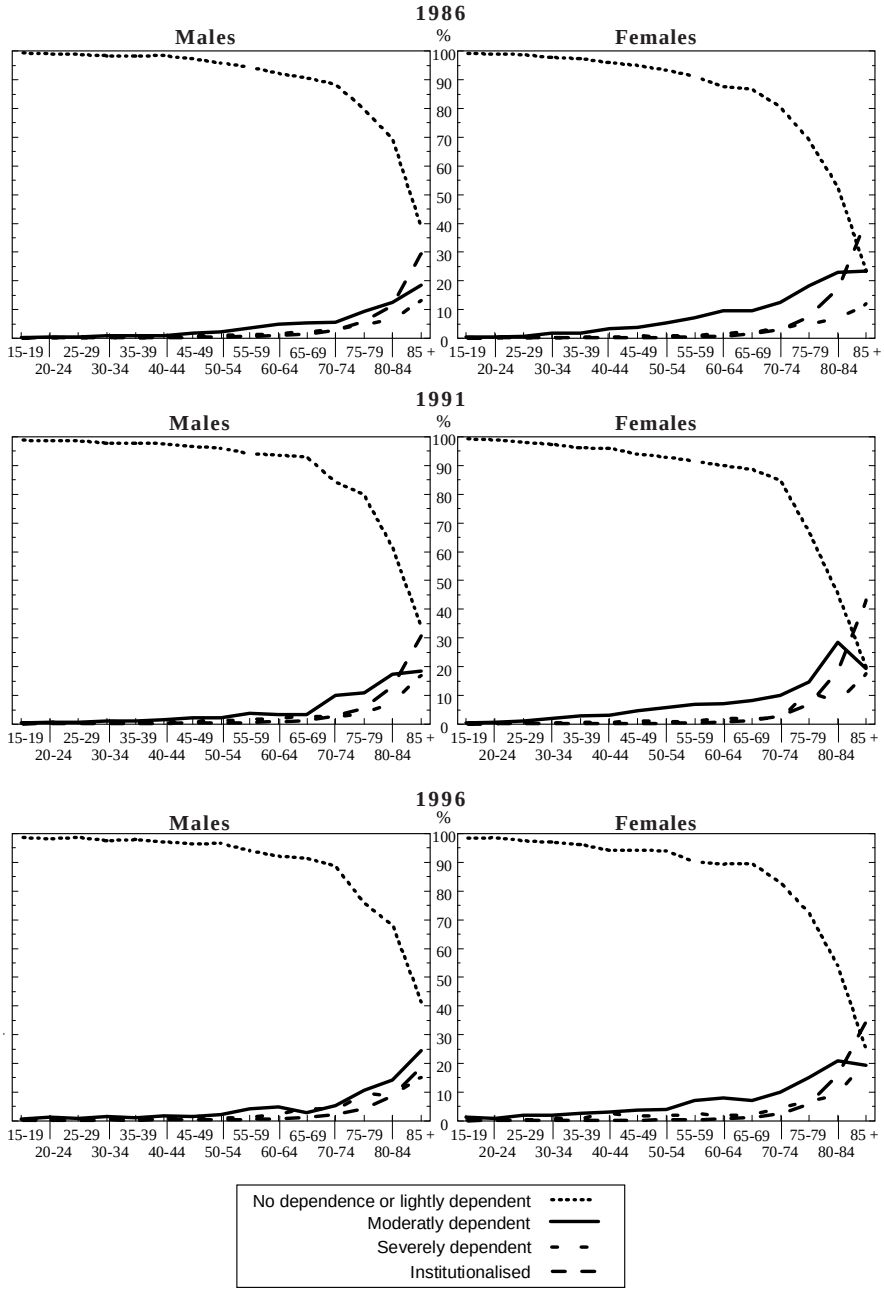
But starting at age 65, the overall health status of the population rapidly deteriorates. Thus, with advancing age, progressively fewer individuals report having no major dependence. While the prevalence of level 2 (moderate dependence) begins to increase prior to age 65, the prevalence of severe dependence (level 3) begins increasing for both sexes primarily around age 70, whereas the prevalence of institutionalization does not really begin to increase until age 75. Women, more than men, experience severe dependence and institutionalization: beyond age 85, there are more women in health care institutions than in private households, which is never the case with men. This phenomenon may be explained not only by women's greater life expectancy but also by their different marital status in old age; because of excess male mortality, many women are widows during their older years.

Solely on the basis of prevalences after age 65, it is difficult to conclude that the health of the Canadian population actually improved or deteriorated between 1986 and 1996. It may be that the slightly downward trend in the numbers living in health care institutions is more the result of changes to health care policies over the past ten years, basically oriented toward de-institutionalization, than the consequence of a general improvement in the health of the population.

Dependence-Free Life Expectancy (DFLE) at Age 15 and 65

Like total life expectancy, DFLE at age 15 steadily increased in absolute terms from 1986 to 1991 to 1996 (Table 3 and figure 3). Thus, Canadian males could expect to live 55.6 years dependence-free in 1986, 56.1 years in 1991 and 56.8 years in 1996. Females, for their part, saw their dependence-

Figure 2. Prevalence of Health Statuses by Age and Sex, Canada, 1986, 1991 et 1996



Sources: 1986 and 1991: Health and Activity Limitations Survey (HALS); 1996: National Population Health Survey (NPHS) and Demography Division, Research and Analysis Section.

free life expectancy rise from 57.8 years in 1986 to 58.1 years in 1991 and 58.6 years in 1996. However, in relative terms, those 58.6 years represent only 88% of their total life expectancy, whereas males can expect to spend 93% of their life without dependence. Thus, sizable differences exist between the sexes, with females spending a larger portion of their life than males in a state of moderate or severe dependence or even in a health care institution (approximately 4 years more in each year of observation). Furthermore, the gaps that exist between males' and females' life expectancy at age 15 are not reflected in equally large gaps in DFLE; the gaps for the latter indicator are much smaller (for example, only 1.8 years separates the DFLE of males and females in 1996, compared to a life expectancy (LE) gap of 5.7 years).

In the past decade, the bulk of Canadians' gains against mortality have been reflected in an increase in dependence-free life expectancy. Males' life expectancy increased by 1.8 years, two-thirds of which (1.2 years) was in years of life without dependence. For females, while it is true that their life expectancy grew less rapidly over this period (with a gain of 1 year), four-fifths of this gain (0.8 year) was in years of life without dependence. Beyond question, from the individual's perspective, such progress is desirable. Canadians of both sexes can expect not only to live longer, but also to live longer in good health!

However, the number of years lived with dependence also increased, in particular during the 1986-1991 period. The proportion of total life expectancy that a male or female can expect to live in without dependence slightly declined between 1986 and 1991, suggesting that of the years of life gained during that period, a greater proportion were years lived with some form of dependence than years lived dependence-free. While there were therefore absolute gains in terms of dependence-free years of life during that period, the increase in the number of years lived with dependence was slightly more rapid. During that period, there was therefore both an absolute and a relative expansion of morbidity, although it was greater among males than among females, despite an increase in the number of years lived without dependence.

The period 1991-1996 appears to be more favourable, since total life expectancy continued to rise, albeit less rapidly than in the first five-year period, but this increase was entirely due to gains in dependence-free years. The number of years lived with dependence even decreased slightly for females and remained unchanged for males. The proportion of total life expectancy lived dependence-free remained the same (92.9%) in 1991 and 1996 for males and for females, it rose from 87.1% to 87.6%. This period was therefore characterized by a slight absolute and relative compression of morbidity for females.

Table 3 also shows LE and DFLE at age 65. As may be seen, the life expectancy of males aged 65 and over increased by 0.8 years between 1986 and 1991. Three-quarters of those gains were in years lived with dependence.

Table 3. Life Expectancy (e) and Dependence-Free Life Expectancy (DFLE) at Age 15 and 65 by Sex, Canada, 1986, 1991 and 1996

	Males			Females		
	e	DFLE	Difference	e	DFLE	Difference
~~Age 15~~	In Years					
1986	59.3	55.6	3.7	65.8	57.8	8.0
1991	60.4	56.1	4.3	66.6	58.1	8.5
1996	61.1	56.8	4.3	66.8	58.6	8.2
	Percentage[1]					
1986	100.0	93.9	6.1	100.0	87.9	12.1
1991	100.0	92.9	7.1	100.0	87.1	12.9
1996	100.0	92.9	7.1	100.0	87.6	12.4
~~Age 65~~	In Years					
1986	15.0	12.0	3.0	19.4	12.7	6.7
1991	15.8	12.2	3.6	20.0	12.8	7.2
1996	16.1	12.7	3.4	20.0	13.5	6.5
	Percentage[1]					
1986	100.0	80.0	20.0	100.0	65.8	34.2
1991	100.0	77.3	22.7	100.0	64.3	35.7
1996	100.0	78.8	21.2	100.0	67.6	32.4

[1] Percentages were obtained using unrounded data.

Sources: Statistics Canada, Health Statistics Division, Health Status and Vital Statistics Section and Demography Division, Research and Analysis Section.

However, since the number of years lived with dependence is smaller than the number of years lived dependence-free (3.0 vs 12.0), such an increase can only result in a greater relative increase for life expectancy with dependence. This is why the proportion of total life expectancy lived with dependence increases from 20.0% to 22.7%. For females, most of the increase in total life expectancy is in years lived with dependence, causing the proportion of the years of life lived with dependence to increase (34.2% in 1986 and 35.7% in 1991). In relative terms, there was also an expansion of morbidity among elderly women in the period 1986-1991.

As Table 3 shows, a compression of morbidity after age 65 is evident in the next five-year period. Elderly women in particular appear to have reduced

Figure 3. Dependence-Free Life Expectancy and Health-Adjusted Life Expectancy at Age 15 and 65, by Sex, Canada, 1986, 1991 and 1996

Sources: Statistics Canada, Health Statistics Division, Health Status and Vital Statistics Section and Demography Division, Research and Analysis Section.

the burden of years spent with dependence, since the proportion represented by those years falls from 35.7% to 32.4% between 1991 and 1996. Since life expectancy at age 65 did not change over this period, all the gains were made against morbidity. On the other hand, men made gains with respect to both mortality (0.3 years) and morbidity (0.5 years). Since the latter gains are larger, men could expect, in 1996, to spend a smaller proportion of their years living with dependence (22.7% in 1991 vs 21.2% in 1996).

In short, it may be concluded that the compression of morbidity in the period 1991-1996 was greater for females than for males. On the other hand, total life expectancy at age 15 and at age 65 grew more rapidly among males during those years. These facts suggest that the gains yet to be made against mortality could be increasingly difficult to realise for females, but that there would still be room for them to make gains against morbidity. For males, life expectancy being lower, it could be easier to realise gains with respect to both mortality and morbidity. The sizable difference that continues to exist

Differences in Life Expectancy Between the Sexes

Less sizable at the start of the century (3 years in 1901), a sizable imbalance between the life expectancy of males and females exists today (5.8 years in 1996: Table 1). The combined effect of a reduction in mortality associated with childbearing and lifestyle differences between the sexes (basically related to risk taking behaviour including smoking, drinking and driving) largely explains the widening of this gap between 1901 and 1981, for all ages. It is nevertheless especially sizable, in relative terms, beyond age 65. Thus, women aged 65 and over can expect to outlive men of the same age by four years, or 25%!

Having thus peaked in the mid 1970s (the gap between males' and females' life expectancy at birth was then 7.3 years), this imbalance has been gradually decreasing ever since, for all ages except after 80, when it is fairly stable. The explanation for this narrowing of the gap probably lies in women's growing tendencies to adopt a lifestyle that puts their health more at risk, in terms of stress and alcohol and tobacco consumption. For this reason, it is likely that the trend that began two decades ago will continue through the first half of the next century.

between the sexes as to the proportion of years lived with dependence also suggests that old age is lived quite differently by the two sexes (Box "Differences in Life Expectancy Between the Sexes").

The analysis of DFLE indicates that the greatest part of the expansion of morbidity during the first period and the compression of morbidity during the following period results from the change in life expectancies (LE and DFLE) after age 65.

As noted above, it is possible that these results reflect in part the changes made to Canadian health programs in the period 1986-1996. Most provinces undertook stricter control of spending in the health sector and implemented programs designed to maintain personal autonomy, increase the involvement of the informal support network and postpone institutionalization as much as possible.

In Canada, the elderly population living in health care institutions is largely female: beyond 80 years of age, there were almost three women for every man in such institutions. An analysis of sex ratios[8] in 1991 and 1996 shows

[8] As defined as the number of females divided by the number of males in health care institutions.

that the proportion of female residents in health care institutions has been further increasing. It is possible that current health policies, oriented toward home support and de-institutionalization, have a greater impact on the male population than on the female population. Furthermore, it is possible that, when the population is aging, a stabilization or reduction in the number of beds in health care institutions can only serve to heighten the average age of the resident population. And since there is a direct relationship between age and the sex ratio, de-institutionalization policies could be accompanied by an increase in the relative number of women living in health care institutions.

In addition, women are more often institutionalized than men in old age because they are less likely to be able to count on the presence of a spouse in the event of health problems resulting in severe limitations.[9] A certain proportion of elderly or very elderly males living in health care institutions reside there not because of severe dependence but rather because of their inability to cope with domestic chores (meal preparation, shopping, etc.) following the death of their spouse (Trottier et al. 1999). The provision of such services in the home now enables such men to stay there more easily. Elderly or very elderly women, on the other hand, are more independent with respect to these aspects of domestic life, and they therefore go into an institution for reasons more often linked to major limitations or physical dependence than is the case with men.

This hypothesis is to some extent supported by the experience of other industrialized countries such as Finland. That country has a much lower proportion of elderly individuals living in health care institutions than Canada (one-half less at all ages) but also a much higher proportion of women in institution relative to men at all ages (Légaré and Martel, 1999), suggesting that women, more than men, require such services for health reasons alone.

Health-Adjusted Life Expectancy at Ages 15 and 65

HALE is probably a more realistic means of measuring the overall health status of a population, since it is a more complete measure. It assigns an average score—calculated by age and sex—to the years lived in each health status so as ultimately to obtain only a single value per sex. HALE represents the equivalent number of years in perfect health that an individual can expect to live during his or her life cycle if exposed to the mortality and morbidity conditions that prevail today at each age.

There are various ways to determine an average score for each health status. Some authors in the past have relied solely on their judgment (Wilkins, 1991). While this approach can yield good results, it is preferable to use a

[9] Because of excess male mortality and their tendency to marry men older than themselves.

Table 4. Life Expectancy (e) and Health-Adjusted Life Expectancy (HALE) at Age 15 and 65 by Sex, Canada, 1986, 1991 and 1996

	Males			Females		
	e	HALE	Difference	e	HALE	Difference
~~Age 15~~	In Years					
1986	59.3	53.9	5.4	65.8	58.3	7.5
1991	60.4	54.7	5.7	66.6	58.8	7.8
1996	61.1	55.4	5.7	66.8	59.1	7.7
	Percentage[1]					
1986	100.0	91.0	9.0	100.0	88.6	11.4
1991	100.0	90.6	9.4	100.0	88.3	11.7
1996	100.0	90.6	9.4	100.0	88.4	11.6
~~Age 65~~	In Years					
1986	15.0	12.4	2.6	19.4	15.3	4.1
1991	15.8	13.0	2.8	20.0	15.6	4.4
1996	16.1	13.3	2.8	20.0	15.8	4.2
	Percentage[1]					
1986	100.0	82.7	17.3	100.0	78.9	21.1
1991	100.0	82.0	18.0	100.0	78.0	22.0
1996	100.0	82.4	17.6	100.0	79.1	20.9

[1] Percentages were obtained using unrounded data.

Sources: Statistics Canada, Health Statistics Division, Health Status and Vital Statistics Section and Demography Division, Research and Analysis Section.

more objective measure of health status. Such a measure exists in Canada, developed by McMaster University: the Health Utility Index (HUI; see Box "The Health Utility Index"). This index is now available as a derived variable within the NPHS. Unfortunately, the questions necessary for calculating the HUI are not included in the 1986 and 1991 HALS questionnaires, so it cannot be calculated for those two years. For this reason, the HUI values obtained using the 1996 NPHS were used as weighting factors for the years lived in each health states in 1986 and 1991.

Table 4 shows that HALE at age 15 and at age 65 increased from one period to the other for both sexes. There were therefore absolute gains for both sexes. What instead attracts our attention in Table 4 is the small difference between the sexes in the proportions of years lived in perfect health (91.0%

The Health Utility Index

Developed by McMaster University's Centre for Health Economics and Policy Analysis (CHEPA), the Health Utility Index (HUI) summarizes both the quantitative and qualitative aspects of an individual's health. It has two components: the first is a classification of a person's functional health states, based on eight attributes: vision, hearing, speech, mobility, dexterity, cognitive ability, pain and discomfort. The second component is a mapping designed to take account of the preferences of the population concerning statuses of health. These two components are combined into a single index that accordingly summarizes health. The index varies between one, for perfect health, and zero, for death. For instance, an individual with near-sightedness but no other health problem would be assigned a score of 0.95.

for males in 1986 vs 88.6% for females the same year). Table 3, by contrast, showed major differences between males and females. In fact, at age 15, the HALE indicator is consistently greater than DFLE for women and smaller for males. The explanation of this phenomenon has to do with the fact that the prevalence of dependence is lower for males, implying that a value of one was assigned to a sizable number of males in calculating DFLE.[10] By contrast, since the prevalence of dependence is greater among females, a weight other than zero was assigned to a greater number of years lived with dependence when calculating HALE for females.

At age 65, however, HALE consistently exceeds DFLE for both sexes. Since a major portion of old age is still lived with dependence, the weight assigned to these years remains sizable in calculating HALE, whereas it is zero for DFLE. Herein lies all the value of HALE, which takes account, by an objective measure (HUI), of the actual health status of a specific population, such as the population that reports having severe dependence.

Conclusion

The purpose of this article was to present dependence-free and health-adjusted life expectancies at three different dates to determine whether the years added to life resulting from the increase in total life expectancy are years lived in good health or, on the contrary, these gains are only increasing the number of years lived in dependency. The results of this study shed an

[10] Implicitly, DFLE assigns a score of one to all years lived disability-free and zero for years lived with disability. The HALE assigns scores between 0 and 1, even for years lived with no dependency.

optimist light on this question: Canadians of both sexes can currently expect to live longer than ever dependence-free and in good health. These findings apply to both the younger and older population.

In addition, in the context of an aging Canadian population and controlled public spending on health, it appeared important to examine the theories of an "*expansion of morbidity*" or a "*compression of morbidity*" in light of Canadian data. The results obtained using the Sullivan method, with three observations over a span of ten years, suggest that over the studied period, the gains made against mortality are distributed, in relative terms, about equally between years lived with and without dependency.

The results obtained in this study are all consistent with the findings of other studies conducted in Canada (Wilkins et Adams, 1992; Berthelot, Roberge, Cranswick, 1999). Furthermore, these results appear to point in the same direction as those described by Crimmins, Saito and Ingegneri (1997) for the United States. There is every indication that for our neighbours to the South too, the decade now ending was also characterized by a compression of morbidity, although it was a modest one. However, the trend had started during the 1980s, which is not the case in Canada, probably because more rapid progress in extending Canadian life expectancy was observed in that decade.

However, these findings run counter to those published in a recent report of the OECD (1998). According to the OECD findings, disability-free life expectancy in Canada decreased in absolute terms between 1978 and 1991, unlike in other member countries such as Japan, Germany, the United States and the United Kingdom. The unfavourable results obtained by the OECD are due to the fact that the concepts used to measure dependence differed from one period to another. In the present study, health statuses were defined in the same way over the entire study period, thus avoiding biases of this type.

These results are, nevertheless, presented with some methodological and theoretical caveats. The perception of health probably evolves over time: a population which is increasingly educated and informed, in which health care and health services are increasingly known, accessible and utilized, can be expected to have a tendency to perceive its health status differently. Problems that were seen as benign or unimportant ten years ago may today be more accurately identified by surveys on the subject. It is therefore not out of the question that a greater reduction in morbidity within the population is masked by differential reporting by individuals of their health status. In addition, it should be noted that the 1986 and 1991 surveys were health and activity limitation surveys, whereas the 1996 survey was a population health survey. It is possible that answers given by respondents to the same question differ when asked in a different context. In the present study, however, the results

are unlikely to be affected by this phenomenon, since the definition of health statuses are based on the concept of dependence, which is much less subject to such variations over time because it is more objective.

Finally it is possible, as this article has shown, for life expectancy to grow faster than dependence-free life expectancy. If the compression of morbidity is becoming an objective of public health policies, it would seem important at this point to continue or indeed step up efforts to combat chronic diseases. Hence a population in good health rests not only on efforts to combat fatal diseases, which are prevalent at all ages, but also—and may be more importantly—on efforts to combat chronic or degenerative diseases, which are still quite common beyond age 65.

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ETHNIC MOBILITY AND THE DEMOGRAPHIC GROWTH OF CANADA'S ABORIGINAL POPULATIONS FROM 1986 TO 1996

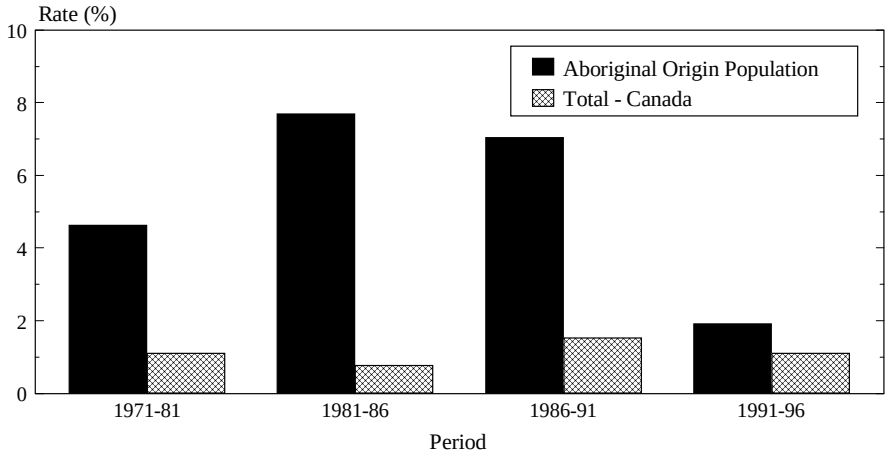
by Éric Guimond[1]

Introduction

As the century draws to a close, there are many topics of interest involving Canada's aboriginal peoples: self-government, land claims, the environment, the criminal justice system, urbanization, the labour market, education, etc. However, one topic receives little attention but could have a major impact on how the others will develop: the demographic growth of aboriginal populations.

From 1971 to 1996, populations of aboriginal origin as enumerated in the census more than tripled in size (+252%), increasing from 312,800 to 1,102,000 persons. By comparison, the total increase in the Canadian population as a whole was 30% during the same period. To triple in twenty-five years, a population must experience phenomenal annual growth rates. Among Aboriginal populations, growth rates in excess of 7% were observed during the periods 1981-1986 and 1986-1991 (Figure 1). These increases greatly exceed the

Figure 1. Comparison of the Average Annual Growth Rates of the Aboriginal and Total Population, Canada, 1971-1996



Sources: Statistics Canada, Censuses of Canada, 1971 to 1996.

[1] The author wishes to thank Norbert Robitaille of the Université de Montréal under whom he his writing a dissertation, and Alain Bélanger, Andrew J. Siggner and Gustave G. Goldmann of Statistics Canada for their relevant and generous comments.

Theoretical Maximum for Natural Increase

Theoretically, the maximum rate of natural increase is 5.5% per year. It is obtained from the highest crude birth rate (60 per 1,000 persons) observable in exceptional conditions —a young population, marrying young and practising no form of contraception— from which is subtracted the lowest crude death rate (5 per 1,000 persons) (Pressat, 1979). Such a combination of a high birth rate and a low death rate has probably never been observed. Today, the highest national rates of natural increase in the world are approximately 3.5% per year. A population maintaining a growth rate of 5.5% per year doubles every 13 years. After a hundred years, that population would be more than 200 times larger than at the outset. A growth rate in excess of 5.5% cannot be explained by natural increase alone: phenomena other than births and deaths are contributing to the increase.

maximum of 5.5% per year that is theoretically possible for a population that is subject only to the natural movement of births and deaths. In practice, this is the case for populations reporting aboriginal origin at the national level.[2] They also contrast sharply with the increase observed during the last five-year period.

A longitudinal analysis of the growth of Aboriginal populations over the periods 1981-1986 and 1986-1991 reveals increases that cannot be explained solely by the interaction of natural increase and migration. For a population

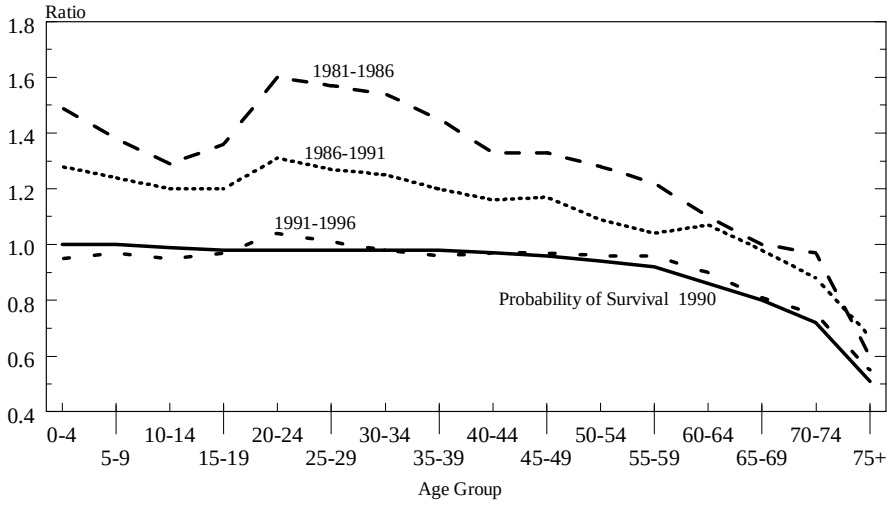
Aboriginal Identity of Populations of Aboriginal Origin

The information available allows us to distinguish populations of aboriginal origin according to aboriginal identity, a concept introduced in 1986[3] in order to improve the enumeration of aboriginal populations (Statistics Canada, 1989). The concept of origin refers to the ethnic or cultural group to which one's ancestors belonged, while the concept of identity designates the respondent's current identification or sense of belonging. The question on aboriginal identity in the 1996 Census contains four response choices: Indian, Métis, Inuit and non-Aboriginal.

[2] In practical terms, the contribution of international migration may be considered nil. In the 1996 Census, 4,900 persons of aboriginal origin indicated that they were living outside Canada 5 years earlier.

[3] The 1986 Census data on aboriginal identity have never been the subject of an official release, partly because of reporting errors detected within the non-aboriginal population. This analysis focuses solely on the identity of populations of aboriginal origin, for which the data on identity are reliable. Those data are available on special request.

Figure 2. Ratio of Aboriginal Origin Cohorts, Canada, 1981-1986, 1986-1991 and 1991-1996



Sources: Statistics Canada, Censuses of Canada for 1981, 1986, 1991 and 1996, and Demography Division, unpublished data.

practically closed to migration, the ratio between the size of a cohort at time t+n (for example, the 1965 cohort today) and the size of that same cohort at time t (the 1965 cohort at its beginnings) must be less than 1, with the complement on one being made up of the members of the cohort who died. Yet, for a majority of the aboriginal cohorts, exactly the opposite occurs in the periods 1981-1986 and 1986-1991 (Figure 2). The ratio of the cohort sizes is greater than 1 for all age groups under 65 years of age, which means that the number of persons who were born in a given year is not decreasing but is actually increasing! The cohorts of adults under age 35 in 1981 increased by more than 50% during the period 1981-1986. Clearly, phenomena other than fertility and mortality are at work here. But what are they? The answer to this question may be found in data from the 1986, 1991 and 1996 censuses of Canada and the 1991 Aboriginal Peoples Survey (APS).

A) Growth of Canada's aboriginal populations from 1986 to 1996

From 1986 to 1996, populations of aboriginal origin as enumerated in the census went from 711,700 to 1,102,000, with the bulk of the increase[4] occurring in the first five-year period (Table 1). This increase varied considerably

[4] Some aboriginal communities wholly or partially refuse to participate in enumeration activities. From one census to the next, the list of those communities varies, giving rise to a serious problem of data comparability. The rates of increase shown here are calculated for populations that participated in the censuses.

Table 1. Number and Growth Rate for Aboriginal Origin Population According to the Aboriginal Identity, Canada, 1986-1996

Aboriginal Origin Aboriginal Identity	1986		1991		1996		Average Annual Growth Rate[1] (%)	
	Number	%	Number	%	Number	%	1986-91	1991-96
Aboriginal Origin	711,720	100.0	973,710	100.0	1,101,960	100.0	7.0	1.9
Aboriginal Identity	464,455	65.3	613,820	63.0	718,950	65.2	6.6	2.3
North American Indian	329,730	46.3	443,285	45.5	494,830	44.9	7.1	0.9
Métis	103,085	14.5	128,700	13.2	178,525	16.2	5.1	6.7
Inuit	30,105	4.2	35,495	3.6	39,705	3.6	3.4	2.3
Multiple Aboriginal	1,540	0.2	6,340	0.7	5,880	0.5	33.4	-1.5
Non Aboriginal Identity	247,265	34.7	359,890	37.0	383,005	34.8	7.8	1.2

[1] Adjusted Rates for partially enumerated aboriginal communities and for the inclusion of non-permanent residents since 1991.

Sources: Statistics Canada, Censuses of Canada from 1986 to 1996 and the 1991 Aboriginal Peoples Survey.

depending on the identity reported. First, the North American Indian population, which accounts for nearly two-thirds of the whole, rose from 329,700 persons to 494,800 persons from 1986 to 1996. More than for any other aboriginal group, the explosive growth of the population during the first five-year period (7.1%) contrasts with the low growth in the second period (0.9%). Remarkably, the last census shows a lower growth rate for this aboriginal group than for the Canadian population as a whole! The number of Métis rose from 103,100 persons in 1986 to 178,500 persons in 1996. At 5.1%, the annual growth rate of the Métis population from 1986 to 1991 was already near the theoretical maximum for natural increase of 5.5% per year, but from 1991 to 1996 it was even higher (6.7%). Among the Inuit, the numbers climbed from 30,100 to 39,700 persons, with faster growth in the first five-year period (3.4%). This was the only aboriginal group to grow at a rate below the theoretical maximum for natural increase in both periods. Few people report more than one aboriginal identity, and this largely accounts for the unbelievably high growth rate in the period 1986-1991. Lastly, the population of aboriginal origin reporting no aboriginal identity, which constitutes the second largest group of individuals of aboriginal origin, grew in ten years from 247,300 to 383,000. As in the case of the North American Indian population, the growth of this group was very high in the first five-year period (7.8%) but much more modest in the second period (1.2%).

B) Contributing Factors

Natural Increase

The natural increase of a population is the difference between the number of children born and the number of persons who die in a given period. In the

early 1990s, the crude death rate of the populations of aboriginal origin varied between 5 and 8 per 1,000, depending on the aboriginal identity group.[5] The crude birth rate of these populations is estimated at 22 per 1,000 per year for the period 1991-1996 (Table 2). The relative stability of the crude birth rate between the periods 1981-1986 and 1991-1996 contrasts with the variations in total growth shown in the previous table. Admittedly, there was a slight decline in the birth rate, especially among the North American Indian population and persons of aboriginal origin without aboriginal identity, but that is not sufficient to explain the drop in overall growth.

Table 2. Crude Birth Rate for Aboriginal Origin Population by Aboriginal Identity, Canada, 1981-1986 et 1991-1996

Aboriginal Origin Aboriginal Identity	Average Annual Rate (per 1,000)	
	1981-86	1991-96
Aboriginal Origin	23.9	22.1
Aboriginal Identity	26.0	24.2
North American Indian	27.9	25.6
Métis	19.4	19.6
Inuit	31.9	32.3
Multiple Aboriginal	19.0	19.9
Non Aboriginal Identity	20.2	18.5
Non Aboriginal Origin	14.2	13.3

Source: Statistics Canada, Censuses of Canada from 1986 to 1996.

If it is assumed that populations of aboriginal origin perpetuate themselves solely through births and there are no enumeration errors, then natural increase and the total increase should necessarily be equal. But as Figure 3 shows, this is far from being the case, especially for the period 1986-1991. Surprising differences between the natural increase and the total increase are observed in the Indian and Métis populations for both periods and in the population of aboriginal origin without aboriginal identity for the period 1986-1991. Only among the Inuit does the total increase approach the natural increase.

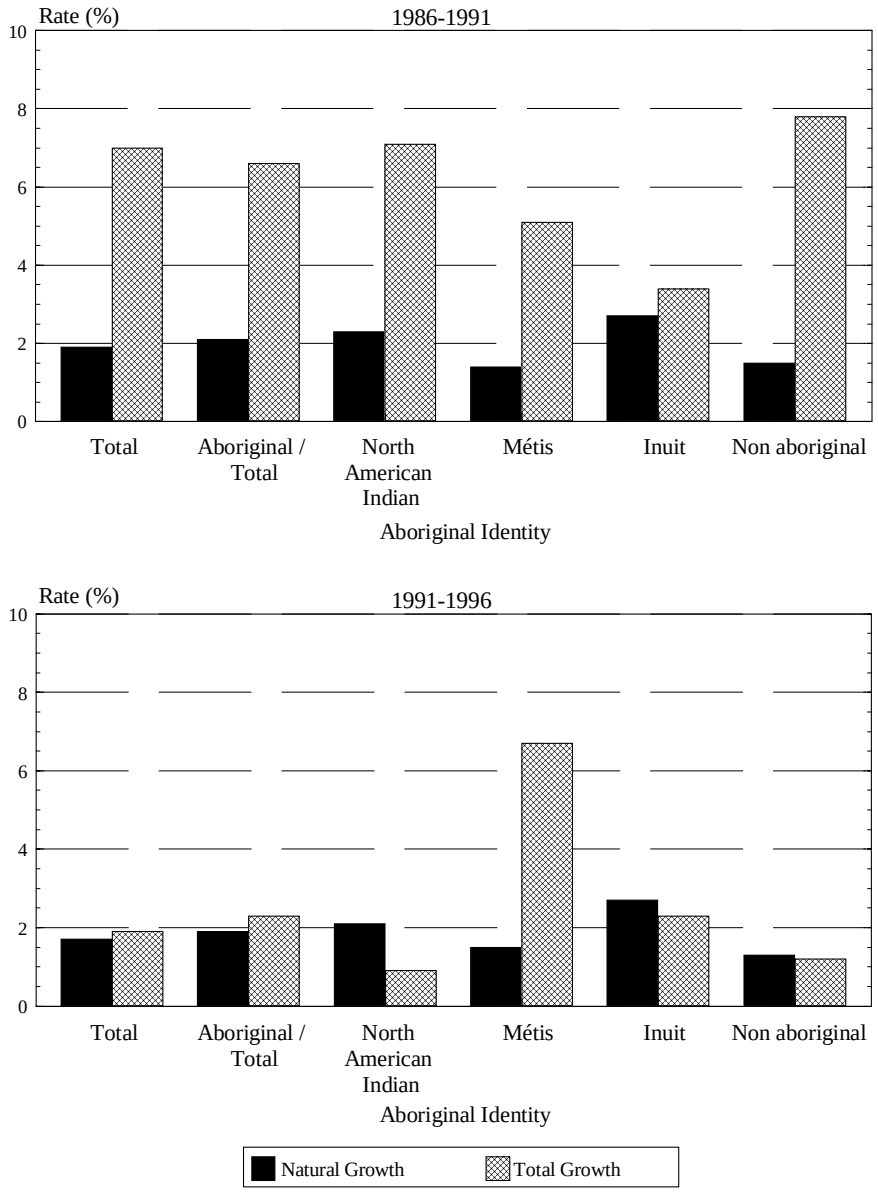
Clearly, while the populations of aboriginal origin have higher fertility than the Canadian population as a whole, this alone does not explain their exceptional growth. The explanation therefore lies elsewhere. Since the contribution of international migration is virtually nil, other factors must be considered.

Variation in the quality of enumerations

It is a known fact that in each enumeration exercise, some individuals are missed —this is the phenomenon known as undercoverage— while others are counted more than once—this is overcoverage. The difference between these two quantities is called *net undercoverage*. It is not so much the numerical value assigned to undercoverage that causes concern, but rather the variation in that value from one census to the next. If it does not vary, then the enumerated

[5] Author's calculations. See M.J. Norris, D. Kerr and F. Nault (1995). *Projections of the Population with Aboriginal Identity in Canada, 1991-2016*. Statistics Canada, Demography Division, 101 pages.

Figure 3. Average Annual Natural Growth Rate[1] and Total Growth Rate[2] for Aboriginal Origin Population According to the Aboriginal Identity, Canada, 1986-1991 and 1991-1996



[1] The crude death rate is assumed to be constant at 5 per 1,000.
[2] Adjusted Rates for partially enumerated aboriginal communities and for the inclusion of non-permanent residents since 1991.

Sources: Statistics Canada, Censuses of Canada from 1986 to 1996 and the 1991 Aboriginal Peoples Survey.

population and the missed population increase at the same rate, and undercoverage does not bias the measurement of growth. If, on the other hand, net undercoverage varies, then the error of the estimate of growth rates is proportional, but its sign is opposite to that of the variation. An increase in undercoverage results in an underestimate of growth, while a decrease in undercoverage results in an overestimate of growth. There is no official estimate of the undercoverage of the populations of aboriginal origin that can be used to quantify precisely the effect of undercoverage on the growth of these populations as measured. According to the information available on the undercoverage of the population residing on fully enumerated Indian reserves, there was no major change in the quality of the enumeration between 1991 (12.6%[6]) and 1996 (13.4%[7]). In order for differential undercoverage to be the only explanation for the difference observed between the 7% increase in populations of aboriginal origin between 1986 and 1991 and the highest rate of natural increase observed at present (3.5%), the quality of enumeration would have to have improved by more than 15% between 1986 and 1991. Such variations in undercoverage are practically impossible. That leaves ethnic mobility.

Ethnic Mobility

The last avenue to explore leads us beyond the paths traditionally trod by demographers and how persons report their ethnicity in the censuses. In light of the information available —on natural increase, migration and quality of enumeration— the extraordinary growth of the Canada's populations of aboriginal origin from 1986 to 1996 is due, in variable proportions depending on the period and the aboriginal identity group, to changes over time in the ethnic identity that individuals report, a phenomenon known as *ethnic mobility*. This phenomenon includes entries and exits. Thus, for the period 1986-1991, when the phenomenon appears to be more prevalent, transfers from a non-aboriginal origin to an aboriginal origin (entries) were more numerous than transfers from an aboriginal origin to a non-aboriginal origin (exits). This phenomenon of ethnic mobility has also been observed in the aboriginal populations of the United States (Eschbach, 1993), Australia (Ross, 1996) and New Zealand (Pool, 1991).

It is basically the exceptional nature of the growth of populations of aboriginal origin from 1986 to 1996 that draws attention to the existence of this phenomenon. However, ethnic mobility has long been a component of the demographic growth of Canada's aboriginal populations. There are numerous signs that it is a contributing factor, including the following:

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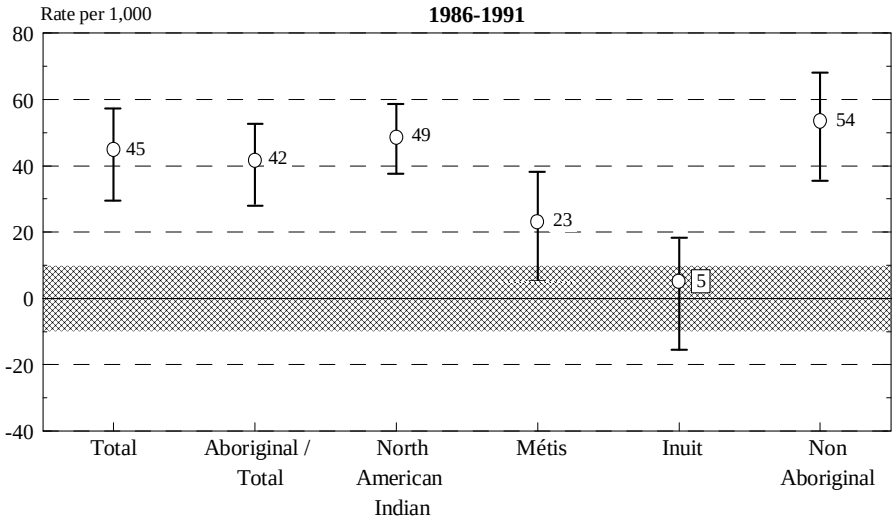
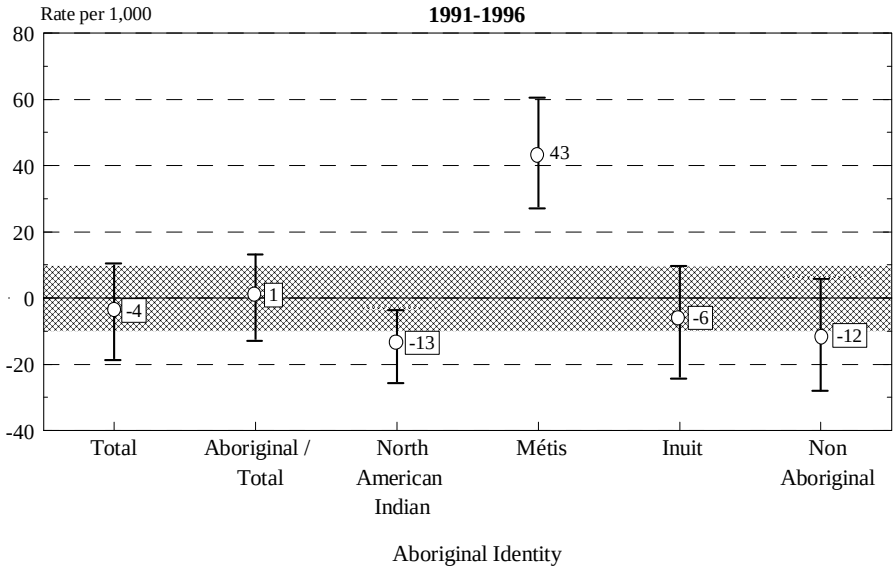
[6] Author's calculations. See M.J. Norris, D. Kerr and F. Nault (1995). *op.cit.*

[7] Author's calculations. Reverse recode check Survey (1996), unpublished table.

Figure 4. Estimates of the Net Ethnic Mobility Rates[1] of Aboriginal Origin Population According to the Aboriginal Identity, Canada, 1986-1991 et 1991-1996





[1] Based on the residual estimates method. Excluding children born during the interval.

Sources: Statistics Canada, Censuses of Canada from 1986 to 1996 and the 1991 Aboriginal Peoples Survey.

- Persons of aboriginal origin who report more than one ethnic origin outnumber those who report a single aboriginal origin;[8] this is the cumulative result of several generations of ethnic mobility.
- More than a third of persons of aboriginal origin do not identify with an aboriginal group (Table 1).
- The Métis, the second largest of the populations with aboriginal identity (Table 1), are the product of ethnic mobility. Particular circumstances relating to the mode of colonization led to the emergence of a third aboriginal cultural entity made up of descendants of Aboriginals and non-Aboriginals.

Ethnic mobility can occur when children's ethnicity is first identified. Parents and children do not necessarily have the same ethnic identification, more especially if the mother and father do not belong to the same ethnic group. Ethnic mobility may also result from a change in individuals' ethnic identification. Only the latter type of ethnic mobility is dealt with in this analysis.

For the period 1986-1991, substantial net ethnic mobility is observed in all populations of aboriginal origin, except for the Inuit. According to available information on the other components, the balance of ethnic transfers stood at 177,200 persons, representing an average annual rate of 45.2 per 1,000 (Figure 4). Over the period as a whole, ethnic mobility resulted in a numerical increase of more than 20%! The populations most benefiting from this phenomenon were the North American Indian population (48.7 per 1,000) and the population of aboriginal origin without aboriginal identity (53.5 per 1,000). For the period 1991-1996, the ethnic mobility of the populations of aboriginal origin as a group was negligible, although the Métis registered strong ethnic mobility (43.2 per 1,000). For the North American Indian population, this intercensal period was characterized by negative ethnic mobility (-12.9 per 1,000), meaning that there were more exits than entries.

While there is no definitive answer to explain such ethnic mobility and the shift that it underwent, several factors may be cited.[9] Probably a major factor is Bill C-31, promulgated in 1985, which changed the rules for transmission of legal Indian status.[10] Furthermore, the media coverage of many events relating to Aboriginal peoples — e.g., the Oka crisis in the summer of 1990, the Royal Commission on Aboriginal Peoples (1991-1996), the territorial

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[8] In the 1996 Census, 624,300 persons of aboriginal origin reported more than one ethnic origin. This was more than half (57%) of all persons of aboriginal origin.

[9] Including methodological factors such as changes in the question on ethnic origin in the 1996 Census.

[10] From 1985 to 1996, 104,869 persons recovered legal Indian status under Bill C-31 of 1985 (Indian and Northern Affairs Canada (1997: Table 2).

Method for Estimating Ethnic Mobility

The estimate of ethnic mobility is obtained by the method of estimation by residual. This method consists of:

(1) calculating the population expected in year t+n (P^{t+n}) by taking the population observed in t (P^t) and substracting an estimate of deaths (D), adding net migration (M) and all other known factors (net undercoverage of the population) (V) for the observation period (t, t+n), assuming that ethnic mobility is nil;

$$P^{t+n} = P^t - D_{(t,\ t+n)} + M_{(t,\ t+n)} + V_{(t,\ t+n)}$$

(2) subtracting the population expected in year t+n (P^{t+n}) from the population observed in that year (P^{t+n}). The result of this subtraction represents the estimate of net ethnic mobility (ß) during the observation period (t, t+n).

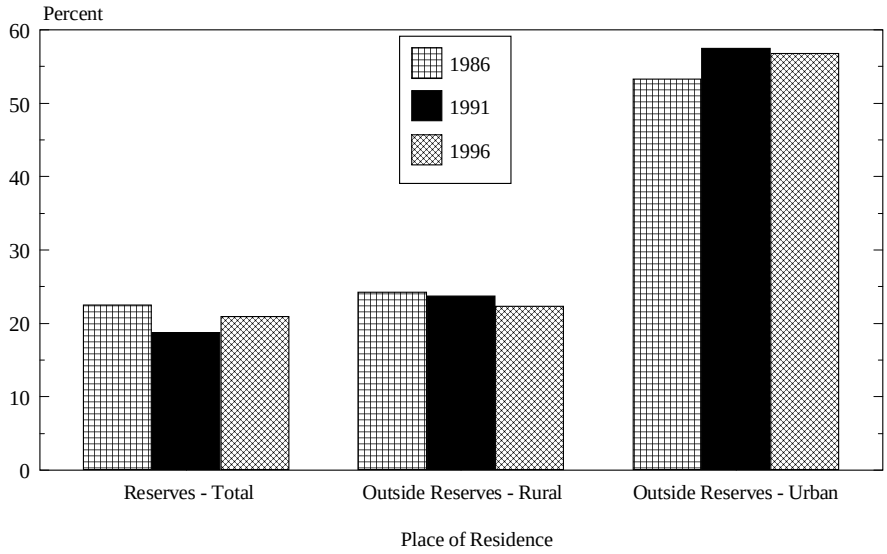
$$ß_{(t,\ t+n)} = P^{t+n} - P^{t+n}$$

This method may be applied to a population as a whole or by age group. In the past it has been used to estimate changes in the ethnic identification of aboriginal populations in the United States (Eschbach , 1993) and ethnic minorities in the former USSR (Anderson and Silver, 1983).

In the case of a population for which statistics are imperfect, it is preferable to formulate more than one estimation scenario: a reference scenario and a higher and lower scenario establishing a range of possible variation in ethnic mobility. Furthermore, since the estimate thus obtained suffers from the variable quality of enumerations and estimates of components, it is preferable to limit comments to estimates for which the range of variation falls outside the band of -10 to +10 per 1,000.

agreement leading to the creation of Nunavut (1992), the agreements on self-government and land claims — probably all served to heighten the awareness of the Canadian public and also to restore the image of Aboriginal Peoples, which has traditionally tended to be negative. All these factors may have caused some persons to feel more inclined to report an aboriginal identity.

Figure 5. Percentage Distribution of the Aboriginal Origin Population by Place of Residence, Canada, 1986-1996



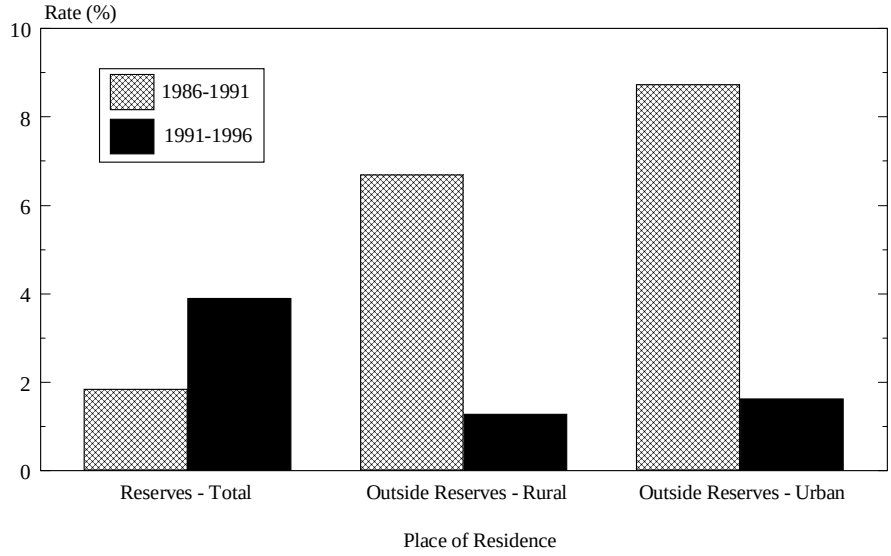
Sources: Statistics Canada, Censuses of Canada, 1986, 1991 and 1996.

C) Growth of Populations of Aboriginal Origin at the Sub-national Scale

In 1996, the great majority (79%) of persons of aboriginal origin were living elsewhere than on Indian reserves (Figure 5), and many were in urban areas (57%). Figures from the previous two censuses in 1986 and 1991 show slight variations in these proportions; these must be interpreted with caution, given the variable participation of aboriginal communities in the Census of Canada.

The exceptional growth of populations of aboriginal origin observed at the national scale occurred off Indian reserves and especially in urban areas (Figure 6). During the period 1986-1991, populations of aboriginal origin in rural and urban areas increased at the remarkable rate of 6.7% and 8.7% per year respectively, greatly exceeding the theoretical maximum for natural increase. On Indian reserves, the growth of populations of aboriginal origin was more modest (1.8%), only slightly greater than that of the population of Canada as a whole (1.5%). For the period 1991-1996, the marked slowdown in the growth of populations of aboriginal origin at the national level (1.9%) resulted from a steep decline in the growth of populations in rural areas (1.3%) and urban areas (1.6%). On Indian reserves (3.9%), the growth accelerated and even surpassed that of off-reserve populations.

Figure 6. Average Annual Growth Rate[1] for Aboriginal Origin Population by Place of Residence, Canada, 1986-1996



[1] Adjusted Rates for partially enumerated aboriginal communities and for the inclusion of non-permanent residents since 1991.

Sources: Statistics Canada, Censuses of Canada from 1986 to 1996 and the 1991 Aboriginal Peoples Survey.

Migration from Indian reserves is often proposed as an explanation for the sizable increase off reserves, especially in Canada's major urban centres. However, recent studies (Norris and Beavon, 1999; Clatworthy, 1996) clearly show that there is not a massive exodus of aboriginal populations from Indian reserves to cities. In fact, from 1966 to 1996, Indian reserves posted a net gain due to migration. For the last two intercensal periods, Indian reserves showed a net migration of +10,100 persons (1986-1991) and +14,100 persons (1991-1996).

The exceptional growth observed during the period 1986-1991 by populations of aboriginal origin residing outside of Indian reserves is primarily due to ethnic mobility. To live on an Indian reserve, it is necessary to have legal Indian status or be recognized or accepted by the resident Indian band. Since the right to settle on a reserve is governed by legal considerations, it is therefore unlikely that residents of Indian reserves will change their ethnic identification. Thus, the ethnic mobility previously identified and measured at the national scale (Figure 4) is taking place outside of Indian reserves, and according to the growth rates observed, it is especially occurring in urban centres, where inter-ethnic contacts are more frequent.

Conclusion

In the census, populations of aboriginal origin registered phenomenal growth during the period 1986-1996. This growth has four components: (1) natural increase; (2) increase due to migration; (3) variations in the quality of enumeration; and (4) ethnic mobility. The latter component is not traditionally within the scope of demographic analysis. However, the extent of ethnic mobility in populations of aboriginal origin supports the idea that this component should be considered in the demographic analysis of all ethnic groups.

Not only is it important to consider ethnic mobility as a component of the demographic growth of Aboriginal populations, it should also be included in the analysis of the socio-demographic characteristics of those populations. For example, within the cohort of persons 25 years of age and over in 1986, the number of postsecondary graduates of aboriginal origin rose from 14,000 to 22,700 between 1986 and 1996, representing a phenomenal leap of 62%.[11] Guimond et al. (Guimond and al. (forthcoming)) show that this increase is in part explained by the "arrival," as a result of ethnic mobility, of more educated individuals, rather than by greater school success among individuals already identified as Aboriginal People in 1986. More analyses of this type will have to be conducted in order to improve our understanding of the phenomenon of ethnic mobility and its consequences. Such analyses are invaluable tools for evaluating programs and policies designed to improve the social and economic conditions of Aboriginal peoples.

[11] Excluding persons in communities that were incompletely enumerated in the 1986, 1991 and 1996 censuses.

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