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# Report on the Demographic Situation in Canada



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Statistics Canada  
Demography Division

# Report on the Demographic Situation in Canada

## 2000

Alain Bélanger, Yves Carrière and Stéphane Gilbert

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## Highlights

### PART I

- In 1999, the Canadian population increased by 254,500 which represents a growth rate of 8.4 per 1,000. This increase is slightly higher than the rate of 7.9 per 1,000 observed in 1998.
- The rate of natural increase slightly declined in 1999, going from 4.1 per 1,000 in 1998 to 3.6 per 1,000 in 1999. The faster demographic growth recorded in 1999 results from a higher increase in the net migration rate, which climbed from 3.8 per 1,000 in 1998 to 4.8 per 1,000 in 1999.
- Alberta experienced the largest demographic growth in the country in 1999 with a growth rate of 13.7 per 1,000. Ontario follows with a growth rate of 12.4 per 1,000.
- In 1999, two Canadian provinces, Newfoundland and Saskatchewan, experienced negative demographic growth of 3.8 per 1,000 and 1.4 per 1,000 respectively.

xxx

- In 1998, there were 69,100 divorces registered in Canada. This represented a small increase of 2.5% over 1997.
- The total divorce rate is estimated at 3,399 divorces per 10,000 marriages in 1998. This means that if, for the next 25 years, the divorce rate by duration of the marriage corresponded to that observed in 1998, 34% of these marriages would end in divorce. This represents a 3.9% increase over the total divorce rate of 1997.

xxx

- In 1998, there were 342,400 births in Canada, which represents a decline of 1.8% over the number recorded in 1997. The number of births declined in all provinces except Alberta.
- At 1.54 children per woman the total fertility rate observed in 1998 is the lowest ever recorded for the country.

- Newfoundland, with the lowest fertility rate in the country, saw its number of births fall by 7.8% in 1998, the largest relative decline in number of births.
- Saskatchewan, with a rate of 1.82 children per woman, has the highest rate of all provinces.

**xxx**

- In 1999, Canada admitted 190,000 immigrants, this represents a rate of 6.2 per 1,000. This is an increase of 16,000 over the number of immigrants admitted the previous year.
- More than 105,000 immigrants were admitted under the economic category, an increase of 10,500 from the previous year. Economic immigrants accounted for 55% of the total.
- In 1999, Canadian immigration was primarily Asian. The number of immigrants originating from Asia amounted to 113,300 and represented 60% of the total.
- Some 104,000 immigrants, representing 55% of all immigrants admitted, choose Ontario as their province of destination. British Columbia and Quebec were the other two provinces receiving the greatest number of immigrants, although in more modest proportions. They received respectively 36,100 (19%) and 29,200 (15%) immigrants.

**xxx**

- As the main hub of internal migration, Ontario is the province that has the most migratory movements. Some 80,000 persons coming from another Canadian province established residence in Ontario during the year 1999, while the number of out-migrants is estimated at 63,300. With a positive balance of 16,600, Ontario posted the biggest migratory gain in 1999.
- In 1999, the Atlantic provinces improved their migratory exchange with the other Canadian provinces. Prince Edward Island, Nova Scotia and New Brunswick, which had a negative balance in 1998, posted a positive balance in 1999.
- In 1999, Alberta had a gain of 14,000 persons in its migratory exchanges with other Canadian provinces, but this positive balance is much smaller than the 40,100 recorded on the previous year.

## **PART II**

- Life expectancy at age 45 is considerably shorter for smokers compared to non-smokers: for men, a gap of 7 years exists between those two populations, raising to 10 years for women.
- For every 100 male non-smokers living at age 45, more than 90 will survive to age 65 and approximately 55 will still be living at age 80. For smokers, these numbers are 80 survivors at age 65 and fewer than 30 survivors at age 80. The trend is similar for women.
- At every age and for both sexes, smokers have a greater probability of becoming disable than non-smokers: they also have a smaller chance of recovering it once it is lost.
- Virtually all (95%) of the additional years of life that a non-smoker can expect to live longer than a smoker will be lived free of disability. On average, a smoker will not only die younger than a non-smoker, but he will also be limited or dependent in his daily activities much earlier than a non-smoker.
- Male smokers can expect, at age 45, to spend 63% of their remaining years living free of disability; this percentage raises to 70% for non-smokers. For women, the trend is the same: 56% of life expectancy at age 45 will be lived free of disability for those who smoke compared with 61% for those who do not smoke.
- At age 80, one out of four men and one out of three women is living free of functional disability among the non-smoking population; this proportion is below one out of ten persons both for men and women smokers.

### **xxx**

- Among those aged 60 and over, the decline in the number of deaths between 1951 and 1996 is largely attributable to a decrease in diseases of the circulatory system. On the other hand, deaths caused by cancer and diseases of the respiratory system increased.
- Over the period from 1951 to 1996, deaths due to cancers saw their share of all deaths increase from 14% to 27% for males and from 16% to 29% for females.
- Between 1951 and 1996, the decrease in mortality due to diseases of the circulatory system after age 60 resulted in gains in life expectancy at that age of 3.4 years and 5.2 years for males and females, respectively.

**xxx**

- Overall, Canadian families with pre-school age children enjoyed only a moderate increase in their average level of economic well-being over the 1981-1997 period. Among families with preschool age children, an increase in economic well-being during the 1981-1989 period was followed by a slight decline between 1989-1997. Average income rose from \$51,542 in 1981 to 56,524 in 1989, and then fell again to \$54,245 by 1997.
- The most harmful trend, from the point of view of meeting the economic needs of young children has been a steady rise in the number of lone parent families. In 1981, about 1 in 10 families with preschoolers was headed by a lone parent, compared with about 1 in 6 in 1997.
- Recent trends toward smaller family size and deferred childbearing have had a beneficial impact on the economic well-being of families with young children.
- The overall impact of family and demographic change was relatively modest in the 1981-1997 period. While recent trends in lone parenthood have had an important negative impact on the average level of economic well-being of young children, this has been offset by ongoing changes, of lesser importance, in the timing and level of childbearing and an increase in the number of earners per family.
- From 1981 to 1997, the percentage of families with pre-school age children characterized by no earners doubled, going from 5% to 10%.

**xxx**

- More and more children experience life with a lone parent and this occurs at an increasingly early age. Among children born in the early 1960s, 20% had lived part of their life with a lone parent by the age of sixteen. Children born a decade later had reached this level by the age of twelve, those born in the early 1980s by the age of seven, and for the most recent cohorts, by the age of five.
- More and more children have to adjust to the presence of a stepparent. Two to three years after a separation, one or both parents of almost half the children of separated couples had entered a new union.

- The lower the age of the mother and the youngest child, the more likely is a birth to occur to the new union and transform this stepfamily into a blended family. On the other hand, the number of children already present has no significant effect on the decision to have another child in a stepfamily.
- Children born into stepfamilies were more at risk of family breakdown than children born into intact families. At ten years of age, 43% of these children had separated parents, more than double the percentage found among children in intact families.

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## **Part I**

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## DEMOGRAPHIC ACCOUNTING

On January 1, 2000, the Canadian population was estimated to be 30,605,700 inhabitants.<sup>1</sup> ***This is an estimated increase of 254,500 from January 1999, representing a growth rate of 8.4 per 1,000*** (Table 1). This increase is slightly higher than the rate of 7.9 per 1,000 observed in 1998. ***The increasing growth rate actually masks a slight decline in rate of natural increase, estimated at 3.6 per 1,000 in 1999, compared with 4.1 per 1,000 in 1998.*** The rate of natural increase, which has fallen steadily since 1990 when it was at 7.7 per 1,000, has decreased by half in less than a decade. In 1999, the surplus of births to deaths was estimated at 108,800, a figure that was almost twice as high (213,500) at the start of the decade. Based on recent trends, natural increase in 2000 will likely be less than 100,000 for the first time since 1925. A low fertility rate, combined with a drop in the number of women of childbearing age, translates into a continued decline in the number of births. To this trend, we must add the rise in the number of deaths, attributable to the fact that more and more people are reaching ages when mortality is especially high. The rate of natural increase is therefore declining both because of the drop in the number of births and because of the increase in the number of deaths, trends that are structural not contextual. The lower birth rate and lower mortality rate among persons 65 years and older have another consequence: an increase in the percentage of elderly persons, which reached 12.5% in January 2000.

***There has been a concomitant rise in migration with the rate climbing from 3.8 per 1,000 in 1998 to 4.8 per 1,000 in 1999.*** In absolute numbers, net migration has climbed 26%, rising from 115,300 to 145,700 in a single year. This is the first time since 1995 that this rate has risen. ***In 1999, Canada welcomed 190,000 immigrants, representing an immigration rate of 6.3 per 1,000.*** While immigration was higher than in 1998 (5.8 per 1,000), the rate is still about 20% below the average rate recorded between 1989 and 1998 (7.8 per 1,000).

In summary, the increase in overall growth results from a relatively large increase in net migration which, for the moment, more than offsets the continued decline in the surplus of births to deaths. Given the trends in recent years and the structural aspect of the reduction in the rate of natural increase, net migration will have to continue to climb for the total growth rate to remain at the level observed in recent years.

Several changes in the methodology used to estimate emigration has been implemented. The main reason for the change is linked to the fact that in

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<sup>1</sup> Statistics on demographic accounting for 1999 were what was available as of September 14, 2000. They may differ slightly from those included in other tables related to the components.



**RATES (for 1,000)**

Year	Population as of January 1st (in thousands)	Growth			Birth	Death	Immigration	Emigration	Non- permanent Residents
		Total	Natural	Migratory					
1972	22,093.1	11.52	8.32	4.45	15.63	7.31	5.49	1.18	0.13
1973	22,349.2	13.47	7.97	6.73	15.26	7.29	8.19	1.81	0.35
1974	22,652.2	14.27	7.84	7.65	15.15	7.31	9.58	1.84	-0.09
1975	22,977.8	14.09	8.30	6.98	15.53	7.22	8.12	1.48	0.34
1976	23,303.8	12.28	8.23	5.04	15.35	7.12	6.37	1.21	-0.13
1977	23,591.8	10.91	8.21	3.53	15.27	7.06	4.84	1.23	-0.08
1978	23,850.5	9.27	7.94	2.16	14.96	7.02	3.60	1.32	-0.12
1979	24,072.6	11.30	8.17	3.95	15.12	6.95	4.63	1.01	0.33
1980	24,346.2	13.05	8.13	5.73	15.13	7.00	5.84	0.72	0.61
1981	24,665.9	12.64	8.07	5.41	14.96	6.89	5.18	0.99	1.22
1982	24,979.8	10.50	7.91	3.44	14.86	6.95	4.82	1.24	-0.15
1983	25,243.4	9.44	7.85	2.43	14.73	6.88	3.52	1.25	0.17
1984	25,482.9	9.32	7.86	2.30	14.73	6.86	3.45	1.14	-0.01
1985	25,721.6	9.34	7.52	2.65	14.54	7.02	3.26	1.04	0.42
1986	25,963.1	11.38	7.23	4.68	14.28	7.06	3.80	0.91	1.78
1987	26,260.1	13.22	6.99	6.54	13.99	7.00	5.75	0.76	1.55
1988	26,609.7	16.11	6.96	9.45	14.05	7.08	6.04	0.64	4.06
1989	27,041.9	15.89	7.40	8.79	14.41	7.01	7.04	0.72	2.47
1990	27,475.2	14.04	7.72	6.62	14.65	6.94	7.74	0.73	-0.40
1991	27,863.6	11.41	7.39	4.90	14.36	6.98	8.24	0.90	-2.44
1992	28,183.3	12.87	7.13	7.02	14.05	6.93	8.91	0.76	-1.13
1993	28,548.3	11.06	6.39	5.93	13.53	7.14	8.91	0.77	-2.20
1994	28,865.8	11.21	6.13	6.32	13.27	7.13	7.71	0.82	-0.57
1995	29,191.1	10.85	5.70	6.38	12.88	7.18	7.22	0.85	0.01
1996	29,509.4	10.42	5.17	5.76	12.34	7.18	7.62	1.40	-0.45
1997	29,818.6	9.79	4.44	5.36	11.63	7.20	7.21	1.86	0.01
1998 PD	30,112.0	7.91	4.10	3.81	11.35	7.25	5.76	1.91	-0.04
1999 PR	30,351.3	8.35	3.57	4.78	11.01	7.44	6.23	2.00	0.54
2000 PR	30,605.7	••	••	••	••	••	••	••	••

<sup>1</sup> The residual consists of the distribution over five years of the error of closure at the end of the intercensal period.

**Note:** (PD) Final postcensal estimates, (PR) Revised postcensal estimates, based on 1996, as of September 14, 2000.

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

1996 a major end of period error was noted that arose from an underestimation of departures from the country. The findings of the 1996 Reverse Record Check (RRC), a survey that measures census coverage, showed on the one hand permanent emigration in the same order of magnitude as had been estimated, and on the other hand, a significant increase between 1991 and 1996 in temporary emigration. The decision was made to add to the “emigration” component for the 1996 to 2001 period an estimate of the net change in the number of persons temporarily abroad. Prior to 1996, it was assumed that the number of persons temporarily leaving the country was the same as the number of persons who returned. It was therefore assumed that the net change in the number of Canadians temporarily abroad was zero.

Since 1996, the “emigration” component of Table 1 has therefore included, in addition to the estimate of the number of permanent emigrants, an estimate of the net change in the number of persons temporarily abroad, as well as the “returning Canadians” component; in the past, the latter component was reported in a separate column of the table. Changes have also been made to the methodology of the “returning Canadians” component. As a result, the estimate of the number of returning Canadians is now based on an annual estimate of these returning persons obtained from the Child Tax Benefit records. Prior to 1996, this estimate was based on the rate of departure of Canadians emigrating to the United States, a rate derived from an outdated American survey that perhaps no longer represented the modern reality. Given that these changes have applied since July 1, 1996, data prior to that date are not exactly comparable to the recent statistics.

#### **Demographic Accounting of the Provinces**

Canada’s demographic growth is the result of sometimes considerable differences from one province or territory to another. ***In 1999, two Canadian provinces, Newfoundland and Saskatchewan, experienced negative demographic growth, or a decline, of 3.8 per 1,000 and 1.4 per 1,000 respectively.*** Since in both instances there was only a slight downturn in the rate of natural increase and both provinces are relatively unaffected by international immigration, the variations in overall growth are due primarily to changes in interprovincial migration. ***There were growth rates of more than 10 per 1,000 (13.7 and 12.4 respectively) in Alberta and Ontario.*** Only one other province, British Columbia, had a rate of increase higher than the Canadian average at 9.2 per 1,000. Compared with the situation in 1998, only Saskatchewan and Alberta recorded a slowdown in their rate of increase.

With respect to the situation in Newfoundland in 1999, the negative rate of increase in that province of -3.8 per 1,000 was in fact a significant change observed in the large decreases experienced in recent years. The previous year, Newfoundland recorded a negative growth rate of -12.8 per 1,000, which was slightly lower than the 1997 rate (-13.2 per 1,000). During the previous

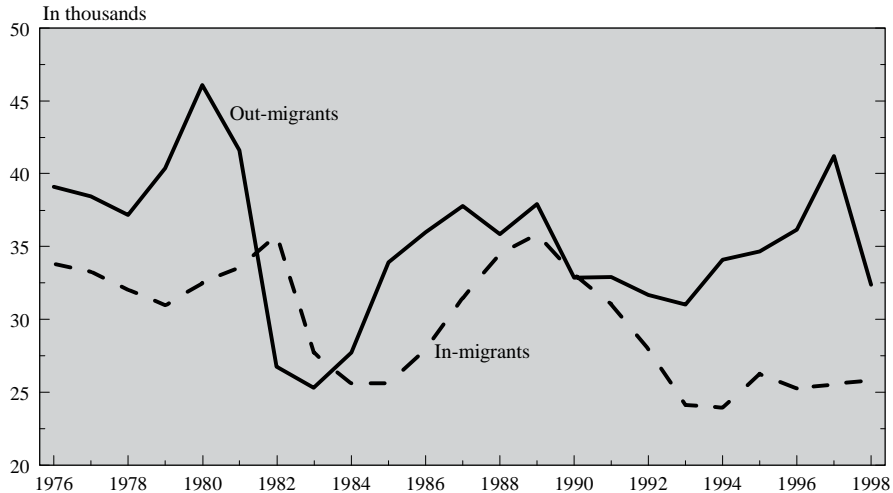
five years, the total rate of increase in this province was consistently below -10.0 per 1,000, with an annual average of -12.2 per 1,000. Expressed in numbers, Newfoundland recorded annual losses of more than 6,000 during this same period. In 1999, those losses were approximately 2,000. It remains to be seen whether this is a temporary phenomenon or a new trend linked to the exploitation of oil, gas and mineral resources.

*The estimated balance of births to deaths (approximately 300 persons) in Newfoundland remains the weakest in the country, translating into a rate of natural increase of 0.5 persons per 1,000 inhabitants, almost seven times less than the national average (3.6 per 1,000).* This low rate of natural increase is attributable in large part to Newfoundland's low fertility rate (1.21 children per woman in 1998), but also indirectly to the large negative net migration of recent years. Migration involving primarily the young, departure rates in the order of those recorded for this province since 1993 tend to reduce in subsequent years the number of persons reaching the age of peak fertility. The rate of natural increase, in the past high in this province, is no longer able to offset the migration losses and may even turn negative before long. Indeed, relying on the average scenario of recent demographic projections by Statistics Canada, the rate of natural increase in this province may turn negative as early as 2002-2003.

Newfoundland is the only Atlantic province to experience a negative growth rate. Prince Edward Island, for example, had a growth rate in 1999 that was very close to the national average, 8.2 per 1,000 (compared to 3.2 per 1,000 in 1998). Nova Scotia and New Brunswick, with growth rates of 4.0 and 2.8 per 1,000 respectively have also seen an improvement in their rate of demographic increase. Despite demographic accounting that shows encouraging signs, it should be noted that the natural increase remains below 2.0 per 1,000 in all of the Atlantic provinces, and even below 1.0 per 1,000 in Nova Scotia and Newfoundland.

The stronger growth rates in 1999 are therefore the result of a net improvement, compared with recent years, in the region's net migration, especially in interprovincial migration (Figure 1). In 1999, the number of persons leaving the Atlantic provinces for other provinces fell for the first time since 1993. The number decreased from 41,200 persons in 1998—the highest level recorded since 1981—to 32,400 persons in 1999. During the same period, the number of persons entering from other Canadian provinces remained relatively stable, around 25,000 annually. Thus, net migration between the four Atlantic provinces and the rest of Canada improved by more than half, falling from -15,700 persons in 1998 to -6,500 persons in 1999. Although net migration levels for the past year are still interim estimates obtained from a different source (Child Tax Credit records), the magnitude of this decrease may indicate an improvement in migration trends for this region of the country. Only Newfoundland experienced negative net migration in 1999, whereas net

**Figure 1. Interprovincial Migration Between the Atlantic Provinces and the Rest of Canada, 1976-1998**



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

migration had been negative in Nova Scotia for the past six years, and only positive once in New Brunswick since 1985.

Saskatchewan is the only other province to post a negative rate of growth (-1.4 per 1,000) in 1999, although the decline was still below that of Newfoundland. In the case of Newfoundland, the 1999 rate was a comparative improvement over previous years, while it represented a deterioration in Saskatchewan's demographics, since this province had not registered negative growth since the early nineties. Although the rate of natural increase is falling off slightly in this province, the main reason for the downturn in demographic growth is an increasingly sharp decline in net interprovincial migration. It should be noted that Saskatchewan has the largest percentage of persons aged 65 years and over, accounting for 14.5% of the population compared to 12.5% for Canada as a whole.

There was an increase in the growth rate in Manitoba, rising from 2.7 per 1,000 in 1998 to 4.8 per 1,000 in 1999. It is interesting to note that, in 1999, this province reported a positive growth in migration for the first time since 1986, even though net interprovincial migration remained negative. This deficit in interprovincial flow was the lowest recorded since 1984 (a negative balance of -1,400 persons in 1999 compared to -10,000 ten years earlier).

As was the case for the previous two years, *Alberta experienced the largest demographic growth in the country in 1999 (13.7 per 1,000)*, even though this rate represented a downturn for the province (23.0 per 1,000 in 1998). On January 1, 2000, the population of Alberta was approaching the three million mark, a level that it should surpass during the next year if its rate of growth remains at the levels observed since the late eighties. The drop in the growth rate in 1999 followed two previous years in which rates exceeded 20 per 1,000. The net interprovincial migration fell from 40,100 to 14,000 persons between 1998 and 1999. This indicates that Alberta's attractiveness has fallen off over the past year after reaching particular high levels in 1997 and 1998. It should also be noted that this province's strong attraction for workers from other provinces has slowed its demographic ageing given that a large portion of the new arrivals are young workers. Indeed, in 1999, Alberta had the lowest percentage of elderly persons of any Canadian province at 10.1%.

As of January 1, 1999, British Columbia passed the 4 million inhabitants mark. This province, which has long enjoyed above average demographic growth, nevertheless recorded a lower rate of growth in 1998 than Canada as a whole for the same year (6.6 compared to 7.9 per 1,000 respectively). The situation returned to normal in 1999: the rate of increase was 9.2 per 1,000, once again surpassing the national average (8.4 per 1,000). This rate is still relatively low compared to the trends previously observed for this province, which recorded an average annual rate of increase of 21.4 per 1,000 over the previous 20 years. In 1999, for the first time in a quarter century, British Columbia posted negative net interprovincial migration (-8,100 persons) for the second consecutive year. In 1999, for the first time since 1993, the number of departing citizens fell compared with the previous year, declining from 64,000 in 1998 to 59,200. The number of persons entering the province also rose for the first time since 1992. Net international migration remained positive (28,600 persons), but at its lowest level since the start of the decade.

The two most populated provinces—Quebec and Ontario—both posted an increase in their rate of demographic growth in 1999. In Ontario's case, the increase was significant, moving from 10.9 per 1,000 to 12.4 per 1,000, while Quebec's increase was smaller, climbing from 3.2 to 3.4 per 1,000. Although net interprovincial migration remained negative in Quebec, it fell from -14,500 to -13,600 persons between 1998 and 1999. This change was attributable not to a decrease in the number of persons leaving Quebec, which rose from 34,700 to 35,700 persons, but rather to an increase in the number of new arrivals, which climbed from 20,200 to 22,100 persons during this period. In the case of international migration, Quebec attracted 29,200 immigrants in 1999, placing it third among Canadian provinces, behind Ontario and British Columbia (104,100 and 36,100 respectively). Despite the significant influx of immigrants, offset by negative net interprovincial migration, Quebec's rate of migration in 1999 was still the third lowest among Canadian provinces,

Summary Table, Rates and Principal Demographic Indicators, Canada, Provinces and Territories, 1981-1999								
	Year	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.
Birth Rate (per 1,000)	1981	17.7	15.4	14.1	14.9	14.6	13.9	15.5
	1986	14.1	15.0	13.9	13.5	12.6	14.2	15.6
	1991	12.4	14.4	13.1	12.7	13.8	14.5	15.6
	1995	10.3	13.0	11.6	11.4	12.1	13.3	14.3
	1996	10.2	12.5	11.3	10.9	11.7	12.6	13.7
	1997	9.8	11.6	10.6	10.5	10.9	11.8	12.9
	1998	9.2	10.9	10.2	10.5	10.4	11.7	12.8
	1999 (P)	8.8	10.7	10.0	10.2	10.0	11.3	12.5
	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	8.2
1991		6.6	9.1	7.9	7.3	7.0	7.0	8.1
1995		6.9	8.5	8.3	7.9	7.3	7.2	8.6
1996		7.0	9.3	8.3	7.8	7.2	7.1	8.4
1997		7.8	7.5	8.6	7.9	7.5	7.1	8.4
1998		7.8	8.6	8.9	8.4	7.4	7.1	8.6
1999 (P)		8.3	8.9	9.2	8.8	7.4	7.3	8.9
Total Fertility Rate (number of children per woman 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	1.83
	1991	1.44	1.86	1.59	1.55	1.65	1.67	1.97
	1995	1.28	1.79	1.52	1.51	1.61	1.67	1.95
	1996	1.30	1.73	1.52	1.46	1.60	1.61	1.89
	1997	1.27	1.63	1.45	1.43	1.52	1.53	1.81
	1998	1.21	1.56	1.42	1.45	1.47	1.53	1.81
	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	712
1986 M		589	711	595	600	430	623	615
F		580	742	631	626	442	658	660
1991 M		600	727	575	581	381	610	600
F		613	730	606	608	427	653	651
1995 M		629	695	566	559	331	584	607
F		649	734	592	594	370	618	657
1996 M		607	747	586	581	327	579	582
F		624	782	597	618	363	609	626
1997 M		630	685	556	550	329	567	573
F		653	718	583	587	362	597	611
Rate of Natural Increase (per 1,000)	1981	12.0	7.3	6.0	7.6	8.0	6.7	7.2
	1986	7.9	6.3	5.7	6.0	5.6	7.0	7.4
	1991	5.8	5.3	5.2	5.4	6.8	7.5	7.5
	1995	3.4	4.5	3.3	3.5	4.8	6.2	5.7
	1996	3.2	3.1	3.0	3.0	4.5	5.5	5.3
	1997	2.0	4.1	2.0	2.6	3.5	4.8	4.5
	1998	1.4	2.3	1.4	2.0	3.0	4.6	4.2
	1999 (P)	0.5	1.8	0.8	1.4	2.6	4.0	3.6
	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	6.3
1991		2.1	0.9	5.5	4.8	7.1	12.2	3.6
1995		-11.8	8.5	2.8	0.9	4.7	12.7	4.4
1996		-12.2	7.4	3.9	1.6	4.2	12.2	3.9
1997 (PD)		-13.2	2.4	2.6	1.0	3.2	13.1	0.8
1998 (PR)		-12.8	3.2	1.6	-0.9	3.2	10.9	2.7
1999 (PR)		-3.7	8.2	4.0	2.8	3.4	12.4	4.8

See notes at the end of this table.



Summary Table, Rates and Principal Demographic Indicators, Canada, Provinces and Territories, 1981-1999 - Continued								
	Year	Sask.	Alta.	B.C.	Yuk.	N.W.T.	Nvt.	Can.
Birth Rate (per 1,000)	1981	17.6	18.6	14.7	21.9	27.5 <sup>4</sup>	...	15.0
	1986	17.0	18.1	14.0	19.5	27.6 <sup>4</sup>	...	14.3
	1991	15.3	16.5	13.5	19.8	33.1 <sup>4</sup>	...	14.4
	1995	13.3	14.2	12.4	15.2	21.1	29.5	12.9
	1996	13.1	13.6	11.9	13.9	19.4	29.4	12.3
	1997	12.6	13.0	11.3	14.8	17.4	28.7	11.6
	1998	12.5	13.1	10.8	13.0	18.4	29.5	11.3
	1999 (P)	12.4	12.8	10.4	12.2	18.3	28.8	11.0
	Mortality Rate (per 1,000)	1981	7.7	5.6	7.0	5.8	4.1 <sup>4</sup>	...
1986		7.8	5.6	7.1	4.6	4.3 <sup>4</sup>	...	7.1
1991		8.1	5.6	7.1	4.0	4.8 <sup>4</sup>	...	7.0
1995		8.4	5.8	7.0	5.1	3.1	3.9	7.2
1996		8.6	5.9	7.1	3.8	3.6	4.7	7.2
1997		8.5	5.8	6.9	3.8	3.3	4.6	7.2
1998		8.7	5.9	7.0	4.6	3.6	4.7	7.2
1999 (P)		9.0	6.0	7.4	5.1	3.8	5.0	7.4
Total Fertility Rate (number of children per woman aged 15-49)		1981	2.12	1.87	1.64	2.06	2.86 <sup>4</sup>	...
	1986	2.03	1.86	1.62	1.95	2.85 <sup>4</sup>	...	1.60
	1991	2.04	1.90	1.69	2.15	2.47	3.55	1.71
	1995	1.91	1.79	1.61	1.82	2.34	3.41	1.66
	1996	1.89	1.74	1.55	1.67	2.25	3.37	1.62
	1997	1.83	1.68	1.48	1.82	2.02	3.36	1.55
	1998	1.82	1.71	1.45	1.60	1.97	2.98	1.54
	Total First Marriage Rate (per 1,000) (males aged 17-49, females aged 15-49)	1981 M	710	644	684	693	457 <sup>4</sup>	...
F		698	689	695	715	474 <sup>4</sup>	...	651
1986 M		588	566	582	484	351 <sup>4</sup>	...	558
F		628	616	623	573	399 <sup>4</sup>	...	589
1991 M		622	597	601	470	284 <sup>4</sup>	...	548
F		656	643	661	521	311 <sup>4</sup>	...	594
1995 M		641	611	556	541	282 <sup>4</sup>	...	524
F		665	649	607	543	315 <sup>4</sup>	...	563
1996 M		628	569	521	453	268 <sup>4</sup>	...	512
F		653	613	563	486	282 <sup>4</sup>	...	548
1997 M		633	565	502	409	260 <sup>4</sup>	...	505
F		655	607	540	422	310 <sup>4</sup>	...	539
Rate of Natural Increase (per 1,000)	1981	9.9	13.0	7.7	16.1	23.3 <sup>4</sup>	...	8.1
	1986	9.2	12.5	6.9	14.9	23.3 <sup>4</sup>	...	7.2
	1991	7.2	10.9	6.4	15.8	28.3 <sup>4</sup>	...	7.4
	1995	4.9	8.4	5.4	10.1	18.0	25.6	5.7
	1996	4.5	7.7	4.8	10.2	15.8	24.7	5.2
	1997	4.1	7.2	4.3	11.0	14.1	24.1	4.4
	1998	3.8	7.2	3.8	8.4	14.8	24.8	4.1
	1999 (P)	3.4	6.8	3.1	7.0	14.5	23.8	3.6
	Total Growth Rate (per 1,000)	1981	11.4	39.2	22.9	-22.7	37.0 <sup>4</sup>	...
1986		2.6	6.0	11.5	31.5	-1.7 <sup>4</sup>	...	11.4
1991		-1.2	15.9	25.3	41.4	38.9 <sup>4</sup>	...	11.4
1995		4.3	14.0	25.6	38.6	9.2	23.8	10.8
1996		4.2	16.5	22.9	20.0	1.5	16.7	10.4
1997 (PD)		2.7	21.5	15.6	-6.0	-5.5	13.1	9.8
1998 (PR)		2.8	23.0	6.6	-26.4	-10.7	23.1	7.9
1999 (PR)		-1.4	13.7	9.2	-11.4	14.9	20.8	8.3

See notes at the end of this table.

Summary Table, Rates and Principal Demographic Indicators, Canada, Provinces and Territories, 1981-1999 - Continued									
	Year	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	
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	11.8	
	1986	8.7	12.6	11.8	11.0	9.8	10.7	12.4	
	1991	9.6	13.1	12.5	12.0	11.1	11.6	13.3	
	1995	10.4	13.0	12.8	12.4	11.8	12.1	13.5	
	1996	10.7	12.9	12.9	12.5	12.0	12.2	13.5	
	1997 (PD)	11.0	12.9	13.0	12.7	12.2	12.3	13.6	
	1998 (PR)	11.3	13.1	13.1	12.8	12.4	12.4	13.6	
	1999 (PR)	11.5	13.1	13.2	12.9	12.6	12.5	13.6	
Total Age Dependency Ratio on July 1 (in %) <sup>1</sup>	1981	78.2	76.0	67.0	69.5	55.9	58.9	67.7	
	1986	68.1	68.6	61.1	62.5	52.2	55.0	64.0	
	1991	59.7	67.3	59.1	59.7	53.5	55.5	65.5	
	1995	55.1	64.5	57.9	57.0	54.2	57.0	65.5	
	1996	54.3	63.5	57.7	56.5	54.2	57.4	65.2	
	1997 (PD)	53.3	62.5	57.2	56.0	53.9	57.3	64.9	
	1998 (PR)	52.5	61.9	56.6	55.3	53.5	57.1	64.5	
	1999 (PR)	51.6	61.0	55.7	54.6	53.0	56.7	63.9	
Life Expectancy at Birth (in years) <sup>2</sup>	1986	M	72.8	72.8	72.4	72.7	72.2	73.8	73.2
		F	79.2	...	79.5	80.1	79.7	80.0	79.9
	1991	M	73.7	73.2	73.7	74.2	73.8	75.0	74.6
		F	79.6	...	80.3	80.9	80.9	80.9	80.7
	1993	M	73.9	74.3	74.0	74.4	74.1	75.2	74.7
		F	79.9	...	80.4	80.7	81.0	81.0	80.9
	1994	M	73.9	...	74.4	74.4	74.1	75.4	74.7
		F	79.9	...	80.4	80.7	81.0	81.0	80.9
	1995	M	74.2	...	74.5	74.6	74.5	75.6	75.0
		F	80.2	81.1	80.6	81.0	81.0	81.1	80.6
	1996	M	74.4	...	74.8	74.8	74.6	75.9	75.1
		F	80.2	...	80.6	81.2	81.0	81.3	80.5
	1997	M (P)	74.5	...	75.0	75.2	74.9	76.3	75.5
		F (P)	80.0	...	80.6	81.2	81.2	81.5	80.6
	Infant Mortality Rate (per 1,000)	1981	9.7	13.2	11.5	10.9	8.5	8.8	11.9
		1986	8.0	6.7	8.4	8.3	7.1	7.2	9.2
1991		7.8	6.9	5.7	6.1	5.9	6.3	6.4	
1995		7.9	4.6	4.8	4.8	5.5	5.9	7.6	
1996		6.6	4.7	5.6	4.9	4.6	5.7	6.7	
1997		5.2	4.4	4.4	5.7	5.6	5.5	7.5	
Rate of Pregnancies Terminated (per 100 births) <sup>3</sup>	1981	3.5	0.3	14.1	4.1	9.5	25.0	10.0	
	1986	3.4	...	14.1	3.3	14.7	20.2	15.9	
	1991	6.0	...	15.1	6.2	15.1	20.7	15.2	
	1995	8.6	...	17.1	7.1	20.8	19.9	18.2	
	1996	9.1	...	17.8	7.7	22.6	21.1	21.5	
	1997	9.6	...	19.5	8.1	24.0	19.9	23.2	
	1998	6.6	...	20.4	8.7	25.6	18.1	22.2	

See notes at the end of this table.

**Summary Table, Rates and Principal Demographic Indicators, Canada,  
Provinces and Territories, 1981-1999 - Concluded**

	Year	Sask.	Alta.	B.C.	Yuk.	N.W.T.	Nvt.	Can.	
Population Aged 65 + as a Percentage of the Total	1981	11.9	7.2	10.7	3.3	3.0 <sup>4</sup>	...	9.6	
	1986	12.6	8.0	11.9	3.7	2.9 <sup>4</sup>	...	10.5	
	1991	14.1	9.0	12.7	3.9	3.1	1.9	11.5	
Population on July 1	1995	14.5	9.6	12.6	4.3	3.4	2.2	12.0	
	1996	14.5	9.8	12.5	4.4	3.5	2.1	12.1	
	1997 (PD)	14.5	9.8	12.6	4.6	3.7	2.3	12.2	
	1998 (PR)	14.5	9.9	12.8	4.9	3.9	2.4	12.3	
	1999 (PR)	14.5	9.9	12.9	5.1	4.0	2.5	12.4	
	1999 (PR)	14.5	9.9	12.9	5.1	4.0	2.5	12.4	
Total Age Dependency Ratio on July 1 (in %) <sup>1</sup>	1981	73.3	57.4	58.6	53.4	77.9 <sup>4</sup>	...	59.8	
	1986	70.7	56.2	57.4	50.3	69.0 <sup>4</sup>	...	56.3	
	1991	73.8	58.1	57.7	47.5	56.2	86.0	56.8	
	1995	73.2	58.0	56.4	47.8	56.9	85.1	57.2	
	1996	72.5	57.7	55.9	47.2	56.9	84.2	57.1	
	1997 (PD)	71.6	57.1	55.5	47.4	56.7	85.5	56.8	
	1998 (PR)	70.7	56.4	55.2	47.1	56.9	85.6	56.5	
Life Expectancy at Birth (in years) <sup>2</sup>	1986	M	73.8	73.7	74.4	...	...	...	73.3
		F	80.5	80.2	80.7	...	...	...	80.0
	1991	M	75.2	75.1	75.3	...	...	...	74.6
		F	81.5	81.2	81.4	...	...	...	81.0
	1993	M	75.5	75.4	75.5	...	...	...	74.9
		F	81.8	81.1	81.4	...	...	...	81.0
	1994	M	75.1	75.5	75.7	...	...	...	75.0
		F	81.8	81.1	81.4	...	...	...	81.0
	1995	M	75.1	75.6	75.9	...	...	...	75.2
		F	81.5	81.3	81.7	...	...	...	81.1
	1996	M	75.4	75.9	76.2	...	...	...	75.5
		F	81.4	81.3	81.8	...	...	...	81.2
	1997	M (P)	75.7	76.4	76.5	...	...	...	75.8
		F (P)	81.5	81.5	82.1	...	...	...	81.4
	Infant Mortality Rate (per 1,000)	1981	11.8	10.6	10.2	14.9	21.5 <sup>4</sup>	...	9.6
		1986	9.0	9.0	8.5	24.8	6.6 <sup>4</sup>	...	7.9
1991		8.2	6.7	6.5	10.6	4.3 <sup>4</sup>	...	6.4	
1995		9.1	7.0	6.0	12.8	9.2	17.6	6.1	
1996		8.4	6.2	5.1	—	4.9	19.9	5.6	
1997		8.9	4.8	4.7	8.4	6.9	14.8	5.5	
1998		9.5	15.8	30.8	20.9	10.8 <sup>4</sup>	...	17.5	
Rate of Pregnancies Terminated (per 100 births) <sup>3</sup>	1981	5.5	14.4	27.3	22.8	12.1 <sup>4</sup>	...	17.0	
	1986	8.1	14.9	23.7	27.5	17.7 <sup>4</sup>	...	17.4	
	1991	13.5	17.0	21.4	27.7	14.9 <sup>4</sup>	...	19.0	
	1995	13.6	15.8	24.3	38.1	16.2 <sup>4</sup>	...	20.3	
	1996	14.0	17.3	24.9	28.3	16.8 <sup>4</sup>	...	20.5	
	1997	13.9	16.1	23.9	35.3	16.3 <sup>4</sup>	...	19.8	

<sup>1</sup> Ratio between population aged 0-17, 65+ and 18-64.

<sup>2</sup> Because of an absence of deaths in certain age groups, the mortality table could not be calculated.

<sup>3</sup> Practised in hospitals in Canada.

<sup>4</sup> Nunavut included.

(P) Preliminary.

(PD) Final postcensal estimates based on 1996, as of September 14, 2000.

(PR) Updated postcensal estimates based on 1996, as of September 14, 2000.

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

ahead of Saskatchewan and Newfoundland. Although relatively weak compared to other Canadian provinces, this increase in migration remains the largest recorded in Quebec since 1995.

Again in 1999, Ontario received the largest number of immigrants. Fifty-five per cent of all immigrants arriving in Canada in 1999 settled in Ontario, which had a population of 11,577,200 inhabitants as of January 1, 2000, representing 38% of the national total. Ontario's attraction for immigrants is not new, since the percentage of immigrants choosing to live in this province has remained steady around at least 50%. This fact means that, as long as Canada continues to receive large numbers of immigrants, Ontario can count on relatively high demographic growth compared to the country as a whole, especially since the rate of natural increase for this province (4.0 per 1,000) is higher than the national average and its interprovincial migration balance is positive (16,600 persons in 1999). It should be noted that, in 1999, for the first time since 1987, Ontario registered the highest net interprovincial migration of all Canadian provinces.

#### **Nunavut, the Northwest Territories and the Yukon**

Nunavut which became officially a territory on April 1, 1999, continued to record strong demographic growth. Its population reached 27,300 persons on January 1, 2000. Even though it slowed slightly, the rate of growth was 20.8 per 1,000 in 1999. This growth is essentially the result of an estimated rate of natural increase of 23.8 per 1,000, by far the highest in Canada. Given its very young demographic structure (the territory had only 2.6% of persons aged 65 years or older as of January 1, 2000) and its high fertility rate, Nunavut should continue to post a relatively high rate of natural increase.

The Northwest Territories also experienced strong demographic growth in 1999 at 14.9 per 1,000, which resulted in an increase in the population to 41,600 inhabitants. As in the case of Nunavut, this growth is largely a reflection of a strong rate of natural increase associated with the relatively young demographic structure (in 1999, 4.1% of the population was aged 65 years and older). As for the Yukon, its population fell in 1999 to 30,700 residents, a drop of 11.4 per 1,000. This is the third consecutive year that the population of the Yukon has decreased owing to a negative migration balance, which has been unable to offset the surplus of births to deaths. It should also be noted that, of the three territories, the Yukon has the highest percentage of elderly persons (5.4%), despite the fact that its population is still quite young compared to the provinces.

## **DIVORCES**

*In 1998, there were 69,100 divorces registered in Canada. This represented a relatively small increase of 2.5% over 1997 (67,400 divorces), but it should be noted that this is the first increase since 1994 and the largest since 1992. Given the decline in the number of marriages and the increase in the average age at marriage, a drop in the number of divorces would have been the expected trend. However, in the past, there have been fluctuations in the number of divorces, followed by a return to lower numbers. In terms of the crude divorce rate, it rose from 22.5 per 1,000 inhabitants to 22.8 per 1,000 in 1998. This slight increase was the first since 1992.*

Along with the increase in the number of divorces, there was also a small decline in the average duration of the marriage among persons divorced in the year from 10.9 years in 1997 to 10.8 years in 1998. Since the early 1970s, there has been a downward trend in this indicator, which has fallen 2.5 years over a 30-year period.

These data apply to the country as a whole and hide significant variations from province to province. The following section looks at these variations and is then followed by a discussion of the change in the total divorce rate in each province since 1980.

### **Provinces and Territories**

Among the Atlantic provinces, only Nova Scotia posted a decline in the number of divorces. While there were 2,000 divorces in 1997, this figure fell slightly in 1998 to 1,900 (decline of 2.5%). This situation follows on the heels of a major decrease of 11% in 1997. Since 1993, the number of divorces in Nova Scotia has fallen 18.6%, the largest decline in Canada over this five-year period. However, as is shown in Table 2, Nova Scotia actually has the highest divorce rate of all of the Atlantic provinces (20.7 per 1,000). It certainly is not indicative of the Atlantic provinces as a whole. Newfoundland and Prince Edward Island experienced the greatest increase in the number of divorces in the country (15%). This situation is especially surprising for Newfoundland since it recorded the sharpest decline in 1997 (23%). Such annual variations are probably attributable more to administrative changes in the applicable courts than to changes in conjugal behaviour. Nevertheless, this province still has the lowest divorce rate in Canada at 17.3 per 1,000. Despite the fact that it is the lowest, Newfoundland's divorce rate has risen sharply from only 14.8 per 1,000 in 1997. In the case of Prince Edward Island, the province recorded the greatest relative increase in the number of divorces of all of the Canadian provinces for the second year in a row. It is important to note that,

**Table 2. Crude Divorce Rate (for 10,000), Canada and Provinces, 1980 to 1998**

Year	New-foundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	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	14.84	17.76	21.22	18.20	23.93	21.00	23.10	21.51	25.32	24.48	22.48
1998	17.31	20.38	20.65	19.55	23.10	22.09	21.47	21.91	26.38	24.58	22.84

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

because of its small population, annual fluctuations can be large (300 divorces in 1998). Lastly, the number of divorces increased by 7% in New Brunswick, rising from 1,400 to 1,500 divorces between 1997 and 1998. This was the first increase in the number of divorces in this province since 1991.

While the Atlantic provinces have the lowest divorce rates, they also boast the longest average duration of the marriage of divorcees in Canada. Throughout the rest of the country, this duration is less than 11.0 years, while it is 12.7 years in Prince Edward Island—the highest of all Canadian provinces—12.1 years in Newfoundland, 11.6 in Nova Scotia and 11.4 years in New Brunswick. These figures represent increases over 1997, with the exception of New Brunswick.

Quebec has the second largest decrease in the number of divorces (-3.2%). Except for 1995, the number of divorces fell steadily in this province throughout the 1990s. While there were 20,500 divorces in 1990, there were fewer than 17,000 in 1998. However, Quebec has the third highest divorce rate in Canada at 23.1 per 1,000, a drop from 1997 (23.9 per 1,000). Another interesting fact is that Quebec had the shortest average duration of the marriage of persons divorced in that year. That duration was only 10.4 years, a drop of 0.3 years compared with 1997.

While Quebec experienced a drop in the number of divorces in 1998, the same did not hold true in Ontario. That province experienced an increase with the number of divorces, climbing from 23,600 to 25,100, up 6%. This increase was accompanied by a rise in the divorce rate from 21.0 per 1,000 in 1997 to 22.9 per 1,000 in 1998. The average duration of the marriage of persons divorced in the year remained stable at 10.9 years, a duration only slightly longer than that for the country as a whole (10.8 years).

As with the Atlantic provinces, there is heterogeneity among the Prairie provinces with respect to divorce. While Manitoba experienced the greatest drop in the number of divorces in Canada (-6.9%), Alberta posted an increase more than 2.5 times higher than the increase for the country as a whole (6.7% compared with 2.4% for Canada). The 2.2% rise in Saskatchewan closely reflects the national trend. There are equally pronounced differences between the Prairie provinces when comparing divorce rates. In Manitoba and Saskatchewan, the rate is lower than the Canadian average, 21.5 per 1,000 and 21.9 per 1,000 respectively (compared with 22.8 per 1,000 for the country as a whole). At the other end, ***Alberta had the highest divorce rate of all Canadian provinces for the second consecutive year, climbing from 24.5 per 1,000 in 1997 to 26.4 per 1,000 in 1998.***

After experiencing a steep drop in the number of divorces in 1997 (-11.1%), British Columbia posted a slight increase of 1.4% in 1998 (9,800 divorces compared to 9,700 in 1997). The divorce rate also remained relatively stable climbing from 24.5 per 1,000 to 24.6 per 1,000. This represents the second

highest rate among Canadian provinces. As for the average duration of the marriage of persons divorced, British Columbia is right in line with Canada with an average of 10.8 years.

It was in the Yukon and Northwest Territories that the greatest increase in the number of divorces occurred in 1998, at 15.8% and 17.7% respectively. In the case of the Territories, annual fluctuations are disproportionate to those in the provinces because of the small size of the population. As for the average duration of the marriage of persons divorced, it reflects the national average at 10.9 years in the Yukon and 10.7 years in the Northwest Territories.

### **Total Divorce Rate**

The total divorce rate is a cross-sectional measure (for one year) of the intensity of the phenomenon. It corresponds, for a given year, to the total of the divorce rates per duration of the marriage and represents the proportion of marriages of a fictitious cohort that would end in a divorce if the divorce rates were applied to these marriages at each duration.

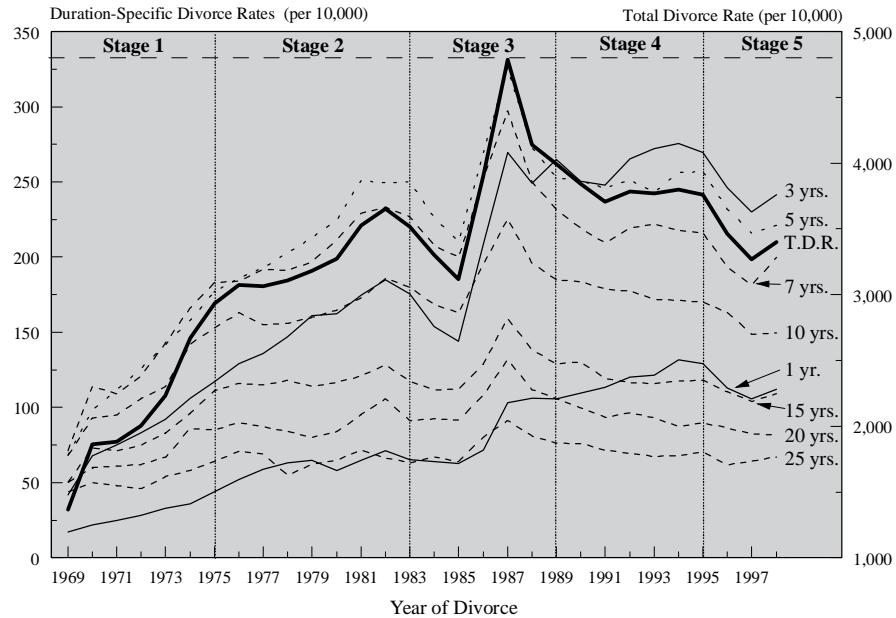
Since the total divorce rate takes into consideration annual fluctuations in the number of marriages, it is more appropriate and easier to interpret than the crude divorce rate, which reports the number of divorces observed in a given year in the total population of the region studied. This aspect is particularly important since there are important differences in the types of conjugal relationships from province to province. For example, common law relationships are much more popular in Quebec than in the other Canadian provinces. All things being equal, therefore, one would expect Quebec to have fewer divorces per 1,000 inhabitants than in some other province where marriage is a more popular form of conjugal living. In reporting the number of divorces by the length of the marriages in the corresponding year, the divorce rates used to calculate the total rate allow for consideration of variations in marriage rates. This explains why Quebec, for example, has the third highest crude divorce rate but the highest total rate of all provinces. On the other hand, the total divorce rate may be biased upward in the case of provinces that have significant positive net migration because the rate attributes a certain number of divorces of persons who would have been married in another provinces to the marriages recorded in that province in years past. The total rate for provinces such as Ontario, Alberta and British Columbia, which all have strong demographic growth linked to migration, could therefore be overestimated.

Based on an estimate of the number of marriages in 1998,<sup>2</sup> *the total divorce rate is estimated at 3,399 divorces per 10,000 marriages in 1998*. This means that if, for the next 25 years, the divorce rate by duration of the marriage

<sup>2</sup> The statistics on marriages for 1998 were not available at the time of this analysis. The estimate of the number of marriages for this year was obtained by applying the marriage rate for the previous year to the estimated population in mid 1998.



**Figure 2. Duration-Specific Divorce Rates for Various Durations of Marriages, by Year of Divorce and Total Divorce Rate, Canada, 1969 to 1998**



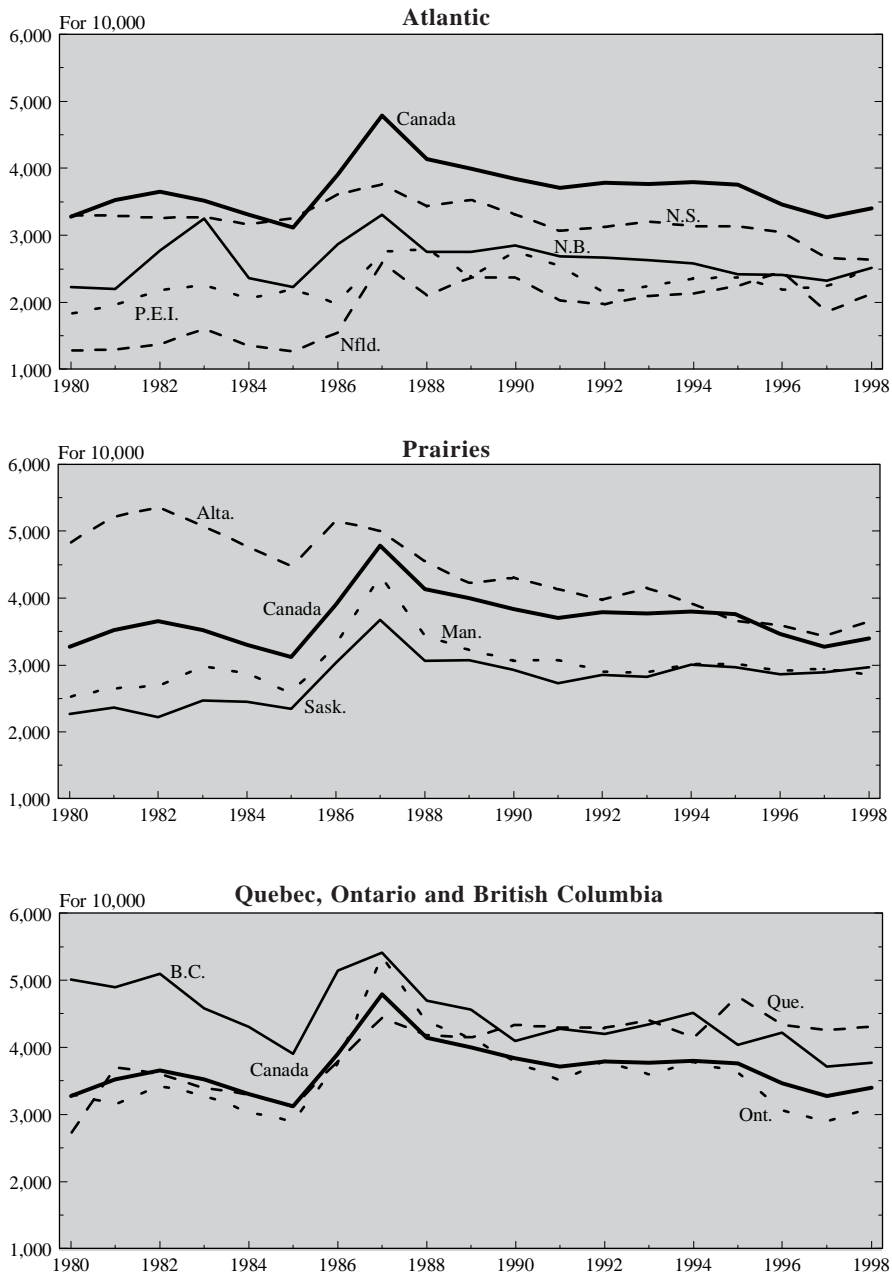
**Note:** Preliminary data for 1998.  
**Source:** See Table A5, appendix.

corresponded to that observed in 1998, 34% of these marriages would end in divorce. This represents a 3.9% increase over the total rate of 3,270 divorces per 10,000 marriages in 1997. As Figure 2 shows, the rise in the total divorce rate is the result of a sharp increase in divorces of marriages lasting less than 20 years.

### **Change in the Total Divorce Rate by Province**

Figure 3 shows the change in the total divorce rate since 1980 in the various provinces. The first thing that is apparent is that the rate varies from province to province, but that the differences tend to even out over the years, at least until 1990. For example, while the highest total divorce rate was 4.0 times greater than the lowest in 1981 (ranging from 1,297 divorces per 10,000 marriages in Newfoundland to 5,220 divorces per 10,000 marriages in Alberta), the ratio was only 1.8 in 1990 (ranging from 2,368 divorces per 10,000 marriages in Newfoundland to 4,336 divorces per 10,000 marriages in Quebec). Since then, this ratio has remained relatively stable settling at 2.0 in 1998.

Figure 3. Total Divorce Rate, Canada and Regions, 1980-1998



**Note:** Preliminary data for 1998.  
**Sources:** Statistics Canada, Health Statistics Division, Health Status and Vital Statistics Section and Demography Division, Population Estimates Section.

Since 1980, three provinces—Alberta, British Columbia and Quebec—have exchanged the top three ranks among provinces with respect to the total divorce rate. At the other end, Newfoundland, Prince Edward Island and New Brunswick have continuously posted the lowest rates. With the exception of 1996, Newfoundland has always had the lowest total divorce rate of all provinces. However, the province with the highest rate has changed several times. Alberta began by registering the highest divorce rate most often until 1986, when British Columbia took over at the end of the 1980s. Since 1990, Quebec has posted the highest total divorce rate in the country every year, except in 1994.

Figure 3 shows that, in the Atlantic provinces, the total divorce rate tends to be increasingly similar from province to province, while remaining below the national average. Although the highest rate in 1980 (Nova Scotia at 3,300 divorces per 10,000 marriages) was 2.6 times higher than the lowest rate (Newfoundland at 1,283 divorces per 10,000 marriages), this difference was only 1.2 in 1998. It is also evident that, since the late 1980s, the total divorce rate has remained relatively stable in all of the Atlantic provinces, except in Nova Scotia where the rate continues to drop, nearing the value observed in the other three provinces.

As was the case with the Atlantic provinces, the Prairies also show a trend to homogeneity in terms of the divorce rate. While the ratio between the highest rate (Alberta) and the lowest (Saskatchewan) in the region was 2.1 in 1980, it was only 1.3 in 1998. Since 1980, the greatest variations in the total divorce rate have been in Alberta where the rate fell from 4,826 divorces per 10,000 marriages to 3,656 divorces per 10,000 marriages between 1980 and 1998. For their part, Saskatchewan and Manitoba have retained some stability in their total divorce rates since the nineties (around 3,000 divorces per 10,000 marriages).

The last section of Figure 3 contains the graphs showing the change in the rate for the three most-populated provinces. Here again, there is some convergence. Most importantly, there has been a reversal in the ranking of these three provinces. In 1980, Quebec had the lowest rate (2,710 divorces per 10,000 marriages) of these three provinces and British Columbia the highest (5,013 divorces per 10,000 marriages). While Quebec's total divorce rate during this period was climbing to the point where in 1998 it had the highest total divorce rate in Canada (4,310 divorces per 10,000 marriages), the rate in British Columbia has fallen. In Ontario, the rate fluctuated significantly during this period, but in 1998 returned more or less to the same level as in 1980 (around 3,000 divorces per 10,000 marriages).

### **Conclusion**

The various measures of divorce rates show a slight increase in the phenomenon in Canada as a whole. This is a trend that has not been seen

since 1992. Since annual fluctuations in the number of divorces may be related to the ways in which the courts operate, caution should be exercised in interpreting this upward movement as a true increase in the divorce rate in Canada. It will therefore be interesting to observe this phenomenon over the next few years. Further, despite the existence of quite significant provincial disparities, there is a trend toward homogeneity of behaviour toward divorce throughout the country.

## BIRTHS AND FERTILITY

In 1998, for the eighth consecutive year, the number of births in Canada fell. There were actually 342,400 births, which represents a decline of 1.8% over the number recorded in 1997. Although the birth rate continued to fall in 1998, there was a slowdown in the rate of decline, the number of births having dropped by 4.8% in the previous year. Combined with the continued population growth, *this decrease in number of births translated into a new drop in the crude birth rate, which fell from 11.6 per 1,000 to 11.4 per 1,000. The total fertility rate also fell in 1998, but very slightly, dropping from 1.55 children per woman in 1997 to 1.54 children per woman in 1998.* This is the lowest level ever recorded for this indicator for the country as a whole. The drop in the birth and fertility rates is occurring, with a few exceptions, in all provinces. *Newfoundland still has the lowest fertility rate in the country at 1.21 children per woman.* Saskatchewan, with a rate of 1.82 children per woman, has the highest rate of all provinces.

The number of births fell everywhere except in Alberta where there were 1,000 more births than in 1997, an increase of 2.7%. At the other end of the scale, *Newfoundland, with the lowest fertility rate in the country, saw its number of births fall by 7.8% in 1998, the largest relative decline in number of births.* Prince Edward Island, Quebec and Nova Scotia had relative drops of 5.5%, 4.9% and 3.6% respectively. Among the Atlantic provinces, New Brunswick was the only one where there was some stability in the birth rate with the number of births falling only 0.5%. Similar situations exist in Ontario (drop of 0.3%) and in Saskatchewan (drop of 0.6%). However, the number of births fell 3.4% in British Columbia.

There are two reasons for the very rapid decrease in the number of births: one is structural and the other is related to behavioural change. The first is related to the drop in the fertility rate that began in the mid-sixties reducing the population in the generations that are now attaining the age groups of highest reproduction. Under these conditions, the number of births declines even if the fertility rate remains stable. The second reason is related to the decline in the total fertility rate. Even if slight, a drop in the fertility rate amplifies the structural effect and leads to the situation observed for the past few years where there has been a continuous and rapid decrease in the number of births. If we look at both the change in the number of births and the change in the total fertility rate in New Brunswick in 1998, we can clearly see the structural impact of the ageing of the population on birth rate. Despite an increase in the fertility rate and an increase in the total population of this province, there has been a slight decline in the number of births because there are fewer women at peak childbearing ages.

Only two provinces had a higher total fertility rate in 1998 than in 1997. The greatest increase was in Alberta where the total fertility rate rose from 1.68 children per woman in 1997 to 1.71 children per woman in 1998, an increase of 1.3%. Virtually the same trend was observed in New Brunswick where the rate rose from 1.43 to 1.45 children per woman, up 1.1%.

The total fertility rate remained unchanged in Ontario (1.53 children per woman) and in Manitoba (1.81 children per woman). The rate was also relatively stable in Saskatchewan (-0.9%), while slight decreases occurred in Nova Scotia (-2.2%) and British Columbia (-2.4%). As with number of births, the drop in the total fertility rate was higher in Prince Edward Island (-4.5%), Newfoundland (-4.3%) and Quebec (-3.1%). Thus, it was in the provinces with the lowest fertility rate that the most significant decreases were recorded. Prince Edward Island is the exception in that, while the fertility rate fell in 1998, its total fertility rate was the fourth highest in Canada in 1997.

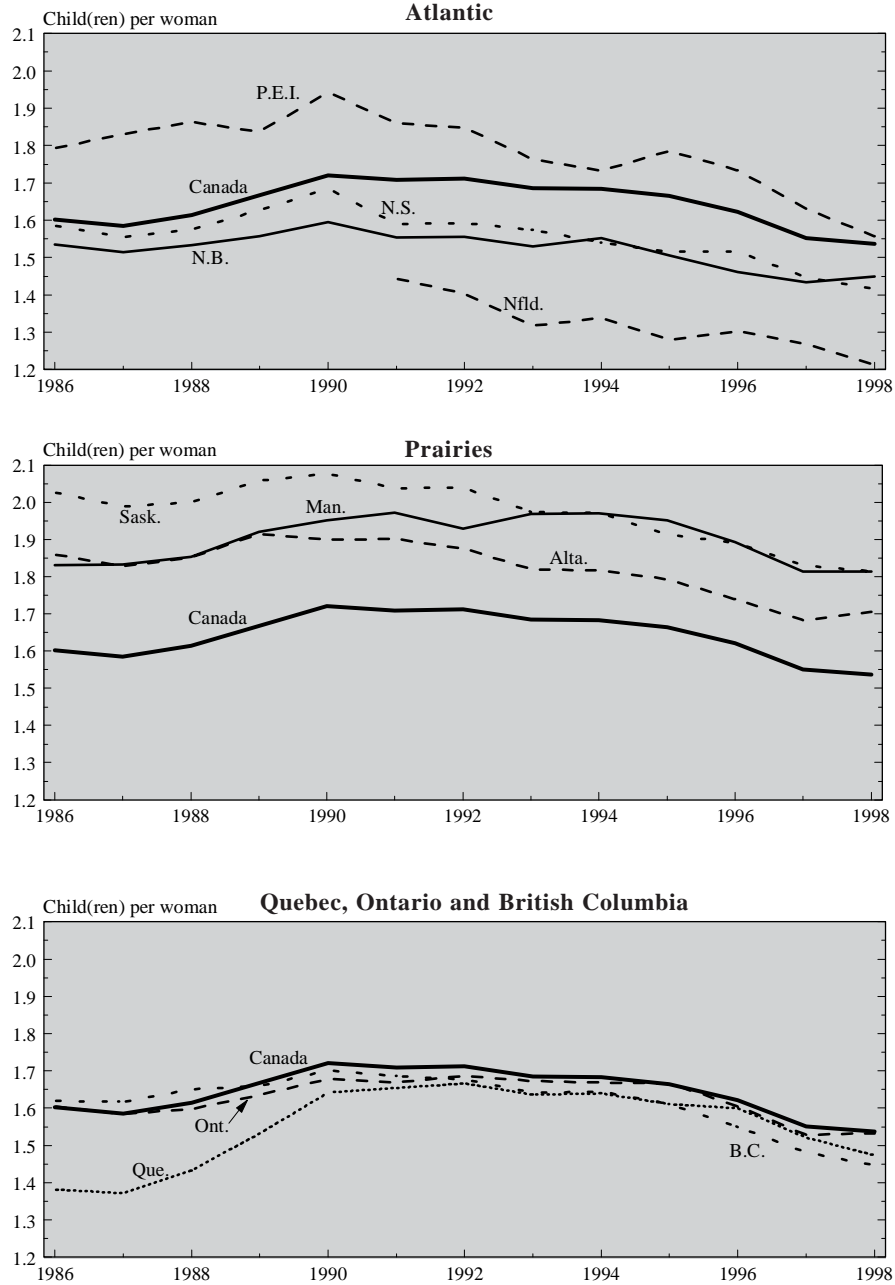
#### **Recent Change in the Total Fertility Rate of the Provinces: 1986-1998**

At 1.54 children per woman in 1998, Canada's total fertility rate has never been lower, but a majority of provinces have even lower rates. Newfoundland, with a rate of 1.21 children per woman, has an extremely low fertility level; indeed the lowest ever recorded in Canada. Two other Atlantic provinces—New Brunswick and Nova Scotia—also have very low rates at 1.45 and 1.42 children per woman respectively. In the case of Prince Edward Island, its rate of 1.56 children per woman appears to be very close to the rate for Canada as a whole. However, if we take a closer look at the trend since 1986, it is evident that this province has experienced the sharpest drop, falling from 1.79 to 1.56 children per woman (Figure 4). Although Prince Edward Island had a total fertility rate significantly higher than the rest of the country in 1986, some twelve years later it reflects the national average.

Except in Newfoundland—the province with the lowest total fertility rate in Canada throughout the 1990s—there has been a narrowing of the gap in fertility behaviour among the Atlantic provinces. This phenomenon is not unlike what was noted with respect to the total divorce rate. With both the divorce and fertility rates, the behaviour of the Atlantic provinces is becoming increasingly homogeneous, while remaining below the national average.

The Prairies traditionally have total fertility rates higher than the Canadian average. Alberta, with 1.71 children per woman in 1998, is in a similar situation to that of Canada in the early 1990s. Manitoba and Saskatchewan are maintaining slightly higher rates at 1.8 children per woman, a level that Canada as a whole has not achieved in two decades. This phenomenon is explained in part by the higher fertility rate of Aboriginal peoples who are relatively more numerous in these provinces than elsewhere in the country. The second section of Figure 4 shows that, since 1986, the total fertility rate in the Prairies, as in the Atlantic

Figure 4. Total Fertility Rate, Canada and Regions, 1986-1998



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

provinces, has been moving toward the level observed for Canada as a whole, even though for each of these provinces, it has always remained higher. Saskatchewan had the highest total fertility rate in Canada between 1986 and 1993, when it was around 2.0 children per woman. Since 1993, none of the provinces has achieved a rate above 2.0 children per woman.

The change in the fertility rate in the three most populated provinces (Ontario, Quebec and British Columbia) is presented in the third section of Figure 4. Here too there is a trend toward homogeneity in reproductive behaviour although, in the case of Ontario and British Columbia, this behaviour was very similar to that of the Canadian population as a whole as early as 1986. The fertility rate at that time among Quebec women was, however, much lower than that of other Canadian women. Over the years, the gap between the fertility rate of Quebec women and that of other Canadian women has narrowed to the point where, since 1996, Quebec's total fertility rate has surpassed that of British Columbia.

It should also be noted that Quebec is the only province where the total fertility rate was higher in 1998 than in 1986. Of course, Quebec's rate was very low in 1986 and the turnaround took place mainly between 1987 and 1990. Further, only the Prairie provinces have total fertility rates that are significantly higher than the Canadian average. Not only do these three provinces have higher total rates, but the 1998 statistics reveal that, rather than moving toward the average, they are moving slightly farther away. This phenomenon is in direct contrast to the trend toward homogeneity observed in the other provinces.

#### **Fertility Rate by Birth Order by Age of the Mother**

Over the past few decades, the drop in the fertility rate has been accompanied by a shift in the fertility schedule. Therefore, it is important to take a closer look at the change in the fertility rate by birth order and by age. Fertility rates by birth order by age of the mother are determined, for each age group, by relating the number of births of each order to the total number of women in the age group in question. For each age group, the denominator therefore remains the same for all of the birth orders. This results in a distribution of births by order and by age of the mother expressed in the form of a rate. This computation adds a further dimension to the analysis of the change in intensity and in the fertility schedule.

*Between 1979 and 1998, the total first birth fertility rate fell by about 6% but this slight decline hides significant variations in the fertility schedule of nulliparous women. The drop in first birth fertility was especially steep among young women aged 15-19 years and 20-24 years for whom the rate fell 28% and 35% respectively over the whole period* (Figure 5). Compared to their younger cohorts, the fertility rate of nonparous women aged 25-29

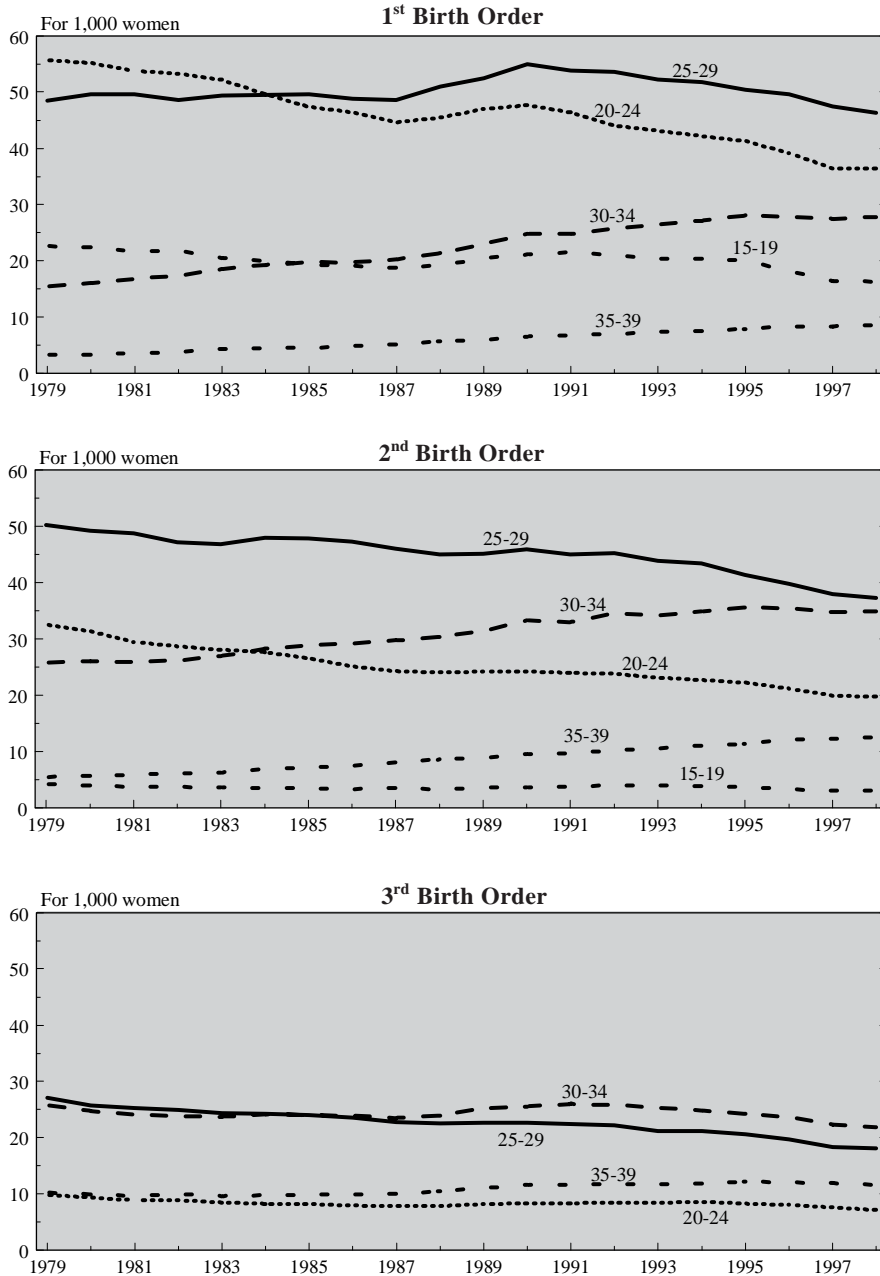


years changed only slightly over the period, falling only 5%. The drop in the first birth fertility rate of women aged 20-24 years was so pronounced that, since 1985, more women have given birth to their first child when they were 25-29 years than when they were 20-24 years. First birth fertility increased among women more than 35 years old and, while the rates remain low, since 1985 they have been higher than those of women aged 15-19 years. There has, therefore, been a postponement of the birth of the first child to an increasing older age, which is reflected in the increase in the average age of first-time mothers. This figure climbed from 24.9 years in 1979 to 26.8 years in 1998.

Of course, delaying the birth of the first child has an impact on the age at which women give birth to their second child. Between 1979 and 1998, the fertility rate of primiparous women, that is those who have already had a child, fell 8% (according to the total second birth fertility rate). As with the first birth, we see a significant ageing of the fertility schedule of women who already have one child. Although across the entire period, the second birth fertility rate always peaked among women aged 25-29 years, that rate nevertheless fell 26% between 1979 and 1998 (Figure 5). Further, the fertility rate of women aged 20-24 years with one child also fell considerably, dropping from 32.5 per 1,000 in 1979 to 19.7 per 1,000 in 1998. In contrast, the second birth fertility rate rose 35% among women aged 30-34 years. There was such an opposite evolution in the fertility rates of women aged 25-29 years and 30-34 years over the period that the difference in rates between the two groups, which was twice as high for the younger age group in 1979, had almost completely disappeared by 1998 (Figure 5). For women aged 35-39 years, the second birth fertility rate more than doubled and in 1998 was almost the same as that of women aged 20-24 years. The average age of mothers at the birth of their second child rose from 27.4 years to 29.3 years.

Beyond the second child, the fertility rate drops dramatically and the birth of a third child is now a rare event. Nevertheless, there has been a similar evolution in the fertility rates relating to the third child and subsequent children as the first and second child (Figure 5). Since 1979, the total third child fertility rate has fallen by 20%, that of the fourth child by 15 %, and that of the fifth and subsequent child by 20%. The decline is first and foremost the result of a pronounced drop in fertility among women aged 15-19 years. Among women aged 30-34 years, there has been a 15% decrease in the fertility rate for the third and subsequent child. Among those women aged 35-39 years, this rate rose 14%, but in absolute values, this increase is negligible, the rate climbing from 10.2 per 1,000 to 11.6 per 1,000. Although for the older age groups there has been greater stability, even a slight increase, in fertility rates for the third and subsequent child, these increases have been only marginal and unable to offset the drop among women younger than 30 years. Overall, fertility related to the third and subsequent births fell 19% between 1979 and 1998.

Figure 5. Fertility Rates by Age Group for Certain Birth Orders, Canada, 1979-1998



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

### **Lifetime Fertility and Total Fertility Rate**

Because of its many advantages, the total fertility rate is the indicator used most often to measure the evolution of fertility. In particular, unlike other less refined indicators, such as the crude birth rate or simply the number of births registered in a given year, the total fertility rate, given the way in which it is calculated, makes it possible to control variations in the size and in the structure by age of the population. It therefore allows for comparisons of fertility over time and region. Another advantage of the total fertility rate is that it is available quickly, given that it is based on the statistics of a single year. In this regard, it is a cross-sectional measure of fertility obtained by adding the fertility rates by age for a given year, thereby encompassing several generations of women.

This advantage is also the main disadvantage of this indicator since it can be influenced by a change in the fertility schedule. The alternative is a longitudinal measure, the lifetime (or completed) fertility rate, which is the sum of the fertility rates for the whole of the reproductive period of a single generation. This measure represents the average number of children that a single generation of women had. However, the rate can only be determined by waiting until the generation of women in question completes its reproductive period.

Figure 6 compares the evolution in the total fertility rate to that of the completed fertility rate over a long period. To make the comparison easier, the line representing the final fertility rate is shifted 28 years, which corresponds more or less to the average age at maternity.<sup>3</sup> In addition, the fertility rates have been extrapolated for generations aged 30 years and older in 1998, the last year for which we have fertility rates by age.

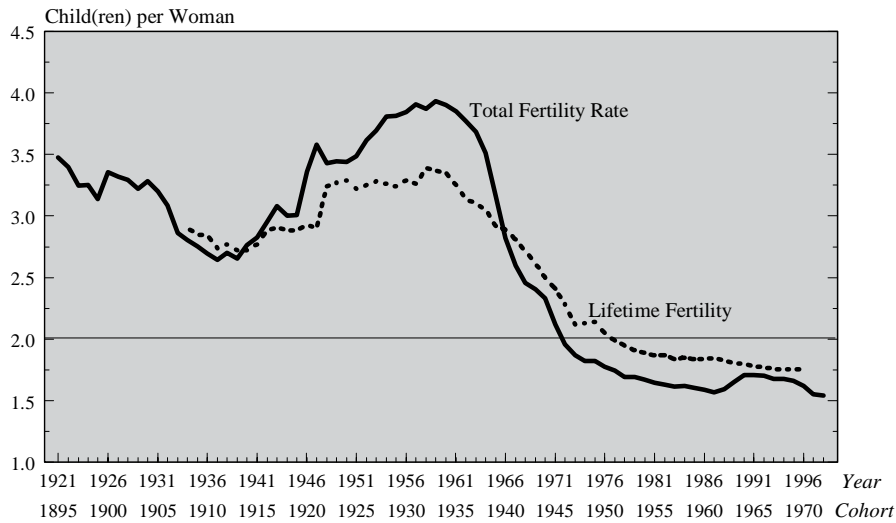
The figure shows the phenomenal growth in postwar fertility that was the origin of the baby boomers, the most numerous generations ever in Canada. It also shows a certain parallelism emerging in the two lines since, if there was no shift in the fertility schedule, these lines should converge and over the long term, the area under the two lines would necessarily be the same. Thus, it was during the baby boom period, while average age at maternity was dropping, that the two indicators were least alike. The total fertility rate was higher than 3.5 children per woman every year between 1952 and 1965, although no generation actually achieved that level, despite several coming close.

In contrast, for the most recent period, the total fertility rate fell more than the longitudinal indicator, reaching 1.54 children per woman in 1998. This is the first generation ever to record such a low completed fertility rate. Even if the fertility rates beyond 30 years were extrapolated for women born in 1968, there would appear to be a completed fertility rate of 1.8 children, a

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<sup>3</sup> The average age at maternity was about 29 years at the start of the baby boom period. It fell to 26.7 years in 1975 and rebounded again to 28.5 years in 1997.

**Figure 6. Total Fertility Rate, 1921-1998 and Lifetime Fertility 1895-1970, Canada**



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

rate 17% higher than the total fertility rate. It should be noted, however, that the lifetime fertility rate still appears to be on a downward trend even in the most recent generations, while the total fertility rate for corresponding years had stabilized around 1.6 children per woman until very recently.

The decline in fertility from the mid-sixties to late 1970s was spectacular. The total fertility rate fell from 3.2 children per woman in 1965 to 1.7 children per woman in 1980, passing in 1971 the level of 2.1 children per woman needed to ensure replacement of the generations. After this period, the rate stabilized around 1.65 children per woman until the late 1980s when there was a very slight increase (1.71 in 1991). Most recently, the rate began to fall again dropping to 1.62 children per woman in 1996 and to 1.54 children per woman in 1998. It is interesting to note that the most numerous generations ever in Canada were also the ones that were the least productive. By a strange reversal of events, the initial generations of baby boomers were also among the first to experience a fertility rate so low that it did not ensure their replacement.

### Conclusion

Fertility has reached a level never before seen in Canada. There are still differences from province to province, although those differences are narrowing

over time. Newfoundland continues to have a particularly low fertility rate, while the Prairies have the highest rate. The completed fertility rate may never reach levels as low as those of the indicators for a given time (total fertility rate). They may nevertheless come close. Although there has been a postponement of childbearing, this phenomenon has yet to translate into a large enough increase in fertility rates at the older ages to offset the drop in fertility observed among the younger ages.

Several developed countries have fertility rates below that of Canada, but some also have higher rates. The United States is unique with its fertility rate of 2.06 children per woman, which is almost at the replacement rate. In the United Kingdom (1.71), France (1.71) and Australia (1.78), fertility is slightly higher than the rates recently recorded in Canada. They are, in fact, at the levels observed in this country between 1989 and 1995. The Netherlands (1.57) and Sweden (1.52) both have fertility rates comparable to Canada's rates. However, the total fertility rate is at very low levels in several western countries. For example, in 1997, this rate was 1.36 children per woman in Germany, 1.15 in Spain and 1.22 in Italy (Monnier, 1998). In the case of the last two countries, it is possible that this very low fertility rate reflects changes in the schedule (a drop in fertility at older ages at the same time as a drop in fertility at the younger ages) since, for a long time, fertility in southern Europe has been higher. Lastly, it should be noted that these national averages, as is the case with Canada, hide even lower levels in some major regions, such as the rate of 0.77 children per woman in East Germany in 1994, a rate that is climbing slowly but which still had not achieved 1.0 children per woman in 1996.

## **MORTALITY**

Between the publication of the last Report on the Demographic Situation and the current one, no new statistics on deaths have been released. It is therefore not possible to analyse the latest trends in this field, as is traditionally done for the various components of demographic change in the first part of the Report. The recurring tables usually published in the section on mortality are reprinted in the appendix (Tables A8 and A9). The reader is invited to consult the 1998-1999 Report for the related comments. By way of compensation, the second part of this year's report contains an original analysis of the evolution of mortality among persons aged 60 and over, according to the associated causes of death.

## INTERNATIONAL IMMIGRATION

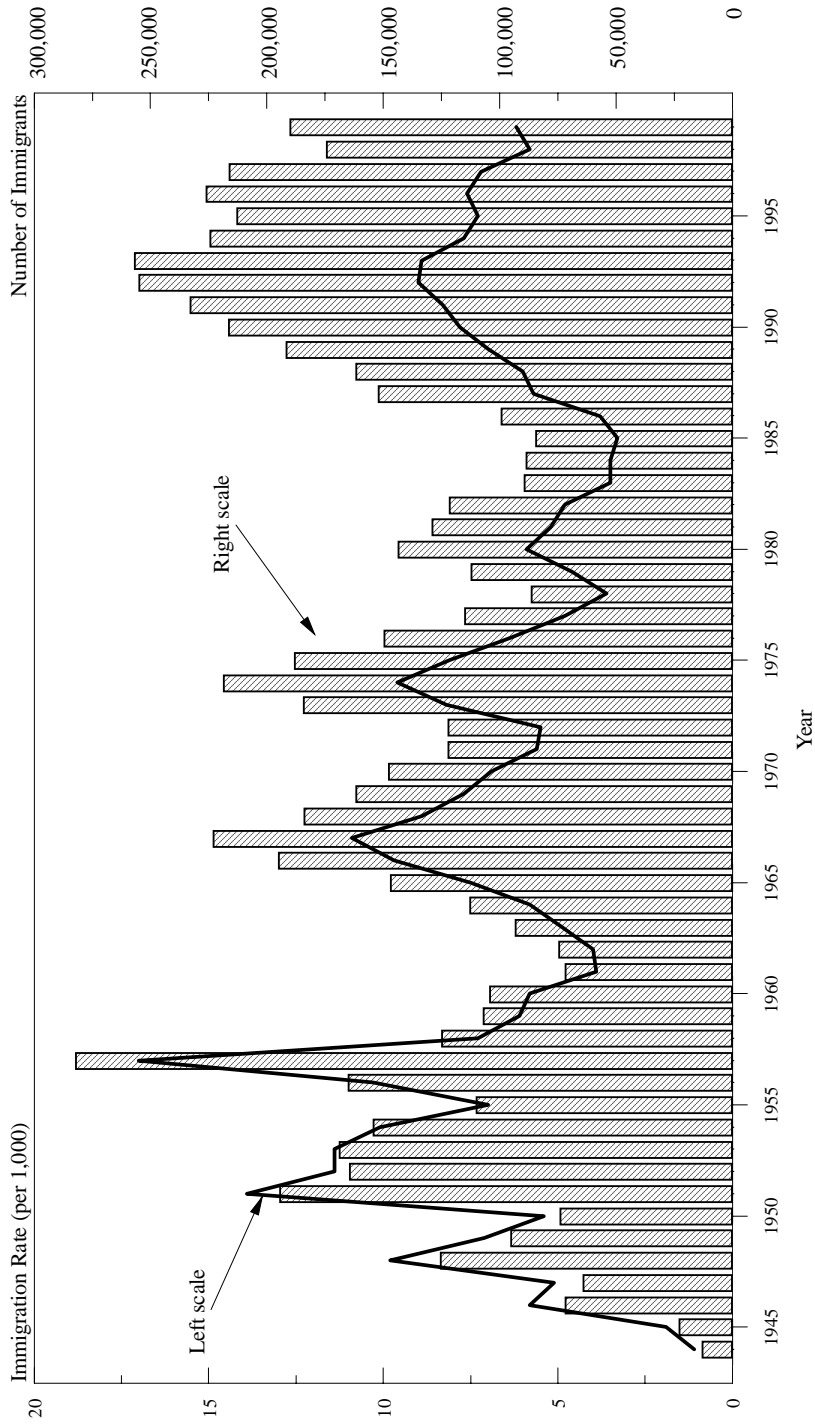
International immigration is a growing phenomenon worldwide. In 1999, the United Nations Population Fund (UNFPA) estimated that 125 million people were living outside their country of origin. In the past twenty years, 3.5 million immigrants have settled in Canada, and the 1996 Census showed that 4.9 million people in Canada, or 18% of the population, were born abroad. Proportionally speaking, Canada is one of the countries that receives the most permanent immigrants.

*In 1999, Canada admitted 190,000 immigrants*, a number comparable to 1989, at the start of the last wave of immigration (Figure 7). *This is a substantial increase from the previous year, with nearly 16,000 (9%) more immigrants than were admitted in 1998.* The rate of international immigration was also up, at 6.2 per 1,000.

It should be noted, however, that the 174,200 immigrants admitted in 1998 represented a low point in recent trends in Canadian immigration. Since 1990, Canada has granted immigrant status to more than 200,000 persons per year, with peaks exceeding 250,000 in 1992 and 1993. These relatively high immigration levels were equal to or greater than the levels set out in the annual plans established for each of those years. On the other hand, the increase in immigration observed in 1999 is not sufficient to meet the objectives set out in the Immigration Plan for 1999, since just over 22,000 more immigrants would be required in order to reach the average level of 212,500 set out in the plan (Table 3). It was primarily with respect to the economic class that the Plan's objectives were unmet. The number of economic-class immigrants fell approximately 19,000 short of the figure set out in the Plan. As to the number of immigrants admitted under the family reunification policy (family class) or humanitarian aid (refugees), the objectives of the Immigration Plan were achieved, since in both cases the number of immigrants admitted—55,300 and 24,400 respectively—fell within the range of the target levels. Thus, while 1999 showed considerable improvement, the years 1998 and 1999 stand out from the previous years by the fact that for each of those years, the planned levels were not reached.

All classes of immigrants (except the "other" class, which is in any event relatively small) saw an increase in their numbers between 1998 and 1999. The increase was roughly of the same magnitude for the three main immigrant classes as for the whole. *The largest increase was for economic immigrants, whose numbers reached 105,500, an increase of 10,500 (11%) from the previous year.* Under the family component of the immigration policy, the number of immigrants admitted reached 55,300, an increase of about 4,400

Figure 7. Number of Immigrants and Immigration Rate, Canada, 1944-1999



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

**Table 3. Number of Observed Immigrants and Number Planned by Class According to the Immigration Plan, Canada, 1999**

Class	Number Planned	Observed Number		
		Number	Difference <sup>2</sup>	
			Number	Percentage
Family	53,500 - 58,300	55,255	-645	-1.2
Economic	117,900 - 130,900	105,444	-18,956	-15.2
Other <sup>1</sup>	6,500	4,831	-1,669	-25.7
Total immigrants	177,900 - 195,700	165,530	-21,270	-11.4
Total refugees	22,100 - 29,300	24,376	-1,324	-5.2
Total	200,000 - 225,000	189,906	-22,594	-10.6

<sup>1</sup> Includes live-in caregivers, special categories and provincial/territorial nominees.

<sup>2</sup> The difference is calculated using the average number planned for each class.

**Source:** Citizenship and Immigration Canada, *Canada - A Welcoming Land: 1999 Annual Immigration Plan*, catalogue no. Ci1-1999.

(8%). Lastly, Canada admitted 1,700 more refugees in 1999 than in 1998, an increase of 7%, bringing their number to 24,400.

Hence the percentage distribution of immigrants by class changed very little. *Economic immigrants still accounted for just over 55% of the total. Following them were those admitted according to the criteria of the family component of the policy and refugees, who accounted for roughly a third and 13% of the total respectively.* While this distribution by immigrant class has remained relatively stable since 1996, it contrasts with the pattern during the 1980s and the early 1990s, when the family class and, to a lesser extent, the refugee class represented a larger share of the whole than at present.

Over the past twenty years, this was only the fourth time that the number of economic immigrants passed the 100,000 mark. In 1980, fewer than 50,000 were admitted, and they represented only 32% of all immigrants. Changes were made to the immigration policy, partly with a view to attracting more economic immigrants, and their numbers began increasing substantially starting in 1987. Ten years later (in 1997), there were 125,500 economic immigrants, the highest number in two decades. Since the early 1980s, Canada has admitted more than 1.5 million immigrants under the economic component of the policy (Table 4).

### Origin of Immigrants

The immigrant population has widely varying origins. According to data from Citizenship and Immigration Canada, immigrants admitted in 1999 came from 213 countries or independent states. Over time, this diversity has



**Table 4. Immigrants to Canada by Class, 1980-1999**

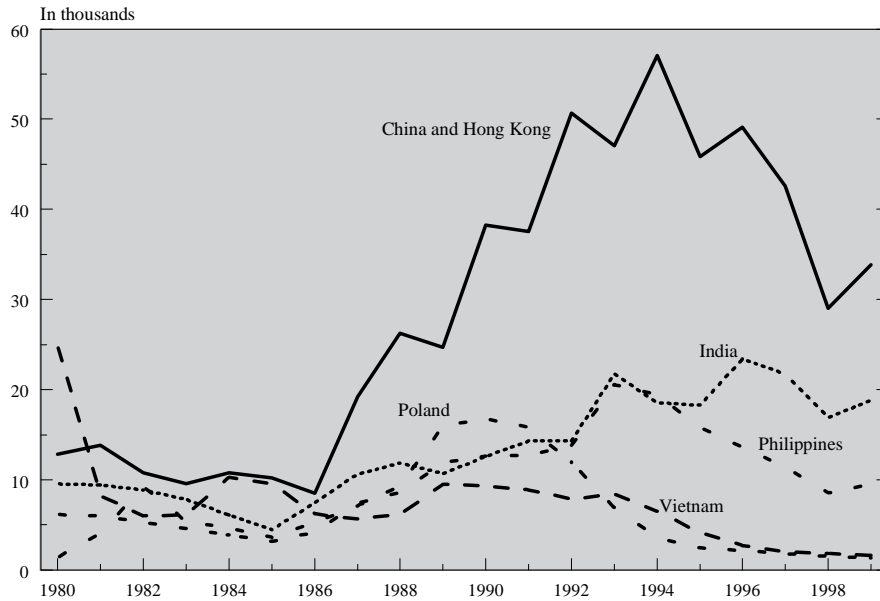
Year	Family	Economic	Refugees	Others <sup>1</sup>	Total
	Number				
1980	49,440	46,431	40,658	6,969	143,498
1981	50,534	56,702	15,062	6,495	128,793
1982	50,186	51,148	17,002	2,994	121,330
1983	48,987	24,186	14,064	2,140	89,377
1984	44,593	26,095	15,556	2,353	88,597
1985	39,355	26,112	16,769	2,102	84,338
1986	42,469	35,837	19,199	1,835	99,340
1987	53,796	74,099	21,465	2,666	152,026
1988	51,396	80,221	26,739	3,172	161,528
1989	60,938	90,136	36,863	3,570	191,507
1990	74,365	95,637	36,100	10,314	216,416
1991	85,941	80,007	35,880	30,935	232,763
1992	96,792	82,283	37,022	38,751	254,848
1993	110,439	95,655	24,894	25,770	256,758
1994	93,716	96,571	19,750	14,353	224,390
1995	77,227	100,905	27,763	6,970	212,865
1996	68,319	120,277	28,342	9,107	226,045
1997	59,957	125,467	24,131	6,465	216,020
1998	50,881	94,971	22,700	5,612	174,164
1999	55,255	105,444	24,376	4,831	189,906
	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	42.8	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
1999	29.1	55.5	12.8	2.5	100.0

<sup>1</sup> 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 September 26, 2000.

**Source:** Citizenship and Immigration Canada, unpublished data.

**Figure 8. Number of Immigrants According to the Five Main Countries of Birth, Canada, 1980-1999**



**Note:** Data is preliminary as of September 26, 2000.

**Source:** Citizenship and Immigration Canada, unpublished data.

contributed to the changing of Canada's demographic landscape. On this score, at the 1996 Census, nearly a third of the Canadian population had roots other than Canadian, British or French.<sup>4</sup>

In Canada, the period from 1997 to 1998 was marked by a sizable drop in international immigration. During 1998, 42,900 fewer immigrants were admitted than in the previous year. Of the 42,900 fewer immigrants, some 37,000 were attributable to a decrease in immigrants of Asian origin. The increase in 1999 was also Asian, with some 11,000 of the 16,000 additional immigrants having as their place of birth a country in southern or eastern Asia. This is hardly surprising, since that part of the world has for some time been the largest source of Canadian immigration. As far back as the early 1980s, a majority of immigrants were of Asian origin. Together, China<sup>5</sup> (577,700), India (267,500), the Philippines (199,300) and Vietnam (145,900)

<sup>4</sup> Statistics Canada. "1996 Census: Ethnic Origin, Visible Minorities", The Daily, February 17 1998.

<sup>5</sup> Immigrants from China and Hong Kong are now counted together. Over the period from 1980 to 1999, there were 294,300 from China and 283,400 from Hong Kong.

**Table 5. Countries of Birth from Which more than 2,000 Immigrants Came to Canada in 1997, 1998 and 1999**

Country of Birth	1997	1998	1999	Difference between 1997 and 1998	Difference between 1998 and 1999
<b>AFRICA</b>					
Algeria	1,795	2,251	2,363	456	112
Egypte	2,043	1,298	1,245	-745	-53
<b>AMERICA</b>					
United States	4,403	4,142	4,910	-261	768
Jamaica	2,870	2,260	2,362	-610	102
<b>ASIA</b>					
Afghanistan	2,307	2,056	2,268	-251	212
Bangladesh	3,272	2,101	2,009	-1,171	-92
China	24,747	22,701	31,050	-2,046	8,349
South Korea	4,108	4,891	7,208	783	2,317
Hong Kong <sup>1</sup>	17,807	6,348	2,801	-11,459	-3,547
India	21,710	16,903	18,831	-4,807	1,928
Iran	7,889	6,996	6,200	-893	-796
Iraq	2,573	1,869	2,037	-704	168
Pakistan	12,178	8,423	9,575	-3,755	1,152
Philippines	11,411	8,540	9,518	-2,871	978
Sri Lanka	5,342	3,537	4,938	-1,805	1,401
Taiwan	12,785	6,946	5,314	-5,839	-1,632
Vietnam	2,004	1,826	1,622	-178	-204
<b>EUROPE</b>					
France	2,310	2,999	3,177	689	178
Great Britain	3,921	3,266	3,769	-655	503
Romania	4,048	3,082	3,571	-966	489
Ex USSR	10,791	11,911	10,655	1,120	-1,256
Russia	4,221	4,733	4,374	512	-359
Ukraine	2,638	2,744	2,821	106	77
Others	3,932	4,434	3,460	502	-974
Ex Yougoslavia	6,788	6,448	6,340	-340	-108
Bosnia-Hercegovina	2,211	2,491	2,425	280	-66
Others	4,577	3,957	3,915	-620	-42

<sup>1</sup> Includes Hong Kong SAR (Special Administrative Region), since July 1, 1997.

**Note:** Data is preliminary as of September 26, 2000.

**Source:** Citizenship and Immigration Canada, unpublished data.

accounted for more than a third of all immigrants admitted during this 20 year period (Figure 8). Again this year, *Canadian immigration was primarily Asian, and of the 190,000 new arrivals, 113,300 (60%) were from Asia. They came primarily from China<sup>6</sup> (33,900), India (18,800), Pakistan (9,600) and the Philippines (9,500).* The change in the number of Asian immigrants had a substantial impact on the total number of immigrants admitted to Canada (Table 5).

<sup>6</sup> Includes natives of Hong Kong.

During the last year, immigration from China showed the greatest increase. After declining between 1996 and 1998, the number of Chinese nationals admitted to Canada increased by 4,800 (16%) in 1999. Similarly, the number of immigrants from South Korea increased substantially to 7,200, the highest level since 1981. Compared with the previous year, this was a sharp increase of 47%, or 2,300 persons. Sri Lanka was a third country to show a sizable increase. For the first time in the past five years, the number of Sri Lankan immigrants was up, from 3,500 in 1998 to 4,900 in 1999, an increase of 1,400 (39%) from 1998. The number of Filipinos settling in Canada was also up, although the 9,500 Filipino immigrants admitted in 1999 were still far fewer than the 20,500 admitted in 1993.

The proportion of immigration from other regions of the world has remained relatively stable, apart from immigration from Africa and North and Central America, which posted an increase of nearly 14%. However, in absolute numbers this increase amounts to scarcely 2,000 and 1,000 additional immigrants for these two regions in comparison with the numbers admitted in 1998. Immigration from African countries totalled approximately 16,500 persons, a distant third behind both Asia and second-ranking Europe, which supplied nearly 39,000 immigrants. Europeans accounted for just over 20% of all immigrants admitted to Canada. From that part of the world, it was primarily immigrants from states of the former USSR that showed the greatest change in absolute numbers, dropping from 11,900 immigrants in 1998 to 10,700 the following year.

### **Immigrant Classes and Place of Birth**

As is the case with immigrants in general, a substantial majority of economic immigrants are from Asia. In 1999, more than 65% (68,900) of economic immigrants were born in Asia, compared with only about 20% (21,300) from Europe. Of all Asian immigrants admitted to Canada in 1999, 61% (68,900) were admitted under the economic category. They came mainly from China<sup>7</sup> (26,400), India (8,300), South Korea (6,600) and Pakistan (5,800). Of the ten main countries of birth of immigrants in this class, only three were non-Asian: Russia (in seventh place), France (eighth place) and the United States (tenth place) with respectively 3,200, 2,800 and 2,500 immigrants (Table 6).

Even though the number of economic immigrants admitted during the last five years reached high levels, an analysis of past trends shows that this class is subject to sizable variations. For example, the number of economic immigrants declined by half from 1982 to 1983, reaching its lowest level for the period from 1980 to 1999. Conversely, the number of such immigrants more than doubled from 1986 to 1987.

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<sup>7</sup> Includes Hong Kong.

**Table 6. Number of Immigrants According to the 10 Main Countries of Birth by Class, Canada, 1999**

Country of Birth	Category				Total
	Economic	Family	Refugees	Others (includes backlog)	
China and Hong Kong	26,379	6,682	484	306	33,851
India	8,268	9,792	693	78	18,831
Pakistan	5,837	2,484	1,084	170	9,575
Philippines	2,410	4,117	4	2,987	9,518
South Korea	6,584	612	3	9	7,208
Iran	4,000	731	1,438	29	6,198
Taiwan	4,915	395	0	4	5,314
Sri Lanka	688	1,579	2,618	52	4,937
United States	2,493	2,381	23	13	4,910
Russia	3,231	804	241	98	4,374

Source: Citizenship and Immigration Canada, unpublished data.

Even though the targeted average of 124,400 economic immigrants was not attained, this year's level was nevertheless higher than last year's. Provided the economic climate remains favourable to immigration, the number of immigrants in this class may be expected to rise in the coming years. This is borne out by the preliminary data for the months of January to October 2000. During that period, Canada admitted 112,500 economic immigrants, compared with 89,700 for the same period in 1999. If the trend continues, Canada should admit 115,000 by the end of 2000. Similarly, if the level of immigration in the family and refugee classes is maintained, the total number of immigrants for 2000 should be in the range of 220,000.

More family-class immigrants were also admitted in 1999. Their number rose by 4,400 to 55,300, up 8.6% from 1998. While this number is consistent with the forecasts in the Immigration Plan, it falls far short of the levels recorded in the early 1990s. For example, it is half the level recorded in 1993, the year when the greatest number of family-class immigrants were admitted.

Just as with the economic class, persons from Asia were strongly predominant among family-class immigrants. They accounted for 58% of immigrants in that class (32,200), compared with 15% (8,300) from Europe and 26% (14,700) from the rest of the world. With 9,800 family-class immigrants, or 18% of the total, India is the dominant country of origin for this class. China (6,700), the Philippines (4,100), Pakistan (2,500) and the United States (2,400) are also among the five main regions, but with a smaller contribution. For immigrants of this class, the distribution by country of origin in 1999 does not greatly differ from what was observed throughout the period 1980 to 1999. Over that period, some 1,264,600 immigrants entered Canada

in the family class. India, with 189,000 immigrants, was dominant in this class, followed by China in second place with 122,500. The United States, with 61,400 immigrants admitted since 1980, is also one of the five main countries of birth of immigrants admitted in this class.

Refugees are the third class of immigrants under Canada's immigration policy. These are persons fleeing armed conflict, political oppression or any other circumstances that could endanger their life. According to United Nations data, there were 14.9 million refugees throughout the world in 1990, and 21.5 million almost a decade later. This increase in the number of refugee worldwide is due to the major crises that have erupted, notably in the Balkans (Bosnia-Herzegovina, Kosovo), Chechnya and East Timor. Added to these are humanitarian problems (floods, famine, etc.) that have arisen in parts of Africa and Asia. Indeed, Asia is the source of the largest proportion of refugees, with 35% of all refugees worldwide. Africa and Europe each account for 29%, and North America, 6%. In 1999, the major industrialized countries received 530,000 applications for political asylum. Applications to Germany (95,100), the United Kingdom (71,200) and Switzerland (46,100) accounted for 40% of the total. Canada, ranking ninth, received 5% (29,400) of these 530,000 applications. It accepted just over a third (11,800). Among countries having a refugee resettlement program for victims of persecution, Canada ranks highly, directly behind the United States. For 1999, the number of refugees receiving resettlement assistance stood at 85,000 in the United States and 17,100 in Canada.<sup>8</sup>

All categories of refugees combined, 24,400 persons were admitted to Canada in 1999. The two main countries of origin were Sri Lanka (2,600) and Bosnia (2,300). In the case of Sri Lanka, the social and political violence stemming from the conflict between the government and Tamil separatists has led many Sri Lankans to seek exile in host countries since the early 1990s. Since 1990, Canada has admitted 31,500 Sri Lankan refugees, including 6,000 at the height of the crisis in 1995. The arrival of Bosnian refugees is a more recent phenomenon. Canada received the first contingent of 70 refugees in 1992. The number peaked at 4,100 in 1994 and subsequently stabilized at approximately 2,400 persons per year.

Over a longer period, however, the greatest numbers of refugees admitted to Canada have come from Vietnam and Poland. The past twenty years have seen 504,300 refugees admitted to Canada, with two major waves marking the period. The first wave, which resulted from the change in political regime following the American withdrawal from Vietnam and the armed conflicts that subsequently dragged on in Southeast Asia, began shortly before 1980. It is estimated that more than 400,000 Vietnamese left their country during

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<sup>8</sup> The figures cited in this paragraph were obtained from the Office of the United Nations High Commissioner for Refugees and Immigration Canada (Web site).

the period from 1978 to 1984. In 1980, Canada alone admitted 24,000 Vietnamese refugees. Another major wave of refugees, this time from Poland, began in the late 1980s. Over the past twenty years, 71,400 Poles have found refuge in Canada, half of them between 1989 and 1991.

### **Destination of Immigrants**

The number of immigrants admitted to Canada conceals great regional variations, since some destinations are more preferred by the newcomers. *Ontario has long been exceptionally attractive to immigrants. In the past decade, it has consistently attracted more than half of international immigrants. This dominance continued in 1999, with some 104,000 newcomers choosing Ontario as their province of destination, representing 55% of all immigrants admitted. British Columbia and Quebec were the other two provinces receiving the greatest number of immigrants, although in more modest proportions. They received respectively 19% (36,100) and 15% (29,200) of immigrants.* Canada's other provinces and territories seemed much less attractive to international immigrants. Fewer than 11% of immigrants chose to settle in those areas, with more than half of that proportion (6%) going to Alberta (Table 7).

It is interesting to examine the distribution of immigrants admitted by province of destination and class. An analysis of destination by immigrant class reveals that one quarter of immigrants settling in Quebec were refugees, while the corresponding proportion in Ontario was only 11.5% and in British Columbia, 5.3%. Prince Edward Island was the province with the highest proportion of refugees, although the numbers were small: nearly half of the 138 immigrants settling in that province were refugees.

On the other hand, Ontario and British Columbia received a larger share of their immigrants under the economic component of the policy. Whereas the economic class accounts for 55.5% of all immigrants at the national level, it accounts for 58% of immigrants choosing Ontario and 60% of those settling in British Columbia. However, Yukon has the highest proportion of economic immigrants (62%). But here again the numbers are small, and this proportion represents only 49 persons. This is very few, compared to the 60,200 economic immigrants received by Ontario.

For the family class, the differences between provinces are smaller than for the economic and refugee classes. Immigrants in the family class represent 29% of immigrants to Canada as a whole, compared with 26% for Quebec, 29% for Ontario and 30% for British Columbia. Newfoundland is the province with the smallest proportion of family-class immigrants, namely 16% of all immigrants received (Figure 9 and Table 8).

Figure 10 shows some differences in the distribution of immigrants by place of birth and province of destination. Immigrant networks have developed

**Table 7. Percentage Distribution of Landed Immigrants by Intended Province of Destination, Canada, 1971-1999**

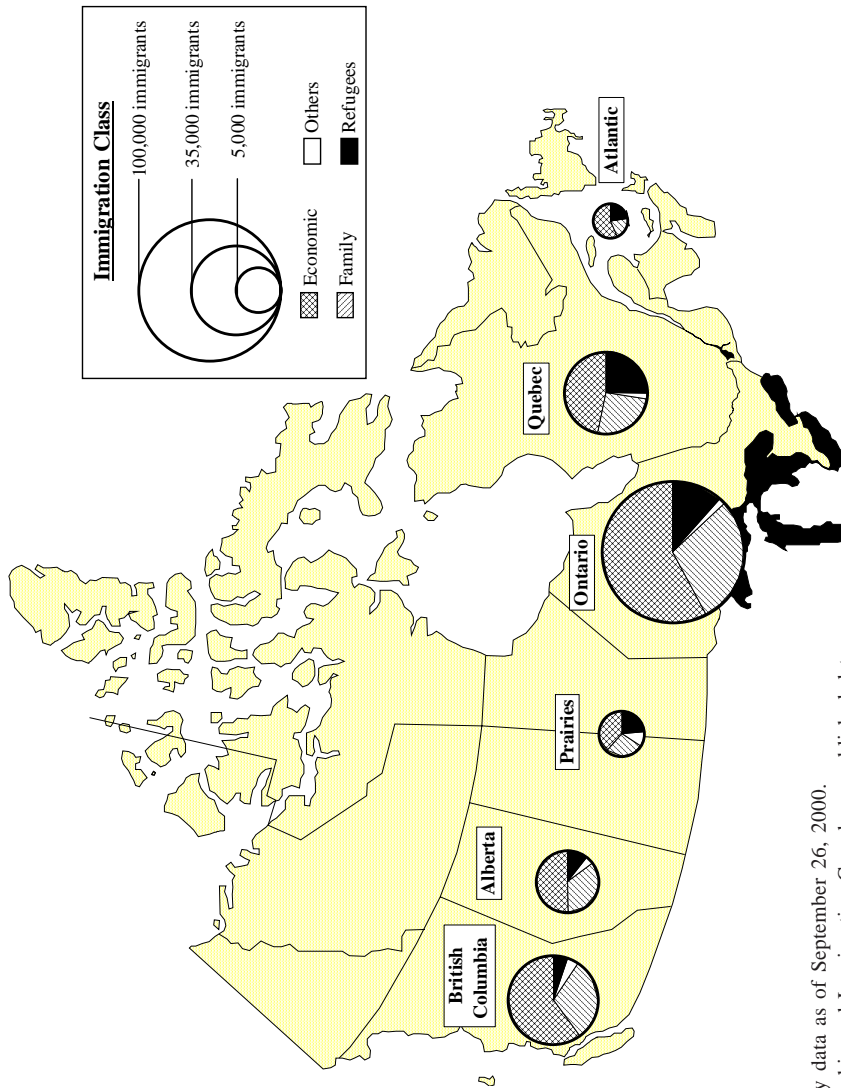
Province	Year													
	1971	1981	1986	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Newfoundland	0.7	0.4	0.3	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2
Prince Edward Island	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Nova Scotia	1.5	1.1	1.1	0.8	0.7	0.6	0.9	1.2	1.5	1.7	1.4	1.3	1.2	0.8
New Brunswick	0.9	0.8	0.6	0.5	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4
Quebec	15.8	16.4	19.6	17.7	18.9	22.3	19.2	17.5	12.5	12.8	13.2	12.9	15.3	15.4
Ontario	52.8	42.7	50.0	54.6	52.9	51.5	54.6	52.5	52.4	54.4	53.0	54.5	52.9	54.8
Manitoba	4.3	4.2	3.8	3.2	3.1	2.4	2.0	1.9	1.8	1.7	1.7	1.7	1.7	2.0
Saskatchewan	1.2	1.9	1.9	1.1	1.1	1.1	1.0	0.9	1.0	0.9	0.8	0.8	0.9	0.9
Alberta	7.1	15.0	9.7	8.4	8.8	7.3	7.0	7.2	8.0	6.7	6.1	5.9	6.4	6.4
British Columbia	15.5	17.1	12.6	13.2	13.4	13.9	14.5	17.9	21.9	20.9	23.0	22.2	20.7	19.0
Yukon, Northwest Territories and Nunavut	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	—	0.3	0.1	0.1	0.2	0.2	0.1	0.1	0.1	—	—	—	—	—
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	99,340	191,507	216,417	232,764	254,848	256,758	224,390	212,865	226,045	216,020	174,164	189,906

Note: Preliminary data as of September 26, 2000.

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



Figure 9. Destination of Immigrants by Province and Class, 1999



Note: Preliminary data as of September 26, 2000.  
Sources: Citizenship and Immigration Canada, unpublished data.

**Table 8. Number of Immigrants and Distribution (in Percent) by Province of Destination and Class, Canada, 1999**

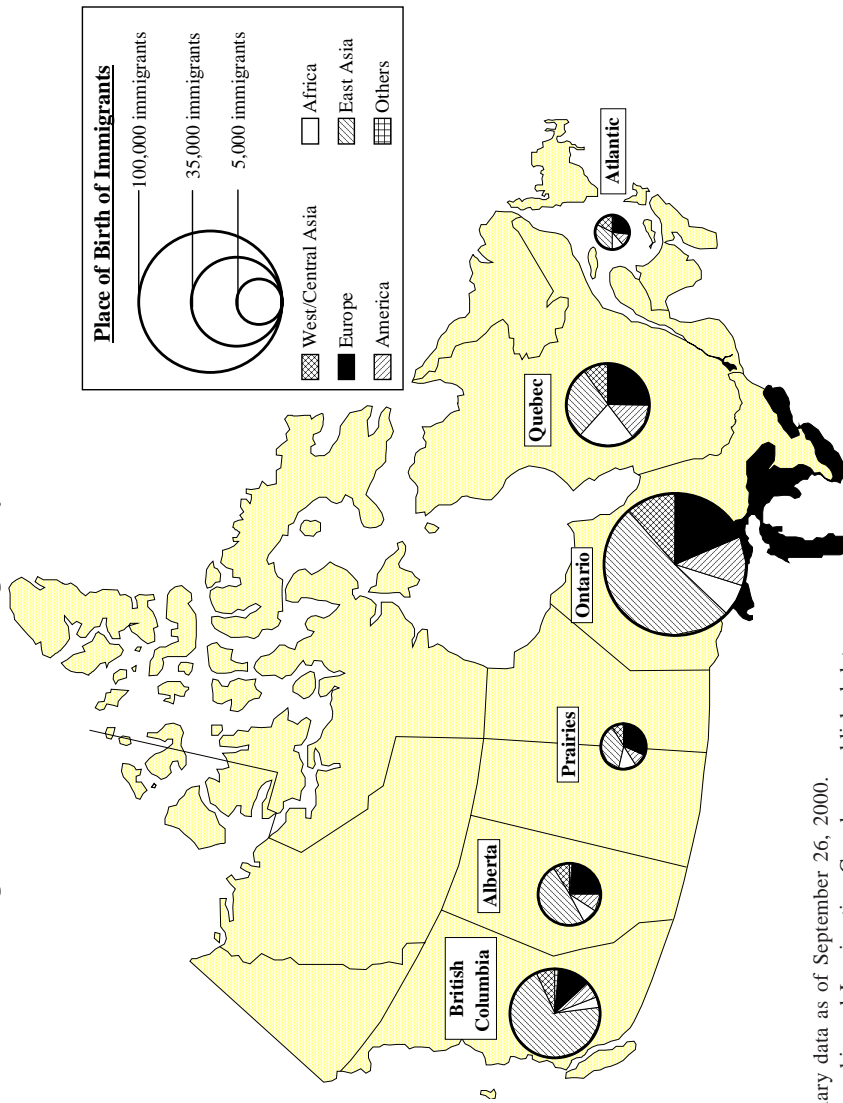
Province	Family	Economic	Refugees	Others <sup>1</sup>	Total
Number					
Newfoundland	69	202	157	3	431
Prince Edward Island	32	39	67	—	138
Nova Scotia	330	1,016	262	2	1,610
New Brunswick	170	351	151	—	672
Quebec	7,548	13,658	7,333	650	29,189
Ontario	30,384	60,188	11,941	1,539	104,052
Manitoba	1,027	1,433	771	484	3,715
Saskatchewan	451	663	511	99	1,724
Alberta	4,180	6,082	1,286	522	12,070
British Columbia	10,991	21,749	1,896	1,462	36,098
Yukon	25	49	—	5	79
Northwest Territories	22	17	—	22	61
Nunavut	5	1	—	—	6
Not Stated	22	37	2	—	61
Total	55,256	105,485	24,377	4,788	189,906
Distribution by Province (%)					
Newfoundland	0.1	0.2	0.6	0.1	0.2
Prince Edward Island	0.1	—	0.3	—	0.1
Nova Scotia	0.6	1.0	1.1	—	0.8
New Brunswick	0.3	0.3	0.6	—	0.4
Quebec	13.7	12.9	30.1	13.6	15.4
Ontario	55.0	57.1	49.0	32.1	54.8
Manitoba	1.9	1.4	3.2	10.1	2.0
Saskatchewan	0.8	0.6	2.1	2.1	0.9
Alberta	7.6	5.8	5.3	10.9	6.4
British Columbia	19.9	20.6	7.8	30.5	19.0
Yukon	—	—	—	0.1	—
Northwest Territories	—	—	—	0.5	—
Nunavut	—	—	—	—	—
Not Stated	—	—	—	—	—
Total	100.0	100.0	100.0	100.0	100.0
Distribution by Class (%)					
Newfoundland	16.0	46.9	36.4	0.7	100.0
Prince Edward Island	23.2	28.3	48.6	—	100.0
Nova Scotia	20.5	63.1	16.3	0.1	100.0
New Brunswick	25.3	52.2	22.5	—	100.0
Quebec	25.9	46.8	25.1	2.2	100.0
Ontario	29.2	57.8	11.5	1.5	100.0
Manitoba	27.6	38.6	20.8	13.0	100.0
Saskatchewan	26.2	38.5	29.6	5.7	100.0
Alberta	34.6	50.4	10.7	4.3	100.0
British Columbia	30.4	60.2	5.3	4.1	100.0
Yukon	31.6	62.0	—	6.3	100.0
Northwest Territories	36.1	27.9	—	36.1	100.0
Nunavut	83.3	16.7	—	—	100.0
Not Stated	36.1	60.7	3.3	—	100.0
Total	29.1	55.5	12.8	2.5	100.0

<sup>1</sup> 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 September 26, 2000.

**Source:** Citizenship and Immigration Canada, unpublished data.

Figure 10. Destination of Immigrants by Province and Place of Birth, 1999



Note: Preliminary data as of September 26, 2000.  
Sources: Citizenship and Immigration Canada, unpublished data.

over time, and as a result, some groups tend to favour one province over another. In the case of Quebec, knowledge of French may be a major asset. A majority of immigrants settling in the main province of destination, namely Ontario, list an Asia country (China, India, etc.) as their place of birth. For every 1,000 immigrants arriving in Ontario, 517 are born in East Asia, 184 in Europe, 114 in the rest of the Americas, 114 in West/Central Asia and 71 in Africa. The presence of large Chinese and Indian communities in Ontario offers networks favourable to the integration of newcomers of these same origins, since it is often easier and more pleasant, and indeed more advantageous, for newcomers to be in a community where they can maintain close ties with their own culture. For British Columbia, the second-ranking province of destination, the proportion of immigrants from East Asia is even greater than for Ontario. Indeed, British Columbia is known for the large proportion of persons of Asian origin in its population. Thus, for every 1,000 immigrants who go to British Columbia, 714 are born in East Asia, compared to only 119 in Europe. The remaining 167 are unequally divided between West/Central Asia (69), the Americas (62) and Africa (37).

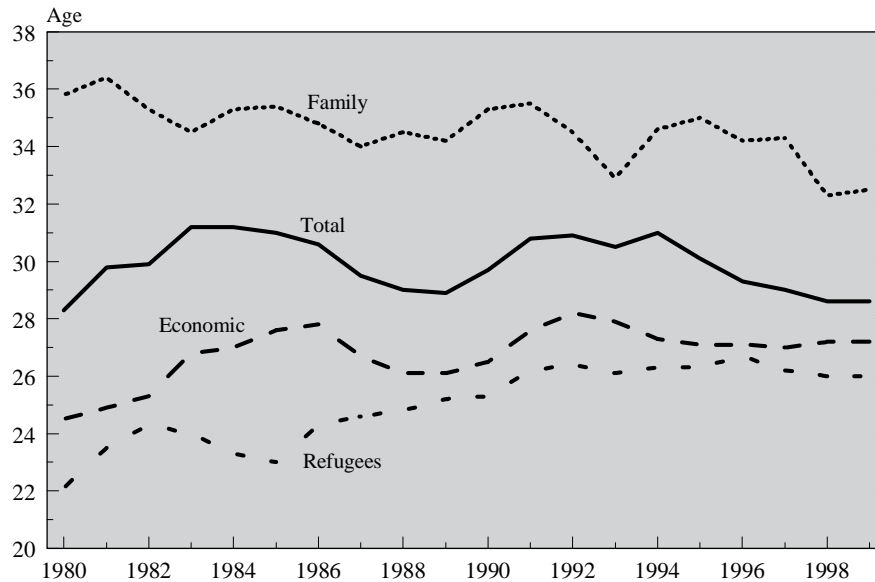
Not surprisingly, the linguistic distinctiveness of Quebec is reflected in the composition of its immigrant population. In terms of place of origin, its immigrant numbers differ markedly in their makeup from those of Ontario and British Columbia. The three major regions—East Asia, Europe and Africa—are represented in practically the same proportions. In order of numerical importance, immigrants from East Asia represent 29%, those from Europe, 25% and those from Africa, 22% of all those arriving in Quebec. Immigrants from other places in the Americas and from West/Central Asia account for respectively 14% and 10%. The sizable share of immigrants from West/Central Asia may be explained by the large numbers from the Middle East—especially Lebanon, but also Iran and Afghanistan.

### **Age and Sex of Immigrants**

Considering the aging of the Canadian population, it seems important to analyse the composition of Canadian immigration by sex and age. During the period from 1980 to 1999, the average age of immigrants has shown little variation, ranging between 28 and 32 from one year to the next. This is a few years less than the average age of the Canadian population as a whole, which is roughly 36. However, there are sizable differences between classes on this score. ***In 1999, the average age of immigrants in the economic class was 27.2, those in the family class, 32.5, and refugees, 26.0. For all classes combined, the average age was 28.6*** (Figure 11).

A comparison of the average age of male immigrants and female immigrants shows that male newcomers tended to be younger than their female counterparts. In the period from 1980 to 1999, the average age of male immigrants on arrival in Canada was consistently lower than that of female immigrants. However,

Figure 11. Trend in the Average Age by Class, Canada, 1980-1999



Note: Preliminary data as of September 26, 2000.

Source: Citizenship and Immigration Canada, unpublished data.

the gap narrowed over time. In 1980, the age difference between males and females was about two years, whereas twenty years later it was only one month.

The traditional image of the immigrant is that of a young man, often single or sometimes with a young family, who seeks to settle in a new country and work there, in hopes of doing better in his adoptive country than in his homeland. The age distribution of immigrants shows that the reality is more complex than this image would suggest. Indeed, the age distribution of Canada's immigrant population does not differ as much as might be imagined from that of the Canadian population as a whole. When the sex ratio—the ratio of males to females—is taken into account, another piece of the traditional image of the typical immigrant falls away. In the Canadian population as a whole, females outnumber males; the sex ratio is 98. For the immigrant population, the ratio is somewhat lower. From 1980 to 1999, Canada received 1,817,000 female immigrants and 1,739,700 male immigrants. This means that for every 100 females who settled in Canada, there were 96 males.

Of the six main source countries in 1999, immigrants from the Philippines, China, Korea and India all presented sex ratios under 100 over the 1980-1999

period (respectively 68, 89, 92 and 99). In contrast, a majority of the arrivals from the other two main source countries, Iran and Pakistan, were males. Iranian-born immigrants in particular have a high sex ratio, with 124 males for every 100 females, while the ratio for Pakistani immigrants was 118.

### **Conclusion**

The 190,000 international immigrants admitted in 1999 represent a 9% increase over the previous year's numbers. The increase was reflected in all classes of immigrants; however, it was the economic class that showed the strongest growth with an increase of 11%. Furthermore, this class was the largest one, since 55% of all immigrants were admitted under the economic class. Ontario continued to be the most attractive province for newcomers with 55% of immigrants choosing it as their province of destination, compared to 19% for British Columbia and 15% for Quebec.

## INTERNAL MIGRATION

Today as in the past, migratory movements are quite often driven by economic motivations. Regions with booming economies become generally prized by persons intending to migrate. Conversely, regions with slow-growing or declining economies often have negative net migration. In Canada, regional variations in economic growth change internal migratory flows. With regional differences in natural growth tending to diminish, internal migration has a direct impact on differential regional growth rates and the spatial redistribution of the Canadian population.

### Interprovincial Migration

According to preliminary data based on child tax benefit files, the number of interprovincial migrants for 1999 is estimated at 303,000 (Table 10). Expressed as a percentage, this means that 1% of Canadians permanently migrated from one province to another. A closer look at the distribution of migratory exchanges reveals major shifts, especially in the Maritime provinces—*Prince Edward Island, Nova Scotia and New Brunswick. Those three provinces, which had a negative balance in 1998 (Table 9), posted a positive balance in 1999*. All three showed increased inflows and decreased outflows, with the result that their migration balance favoured an increase in their population. Newfoundland, while it still had a negative balance, saw an increased number of in-migrants and a sizable decrease in the number of out-migrants in 1999. It is possible that the recent discoveries of oil and gas reserves off the east coast of Newfoundland have served to slow the population decrease observed in this province since 1993, although the impact of this growth industry is still modest from a strictly demographic standpoint.

*In absolute numbers, the most notable changes occurred in Alberta. That province, which had a gain of 40,100 migrants last year, saw that gain drop to 14,000 in 1999 (Table 11). This decrease is attributable both to sharply decreased inflows from British Columbia and Ontario and to much larger outflows to those same provinces.* These two patterns also explain the improvement in British Columbia's balance. The latter province, which registered migratory losses for a second straight year, nevertheless reduced its negative balance by half, from -17,500 in 1998 to -8,100 in 1999. The improved balance was mainly due to increased inflows from Ontario.

Manitoba and Saskatchewan also have a negative balance. In fact, the most recent migratory gains for these two provinces go back more than fifteen years. Of the two, Saskatchewan has the largest deficit in its demographic exchanges with other provinces. Its negative balance is 6,200, the highest level since 1992.

**Table 9. Annual Number of Interprovincial Migrants According to Revenue Canada Tax Files  
January to December 1998**

Number of Migrants: 298,158

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.	Nunavut
Newfoundland	...	233	1,772	609	218	5,730	229	253	5,205	718	39	201	145
Prince Edward Island	76	...	624	488	100	621	27	36	477	171	2	8	4
Nova Scotia	1,039	558	...	2,068	610	6,315	397	299	3,578	1,593	40	147	124
New Brunswick	269	415	2,441	...	1,885	3,977	242	167	2,325	747	25	68	60
Quebec	239	134	851	1,523	...	23,826	521	371	3,649	3,357	50	66	81
Ontario	2,900	733	5,144	2,799	12,426	...	4,507	1,982	14,993	15,830	256	250	136
Manitoba	123	17	319	196	382	4,692	...	2,983	6,178	3,395	46	52	37
Saskatchewan	126	51	253	145	272	2,424	2,443	...	11,475	3,087	42	154	50
Alberta	1,708	306	1,758	1,021	1,478	9,568	3,191	8,116	...	16,055	235	652	73
British Columbia	658	160	1,922	766	2,648	15,544	3,431	4,069	33,771	...	628	337	75
Yukon	83	3	33	24	43	259	63	152	926	941	...	90	15
Northwest Territories	99	5	46	32	36	284	154	254	1,574	524	135	...	229
Nunavut	61	4	34	15	58	182	118	54	135	70	20	292	...
In	7,381	2,619	15,197	9,686	20,156	73,422	15,323	18,736	84,286	46,488	1,518	2,317	1,029
Out	15,352	2,634	16,768	12,621	34,668	61,956	18,420	20,522	44,161	64,009	2,632	3,372	1,043
Net Migration	-7,971	-15	-1,571	-2,935	-14,512	11,466	-3,097	-1,786	40,125	-17,521	-1,114	-1,055	-14

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



**Table 10. Annual Number of Interprovincial Migrants According to Revenue Canada Tax and Child Tax Credit Files**

**January to December 1999**

Number of Migrants: 302,959

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.	Nunavut
Newfoundland	...	299	2,012	692	93	5,410	245	152	3,140	716	49	130	93
Prince Edward Island	123	...	540	357	87	682	34	22	280	76	20	11	2
Nova Scotia	1,373	566	...	2,628	703	6,012	494	234	2,157	1,433	38	69	61
New Brunswick	410	521	2,598	...	2,110	3,828	258	197	1,530	656	57	37	30
Quebec	251	66	1,049	1,784	...	25,656	635	156	2,535	3,369	37	64	73
Ontario	3,748	785	5,885	3,882	13,846	...	4,644	1,885	11,329	16,587	129	406	221
Manitoba	158	47	482	199	485	5,428	...	2,716	4,685	3,308	42	86	63
Saskatchewan	153	21	377	159	225	2,805	2,878	...	12,471	3,759	61	176	63
Alberta	2,741	299	2,383	1,706	1,850	12,506	3,827	8,096	...	20,026	292	963	119
British Columbia	997	286	1,641	793	2,618	16,890	2,939	3,235	28,691	...	705	366	71
Yukon	48	13	17	8	33	230	117	79	603	844	...	67	12
Northwest Territories	92	—	140	72	30	324	95	121	1,242	283	56	...	214
Nunavut	72	—	84	32	42	200	98	25	130	46	8	308	...
In	10,166	2,903	17,208	12,312	22,122	79,971	16,264	16,918	68,793	51,103	1,494	2,683	1,022
Out	13,031	2,234	15,768	12,232	35,675	63,347	17,699	23,148	54,808	59,232	2,071	2,669	1,045
Net Migration	-2,865	669	1,440	80	-13,553	16,624	-1,435	-6,230	13,985	-8,129	-577	14	-23

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

**Table 11. Net Migration for Provinces and Territories, 1972-1999**

Year	Nfld	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta	B.C.	Yuk.	N.W.T.	Nun.	Total Number of Interprovincial Migrants
1972	-189	858	2,845	241	-19,891	8,227	-7,735	-17,296	6,538	24,927	575	900	...	375,184
1973	-2,510	478	2,107	2,841	-14,730	-5,275	-2,200	-13,261	2,698	30,537	-269	-416	...	433,992
1974	-618	1,386	1,576	4,192	-11,852	-22,163	-5,400	-4,835	14,810	22,655	97	152	...	421,336
1975	915	814	4,454	7,572	-12,340	-25,057	-4,134	6,555	23,463	-2,864	242	380	...	385,330
1976	-2,732	309	361	1,640	-20,801	-10,508	-3,655	3,819	34,215	-1,490	-350	-808	...	376,970
1977	-4,009	614	-1,277	-886	-46,536	8,596	-3,789	384	32,344	15,507	57	-1,005	...	366,918
1978	-3,540	25	-109	-1,644	-33,424	415	-9,557	-3,701	31,987	20,698	-178	-972	...	348,929
1979	-4,217	-225	-1,840	-2,219	-30,025	-15,317	-13,806	-3,510	39,212	33,241	-447	-847	...	370,862
1980	-3,082	-1,082	-2,494	-4,165	-24,283	-34,919	-11,342	-4,382	46,933	40,165	-419	-930	...	372,167
1981	-6,238	-783	-2,465	-4,766	-22,549	-19,665	-3,621	-520	40,243	21,565	-1,376	175	...	380,041
1982	261	-6	1,591	2,183	-28,169	19,614	1,498	1,743	3,961	-2,019	-1,208	551	...	322,634
1983	-1,092	799	3,861	2,296	-19,080	32,825	950	2,501	-26,246	4,029	-808	-35	...	285,599
1984	-3,585	524	2,963	812	-10,943	36,691	-49	733	-30,591	3,505	-111	51	...	273,323
1985	-5,019	-13	-234	-1,559	-6,023	33,414	-1,755	-5,014	-9,568	-3,199	-445	-585	...	281,275
1986	-4,682	-493	-739	-2,897	-3,020	42,916	-3,039	-7,020	-20,293	910	179	-1,822	...	302,352
1987	-4,374	301	-2,183	-1,762	-7,410	40,278	-4,751	-9,043	-27,595	17,618	100	-1,179	...	318,890
1988	-2,154	424	71	-1,215	-7,003	14,898	-8,584	-16,338	-5,535	25,865	349	-778	...	323,685
1989	-2,606	-102	572	-21	-8,379	-1,205	-10,004	-18,589	3,366	37,367	-30	-369	...	347,990
1990	-1,137	-273	-106	1,014	-9,567	-15,117	-8,613	-15,928	11,055	38,704	-26	-6	...	332,637
1991	-1,084	-415	1,039	-79	-13,047	-9,978	-7,581	-9,499	5,511	34,572	478	83	...	315,420
1992	-2,563	232	355	-1,087	-9,785	-13,530	-6,417	-7,727	1,030	39,578	215	-220	-81	309,680
1993	-3,397	532	-1,143	-492	-7,426	-12,771	-5,206	-4,543	-2,355	37,595	-755	-43	4	283,737
1994	-6,204	694	-2,694	-505	-10,252	-4,527	-4,010	-3,958	-2,684	34,449	-245	75	-139	286,860
1995	-6,566	368	-1,972	-931	-10,248	-1,764	-3,344	-3,190	4,251	23,414	656	-440	-234	286,746
1996	-7,945	401	-1,064	-910	-15,358	-1,706	-3,738	-1,871	15,069	17,798	215	-642	-249	284,484
1997	-8,522	-241	-2,074	-1,812	-17,559	6,823	-6,717	-2,669	32,459	1,980	-558	-845	-265	291,580
1998	-7,971	-15	-1,571	-2,935	-14,512	11,466	-3,097	-1,786	40,125	-17,521	-1,114	-1,055	-14	298,158
1999	-2,865	669	1,440	80	-13,553	16,624	-1,435	-6,230	13,985	-8,129	-577	14	-23	302,959
Total	-97,725	5,780	1,270	-7,014	-447,765	79,285	-141,131	-145,175	278,388	491,457	-5,753	-10,616	-1,001	9,279,738

**Note:** Until 1991, Nunavut is included in the Northwest Territories.

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

As the main hub of internal migration, Ontario is the province that has the most migratory movements. The number of persons from another Canadian province establishing residence in Ontario is estimated at 80,000, while the number of out-migrants is estimated at 63,300. With a positive balance of 16,600, **Ontario posted the biggest migratory gain in 1999**. Ontario's strong economic performance can be related to this improvement in the migration balance. Despite the language barrier between Quebec and Ontario, there are large migratory exchanges between these two provinces: 13,800 people left Ontario to settle in Quebec and 25,700 did the reverse migration. In other words, for every Ontario resident who migrates to Quebec, there are two Quebec residents who migrate to Ontario.

Quebec is generally in a loss position in its migratory exchanges with other provinces. During the period from 1972 to 1999, Quebec lost nearly 450,000 people just as a result of internal migration. This is three times as much as Saskatchewan and Manitoba, which rank second and third among the provinces in terms of the greatest number of losses. Alberta and British Columbia, which have enjoyed strong economic growth in the past thirty years, registered the greatest number of interprovincial migrants over the same period, namely 280,000 and 490,000 respectively.

These figures on inflows and outflows tell us very little about the propensity to migrate of people living in the different provinces. All things being otherwise equal, a more populous province would generate a greater number of migrants. It is therefore useful to look at the out-migration rates to get a better grasp of the propensity to migrate of each province's inhabitants. An analysis of these rates provides a quite different picture of internal migration, since it looks at the number of out-migrants from a province in relation to its population size. For example, Quebec, which has much greater losses than the other provinces, is nevertheless the province with the lowest propensity to migrate: only 4.9 individuals per 1,000 leave Quebec, compared to 24.1 per 1,000 for Newfoundland. In 1999, Newfoundland still has the highest out-migration rate of all Canadian provinces. Like Quebec, Ontario has a very low out-migration rate.

## **Conclusion**

***The Atlantic provinces greatly improved their migratory exchange in 1999***. Three of the four Atlantic provinces even posted a positive balance. Quebec, Manitoba and British Columbia also reduced their migratory loss. By contrast, Saskatchewan had a less favourable year, with its migratory losses increasing. Ontario and Alberta posted the largest migratory gains, although Alberta saw its net interprovincial migration decrease considerably from the previous year.

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## **Appendices**

**Table A1. Population as of January 1 and Population Growth Components, Provinces and Territories, 1972-2000**

**NEWFOUNDLAND**

**NUMBERS (in thousands)**

Year	Population as of January 1	Growth			Births	Deaths	Immigration	Emigration	Non-permanent Residents (net)	Interprovincial Migration			Residual <sup>1</sup>
		Total	Natural	Migratory						In	Out	Net	
1972	535.9	7.5	9.5	0.4	12.9	3.3	0.7	0.2	—	11.2	11.4	-0.2	-2.4
1973	543.4	4.4	8.5	-1.7	11.9	3.4	1.0	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	0.3	—	12.4	13.0	-0.6	-2.4
1975	552.5	7.5	8.0	1.9	11.2	3.2	1.1	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	0.2	—	9.7	12.4	-2.7	-1.6
1977	563.9	2.6	7.3	-3.6	10.4	3.1	0.6	0.2	—	8.1	12.2	-4.0	-1.1
1978	566.5	2.0	6.4	-3.4	9.5	3.1	0.4	0.2	—	8.1	11.7	-3.5	-1.1
1979	568.4	2.2	7.0	-3.7	10.2	3.1	0.6	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	0.1	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	0.2	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	0.2	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	0.3	-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	0.3	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	0.2	—	6.0	11.0	-5.0	-2.1
1986	577.2	-1.6	4.6	-4.5	8.1	3.5	0.3	0.3	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	0.2	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	0.1	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	0.1	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	0.1	-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	0.2	—	9.9	10.9	-1.1	-1.6
1992	579.4	1.6	3.1	0.2	6.9	3.8	0.8	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	0.1	-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	0.1	-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	0.1	-0.8	7.0	13.5	-6.6	-1.8
1996	564.3	-6.9	1.8	-8.0	5.7	3.9	0.6	0.2	-0.4	6.6	14.5	-7.9	-0.7
1997	557.4	-7.3	1.1	-8.4	5.4	4.3	0.4	0.2	-0.1	7.0	15.5	-8.5	...
1998 PD	550.1	-7.0	0.8	-7.8	5.0	4.3	0.4	0.3	0.1	7.4	15.4	-8.0	...
1999 PR	543.1	-2.0	0.3	-2.3	4.8	4.5	0.4	0.3	0.4	10.2	13.0	-2.9	...
2000 PR	541.1	..	..	..	..	..	..	..	..	..	..	..	...

**RATES (per 1,000)**

Year	Population as of January 1 (in thousands)	Growth			Fertility	Death	Immigration	Emigration	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	0.32	0.06	20.72	21.07	-0.35
1973	543.4	8.02	15.58	-3.16	21.82	6.24	1.80	0.50	0.13	23.85	28.45	-4.60
1974	547.8	8.52	12.63	0.25	18.61	5.97	1.88	0.50	-0.01	22.50	23.62	-1.12
1975	552.5	13.42	14.37	3.36	20.16	5.79	1.99	0.40	0.13	22.20	20.56	1.65
1976	559.9	7.08	13.89	-3.93	19.81	5.91	1.29	0.33	-0.02	17.28	22.14	-4.86
1977	563.9	4.58	12.86	-6.41	18.42	5.55	1.03	0.34	-0.01	14.41	21.51	-7.09
1978	566.5	3.46	11.30	-5.96	16.79	5.49	0.66	0.36	-0.02	14.36	20.59	-6.24
1979	568.4	3.92	12.35	-6.56	17.86	5.51	0.97	0.27	0.14	15.66	23.07	-7.40
1980	570.7	5.98	12.21	-4.37	18.05	5.84	0.96	0.19	0.24	16.19	21.58	-5.38
1981	574.1	-1.13	12.03	-10.27	17.65	5.63	0.84	0.32	0.09	14.89	25.76	-10.87
1982	573.5	7.38	10.06	0.95	15.94	5.88	0.71	0.43	0.22	18.40	17.94	0.45
1983	577.7	3.51	9.38	-2.27	15.43	6.04	0.48	0.52	-0.34	13.08	14.97	-1.89
1984	579.7	-0.84	8.70	-5.94	14.77	6.07	0.52	0.44	0.17	9.84	16.03	-6.19
1985	579.2	-3.51	8.55	-8.45	14.70	6.15	0.56	0.39	0.05	10.31	18.99	-8.68
1986	577.2	-2.77	7.91	-7.82	14.05	6.14	0.48	0.48	0.31	13.36	21.48	-8.12
1987	575.6	-1.76	7.20	-6.63	13.51	6.31	0.80	0.27	0.45	14.69	22.29	-7.61
1988	574.6	1.84	6.77	-2.61	13.02	6.24	0.71	0.10	0.53	17.43	21.18	-3.75
1989	575.7	1.52	7.02	-3.17	13.47	6.45	0.81	0.09	0.63	17.51	22.03	-4.52
1990	576.5	2.89	6.44	-1.23	13.17	6.73	0.95	0.12	-0.09	17.75	19.72	-1.97
1991	578.2	2.08	5.82	-1.01	12.38	6.56	1.11	0.32	0.08	17.02	18.89	-1.87
1992	579.4	2.69	5.38	0.34	11.92	6.55	1.36	0.21	3.61	14.04	18.46	-4.42
1993	581.0	-6.15	4.37	-7.49	11.09	6.72	1.39	0.22	-2.81	11.87	17.74	-5.87
1994	577.4	-11.12	3.99	-12.05	11.04	7.05	0.99	0.22	-2.02	10.97	21.78	-10.80
1995	571.0	-11.83	3.39	-12.13	10.32	6.93	1.06	0.24	-1.39	12.26	23.83	-11.57
1996	564.3	-12.24	3.24	-14.18	10.25	7.00	1.04	0.29	-0.77	11.71	25.88	-14.17
1997	557.4	-13.21	1.98	-15.19	9.78	7.80	0.78	0.43	-0.16	12.57	27.96	-15.39
1998 PD	550.1	-12.81	1.37	-14.18	9.15	7.78	0.75	0.47	0.12	13.50	28.09	-14.58
1999 PR	543.1	-3.75	0.53	-4.27	8.81	8.29	0.80	0.50	0.72	18.75	24.04	-5.28
2000 PR	541.1	..	..	..	..	..	..	..	..	..	..	..

See notes at the end of Table 1.

**Table A1. Population as of January 1 and Population Growth Components, Provinces and Territories, 1972-2000**

**PRINCE EDWARD ISLAND**

**NUMBERS (in thousands)**

Year	Population as of January 1	Growth			Births	Deaths	Immigration	Emigration	Non-permanent Residents (net)	Interprovincial Migration			Residual <sup>1</sup>
		Total	Natural	Migratory						In	Out	Net	
1972	113.0	1.3	1.0	1.0	2.0	1.1	0.2	—	—	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	—	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	—	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	—	4.6	3.8	0.8	-0.6
1976	118.3	1.1	0.8	0.5	1.9	1.1	0.2	—	—	4.3	4.0	0.3	-0.2
1977	119.4	1.7	0.9	0.8	2.0	1.0	0.2	—	—	3.9	3.3	0.6	—
1978	121.1	1.2	1.0	0.1	2.0	1.0	0.1	—	—	3.5	3.5	—	—
1979	122.3	1.0	0.9	—	1.9	1.0	0.3	—	—	3.4	3.6	-0.2	—
1980	123.3	0.1	0.9	-0.9	2.0	1.0	0.2	—	—	3.0	4.1	-1.1	—
1981	123.3	0.2	0.9	-0.7	1.9	1.0	0.1	—	—	3.5	4.3	-0.8	—
1982	123.5	0.9	0.9	0.1	1.9	1.0	0.2	—	—	3.4	3.4	—	-0.1
1983	124.5	1.6	0.9	0.9	1.9	1.1	0.1	0.1	—	3.3	2.5	0.8	-0.1
1984	126.1	1.3	0.8	0.6	2.0	1.1	0.1	—	—	3.1	2.5	0.5	-0.1
1985	127.4	0.9	0.9	0.1	2.0	1.1	0.1	—	—	2.8	2.8	—	-0.1
1986	128.3	0.1	0.8	-0.3	1.9	1.1	0.2	—	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	—	—	3.1	2.8	0.3	-0.6
1988	129.1	0.9	0.9	0.6	2.0	1.1	0.2	—	—	3.5	3.1	0.4	-0.6
1989	130.0	0.3	0.8	0.1	1.9	1.1	0.2	—	—	3.3	3.4	-0.1	-0.6
1990	130.3	0.2	0.9	-0.1	2.0	1.1	0.2	—	—	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	—	2.9	3.3	-0.4	-0.2
1992	130.6	1.1	0.7	0.3	1.9	1.1	0.2	—	—	2.8	2.6	0.2	—
1993	131.7	1.3	0.6	0.7	1.8	1.1	0.2	—	—	2.5	1.9	0.5	—
1994	133.0	1.4	0.6	0.8	1.7	1.1	0.2	—	—	2.7	2.0	0.7	—
1995	134.4	1.1	0.6	0.6	1.8	1.2	0.2	—	0.1	2.6	2.2	0.4	—
1996	135.5	1.0	0.4	0.6	1.7	1.3	0.2	—	0.1	2.7	2.3	0.4	—
1997	136.5	0.3	0.6	-0.2	1.6	1.0	0.2	—	-0.1	2.5	2.8	-0.2	...
1998 PD	136.9	0.4	0.3	0.1	1.5	1.2	0.1	—	—	2.6	2.6	—	...
1999 PR	137.3	1.1	0.2	0.9	1.5	1.2	0.1	—	0.1	2.9	2.2	0.7	...
2000 PR	138.4	..	..	..	..	..	..	..	..	..	..	..	...



**RATES (per 1,000)**

Year	Population as of January 1 (in thousands)	Growth			Fertility	Death	Immigration	Emigration	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	0.35	0.03	37.36	29.81	7.55
1973	114.3	7.96	7.55	6.00	16.44	8.89	2.38	0.58	0.03	41.96	37.79	4.17
1974	115.2	15.86	7.33	14.05	16.70	9.37	2.68	0.58	0.01	44.46	32.52	11.94
1975	117.0	10.47	7.40	8.52	16.39	8.98	2.00	0.45	0.05	39.19	32.27	6.92
1976	118.3	9.33	7.12	4.21	16.34	9.22	1.98	0.36	-0.01	36.25	33.65	2.60
1977	119.4	14.42	7.68	6.34	16.38	8.70	1.60	0.37	—	32.30	27.20	5.11
1978	121.1	9.57	8.14	1.02	16.31	8.17	1.19	0.38	—	28.62	28.42	0.21
1979	122.3	8.11	7.43	0.29	15.75	8.32	2.35	0.29	0.05	27.65	29.48	-1.83
1980	123.3	0.49	7.49	-7.40	15.88	8.39	1.53	0.24	0.08	24.58	33.36	-8.78
1981	123.3	1.74	7.33	-5.29	15.37	8.04	1.04	0.28	0.30	28.12	34.46	-6.34
1982	123.5	7.52	7.61	0.70	15.52	7.90	1.33	0.28	-0.30	27.09	27.14	-0.05
1983	124.5	12.87	6.84	6.81	15.22	8.38	0.84	0.50	0.10	26.17	19.80	6.38
1984	126.1	10.38	6.67	4.48	15.42	8.75	0.86	0.38	-0.13	24.23	20.10	4.13
1985	127.4	6.70	7.02	0.45	15.71	8.68	0.88	0.34	—	22.13	22.23	-0.10
1986	128.3	1.05	6.29	-2.28	15.02	8.74	1.31	0.23	0.48	19.45	23.29	-3.84
1987	128.4	5.68	6.52	3.68	15.18	8.67	1.23	0.09	0.20	23.96	21.62	2.34
1988	129.1	6.71	6.68	4.52	15.26	8.58	1.18	0.12	0.19	26.86	23.59	3.27
1989	130.0	2.46	6.52	0.41	14.88	8.37	1.22	0.27	0.25	25.69	26.48	-0.78
1990	130.3	1.30	6.68	-0.92	15.44	8.77	1.35	0.15	-0.03	21.73	23.82	-2.09
1991	130.5	0.93	5.34	-2.50	14.44	9.10	1.15	0.46	-0.02	22.12	25.30	-3.18
1992	130.6	8.17	5.61	2.65	14.11	8.49	1.15	0.37	0.11	21.57	19.80	1.77
1993	131.7	9.76	4.60	5.25	13.26	8.65	1.24	0.24	0.23	18.57	14.55	4.02
1994	133.0	10.62	4.50	6.21	12.84	8.33	1.20	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	0.27	0.49	18.96	16.23	2.73
1996	135.5	7.36	3.13	4.26	12.45	9.32	1.12	0.26	0.45	20.05	17.10	2.95
1997	136.5	2.41	4.10	-1.70	11.64	7.53	1.10	0.26	-0.78	18.55	20.31	-1.76
1998 PD	136.9	3.17	2.32	0.85	10.91	8.59	0.99	0.24	0.21	19.11	19.22	-0.11
1999 PR	137.3	8.20	1.81	6.40	10.69	8.89	1.00	0.26	0.81	21.06	16.20	4.85
2000 PR	138.4	..	..	..	..	..	..	..	..	..	..	..

See notes at the end of Table 1.

**Table A1. Population as of January 1 and Population Growth Components, Provinces and Territories, 1972-2000**

**NOVA SCOTIA**

**NUMBERS (in thousands)**

Year	Population as of January 1	Growth			Births	Deaths	Immigration	Emigration	Non-permanent Residents (net)	Interprovincial Migration			Residual <sup>1</sup>
		Total	Natural	Migratory						In	Out	Net	
1972	800.5	8.1	6.6	4.5	13.5	6.9	1.9	0.2	—	22.7	19.9	2.8	-3.0
1973	808.6	7.7	6.4	4.4	13.3	6.9	2.5	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	0.4	-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	0.3	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	0.3	-0.1	23.0	22.6	0.4	-2.0
1977	838.6	4.1	5.4	—	12.4	7.0	1.6	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	0.3	-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	0.2	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	0.1	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	0.3	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	0.3	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	0.3	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	0.2	—	17.3	14.4	3.0	-0.8
1985	882.7	4.6	5.1	0.2	12.5	7.3	1.0	0.3	-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	0.3	—	17.1	17.8	-0.7	-0.9
1987	891.5	3.1	5.0	-0.9	12.1	7.1	1.2	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	0.2	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	0.3	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	0.5	-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	0.6	-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	0.5	-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	0.4	-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	0.4	-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	0.5	-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	0.5	-0.1	16.0	17.1	-1.1	-0.7
1997	933.3	2.4	1.9	0.5	10.0	8.0	2.9	0.6	0.3	15.8	17.9	-2.1	...
1998 PD	935.8	1.5	1.3	0.2	9.6	8.3	2.1	0.6	0.3	15.2	16.8	-1.6	...
1999 PR	937.3	3.8	0.7	3.0	9.4	8.6	1.6	0.6	0.6	17.2	15.8	1.4	...
2000 PR	941.0	..	..	..	..	..	..	..	..	..	..	..	...

**RATES (per 1,000)**

Year	Population as of January 1 (in thousands)	Growth			Fertility	Death	Immigration	Emigration	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	0.30	0.05	28.21	24.67	3.54
1973	808.6	9.52	7.83	5.44	16.36	8.53	3.14	0.46	0.17	32.31	29.72	2.59
1974	816.4	8.21	7.37	4.55	15.79	8.42	3.17	0.47	-0.08	33.15	31.23	1.92
1975	823.1	11.69	7.64	7.73	15.85	8.21	2.57	0.38	0.16	30.88	25.50	5.38
1976	832.8	6.92	7.02	2.35	15.34	8.32	2.32	0.31	-0.10	27.51	27.08	0.43
1977	838.6	4.84	6.44	-0.02	14.72	8.28	1.89	0.31	-0.08	23.69	25.21	-1.52
1978	842.6	5.74	6.71	0.60	14.85	8.14	1.16	0.33	-0.10	23.07	23.20	-0.13
1979	847.5	4.28	6.55	-0.70	14.61	8.06	1.58	0.25	0.14	21.69	23.86	-2.17
1980	851.1	3.81	6.29	-0.92	14.51	8.21	1.89	0.17	0.28	21.68	24.61	-2.92
1981	854.3	3.90	5.98	-0.88	14.11	8.13	1.64	0.33	0.69	22.51	25.39	-2.88
1982	857.7	8.52	6.25	3.21	14.31	8.06	1.46	0.29	0.20	21.87	20.03	1.85
1983	865.0	10.56	6.16	5.34	14.26	8.10	0.96	0.31	0.26	21.08	16.64	4.44
1984	874.2	9.63	6.22	4.33	14.09	7.87	1.18	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	0.30	-0.27	18.86	19.13	-0.26
1986	887.2	4.85	5.74	0.12	13.90	8.16	1.23	0.31	0.03	19.18	20.01	-0.83
1987	891.5	3.48	5.60	-1.04	13.56	7.96	1.37	0.30	0.33	19.68	22.12	-2.44
1988	894.6	6.43	5.31	2.18	13.57	8.26	1.45	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	0.31	0.80	22.56	21.93	0.63
1990	907.0	5.90	6.03	0.93	14.15	8.12	1.72	0.51	-0.17	20.43	20.54	-0.12
1991	912.3	5.47	5.20	1.79	13.13	7.93	1.64	0.70	-0.29	20.73	19.59	1.14
1992	917.3	5.08	4.71	2.23	12.91	8.20	2.57	0.51	-0.21	19.73	19.34	0.39
1993	922.0	3.79	4.34	1.30	12.52	8.18	3.26	0.46	-0.27	16.79	18.03	-1.24
1994	925.5	1.66	3.59	-0.09	11.98	8.39	3.74	0.48	-0.44	16.33	19.24	-2.91
1995	927.1	2.79	3.27	1.35	11.55	8.28	4.06	0.50	-0.08	16.59	18.72	-2.12
1996	929.6	3.95	3.03	1.69	11.35	8.32	3.46	0.56	-0.07	17.21	18.35	-1.14
1997	933.3	2.61	2.04	0.56	10.65	8.61	3.11	0.61	0.28	16.95	19.17	-2.22
1998 PD	935.8	1.60	1.36	0.24	10.25	8.89	2.20	0.62	0.34	16.23	17.90	-1.68
1999 PR	937.3	4.00	0.79	3.21	9.99	9.20	1.71	0.65	0.61	18.32	16.79	1.53
2000 PR	941.0	**	**	**	**	**	**	**	**	**	**	**

See notes at the end of Table 1.

**Table A1. Population as of January 1 and Population Growth Components, Provinces and Territories, 1972-2000**

**NEW BRUNSWICK**

**NUMBERS (in thousands)**

Year	Population as of January 1	Growth			Births	Deaths	Immigration	Emigration	Non-permanent Residents (net)	Interprovincial Migration			Residual <sup>1</sup>
		Total	Natural	Migratory						In	Out	Net	
1972	646.3	6.2	6.8	1.2	11.8	5.0	1.3	0.4	—	18.2	17.9	0.2	-1.8
1973	652.5	8.5	6.3	4.0	11.4	5.1	1.7	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	0.7	—	22.9	18.7	4.2	-1.8
1975	671.1	14.0	6.6	9.2	11.8	5.2	2.1	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	0.5	—	18.9	17.3	1.6	-1.4
1977	693.3	5.0	6.3	-0.2	11.5	5.2	1.2	0.5	—	15.5	16.4	-0.9	-1.1
1978	698.3	3.0	5.6	-1.5	10.8	5.2	0.7	0.5	—	14.3	16.0	-1.6	-1.1
1979	701.3	3.2	5.7	-1.4	10.8	5.2	1.1	0.4	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	0.3	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	0.6	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	0.6	-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	0.4	—	13.2	10.9	2.3	-1.5
1984	718.0	4.5	5.1	0.9	10.4	5.3	0.6	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	0.5	—	11.5	13.1	-1.6	-1.5
1986	724.4	1.2	4.3	-2.6	9.8	5.5	0.6	0.5	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	0.4	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	0.4	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	0.5	0.1	15.0	15.0	—	0.2
1990	737.4	5.9	4.4	1.3	9.8	5.4	0.8	0.5	-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	0.4	-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	0.5	-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	0.5	-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	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	0.5	—	11.2	12.1	-0.9	-1.1
1996	752.3	1.2	2.3	-0.6	8.2	5.9	0.7	0.3	-0.1	11.1	12.0	-0.9	-0.5
1997	753.5	0.8	2.0	-1.2	7.9	5.9	0.7	0.2	0.1	11.4	13.2	-1.8	...
1998 PD	754.3	-0.7	1.5	-2.3	7.9	6.3	0.8	0.2	0.1	9.7	12.6	-2.9	...
1999 PR	753.6	2.1	1.1	1.1	7.7	6.6	0.7	0.2	0.5	12.3	12.2	0.1	...
2000 PR	755.7	..	..	..	..	..	..	..	..	..	..	..	...

**RATES (per 1,000)**

Year	Population as of January 1 (in thousands)	Growth			Fertility	Death	Immigration	Emigration	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	0.66	0.07	28.00	27.63	0.37
1973	652.5	12.97	9.65	6.08	17.40	7.74	2.63	1.03	0.15	34.56	30.23	4.33
1974	661.0	15.19	9.37	8.55	17.18	7.81	3.31	1.05	-0.01	34.37	28.07	6.29
1975	671.1	20.67	9.79	13.56	17.38	7.59	3.09	0.84	0.15	35.63	24.46	11.17
1976	685.2	11.79	9.59	4.21	17.14	7.55	2.54	0.69	-0.03	27.47	25.09	2.38
1977	693.3	7.25	9.10	-0.31	16.55	7.45	1.66	0.70	-0.01	22.22	23.50	-1.27
1978	698.3	4.31	8.01	-2.18	15.42	7.41	0.94	0.75	-0.03	20.48	22.83	-2.35
1979	701.3	4.62	8.07	-1.94	15.43	7.36	1.63	0.57	0.16	20.29	23.44	-3.16
1980	704.6	1.76	7.57	-4.30	15.08	7.51	1.71	0.38	0.28	18.76	24.67	-5.91
1981	705.8	0.08	7.60	-5.66	14.88	7.28	1.40	0.86	0.55	19.61	26.36	-6.75
1982	705.9	8.34	7.47	2.99	14.80	7.33	1.06	0.87	-0.28	20.93	17.85	3.08
1983	711.8	8.67	7.43	3.33	14.71	7.28	0.77	0.60	-0.05	18.41	15.20	3.21
1984	718.0	6.21	7.06	1.22	14.38	7.32	0.83	0.59	-0.15	16.67	15.54	1.13
1985	722.5	2.64	6.76	-2.05	13.99	7.23	0.84	0.70	-0.04	15.94	18.09	-2.16
1986	724.4	1.67	5.97	-3.59	13.50	7.53	0.88	0.67	0.20	15.72	19.71	-4.00
1987	725.6	4.07	5.75	-1.91	13.19	7.44	0.88	0.57	0.20	18.17	20.59	-2.42
1988	728.6	5.45	5.70	-0.49	13.16	7.46	0.93	0.59	0.83	18.76	20.42	-1.66
1989	732.5	6.57	5.68	0.66	13.15	7.48	1.23	0.65	0.10	20.44	20.47	-0.03
1990	737.4	7.91	5.94	1.74	13.27	7.33	1.14	0.63	-0.14	19.13	17.76	1.37
1991	743.2	4.77	5.41	0.12	12.75	7.34	0.92	0.59	-0.10	17.24	17.35	-0.11
1992	746.8	2.28	5.06	-1.33	12.56	7.50	1.01	0.66	-0.22	16.10	17.55	-1.45
1993	748.5	2.37	4.33	-0.51	12.08	7.75	0.93	0.64	-0.15	14.73	15.39	-0.66
1994	750.3	1.83	4.08	-0.80	11.96	7.88	0.83	0.69	-0.28	14.29	14.97	-0.67
1995	751.6	0.93	3.49	-1.12	11.39	7.90	0.84	0.71	-0.01	14.90	16.14	-1.24
1996	752.3	1.58	3.03	-0.85	10.86	7.83	0.95	0.41	-0.18	14.70	15.91	-1.21
1997	753.5	1.00	2.62	-1.62	10.51	7.88	0.88	0.27	0.17	15.17	17.57	-2.40
1998 PD	754.3	-0.95	2.05	-2.99	10.47	8.42	0.99	0.23	0.14	12.85	16.74	-3.89
1999 PR	753.6	2.84	1.42	1.42	10.22	8.80	0.90	0.26	0.67	16.32	16.21	0.11
2000 PR	755.7	..	..	..	..	..	..	..	..	..	..	..

See notes at the end of Table 1.

**Table A1. Population as of January 1 and Population Growth Components, Provinces and Territories, 1972-2000**

**QUEBEC**

**NUMBERS (in thousands)**

Year	Population as of January 1	Growth			Births	Deaths	Immigration	Emigration	Non-permanent Residents (net)	Interprovincial Migration			Residual <sup>1</sup>
		Total	Natural	Migratory						In	Out	Net	
1972	6,153.4	37.5	41.3	-5.0	83.6	42.3	18.6	4.4	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	6.9	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	7.0	-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	5.7	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	4.7	-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	4.8	-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	5.2	-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	4.0	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	2.7	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	3.6	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	4.7	-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	5.1	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	4.6	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	3.5	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	3.1	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	2.3	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	2.1	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	2.6	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	2.7	-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	3.4	-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	2.9	-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	2.9	-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	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	3.3	5.3	23.1	33.4	-10.2	-18.9
1996	7,259.0	30.6	32.9	5.6	85.2	52.3	29.7	7.5	-1.3	20.8	36.2	-15.4	-7.9
1997	7,289.6	23.4	25.4	-2.0	79.8	54.4	27.8	10.5	-1.7	20.4	37.9	-17.6	...
1998 PD	7,313.0	23.3	21.6	1.6	75.9	54.3	26.7	10.9	0.4	20.2	34.7	-14.5	...
1999 PR	7,336.3	24.9	19.1	5.8	73.6	54.5	29.2	11.4	1.5	22.1	35.7	-13.6	...
2000 PR	7,361.1	..	..	..	..	..	..	..	..	..	..	..	...

**RATES (per 1,000)**

Year	Population as of January 1 (in thousands)	Growth			Fertility	Death	Immigration	Emigration	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	0.71	0.12	5.86	9.08	-3.22
1973	6,190.9	7.97	6.66	1.13	13.52	6.86	4.32	1.10	0.27	6.38	8.75	-2.37
1974	6,240.4	9.30	6.84	2.28	13.66	6.82	5.34	1.12	-0.04	6.27	8.16	-1.89
1975	6,298.7	9.97	7.93	1.86	14.79	6.86	4.43	0.90	0.27	5.44	7.39	-1.95
1976	6,361.8	8.16	8.35	0.53	15.08	6.73	4.58	0.73	-0.07	4.95	8.20	-3.26
1977	6,413.9	1.98	8.37	-5.04	15.14	6.77	3.00	0.74	-0.04	3.80	11.05	-7.25
1978	6,426.6	2.85	8.05	-3.85	14.82	6.77	2.22	0.80	-0.07	3.80	9.00	-5.19
1979	6,445.0	5.26	8.56	-1.96	15.27	6.70	3.02	0.61	0.28	3.66	8.30	-4.65
1980	6,479.0	6.77	8.29	-0.19	14.99	6.69	3.47	0.42	0.50	3.37	7.11	-3.74
1981	6,523.0	6.46	8.04	-0.03	14.57	6.52	3.24	0.56	0.73	3.60	7.05	-3.45
1982	6,565.3	3.32	7.19	-2.17	13.81	6.61	3.24	0.72	-0.42	3.03	7.32	-4.28
1983	6,587.1	4.01	6.65	-0.94	13.36	6.71	2.48	0.77	0.24	3.39	6.28	-2.89
1984	6,613.6	4.82	6.54	-0.04	13.25	6.70	2.21	0.69	0.09	3.81	5.46	-1.65
1985	6,645.5	5.91	6.10	1.49	12.95	6.86	2.23	0.53	0.69	3.81	4.72	-0.90
1986	6,684.9	9.07	5.62	4.07	12.60	6.98	2.90	0.46	2.08	3.87	4.32	-0.45
1987	6,745.8	9.04	5.34	3.58	12.37	7.03	3.96	0.34	1.05	3.84	4.94	-1.09
1988	6,807.1	11.58	5.67	5.78	12.65	6.98	3.77	0.31	3.35	4.07	5.09	-1.02
1989	6,886.4	10.87	6.36	4.39	13.34	6.98	4.94	0.37	1.04	4.25	5.46	-1.21
1990	6,961.7	10.25	7.09	3.03	14.01	6.92	5.84	0.38	-1.05	3.84	5.21	-1.37
1991	7,033.4	7.07	6.83	1.75	13.79	6.96	7.33	0.49	-3.24	3.47	5.32	-1.85
1992	7,083.3	8.50	6.65	4.50	13.52	6.86	6.80	0.41	-0.51	3.58	4.96	-1.38
1993	7,143.7	6.50	5.68	3.46	12.89	7.22	6.27	0.41	-1.37	3.42	4.46	-1.04
1994	7,190.3	4.80	5.44	1.98	12.57	7.13	3.89	0.44	-0.05	3.15	4.57	-1.42
1995	7,224.9	4.71	4.79	2.52	12.07	7.28	3.67	0.46	0.73	3.19	4.61	-1.42
1996	7,259.0	4.21	4.52	0.77	11.72	7.19	4.08	1.02	-0.18	2.87	4.98	-2.11
1997	7,289.6	3.20	3.48	-0.27	10.93	7.45	3.80	1.44	-0.23	2.79	5.19	-2.40
1998 PD	7,313.0	3.17	2.95	0.22	10.36	7.41	3.64	1.48	0.05	2.75	4.73	-1.98
1999 PR	7,336.3	3.38	2.60	0.79	10.02	7.42	3.98	1.55	0.21	3.01	4.85	-1.84
2000 PR	7,361.1	..	..	..	..	..	..	..	..	..	..	..

See notes at the end of Table 1.

**Table A1. Population as of January 1 and Population Growth Components, Provinces and Territories, 1972-2000**

**ONTARIO**

**NUMBERS (in thousands)**

Year	Population as of January 1	Growth			Births	Deaths	Immigration	Emigration	Non-permanent Residents (net)	Interprovincial Migration			Residual <sup>1</sup>
		Total	Natural	Migratory						In	Out	Net	
1972	7,906.4	107.1	66.2	60.8	125.1	58.9	63.8	12.7	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	19.6	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	20.2	-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	16.4	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	13.5	-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	13.8	-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	15.0	-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	11.5	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	8.2	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	11.0	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	14.3	-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	14.3	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	12.9	-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	11.8	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	10.3	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	8.6	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	7.3	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	8.3	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	8.3	-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	10.7	-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	9.1	-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	9.3	-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	10.0	-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	10.5	-10.2	68.5	70.3	-1.8	-21.4
1996	11,029.0	134.8	60.9	82.8	140.0	79.1	119.8	20.2	-15.0	67.0	68.7	-1.7	-8.9
1997	11,163.8	147.3	53.5	93.9	133.0	79.5	117.9	28.4	-2.5	71.1	64.3	6.8	...
1998 PD	11,311.1	123.6	52.3	71.3	132.7	80.4	92.2	29.6	-2.8	73.4	62.0	11.5	...
1999 PR	11,434.7	142.4	45.8	96.6	129.9	84.0	104.1	31.0	6.9	80.0	63.3	16.6	...
2000 PR	11,577.2	..	..	..	..	..	..	..	..	..	..	..	...



**RATES (per 1,000)**

Year	Population as of January 1 (in thousands)	Growth			Fertility	Death	Immigration	Emigration	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	1.59	0.18	12.19	11.16	1.03
1973	8,013.5	15.65	7.91	10.20	15.33	7.41	12.78	2.43	0.51	12.90	13.55	-0.65
1974	8,139.9	14.67	7.76	9.34	15.15	7.38	14.65	2.46	-0.14	10.91	13.62	-2.70
1975	8,260.2	12.79	7.84	7.34	15.13	7.29	11.84	1.98	0.49	9.74	12.75	-3.01
1976	8,366.5	10.86	7.38	5.51	14.59	7.21	8.56	1.60	-0.20	10.54	11.79	-1.25
1977	8,457.9	11.35	7.21	5.90	14.43	7.22	6.65	1.62	-0.14	11.59	10.58	1.01
1978	8,554.5	8.27	6.97	3.04	14.08	7.11	4.94	1.74	-0.20	10.08	10.03	0.05
1979	8,625.5	8.59	6.95	3.37	14.04	7.10	6.00	1.33	0.46	9.64	11.41	-1.77
1980	8,699.9	8.29	6.93	3.07	14.12	7.18	7.13	0.94	0.87	8.49	12.49	-4.00
1981	8,772.3	10.67	6.73	4.75	13.85	7.13	6.24	1.25	1.99	9.14	11.37	-2.23
1982	8,866.4	13.20	6.85	6.53	13.99	7.14	5.94	1.60	-0.01	9.99	7.79	2.20
1983	8,984.2	13.37	6.89	6.67	14.02	7.13	4.43	1.58	0.19	9.75	6.12	3.63
1984	9,105.1	14.04	7.26	6.96	14.32	7.06	4.53	1.40	-0.17	9.71	5.71	4.00
1985	9,233.9	13.94	7.04	7.08	14.22	7.18	4.38	1.26	0.37	9.50	5.91	3.59
1986	9,363.5	18.27	6.99	11.32	14.17	7.18	5.25	1.09	2.61	10.59	6.05	4.54
1987	9,536.2	21.35	6.90	14.38	13.97	7.07	8.80	0.89	2.30	10.86	6.68	4.18
1988	9,741.9	23.79	6.83	16.89	14.00	7.17	9.03	0.74	7.10	9.27	7.76	1.51
1989	9,976.5	21.61	7.38	14.17	14.41	7.03	10.39	0.82	4.72	8.65	8.77	-0.12
1990	10,194.5	16.03	7.79	8.18	14.69	6.89	11.04	0.80	-0.58	7.32	8.79	-1.47
1991	10,359.2	12.18	7.54	5.82	14.53	7.00	11.40	1.02	-3.60	6.83	7.79	-0.96
1992	10,486.2	13.68	7.33	8.38	14.26	6.93	13.09	0.86	-2.57	6.44	7.72	-1.28
1993	10,630.6	11.24	6.73	6.51	13.83	7.10	12.56	0.87	-3.99	5.83	7.02	-1.19
1994	10,750.8	12.82	6.43	8.37	13.59	7.16	10.84	0.92	-1.13	6.10	6.52	-0.42
1995	10,889.5	12.72	6.19	8.49	13.35	7.16	10.54	0.96	-0.93	6.25	6.41	-0.16
1996	11,029.0	12.15	5.49	7.47	12.62	7.13	10.80	1.82	-1.35	6.04	6.19	-0.15
1997	11,163.8	13.11	4.76	8.35	11.84	7.08	10.50	2.53	-0.22	6.33	5.72	0.61
1998 PD	11,311.1	10.87	4.60	6.27	11.66	7.07	8.11	2.60	-0.24	6.46	5.45	1.01
1999 PR	11,434.7	12.38	3.98	8.40	11.29	7.30	9.05	2.70	0.60	6.95	5.51	1.44
2000 PR	11,577.2	**	**	**	**	**	**	**	**	**	**	**

See notes at the end of Table 1.

**Table A1. Population as of January 1 and Population Growth Components, Provinces and Territories, 1972-2000**

**MANITOBA**

**NUMBERS (in thousands)**

Year	Population as of January 1	Growth			Births	Deaths	Immigration	Emigration	Non-permanent Residents (net)	Interprovincial Migration			Residual <sup>1</sup>
		Total	Natural	Migratory						In	Out	Net	
1972	998.9	3.7	9.2	-3.3	17.4	8.2	5.3	0.9	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	1.5	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	1.5	-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	1.2	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	1.0	-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	1.0	-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	1.1	-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	0.8	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	0.6	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	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	0.9	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	1.1	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	0.7	-0.2	17.2	17.2	—	0.3
1985	1,078.4	9.4	8.3	0.7	17.1	8.8	3.4	0.8	-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	1.0	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	1.1	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	1.2	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	1.4	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	1.1	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	1.0	-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	1.0	-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	1.2	-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	1.2	-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	1.3	-0.1	15.5	18.9	-3.3	-0.3
1996	1,130.8	4.4	6.0	-1.5	15.5	9.5	3.9	1.4	-0.3	14.4	18.1	-3.7	-0.1
1997	1,135.2	1.0	5.1	-4.2	14.7	9.5	3.8	1.5	0.3	13.2	19.9	-6.7	...
1998 PD	1,136.1	3.1	4.7	-1.6	14.6	9.8	3.0	1.5	—	15.3	18.4	-3.1	...
1999 PR	1,139.2	5.4	4.2	1.3	14.3	10.2	3.7	1.6	0.6	16.3	17.7	-1.4	...
2000 PR	1,144.7	..	..	..	..	..	..	..	..	..	..	..	...

**RATES (per 1,000)**

Year	Population as of January 1 (in thousands)	Growth			Fertility	Death	Immigration	Emigration	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	0.94	0.08	26.09	33.82	-7.73
1973	1,002.6	9.71	8.70	3.15	16.84	8.14	6.57	1.47	0.23	33.53	35.71	-2.18
1974	1,012.4	7.04	8.74	0.41	17.04	8.30	7.31	1.51	-0.07	29.72	35.04	-5.32
1975	1,019.5	8.40	8.56	1.95	16.75	8.19	6.97	1.20	0.22	27.72	31.76	-4.04
1976	1,028.1	6.15	8.21	0.72	16.22	8.01	5.34	0.98	-0.10	24.30	27.84	-3.54
1977	1,034.5	5.13	8.23	0.16	16.12	7.89	4.88	0.99	-0.07	20.78	24.43	-3.65
1978	1,039.8	-2.39	7.80	-6.93	15.79	7.99	3.44	1.07	-0.10	17.97	27.18	-9.20
1979	1,037.3	-4.72	7.75	-9.20	15.69	7.94	4.74	0.81	0.21	18.14	31.48	-13.34
1980	1,032.4	0.32	7.31	-3.71	15.48	8.17	7.44	0.58	0.41	18.44	29.43	-10.98
1981	1,032.8	7.44	7.16	1.46	15.51	8.34	5.18	0.94	0.71	21.87	25.37	-3.49
1982	1,040.5	13.01	7.29	5.41	15.40	8.11	4.71	0.88	0.15	19.94	18.51	1.43
1983	1,054.1	11.93	7.62	4.01	15.66	8.04	3.75	1.04	0.40	17.44	16.54	0.90
1984	1,066.7	10.85	7.80	2.75	15.52	7.73	3.64	0.68	-0.16	16.00	16.05	-0.05
1985	1,078.4	8.63	7.70	0.63	15.79	8.08	3.15	0.78	-0.12	15.90	17.52	-1.62
1986	1,087.7	6.31	7.42	-0.11	15.59	8.17	3.44	0.92	0.16	15.97	18.75	-2.79
1987	1,094.6	4.70	7.51	-0.90	15.45	7.94	4.37	1.02	0.07	16.51	20.84	-4.33
1988	1,099.8	1.58	7.20	-3.72	15.47	8.27	4.55	1.08	0.61	14.65	22.45	-7.80
1989	1,101.5	1.21	7.71	-4.60	15.72	8.00	5.57	1.31	0.21	15.48	24.56	-9.08
1990	1,102.8	3.11	7.69	-2.68	15.71	8.02	6.01	1.02	0.14	15.31	23.11	-7.80
1991	1,106.3	3.61	7.52	-2.99	15.59	8.07	5.09	0.89	-0.35	14.48	21.32	-6.84
1992	1,110.3	4.12	6.84	-2.48	14.91	8.07	4.57	0.93	-0.35	14.31	20.08	-5.77
1993	1,114.9	4.68	6.63	-1.72	14.95	8.32	4.36	1.04	-0.38	13.06	17.72	-4.66
1994	1,120.1	5.09	6.53	-1.21	14.68	8.15	3.67	1.10	-0.20	13.68	17.25	-3.57
1995	1,125.8	4.41	5.72	-1.08	14.28	8.56	3.14	1.14	-0.11	13.75	16.71	-2.96
1996	1,130.8	3.87	5.28	-1.31	13.66	8.38	3.47	1.24	-0.23	12.68	15.97	-3.30
1997	1,135.2	0.85	4.53	-3.68	12.90	8.37	3.32	1.31	0.22	11.60	17.51	-5.91
1998 PD	1,136.1	2.74	4.17	-1.43	12.81	8.64	2.65	1.35	-0.01	13.47	16.19	-2.72
1999 PR	1,139.2	4.75	3.64	1.11	12.54	8.90	3.25	1.42	0.53	14.24	15.50	-1.26
2000 PR	1,144.7	..	..	..	..	..	..	..	..	..	..	..

See notes at the end of Table 1.

**Table A1. Population as of January 1 and Population Growth Components, Provinces and Territories, 1972-2000**

**SASKATCHEWAN**

**NUMBERS (in thousands)**

Year	Population as of January 1	Growth			Births	Deaths	Immigration	Emigration	Non-permanent Residents (net)	Interprovincial Migration			Residual <sup>1</sup>
		Total	Natural	Migratory						In	Out	Net	
1972	923.1	-9.5	7.9	-16.2	15.5	7.6	1.5	0.4	—	19.5	36.8	-17.3	-1.2
1973	913.6	-6.0	7.2	-12.0	14.8	7.6	1.9	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	0.7	—	28.0	32.8	-4.8	-1.2
1975	910.3	15.3	7.6	8.9	15.3	7.7	2.8	0.6	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	0.5	—	26.2	22.4	3.8	-0.8
1977	938.5	10.5	9.0	2.1	16.5	7.6	2.2	0.5	—	22.2	21.8	0.4	-0.5
1978	949.1	5.6	8.8	-2.7	16.6	7.7	1.6	0.6	—	19.3	23.0	-3.7	-0.5
1979	954.7	8.0	9.6	-1.1	16.9	7.4	2.8	0.4	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	0.3	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	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	0.6	—	21.0	19.3	1.7	-0.2
1983	994.5	13.8	10.2	3.7	17.8	7.6	1.7	0.6	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	0.6	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	0.8	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	0.4	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	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	0.5	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	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	0.4	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	0.4	-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	0.5	-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	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	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	0.5	0.2	16.9	20.1	-3.2	1.0
1996	1,016.3	4.3	4.5	-0.6	13.3	8.8	1.8	0.7	0.1	16.8	18.7	-1.9	0.4
1997	1,020.6	2.8	4.2	-1.5	12.9	8.6	1.8	0.9	0.3	16.7	19.4	-2.7	...
1998 PD	1,023.4	2.9	3.9	-1.0	12.8	8.9	1.6	0.9	0.1	18.7	20.5	-1.8	...
1999 PR	1,026.3	-1.4	3.5	-4.9	12.7	9.2	1.7	0.9	0.5	16.9	23.1	-6.2	...
2000 PR	1,024.8	..	..	..	..	..	..	..	..	..	..	..	...

**RATES (per 1,000)**

Year	Population as of January 1 (in thousands)	Growth			Fertility	Death	Immigration	Emigration	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	0.49	0.05	21.22	40.05	-18.83
1973	913.6	-6.64	7.86	-13.16	16.26	8.40	2.05	0.78	0.14	28.75	43.31	-14.56
1974	907.5	3.00	8.04	-3.68	16.63	8.60	2.47	0.80	-0.03	30.81	36.13	-5.32
1975	910.3	16.66	8.27	9.73	16.63	8.36	3.09	0.64	0.14	32.66	25.52	7.14
1976	925.6	13.92	8.75	6.01	17.13	8.38	2.49	0.53	-0.05	28.15	24.05	4.10
1977	938.5	11.18	9.49	2.19	17.53	8.05	2.36	0.54	-0.03	23.52	23.11	0.41
1978	949.1	5.87	9.25	-2.88	17.39	8.14	1.64	0.59	-0.05	20.27	24.16	-3.89
1979	954.7	8.39	9.99	-1.10	17.67	7.69	2.88	0.45	0.13	22.01	25.68	-3.66
1980	962.7	8.36	9.73	-0.88	17.64	7.91	3.72	0.31	0.24	21.37	25.91	-4.53
1981	970.8	11.36	9.92	1.74	17.63	7.71	2.46	0.50	0.31	23.74	24.27	-0.53
1982	981.9	12.77	9.63	3.29	17.93	8.30	2.15	0.59	-0.03	21.29	19.53	1.76
1983	994.5	13.75	10.22	3.68	17.82	7.60	1.73	0.65	0.10	19.44	16.94	2.50
1984	1,008.3	12.46	10.16	2.46	17.75	7.60	2.12	0.57	0.19	17.08	16.36	0.72
1985	1,021.0	6.18	9.89	-3.56	17.73	7.84	1.86	0.79	0.27	15.39	20.28	-4.90
1986	1,027.3	2.63	9.19	-5.02	17.03	7.84	1.81	0.35	0.36	15.48	22.30	-6.82
1987	1,030.0	-0.42	8.96	-6.83	16.54	7.58	2.06	0.46	0.35	15.24	24.03	-8.78
1988	1,029.6	-7.93	8.45	-13.82	16.35	7.90	2.17	0.44	0.39	13.30	29.23	-15.93
1989	1,021.4	-10.46	8.59	-16.47	16.39	7.79	2.11	0.50	0.22	15.02	33.31	-18.29
1990	1,010.8	-8.39	7.99	-13.77	15.99	7.99	2.35	0.40	0.11	15.99	31.81	-15.82
1991	1,002.3	-1.18	7.19	-7.85	15.28	8.08	2.45	0.41	-0.40	17.38	26.86	-9.48
1992	1,001.2	2.35	7.19	-5.81	14.97	7.77	2.50	0.47	-0.14	17.30	25.01	-7.71
1993	1,003.5	4.15	6.07	-2.89	14.19	8.12	2.39	0.48	-0.28	16.20	20.72	-4.52
1994	1,007.7	4.19	5.67	-2.45	13.90	8.23	2.23	0.52	-0.24	16.72	20.64	-3.92
1995	1,011.9	4.32	4.93	-1.57	13.31	8.38	1.90	0.53	0.20	16.70	19.84	-3.15
1996	1,016.3	4.23	4.45	-0.62	13.06	8.61	1.79	0.69	0.12	16.48	18.32	-1.84
1997	1,020.6	2.69	4.13	-1.44	12.58	8.45	1.71	0.84	0.29	16.33	18.94	-2.61
1998 PD	1,023.4	2.84	3.77	-0.93	12.50	8.73	1.54	0.86	0.14	18.28	20.03	-1.74
1999 PR	1,026.3	-1.38	3.41	-4.79	12.38	8.97	1.68	0.92	0.53	16.50	22.57	-6.07
2000 PR	1,024.8	**	**	**	**	**	**	**	**	**	**	**

See notes at the end of Table 1.

**Table A1. Population as of January 1 and Population Growth Components, Provinces and Territories, 1972-2000**

**ALBERTA**

**NUMBERS (in thousands)**

Year	Population as of January 1	Growth			Births	Deaths	Immigration	Emigration	Non-permanent Residents (net)	Interprovincial Migration			Residual <sup>1</sup>
		Total	Natural	Migratory						In	Out	Net	
1972	1,680.0	30.9	18.6	11.9	29.3	10.7	8.4	3.3	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	5.1	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	5.3	-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	4.4	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	3.8	-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	4.0	-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	4.4	-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	3.6	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	2.7	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	4.1	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	5.1	-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	5.2	—	45.9	72.1	-26.2	-4.7
1984	2,389.9	2.6	31.4	-24.1	44.1	12.7	10.7	4.4	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	4.2	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	3.6	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	3.6	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	3.0	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	3.1	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	3.5	-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	4.8	-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	3.7	-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	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	4.0	-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	4.2	0.7	53.8	49.5	4.3	-0.1
1996	2,759.5	46.0	21.5	24.5	37.9	16.4	13.9	5.2	0.8	61.2	46.1	15.1	-0.1
1997	2,805.4	61.1	20.5	40.6	36.9	16.5	12.9	6.4	1.7	74.5	42.0	32.5	...
1998 PD	2,866.5	66.6	21.0	45.6	38.0	17.1	11.2	6.6	0.9	84.3	44.2	40.1	...
1999 PR	2,933.1	40.4	20.0	20.4	37.9	17.8	12.1	7.0	1.3	68.8	54.8	14.0	...
2000 PR	2,973.6	..	..	..	..	..	..	..	..	..	..	..	...

**RATES (per 1,000)**

Year	Population as of January 1 (in thousands)	Growth			Fertility	Death	Immigration	Emigration	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	1.93	0.15	35.70	31.85	3.86
1973	1,710.9	16.85	10.74	5.89	16.97	6.24	6.90	2.95	0.38	40.86	39.29	1.56
1974	1,739.9	24.21	10.54	13.45	16.93	6.39	8.11	2.99	-0.08	42.82	34.41	8.41
1975	1,782.6	31.26	11.17	19.88	17.46	6.29	8.99	2.43	0.36	42.35	29.40	12.96
1976	1,839.2	39.19	11.45	24.06	17.62	6.17	7.94	2.00	-0.12	44.51	26.27	18.24
1977	1,912.7	38.60	11.69	20.97	17.64	5.95	6.51	2.05	-0.07	42.46	25.88	16.58
1978	1,988.0	35.66	11.59	18.35	17.49	5.90	4.85	2.20	-0.11	40.79	24.98	15.80
1979	2,060.2	40.69	11.84	23.35	17.60	5.76	6.08	1.69	0.32	45.71	27.06	18.65
1980	2,145.7	46.84	12.31	29.26	18.09	5.78	8.57	1.23	0.56	48.56	27.20	21.36
1981	2,248.7	39.17	13.00	25.26	18.59	5.59	8.43	1.80	1.08	46.91	29.36	17.55
1982	2,338.5	18.55	13.59	6.95	19.08	5.49	7.60	2.16	-0.18	30.81	29.13	1.68
1983	2,382.3	3.18	13.82	-8.68	19.09	5.28	4.48	2.16	—	19.23	30.23	-11.00
1984	2,389.9	1.09	13.12	-10.08	18.44	5.32	4.46	1.84	0.09	16.45	29.24	-12.79
1985	2,392.5	9.33	12.72	-1.45	18.23	5.50	3.74	1.73	0.52	20.77	24.75	-3.98
1986	2,414.9	6.00	12.46	-4.86	18.06	5.60	3.99	1.49	1.02	20.44	28.82	-8.38
1987	2,429.4	4.50	11.83	-5.98	17.29	5.47	4.92	1.47	1.90	18.60	29.94	-11.33
1988	2,440.4	14.28	11.46	4.15	17.11	5.65	5.71	1.21	1.91	22.30	24.55	-2.25
1989	2,475.5	17.85	11.81	7.35	17.36	5.55	6.49	1.24	0.75	25.89	24.54	1.35
1990	2,520.1	20.32	11.37	10.25	16.89	5.53	7.44	1.38	-0.16	26.47	22.13	4.34
1991	2,571.8	15.94	10.93	5.57	16.50	5.57	6.55	1.85	-1.26	23.61	21.49	2.13
1992	2,613.1	15.47	10.39	5.13	15.96	5.57	6.72	1.39	-0.59	21.65	21.26	0.39
1993	2,653.9	12.57	9.34	3.27	15.09	5.74	6.95	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	1.48	-0.68	18.86	19.85	-0.99
1995	2,721.0	14.04	8.40	5.69	14.20	5.80	5.41	1.53	0.26	19.63	18.08	1.55
1996	2,759.5	16.52	7.71	8.82	13.60	5.89	5.00	1.87	0.28	22.00	16.58	5.42
1997	2,805.4	21.54	7.21	14.33	13.01	5.80	4.56	2.27	0.60	26.26	14.81	11.45
1998 PD	2,866.5	22.97	7.23	15.73	13.12	5.88	3.87	2.28	0.31	29.07	15.23	13.84
1999 PR	2,933.1	13.69	6.78	6.91	12.82	6.04	4.09	2.37	0.45	23.29	18.56	4.74
2000 PR	2,973.6	..	..	..	..	..	..	..	..	..	..	..

See notes at the end of Table 1.

**Table A1. Population as of January 1 and Population Growth Components, Provinces and Territories, 1972-2000**

**BRITISH COLUMBIA**

**NUMBERS (in thousands)**

Year	Population as of January 1	Growth			Births	Deaths	Immigration	Emigration	Non-permanent Residents (net)	Interprovincial Migration			Residual <sup>1</sup>
		Total	Natural	Migratory						In	Out	Net	
1972	2,278.1	60.1	16.5	41.8	34.6	18.0	20.1	3.5	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	5.5	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	5.7	-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	4.7	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	3.9	-0.3	59.3	60.8	-1.5	—
1977	2,552.3	43.6	18.1	26.7	36.7	18.6	15.4	4.0	-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	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	3.4	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	2.5	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	3.2	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	4.2	-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	4.4	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	4.9	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	4.7	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	4.2	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	3.2	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	2.4	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	2.8	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	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	3.6	-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	3.3	-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	3.5	-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	3.7	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	3.8	5.1	67.1	43.7	23.4	7.6
1996	3,834.7	88.9	18.6	67.1	46.1	27.5	52.1	5.5	2.7	62.7	44.9	17.8	3.2
1997	3,923.6	61.8	17.2	44.6	44.6	27.4	47.5	6.8	1.9	54.0	52.0	2.0	...
1998 PD	3,985.3	26.2	15.1	11.2	43.1	28.1	36.0	7.1	-0.2	46.5	64.0	-17.5	...
1999 PR	4,011.6	36.9	12.4	24.5	42.0	29.6	36.1	7.6	4.1	51.1	59.2	-8.1	...
2000 PR	4,048.4	..	..	..	..	..	..	..	..	..	..	..	...



**RATES (per 1,000)**

Year	Population as of January 1 (in thousands)	Growth			Fertility	Death	Immigration	Emigration	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	1.53	0.13	31.34	20.54	10.80
1973	2,338.1	30.23	6.85	22.65	14.47	7.62	11.77	2.32	0.34	36.69	23.82	12.86
1974	2,409.9	28.30	6.66	20.93	14.50	7.84	14.11	2.35	-0.09	34.43	25.17	9.27
1975	2,479.1	16.54	6.85	8.99	14.51	7.66	11.71	1.89	0.32	24.46	25.60	-1.15
1976	2,520.4	12.56	6.73	5.83	14.13	7.41	8.08	1.53	-0.13	23.37	23.96	-0.59
1977	2,552.3	16.93	7.03	10.38	14.25	7.22	5.98	1.54	-0.08	24.39	18.36	6.02
1978	2,595.9	17.31	6.94	10.84	14.22	7.28	4.71	1.65	-0.12	24.98	17.07	7.90
1979	2,641.2	24.40	7.19	17.67	14.37	7.18	6.21	1.26	0.30	28.66	16.22	12.43
1980	2,706.4	30.24	7.54	23.15	14.59	7.05	8.89	0.90	0.54	29.09	14.48	14.62
1981	2,789.6	22.92	7.66	15.49	14.70	7.04	7.83	1.14	1.16	24.94	17.30	7.64
1982	2,854.2	11.83	7.68	4.23	14.89	7.21	6.62	1.46	-0.23	15.98	16.69	-0.70
1983	2,888.2	12.91	7.94	5.03	14.76	6.82	4.97	1.51	0.19	15.11	13.73	1.39
1984	2,925.7	11.95	7.89	4.12	14.92	7.03	4.48	1.67	0.12	14.27	13.08	1.19
1985	2,960.9	9.34	7.34	2.07	14.50	7.16	4.11	1.57	0.60	14.31	15.38	-1.08
1986	2,988.7	11.52	6.90	4.57	13.96	7.06	4.18	1.41	1.50	16.47	16.17	0.30
1987	3,023.3	19.53	6.55	12.85	13.70	7.14	6.20	1.04	1.92	19.95	14.18	5.77
1988	3,082.9	24.32	6.53	17.66	13.76	7.22	7.44	0.78	2.72	21.63	13.34	8.29
1989	3,158.8	28.11	6.48	21.50	13.66	7.18	7.91	0.87	2.80	24.77	13.11	11.66
1990	3,248.9	27.19	6.69	20.38	13.85	7.16	8.72	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	1.08	-1.07	22.02	11.80	10.22
1992	3,424.1	29.19	6.20	20.79	13.28	7.08	10.56	0.95	-0.21	22.62	11.23	11.39
1993	3,525.5	28.89	5.66	21.09	12.87	7.20	12.78	0.97	-1.23	21.03	10.52	10.51
1994	3,628.9	29.51	5.72	21.72	12.76	7.04	13.32	0.99	0.04	20.23	10.88	9.35
1995	3,737.6	25.64	5.40	18.23	12.37	6.97	11.70	1.00	1.35	17.72	11.54	6.18
1996	3,834.7	22.92	4.80	17.30	11.89	7.10	13.42	1.41	0.70	16.17	11.58	4.59
1997	3,923.6	15.62	4.34	11.28	11.27	6.93	12.02	1.73	0.48	13.66	13.16	0.50
1998 PD	3,985.3	6.56	3.76	2.79	10.79	7.02	9.00	1.77	-0.06	11.63	16.01	-4.38
1999 PR	4,011.6	9.15	3.07	6.08	10.42	7.35	8.96	1.87	1.01	12.68	14.70	-2.02
2000 PR	4,048.4	..	..	..	..	..	..	..	..	..	..	..

See notes at the end of Table 1.

**Table A1. Population as of January 1 and Population Growth Components, Provinces and Territories, 1972-2000**

**YUKON**

**NUMBERS (in thousands)**

Year	Population as of January 1	Growth			Births	Deaths	Immigration	Emigration	Non-permanent Residents (net)	Interprovincial Migration			Residual <sup>1</sup>
		Total	Natural	Migratory						In	Out	Net	
1972	19.7	1.1	0.3	0.7	0.5	0.1	0.1	—	—	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	—	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	—	2.8	2.7	0.1	0.1
1975	21.6	0.7	0.3	0.3	0.4	0.1	0.1	—	—	2.8	2.5	0.2	0.1
1976	22.3	0.3	0.3	-0.3	0.4	0.1	0.1	—	—	2.6	2.9	-0.4	0.3
1977	22.5	0.8	0.3	0.1	0.4	0.1	0.1	—	—	2.8	2.7	0.1	0.4
1978	23.4	0.6	0.4	-0.2	0.4	0.1	0.1	—	—	2.7	2.8	-0.2	0.4
1979	24.0	0.4	0.4	-0.4	0.5	0.1	0.1	—	—	2.4	2.8	-0.4	0.4
1980	24.3	0.4	0.3	-0.3	0.5	0.1	0.1	—	—	2.3	2.7	-0.4	0.4
1981	24.8	-0.6	0.4	-1.3	0.5	0.1	0.1	—	—	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	—	1.6	2.8	-1.2	0.3
1983	23.6	-0.1	0.4	-0.8	0.5	0.1	0.1	—	—	1.6	2.4	-0.8	0.3
1984	23.6	0.6	0.4	-0.1	0.5	0.1	—	—	—	1.6	1.7	-0.1	0.3
1985	24.2	0.2	0.3	-0.4	0.5	0.1	—	—	—	1.6	2.0	-0.4	0.3
1986	24.4	0.8	0.4	0.2	0.5	0.1	—	—	—	2.2	2.0	0.2	0.2
1987	25.1	0.7	0.4	0.2	0.5	0.1	0.1	—	—	2.3	2.2	0.1	0.2
1988	25.9	1.0	0.4	0.4	0.5	0.1	0.1	—	—	2.4	2.1	0.3	0.2
1989	26.8	0.7	0.4	0.1	0.5	0.1	0.1	—	—	2.3	2.3	—	0.2
1990	27.5	0.7	0.4	—	0.6	0.1	0.1	—	—	2.2	2.2	—	0.2
1991	28.2	1.2	0.5	0.6	0.6	0.1	0.1	—	—	2.4	1.9	0.5	0.2
1992	29.3	0.8	0.4	0.3	0.5	0.1	0.1	—	—	2.3	2.1	0.2	0.1
1993	30.2	-0.2	0.4	-0.7	0.5	0.1	0.1	—	—	1.6	2.4	-0.8	0.1
1994	30.0	0.3	0.3	-0.2	0.4	0.1	0.1	—	—	1.8	2.0	-0.2	0.1
1995	30.3	1.2	0.3	0.7	0.5	0.2	0.1	—	—	2.3	1.7	0.7	0.1
1996	31.5	0.6	0.3	0.3	0.4	0.1	0.1	—	—	1.9	1.7	0.2	0.1
1997	32.1	-0.2	0.4	-0.5	0.5	0.1	0.1	0.1	—	1.6	2.2	-0.6	...
1998 PD	31.9	-0.8	0.3	-1.1	0.4	0.1	0.1	0.1	—	1.5	2.6	-1.1	...
1999 PR	31.1	-0.4	0.2	-0.6	0.4	0.2	0.1	0.1	—	1.5	2.1	-0.6	...
2000 PR	30.7	..	..	..	..	..	..	..	..	..	..	..	...

**RATES (per 1,000)**

Year	Population as of January 1 (in thousands)	Growth			Fertility	Death	Immigration	Emigration	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	1.92	0.15	138.94	110.57	28.37
1973	20.8	7.61	14.79	-11.34	20.10	5.31	4.31	2.97	0.19	109.42	122.29	-12.88
1974	21.0	28.53	17.91	6.53	23.27	5.36	4.70	2.73	—	130.67	126.11	4.56
1975	21.6	31.02	13.50	13.50	18.61	5.11	4.43	2.19	0.23	125.46	114.42	11.04
1976	22.3	12.72	14.51	-14.15	20.00	5.49	3.26	1.79	—	114.32	129.95	-15.62
1977	22.5	35.21	14.29	2.92	18.87	4.58	2.27	1.83	—	122.28	119.79	2.48
1978	23.4	25.49	15.14	-7.10	18.90	3.76	2.41	1.99	—	112.16	119.69	-7.53
1979	24.0	15.82	15.49	-16.81	20.75	5.26	2.86	1.37	0.21	98.53	117.04	-18.51
1980	24.3	17.11	14.18	-13.89	19.39	5.21	3.91	1.10	0.37	93.45	110.52	-17.07
1981	24.8	-22.67	16.14	-52.21	21.90	5.76	4.49	1.84	1.35	110.58	166.79	-56.21
1982	24.2	-23.20	17.01	-51.37	21.94	4.93	2.88	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	1.44	-0.38	65.96	100.19	-34.23
1984	23.6	24.77	17.23	-3.65	21.75	4.53	1.72	0.92	0.21	66.60	71.25	-4.65
1985	24.2	8.74	14.06	-16.36	19.13	5.07	1.48	0.82	1.32	65.37	83.71	-18.34
1986	24.4	31.47	14.95	7.55	19.51	4.56	1.98	0.77	-0.89	88.50	81.27	7.23
1987	25.1	28.73	14.50	6.82	18.74	4.23	3.14	0.82	0.59	90.50	86.59	3.92
1988	25.9	36.72	14.60	14.91	19.76	5.16	2.58	0.87	-0.04	92.90	79.66	13.24
1989	26.8	24.07	14.17	2.94	17.66	3.50	3.68	0.74	1.10	85.23	86.33	-1.10
1990	27.5	23.47	15.85	0.79	19.98	4.13	2.87	1.15	—	79.89	80.82	-0.93
1991	28.2	41.36	15.79	19.83	19.76	3.97	2.92	1.36	1.63	81.78	65.15	16.63
1992	29.3	28.42	13.84	9.57	17.77	3.93	4.47	1.44	-0.67	78.45	71.22	7.22
1993	30.2	-6.41	12.79	-24.13	16.88	4.09	3.42	1.03	-1.43	54.40	79.49	-25.09
1994	30.0	9.89	10.55	-5.57	14.66	4.11	3.88	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	1.10	0.74	74.72	53.48	21.24
1996	31.5	20.03	10.16	7.92	13.93	3.77	2.74	1.45	-0.13	59.93	53.17	6.76
1997	32.1	-5.99	10.96	-16.95	14.80	3.84	2.72	1.81	-0.44	50.89	68.32	-17.42
1998 PD	31.9	-26.43	8.41	-34.84	13.04	4.63	1.97	2.03	0.57	48.17	83.51	-35.35
1999 PR	31.1	-11.35	7.05	-18.40	12.19	5.14	2.46	2.20	—	48.31	66.97	-18.66
2000 PR	30.7	..	..	..	..	..	..	..	..	..	..	..

See notes at the end of Table 1.

**Table A1. Population as of January 1 and Population Growth Components, Provinces and Territories, 1972-2000**  
**NORTHWEST TERRITORIES (Nunavut included until 1991)**  
**NUMBERS (in thousands)**

Year	Population as of January 1	Growth			Births	Deaths	Immigration	Emigration	Non-permanent Residents (net)	Interprovincial Migration			Residual <sup>1</sup>
		Total	Natural	Migratory						In	Out	Net	
1972	37.8	2.2	1.0	1.1	1.2	0.3	0.2	—	—	4.4	3.5	0.9	0.1
1973	40.0	0.8	1.0	-0.3	1.2	0.2	0.2	—	—	3.6	4.0	-0.4	0.1
1974	40.8	1.3	0.8	0.3	1.0	0.2	0.2	—	—	4.3	4.2	0.2	0.1
1975	42.1	1.6	1.0	0.6	1.2	0.2	0.2	—	—	4.3	3.9	0.4	0.1
1976	43.8	0.6	1.0	-0.6	1.2	0.2	0.2	—	—	4.1	4.9	-0.8	0.3
1977	44.4	0.4	1.0	-0.9	1.2	0.2	0.1	—	—	4.4	5.4	-1.0	0.3
1978	44.8	0.5	1.0	-0.9	1.2	0.2	0.1	—	—	3.9	4.8	-1.0	0.3
1979	45.2	0.7	1.1	-0.7	1.3	0.2	0.1	—	—	3.7	4.6	-0.8	0.3
1980	45.9	0.6	1.1	-0.8	1.3	0.2	0.1	—	—	3.4	4.3	-0.9	0.3
1981	46.5	1.8	1.1	0.3	1.3	0.2	0.1	—	—	4.2	4.1	0.2	0.3
1982	48.2	2.1	1.1	0.6	1.4	0.2	0.1	—	—	3.8	3.2	0.6	0.4
1983	50.4	1.6	1.3	—	1.5	0.2	0.1	—	—	3.4	3.4	—	0.4
1984	52.0	1.7	1.2	0.1	1.4	0.2	0.1	—	—	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	—	3.4	4.0	-0.6	0.4
1986	54.6	-0.1	1.3	-1.8	1.5	0.2	0.1	—	—	3.1	4.9	-1.8	0.4
1987	54.5	0.7	1.3	-1.1	1.5	0.2	0.1	—	—	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	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	—	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	0.1	3.8	3.8	—	0.5
1991	59.7	1.9	1.4	0.2	1.6	0.2	0.1	—	—	3.7	3.6	0.1	0.3
1992	39.1	0.5	0.7	-0.2	0.9	0.1	0.1	—	-0.1	2.9	3.1	-0.2	—
1993	39.6	0.8	0.7	—	0.8	0.1	0.1	—	—	2.6	2.6	—	—
1994	40.4	0.8	0.7	0.1	0.8	0.1	0.1	—	—	2.8	2.7	0.1	—
1995	41.2	0.4	0.7	-0.4	0.9	0.1	0.1	0.1	—	2.5	2.9	-0.4	—
1996	41.6	0.1	0.7	-0.6	0.8	0.2	0.1	0.1	—	2.4	3.0	-0.6	—
1997	41.7	-0.2	0.6	-0.8	0.7	0.1	0.1	0.1	—	2.4	3.3	-0.8	—
1998 PD	41.4	-0.4	0.6	-1.1	0.8	0.2	0.1	0.1	—	2.3	3.4	-1.1	...
1999 PR	41.0	0.6	0.6	—	0.8	0.2	0.1	0.1	—	2.7	2.7	—	...
2000 PR	41.6	..	..	..	..	..	..	..	..	..	..	..	...

**RATES (per 1,000)**

Year	Population as of January 1 (in thousands)	Growth			Fertility	Death	Immigration	Emigration	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	0.31	-0.03	113.20	90.07	23.12
1973	40.0	20.58	23.62	-6.36	29.78	6.16	4.40	0.49	0.02	88.53	98.82	-10.29
1974	40.8	31.21	20.15	7.83	25.11	4.96	4.82	0.55	-0.10	104.82	101.15	3.66
1975	42.1	38.36	22.32	12.92	27.35	5.03	4.49	0.42	—	100.13	91.29	8.84
1976	43.8	13.05	22.03	-14.73	26.84	4.81	4.02	0.29	-0.11	92.98	111.31	-18.33
1977	44.4	9.60	22.25	-20.24	26.74	4.49	2.74	0.31	-0.11	98.06	120.60	-22.55
1978	44.8	10.13	22.19	-19.55	26.74	4.55	2.53	0.38	-0.11	85.59	107.18	-21.59
1979	45.2	15.22	23.64	-15.84	28.14	4.50	3.05	0.29	-0.02	81.24	99.82	-18.58
1980	45.9	12.01	23.02	-18.30	28.17	5.15	2.01	0.22	0.02	72.96	93.08	-20.12
1981	46.5	36.98	23.35	6.33	27.49	4.14	1.92	0.19	0.91	89.30	85.60	3.69
1982	48.2	43.06	22.92	13.04	27.62	4.71	2.25	0.95	0.57	76.92	65.75	11.17
1983	50.4	31.02	24.43	-0.27	29.14	4.71	1.15	0.47	-0.27	66.41	67.10	-0.68
1984	52.0	31.26	22.87	1.74	27.36	4.49	1.42	0.49	-0.15	67.14	66.18	0.97
1985	53.6	18.54	22.60	-10.55	26.56	3.96	1.31	0.98	-0.07	63.17	73.98	-10.81
1986	54.6	-1.72	23.31	-33.01	27.62	4.31	1.23	0.88	0.04	56.61	90.01	-33.39
1987	54.5	12.70	24.17	-20.52	27.76	3.59	1.31	0.42	0.07	63.92	85.41	-21.49
1988	55.2	20.77	23.93	-12.04	27.87	3.94	1.36	0.70	1.24	63.20	77.14	-13.94
1989	56.4	24.57	21.55	-5.68	25.91	4.36	1.75	1.35	0.39	65.34	71.80	-6.47
1990	57.8	33.04	23.10	1.50	26.96	3.86	1.28	0.92	1.24	63.90	64.01	-0.10
1991	59.7	38.90	28.29	3.87	33.09	4.80	2.51	0.24	-0.08	73.95	72.27	1.68
1992	39.1	13.61	18.11	-5.42	21.67	3.56	2.31	0.46	-1.68	73.22	78.81	-5.59
1993	39.6	19.39	17.31	1.03	20.86	3.55	3.43	0.75	-0.58	65.09	66.16	-1.08
1994	40.4	20.77	16.72	3.04	20.20	3.48	3.06	1.01	-0.86	68.43	66.59	1.84
1995	41.2	9.18	17.97	-9.64	21.11	3.14	2.10	1.21	0.10	60.36	70.99	-10.63
1996	41.6	1.47	15.81	-14.94	19.44	3.63	1.97	1.54	0.05	57.21	72.63	-15.42
1997	41.7	-5.51	14.08	-19.60	17.41	3.32	2.02	1.71	0.43	58.04	78.39	-20.34
1998 PD	41.4	-10.70	14.78	-25.48	18.42	3.64	1.31	1.89	0.70	56.23	81.84	-25.61
1999 PR	41.0	14.92	14.48	0.44	18.31	3.83	1.48	2.01	0.63	64.98	64.64	0.34
2000 PR	41.6	..	..	..	..	..	..	..	..	..	..	..

See notes at the end of Table 1.

**Table A1. Population as of January 1 and Population Growth Components, Provinces and Territories, 1972-2000**

**NUNAVUT**

**NUMBERS (in thousands)**

Year	Population as of January 1	Growth			Births	Deaths	Immigration	Emigration	Non-permanent Residents (net)	Interprovincial Migration			Residual <sup>1</sup>
		Total	Natural	Migratory						In	Out	Net	
1972	...	...	...	...	...	...	...	...	...	...	...	...	...
1973	...	...	...	...	...	...	...	...	...	...	...	...	...
1974	...	...	...	...	...	...	...	...	...	...	...	...	...
1975	...	...	...	...	...	...	...	...	...	...	...	...	...
1976	...	...	...	...	...	...	...	...	...	...	...	...	...
1977	...	...	...	...	...	...	...	...	...	...	...	...	...
1978	...	...	...	...	...	...	...	...	...	...	...	...	...
1979	...	...	...	...	...	...	...	...	...	...	...	...	...
1980	...	...	...	...	...	...	...	...	...	...	...	...	...
1981	...	...	...	...	...	...	...	...	...	...	...	...	...
1982	...	...	...	...	...	...	...	...	...	...	...	...	...
1983	...	...	...	...	...	...	...	...	...	...	...	...	...
1984	...	...	...	...	...	...	...	...	...	...	...	...	...
1985	...	...	...	...	...	...	...	...	...	...	...	...	...
1986	...	...	...	...	...	...	...	...	...	...	...	...	...
1987	...	...	...	...	...	...	...	...	...	...	...	...	...
1988	...	...	...	...	...	...	...	...	...	...	...	...	...
1989	...	...	...	...	...	...	...	...	...	...	...	...	...
1990	...	...	...	...	...	...	...	...	...	...	...	...	...
1991	...	...	...	...	...	...	...	...	...	...	...	...	...
1992	22.6	0.7	0.6	-0.1	0.7	0.1	—	—	—	1.0	1.0	-0.1	0.2
1993	23.3	0.8	0.6	—	0.7	0.1	—	—	—	1.0	1.0	—	0.2
1994	24.1	0.7	0.7	-0.1	0.8	0.1	—	—	—	0.9	1.1	-0.1	0.2
1995	24.8	0.6	0.6	-0.2	0.7	0.1	—	—	—	0.8	1.1	-0.2	0.2
1996	25.4	0.4	0.6	-0.3	0.8	0.1	—	—	—	0.9	1.1	-0.2	0.1
1997	25.8	0.3	0.6	-0.3	0.7	0.1	—	—	—	0.9	1.2	-0.3	...
1998 PD	26.1	0.6	0.7	—	0.8	0.1	—	—	—	1.0	1.0	—	...
1999 PR	26.7	0.6	0.6	-0.1	0.8	0.1	—	—	—	1.0	1.0	—	...
2000 PR	27.3	..	..	..	..	..	..	..	..	..	..	..	..

**RATES (per 1,000)**

Year	Population as of January 1 (in thousands)	Growth			Fertility	Death	Immigration	Emigration	Non-permanent Residents	Interprovincial Migration		
		Total	Natural	Migratory						In	Out	Net
1972	...	...	...	...	...	...	...	...	...	...	...	...
1973	...	...	...	...	...	...	...	...	...	...	...	...
1974	...	...	...	...	...	...	...	...	...	...	...	...
1975	...	...	...	...	...	...	...	...	...	...	...	...
1976	...	...	...	...	...	...	...	...	...	...	...	...
1977	...	...	...	...	...	...	...	...	...	...	...	...
1978	...	...	...	...	...	...	...	...	...	...	...	...
1979	...	...	...	...	...	...	...	...	...	...	...	...
1980	...	...	...	...	...	...	...	...	...	...	...	...
1981	...	...	...	...	...	...	...	...	...	...	...	...
1982	...	...	...	...	...	...	...	...	...	...	...	...
1983	...	...	...	...	...	...	...	...	...	...	...	...
1984	...	...	...	...	...	...	...	...	...	...	...	...
1985	...	...	...	...	...	...	...	...	...	...	...	...
1986	...	...	...	...	...	...	...	...	...	...	...	...
1987	...	...	...	...	...	...	...	...	...	...	...	...
1988	...	...	...	...	...	...	...	...	...	...	...	...
1989	...	...	...	...	...	...	...	...	...	...	...	...
1990	...	...	...	...	...	...	...	...	...	...	...	...
1991	...	...	...	...	...	...	...	...	...	...	...	...
1992	22.6	29.79	25.56	-3.62	30.62	5.06	0.87	0.44	-0.52	41.97	45.50	-3.53
1993	23.3	34.05	25.65	1.01	30.63	4.99	1.44	0.46	-0.13	40.60	40.43	0.17
1994	24.1	28.83	26.90	-5.24	30.95	4.05	0.98	0.25	-0.29	38.77	44.47	-5.69
1995	24.8	23.77	25.61	-9.05	29.47	3.87	0.36	0.08	—	33.86	43.19	-9.33
1996	25.4	16.69	24.70	-10.55	29.43	4.73	0.39	1.25	0.04	34.90	44.64	-9.73
1997	25.8	13.09	24.07	-10.98	28.69	4.62	0.69	1.62	0.15	35.66	45.86	-10.20
1998 PD	26.1	23.11	24.77	-1.66	29.46	4.69	0.34	1.66	0.19	38.91	39.44	-0.53
1999 PR	26.7	20.76	23.79	-3.03	28.78	4.99	0.22	1.81	-0.59	37.81	38.66	-0.85
2000 PR	27.3	..	..	..	..	..	..	..	..	..	..	..

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. <sup>1</sup>	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

<sup>1</sup> 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	8.3	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	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	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	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			
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	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	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	105.8					
23									47.3	50.5	52.1	54.1	54.8	58.1	62.5	67.2	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	70.6	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	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	35.1					
26												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	25.3	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	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	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	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	9.3	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	7.4	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	6.1	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	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	4.3	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	3.6	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	2.9	2.9	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	2.5	2.5	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	2.3	2.3	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	2.1	2.1	2.1	2.1		
40																										2.5	2.8	2.5	2.4	2.2	2.3	2.2	2.0	2.0	2.0	2.0	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	1.6	1.6	1.6	1.6	1.6	
42																												1.9	1.7	1.7	1.6	1.4	1.6	1.5	1.5	1.5	1.5	1.5	1.5	1.5	
43																													1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
44																														1.2	1.2	1.1	1.0	1.2	0.9	0.9	0.9	0.9	0.9	0.9	0.9
45																														1.1	1.1	1.0	1.0	0.9	0.8	0.8	0.8	0.8	0.8	0.8	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. <sup>2</sup>	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
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
1998	944	279	1,933	1,473	16,916	25,149	2,443	2,246	7,668	9,827	117	93	69,088
Mean Duration of Marriage for Persons Divorced in the Year <sup>1</sup>													
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
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
1998	12.1	12.7	11.6	11.4	10.4	10.9	10.5	10.7	10.9	10.8	10.9	10.7	10.8

<sup>1</sup> Excludes divorces for marriages of a duration greater than 25 years.

<sup>2</sup> 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 1948-1949 to 1997-1998**

Year	Number of Marriages per Year	Marriage Cohort	Cohort Marriages	Marriage Duration (in years)																									Year of Observation	T.D.R. <sup>1</sup>																			
				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																		
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
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

Year	Number of Marriages per Year	Marriage Cohort	Cohort Marriages	Marriage Duration (in years)																									Year of Observation	T.D.R. <sup>1</sup>	
				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
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	67	1998	3,399
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	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	70				
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	76					
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	77						
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	82							
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	85								
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	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	96										
1982	188,360	1981-82	189,221	9	65	118	144	260	326	263	232	216	190	177	160	153	135	119	104	103											
1983	184,675	1982-83	186,518	8	64	109	209	322	273	247	219	197	183	172	158	140	128	111	109												
1984	185,597	1983-84	185,136	8	63	150	270	263	253	237	209	202	184	171	151	135	117	112													
1985	184,096	1984-85	184,847	8	72	212	249	260	251	226	219	201	187	170	146	123	122														
1986	175,518	1985-86	179,807	10	103	217	265	263	246	237	222	203	182	163	143	140															
1987	182,151	1986-87	178,835	20	106	216	251	255	251	235	218	196	171	149	140																
1988	187,728	1987-88	184,940	19	106	214	248	254	243	237	216	175	158	150																	
1989	190,640	1988-89	189,184	19	109	208	265	268	256	231	193	170	168																		
1990	187,737	1989-90	189,189	17	113	230	272	270	257	213	181	178																			
1991	172,251	1990-91	179,994	19	120	232	276	274	232	205	200																				
1992	164,573	1991-92	168,412	21	121	242	270	246	216	212																					
1993	159,317	1992-93	161,945	22	132	236	246	228	221																						
1994	159,958	1993-94	159,638	22	129	222	230	241																							
1995	160,251	1994-95	160,105	20	113	203	241																								
1996	156,691	1995-96	158,471	16	106	218																									
1997	153,306	1996-97	154,999	16	112																										
1998	151,577	1997-98	152,442	15																											

<sup>1</sup> 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.	Nvt.	Canada
Live Births														
1986	7,618	1,928	12,358	9,788	84,634	133,882	17,009	17,513	43,744	41,967	483	830	677	372,431
1987	7,468	1,955	12,110	9,588	83,791	134,617	16,953	17,034	42,110	41,814	478	843	680	369,441
1988	6,435	1,977	12,182	9,617	86,612	138,066	17,030	16,763	42,055	42,930	521	853	702	375,743
1989	7,026	1,937	12,533	9,667	92,373	145,338	17,321	16,651	43,351	43,769	480	819	660	391,925
1990	6,787	2,014	12,870	9,824	98,048	150,923	17,352	16,090	43,004	45,617	556	902	682	404,669
1991	7,166	1,885	12,016	9,497	97,310	151,478	17,282	15,304	42,776	45,612	568	911	723	402,533
1992	6,918	1,850	11,874	9,389	96,146	150,593	16,590	15,004	42,039	46,156	529	852	702	398,643
1993	6,421	1,754	11,568	9,049	92,391	147,848	16,709	14,269	40,292	46,026	508	834	725	388,394
1994	6,339	1,716	11,099	8,978	90,578	147,068	16,480	14,038	39,796	46,998	442	824	756	385,114
1995	5,859	1,754	10,726	8,563	87,417	146,263	16,113	13,499	38,914	46,820	470	874	739	378,016
1996	5,747	1,694	10,573	8,176	85,226	140,012	15,478	13,300	37,851	46,138	443	815	747	366,200
1997	5,416	1,591	9,952	7,922	79,774	133,004	14,655	12,860	36,905	44,577	474	723	745	348,598
1998	4,994	1,504	9,595	7,885	75,856	132,618	14,461	12,777	37,905	43,072	396	681	667	342,418
Age-Specific Fertility Rates (per 1,000)														
1996: 15-19	23.6	29.8	28.0	26.8	16.3	19.9	40.0	39.5	28.2	19.1	32.7	60.0	153.4	22.1
20-24	63.7	79.8	72.1	76.7	72.1	57.7	92.3	96.9	79.2	65.0	87.0	137.0	203.8	68.4
25-29	92.0	121.0	100.8	102.4	118.4	104.4	120.4	129.9	115.3	99.2	96.8	111.4	170.2	109.1
30-34	63.0	84.2	74.4	65.1	81.7	94.4	89.5	81.3	87.6	85.3	76.9	93.0	87.3	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	37.5	45.6	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	10.8	5.1
45-49	—	0.6	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.3	0.8	—	2.0	0.2
1997: 15-19	22.6	29.0	23.7	25.4	15.5	17.1	36.2	37.3	25.8	17.4	31.4	55.2	136.4	20.0
20-24	59.2	76.1	68.6	76.0	67.0	53.7	85.4	94.7	75.3	59.5	90.5	117.5	214.6	64.0
25-29	90.6	111.9	98.0	101.2	111.7	98.8	115.8	123.4	112.5	94.3	115.1	103.2	165.5	103.8
30-34	61.5	75.7	71.4	64.6	79.6	91.5	87.2	79.4	84.9	83.2	82.8	79.6	98.1	84.5
35-39	17.3	27.3	24.4	17.1	26.6	38.1	33.2	27.0	32.4	35.7	37.2	41.3	48.7	32.5
40-44	2.2	6.1	3.1	2.4	3.9	6.3	4.7	4.0	5.6	6.0	7.7	7.6	8.6	5.2
45-49	0.2	—	0.2	—	0.1	0.2	0.3	0.4	0.1	0.3	—	—	—	0.2
1998: 15-19	20.4	29.7	23.9	26.4	14.9	17.2	38.7	38.0	25.4	16.1	28.7	54.9	137.4	19.8
20-24	57.8	72.6	65.8	71.7	63.7	54.6	85.3	94.0	76.1	58.2	88.5	109.8	187.3	63.2
25-29	83.2	99.6	94.3	103.9	108.4	97.5	115.6	121.2	110.6	91.1	85.9	97.3	126.9	101.6
30-34	61.7	75.1	71.1	65.1	77.2	92.0	85.8	79.1	90.7	82.4	72.0	90.6	92.4	84.6
35-39	17.1	29.9	24.3	20.5	26.3	38.6	32.9	26.4	32.8	35.5	38.4	36.2	41.8	32.8
40-44	2.3	4.3	3.6	2.2	4.1	6.4	4.3	4.0	5.3	5.9	7.2	3.8	10.3	5.2
45-49	0.1	0.2	0.1	0.2	0.1	0.3	0.2	0.3	0.2	0.2	—	1.6	—	0.2

Year	Nfld	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta	B.C.	Yukon	N.W.T.	Nvt.	Canada
Fertility Rates by Birth Order (per 1,000 women)														
1996: 1	17.4	19.9	19.2	18.6	19.4	20.3	22.3	20.3	20.1	20.2	22.4	26.0	32.8	20.0
2	13.9	16.6	15.1	14.5	15.8	17.1	16.8	16.9	17.7	15.6	14.9	21.6	27.9	16.4
3	4.0	7.8	6.0	5.5	6.2	6.8	8.4	9.3	7.9	5.9	6.1	11.3	20.0	6.7
4	1.1	2.9	1.6	1.4	1.8	2.1	3.5	3.8	2.8	1.9	2.6	5.7	15.1	2.1
5 +	0.3	1.2	0.8	0.5	0.8	1.1	2.7	2.8	1.8	0.9	1.3	3.4	21.0	1.2
1997: 1	17.0	19.5	18.1	18.4	18.4	19.0	20.9	19.3	19.4	19.0	21.3	23.2	32.3	18.9
2	12.9	15.1	14.5	14.3	14.9	16.3	16.4	16.3	16.9	15.2	18.1	19.6	27.4	15.7
3	3.9	7.6	5.4	4.9	5.6	6.4	7.9	9.0	7.2	5.5	7.2	9.5	19.4	6.2
4	0.9	1.7	1.6	1.4	1.7	1.9	3.2	3.8	2.7	1.7	2.8	4.7	14.9	2.0
5 +	0.5	1.2	0.7	0.5	0.8	1.0	2.7	2.8	1.8	0.8	1.2	4.1	21.2	1.1
1998: 1	16.2	17.6	17.4	18.1	17.8	18.8	20.8	19.2	19.8	18.4	17.5	22.4	29.0	18.6
2	12.3	15.2	14.2	14.9	14.5	16.2	15.6	16.3	16.8	14.7	17.2	16.6	24.7	15.5
3	3.6	6.9	5.2	4.9	5.0	6.3	7.9	8.6	7.4	5.3	5.9	10.9	16.1	6.0
4	0.8	2.2	1.5	1.3	1.5	1.9	3.5	3.6	2.6	1.6	2.1	5.0	13.0	1.9
5 +	0.4	0.8	0.7	0.5	0.8	1.0	2.7	2.8	1.7	0.8	0.8	4.2	17.8	1.1
Total Fertility Rate (women aged 15-49); <sup>1</sup>														
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	..	1.83	1.56	1.51	1.37	1.58	1.83	1.99	1.83	1.62	1.90	2.86	..	1.58
1988	..	1.86	1.57	1.53	1.43	1.60	1.85	2.00	1.85	1.65	2.00	2.94	..	1.61
1989	..	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	..	1.94	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	2.47	3.55	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	2.30	3.37	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	2.23	3.43	1.68
1994	1.34	1.73	1.54	1.55	1.64	1.67	1.97	1.97	1.82	1.64	1.73	2.23	3.51	1.68
1995	1.28	1.79	1.52	1.51	1.61	1.67	1.95	1.91	1.79	1.61	1.82	2.34	3.41	1.66
1996	1.30	1.73	1.52	1.46	1.60	1.61	1.89	1.89	1.74	1.55	1.67	2.25	3.37	1.62
1997	1.27	1.63	1.45	1.43	1.52	1.53	1.81	1.83	1.68	1.48	1.82	2.02	3.36	1.55
1998	1.21	1.56	1.42	1.45	1.47	1.53	1.81	1.82	1.71	1.45	1.60	1.97	2.98	1.54

<sup>2</sup> 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<sup>1</sup>, 1986-1998**

Birth Order	Year	15-19		20-24		25-29		30-34		35-39		40-44		45-49		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	Quebec	Rest of Canada	Canada
1	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	0.03	0.02	0.66	0.71	0.70
	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	0.03	0.02	0.71	0.72	0.72
	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	0.05	0.02	0.76	0.75	0.75
	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	0.02	0.02	0.80	0.77	0.78
	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	0.01	0.04	0.80	0.76	0.77
	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	0.02	0.01	0.78	0.76	0.76
	1993	14.69	22.31	47.70	41.73	56.78	50.70	24.75	27.02	6.29	7.70	0.86	1.11	0.01	0.04	0.76	0.75	0.75
	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	0.02	0.04	0.74	0.76	0.75
	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	0.04	0.05	0.73	0.75	0.74
	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	0.04	0.05	0.73	0.72	0.72
	1997	13.15	17.50	41.36	34.93	52.00	46.22	25.15	28.22	6.98	8.84	0.99	1.38	0.03	0.04	0.70	0.69	0.69
	1998	12.48	17.56	39.28	35.45	51.31	44.84	24.93	28.72	7.07	9.04	1.04	1.36	0.03	0.05	0.68	0.69	0.68
	2	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	0.04	0.01	0.49	0.59
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	0.04	0.02	0.50	0.58	0.56
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	0.01	0.03	0.52	0.59	0.57
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	0.04	0.02	0.57	0.60	0.59
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	0.02	0.04	0.57	0.59	0.58
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	0.01	0.04	0.59	0.60	0.60
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	0.02	0.04	0.59	0.59	0.59
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	0.02	0.04	0.59	0.59	0.59
1995		2.36	4.20	21.30	22.54	45.56	40.07	34.77	35.82	9.64	11.96	1.19	1.59	0.01	0.05	0.57	0.58	0.58
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	0.01	0.05	0.57	0.57	0.57
1997		2.09	3.44	19.59	20.05	41.85	36.83	33.53	35.09	10.04	12.97	1.17	1.83	0.03	0.07	0.54	0.55	0.55
1998		2.23	3.33	19.24	19.86	41.07	36.17	33.25	35.43	10.11	13.36	1.29	1.84	0.03	0.07	0.54	0.55	0.55
3		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	0.01	0.03	0.17	0.26
	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	0.04	0.03	0.17	0.26	0.23
	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	0.01	0.02	0.19	0.26	0.24
	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	0.03	0.02	0.20	0.26	0.24
	1991	0.19	0.51	4.64	7.11	15.13	16.92	15.73	18.54	5.44	7.19	0.68	0.92	0.01	0.03	0.21	0.26	0.24
	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	0.02	0.03	0.22	0.25	0.24
	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	0.01	0.04	0.22	0.24	0.24
	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	0.01	0.02	0.22	0.24	0.24
	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	0.03	0.04	0.22	0.23	0.23
	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	0.04	0.04	0.21	0.23	0.22
	1997	0.17	0.44	4.77	6.12	13.33	12.75	14.82	15.39	5.77	7.38	0.74	1.12	0.02	0.04	0.20	0.22	0.21
	1998	0.18	0.41	4.16	5.85	11.69	12.93	13.05	15.16	5.61	7.40	0.83	1.11	0.03	0.04	0.18	0.21	0.21



Birth Order	Year	15-19		20-24		25-29		30-34		35-39		40-44		45-49		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	Quebec	Rest of Canada	Canada
4	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	0.02	0.02	0.04	0.08	0.07
	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	0.03	0.03	0.04	0.08	0.07
	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	—	0.03	0.04	0.08	0.07
	1990	—	0.04	0.76	1.67	2.80	4.77	3.95	6.03	2.24	3.11	0.35	0.54	0.02	0.02	0.05	0.08	0.07
	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	—	0.03	0.05	0.08	0.07
	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	0.01	0.01	0.06	0.08	0.07
	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	0.02	0.02	0.06	0.08	0.07
	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	—	0.02	0.06	0.08	0.07
	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	0.02	0.02	0.06	0.08	0.07
	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	0.03	0.02	0.06	0.07	0.07
	1997	0.04	0.04	1.02	1.55	3.23	3.89	4.26	4.71	2.37	3.00	0.50	0.59	0.02	0.03	0.06	0.07	0.07
	1998	—	0.04	0.72	1.49	3.19	3.84	4.08	4.79	2.13	2.87	0.46	0.60	0.01	0.03	0.05	0.07	0.06
	5 +	1986	—	—	0.09	0.37	0.68	1.82	1.29	2.86	1.07	2.14	0.36	0.72	0.02	0.06	0.02	0.04
1988		—	—	0.09	0.38	0.63	1.72	1.31	2.98	1.18	2.11	0.40	0.68	0.02	0.05	0.02	0.04	0.03
1989		—	—	0.13	0.41	0.77	1.77	1.60	2.88	1.30	2.15	0.35	0.63	—	0.04	0.02	0.04	0.03
1990		0.01	0.01	0.15	0.44	0.77	1.91	1.51	2.92	1.30	2.27	0.39	0.67	0.03	0.05	0.02	0.04	0.04
1991		—	—	0.14	0.42	0.80	1.93	1.62	2.98	1.38	2.25	0.37	0.64	0.04	0.05	0.02	0.04	0.04
1992		—	0.01	0.21	0.42	0.97	1.99	1.69	2.98	1.32	2.29	0.38	0.68	0.01	0.04	0.02	0.04	0.04
1993		—	0.01	0.17	0.45	0.95	1.96	1.80	2.93	1.48	2.22	0.47	0.65	0.01	0.05	0.02	0.04	0.04
1994		—	0.01	0.19	0.49	1.16	2.01	1.81	2.93	1.39	2.21	0.46	0.67	0.01	0.03	0.03	0.04	0.04
1995		—	—	0.20	0.47	1.08	2.04	1.91	2.83	1.63	2.33	0.47	0.70	0.03	0.05	0.03	0.04	0.04
1996		—	—	0.21	0.48	1.23	1.98	1.94	2.75	1.50	2.22	0.57	0.71	0.05	0.05	0.03	0.04	0.04
1997		—	—	0.21	0.42	1.30	1.84	1.85	2.66	1.43	2.30	0.48	0.71	0.02	0.05	0.03	0.04	0.04
1998		—	—	0.26	0.43	1.16	1.87	1.90	2.78	1.38	2.17	0.51	0.69	0.03	0.06	0.03	0.04	0.04
All Orders		1986	14.86	25.56	70.05	82.75	112.18	122.34	59.52	77.75	17.20	24.22	2.48	3.43	0.12	0.14	1.38	1.68
	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	0.15	0.15	1.43	1.68	1.61
	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	0.08	0.15	1.53	1.72	1.67
	1990	18.06	27.66	80.88	80.04	128.43	121.68	75.65	86.40	22.35	29.65	2.89	4.21	0.15	0.12	1.64	1.75	1.72
	1991	17.22	28.56	80.52	78.09	129.16	118.61	77.91	85.82	22.93	30.05	3.03	4.19	0.09	0.20	1.65	1.73	1.71
	1992	17.72	28.14	77.60	75.98	129.71	118.23	80.89	87.79	23.94	30.69	3.33	4.55	0.08	0.13	1.67	1.73	1.71
	1993	17.26	27.45	76.48	74.12	124.34	114.92	81.11	87.55	24.36	31.49	3.63	4.72	0.07	0.18	1.64	1.70	1.68
	1994	17.46	27.40	75.61	72.85	123.34	114.05	82.21	88.39	25.52	32.18	3.73	5.02	0.06	0.16	1.64	1.70	1.68
	1995	17.01	26.73	73.17	71.41	119.06	110.42	82.81	89.56	26.13	33.26	3.94	5.17	0.13	0.21	1.61	1.68	1.66
	1996	16.27	23.99	72.13	67.24	118.42	106.28	81.69	88.64	27.33	34.34	3.94	5.47	0.17	0.20	1.60	1.63	1.62
	1997	15.45	21.42	66.95	63.08	111.72	101.53	79.61	86.08	26.58	34.50	3.88	5.63	0.11	0.22	1.52	1.56	1.55
	1998	14.90	21.34	63.67	63.09	108.41	99.65	77.22	86.87	26.29	34.84	4.13	5.60	0.12	0.25	1.47	1.56	1.54

<sup>1</sup> 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. <sup>1</sup>	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

<sup>1</sup> 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 <sup>1</sup>
	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

<sup>1</sup> 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, 1981-1999**

	1981	1986	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
<b>ASIA</b>	<b>50,894</b>	<b>42,291</b>	<b>115,240</b>	<b>123,414</b>	<b>143,048</b>	<b>149,835</b>	<b>143,252</b>	<b>130,534</b>	<b>145,483</b>	<b>139,741</b>	<b>102,203</b>	<b>113,306</b>
China	9,789	4,173	14,475	20,977	22,407	19,721	23,350	20,966	24,986	24,747	22,701	31,050
South Korea	1,504	1,203	2,082	2,608	3,787	3,817	3,015	3,507	3,250	4,108	4,891	7,208
Hong Kong <sup>1</sup>	4,040	4,303	23,743	16,587	28,260	27,320	33,729	24,878	24,143	17,807	6,348	2,801
India	9,427	7,453	12,592	14,305	14,302	21,751	18,568	18,266	23,383	21,710	16,903	18,831
Iran	1,409	2,128	3,985	6,688	7,103	4,172	3,010	4,076	6,255	7,889	6,996	6,200
Iraq	305	316	815	996	2,174	3,317	2,251	2,414	2,771	2,573	1,869	2,037
Lebanon	1,043	2,419	12,969	12,221	6,664	4,804	2,725	2,165	1,894	1,466	1,347	1,566
Pakistan	823	629	2,149	2,780	3,750	4,512	4,402	4,665	8,559	12,178	8,423	9,575
Philippines	5,986	4,199	12,603	12,730	13,803	20,548	19,492	15,818	13,626	11,411	8,540	9,518
Sri Lanka	368	1,827	3,458	7,158	12,941	9,479	7,085	9,361	6,442	5,342	3,537	4,938
Taiwan	705	638	3,590	4,295	7,077	9,379	7,005	7,416	12,739	12,785	6,946	5,314
Vietnam	8,241	6,219	9,311	8,892	7,857	8,390	6,505	4,176	2,711	2,004	1,826	1,622
Others	7,254	6,784	13,468	13,177	12,923	12,625	12,115	12,826	14,724	15,721	11,876	12,646
<b>EUROPE</b>	<b>44,817</b>	<b>22,446</b>	<b>51,115</b>	<b>46,890</b>	<b>43,627</b>	<b>45,702</b>	<b>38,069</b>	<b>40,297</b>	<b>39,198</b>	<b>37,944</b>	<b>37,287</b>	<b>38,694</b>
Germany	2,075	1,342	1,610	1,574	1,411	1,659	1,364	1,589	1,761	1,560	1,652	1,909
Bosnia-Herzegovina	—	—	—	—	345	2,744	4,720	4,187	2,469	2,211	2,491	2,425
France	1,681	1,113	2,002	2,631	3,114	3,351	2,522	3,036	2,437	2,310	2,999	3,177
Great Britain	18,920	4,605	7,072	6,443	5,920	5,953	4,770	4,566	4,381	3,921	3,266	3,769
Greece	927	548	608	626	597	539	341	246	238	209	143	158
Ireland	851	477	800	639	490	418	317	227	260	225	173	166
Italy	2,058	782	1,073	782	671	696	533	505	486	465	369	389
Poland	4,094	5,271	16,787	15,801	11,938	6,943	3,572	2,452	2,167	1,792	1,511	1,368
Portugal	3,292	2,449	7,747	5,858	2,747	1,706	819	815	711	698	431	349
Romania	1,004	997	2,971	2,599	3,313	3,786	3,595	4,342	3,952	4,048	3,082	3,571
Russia	—	—	—	1	160	892	1,414	2,078	3,150	4,221	4,733	4,374
Ukraine	—	—	3	6	114	867	1,436	1,825	2,667	2,638	2,744	2,821
Others	9,915	4,862	10,442	9,930	12,807	16,148	12,666	14,429	14,519	13,646	13,693	14,218

	1981	1986	1990	1991	1992	1993	1994	1995	1996	1997	1998	1998
<b>AFRICA</b>	<b>5,915</b>	<b>5,172</b>	<b>13,895</b>	<b>16,634</b>	<b>20,239</b>	<b>17,560</b>	<b>14,214</b>	<b>15,498</b>	<b>15,847</b>	<b>15,309</b>	<b>14,447</b>	<b>16,406</b>
South Africa	1,238	795	1,005	947	1,139	1,668	2,464	1,475	1,352	1,763	1,405	1,429
Algeria	128	111	508	913	852	751	649	1,113	2,042	1,795	2,251	2,363
Egypt	767	630	2,522	1,941	1,640	1,660	2,320	2,718	2,374	2,043	1,298	1,245
Ethiopia	152	991	2,419	2,569	2,275	1,921	1,270	950	1,042	811	655	744
Somalia	9	58	1,158	3,269	5,553	3,658	1,730	2,078	1,428	1,158	1,384	1,598
Others	3,621	2,587	6,283	6,995	8,780	7,902	5,781	7,164	7,609	7,739	7,454	9,027
<b>NORTH AND CENTRAL AMERICA</b>	<b>10,183</b>	<b>12,381</b>	<b>13,137</b>	<b>19,095</b>	<b>18,835</b>	<b>14,425</b>	<b>8,773</b>	<b>7,268</b>	<b>8,551</b>	<b>7,927</b>	<b>6,853</b>	<b>7,827</b>
United States	8,695	6,090	5,134	5,323	5,975	6,481	5,154	4,330	5,053	4,403	4,142	4,910
Mexico	397	673	1,204	1,150	1,200	1,153	786	764	1,247	1,689	1,383	1,683
Others	1,091	5,618	6,799	12,622	11,660	6,791	2,833	2,174	2,251	1,835	1,328	1,234
<b>CARRIBEAN AND BERMUDA</b>	<b>8,805</b>	<b>8,864</b>	<b>11,821</b>	<b>13,109</b>	<b>15,234</b>	<b>16,752</b>	<b>10,070</b>	<b>10,091</b>	<b>9,395</b>	<b>8,234</b>	<b>6,391</b>	<b>6,803</b>
Haiti	3,704	1,727	2,378	2,851	2,432	3,688	2,124	2,036	1,977	1,657	1,312	1,444
Jamaica	2,688	4,663	5,030	5,132	6,058	6,117	3,950	3,641	3,307	2,870	2,260	2,362
Trinidad and Tobago	949	921	2,829	2,982	4,348	4,215	2,342	2,584	2,205	1,760	1,196	1,186
Others	1,464	1,553	1,584	2,144	2,396	2,732	1,654	1,830	1,906	1,947	1,623	1,811
<b>SOUTH AMERICA</b>	<b>6,126</b>	<b>6,528</b>	<b>8,618</b>	<b>10,515</b>	<b>10,314</b>	<b>9,554</b>	<b>7,954</b>	<b>7,518</b>	<b>6,020</b>	<b>5,590</b>	<b>4,897</b>	<b>5,571</b>
Guyana	3,024	3,975	2,892	3,370	3,059	3,549	4,272	3,974	2,392	1,841	1,275	1,387
Others	3,102	2,553	5,726	7,145	7,255	6,005	3,682	3,544	3,628	3,749	3,622	4,184
<b>AUSTRALASIA</b>	<b>1,024</b>	<b>451</b>	<b>728</b>	<b>743</b>	<b>931</b>	<b>1,017</b>	<b>741</b>	<b>676</b>	<b>695</b>	<b>626</b>	<b>514</b>	<b>579</b>
<b>OCEANIA</b>	<b>726</b>	<b>383</b>	<b>1,189</b>	<b>1,626</b>	<b>1,780</b>	<b>1,336</b>	<b>1,049</b>	<b>680</b>	<b>636</b>	<b>472</b>	<b>392</b>	<b>379</b>
<b>OTHERS AND NOT STATED</b>	<b>303</b>	<b>824</b>	<b>674</b>	<b>738</b>	<b>840</b>	<b>577</b>	<b>268</b>	<b>303</b>	<b>220</b>	<b>177</b>	<b>1,180</b>	<b>341</b>
<b>TOTAL</b>	<b>128,793</b>	<b>99,340</b>	<b>216,417</b>	<b>232,764</b>	<b>254,848</b>	<b>256,758</b>	<b>224,390</b>	<b>212,865</b>	<b>226,045</b>	<b>216,020</b>	<b>174,164</b>	<b>189,906</b>

<sup>1</sup> Includes Honk Kong SAR (Special Administrative Region) since July 1, 1997.

**Note:** Preliminary data as of September 26, 2000.

**Sources:** Citizenship and Immigration Canada, unpublished data.

**Table A11. Canadian Population as of July 1st, 1997, 1998, 1999, by Age and Sex**  
(in thousands)

Age	Males			Females		
	1997	1998	1999	1997	1998	1999
0	183.6	176.6	173.3	172.6	167.7	164.4
1	196.2	184.8	177.7	188.0	174.2	169.3
2	199.7	197.4	185.8	189.3	189.1	175.1
3	201.4	200.8	198.3	191.2	190.2	190.0
4	205.6	202.5	201.7	195.3	192.2	191.1
5	210.7	206.8	203.4	201.2	196.4	193.1
6	213.7	212.0	207.8	203.1	202.5	197.5
7	214.5	214.9	213.0	204.2	204.2	203.4
8	207.2	215.7	215.8	197.0	205.3	205.0
9	201.4	208.4	216.7	192.0	198.1	206.0
10	203.5	202.7	209.4	193.9	193.1	199.0
11	207.7	204.8	203.6	196.6	194.9	193.7
12	209.3	209.0	205.7	197.3	197.6	195.7
13	207.9	210.7	210.1	197.3	198.3	198.3
14	207.3	209.3	211.8	196.5	198.3	199.1
15	207.3	208.8	210.4	196.5	197.6	199.2
16	210.4	208.9	210.1	199.7	198.0	198.9
17	210.8	211.9	210.3	199.3	201.4	199.6
18	208.7	212.3	213.5	196.6	200.9	202.8
19	206.5	210.3	214.2	194.9	198.6	203.0
20	207.7	207.7	211.7	197.7	196.7	200.7
21	208.1	208.7	209.2	199.4	199.6	198.9
22	208.0	209.3	210.4	200.5	200.9	201.7
23	202.7	209.4	211.2	196.1	201.8	202.8
24	204.8	203.8	211.3	198.6	197.7	204.0
25	208.7	205.9	205.6	203.2	200.1	199.9
26	218.0	209.8	207.7	213.4	204.9	202.3
27	220.4	219.4	211.7	214.5	214.9	207.0
28	218.6	222.1	221.3	214.2	216.1	217.0
29	219.7	220.3	224.2	216.0	215.8	218.2
30	226.8	221.4	222.5	222.5	217.7	217.8
31	241.3	228.2	223.3	235.8	223.8	219.5
32	260.2	242.5	229.7	253.9	237.2	225.2
33	270.2	261.1	243.8	263.3	255.2	238.4
34	274.1	271.3	262.3	268.0	264.6	256.4
35	269.3	275.0	272.5	264.6	269.5	265.8
36	271.8	270.1	276.1	268.8	265.8	270.6
37	269.1	272.5	270.7	266.8	269.8	266.6
38	263.3	269.6	272.7	263.0	267.8	270.4
39	262.3	263.8	269.9	260.5	263.8	268.4
40	257.2	262.8	264.1	256.8	261.3	264.3
41	249.6	257.7	263.0	249.9	257.4	261.7
42	247.9	250.0	257.9	248.5	250.5	257.6
43	239.5	248.4	250.2	241.8	248.9	250.6
44	229.5	239.8	248.6	231.7	242.1	248.9
45	222.3	229.8	239.9	222.5	231.8	241.9
46	218.3	222.4	229.7	218.4	222.6	231.7

See notes at the end of the table.

**Table A12. Canadian Population as of July 1st, 1997, 1998, 1999, by Age and Sex**  
(in thousands) - Concluded

Age	Males			Females		
	1997	1998	1999	1997	1998	1999
47	214.5	218.3	222.2	214.4	218.4	222.5
48	210.7	214.4	217.9	211.6	214.3	218.1
49	211.3	210.3	213.9	211.5	211.3	213.9
50	210.7	210.9	209.7	211.4	211.2	210.8
51	181.1	210.2	210.3	182.1	211.2	210.9
52	169.0	180.5	209.5	169.7	181.8	210.9
53	164.6	168.2	179.7	166.1	169.3	181.4
54	159.7	163.8	167.3	161.3	165.7	168.8
55	148.3	158.9	162.9	150.2	160.8	165.2
56	142.2	147.5	157.9	145.0	149.9	160.4
57	134.4	141.3	146.4	137.3	144.6	149.4
58	130.9	133.5	140.2	133.9	136.8	144.0
59	126.2	129.8	132.4	129.3	133.5	136.4
60	121.5	125.1	128.6	125.0	128.8	133.0
61	121.2	120.3	123.8	125.2	124.5	128.2
62	117.8	119.9	118.9	122.5	124.6	123.8
63	115.1	116.2	118.2	119.5	121.7	123.8
64	116.2	113.4	114.4	121.9	118.7	120.8
65	116.3	114.3	111.4	121.9	121.0	117.6
66	113.6	114.1	112.0	122.2	120.8	119.8
67	109.4	111.3	111.7	119.6	120.9	119.4
68	103.2	107.0	108.8	115.3	118.2	119.5
69	100.3	100.6	104.4	114.5	113.8	116.6
70	95.0	97.6	97.8	111.8	112.8	112.0
71	91.4	92.0	94.6	111.8	109.9	110.8
72	87.0	88.3	88.8	109.3	109.8	107.8
73	81.9	83.7	84.9	106.4	107.2	107.5
74	76.8	78.5	80.2	102.2	104.0	104.7
75	73.3	73.4	75.0	100.3	99.6	101.3
76	67.4	69.7	69.8	94.4	97.4	96.7
77	61.0	63.8	66.1	87.6	91.4	94.3
78	50.4	57.8	60.6	75.6	84.8	88.5
79	45.3	47.0	54.4	69.1	72.6	81.8
80	41.6	42.0	43.7	66.0	66.1	69.5
81	38.1	38.1	38.4	62.4	62.7	62.6
82	35.9	34.7	34.6	60.5	58.8	59.0
83	31.2	32.6	31.3	55.0	56.8	55.0
84	26.7	28.0	29.3	49.0	51.4	53.1
85	21.9	23.8	25.0	42.8	45.4	47.7
86	18.2	19.1	20.9	37.7	39.3	41.7
87	15.2	15.6	16.4	32.5	34.3	35.8
88	12.2	12.9	13.3	27.8	29.0	30.8
89	10.0	10.3	11.0	23.6	24.5	25.7
90+	29.5	31.1	32.8	86.5	90.0	94.0
Total	14,850.9	14,981.5	15,104.7	15,136.3	15,266.5	15,388.7

1997: Final postcensal estimates from October 19, 2000.

1998: Updated postcensal estimates from October 19, 2000.

1999: Updated postcensal estimates from October 19, 2000.

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

## Glossary\*

**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 1<sup>st</sup> and December 31<sup>st</sup> 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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\* 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  ${}_n p_x$  and it is the complement of the probability of dying ( $1 - q_x$ ).

**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**

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by Laurent Martel, Alain Bélanger and Jean-Marie Berthelot

### **IMPACT OF CAUSES OF DEATH ON LIFE EXPECTANCY AT HIGHER AGES FROM 1951 TO 1996**

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## SMOKING AND DISABILITY-FREE LIFE EXPECTANCY IN CANADA

by Laurent Martel, Alain Bélanger and Jean-Marie Berthelot

For more than a century, the life expectancy at birth of women has been longer than that of men (respectively 81.4 years and 75.8 years in 1997). Over time, this advantage for women, while initially modest (1.8 years in 1921), increased steadily to a high of 7.5 years in 1978 (Nault, 1997). Since then, the gap between the life expectancy of men and women has narrowed and in 1997, it was 5.6 years, a reduction of almost two years over less than two decades.

Other than a biological factor favouring women, the inequality between sexes with respect to death also reflects social and behavioural factors (Chesnais, 1998). Men and women do not have the same behaviours and habits: traditionally, for example, women have held jobs of lower risk to health than men, which may have contributed to widening the mortality gap between genders in the past.

An examination of the recent evolution in the main causes of death in Canada reveals a number of changes in the behaviour of women that have a negative impact on their health. Mortality rates attributable to cardiovascular diseases—the leading cause of death in the country—have fallen since the late 1970s, but more so among men than among women (Health Reports, 2001). Similarly, the incidence of lung cancer and related deaths has risen sharply among women over the past 25 years, while it has dropped among men, thereby closing a large part of the gap for this type of cancer (Health Reports, 2001). Indeed, mortality associated with this disease has increased so much among women that, in the early 1990s, it surpassed breast cancer (ACPH, 1999). There has also been a rise in mortality associated with chronic obstructive pulmonary diseases among women (Nault, 1997).

Numerous scientific studies have shown a strong correlation between these often fatal diseases and smoking. Some studies even suggest that close to half of the mortality differential between men and women is attributable to smoking alone (Waldron, 1986). Other researches have shown that in Canada, approximately a quarter of the deaths of individuals aged 35 to 84 years can be attributed to this habit (Collishaw and al., 1988; Makomaski and al., 1995). According to Ellison and al. (1995), tobacco use was responsible for almost 45,000 deaths in Canada in 1991. Cigarette smoking represents the primary cause of premature death and of potential years of life lost, far ahead of suicide, violent death, AIDS and murder combined (Ellison and al., 1999; Légaré and al., 1993; Pelletier and al., 1996). The near stagnation of remaining life expectancy

at age 85 observed for the past 20 years or so could also be due in part to the smoking history of the cohorts reaching this age (Nusselder and Mackenbach, 2000). In view of the relationship between smoking and mortality, any change in smoking prevalence ultimately has a significant impact on life expectancy.

The evolution of smoking has followed different paths for men and women despite the fact that, in general, they both are smoking less today than in the 1960s and 1970s when more than one in two men and almost two in five women smoked (ACPH, 1999). Today, approximately 30% of men and 25% of women aged 12 years or older are daily or occasional smokers (ACPH, 1999). This means that, over a period of 30 years, the prevalence of smoking among men and women has converged.

In Canada, the decline in smoking among male cohorts and the increase among female cohorts born between 1900 and 1950 led to a homogenization of smoking habits among the cohorts born in the mid-1950s (Ferrence, 1988; Marcil-Gratton and al., 1992). The latent period for diseases associated with smoking means that these individuals are now at the ages where mortality associated with smoking is at its highest and certainly explains the narrowing of the mortality gap between men and women for cardiovascular diseases and lung cancer.

While the relationship between smoking and mortality has been much studied, much less is known about its links to disability. When it is very high, as is the case in Canada, life expectancy is not the ideal indicator to define a population's state of health. For example, the increased effectiveness of treatments for a disease could enable a larger number of individuals to survive but in a state of disability. Thus, the use of other aggregated indicators is necessary to better define population's health and disability-free life expectancy is one of them. This indicator can be used to desegregate life expectancy in terms of the years spent with or without disability or with dependency of greater or lesser severity.

The purpose of this article is to measure the effect of smoking on disability-free life expectancy in the Canadian population. Although it has been established that eliminating smoking would increase life expectancy, the impact on the quality of the years lived has been less clearly described. Would the lost years have been years lived in good health or is the premature death of smokers sparing them only years lived in a state of disability or with the dependencies that often accompany old age? It seems important to determine whether smokers must look forward not only to dying prematurely but also to having to live longer with one or more disabilities.

To our knowledge, there are no studies on this topic for Canada. We know, however, that smokers are hospitalized more frequently than persons who have never smoked (Johansen, 1999), which suggests a possible link between morbidity and smoking. A few recent studies have looked at the effect of

smoking on disability-free life expectancy in the United States and the Netherlands, but not in Canada. These studies clearly show the negative effect of smoking on this indicator (Rogers and al., 1994; Nusselder, 1998).

In this article, the calculation of disability-free life expectancies is based on multi-state life tables. Of a more complex calculation than those obtained using the traditional method (Sullivan method), which simply distributes total life expectancy between the various functional states based on the observed prevalence of each of these states in the population at a given point in time, the multi-state tables are based on an estimate of the transitions between each of the functional states and on the mortality rates specific to each of these states. An individual with activity limitations or a dependency, even a severe one, can still regain his independence at any age. The multi-state life tables make it possible to explicitly include this dynamic and thus more closely reflect reality. However, estimating the transitions between the functional states requires longitudinal surveys, which are more complex and costly to carry out and, accordingly, relatively scarce. The National Population Health Survey (NPHS) is the first survey that can be used to estimate these transitions possible for a representative sample of the Canadian population.

The other advantage of the multi-state life tables model is that it makes it possible to explicitly take into consideration the mortality differences between the various functional states. This is especially important when calculating disability-free life expectancy because, more than in any other applications of the model, mortality is likely to vary widely from state to state, the degree of good or poor health obviously being a key determinant of mortality.

#### **Data Source and Method**

The data used in this research are taken from the longitudinal panel of the National Population Health Survey (NPHS) conducted by Statistics Canada since 1994. As the first longitudinal survey representative of the Canadian population as a whole, the NPHS gathers detailed information on physical and mental health, functional capabilities, use and access to health care, chronic health problems and lifestyles and behaviour related to health. Its purpose is to promote a better understanding of health and its determinants (Swain and al., 1999).

The sample used in this study is representative of the whole of the Canadian population aged 45 years and older, that is, the population living in private households (6,053 respondents) and in long-term health care establishments (1,956 respondents). The mortality differentials according to functional state and the transitions between these states are estimated from the first two NPHS cycles (1994-95 and 1996-97).

As a panel survey, the longitudinal component of the NPHS does not add new respondents to the various data collection cycles. Consequently, the

longitudinal sample is only representative of the Canadian population in 1994 and its size gradually decreases through attrition<sup>1</sup> as the cycles progress. Since attrition is low, especially for the population aged 45 and older, and the weights of the survey have been recalculated to take into account this element, as the sample design and post-stratification (Tambay and al., 1998), it is unlikely that it produces any significant bias.

### *Functional States*

Health is a difficult concept to define and should not be restricted to the solely absence of disease. The advantage of defining health as a functional state allowing individuals to be or not to be independent in their activities of daily living is that it links the health—or functional—status to the potential burden that its deterioration may represent. For example, an individual dependent on someone else for his personal care or to move about within his home would need intensive, daily assistance that is often of great costs for the health care system or the informal support network.

In this study, functional states are defined so as to respect certain criteria. The first one is that the definition used must allow for the creation of homogeneous and distinct groups in terms of the risk of dying and of losing or regaining independence. Further, it was important to obtain groups large enough to ensure greater robustness when estimating mortality rates and the probabilities of transition between the various states.

Operationally, two concepts were used and combined under the generic term “disability” in order to define an individual’s functional state: activity limitations and dependencies. It is likely that, in the process of losing one’s independence, activity limitations occur before dependencies and ideally, it would have been preferable to distinguish those individuals suffering from activity limitations but no dependency from those with one or more dependencies. Further, it should be noted that relatively fewer male respondents indicated that they required assistance from someone else to prepare meals, to shop for groceries or to perform normal everyday housework, activities often performed by women, at least in the case of the today’s older cohorts. This explains to a large extent the differences observed between men and women in the prevalence of dependencies. On the other hand, this division between sexes was almost non-existent in the answers to the question on activity limitations.<sup>2</sup> However, the need to ensure a sufficient number of respondents in each of the states made it necessary to group respondents.

<sup>1</sup> Attrition is the process by which some respondents from the first cycle in 1994-95, for example, are not interviewed in the subsequent cycle. There are generally two types of attrition: non-response (respondents located in 1996-97 but not wishing to be part of the survey) and non-located. The latter case is relatively rare since it represents 1.7% of the total NPHS sample (Béland and Bustros, 1998).

<sup>2</sup> The exact question was: “Because of a long-term physical or mental condition or a health problem are/is... limited in the kind or amount of activity you/he/she can do (a) at home, (b) at school, (c) at work, (d) in other activities such as transportation to or from work or leisure time activities?”

**Table 1. Summary Table of the Functional States**

<i>Functional States</i>	<i>Activity Limitations</i>	<i>Dependency</i>
No disabilities	None	None
Light or moderate disability	Yes	No
	Yes or no	Heavy household chores, shopping for groceries, normal everyday housework
Severe disability	Yes or no	Preparing meals, personal care, move around the house
Health-care facilities	...	...

Consequently, four functional states were defined (Table 1): a person was classified as independent (no disability) if he or she answered that there was no activity limitation and no dependency. Persons included in the category “slight or moderate disability” had some activity limitations but no dependency or required assistance from someone for heavy household chores, to go shopping for groceries or to perform normal everyday housework, regardless of whether they had any activity limitations. Individuals classified as the most severely disabled were those who required assistance from a third party to prepare their meals, for their personal care or to move about the house, regardless of whether they had any activity limitations. Lastly, individuals residing in long-term health care establishments made up the fourth functional state of health.

*States Related to Tobacco Use*

The richness of the NPHS questionnaire allows for separation of the study population into two categories (smokers and non-smokers) taking into consideration the latent period for smoking related diseases (Table 2). Although the risks related to cardiovascular disease decrease quite quickly after the cessation of tobacco use (Lacroix and al., 1991), the risk associated with lung cancer can have a much longer latent period. It was therefore important to include a lapse of time after the cessation of use during which period the former smokers are still at risk of health problems related to their former habits.

In this study, a smoker is defined as a respondent who reported either that he or she smoked daily or is a former daily smoker who had stopped within the past 5 years or still smoked occasionally by now. Respondents

**Table 2. Summary Table of the Smoking States**

<i>Smokers</i>	<i>Non-smokers</i>
Daily smoker	Never smoked
Occasional smoker (former daily smoker)	Always an occasional smoker
Former daily smoker who stopped in the last 5 years	Former daily smoker who stopped more than 5 years ago

classified as non-smokers were those who never smoked in their lives, those who smoked but always occasionally, and those who smoked regularly but stopped more than 5 years ago.

### **Method**

The calculation of disability-free life expectancy using the multi-state life tables model is based on estimating two elements: the first is the mortality differential by functional state and smoking status, and the second is the transitions between the different functional states for the two populations—smokers and non-smokers.

Since the NPHS sample is relatively small, estimating mortality rates by age, sex and the four functional states does not produce very robust results using only the survey data. However, life tables produced from the vital statistics provide a better estimate of mortality for the Canadian population as a whole. The method used to estimate the mortality differential by functional state takes advantage of this information and uses the survey data to increase or decrease the risk of death of individuals according to their functional state reported in the first cycle by means of an estimation of relative risks. These relative risks for each of the states are applied to the probability of dying from the Canadian life tables to produce new probabilities for each functional state. The mortality base level is therefore a reliable estimate that takes the whole of the Canadian population into consideration.

#### *Estimate of the Mortality Differential*

The relative risks are estimated using a proportional hazard model (Cox regression), which, in addition to the functional states, takes into consideration age and an interaction variable between age and these states. The introduction of this interaction variable enables the relative risks for the various functional

states to converge as age increases. The assumption is that the functional state of a younger person has a greater impact on his or her probability of dying than that of an older person.

In general, the modelling results show that the relative risks of smokers with respect to mortality are two times higher than those of non-smokers for both men and women (data not presented). Similar results have been obtained by various studies that have shown that smokers generally increase their risk of dying by a factor of about two (Collishaw and al., 1988; Mao and al., 1988; Rogers and al., 2000).

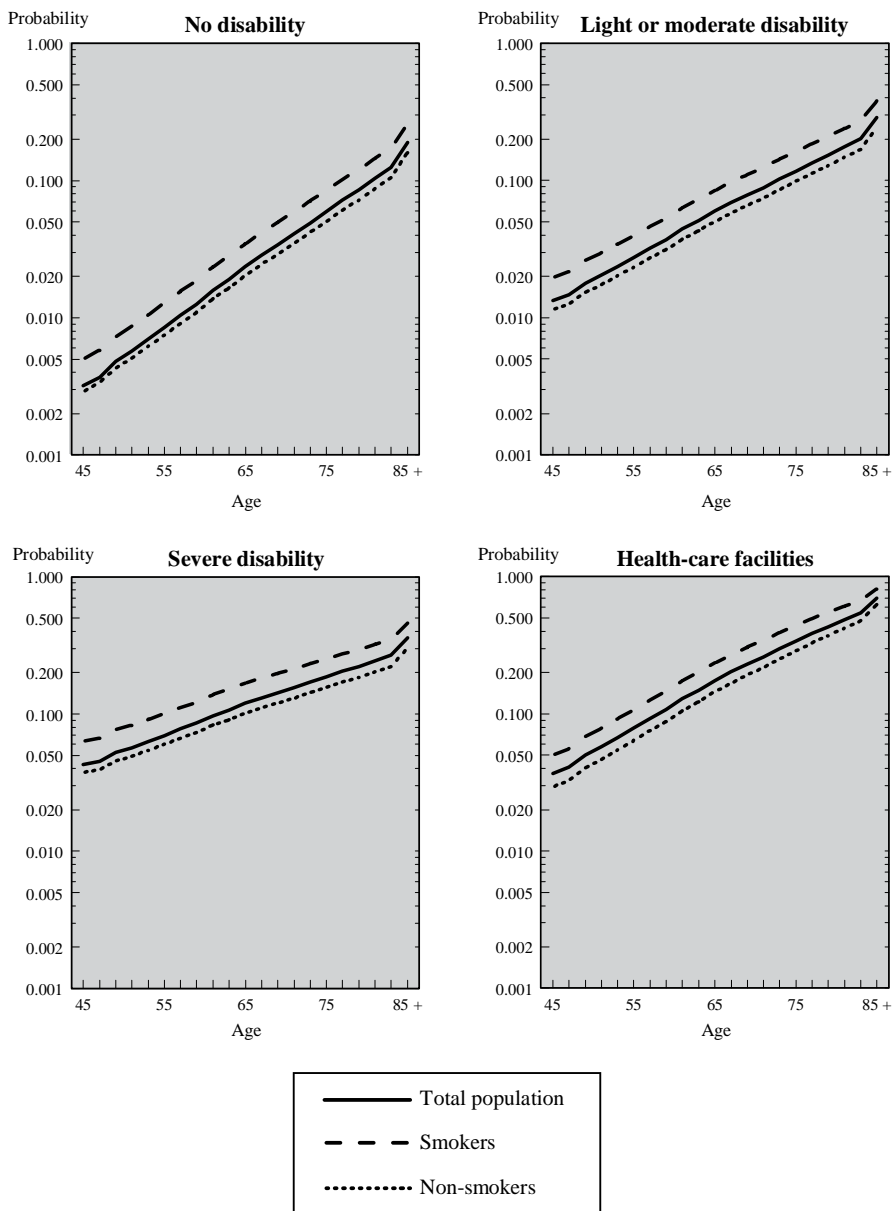
Figure 1 presents the probability of dying obtained for each functional state by age, sex and smoking status. The more the functional state declines, the more mortality rises. As expected, probabilities of dying increase progressively with age in each of the states. Except for those living in health care establishments prior to age 65, women have lower mortality than men for every functional state and smoker status. In addition, in the case of smokers with severe disabilities, the mortality for men and women is similar: at this stage of deterioration in health, the consequences of smoking are probably the same for both sexes. Lastly, the probabilities of dying for smokers are always higher than for non-smokers and this is true for all functional states, at all ages and for both sexes. Therefore, despite the relatively small size of the study sample, the estimate of the probabilities of dying by functional states and smoking behaviour appears to be reliable.

#### *Estimation of Transitions Between Functional States*

Calculation of the multi-state life tables also requires an estimation of the transitions—subject to survival—between the functional states for each sex and for the two tobacco habits. Table 3 presents the probabilities of moving from one functional state to another between 1994 and 1996 for the entire population aged 45 years and older. We find, for example, that almost 16% of persons free of disability (independent) in 1994 had lost, to a certain extent, their independence in 1996. Among smokers, the probability of loss of independence was higher : almost 18% compared to 15% for non-smokers. Table 3 also reveals that the ability to regain one's independence is considerable, especially for individuals experiencing slight or moderate disabilities. Approximately 25% of these individuals regained their independence between 1994 and 1996: this percentage dropped to 23% for smokers compared to 26% for non-smokers. Similarly, a reasonable percentage of severely disabled individuals returned to a level of slight or moderate dependency two years later. Overall, regaining independence, whether in whole or in part, occurs more frequently among the non-smoking population, suggesting that smoking affects not only mortality but also functional capacity.

**Figure 1. Probabilities of Dying by Functional State, Sex and Smoking Behaviour, Canada, 1994-1996**

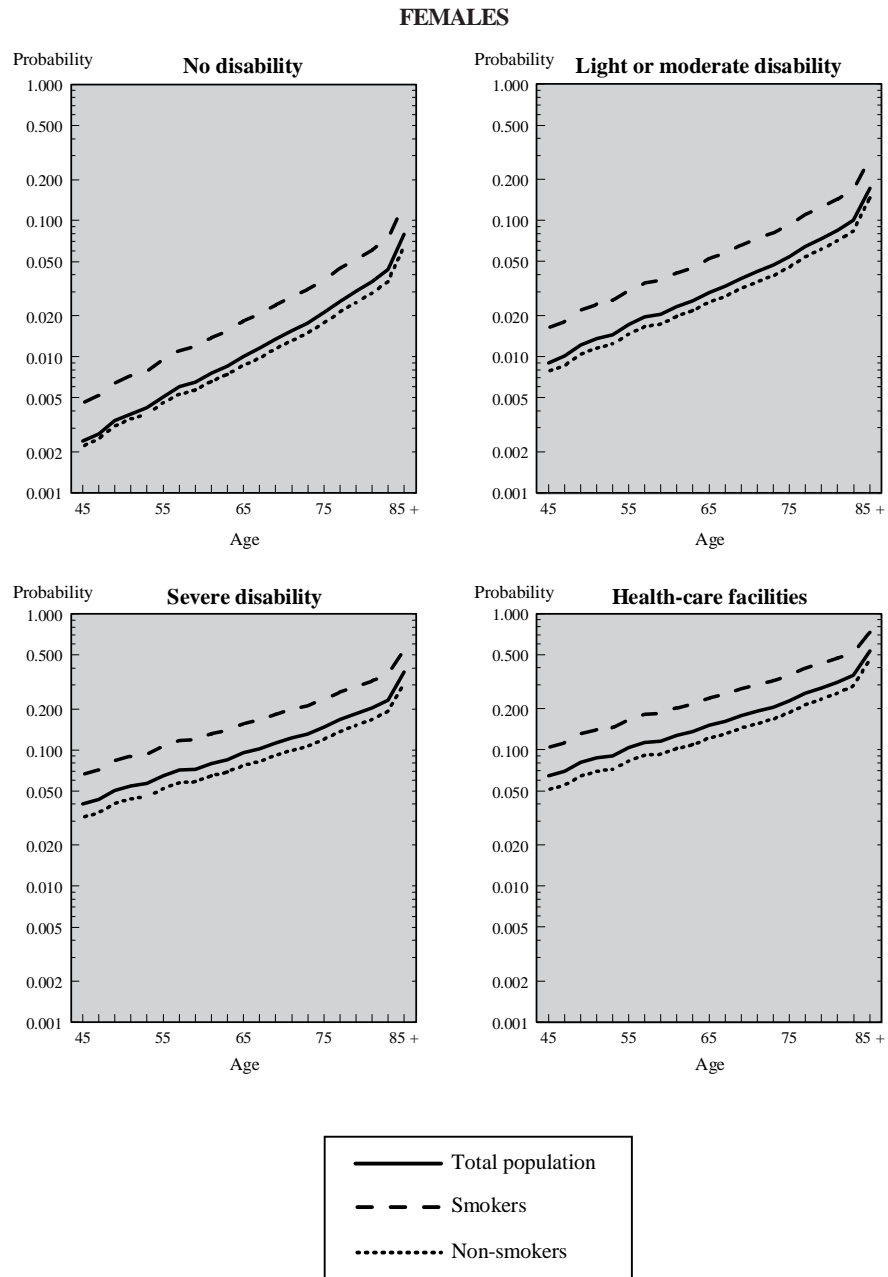
**MALES**



Source : Statistics Canada, National Population Health Survey, 1994-1996.



**Figure 1. Probabilities of Dying by Functional State, Sex and Smoking Behaviour, Canada, 1994-1996 - end**



**Source :** Statistics Canada, National Population Health Survey, 1994-1996.

**Table 3. Transitions Between Functional States (Conditional on Survival) for the Total Population and by Smoker Status, Canada, 1994-1996**

Functional State in 1994	Functional State in 1996					
	No disabilities	Light or moderate disability	Severe disability	Health-care facilities	Crude death rate	Number
Total population						
No disability	0.842	0.136	0.019	0.003	1.8	3,830
Light or moderate disability	0.247	0.658	0.089	0.007	6.1	1,924
Severe disability	0.081	0.356	0.487	0.076	20.3	299
Health-care facilities	0.000	0.000	0.009	0.991	35.7	1,956
Smokers						
No disability	0.823	0.155	0.021	0.001	2.0	1,052
Light or moderate disability	0.227	0.683	0.091	0.004	7.8	580
Severe disability	0.053	0.346	0.521	0.080	17.0	81
Health-care facilities	0.000	0.000	0.017	0.983	33.5	419
Non-smokers						
No disability	0.850	0.128	0.019	0.003	1.5	2,773
Light or moderate disability	0.258	0.646	0.088	0.008	6.0	1,343
Severe disability	0.094	0.360	0.472	0.074	22.5	218
Health-care facilities	0.000	0.000	0.007	0.993	36.1	1,368

**Source:** Statistics Canada, National Population Health Survey, 1994-1996.

Lastly, it should be mentioned that the probability of leaving a long-term health care establishment is practically zero, at least for persons aged 45 or older.<sup>3</sup> In this regard, the fourth functional state can be considered as a virtual absorbing state on almost the same level as death.

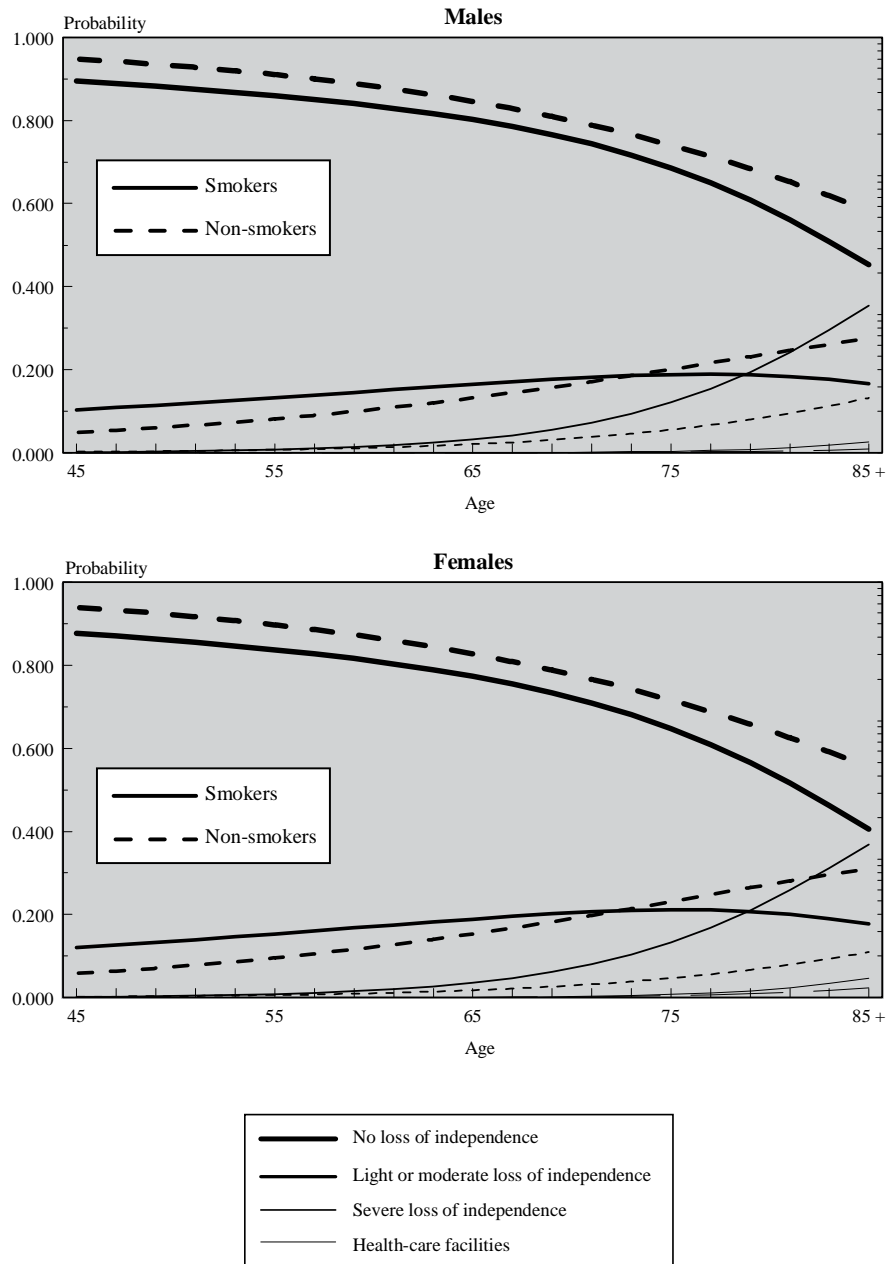
Because of the small sample size, the direct calculation of the probability of making a transition between each functional state by age, sex and smoking status introduce undesirable random variations from one age group to another. Transitions between functional states by age and sex for smokers and non-smoker was estimated by using a generalized polychotomous logit model,<sup>4</sup> allowing to eliminate those random variations. For each original state, the probability of making a transition to another state is assumed to be a function of age and sex, the only two variables included in the regression. However, the model provides for inclusion of competing risks, that is, that the probability of making a transition from one functional state to another also depends on all of the other states. Separate models were estimated for smokers and non-smokers.

Figures 2 and 3 present some of the transitions from Table 2, broken down by age and sex. Figure 2 shows the evolution, as age progresses, of the risks of losing one's independence, specifically, the probability that an

<sup>3</sup> Because of the small number of institutionalized respondents who returned to live in private households in 1996 and their probably precarious functional state for the most part, it was assumed that these returns were all made at stage 3, that of severe disability.

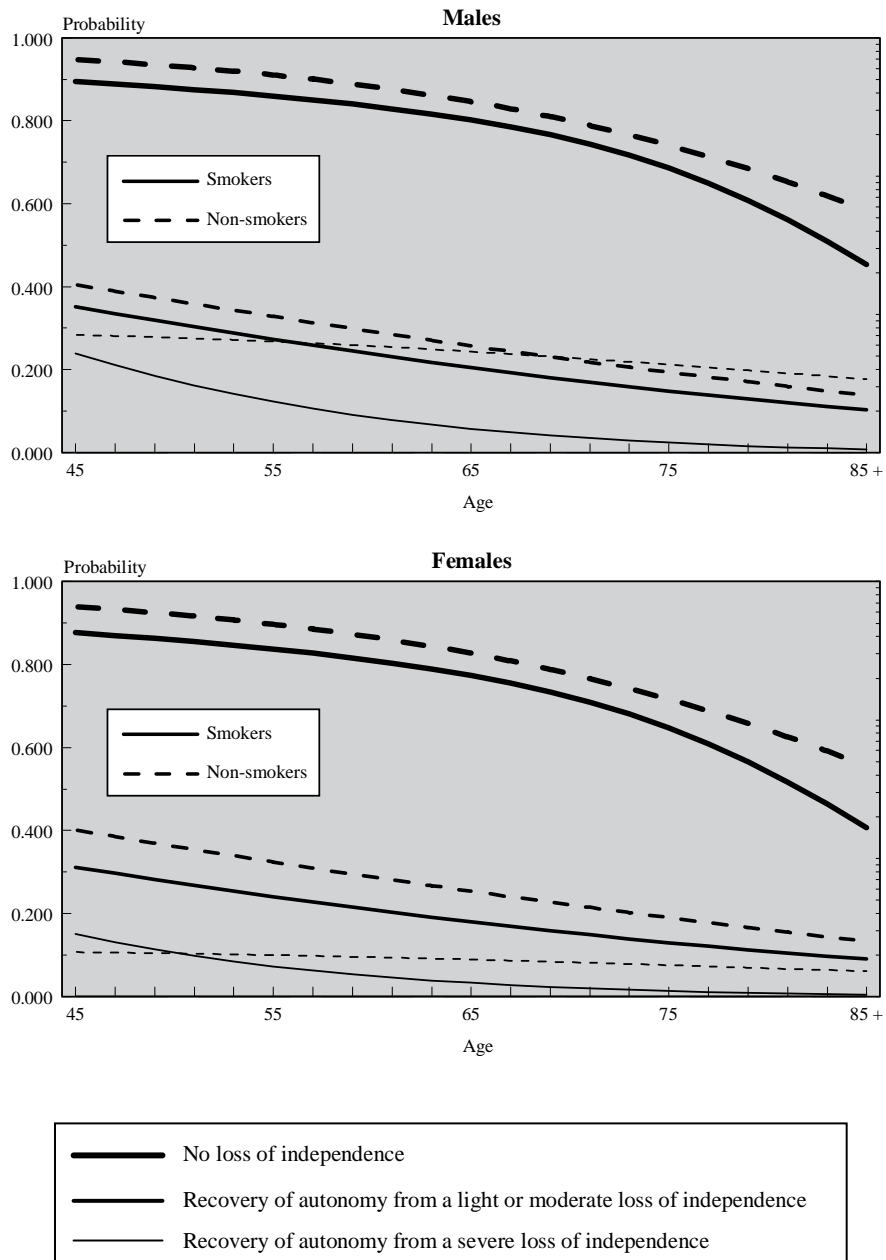
<sup>4</sup> "Generalized logit model" (CATMOD procedure in the SAS statistics software).

**Figure 2. Probability of Transiting from Independent State in 1994 to Another Functional State in 1996 by Sex, Age and Smoking Behaviour, Canada**



Source: Statistics Canada, National Population Health Survey, 1994-1996.

**Figure 3. Probability of Transiting from a Disability State in 1994 to a State of Independence in 1996 by Sex, Age and Smoking Behaviour, Canada**



**Source:** Statistics Canada, National Population Health Survey, 1994-1996.

independent person in 1994 reported a slight, moderate or severe disability or was institutionalized in 1996. The effect of age is very clear: the older the individual, the more the chance of remaining independent recedes, falling from almost 95% at 45 years to less than 60% at 85 years. Being a smoker aggravates this situation since, at all ages, smokers have a lower probability of remaining independent than non-smokers. There appears to be little difference, however, between men and women.

Figure 3 shows the total recovery of independence, that is, the probability of again being without disability in 1996 of respondents who reported some disabilities in 1994. The probability of recovering independence for individuals with slight, moderate or severe disabilities definitely diminishes with age, but the results show that it is far from negligible, thereby illustrating that functional health is a dynamic process and does not move in only one direction. At age 45, close to 40% of persons with a slight or moderate disability recovered their independence, a proportion that falls to just below 30% for those with severe disabilities. At all ages and for all states of disability, smoking decreases the chance of a recovering independence, sometimes considerably (as is the case with severe disability state).

Two fundamental points come out of this analysis of the transitions between functional states: first, recovering independence is a frequent phenomenon, even among persons older than 65 years (Martel and al., 2000). It is therefore important to take this into consideration when calculating aggregate health indicators and using the multi-state life tables enables us to do this. Second, smoking can be viewed as a double jeopardy to functional health: not only does it increase the risks of losing one's independence, but it also reduces the chance of recovering it. Episodes of dependency and activity limitations are therefore more frequent and longer for smokers than for non-smokers. The calculation of disability-free life expectancy makes it possible, through a measurement that is intuitively easy to understand, to determine the impact of smoking on both the mortality and morbidity of the population.

## Results

Taking into consideration mortality differentials by functional state, as well as the transitions between these states, total remaining life expectancy at age 45 is estimated at 32.9 years for men and 37.7 years for women in 1995<sup>5</sup> (Table 4).<sup>6</sup> The life expectancy of male smokers at age 45 is 28.1 years,

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<sup>5</sup> It is assumed that individuals who died between 1994 and 1996 lived half of this time, specifically one year. For this reason, the results presented are for 1995, located in the middle of the interval between the first two cycles of the NPHS.

<sup>6</sup> As a comparison, life expectancy at the same age, based on the official Statistics Canada mortality table and produced using vital statistics, gives 32.7 years for men and 37.6 years for women (Bélanger, 1999). The life expectancy estimate presented in this report is therefore very close to the official mortality table, given random variations resulting from the use of a sample survey.

almost five years less than for the male population in general. Among women, the gap is even larger : more than 7 years (30.5 for women smokers compared to 37.6 years for the total female population). On the other hand, life expectancy at 45 years for non-smoking men is 35.5 years, almost 3 years longer than for the male population as a whole and more than 7 years longer than for smokers. Among non-smoking women, the life expectancy at the same age is 40.8 years or 3 years longer than for the female population as a whole, and more than 10 years longer than for female smokers.

The differences in life expectancy between smokers and non-smokers remains significant even at 65 years: almost 6 years of life expectancy separate men who smoke from those who do not, a gap that is 8.5 years among women (Table 4). Tobacco use therefore is associated with a decrease in life expectancy, going so far as to eliminate close to one-quarter of the remaining life years of women aged 45 years. It is difficult to compare these results with those of other studies on this topic. This is because these are the first to take into consideration in their calculation the mortality differential by functional state and the transitions between states. We should point out, however, that Nam and al. (1994) estimated that, in the United States, at 25 years of age, the gap between the life expectancy of smokers and non-smokers was 18 years.

Several reasons can be put forward to explain such differences in mortality attributable to smoking. On the one hand, it should be remembered that the probabilities of dying used in this calculation are those of smokers at all ages between 45 and 85 years. This life expectancy is therefore related to individuals who allegedly smoked during their entire lives. On the other hand, numerous studies have shown the close correlation between smoking and co-morbidity: smokers suffer more often than others from several diseases at the same time (Nam and al., 1994; Hummer and al., 1998). Lastly, it has been shown that non-smokers often adopt other preventive behaviours related to their health, such as regular physical activity, moderate alcohol consumption and better eating habits (Marcil-Gratton and al., 1992). Conversely, smoking and excessive alcohol and drug consumption are often linked (Clark, 1996; Pérez, 1999). There is no question that these elements contribute to widening the mortality gap between smokers and non-smokers.

Smoking appears to have a greater impact on gap in the life expectancy of women than of men, confirming the findings of other researchers (Prescott and al., 1999). One possible explanation of this observation might be found in the evolution, by sex, of the prevalence of smoking in past cohorts. Men began smoking in large numbers earlier and many of them stopped during their lives. Consequently, the population of non-smoking men aged 45 and older would be more heterogeneous, that is, it would have a larger percentage of former smokers than the population of women among whom the widespread use of tobacco began much later. This appears to be confirmed by the NPHS. Among the non-smoking population aged 45 years or more, almost two-thirds

**Table 4. Life Expectancy and Disability-free Life Expectancy at Age 45 Years and 65 Years for the Total Population, Smokers and Non-smokers, by Sex, Canada, 1995 (Multi-state Model)**

	Males			Females		
	$e_x$	$dfle_x$	Difference	$e_x$	$dfle_x$	Difference
<b>x = Age 45</b>						
In years						
Smokers	28.1	17.8	10.3	30.5	17.1	13.4
Non-smokers	35.5	24.8	10.7	40.8	25.0	15.8
Total population	32.9	22.2	10.7	37.7	22.6	15.1
Difference between smokers and non-smokers	7.4	7.0	...	10.3	7.9	...
In percent						
Smokers	100.0	63.3	36.7	100.0	56.1	43.9
Non-smokers	100.0	69.9	30.1	100.0	61.3	38.7
Total population	100.0	67.5	32.5	100.0	59.9	40.1
<b>x = Age 65</b>						
In years						
Smokers	12.4	5.8	6.6	14.5	5.7	8.8
Non-smokers	18.3	9.8	8.5	23.0	10.5	12.5
Total population	16.0	8.2	7.8	20.3	9.0	11.3
Difference between smokers and non-smokers	5.9	4.0	...	8.5	4.8	...
In percent						
Smokers	100.0	46.8	53.2	100.0	39.3	60.7
Non-smokers	100.0	53.6	46.4	100.0	45.7	54.3
Total population	100.0	51.3	48.7	100.0	44.3	55.7

Source: Statistics Canada, National Population Health Survey, 1994-1996.

of women (65%) stated that they had never smoked, a percentage close to double that among the non-smoking men (35%). Similarly, more than half of the non-smoking men had previously been regular smokers (56%) compared with just one in four of the non-smoking women (26%). The negative effects of tobacco use may persist for more than five years, which may be part of the reason for its greater impact on the gap in life expectancy for women.

#### *Disability-free Life Expectancy*

Disability-free life expectancy at various ages was calculated for the total population and by functional state. For the male population as a whole, disability-free life expectancy at age 45 is 22 years, or 68% of the total life expectancy at this age (33 years), putting the burden of disability at about one-third of the average life span. For women, disability-free life expectancy without disability is slightly higher than for men (23 years) but represents a smaller proportion of their total life expectancy (60%). The burden of disability among women therefore appears to be greater than among men, a situation that is

explained both by women's longer life expectancy and their greater propensity than men to suffer from chronic, often debilitating, diseases. At age 65, the picture is similar with one slight difference in that the proportion of life expectancy lived free of disability is considerably shortened for both men (51%) and women (44%).<sup>7</sup>

The analysis of disability-free life expectancy by tobacco use shows that its negative effects are not limited to mortality. Table 4 shows that at age 45, disability-free life expectancy of men who smoke is only 18 years compared with 25 years for those who do not smoke, a difference of 7 years. Among women, the situation is similar with the gap between smokers and non-smokers being 8 years in favour of the latter. ***Virtually all (95%) of the additional years of life that a male non-smoker can expect to live over a smoker will be lived free of disability. Not only is a smoker more likely to die younger than a non-smoker, as other studies have already shown, but on average the smoker is more likely to be limited or dependent in his activities of daily living much earlier than a non-smoker.*** For women, the gains in disability-free life expectancy related to the absence of tobacco use are slightly higher than among men, but they represent a smaller proportion (77%) of the total gain. The risk of experiencing limitation or dependency in one's activities of daily living increases with age among smokers and non-smokers. Because of their greater longevity, the gains that women may make by abstaining from smoking occur at older ages than for men, which explains why a smaller proportion of years are lived free of disability.

Further, since the life expectancy of smokers is considerably shorter than that of non-smokers, the latter will spend a few more years of their life with some type of disability (10.7 years for non-smoking men compared to 10.3 years for smokers; 15.8 years for non-smoking women compared to 13.4 years for smokers).

There is such a large difference in average longevity between smokers and non-smokers that it makes the analysis expressed as a percentage of these years of life much more interesting. ***Men who smoke can expect, at age 45, to spend 63% of their remaining years living free of a disability, a proportion that climbs to 70% for non-smokers. For women, the trend is the same: 56% of life expectancy at age 45 years will be lived free of disability for those who smoke compared with 61% for those who do not smoke.*** In short, non-smokers can expect not only to live longer than smokers and to live longer free of disability, but also to spend a smaller percentage of their life with a

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<sup>7</sup> Although the trends are the same with respect to evolution by age and sex, these findings cannot be compared with those published last year in this same publication and which showed that in 1996 close to 80% of the life expectancy at 65 years among men and 69% among women was lived free of dependency (Martel and Bélanger, 1999). The concept of disability is broader than that of dependency and the inclusion of activity limitations in this study reduces the percentage of years lived without disability.



disability. The lower incidence of disability among the non-smoking population, combined with their increased chance of recovering their independence, means that they will spend a larger proportion of their total life expectancy free of disability. This finding is especially remarkable given that the risk of acquiring a disability increases with age and non-smokers on average enjoy a longer life than smokers.

The situation is similar, although less notable, at age 65. Smokers still have a shorter disability-free life expectancy than non-smokers but the differences in average longevity are such that the burden of disability, in number of years, is higher among non-smokers (8.5 years for non-smoking men compared with 6.6 years for smokers; 12.5 years for non-smoking women compared with 8.8 years for smokers). Expressed as a percentage of life expectancy, however, non-smokers still spend a longer period of their lives without disability. The burden of disability is therefore higher for smokers at 65 years.

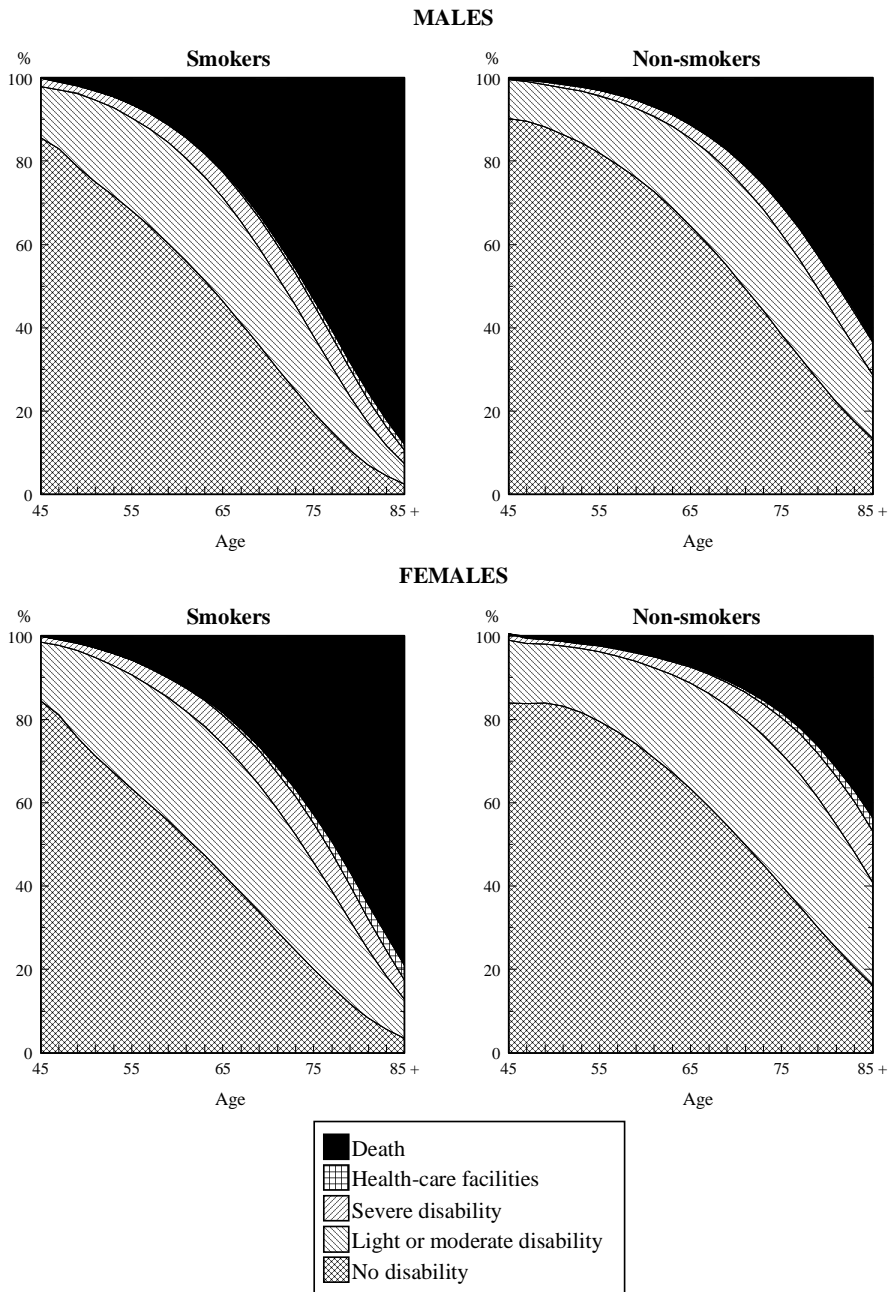
Figure 4 shows the evolution in the number of survivors for the various functional states. For men and women, it is easy to see the effect of smoking on mortality, the number of survivors at all ages being lower among smokers than among non-smokers, illustrating how tobacco use is associated with a significant number of premature deaths in the Canadian population. For every 100 male non-smokers living at age 45 years, about 90 will survive to age 65 and approximately 55 will still be living at age 80. The corresponding figures for smokers are 80 survivors at age 65 and fewer than 30 survivors at 80 years. For women, the percentage of survivors is higher for both smokers and non-smokers, but the negative consequences of tobacco use are just as evident. At 80 years, for example, about 70% of non-smoking women survive compared with about 40% of smokers.

It is equally evident from the same chart that the number of survivors not reporting any disability is significantly higher among non-smokers. Among both men and women, two-thirds of non-smokers will survive without any disability at age 65, compared with less than half of smokers. At age 80, 25% of non-smoking men and 30% of non-smoking women survivors have no disability, while these proportions are below 10% for both men and women who smoke.

#### *Disability-free Life Expectancy by Functional State*

All of the results presented so far are population based, i.e. have dealt with the population in general regardless of functional state. The multi-state life table however makes it possible to carry out a more detailed analysis. For example, the life expectancy at age 45 of men who are independent is 33 years, one year longer than for those with slight or moderate disabilities, 2.5 years longer than those with severe disabilities and 12.3 years longer than those living in health care establishments (Table 5). The vast majority of the

Figure 4. Survivors by Age, Sex, Smoking Behaviour and Functional State, Canada, 1994-1996



Source: Statistics Canada, National Population Health Survey, 1994-1996.

**Table 5. Life Expectancy at Age 45 Years by Functional State and Sex and Breakdown by Percentage of Years Lived in the Various States, Canada, 1995**

	Prevalence (%)	e <sub>45</sub> (years)	No disability (% from e <sub>45</sub> )	Light or moderate disability (% from e <sub>45</sub> )	Severe disability (% from e <sub>45</sub> )	Health-care facilities (% from e <sub>45</sub> )
<b>MALES</b>						
Total population						
No disability	89.4	33.0	69.7	23.6	6.1	0.6
Light or moderate disability	9.7	32.0	55.6	37.2	6.9	0.6
Severe disability	0.8	30.5	53.4	30.5	15.7	0.7
Health-care facilities	0.1	20.7	15.5	10.6	6.8	66.7
Smokers						
No disability	83.6	28.3	66.1	25.8	7.1	1.1
Light or moderate disability	14.1	27.1	49.8	40.6	8.5	1.1
Severe disability	2.0	25.0	46.4	31.6	21.2	1.2
Health-care facilities	0.2	18.5	16.8	14.6	10.8	57.8
Non-smokers						
No disability	92.7	35.6	71.1	22.5	6.2	0.3
Light or moderate disability	7.1	34.8	58.3	34.8	6.6	0.3
Severe disability	0.1	33.5	56.4	29.3	14.0	0.3
Health-care facilities	0.1	22.6	13.3	8.4	4.9	73.0
<b>FEMALES</b>						
Total population						
No disability	84.5	37.6	62.4	28.5	7.3	1.8
Light or moderate disability	14.3	36.8	49.7	40.4	8.1	1.9
Severe disability	1.0	34.5	44.8	36.2	16.7	2.3
Health-care facilities	0.1	19.7	14.1	13.9	7.5	64.6
Smokers						
No disability	83.6	30.7	58.5	31.7	7.8	2.0
Light or moderate disability	14.7	29.4	42.9	45.9	9.2	2.0
Severe disability	1.7	26.5	38.0	37.8	22.1	2.1
Health-care facilities	0.0	15.7	14.8	18.1	11.7	55.3
Non-smokers						
No disability	85.0	40.9	63.2	27.5	7.8	1.5
Light or moderate disability	14.1	40.2	52.1	38.1	8.3	1.5
Severe disability	0.7	38.5	47.6	35.4	15.3	1.7
Health-care facilities	0.2	22.3	11.9	11.4	5.9	70.8

Source: Statistics Canada, National Population Health Survey, 1994-1996.

population is independent at age 45 years, although with some variation related to smoking status: smokers are already displaying a higher prevalence of disability than non-smokers.

The breakdown of these years of life also varies by functional state: accordingly, almost 70% of the 33 years that an independent male at age 45 can expect to live will be lived free of disability. For those with severe disabilities,

only half (53.4%) of the years to live—already fewer than for those who are independent—will be spent free of disability. In other words, life expectancy decreases and the burden of disability increases as functional state declines.

Depending on functional state, the consequences of smoking on morbidity are clear. Except for individuals living in long-term health care establishments, the proportion of years that smokers live free of disability is systematically smaller than among non-smokers. For example, a male smoker aged 45 with slight or moderate disabilities could expect to spend almost half of his remaining 27.1 years, on average, living free of disability. For a non-smoker, this percentage is close to 60%. Not only is the life expectancy of smokers in each of the functional states shorter than that of non-smokers, but the burden of disability is also heavier.

The situation is very similar among women, although the difference between smokers and non-smokers is even more marked (Table 5). Approximately 65% of the 40.9 years of life expectancy of independent non-smoking females at age 45 will be lived free of disability, a proportion that drops to 59% for smokers who, moreover, can expect a considerably shorter life expectancy (30.7 years). The latter are already experiencing slight or moderate disabilities at age 45 and must expect to spend slightly more than 57% of their remaining years with a disability of greater or lesser severity, compared to only 48% for non-smokers who will also live longer.

For both men and women, the burden of disability appears to be less among smokers living in long-term health care establishments than for non-smokers. Such findings, while surprising at first glance, need to be considered in conjunction with the considerably higher mortality of smokers. Smokers have a shorter life expectancy at age 45 and enter these establishments earlier than non-smokers who, in addition, live there longer than smokers. For these reasons, the length of exposure to the risk of disability is much longer for non-smokers, thereby increasing the burden.

## **Discussion**

The purpose of this study was to estimate the effect of smoking on mortality and morbidity in Canada using an aggregate indicator: disability-free life expectancy. This indicator was calculated using the method of multi-state life tables because it makes it possible to take into consideration the dynamic of functional health. The findings obtained show that tobacco use is associated with not only a reduction in the number of years that a person may hope to live, but also with a reduction in the number of years lived free of disability. For their part, non-smokers live longer and live longer without disability. They also spend a higher percentage of their lives without disability. This conclusion

is based on a higher prevalence of disability at all ages, a higher probability of losing one's independence, and a lesser chance of recovering that independence for smokers compared to non-smokers.

The elimination of smoking could therefore lead to a compression of morbidity in Canada, concentrating the burden of disability over a shorter period of time, later in life. Similar findings were obtained for the Netherlands (Nusselder, 1998; Nusselder and al., 2000). The elimination or reduction of smoking would promote a longer life expectancy together with lesser proportion of those years lived with disability, thereby contradicting one popular idea that a longer life is necessarily synonymous with a longer period lived with disability. Lower levels of smoking would help to reduce the burden of disability in the Canadian population while increasing life expectancy.

These findings may also raise some concerns about the future when one considers recent trends in tobacco use by youth. Youth represent a group particularly at risk because it has been shown that more than four smokers in five began smoking before the age of 20 years (Clark, 1996). Moreover, the prevalence of smoking among youth aged 15-19 was higher in 1994-95 than in the late 1980s (Clark, 1996). The negative impact of this trend could therefore be felt on both the mortality and morbidity of the Canadian population twenty years from now. In addition, the most recent statistics available show that young women are now smoking more than young men (32% of girls aged 15 to 19 smoked daily in 1998-99 compared with 23% of boys (Pérez, 1999)), which could further slow future gains in life expectancy of women.

For many individuals, growing old is not a major concern as long as one remains in good health. At the population level, future gains in life expectancy may be less attractive if these additional years are spent in poor health. Smoking reduction could be a means of bringing together sometimes divergent views since it would not only increase the life expectancy of Canadians but would also help reduce the burden of disability.

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## IMPACT OF CAUSES OF DEATH ON LIFE EXPECTANCY AT HIGHER AGES FROM 1951 TO 1996

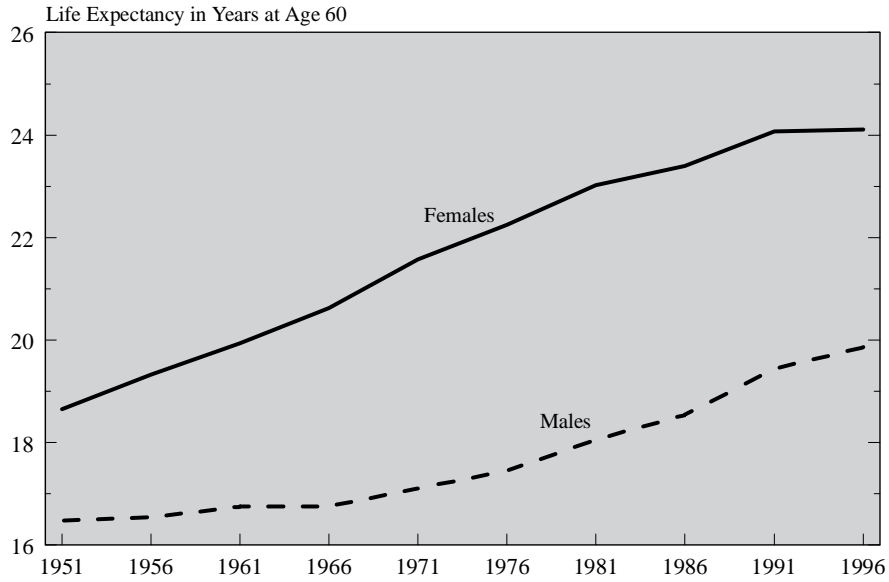
by Stéphane Gilbert and Alain Bélanger

Until the mid-twentieth century, the extension of life expectancy in most industrialized countries was largely due to medical advances against infectious diseases. The gradual reduction in these diseases, which primarily affect children under one year of age, has played a major role in extending life expectancy. Since infant mortality has now reached very low levels, and since deaths among children under one year of age are now largely due to endogenous causes, it is difficult to further compress infant mortality rates, and any future decreases will have very little impact on life expectancy. As a result, while the secular trend toward greater life expectancy continues, gains are now more attributable to decreased mortality among older persons than among children, teenagers or even young adults. Thus it is useful to analyse life expectancy gains by cause of death in persons aged 60 and over, particularly considering that by 2006, great numbers of Canadians—the large cohort consisting of the baby boomers born in the years following World War II—will start moving into their sixties.

*Since the 1950s, life expectancy at age 60 has grown considerably. A woman reaching age 60 in 1951 could expect to live an additional 19 years on average, whereas in 1996, a woman of that age could expect to live an average of 24 years. For men, however, the increase has been less pronounced; their life expectancy increased by just over three years during the same period (Figure 1).*

While life expectancy is growing continually, the gains vary considerably over time. Figure 2 shows the variation in gains for life expectancy at age 60 for five-year periods in the last half-century. There are variations not only from one period to another but also by sex. From 1951-1956 to 1976-1981, gains in life expectancy at age 60 were much greater for females than for males. For each of these five-year periods, females posted gains in excess of 0.6 years of life expectancy, while the gains for males did not exceed 0.2 years per five-year period prior to 1966-1971. *In the early 1970s a new trend emerged: male gains in life expectancy at 60 rose almost continually, while female gains tended to decline from one period to the next.* Starting in 1981-1986, males' gains exceeded those of females. They remained relatively high (more than 0.4 years per five-year period) even for the most recent period (1991-1996), while females' gains over the latter period were practically nil, in sharp contrast with the past.

**Figure 1. Life Expectancy at Age 60 by Sex, Canada, 1951-1996**



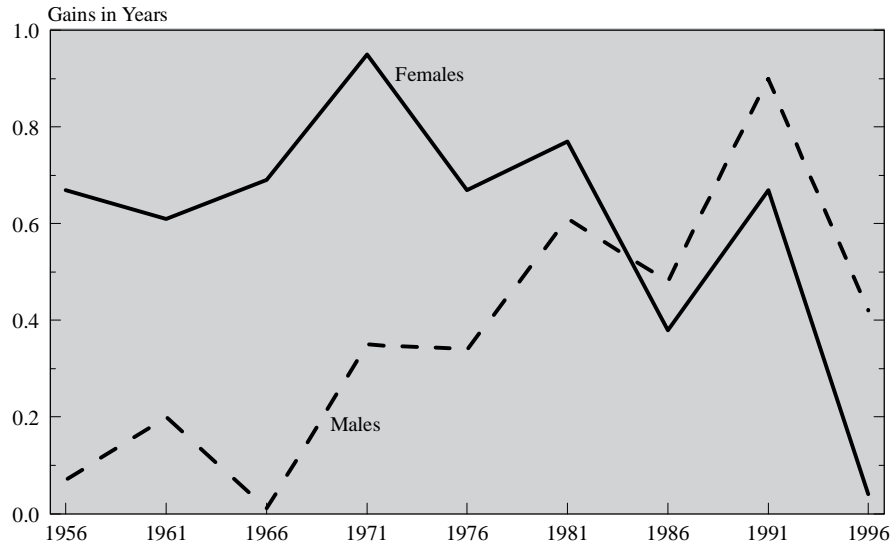
**Sources:** Statistics Canada, Health Statistics Division, Health Status and Vital Statistics Section and Demography Division, Population Estimates Section and Research and analysis section.

It seems useful to analyse in greater detail how gains in life expectancy at age 60 have evolved over time, in particular by identifying the causes of death associated with those gains. It would seem that an ideal way to do this would be to use the method proposed by Pollard (1988) for analysing the contribution of each cause of death to the increase in life expectancy. An advantage of this method is that the life expectancy gains observed over a given period can be broken down by cause of death or by age group. It is therefore possible to identify those causes of death which are associated with an increase in gains and those which, on the contrary, have slowed those gains. But before examining the impact of each cause of death on life expectancy gains, it seems appropriate to draw a brief sketch of how mortality by cause of death evolved from 1951 to 1996.

#### **Weighting of the Main Causes of Death Among Persons Aged 60 and Over**

Little can be gained by examining annual figures on deaths according to their cause, since the population aged 60 and over has grown substantially

Figure 2. Gains in Life Expectancy at Age 60 by Sex, Canada, 1951-1996



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

over the period and its age structure has also changed over time. To obtain a better comparison over time, it is preferable to standardize the number of deaths according to the different causes by applying mortality rates by cause and age group to a population held constant. Figure 3 shows the number of deaths for each major cause, obtained by multiplying those rates by the size of the Canadian population in 1976. Overall, mortality at age 60 and over declined over the period. *For both sexes—and especially for females—this decline in the standardized number of deaths is largely attributable to a decrease in diseases of the circulatory system (arteriosclerosis, stroke, heart disease, etc.). On the other hand, deaths caused by cancer and diseases of the respiratory system increased.*

Another way to analyse variations in the importance of the different causes of death is to look at their weight in relation to all deaths (Figure 4). Starting in 1981, the proportion of deaths attributable to diseases of the circulatory system declines especially rapidly. *For males, this cause, which was responsible for 59% of all deaths in 1951, accounted for only 40% in 1996. For females, the decline was even more dramatic: during the period, the proportion of*

### Causes of Death

To limit the analysis to the most important causes of death, we chose to select only those that accounted for at least 5% of all deaths registered during any of the five-year periods between 1951 and 1996. The effect of all other causes—those that never accounted for more than 5% of total deaths—is summarized in the “other” category. This Table shows the causes selected, along with the correspondence between the codes for each revision of the International Classification of Diseases (ICD). The causes are grouped into four major etiological categories, including “other.”

The choice of the study period (1951 to 1996) is not unrelated to the different revisions of the ICD. Revisions prior to the 6<sup>th</sup> (that is, before 1950) are sufficiently different to make it both difficult and risky to establish a correspondence between the causes of death.<sup>1</sup> As epidemiologist and demographer Marie-Hélène Bouvier-Colle<sup>2</sup> points out:

*“The evolution of specific diagnoses cannot accurately be traced back more than fifty years. Very often, the identification and naming of certain diseases has taken place only recently. Moreover ... it is hard to assess the consequences of these changes in numerical terms.”*

**deaths attributable to this cause fell from 62% of all deaths to 41%.** Despite the steep decline in the proportion of deaths related to circulatory system dysfunction, in 1997 this cause of death was still responsible for roughly two deaths in five among persons 60 and over.

Of course, the decrease in the proportion of deaths attributable to one cause inevitably leads to an increase in the proportion attributable to another cause. In particular, this is the case with deaths due to cancer, which saw their weight increase from 14% to 27% of all deaths for females and from 16% to 29% for males over the period from 1951 to 1996. Among all cancers,

<sup>1</sup> Attempts have been made to reconstruct different causes of death along etiological and anatomical lines (although not without some discontinuities), based on the different revisions of the ICD. On this subject, see Vallin, J. (1982). “Pour une approche démographique de la classification des décès” in *Morbidité et mortalité aux âges adultes dans les pays développés*, Chaire Quételet 1982, Département de démographie, Université Catholique de Louvain, pp. 61-80.

<sup>2</sup> Bouvier-Colle, M. H. (1990). “Classement des maladies et causes de décès. La mort vue par les épidémiologistes,” in Bouvier-Colle, M.-H., Vallin, J. and F. Hatton. *Mortalité et causes de décès en France*, Les Éditions INSERM and Doin Éditeurs, Paris, France, p. 104.

**Main Causes of Death According to the International Classification of Diseases (Accounting for 5% or More of Deaths in at Least One Five-year Period from 1951 to 1996)**

Causes	Codes According to the ICD <sup>a</sup> Revision			
	6 <sup>b</sup>	7 <sup>c</sup>	8 <sup>d</sup>	9 <sup>e</sup>
<b>1.0 - Cancers</b>	<b>140 - 205</b>	<b>140 - 205</b>	<b>140 - 207</b>	<b>140 - 208</b>
1.1 Trachea, Bronchus and Lung	162 - 163	162 - 163	162	162
1.2 Breast (Females)	170	170	174	174
1.3 Prostate (Males)	177	177	185	185
1.4 Other Cancers				
<b>2.0 - Diseases of the Circulatory System</b>	<b>330 - 334</b>	<b>330 - 334</b>	<b>390 - 458</b>	<b>390 - 459</b>
	<b>400 - 468</b>	<b>400 - 468</b>		
2.1 Ischaemic Heart Diseases	420	420	410 - 414	410 - 414
2.2 Cerebrovascular Diseases	330 - 334	330 - 334	430 - 438	430 - 438
2.3 Atherosclerosis	450	450	440	440
2.4 Other Diseases of the Circulatory System				
<b>3.0 - Diseases of the Respiratory System</b>	<b>240 - 241</b>	<b>240 - 241</b>	<b>460 - 519</b>	<b>460 - 519</b>
	<b>469 - 527</b>	<b>470 - 527</b>		
3.1 Pneumonia and Influenza	480 - 493	480 - 493	470 - 486	480 - 487
3.2 Other Diseases of the Respiratory System				
<b>4.0 - Other Causes</b>				

<sup>a</sup> International Classification of Diseases.

<sup>b</sup> 6<sup>th</sup> revision, adopted in 1950.

<sup>c</sup> 7<sup>th</sup> revision, adopted in 1955.

<sup>d</sup> 8<sup>th</sup> revision, adopted in 1965.

<sup>e</sup> 9<sup>th</sup> revision, adopted in 1975.

**Source:** Statistics Canada, *Causes of Death*, Vital Statistics, volume IV, catalogue no. 84-203, 1985.

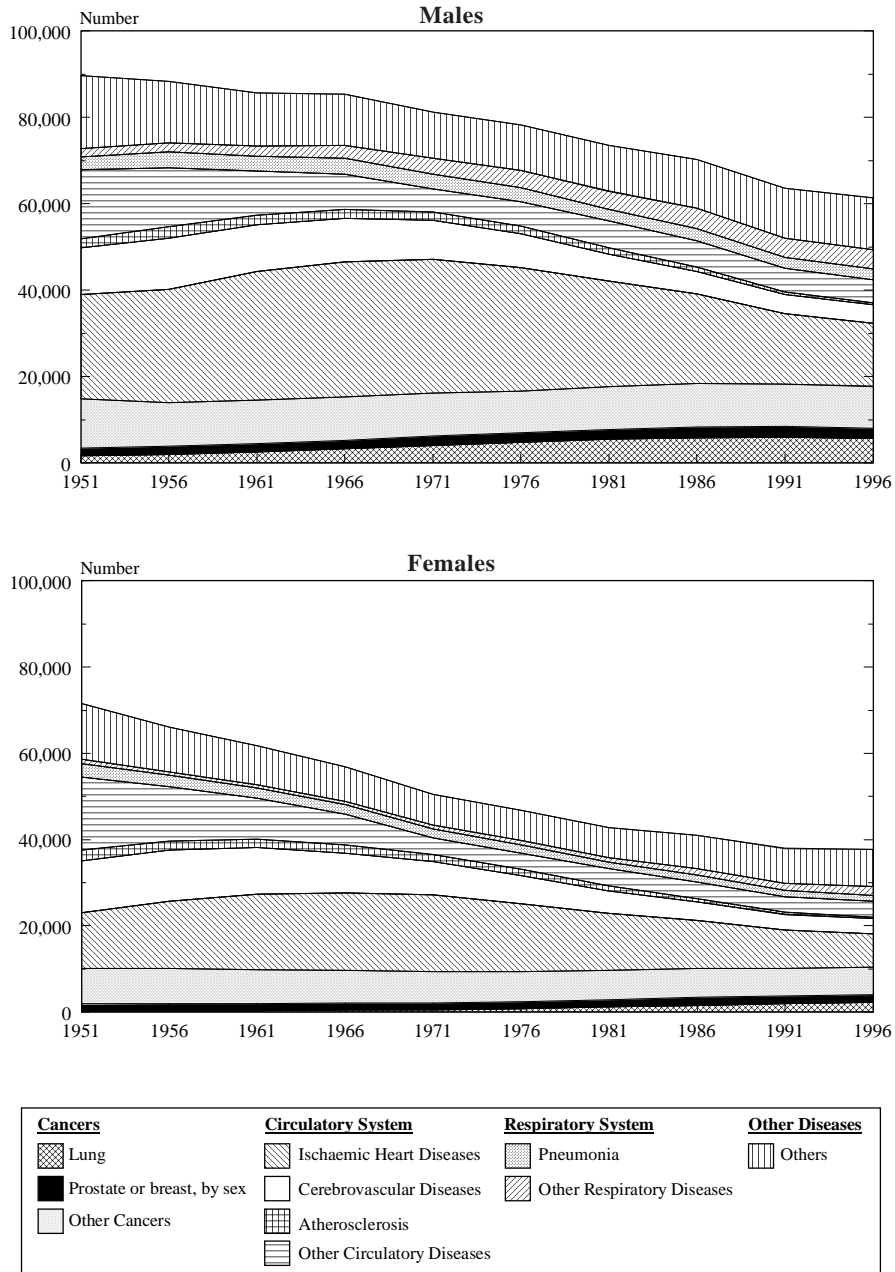
*lung cancer plays a predominant role in mortality. In 1996, it alone was responsible for 22% of all cancer deaths among females and 32% among males.* Within a few years, it is predicted that approximately one woman in 25 and one man in 11 will contract lung cancer.<sup>3</sup> Generally, the increase in cancers, especially lung cancer, would appear to be largely due to smoking, since the risk of dying of cancer is much greater for a smoker and than for a non-smoker.<sup>4</sup>

Prostate cancer in males is another form of cancer that increased significantly during the period from 1951 to 1996. This type of cancer accounted for 12% of cancer deaths in 1951, a figure which had risen to 14% by 1996. Among females, the proportion of deaths by breast cancer remained relatively stable over the period. Nevertheless, it is expected that approximately 11%

<sup>3</sup> Illing, E.M., Gaudette, L.A., McLaughlin, J.A. & M.J. Brite (1992). *Cancer Statistics 1992*, Health Report, volume 4, no. 2, October.

<sup>4</sup> Mao, Y., Morrison, H., Nicol, R.D., Pipe, A. & D. Wigle (1988). "The Health Consequences of Smoking Among Smokers in Canada" in *Canadian Journal of Public Health*, volume 79, September/October.

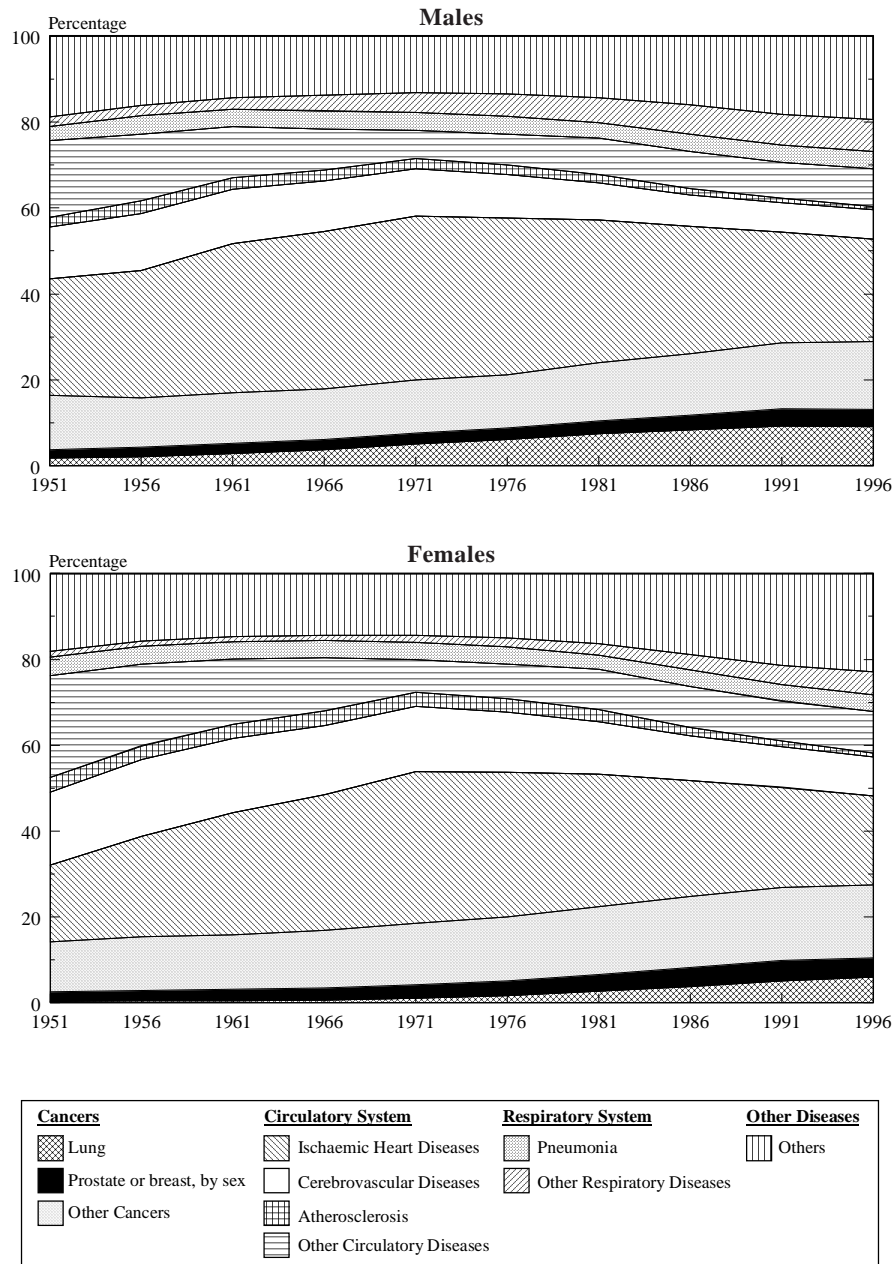
**Figure 3. Trend in the Expected Number of Deaths Beyond Age 60 by Main Causes of Death and Sex, Canada, 1951-1996<sup>1</sup>**



<sup>1</sup> Standardized with the 1976 population.

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

**Figure 4. Trend in the Expected Deaths Beyond Age 60 by Weighted Main Causes of Death and Sex, Canada, 1951-1996<sup>1</sup>**



<sup>1</sup> Standardized with the 1976 population.

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

of females will contract breast cancer over the course of their life. However, breast cancer is often less fatal than other forms of cancer; recent studies suggest that fewer than 5% of women with breast cancer will die from it.<sup>5</sup>

To a lesser extent, deaths caused by respiratory disorders also increased. They accounted for roughly 10% of all standardized deaths in 1996. And finally, a greater proportion of deaths fell into the “other” category in 1996 than in 1951. This relative increase is primarily due to the relative decrease in deaths attributable to diseases of the circulatory system.

#### **Weight of the Major Causes by Age**

As may be seen in Figure 5 for 1951, male mortality is higher at all ages and for all the major etiological categories. At all ages above 60 and for both sexes, diseases of the circulatory system are responsible for the majority of deaths. The share of deaths due to cancer tends to be much greater in the younger age groups than in the 90 and over group. *Cancer is responsible for nearly 20% of all deaths at age 60-64 for males and 26% for females, compared with only 9% and 4% at age 90 and over for males and females respectively.* On the other hand, the share of deaths attributable to diseases of the respiratory system increases slightly with age, while the number of deaths attributable to other causes shows little variation from one age group to another.

*In 1996, male mortality is still higher at all ages.* However, the proportion of deaths in the older age groups is greater than in 1951 apart from deaths from cancer, which show essentially the same age distribution. As to deaths due to diseases of the circulatory system and the respiratory system, their proportion tends to increase with age. This phenomenon is especially apparent in the female population, where these two etiological groups account for respectively 18.3% and 19.0% of deaths of persons aged 90 and over, compared to 5.4% and 5.7% of deaths in the 60-64 age group.

#### **Contribution of Causes of Death in the Trend in Life Expectancy at Age 60 and Over**

The number of deaths attributable to each cause provides a good idea of the contribution of that cause to the variation in mortality at the higher ages. But even when standardized (in this case, using the 1976 population as the standard), the calculation does not clearly show how the change in causes of death over time has affected life expectancy gains.

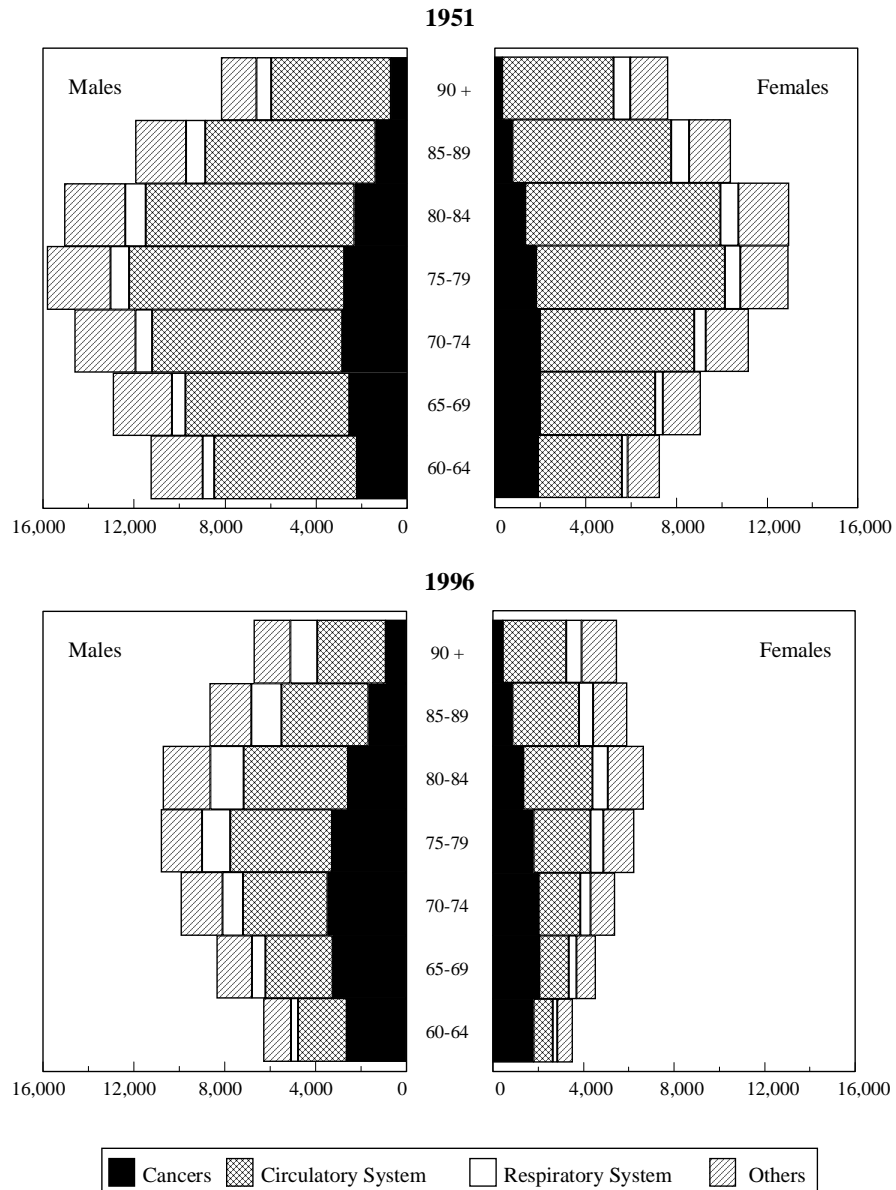
In order to assess the impact of causes of death on life expectancy gains, it is necessary to use a method that enables us to calculate the contribution

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<sup>5</sup> Gaudette, L.A. (1998). “Breast Cancer and Mammography” in *Canadian Social Trends*, no. 48, Spring.



**Figure 5. Distribution of Expected Deaths<sup>1</sup> by Cause and Age Group, Canada 1951 and 1996**



<sup>1</sup> Deaths were standardized to the 1976 Canadian population to facilitate comparison between years.

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

**Table 1. Contribution of Each Cause of Death to Life Expectancy Gain at Age 60 by Sex, 1951-1996**

Causes	Males		Females	
	Contribution	%	Contribution	%
<b>1.0 - Cancers</b>	<b>-0.38</b>	<b>-10.7</b>	<b>-0.02</b>	<b>-0.4</b>
1.1 Trachea, Bronchus and Lung	-0.50	-14.3	-0.38	-6.2
1.2 Breast (Females)	...	...	-0.01	-0.2
1.3 Prostate (Males)	-0.08	-2.2	...	...
1.4 Other Cancers	0.20	5.8	0.36	6.0
<b>2.0 - Diseases of the Circulatory System</b>	<b>3.41</b>	<b>97.1</b>	<b>5.18</b>	<b>85.7</b>
2.1 Ischaemic Heart Diseases	1.32	37.5	0.97	16.0
2.2 Cerebrovascular Diseases	0.76	21.5	1.56	25.7
2.3 Atherosclerosis	0.15	4.4	0.35	5.8
2.4 Other Diseases of the Circulatory System	1.18	33.6	2.31	38.1
<b>3.0 - Diseases of the Respiratory System</b>	<b>-0.17</b>	<b>-4.8</b>	<b>0.10</b>	<b>1.7</b>
3.1 Pneumonia and Influenza	0.08	2.3	0.28	4.7
3.2 Other Diseases of the Respiratory System	-0.25	-7.1	-0.18	-3.0
<b>4.0 - Other Causes</b>	<b>0.65</b>	<b>18.4</b>	<b>0.79</b>	<b>13.0</b>
<b>Total</b>	<b>3.52</b>	<b>100.0</b>	<b>6.05</b>	<b>100.0</b>

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

of each cause to the increase in life expectancy while minimizing the effects due to interaction between causes. The approach that best meets these requirements is the one proposed by John H. Pollard<sup>6</sup> for breaking down life expectancy gains according to the various causes of death.

Table 1 shows a breakdown of life expectancy gains over the study period by the main etiological categories and subcategories. Among males, life expectancy gains at age 60 over the course of the study period are mainly due to the decrease in mortality related to diseases of the circulatory system. *The gains for this cause amounted to 3.4 years, including 1.3 years for lower mortality due to ischaemic heart disease.* On the other hand, the increase in death by cancer resulted in a negative contribution to life expectancy equivalent to 0.4 years. This was also the case with deaths related to diseases of the respiratory system, which contributed negatively to life expectancy gains over the study period, resulting in a loss of 0.2 years.

For females, the decline in mortality due to the decrease in diseases of the circulatory system made an even greater contribution to life expectancy gains. *During the period from 1951 to 1996, the decline in mortality for this etiological group caused female life expectancy to increase by 5.2 years.*

<sup>6</sup> Pollard, J.H. (1988). "Causes de décès et espérance de vie: quelques comparaisons internationales" in Vallin, J., D'Souza, S. & A. Palloni, *Mesure et analyse de la mortalité: nouvelles approches*, proceedings of an international seminar on comparative changes in mortality, held in Sienna from July 7 to 12, 1987 under an initiative of the IUSSP with the co-operation of the Instituto di Statistica of the University of Sienna, INED, pp. 291-311, paper 119.

### Method

The breakdown of life expectancy is obtained by calculating the difference in mortality rates ( $m_x^{(i)}$ ) at two given points in time ( $t, t + a$ ) that a weighting factor ( $w$ ) multiplies for each cause ( $i$ ) at age ( $x$ ). The sum of the differences of the weighted rates calculated by age for each cause ( $i$ ) gives the contribution to life expectancy attributable to this cause for all ages combined. The contribution obtained, multiplied by age interval  $n$ , may thus have a negative impact on life expectancy when its value is less than zero or a positive impact when its value is greater than zero.

$$C_x^{(i)} \cong n \sum_x \left( m_x^{(i)t} - m_x^{(i)t+a} \right) \times W_x$$

$$W_x = \frac{\left( {}_n P_x^{t+a} e_x^t + {}_n P_x^t e_x^{t+a} \right)}{2}$$

Where:

$$e_x^{t+a} - e_x^t \cong \sum_i C_x^{(i)}$$

$C^{(i)}$  = Contribution of cause  $i$  to life expectancy

$m^{(i)}$  = Mortality rate for cause  $i$

$P$  = Probability of survival to age  $x$

$e$  = Life expectancy at age  $x$

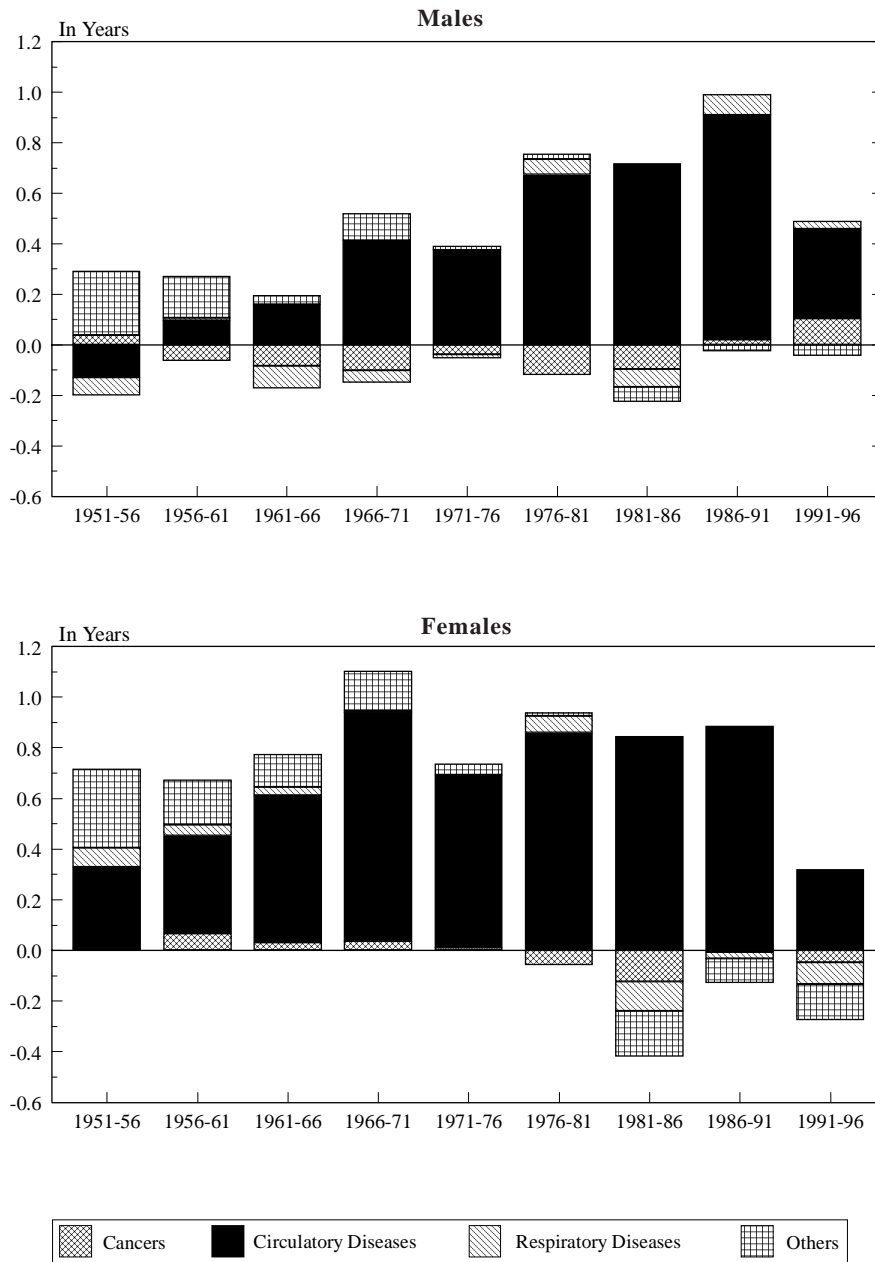
$a$  = Time interval (5 years)

$n$  = Age interval (5 years)

Lastly, the sum of the contributions of each cause and of all age groups yields an approximate value for the total life expectancy gains at age  $x$  observed during period  $t$  and  $t + a$ .

Unlike for males, most of the gain is not attributable to the reduction in mortality for ischaemic heart disease, but rather to that for stroke, which results in a gain of 1.6 years. For females, cancer and diseases of the respiratory system have virtually no impact on how life expectancy at age 60 varies over time, whereas for males these causes of death have a negative impact.

**Figure 6. Contribution of Causes of Death to the Variation in Life Expectancy, by Sex, 1951-1996**



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

Judging from only the positive contributions to the extension of life expectancy, the sole cause of death for which males show greater gains than females is ischaemic heart disease. ***For all other major causes of death, the drop in mortality results in greater gains in life expectancy at age 60 for females than for males. This is not surprising, considering that over the period, the total gains in life expectancy at age 60 are 2.5 years larger for females than for males.*** As to the causes that play a negative role in the change in life expectancy, they affect males more than females. For example, lung cancer reduces male gains by half a year, while for females, the losses due to this disease are approximately 0.4 years.

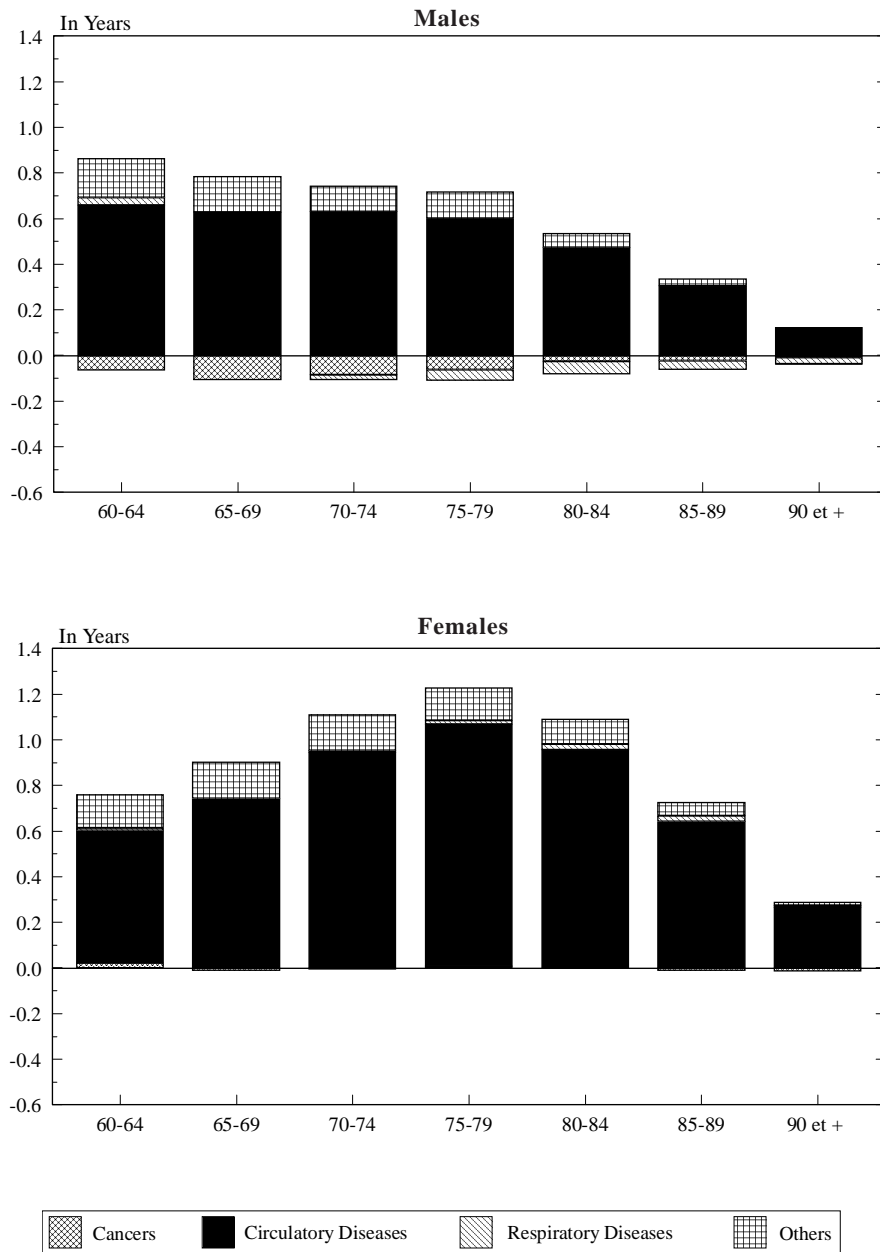
An analysis of life expectancy gains per five-year period shows that for males, the gains related to the decrease in deaths due to diseases of the circulatory system are relatively large starting in 1966-1971, a period when gains in life expectancy took off. For the periods 1951-1956 and 1956-1961, the gains are largely attributable to the “other diseases” category. This category has a positive effect that decreases over time and even becomes a negative effect on gains starting in 1981-1986. Except for the period 1951-1956 and the two most recent periods, cancer contributes negatively to the change in life expectancy, but that negative effect does not exceed 0.2 years, so that it never fully offsets the gains due to the decrease in deaths from diseases of the circulatory system. For females, the gains due to the drop in mortality related to this cause are by far the dominant ones for all periods. But starting in 1976, the negative effects associated with the other three etiological groups reduce life expectancy gains.

#### **Contribution to Gains in Life Expectancy at Age 60 by Age Group**

The size of life expectancy gains by cause of death also varies from one age group to another. The results presented in Figure 7 show that ***gains gradually decline with age for males but increase up to age 75-79 for females.*** The contribution of reduced mortality for diseases of the circulatory system is positive for all age groups, but it is greater among the younger age groups (under 80). For males, only cancer offsets the gains for the 60-64 and 65-69 age groups, but starting with the 70-74 age group, mortality due to diseases of the respiratory system also contributes negatively to the variation in life expectancy at age 60 between 1951 and 1996.

Figure 7 also shows how much the reduction in mortality for diseases of the circulatory system contributes to gains in female life expectancy at age 60. That contribution is strongly positive for the 75-79 age group; unlike for males, ***more than one year was added to female life expectancy at age 60 solely by the reduction in mortality due to diseases of the circulatory system in females aged 75-79.*** Cancer-related mortality has almost no effect on female life expectancy gains (-0.02), and this is confirmed for all age groups. Similarly, while mortality for diseases of the circulatory system has only a

**Figure 7. Contribution of Major Causes of Death to Increase in Life Expectancy at Age 60 by Age Group and Sex, Canada, 1951-1996**



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

small positive effect on the life expectancy gains of males prior to age 70, the reduction in mortality associated with this cause makes a positive, if minor, contribution for all age groups among females.

### **Conclusion**

The importance of the difference causes of death has changed over time. Some causes, by accounting for a lower number of deaths, have played a favourable or positive role in increasing life expectancy. This is especially the case with diseases of the circulatory system, which accounted for large gains in life expectancy at age 60 for males and females. Gains in life expectancy as a result of the reduction in mortality associated with this cause are especially striking for females between 1961 and 1991 and for males starting in 1966. Conversely, other causes have instead played an unfavourable or negative role, accounting for a greater number of deaths. This is the case with some cancers—especially lung cancer—that had a negative effect on the change in life expectancy at age 60 over the study period. Without the increase in mortality for lung cancer, life expectancy at 60 could have increased by an additional 0.5 years for males and 0.4 years for females.

Most of the life expectancy gains registered over the second half of the twentieth century among persons aged 60 and over are primarily due to the sharp decline in deaths associated with diseases of the circulatory system. It has resulted in a gain of 3.4 years for males and 5.2 years for females over the period from 1951 to 1996. These gains are enormous, considering that the total gain for males is 3.5 years and for females, 6.1 years. Even so, this etiological category remains the main cause of death. For both males and females, it is responsible for more than 40% of deaths.

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**FAMILY AND DEMOGRAPHIC CHANGES AND THE  
ECONOMIC WELL-BEING OF PRESCHOOL-AGE  
CHILDREN IN CANADA, 1981-1997**

By Don Kerr and Alain Bélanger

Over the last few decades in Canada, the familial circumstances of couples with young children have changed substantially. Changes in the number and timing of children, the formation and dissolution of unions, and an increase in the labour force participation of women have all had an impact on the family life and economic conditions experienced by Canadian children. In this context, we thought it would be useful to examine the importance of these changes to the economic conditions faced by children between 1981 and 1997.

In examining the evolving economic conditions faced by Canadian children, the present study places particular emphasis on families with preschool-age children. In a classic study on the interrelations between family life, the world of work and demographic change, Valerie Oppenheimer (1982) demonstrated that families with very young children had the greatest chance of experiencing what she termed the “life-cycle squeeze”. With the arrival of young children, many families go through economic tensions, as consumption patterns often approach or even exceed family purchasing power. Similarly, parents have to cope with severe demands on their time as they strive to meet the needs of young children while one or even both spouses are working outside the home, often full time. Since families with preschoolers are more vulnerable than other families to tensions associated with this “life-cycle squeeze”, the present study focuses solely on families with at least one child aged 5 or under.

Several different analyses have considered the impact of family and demographic change on the economic conditions affecting children (Dooley, 1988, 1991; McQuillan, 1992; Picot and Myles, 1996). The present study updates this research to 1997, while shifting the emphasis to families with very young children. We begin by describing recent trends in demographic and family change and establish a link between these changes and shifts in the economic well-being of young children. Then we use a multivariate analysis to evaluate the interrelations between trends in family and demographic composition and characteristics, and trends in economic well-being over the 1981-1997 period. An interesting issue addressed in this context is whether there is any evidence to suggest that, for families with preschool-age children, this “life-cycle squeeze” has tightened in recent years.

### **Demographic and Family Changes**

In recent decades, various offsetting changes in the family life of Canadians have had an impact on the economic well-being of Canadian children. Among the most important demographic changes to have a net beneficial impact on the economic well-being of children has been the well-documented decline in fertility that followed the baby boom (Romaniuc, 1984). By itself, a decrease in the number of children per family has direct economic ramifications, since it means fewer dependent youths per household and thus a decline in the number of claimants on family income (Dooley, 1989; Brouillette and al., 1990).

There has also been an upward shift in the age pattern of fertility (Ram, 1990; Beaujot and al., 1995; Bélanger, 1999). This may be associated with a higher level of economic well-being, as adults delay having children until later in their reproductive years, when economic resources are generally greater (Oppenheimer, 1988; Grindstaff and al., 1989).

While fertility has declined, non-marital fertility as a proportion of total births has risen steadily. For example, only about 14% of all births were to unmarried mothers in 1981, compared with 36% in 1996 (Beaujot, 2000). This growth in the relative number of non-marital births is not due to an increased incidence of fatherless births but rather to the growing popularity of common-law unions in Canada. For a growing number of Canadians, common-law union is preferred to legal marriage, even if there are children. While common-law partners continue to have a lower fertility rate than married couples (Dumas and Bélanger, 1997), this growing popularity of common-law unions directly explains the above-mentioned trend in non-marital fertility.

According to the 1996 Census, 14% of all couples were living in a common-law union, more than double the 1981 figure of 6%. Among younger cohorts, this change is far more dramatic. For example, over one half of first unions formed since 1985 were common-law unions rather than marriages (Dumas and Bélanger, 1997). This fundamental change in nuptiality has important ramifications for children, as common-law unions are also far less stable than legal marriages, even when they include children (Marcil-Gratton, 1993; Marcil-Gratton and Le Bourdais, 1999). The rates of marital dissolution have been rising in recent years (for both legal marriages and cohabiting unions).

As in the case of births to single parents, there is ample evidence to suggest that separation and/or divorce cause considerable economic hardship for both women and children (Ross and Shillington, 1989; Dooley, 1991; Rashid, 1994). While the long-term economic repercussions of union dissolution are generally not as great as those faced by single women who have births without a partner, in general, children experience significant economic hardship as a result of their parents' inability to continue their relationship (McQuillan, 1992). As a

consequence of both the lower proportion of married couples and the higher rates of union dissolution, the proportion of families headed by a single parent has increased. According to the 1996 Census, fully 22% of families with at least one child in Canada are headed by a lone parent, compared with 17% in 1981. Furthermore, in recent decades the average age of lone parents has declined steadily, as fewer result from widowhood and more from union dissolution and marital breakdown (Peron and al., 1999).

A further change that influences the dynamics of family life in Canada is greater labour force participation by women. Female participation rates reached 40% in the early 1970s and are now approaching 60%. The proportion of women in the paid labour force has climbed substantially among both married and non-married women (Gunderson, 1998). While women with young children have always had lower participation rates than women without children, they are the ones who have experienced the most significant changes over the past few decades. A decline in young males' relative income during the 1970s and 1980s, combined with rising material aspirations, made it more necessary for couples to be able to count on two incomes (Martel and Bélanger, 1999). This adaptation to new economic circumstances has forced young couples to postpone their childbearing plans and reduce their fertility expectations. In terms of fundamental life-cycle demographic events, more and more women are taking paid employment, opting for work outside the home and additional income rather than additional children.

It has been shown in the literature that the above-mentioned changes, taken as a whole, have had a net positive impact on the economic well-being of Canadian families with children (Dooley, 1989; Kerr, 1992; Picot and Myles, 1996). Irrespective of the well-documented growth in lone-parent families, the family and demographic changes described above have had a net positive impact on the economic well-being of Canadian children. The present study updates this research on the basis of family and demographic change and income trends from 1981 to 1997, focusing exclusively on families with at least one preschool-age child.

### **Recent Trends, 1981-1997**

Table 1 summarizes many of these changes using 1981, 1989 and 1997 data on economic families from the Survey of Consumer Finances. This survey has long provided information on a variety of socio-economic and demographic characteristics for a sizable sample of Canadian families.

As has been well documented, the largest part of the fertility decline in Canada occurred during the 1960s and 1970s; it is consequently not reflected in Table 1. For example, by the early 1970s, Canada's total fertility rate (TFR) had already fallen below replacement, and it has hovered between 1.85 and its current low of 1.54 ever since. Although the largest part of Canada's fertility

**Table 1. Distribution of Families with Pre-school Age Children by Selected Variables, Canada, 1981-1997**

Variables	1981	1989	1997
Number of Children			
- One Child	35.9	36.2	39.2
- Two Children	41.7	41.4	39.1
- Three Children	15.9	16.4	16.2
- Four or More Children	6.5	6.0	5.5
Age of Reference Person			
- Under 25	18.2	11.7	10.5
- 25-29	33.9	30.2	22.5
- 30-34	29.2	33.7	33.6
- 35-39	11.9	16.0	21.9
- 40 and Over	6.8	8.4	11.5
Presence of Parents			
- Dual Parent	90.1	88.1	82.9
- Single Parent	9.9	11.9	17.1
Female Lone Parent	8.7	11.0	15.8
Number of Earners			
- None	4.5	5.7	9.5
- One	40.6	27.7	28.8
- Two or More	54.9	66.6	61.7

**Source:** Statistics Canada, Survey of Consumer Finances, 1982, 1990 and 1998.

decline had already occurred by 1981, average family size has continued to decline, albeit only slightly, and the timing of childbearing continues to shift upward toward older ages.

Among families with preschool-age children, the proportion with only one child increased slightly from 36% in 1981 to 39% by 1997. While the proportion of families with three or more children fell dramatically in earlier decades, it has generally remained stable in recent years.

In Table 1, the data on “age of reference person”, which for the purposes of this article is defined as the age of the mother in all but male lone-parent families, suggest a continued trend toward delayed childbearing. Through the 1980s and 1990s, the proportion of families headed by a young parent continued to decline. By 1997, only about a third of all families with preschoolers in Canada were headed by a mother in her twenties. This is down from over 50% in 1981.

A further change of importance to the economic well-being of families with young children has to do with recent trends in the presence of parents. Table 1 reflects a decline in the proportion of two-parent families with

preschoolers from 90% in 1981 to only 83% by 1997. About 1 in 10 families with preschoolers was headed by a lone parent in 1981, compared with about 1 in 6 in 1997.

While this growth in the relative number of lone-parent families implies a continuation of past trends throughout the 1981-1997 period, the same generalization is not true for the number of earners per Canadian family. Overall, there was a substantial increase in the proportion of families with two earners between 1981 and 1989 (moving away from the traditional situation of having only one earner per family). However, this trend reversed itself between 1989 and 1997, as the proportion of two-earner families declined. In 1981, 55% of all families with preschoolers had two or more earners, compared with 67% in 1989 and 62% in 1997.

Accompanying this shift toward two-earner families has been an increase in the relative number of families with no labour force participation. The proportion of earnerless families with preschoolers doubled from 5% in 1981 to 10% in 1997. In general, the gains resulting from the increased number of two-earner families have been at least partially offset by an increased proportion of families with no earners. This is probably associated with the aforementioned growth in the number of female lone-parent families.

### **Family and Demographic Change and Economic Well-Being**

The present study uses income data from the Survey of Consumer Finances (SCF). The SCF is conducted each April as a supplement to the Canadian Labour Force Survey. It was designed primarily to provide reliable estimates on average income and income distribution for individuals and families. In recent years, the SCF has used a representative sample of approximately 35,000 households, or 65,000 individuals. The SCF collects detailed information on various socio-demographic and labour force characteristics of Canadian families. Its response rate is of about 80%.

When all figures are expressed in constant 1997 dollars, it is possible to derive comparable income statistics for families with preschoolers for the entire 1981-1997 period. Total family income is, of course, a flawed indicator of economic well-being. To measure economic well-being, one of the things we must do is adjust income data to take account of economic need. As merely a simple example, there is little debate that larger families require larger incomes to attain a comparable level of overall economic well-being relative to smaller households.

A commonly employed method of accounting for such differences in economic need is to examine the "income-to-needs ratio" of different families. This ratio is computed by dividing total family income by some sort of standard income, representing the level of income required to meet the basic economic

**Table 2. Economic Well-being of Families with Pre-school Age Children by Selected Variables, Canada, 1981-1997**

Variables	1981	1989	1997
Average Family Income	51,542	56,524	54,245
Average Income to Needs Weighted Average	1.87	2.00	1.91
Number of Children (Under 18)			
- One Child	2.07	2.13	2.05
- Two Children	1.83	1.99	1.91
- Three Children	1.67	1.84	1.74
- Four or More Children	1.58	1.78	1.49
Age of Reference Person			
- Under 25	1.50	1.45	1.15
- 25-29	1.91	1.83	1.76
- 30-34	1.96	2.11	2.02
- 35-39	2.07	2.31	2.13
- 40 and Over	1.98	2.30	2.17
Presence of Parents			
- Dual Parent	1.96	2.13	2.10
- Single Parent	1.04	1.04	1.01
Female Lone Parent	0.94	0.97	0.93
Number of Earners			
- None	0.49	0.63	0.57
- One	1.62	1.54	1.45
- Two or More	2.17	2.31	2.33

Source: Statistics Canada, Survey of Consumer Finances, 1982, 1990 and 1998.

needs of that family. As there is no solid consensus in the literature as to the most appropriate standard to be employed in the definition of economic need, the present study has selected Statistics Canada's 1992 low-income cut-offs as the denominator for this ratio. Not surprisingly, the cut-offs are weighted so that larger families require higher incomes to meet their economic needs, while "economies of scale" also kick in as size increases. Furthermore, the cut-offs are weighted differently depending on whether the family lives in a major metropolitan area, a smaller city, or a rural area.

Table 2 presents average family income and the income-to-needs ratios for 1981, 1989 and 1997 (with all figures converted to constant 1997 dollars). *Overall, the data point to an increase in economic well-being during the 1981-1989 period, followed by a slight decline between 1989 and 1997. Average income rose from \$51,542 in 1981 to \$56,524 in 1989, and then fell again to \$54,245 by 1997. This translates into a shift in the income-to-needs ratio from 1.87 in 1981 to 2.0 in 1989, and then to 1.91 in 1997.* This is true overall for all families with preschoolers, and generally true across most categories of the family and demographic variables included in Table 2.

When we review the trends for the different variables listed in Table 2, it should come as no great surprise that families with a larger number of children are found to generally experience lower levels of economic well-being. For example, in 1997 the income-to-needs ratio was 1.49 for families with four or more children and 2.05 for families with only one child. Similarly, Table 2 demonstrates the clearly advantageous circumstances faced by families headed by older parents. Consequently, it is anticipated that *recent trends toward smaller family size and deferred childbearing have had a beneficial impact on the economic circumstances of Canadian families.*

Concerning the economic hardships typically associated with female lone-parent status, the figures in Table 2 are certainly consistent with what has been documented elsewhere. On average, female lone-parent families with preschoolers have an income-to-needs ratio of less than 1.0; this implies that their income, on average, is actually lower than Statistics Canada's low-income cut-offs. While two-parent families enjoyed some gains during the 1981-1997 period, female lone-parent families with preschoolers had a slightly lower income-to-needs ratio in 1997 than in 1981. It is noteworthy that the economic conditions of lone-parent families with preschoolers are somewhat worse than those experienced by lone-parent families in general (not shown in Table 2), as single mothers with very young children are known to experience serious obstacles in achieving earnings beyond transfer payments (McQuillan, 1992).

Also obvious in Table 2 are the economic benefits of the two-income family. Families with no earners are doing particularly poorly, while the average income-to-needs ratio is somewhat higher for single-earner families. Over the 1981-1997 period, families with one earner actually experienced a decline in average income to needs, from 1.62 in 1981 to 1.45 by 1997. On the other hand, two-earner households did relatively well over this same period, with the ratio increasing from 2.17 in 1981 to 2.33 by 1997.

As indicated in Table 1, the number of two-earner households increased during the 1981-1997 period as a whole, while the number of single-earner families declined slightly from 41% to 29%. In this context, one can speculate as to the impact that downward pressures on the income-to-needs ratio for families with only one earner might have on the observed increase in the number of two-earner households. It is quite possible that many couples have adapted to downward pressures in individual market earnings by increasing their family's paid employment, even within families with preschool-age children. This life-cycle squeeze on both family economic resources and time probably leaves many new parents with very difficult decisions on how to divide their time between child care and paid employment.

In summary, the average level of economic well-being of families with preschool children varies across several family and demographic variables. We have shown that the average income-to-needs ratio was related to:

- (1) the presence of parents (two parents as opposed to one);
- (2) the age of the parents (as an indicator of the timing of fertility);
- (3) the number of children in the family, and;
- (4) the number of earners who contribute to family income.

### **A Decomposition of Recent Trends**

The relationships presented so far have been exclusively bivariate and tell us relatively little about the comparative importance of each variable in explaining recent trends in income to needs ratio. For example, what is the impact of recent trends in the average number of earners per household, after we control for changes in the presence of parents (i.e., the growth in lone-parent families)? To answer this type of question, we can use a multivariate model to decompose recent trends. This decomposition provides some insight into the net impact of selected variables, after we control for the other variables included in Table 2 and any other variables that might be considered important in explaining changes in family economic well-being.

Through a series of regressions and comparisons of results of “nested” models, the multivariate analysis attempts to identify the relative importance of selected family, demographic and non-demographic factors in recent trends in economic well-being (see box). The present analysis includes all the variables considered thus far and introduces additional information on the occupation and education of parents to control for socio-economic differentials. Table 3 lists the variables included in the decomposition model.

**Table 3. Variables Included in the Multivariate Model**

<p><b><u>Family / Demographic Variables</u></b></p> <p><b><i>Number of Children</i></b> - One child, two children three children, four or more children</p> <p><b><i>Age of Reference Person (Mother's Age or Male Lone Parent)</i></b> - Under 20, 20-24 years, 25-29 years, 30-34 years, 35-39 years, 40 + years</p> <p><b><i>Presence of Parents</i></b> - Dual parent, female lone parent, male lone parent</p> <p><b><i>Number of Earners</i></b> - None, one, two, three or more</p> <p><b><u>Socio-economic</u></b></p> <p><b><i>Education (Mother's Education or Male Lone Parent)</i></b> - Less than high school, high school completion, some post-secondary, completed post-secondary</p> <p><b><i>Occupation (Mother's Occupation or Male Lone Parent)</i></b> - 1981 Occupation Classification</p> <p><b><u>Year</u></b> - 1981, 1989, 1997</p>
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### **Methodology: Decomposition of Trends in Economic Well-Being, 1981-1997**

The present multivariate analysis works with a merged data set (N=18,872) for three years (1981, 1989, 1997). Through a series of regressions, it attempts to identify the relative importance of selected demographic and non-demographic factors. The full model to be estimated is:

$$\log (IN_{it}) = \beta'x_{it} + \xi_{it}$$

$$t = 1981, 1989, 1997$$

where the dependent variable  $\log (IN_{it})$  is the logarithmic transformation of the income-to-needs ratio of the  $i$ th family in year  $t$ ,  $x_{it}$  is a vector of explanatory variables (see Table 3),  $\beta$  is a vector of corresponding parameters, and  $\xi_{it}$  is an error term assumed to have zero mean and constant variance across  $i$  and  $t$ . With the full model ( $R^2 = 0.29$ ), all selected variables had a statistically significant impact on the dependent variable, with a few minor exceptions (e.g., a few of the dichotomous variables introduced in estimating the impact of occupation).

The regression coefficients associated with the year variables are particularly useful for estimating the relative importance of specific variables or sets of variables in recent trends. These dichotomous variables are intended to capture differences in  $\log (IN_{it})$  across years after we control for all other factors in the analysis. In estimating the relative importance of any single demographic or non-demographic factor in changes observed in the average income-to-needs ratio over time, one can simply exclude it from the full model and consider the change observed with respect to the coefficients on the year variables. The impact of a specific variable can be estimated as the difference between the effect identified with the revised model (after the variable of specific interest is excluded) and the effect identified with the full model. This procedure gives a “conservative” estimate, in that it suggests only the marginal effect of that factor, controlling for all others.

Table 4 summarizes the impact of each family and demographic variable separately, as well as the socio-economic controls (i.e., occupation and education). To illustrate how the results can be interpreted, the first row tells us that change in the presence of parents contributed to an estimated 2.6% decline (100.0 – 97.4) in the average income to needs ratio of families with preschoolers during the 1981-1989 period (after we control for all other variables in the model) and an estimated decline of 4.3% for the entire 1981-1997 period (100.0 – 95.7). These results also tell us that, for the 1981-1997 period, change in the presence of parents was more important than any other single factor included in the model in explaining recent trends in economic well-being.

**Table 4. Effect of Change in Selected Variables on the Mean of the Income to Needs Ratio of Families with Pre-school Age Children**

Variables	1981	1989	1997
A. Family Demographic			
- Presence of Parents	100.0	<b>97.4</b>	<b>95.7</b>
- Number of Children	100.0	100.2	101.1
- Timing	100.0	101.5	102.1
- Number of Earners	100.0	102.2	<b>103.0</b>
B. Socio-economic			
- Occupation	100.0	99.6	98.6
- Education	100.0	101.9	<b>103.7</b>

Source: Statistics Canada, Survey of Consumer Finances, 1982, 1990 and 1998.

For the purposes of this study, the selected model includes education and occupation of mothers, in all but male lone-parent families. It was expected that the significant changes that had occurred in the educational attainment and occupation classification of Canadian women in recent years would have a net positive impact on the economic conditions experienced by families with young children. After we controlled for these variables, the main factors were still the family and demographic variables listed in Table 3.

Table 4 summarizes the results of this decomposition, for both the 1981-1989 and 1981-1997 periods. The data indicate that *change in the presence of parents is more important than any other single factor considered in the model. By itself, change in the presence of parents accounted for an estimated 4.3% decline in the average income-to-needs ratio of families with preschoolers between 1981 and 1997.* The indirect impact of increasing rates of marital dissolution in Canada (and the resulting growth in the number of female lone-parent families) is a real reduction in the average income-to-needs ratio of families with very young children.

Over the entire period, the effects of change in the other family and demographic variables are largely in line with expectations. For example, both the number of children and the “timing of fertility” have a net positive effect on average income to needs ratio, although this procedure suggests that their impact is relatively modest.

When we controlled for all other variables in the model, we observed that the number of earners per family had a positive effect over the entire period. *Change in the number of earners per family is responsible for an estimated 3% increase in average income to needs ratio.* Moreover, this variable shows a net positive impact for both the 1981-1989 and 1989-1997 periods. For the latter period, this finding contrasts with what was found in the simple

bivariate relationships. Between 1989 and 1997 there was a slight decline in the number of earners per family and an increase in the relative number of families with no earners at all (see Table 1), trends that may be related to an ongoing increase in the relative number of lone-parent families. Controlling for that trend allows the expected positive effect of the changes in the number of earners per family to emerge throughout the period.

For the remaining variables in the model (i.e. education and occupation), the results indicate a slight negative effect due to occupational change, while change in educational attainment is associated with an increase in the average income to needs ratio. As the positive effect of education is greater than the negative impact of recent changes in the occupational profile of women with preschoolers, the overall impact of these controls is to slightly improve the economic situation for families with young children. Among all the variables presented in Table 4, gains in the educational attainment of Canadian women in recent years appear to have the largest positive impact on the income of families with preschoolers

#### **Discussion and Conclusion**

For the 1981-1997 period, the present study reveals several ongoing changes in the familial circumstances of Canadians with young children. These changes include a shift in the timing of childbearing toward older ages, a slight increase in the relative number of one-child families, an ongoing growth in the proportion of female lone-parent families, and some rather noteworthy shifts in the number of earners per family.

*Overall, Canadian families with preschool-age children enjoyed a moderate increase in their average level of economic well-being over an extended period of time.* The average income-to-needs ratio for Canadian families with preschoolers increased from 1.87 in 1981 to a high of 2.00 in 1989, only to drop to 1.91 by 1997. While this indicator of economic well-being is not very different in 1997 than it was in 1981, this should not obscure the fact that there has been a whole series of offsetting family/demographic changes with direct economic ramifications for Canadian children during this period.

*The most harmful trend, from the point of view of meeting the economic needs of children, has been a steady rise in the number of lone-parent families.* As indicated in this analysis, the growing proportion of families headed by lone parents appears to be the single most important demographic change shaping the economic circumstances of very young children during the 1981-1997 period.

While family and demographic change is fundamental to the study of the economic conditions affecting families and individuals in Canada, it is also

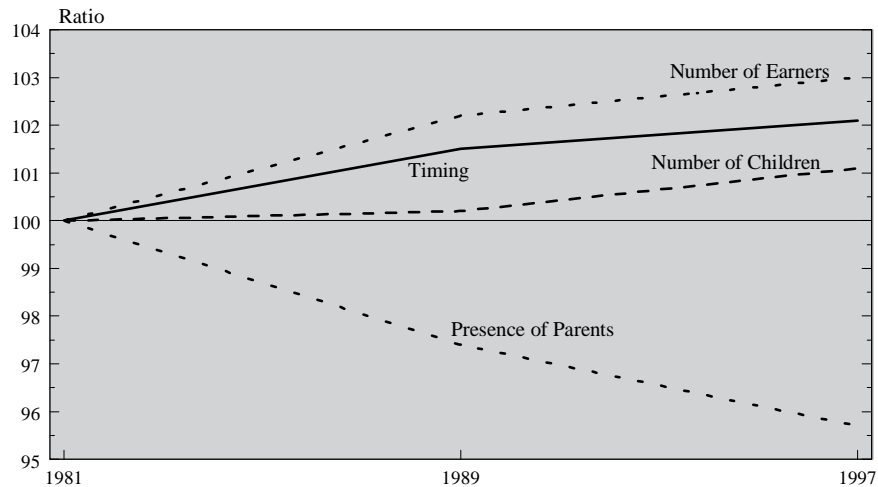
recognized that that change can provide only a partial explanation of past trends. As Picot and al. (1998) stated in a comprehensive analysis of 1973-1995 low-income trends in Canada, it is preferable to avoid focusing too narrowly on family and demographic events to the exclusion of broader “social and economic events that might influence the availability of jobs, employment earnings, and other sources of market income”. While shifting the emphasis to a much broader perspective is beyond the scope of the present study, a few general concluding comments appear to be in order.

Returning briefly to Oppenheimer’s (1982) emphasis on the so-called “life-cycle squeeze”, we note that these trends in individual earnings would seem to suggest little improvement in the economic tensions often experienced by Canadians during the earliest years of the family life cycle. As Oppenheimer indicated, the birth and care of children are often associated with considerable economic tensions and substantial time demands, as parents attempt to meet simultaneously the needs of very young children and the demands of work outside the home. As seen in the present study of families with preschoolers, the 1981-1997 period witnessed both an increase in the number of two-earner families and a stagnation or real decline in individual earnings. It appears that the household reaction to reduced individual earnings has been to increase the number of earners. Many couples appear to have adapted to downward pressures in individual market earnings by increasing their involvement in paid employment, even when they have the added time demands of raising preschool-age children.

In conclusion, it is useful to return to the results of the decomposition discussed earlier, as summarized in Figure 1. After examining the income statistics for the 1981-1997 period and interpreting the results of the present analysis, we drew the following conclusions:

- (i) The average level of economic well-being of families with preschool-age children increased only slightly during the 1981-1997 period;
- (ii) Recent change in the presence of parents is the most important family change to influence the economic well-being of families with preschool-age children over the 1981-1997 period. Overall, this change has had a negative impact on the average level of economic well-being of young children, with continued growth in the relative number of female lone- parent families;
- (iii) Delayed childbearing and smaller family size have a positive impact on the economic well-being of children, although over the 1981-1997 period, these changes were not nearly as important as the aforementioned trend in lone parenthood. Having a child early in one’s adult years or having many children continues to be associated with a lower level of economic well-being, and recent

**Figure 1. Effect of Selected Family / Demographic Factors, 1981-1997**



**Source:** Statistics Canada, Survey of Consumer Finances, 1982, 1990 and 1998.

trends toward lower and delayed fertility are responsible for slight gains in the average income available to families with young children;

- (iv) Change in the average number of earners per family had a net positive impact on the economic well-being of preschool-age children during the 1981-1997 period;
- (v) The overall impact of family and demographic change was relatively modest in the 1981-1997 period, if we consider the offsetting impact of all the above-mentioned factors. While recent trends in lone parenthood have had an important negative impact on the average level of economic well-being of young children, this has been offset by ongoing changes, of lesser importance, in the timing and level of childbearing and an increase in the number of earners per family.

There is little evidence, in recent years, of a slowdown in the growth of female lone-parent families; if anything, we have seen acceleration. Total divorce rates may have stabilized in the recent past around 35%, but the number of common-law unions is still rising. From year to year, the proportion of children born to parents living common-law is increasing. Even when children are present, these unions remain, on average, less durable than legal marriages. All these factors suggest a possible continuing increase in the number of lone-parent families.

With respect to the future fertility behaviour of Canadians, many demographers doubt that the total fertility rate will fall much below its historic low of 1.5 children per woman, set in 1998. On the other hand, there are no indications that the rate will increase in the near future. With respect to the timing of childbearing, we are obviously approaching an upper limit in the age at which Canadian women can start their families. As to future growth in the number of two-earner households, there are obviously upper limits there too, as the labour force participation of women is quickly approaching that of their male counterparts. Overall, it may very well be that the impact of family and demographic change in the future will be dominated by continued growth in the number of lone-parent families, without the offsetting impact of further fertility decline and/or increased involvement of parents in work outside the home.

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## **A STEP FURTHER IN FAMILY LIFE: THE EMERGENCE OF THE BLENDED FAMILY**

by Heather Juby<sup>\*</sup>, Nicole Marcil-Gratton<sup>\*</sup> and Céline Le Bourdais<sup>\*</sup>  
with the collaboration of Paul-Marie Huot<sup>\*</sup>

### **Introduction**

As the Baby Boom drew to a close, the institution of marriage in its most traditional form also started to crumble, marking the beginning of the profound changes in conjugal and family life that characterized the final decades of the twentieth Century. The same breakthrough that permitted reliable family planning, and contributed to the plummeting birth rates of the late 1960s and early 1970s, also made possible the divorce between marriage and sexual activity. New and safer contraceptive methods paved the way for relatively risk-free cohabitation among the young, undermining the institution of marriage as the sole entry into conjugal life. Soaring divorce rates during the same period dealt a further blow, as the legal system adapted to changing ideas on marital commitment by offering an alternative to “till death do us part” as the only socially acceptable way out of an unsatisfactory marriage.

Changes in conjugal behaviour have led to the transformation of family life for both adults and children. Socio-demographic studies of the adults involved tend to look at who chooses cohabitation over marriage, and why some couples are more prone to divorce than others, paying little attention to the emotional or behavioural impact on the adults involved. A great deal of research, however, has focused on the impact that these changes in adult behaviour have on the children whose lives are transformed as a result. As the process unfolded, leading from one uncharted territory to another, social scientists were never far behind. The earliest studies looked at the impact of marital breakdown on children, assuming father-absence to be responsible for any adverse effects. As more and younger children experienced their parents' divorce, the focus shifted towards the more general consequences of living in a lone-parent family, suggesting that many of the negative outcomes previously attributed to father-absence could be explained by the relative poverty into which these families frequently fell when the parents separated (see Seltzer, 1994 and Amato, 1993, for reviews of research on children's adjustment to divorce). Then, as these lone-parents entered new unions, sometimes with partners who also had children from earlier unions, the field of “stepfamily” research developed. It was largely concerned with understanding why

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stepfamilies are less stable than intact families (see Cherlin and Furstenberg, 1994; Coleman, Ganong and Goodwin, 1994). More recently, as the first generations of children growing up in these unstable families reach adulthood, it has been possible to assess the longer-term effects, with research showing that children of separated or divorced parents have an above-average risk of a number of “undesirable” conjugal and parental behaviours, such as teenage pregnancy and early marriage (Amato, 1996; Le Bourdais and Marcil-Gratton, 1998).

As the number of stepfamilies grows, a development that has so far aroused less interest is the emergence of yet another family type, with parents in a stepfamily deciding to have a child together. The birth of a common child transforms the nature of the stepfamily by creating a genetic link between all family members where one did not previously exist. The first studies to take notice of this event did so in the context of research into factors contributing to the stability of stepfamilies rather than as an object of study in its own right. In the present research, our aims are to trace the emergence of the “blended family” (the term generally employed to describe stepfamilies with a common child), exploring which features of stepfamilies make them most susceptible to become blended families, and to assess how being born into a stepfamily affects the family experience and subsequent life course of the growing number of children involved.

### **Defining Stepfamilies and Blended Families**

A stepfamily is created when a lone parent starts living with, or marries, an individual or another lone parent. Men and women can enter stepfamilies as a stepparent or a biological parent (or both), and through a number of different pathways. For some, becoming a stepparent may be their first experience of parental and conjugal life; for many others, the transition to stepfamily life marks the end of a period of lone-parenthood, initiated either by the birth of a child outside a union, or more commonly by the separation of parents in an intact family. This creates great diversity between stepfamilies, and raises the question of how to characterize different stepfamily types. To be classified within the general category of “stepfamily,” a family is normally expected to fulfil two conditions: first, that one of the parents in the family is not the biological parent of all the children, and, second, that the parents and children share a residence. Obviously, the second condition is a slippery one when applied to the types of family studied here, where children may have more than one residence, alternating between the households of separated parents. Should a father whose children spend every other weekend with him be classified as a lone-parent? If he remarries, should his new family be classified as a stepfamily? We will not attempt to solve these problems here, but we will try to put very clearly how we have defined the family types included in our analyses.

<b>Residence-based Definition of the Various Types of Two-parent Family<sup>1</sup></b>	
Family Type	Household Composition
<p><b>Intact family</b></p> <p>No child(ren) from earlier unions</p> <p>Child(ren) from earlier union not living in household</p>	<p><b>Two biological parents + child(ren) from the current union only</b></p>
<p><b>Stepfamily</b></p> <p>Stepfather</p> <p>Single mother</p> <p>Separated or divorced mother</p> <p>Stepmother</p> <p>Stepfather/stepmother</p>	<p><b>At least one parent is stepparent of at least one child in the household; no child common to the couple</b></p> <p>Mother, her children + stepfather</p> <p>Single mother, her child(ren) + stepfather</p> <p>Separated or divorced mother, her child(ren) + stepfather</p> <p>Father, his child(ren) + stepmother</p> <p>Mother, her child(ren) + father, his child(ren)</p>
<p><b>Blended family</b></p> <p>Blended stepfather</p> <p>Blended stepmother</p> <p>Blended stepfather/stepmother</p>	<p><b>At least one parent is stepparent of at least one child in the household + at least one common child</b></p> <p>Mother, her children + stepfather + their child(ren)</p> <p>Father, his children + stepmother + their child(ren)</p> <p>Mother, her children + father, his children + their child(ren)</p>

<sup>1</sup> As most family types are defined by the presence or absence of stepchildren in the household, which is subject to change, the terms describe the composition of the residential family group at a given moment in time (birth of child, time of survey).

A second important point that needs to be clarified is the lack of uniformity in the terms used to describe the different family types that are currently emerging. Some consensus is being reached, but the terms are still used

inconsistently in recent publications. For example, in the Census Monograph on the Family, the term “blended family” has been substituted for the term “stepfamily” which does not even appear in the document (Péron et al., 1999). In the definitions adopted for the National Longitudinal Survey of Children and Youth, however, “stepfamily” is the generic term referring to “a married or common-law couple residing in the same household, with at least one stepchild living with them who is the biological or adopted child of one parent but not the other parent.” A blended family is a “subset of the stepfamily,” and “consists of a married or common-law couple living with at least two children, one of whom does not share the same natural and/or adoptive parents as the other child(ren)” (User’s Handbook and Microdata Guide, p. 55). Two types of “blended family” are envisaged:

- 1) A couple with the biological children of the female partner as well as the biological children of the male partner;
- 2) A couple with the biological children of the male, female or both partners, plus a child from the new union.

While there is some justification for using a “not-full-sibling” criterion for classifying these families, the origin, composition and dynamics of the two types of blended family are so different that it may be necessary to distinguish between them to analyse them with any subtlety. In the first type, the relationship between the children in the family is that of stepsiblings, while in the second it is a half-sibling relationship. Moreover, in the first type, all the children have had similar life experiences, such as having a stepparent in the household, and most have lived in a lone parent family and have another biological parent living elsewhere. In the second type of family, only some of the children have lived these events, and their experience is not shared by their half-siblings born within the stepfamily and living with their two biological parents. Finally, the first kind of blended family is formed when two lone parents marry or start living together, each bringing children from an earlier union with them into the new union; this event marks a transition from a lone-parent family to a stepfamily. The second is a transition that occurs within a stepfamily and creates a genetic link between all members of the family that is absent in the first type.

In fact, in terms of the relationships between the family members, the first type of blended family has more in common with stepmother or stepfather families than with the second type of blended family. The creation of the first type of blended family is also a relatively rare event: only 8% of the stepfamily episodes reported by women in the 1990 GSS, for instance, included children from earlier unions of both members of the couple (see Table 1). In contrast, a common child was born within almost half (48%) of these episodes. In the present analysis, therefore, the focus will be on the emergence of the second, and most common, type of blended family.

### **The Emergence of the Blended Stepfamily**

After a brief presentation of the data, this section reviews how changing conjugal behaviour over the last three decades has created the conditions necessary for the emergence of the blended stepfamily, from both the child's and the mother's perspective. A second section presents an analysis of the factors influencing the decision to have a child within a stepfamily. In the final section, we examine the impact that being born into a blended family has on children's subsequent family life, exploring whether this varies according to the characteristics of the stepfamily into which they are born, and comparing it with the experience of children born into intact families. These different analyses draw principally on data from two separate sources: those analyses that take the child as the unit of study employ data from the National Longitudinal Survey for Children and Youth (NLSCY), while those that are based on adult behaviour draw on data from the 1990 and 1995 General Social Surveys on the family (GSS). In the General Social Surveys, large representative samples of Canadian men and women, aged 15 years and over, were asked retrospectively about all marital or common-law unions, and about all biological, adopted or stepchildren they had raised. This information enabled us to reconstitute the family histories of all respondents.

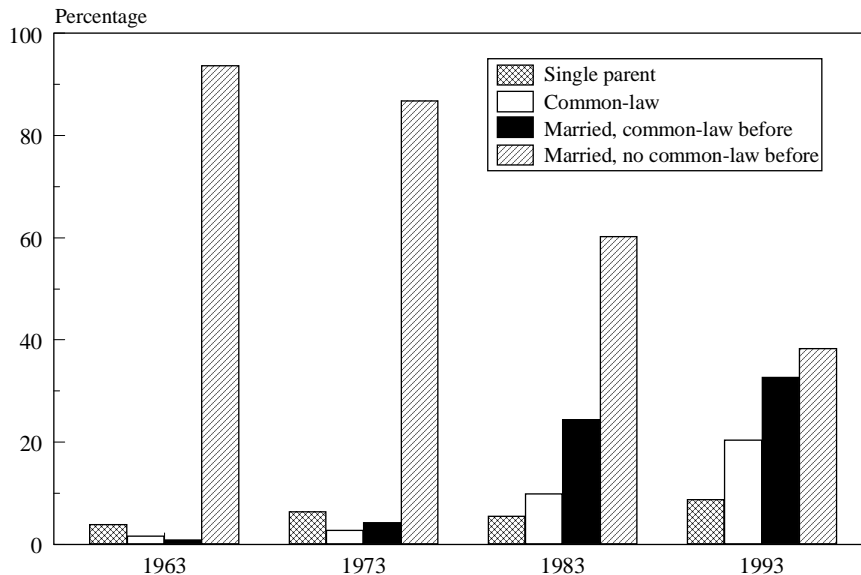
The NLSCY is a panel study, conducted jointly by Statistics Canada and Human Resources and Development Canada (HRDC). Repeated at two-year intervals at least until the year 2002, it provides a unique source of data on the family histories of a large sample of Canadian children, which is representative at the national and provincial level. At the first wave, carried out during the winter of 1994-95, 22,831 children aged 0 to 11 years were included in the survey sample. Questions were put to parents, children and teachers on a variety of topics ranging from child development and school achievement, to family history and dynamics. The main data used here are drawn from the "Family and Custody History" section of the survey, which contains the complete, retrospective conjugal and parental history of the child's biological parents up to the time of survey. Using information on the number and type of earlier conjugal unions, whether children had been born within these unions, and whether these children were present in the household at the target child's birth, we were able to determine the type of family into which each child was born. Data on the subsequent conjugal behaviour of both parents revealed whether or not children experienced their parents' separation, and at what age.

#### *a) The Child's Perspective*

##### *- Family Context at Birth and the Rise of Common-law Unions*

The decline of traditional marriage as the context for family formation has altered the family environment into which children are born. When common-

**Figure 1. Family Context at Birth for Various Cohorts of Children, Canada, 1963-1993**

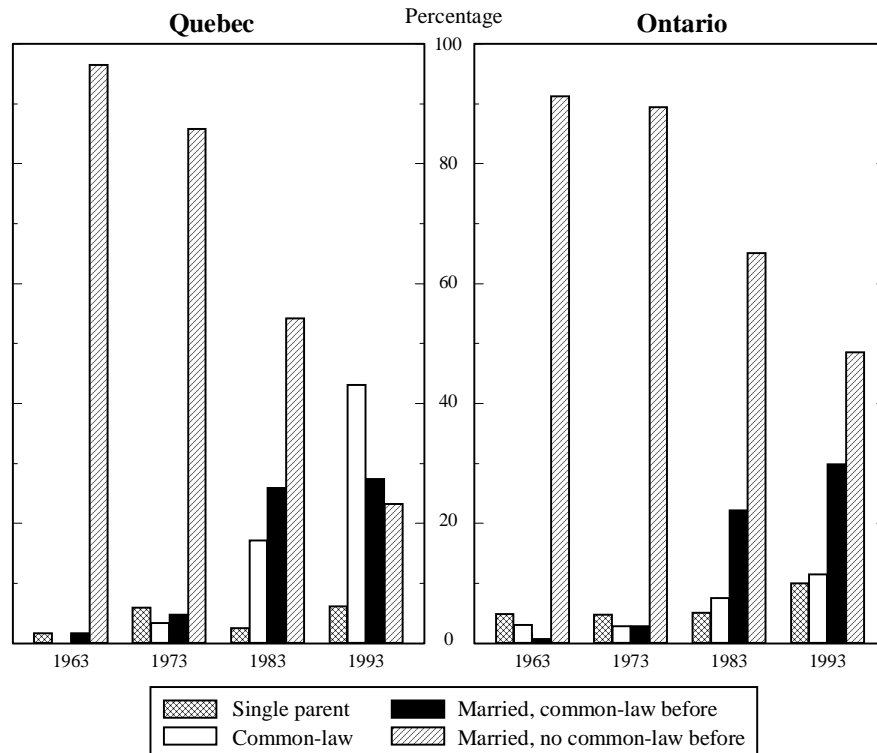


**Sources:** 1963 cohort: Family History Survey 1984; 1973 cohort: General Social Survey, 1990; 1983 and 1993 cohorts: National Longitudinal Survey of Children and Youth 1994-1995.

law unions first became popular, it was as a prelude to marriage rather than as an alternative to it; as the union became more committed, and particularly once children were planned, couples tended to legalize their union by marrying. However, in more recent years, particularly in Quebec, cohabitation has largely replaced marriage as a context for starting a family, with couples no longer seeing the need to formalize their conjugal union when children arrive. Figure 1, which presents the family context into which children were born at the start of each of the last four decades of the twentieth century, clearly illustrates the emergence of this trend for Canada as a whole.

Apart from a small percentage born to lone mothers, the babies of the early 1960s were born almost exclusively to couples whose life together had started at their wedding. Over the following decades, while the proportion of extra-conjugal births remained relatively stable, the same is not true for births within traditional marriage. Rising slowly during the late 1960s and the 1970s, the proportion of children born to parents who had experienced a common-law union escalated during the 1980s. *By the early 1990s, only a minority—just over one-third—of Canadian babies were born within*

**Figure 2. Family Context at Birth for Various Cohorts of Children, Ontario and Quebec, 1963-1993**



**Sources:** 1963 cohort: Family History Survey 1984; 1973 cohort: General Social Survey, 1990; 1983 and 1993 cohorts: National Longitudinal Survey of Children and Youth 1994-1995.

*“traditional” marriages*, although the majority were still born “within wedlock,” as cohabiting couples legalized their union before starting a family. Overall, among the most recent cohorts, one Canadian birth in five was to an unmarried couple—twice as many as there had been a decade earlier. This rapid increase in children born “out-of-wedlock,” however, was due largely to changes in Quebec.

Taken as a whole, Canadian statistics mask important regional differences in the family context into which children are born. Contrasting the evolution of common-law unions in Canada’s two most populous provinces—Quebec and Ontario—serves to highlight these strong disparities with respect to the incidence of cohabitation as a context for family life (Figure 2). The move away from marriage as the only permissible framework within which to start a family has been much slower in Ontario than Quebec; by the 1990s, almost

half the children born in Ontario were still born within a traditional marriage. Add to that the 30% of cohabiting couples who legalized their union before starting a family, and almost four out of five Ontario babies in the most recent cohorts were born to married parents. Cohabiting couples were responsible for only one birth in eight, only slightly more than the proportion attributable to lone mothers (10%). This situation is in striking contrast with developments in Quebec, where the likelihood of being born within a traditional marriage in the early 1960s was even higher than it was in Ontario at that time. Three decades later, the situation had changed radically: less than a quarter of babies were born to married couples who had not lived together before marrying, and half of all babies were born outside marriage. In other words, by the early 1990s, over 40% of births were to cohabiting couples; this trend continued throughout the 1990s, and by the turn of the century more than half the babies born within a union were born to couples who had chosen not to legalize their union. Moreover, the lowest proportions of marital births in Quebec are to be found in the rural, Francophone regions of Quebec; in two of these regions, less than a quarter of babies born in 1998 were born within marriage (Institut de la Statistique du Québec, 2000).

To sum up, while the institution of marriage has lost its monopoly as the only acceptable entry into conjugal life in Ontario, it has retained its monopoly insofar as family life is concerned. The change in Quebec is much more profound, with cohabitation steadily gaining ground as an alternative to marriage for raising a family. As a result, the family context into which children are born has undergone far greater change in Quebec than in Ontario. This fact does not, however, protect Ontario children from the consequences of the second factor affecting conjugal unions—that of their growing instability. Although marriage still appears necessary for starting a family, it is no longer deemed essential for raising children to adulthood, and the presence of children is now far less of a hindrance to marital breakdown than it was in the past.

*- Union Instability and Life with a Lone Parent*

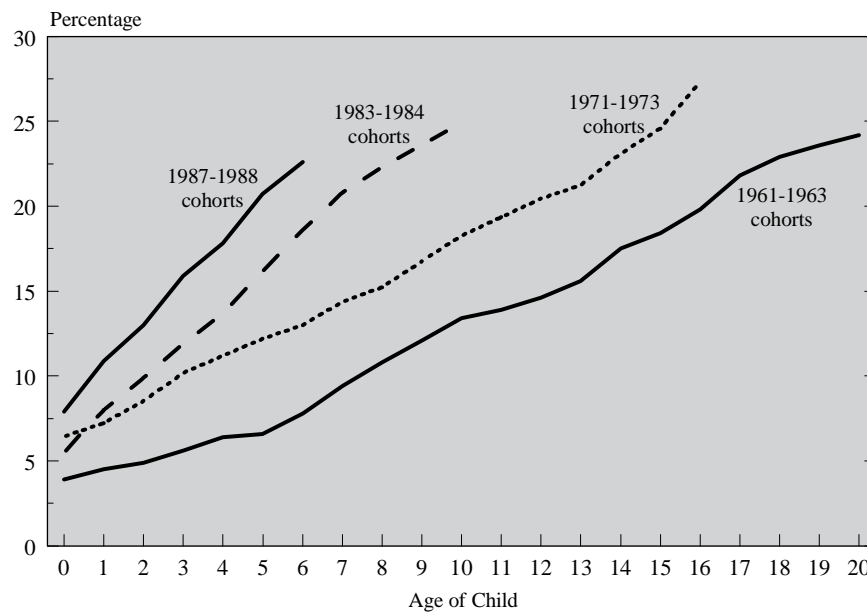
In the wake of the 1968 Divorce Act in Canada, escalating divorce rates have had a huge impact on the family life of children growing up at the end of the twentieth century. Of course, divorce rates as such provide only a partial image of conjugal instability, given that dissolutions of common-law unions are, by definition, excluded from the statistics on legal separation and divorce. Survey data provide a more complete picture of the extent of union breakdown, and enable us to focus on the separations of interest here: those involving couples with children. Comparing data for the same cohorts of children described in the previous section,<sup>1</sup> Figure 3 shows clearly how the experience

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<sup>1</sup> Except the most recent who were still very young at the time of survey—children born five years earlier were used instead.



**Figure 3. Cumulative Percentage of Canadian Children Who Were Born to a Lone Parent or Have Lived Through the Separation of their Parents, from Birth to Last Birthday Before Survey, for Various Birth Cohorts, Canada**

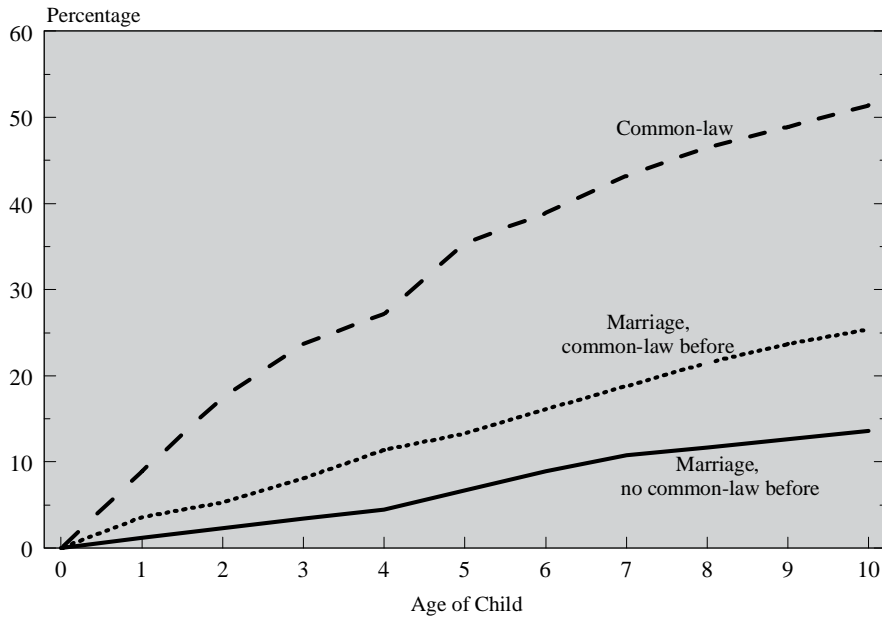


**Sources:** 1961-1963 cohorts: Family History Survey 1984; 1971-1973 cohorts: General Social Survey, 1990; 1983-1984 and 1987-1988 cohorts: National Longitudinal Survey of Children and Youth 1994-1995.

of life with one parent has evolved since the early 1960s. The starting point of each curve, at age 0, represents the proportion of children whose parents were apart at their birth; all further variations between the cohorts are due to changing rates of union breakdown among parents who were living as a couple at the child's birth.

*Among children born in the early 1960s, 20% had lived part of their life with a lone parent by the age of sixteen. Children born a decade later had reached this level by the age of twelve, those born in the early 1980s by the age of seven, and for the most recent cohorts, by the age of five.* It is as yet too early to estimate what proportion of children born in the 1990s will experience lone-parent family life during their childhood. However, the rise in separations during the preschool years over the period indicates that these children are unlikely to live more stable family lives than their predecessors. This rise is visible in the increasing steepness of the curves from one generation to the next in Figure 3. The growing proportion of children experiencing parental

**Figure 4. Cumulative Percentage of Canadian Children Born in a Two-parent Family, Who Have Experienced their Parents' Separation, According to the Type of Parents' Union, 1983-1984 Cohorts, Canada**



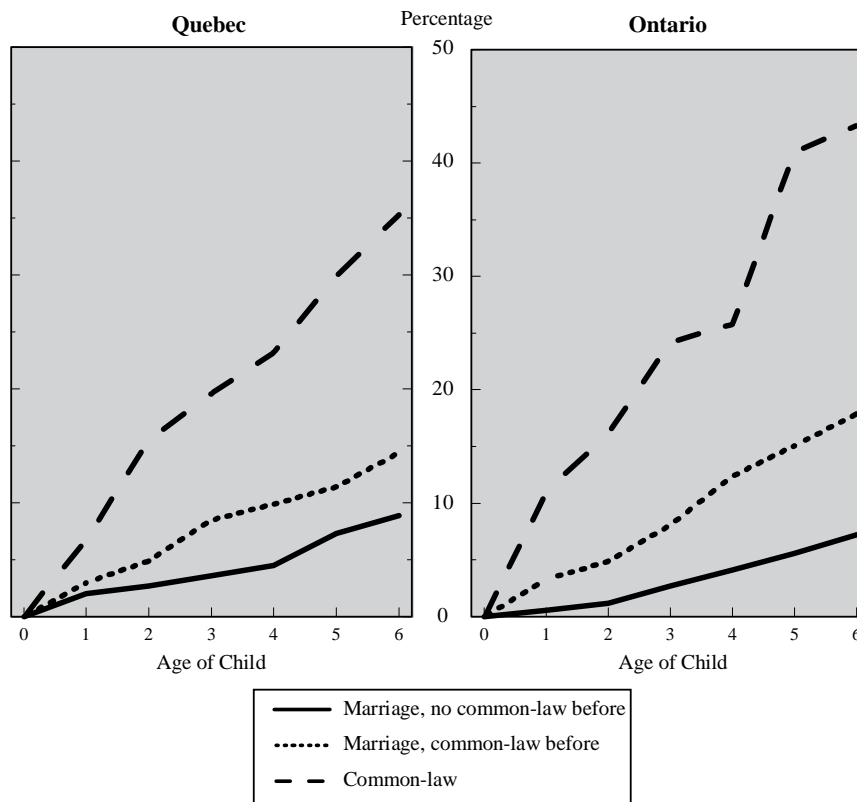
**Source:** Statistics Canada, National Longitudinal Survey of Children and Youth 1994-1995.

separation can be estimated by taking the percentage at age 0 as the starting point (thus excluding children born outside a union who never lived with both parents). While only around 3% of children in the earliest cohorts saw their parents separate before the age of five (7% - 4% of children born outside a union), the proportion reached 5% for the next cohort, 10% for children born in the early 1980s and over 12% for the most recent cohorts.

*- The Greater Instability of Common-law Unions*

Reinforcing these trends is the rising proportion of children born within common-law unions who, as Figure 4 clearly indicates, face a higher risk of experiencing their parents' separation than children of married parents. It seems that having a child, a decision that might have been expected to suggest a high level of commitment within a common-law union, is not sufficient to close the gap between the stability of cohabiting and married couples. Overall, one child in five (20.5%), born in 1983-84 within a two-parent family, saw his parents separate by age ten. However, the risk varied enormously according

**Figure 5. Cumulative Percentage of Canadian Children Born in a Two-parent Family, Who Have Experienced their Parents' Separation Before Age 6, According to the Type of Parents' Union, 1983-1988 Cohorts, Ontario and Quebec**



Source: Statistics Canada, National Longitudinal Survey of Children and Youth 1994-1995.

to the type of conjugal union selected by their parents. *Children born to married couples who did not live together before marriage were the least likely to witness the breakdown of their parents' union (13.6%). For those born to married parents who had lived together before marrying the risk was almost twice as high (25.4%). The risk doubled again for children whose parents were unmarried at their birth: over half of these children lived through their parents' separation before their tenth birthday.*

With common-law unions largely replacing marriage as the context for raising a family in Quebec, one might expect to find greater stability for this type of family in Quebec than in other regions of Canada. However, risks of

parental separation, calculated up to the sixth birthday for children aged 6-11 years at the NLSCY (Cycle 1, 1994-95) for Quebec and Ontario, show that cohabiting-couple families in both provinces remain much more unstable than other families (Figure 5). Nonetheless, there is some evidence that, in Quebec, the gap in stability between the different types of union is narrowing. In particular, the destabilizing impact of premarital cohabitation among married-couple families is smaller in Quebec than Ontario: direct marriage in Quebec appears slightly less stable, and cohabitation rather more so than in Ontario.

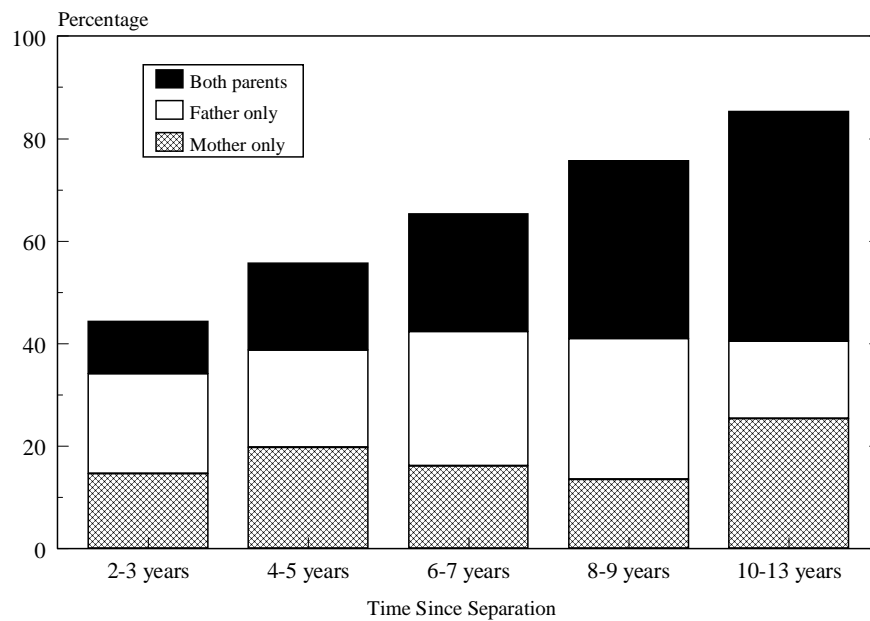
To sum up, the two most striking consequences for children's family experience of growing union instability are, first, that ***more and more of them experience life with a lone parent and, second, that this occurs at an increasingly early age***. These developments have important repercussions going beyond the fact that more and more families will be struggling with the many adjustments triggered off by parents separating. For these children, entering a period of life with a lone parent may be only the first of a series of family transitions. With their parents once more "available," they may see their mother, father, or both parents enter another conjugal union with a new partner.

- *New Unions and Life with a Stepparent*

Indeed, many children whose parents separated during the 1980s and 1990s had to adjust to the presence of stepparents as one, or both, of their parents entered a new union. This is clearly shown in Figure 6, which presents the proportion of children whose parents were not together at the NLSCY first wave (1994-95) according to both the time elapsed since the separation and the subsequent conjugal histories of their parents—that is, whether their mother, father or both parents had entered a new union at some point between separation and the second wave (1996-97) of the survey.

Already, ***only two to three years after the separation, one or both parents of almost half the children had entered a new union***: a quarter of mothers (14.6% + 10.3%) and almost one-third of fathers (19.5% + 10.3%). Over time, more parents entered new relationships and, 10-13 years after the separation, 85% of children had experienced the arrival of at least one new "parent" in their family environment; for more than half of these children (44.8% / 85.0%) there was both a new mother and a new father. In other words, many children who spend a period of time with a lone-parent, subsequently find themselves in a stepfamily; at this point the next transition could well be into a blended family, as parents decide to cement their new union by having a child together. For this course of events to culminate in the birth of a child within a stepfamily, it must occur early enough in a woman's life for her still to be of reproductive age. This condition for the emergence of the blended family can best be evaluated through data on the family life course of women.

**Figure 6. Distribution of Children Whose Parents Were Separated in 1994-95, by the Time Elapsed Since Separation and New Conjugal Unions of Mother, Father or Both Parents, Canada**

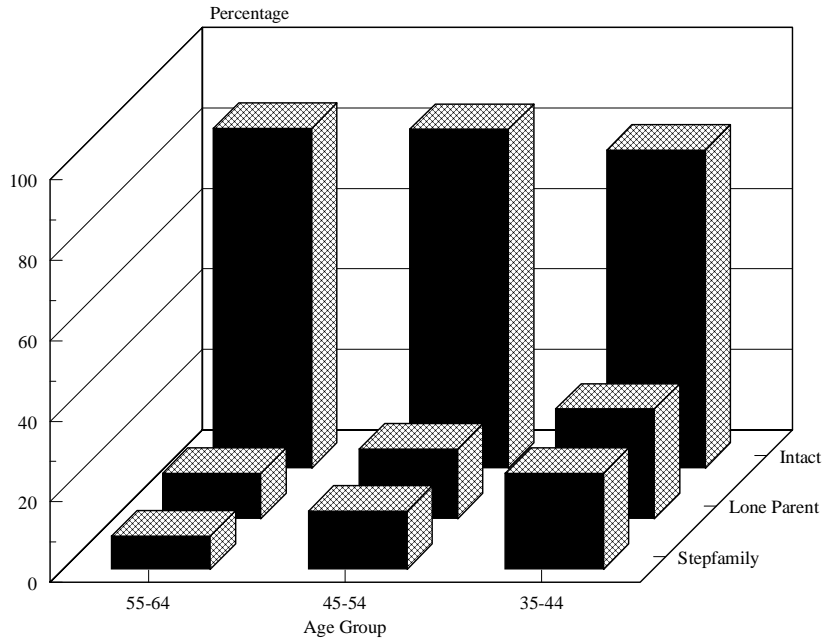


Source: Statistics Canada, National Longitudinal Survey of Children and Youth, cycles 1 and 2.

*b) The Mother's Perspective*

With research showing that the younger a mother is at separation, the more likely she is to enter a new union (Ermisch and Wright, 1991; Le Bourdais et al., 1995), the fact that separation is occurring earlier reinforces the probability that lone parents will form a new union and create a stepfamily. A study of women's family life course illustrates these trends (Juby and Le Bourdais, 1996). Using 1990 GSS data, the probabilities of experiencing a number of different family pathways were estimated for three generations of Canadian women (aged 55-64, 45-54 and 35-44 in 1990). The analysis was limited to transitions occurring before the age of forty, an important factor in the present study, as women entering stepfamily life after this age are unlikely to make the transition to a blended family by having an additional child. These three groups are roughly equivalent to the generations of mothers of the child cohorts (1961-63, 1971-73 and 1983-84) analysed in Figures 1 to 3, and parallels can be drawn between the experiences of children and mothers. Take the type of parents' union at birth illustrated in Figure 1, for example. In the early 1960s, children were born almost exclusively within a traditional marriage,

**Figure 7. Family Trajectory, by Age 40, of Women Entering Motherhood in an Intact Family, by Age Group, 1990, Canada**



Source: Statistics Canada, General Social Survey, 1990.

unlike those born twenty years later; correspondingly, the oldest generations of women (55-64 years) would generally have had their children within a traditional marriage, while the youngest would be more likely to have cohabited with their child's father.

To illustrate the effect of growing conjugal instability on the family life course, Figure 7 presents the first three most common family transitions made by three generations of Canadian women. Most women become mothers for the first time within an intact family at the birth of their first child<sup>2</sup>. The tallest columns in Figure 7, therefore, indicate the proportions of women entering motherhood when they have their first child within an intact family<sup>3</sup>. The figures are high for all generations: at almost 85% for women in the two oldest groups, and 79% for women aged 35-44 years at the survey. The middle columns show the proportion of women experiencing the second most common family transition—from an intact to a lone-mother family at the breakdown of their marriage or common-law union. Despite the fact that fewer women

<sup>2</sup> Less than 10% of women start family life as a single mother or as a stepmother.

<sup>3</sup> Estimates calculated from a series of multiple-decrement life tables.

in the younger generations became mothers in an intact family, a higher proportion experienced the breakdown of an intact family: over a quarter of the youngest women, compared with just over one-tenth of the oldest. The shortest columns represent the third most common transition—to life in a stepfamily, as these lone-mothers enter a union with a new partner. Although the majority of lone mothers in each generation made this transition, the probability increased over time. Among the oldest generations of women, almost three-quarters ( $8.3 / 11.3 = 73.5\%$ ) of separated or divorced mothers entered a new union; among the youngest, this proportion rose to nearly 90% ( $23.9 / 27.3 = 87.6\%$ ). Overall, the proportion of women aged 35-44 years following the family life course “intact family - lone mother - stepfamily” was three times higher than among women aged 55-64 years.

The breakdown of an intact family is not the only entry into lone motherhood—around 5% of women have their first child outside a union altogether. Almost all these women, who tend to be young at their child’s birth, provide their child with a stepfather at some point. In addition, a small percentage of women start family life by becoming a stepmother to their partner’s children. Overall, therefore, among women starting families during the 1980s, approximately one-third spent some time as a lone mother, and around 30% entered stepfamily life before the age of forty—twice the proportion among women starting family life twenty years earlier (see Juby and Le Bourdais, 1996, Table 2). Although it is too early to analyse the family life course of parents of the 1990s, the data available for the early years indicate that these trends are likely to continue. The rapid rise in the number of women living in a stepfamily during childbearing years is largely responsible for the emergence of the blended family, as parents in stepfamilies decide to have a child together. However, not all couples choose to expand their family, and in the following section, we will attempt to identify which characteristics of stepfamilies and their members promote or impede this transition.

### **From Stepfamily to Blended Family**

Stepfamilies can be characterized in a number of different ways, but the most common way is to classify them according to the origin of the children, or, conversely, by the sex of the stepparent. Thus, in a stepmother family, only the biological children of the father are present, whereas in a stepfather family, only the mother’s children are present. As mentioned earlier, a family in which both parents are stepparents of the other parent’s biological children is classified as “blended” according to NLSCY definitions. Here, this type of family will be referred to as a stepmother/stepfather family; the term “blended” family will be restricted to stepfamilies, formed when the stepfamily couple have a child together, in which some children are half-siblings of others. Only by making this distinction is it possible to analyse the factors influencing the decision made by stepfamily parents to have a child together.

Not all stepfamilies become blended families, but little is known about the conditions conducive to this transition. Having a child within a stepfamily has generally been explored within studies of stepfamily stability, rather than being examined as a transition in its own right. Research has shown that having a child within a stepfamily is linked to union stability (Desrosiers et al., 1995; Wineberg, 1992), although the direction of the relationship has not been established. Do couples have a child together because their union is a stable one, or does the arrival of a baby create a bond uniting the previously disparate family group? Both factors may well have a role to play, in that the birth of a child may cement an already relatively committed relationship.

Survey data are essential to explore how stepfamilies evolve. Collecting reliable data on this question, however, is fraught with difficulties arising in particular from children moving between their parents' households. In the 1990 GSS, for example, respondents were asked for details concerning all the children they had raised. Fewer women reported raising stepchildren that might have been expected from information provided by male respondents. This deficit may partly be explained by problems with interpreting the question of "raising" children: a woman whose partner's children lived mainly with their mother might not consider that she had "raised" these children, and would not have reported them in the survey. Nonetheless, information collected from women interviewed at the GSS on the subject is more reliable than that supplied by male respondents, for two reasons. The first relates to the incomplete coverage of fathers not living in intact families (for a discussion of this problem, see Juby and Le Bourdais, 1998); the second stems from the lack of data on the living arrangements of parents and children, which makes it difficult to identify family "episodes" according to a residence-based definition of the family. Given that children usually live with their mother most or all of the time after their parents separate, we can more reliably assume that children were actually present in the household during the family episodes reconstructed from mothers' reports than from fathers'. The following analysis of stepfamily transformation is based, therefore, uniquely on data collected from female respondents of the 1990 GSS; as a result, it is important to remember that the distribution according to stepfamily type may underestimate the proportion of "stepmother" families.

#### *Determinants of the Transition from Step to Blended Family*

A proportional hazards model was used to analyse the transition from step to blended family (see Allison, 1984). The analysis is based on first stepfamily episodes experienced by female respondents aged 18 to 65 years in the 1990 General Social Survey.<sup>4</sup> Episodes starting after the age of forty are excluded,

<sup>4</sup> This analysis is based on previous research, leading to the construction of the series of family episodes from information on unions and children collected in the 1990 GSS. This process, which is essential in order to identify stepfamily episodes and situate them in the life course, has not been carried out for the 1995 GSS.



given that the birth of a child within the stepfamily is the object of study. The dependent variable is the instantaneous rate of birth, estimated from the moment the stepfamily couple started their conjugal life together. The independent variables are principally socio-demographic characteristics of the 481 stepfamilies included in the sample. Socio-economic characteristics could not be included because the information, such as income data, referred to the situation at the time of survey rather than during the stepfamily episode. For the same reason, an important demographic characteristic also had to be omitted from this analysis: whether or not both partners were still fertile at the start of their union.<sup>5</sup> This factor is obviously crucial to the decision to have a child, and is likely to affect the different stepfamily types in different ways. Childless women entering stepfather families, for example, are less likely to have undergone voluntary sterilization than are separated or divorced women, who may have had their desired number of children before the breakdown of their first family.

In Table 1, distributions of the characteristics introduced into the model are presented for the sample as a whole, and for the different stepfamily types: stepfather, stepmother and stepfather / stepmother families. Stepfather families were further subdivided, according to the two principal family pathways leading up to their formation: the first category includes women whose children were born within an intact family, while the second comprises those who were alone at their child's birth, and for whom the stepfamily is their first experience of a two-parent family. Stepfather families, by far the most common type of stepfamily reported by female respondents, representing over three-quarters (76%) of the families in the sample, were divided almost equally between the two types. Stepmother and stepfather/stepmother families made up one-sixth (16%) and one-twelfth (8%) of the sample respectively. ***Almost half (48%) the stepfamilies became blended families with the birth of a child within the family***, although this proportion varied considerably according to the family type. In stepfather families, two-thirds of single mothers had a child with their new partner compared with just over one-third of separated or divorced mothers (35%). Stepfamilies in which both parents had children from a previous union were at a similar level (34%), while half the women entering stepfamily life as a stepmother, without children of their own, had a child within the union.

Several demographic variables, measured at the start of the episode, seemed likely to influence the decision to have a child: the mother's age, the number of children already present, the age of the youngest of these children, and the sex of the children. These variables show clearly the contrast in the two stepfather family types. Single mothers were generally younger than separated or divorced women when they formed a stepfamily, and they had fewer and younger children. Almost four-fifths of single mothers were under 25 years

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<sup>5</sup> Although the respondents are asked whether they or their partner had had an operation to prevent pregnancy, there is no information on the timing of the event.

**Table 1. Stepfamily Characteristics for First Stepfamily Episodes Declared by Female Respondents at the 1990 General Social Survey, According to the Type of Stepfamily, Canada**

Characteristic	Stepfather		Stepmother	Stepfather/ Stepmother	Total
	After separation	Single mother			
Total number of stepfamilies	193	171	79	38	481
Percentage distribution of stepfamilies	40	36	16	8 *	100
Percentage of stepfamilies with a born or adopted child	35	66	50	34	48
	Percentage Distribution of:				
Mother's Age at Start of Episode					
Under 25 years	20 *	78	46	**	46
25-29 years	26	16 *	28 *	**	22
30-39 years	54	**	26 *	40 *	32
Total	100	100	100	100	100
Sex of Child(ren) Present at Start of Episode					
Boys only	34	54	46	**	41
Girls only	32	41	**	**	32
Boys and girls	34	**	30 *	80	27
Total	100	100	100	100	100
Period of Entry into Stepfamily					
Before 1970	14 *	32	32 *	**	23
1970-1979	28	35	**	48 *	31
1980-1990	58	33	49	40 *	46
Total	100	100	100	100	100
Type of Union at Start of Episode					
Marriage	22 *	68	38 *	**	41
Cohabitation	78	32	62	76	59
Total	100	100	100	100	100
Average age of mother	30.4	22.6	25.7	27.9	26.7
Average number of children at start of episode	1.8	1.1	1.7	3.4	1.7
Average age of youngest child at start of episode	6.6	2.7	6.2	4.3	5

\* Estimate has a high variability and should be interpreted with caution.

\*\* Estimate has a too high variability to be published.

**Note:** Percentages were obtained using weighted data.

**Source:** Statistics Canada, General Social Survey, 1990.

of age at the start of the episode compared with only one-fifth of separated or divorced mothers; for the two groups, the average age was 22.6 and 30.4 years respectively, and the average age of their youngest child, 2.7 and 6.6 years respectively. The other two stepfamily types fell between these extremes. In terms of the number of children already present in the family, stepfather / stepmother families, where both members of the couple had children at the start of the union, had the highest average number of children (3.4). This is double the figure for stepmother families and stepfather families created round a separated or divorced mother, and triple that for stepfather families formed by single mothers who rarely had more than one child at the start of their

new union. Another factor that may or may not be linked to the decision to have an additional child is the desire to have children of a particular sex, or to have “one of each.” Four-fifths of the stepfather / stepmother families included both boys and girls, a much higher proportion than that found in other stepfamily types.

The period of family formation is important because of the changes in marital behaviour affecting the different generations of women in the sample. The increase in separation and divorce following the Divorce Act of 1968 is evident in the distribution of stepfamily episodes from one period to another (rising from 23% before 1970 to 46% after 1980), and in their evolution by type. Only stepfather families created by single mothers are uniformly distributed over the three periods, reflecting the stability over time in the proportion of women having their first child outside a union. The impact of family disruption is particularly clear in the distribution of stepfather families created by separated or divorced mothers. However, the increase in stepmother / stepfather families in recent years reflects not only increasing marital instability. The fact that more women become stepmothers is also a corollary of the growing proportion of separated fathers keeping contact with their children. High proportions of stepmother families in the earliest period, on the other hand, are largely the result of remarriage by widowers.

The period of stepfamily formation is also important because changes in fertility behaviour throughout Canada during the period are likely to play a part in a stepfamily couple’s decision to have a child together. Despite a sharp drop during the 1960s, the total fertility rate remained above replacement level until the early 1970s; it continued to fall throughout the 1970s and more or less settled at around 1.6-1.7 children per woman by the 1980s. Although different factors may be at play in the family-planning process within step and intact families, we would nonetheless expect that declining fertility levels would also be reflected in stepfamily fertility, and that stepfamilies formed in the earlier period would be more fertile than those formed later.

With research showing that marital unions are more fertile than common-law unions, we would expect children to be born more frequently to married stepfamily couples than to those who were cohabiting. However, as discussed earlier, cohabitation is more common among stepfamily couples and may not follow the same patterns of behaviour. In our sample, more than half the couples (59%) were unmarried at the start of the stepfamily episode, although there was great diversity in the type of union chosen by the different types of stepfamily. Stepfather families created by single mothers were the most likely (68%) to begin at marriage—three times more likely than those created around separated mothers. This may be because, as a first union, these couples were more willing to give marriage a try than were other stepfamily couples. On the other hand, the low levels of marriage among couples in other stepfamily types may be a product of the divorce process itself: many unions were formed by

**Table 2. Effect of Socio-Demographic Characteristics on the Risk of Having a Child Among Women Living in a Stepfamily (Proportional Hazards Estimates), 1990<sup>1</sup>**

Variable / Category	Model		
	1	2	3
Stepfamily Type			
Stepfather - after separation	1.00	1.00	1.00
Stepfather - single mother	2.40 ***	1.03	0.69
Stepmother	1.71 **	1.10	0.99
Stepfather / stepmother	0.87	0.72	0.77
At Start of Stepfamily			
Mother's age	...	0.94 ***	0.93 ***
Age of youngest child	...	0.90 ***	0.92 **
Number of children	...	0.95	0.95
Sex of children			
Boys only	...	1.09	1.07
Other	...	1.00	1.00
Region of Residence / Type of Union <sup>2</sup>			
Rest of Canada / married	...	...	1.00
Rest of Canada / cohabitation	...	...	0.41 ***
Quebec / married	...	...	0.88
Quebec / cohabitation	...	...	0.19 ***
Period in Stepfamily <sup>2</sup>			
Before 1970	...	...	1.00
1970-80	...	...	0.82
1980+	...	...	0.70 *

<sup>1</sup> The levels of significance of the coefficient (exp  $\beta$ ): \*\*\*: p<.001; \*\*: p<.01; \*: p<.05.

<sup>2</sup> A variable whose value may change over time.

Source: Statistics Canada, General Social Survey, 1990.

previously married individuals who might not have been free to remarry at the start of the episode. This may explain why many couples who were cohabiting at the start of the episode married at some point before the survey. These marital status changes were integrated into the model in the form of a time-varying variable. Moreover, given the distinctive nature of union status in Quebec, the type of union was introduced in interaction with the region of Canada.

*- Event History Analysis of the Transition from Step to Blended Family*

The parameter estimates for three models are presented in Table 2. A coefficient greater than 1 indicates that the characteristic increases the probability of a transition from step to blended family through the birth of a child and, conversely, a coefficient smaller than 1 indicates that the characteristic decreases it. Variables such as stepfamily type were introduced as dummy variables, and coefficients are interpreted in relation to the reference category (given

in parentheses). For continuous variables, such as mother's age, the number of children and the age of youngest child, the coefficients represent the change in the probability of having a child for each unit increase in the metric variable. All but two variables measure fixed characteristics, with values that remain constant throughout the period. Union status, and the period during which the episode occurred, were introduced as time-varying variables whose values might change over time. A stepfamily episode lasting from 1965-1975, for example, would be categorised as "before 1970" for the first five years of duration, and as "1970-1980" for subsequent durations.

The first model estimates the association between stepfamily type and the transition to a blended family, with stepfather families formed by separated or divorced women as the reference category. The results show that, along with stepfather / stepmother families, this stepfamily type is the least likely to become a blended family. In the two other family types, the conditional probability is significantly higher, with stepmother families 1.7 times more likely to have a child, and stepfather families created by single mothers 2.4 times more likely to.

This diversity totally disappears in the second model, with the introduction of four characteristics at the start of the stepfamily episode: the mother's age, the age of the youngest child, and the number and sex of the children present. Of these, the ages of the mother and of the youngest child at the start of the stepfamily are closely linked to the likelihood of having an additional child. The coefficients show that *the chance of having a child decreases as the age of both mothers and their youngest child increases*. In other words, *the younger the mother and the youngest child, the more likely is the transition from step to blended family. These two characteristics explain the stronger risk of transition among stepfather families formed by single mothers estimated in model 1; these mothers and their children were much younger than separated and divorced mothers and their children on entry into stepfamily life* (Table 1). That a woman's age is important is to be expected given that involuntary and voluntary sterility increase with age for both women and men. It is also unsurprising that couples with younger children are more likely to have an additional child—when young children are already present, having a baby involves less of a change of lifestyle than when children are older, and at the same time it provides a sibling close in age to the other children in the stepfamily. What is more surprising, however, is that *one of the principal fertility determinants in intact families, namely the number of children already present, has no significant effect on the decision to have another child in a stepfamily*. If the desire to have children of a particular sex has an influence, there is no sign of any consistent pattern. However, the lack of significant results may mean that preferences are spread equally between wanting boys, girls and children of both sexes. The effect of these last two variables remained statistically insignificant even after testing for the possible patterns of collinearity

with stepfamily type, given that stepmother/stepfather families have twice as many children as other families and are also less likely to fall into the “boys only” category.<sup>6</sup>

The absence of any significant difference between stepfamily types remains when we take into account the type of union formed by the stepfamily couple and their region of residence, and the period during which the events occurred (see model 3). This does not mean, however, that these time-varying variables have no impact on the transition from step to blended family. Firstly, cohabitation reduces considerably the likelihood of having a child, and has an even greater negative impact on stepfamily fertility in Quebec than in the rest of Canada (though the difference between regions is not statistically significant). Given that cohabitation is closer to marriage in Quebec, one might have expected the opposite to be true. However, it is important to remember that the growing fertility of common-law unions is a recent development, particularly in evidence in the 1990s, after the 1990 GSS data was collected. There are, however, no significant regional differences in fertility among married stepfamily couples. Secondly, as expected, the probability of having a child declined over time, with stepfamilies in the 1980s significantly less likely than those in the 1960s to become blended families.

Overall, this analysis indicates that stepfamily fertility is to a great extent determined by the same factors that influence fertility in general—mother’s age, the size of the birth interval (which corresponds here to the age of the youngest child), the period during which the family was formed, the type of union at birth, and the region of residence. However, this is certainly not the whole story. The fact that the number of children present at the start of the stepfamily has no significant effect on the likelihood of having a child suggests that fertility decisions within stepfamilies are subject to certain influences not at play in intact families. This is only to be expected given the very different circumstances in these two types of family. In most stepfamilies, only one parent has biological children—an experience that the other parent might wish to have. In addition, stepfamily couples are likely to share the same desire to “have a child together” as intact families couples, irrespective of how many children one or other has brought into the family from an earlier union (Vikat et al., 1999).

### **The Life Course of Children in Blended Families**

By the end of the twentieth century, one Canadian child out of five was born into a family environment that did not conform to the nuclear family model: 7.5% were born to a lone mother, and the other 12.5%, born into two-parent families, had half-siblings in their family environment at their birth. Given the dearth of data on the subject, comparing the experience of the oldest

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<sup>6</sup> Removing these variables from the equation had no significant effect either on the coefficients of the other variables included in the model.

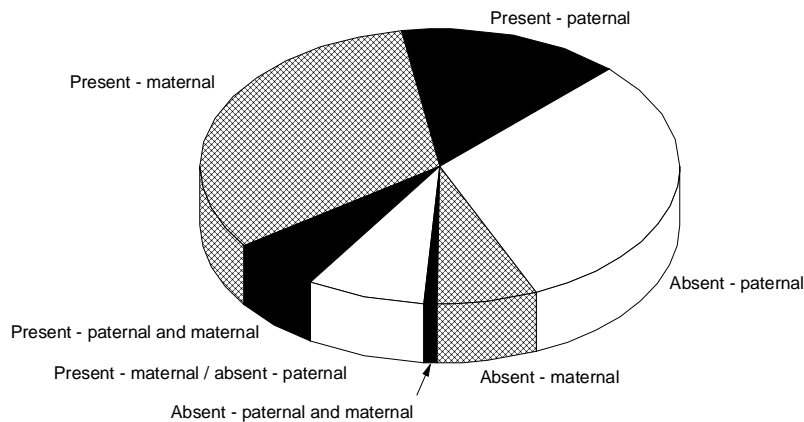
(1983-84) and youngest (1993-94) of NLSCY cohorts on which these figures are based is perhaps the only way of indicating that the family context into which children are born is growing increasingly diverse: 14.5% of the latter cohort compared with 11.4% of the former had half-siblings in their family environment at birth—an increase of over 25% over a ten-year period.

In this analysis, half-siblings are considered “present” in the household if at least one of them lived in the household at least part of the time. These families are consistent with the residence-based definition of the “blended family”. For a sizeable minority (39%) of these children, however, none of their half-siblings were present in the household at birth, raising the question of how to classify them. The problem of using residence to define stepfamilies was raised earlier—children with separated parents may live in two households and living arrangements may change over time. At their birth, for instance, children born into stepfamilies may have all or some of their half-siblings present in the household all or some of the time; at a later date, the family configuration may alter as half-siblings change living arrangements and spend either more or less time in the household. These moving boundaries make it virtually impossible to have a clear and constant definition of stepfamilies and, therefore, of blended families, leaving us unclear how to treat children whose half-siblings are not in the household at their birth. From a purely residential perspective, these children are born into intact families. Are we justified, however, in assuming that the family experience of children with half-siblings living elsewhere is similar to that of children born to parents who have no children from earlier unions? Although the half-siblings are not physically present, economic and other resources may be diverted towards them. To circumvent this problem in the present analysis, these children have been assigned a separate category that sets them apart both from children born into intact families, and from those born into stepfamilies.

*- The Family Context at Birth*

Figure 8 indicates the diversity of family configurations at birth for the growing proportion of children with half-siblings in their family network when the presence of their half-siblings and their origin (that is, whether they are the children of the mother, father or both parents) are taken into account. Having maternal half-siblings living in the household (32%), or paternal half-siblings living elsewhere (31%) were the most common situations, reflecting the greater propensity for children to remain with their mother after their parents separate. To have paternal half-siblings in the household was more unusual (15%), but this situation occurred, nonetheless, twice as frequently as having maternal half-siblings living elsewhere (7%). The remaining 15% of children had both maternal and paternal half-siblings: most often, only the mother’s children were present in the household (8%); in 6% of cases, the

**Figure 8. Residential Status and Origin of Half-Siblings (Maternal or Paternal) in Children's Family Environment at Birth, Canada**



**Source:** Statistics Canada, National Longitudinal Survey of Children and Youth.

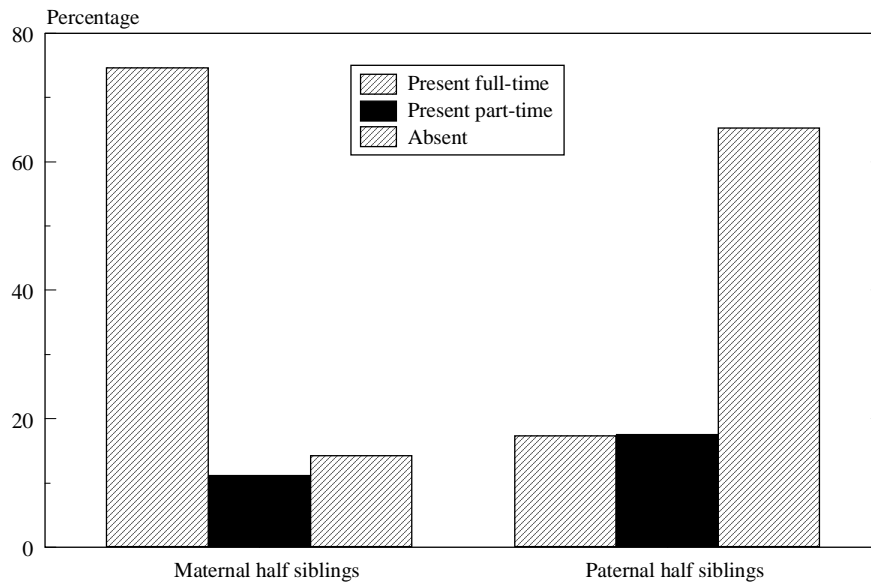
children of both parents were present and, for a few (1%), the children of both parents lived elsewhere. In several of the following analyses, these children have been grouped into three broad categories:

- All half-siblings living elsewhere (31% + 7% + 1% = 39%);
- Maternal half-siblings only in the household (though the father may have children living elsewhere) (32% + 8% = 40%);
- Half-siblings from father or both parents in the household (15% + 6% = 21%).

From these figures, it is clear that children are more likely to have close contact with maternal half-siblings than with their father's children from an earlier union. This is even more evident in Figure 9, which presents the proportions of children with maternal and paternal half-siblings according to their presence in the household at the child's birth. *Almost three-quarters of these children had all their maternal half-siblings present full-time in the household, and for only one in seven were they all living elsewhere. This contrasts strongly with the situation regarding their father's children from an earlier union: for almost two-thirds, all of their paternal half-siblings lived elsewhere full-time; the rest were divided equally between those with paternal half-siblings present full- or part-time.*



**Figure 9. Maternal and Paternal Half-Siblings, According to the Time Spent in the Household at the Target Child's Birth, 1994-1995, Canada**



**Source:** Statistics Canada, National Longitudinal Survey of Children and Youth, cycle 1, 1994-1995.

There are important differences between these children and those born in intact families. Never being the oldest child, for example, they are not raised by two first-time parents, as is the case for almost half the children now born in intact families. At least one of their parents will have had some experience of child rearing, although the level will vary according to the time spent with the child before and after separation from the other parent. They will also never be only children, although they may be brought up as such if half-siblings live elsewhere. Table 3 presents the distribution of children with half-siblings in their family environment at birth, although not necessarily present in the household, according to the number of half-siblings. Over half (54.5%) had only one; just over a quarter (26.8%) had two, and almost one-fifth (18.8%) had three or more half-siblings. Of course, children had the greatest number when both parents had children from an earlier union—the case for over half of those with three or more half-siblings. They had the fewest when half-siblings came only from their mother's side: only a quarter had more than one half-sibling, owing primarily to the high proportion of single mothers with only one child in this category.

**Table 3. Number and Provenance of Half-Siblings in the Family Environment at Birth<sup>1</sup>**

Provenance of Half-siblings	Number of Half-siblings			
	1	2	3+	Total
Mother only	29.2	7.7	2.3 *	39.2
Father only	25.2	13.6	6.7	45.5
Both parents	-	5.5	9.8	15.3
Total	54.5	26.8	18.8	100.0

\* Estimate has a high variability and should be interpreted with caution.

<sup>1</sup> Whether they are present in the household or live elsewhere.

Source: Statistics Canada, National Longitudinal Survey of Children and Youth, cycle 1.

*- Type of Conjugal Union*

***Another way in which these children differ from children born in intact families is that their parents are less likely to be married.*** Table 4 shows the distribution of children by family environment at birth and the type of conjugal union of their parents. Compared with children born into intact families in Canada as a whole, those born into residential stepfamilies are almost four times as likely to be born to unmarried parents. Those with half-siblings living

**Table 4. Distribution of Children Born in Two-parent Families, by Type of Family, Type of Parental Union at Birth, and Region of Canada, 1994-95**

Region / Type of Parental Union at Birth	Intact Family		Stepfamily		Total
	No children from Previous Unions	Half-Sibs Not in Household	Stepfather Family	Stepmother/Stepmother-Stepfather	
Canada					
Direct marriage	56.4	22.0	16.4	19.5	51.3
Marriage, preceded by cohabitation	30.9	43.1	39.4	35.1	32.1
Cohabitation	12.8	34.9	44.2	45.4	16.6
Total	100.0	100.0	100.0	100.0	100.0
Quebec					
Direct marriage	41.2	**	**	**	37.5
Marriage, preceded by cohabitation	30.4	**	**	36.1 *	30.0
Cohabitation	28.3	54.6	76.5	60.8	32.5
Total	100.0	100.0	100.0	100.0	100.0
Canada, Without Quebec					
Direct marriage	61.4	22.2	20.1	25.6	55.8
Marriage, preceded by cohabitation	31.0	46.7	44.4	34.7	32.8
Cohabitation	7.6	31.1	35.4	39.7	11.4
Total	100.0	100.0	100.0	100.0	100.0

\* Estimate has a high variability and should be interpreted with caution.

\*\* Estimate has a too high variability to be published.

Source: Statistics Canada, National Longitudinal Survey of Children and Youth, cycle 1.

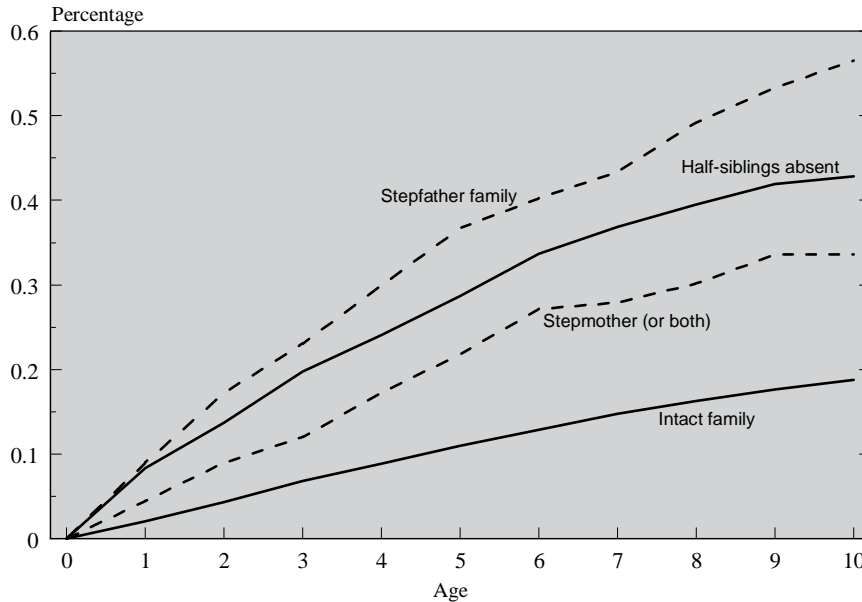
outside the household fall in between, but are much closer to children born in stepfamilies than in intact families in terms of their parents' conjugal union. As expected, the contrast is not quite so extreme in Quebec, where cohabitation is more common as a context for creating a first, intact family, but the trend is perhaps even clearer. In Quebec, direct marriage has all but disappeared as an entry into stepfamily life at the end of the twentieth century even among couples who are committed enough to have a child together. More than three-quarters of babies born in stepfather families had unmarried parents. Even outside Quebec, where few children in intact families (7.6%) were born to cohabiting parents, more than one-third of those born into stepfamilies had parents who had not legalized their union before their birth. The fact that blended families are much more often created outside marriage than are intact families raises the question of their stability, given the greater instability of common-law unions discussed earlier.

- *Family Stability*

Research has shown that having a child within a stepfamily acts as a protective factor for the family; in other words, stepfamilies that become blended families last longer than those that do not. However, when the same event is considered from the child's perspective, the basis of comparison broadens from stepfamilies to families in general; the relevant question becomes how children born in stepfamilies compare with children born into other family types in terms of family stability. Does the fact that their parents are already fairly advanced along their family life course reduce the likelihood of further family transitions, or, on the contrary, does the previous history of conjugal breakdown bode ill for the current union? Is the association between cohabitation and parental separation as strong among stepfamilies, where common-law unions are very common, as among intact families? Does it make a difference which parent brought children from an earlier union into the family, or how much time the children spend in the household, or how many and how old they are? Some clues to these questions may be gleaned from NLSCY data, which can be used to reconstruct both the family type at birth, and children's subsequent family life experience up to the time of survey.

Life table estimates of the probability that parents will separate suggest a strong link between family environment at birth and the subsequent family life course. Figure 10 shows clearly that ***children born into stepfamilies were more at risk of family breakdown than children born into intact families.*** In addition, the experience of children with half-siblings not living in the household was closer to that of children born in stepfamilies than to that of children in intact families from whom they are indistinguishable in terms of the residential family group. ***At ten years of age, 43% of these children had separated parents, more than double the percentage found among children in intact families.*** ***Risks of family breakdown varied according to blended family type: children***

Figure 10. Probability of Separation by Family Type at Birth, 1994-1995, Canada



Source: Statistics Canada, National Longitudinal Survey of Children and Youth, cycle 1, 1994-1995.

*born into stepfather families were most at risk, with a probability of parents separating (56%) that was appreciably higher than among children born into stepmother or stepmother/stepfather families (34%).* Compared with children without half-siblings, having maternal half-siblings in the household at a child's birth tripled the risk of experiencing parental separation by the age of 10 (56% vs 19%). Clearly, although there is greater conjugal stability among stepfamily couples who have a child together, the children involved are not guaranteed a stable family life course.

*- Analysis of Parental Separation Among Children Born into a Stepfamily*

This analysis focuses on differences between children born into intact and blended families, using the four-category variable to classify children's family context at birth; it is based on a sample of 20,071 children born within a two-parent family for whom the pertinent information is complete. The parameter estimates for the full model is presented in Table 5 in their exponential form. Standard errors were adjusted to take into account possible clustering due to children in the sample belonging to the same family.

**Table 5. Effect of Socio-demographic Characteristics on the Risk of Experiencing Parental Separation Among Children Born in Two-parent Families, 1994-95 (Proportional Hazards Estimates)<sup>1</sup>**

Variable / Category	Coefficient
Family Type at Birth	
Intact family	1.00
Half-siblings not in household	1.95 ***
Blended stepfather family	2.01 ***
Blended stepmother or stepmother / stepfather family	1.25
Region of Residence X / Type of Union at Birth	
Rest of Canada / direct marriage	1.00
Rest of Canada / married after cohabitation	1.82 ***
Rest of Canada / cohabitation	5.71 ***
Quebec / direct marriage	1.16
Quebec / married after cohabitation	1.35
Quebec / cohabitation	3.96 ***
Duration of Union at Birth	
Less than 9 months	1.70 ***
9 to 23 months	1.57 ***
2 to 4 years	1.13
5 years or more	1.00
Type of Previous Parental Unions (Both Parents)	
No previous union	1.00
Marriage only	0.69 **
Cohabitation only	1.24
Marriage and cohabitation	0.91
Birth Cohort	
1982-1988	1.00
1989-1995	1.25 **

<sup>1</sup> The coefficients are (exp  $\beta$ ), with levels of significance: \*\*\*:  $p < .001$ ; \*\*:  $p < .01$ ; \*:  $p < .05$ .  
**Source:** Statistics Canada, National Longitudinal Survey of Children and Youth, cycle 1.

The dependent variable is the instantaneous rate of separation among the parents of the children in the samples, estimated from the moment of birth. The independent variables are limited to socio-demographic characteristics, as little other information on the situation at the time of birth was collected at the survey. These characteristics include the duration of the union at birth, and the birth cohort of the child. Other important characteristics, such as the age of the mother at the start of the union, could not be included, as this information was not available for the mothers of children living with a stepmother at the survey. Given the importance of the type of parental union at birth for the risk of separation, and the contrast in marital behaviour between Quebec

and the rest of Canada, the type of union was introduced in interaction with the region of residence. Information on earlier unions was also included for two reasons. Firstly, distinguishing between parents who have or who have not lived in earlier unions enables us to control for the strong differences between stepfather families created by single mothers compared with separated/divorced mothers, discussed earlier. Secondly, a study of NLSCY data suggests that parents' conjugal history preceding the union in which the target child was born may also predict union instability (Juby and Marcil-Gratton, *forthcoming*). A four-category variable, summarising the earlier conjugal history of both parents, was created and included in the model:

- a) neither parent had had a previous conjugal union;
- b) one or both parents had been married, but never cohabited;
- c) one or both parents had cohabited, but never married;
- d) one or both parents had married and cohabited.

The analysis presented in Table 5 compares family stability for children in intact families (no half-siblings) with that of children whose half-siblings live elsewhere and with two types of blended family—those including maternal half-siblings only, and those with paternal half-siblings (plus maternal half-siblings in some cases). *Among children born into “intact” families*, according to the residence-based definition, *having half-siblings in the family environment doubles the risk of separation compared with children whose parents have no children from earlier unions. In fact, the risk for children whose half siblings live elsewhere is almost as high as that for children born into stepfather families. However, children with paternal half-siblings in the family are not significantly more at risk of experiencing their parents' separation than children in intact families.* These findings support other research on the subject which has demonstrated the greater stability of stepmother over stepfather families (Ambert, 1986; Desrosiers et al.; 1995 Ferri, 1995).

Separation risks were lowest for children to parents who married without previous cohabitation, both within and outside Quebec. Children born in common-law unions were exposed to highest risks of separation in Quebec (3.96) and even more so in the rest of Canada (5.71). Children whose parents lived together before marriage were also more likely to experience their parents' separation, although in Quebec this increase was not significant. In this province, the gap in stability levels between different types of union appears to be getting narrower, and little difference remains between children born to couples who marry directly and those whose parents' lived together before marrying.

The positive effect of marriage on union stability is also reflected in the conjugal history preceding the union in which the target child was born. Even compared with children born to couples with no history of previous unions, those with a parent who had been previously married were less at risk of

family disruption. This rather unexpected result stems from the fact that the “no previous union” category includes mothers whose first child was born outside a union. In order to evaluate the impact of the trajectory leading up to the creation of the family, we carried out a second analysis that included only the 2,855 children with half-siblings in their family environment at birth (not presented). In this model, the “no previous union” category related directly to mothers whose previous child was born outside a union. This permitted us, in other words, to distinguish between the two very different types of stepfather family discussed earlier (i.e. families formed around single *versus* separated or divorced mothers). Our findings showed that children born into stepfamilies created by single mothers appear significantly more at risk of parental separation than children born to parents who had been previously married.

The duration of the union before the baby’s birth is a strong predictor of family stability, with unions formed less than two years before the target child’s birth significantly more at risk of breakdown than those existing for five years or more. The impact of the period was as expected: children born in the early 1990s were more likely to experience parental separation than those born in the 1980s.

Comparing children born within intact and stepfamilies shows how even half-siblings who are not present in the family influence the probability that children experience the breakdown of their parents’ union. It also indicates that the greater stability of stepmother families over stepfather families, reported in the literature, remains even after the stepfamily couple have a child together; children born into stepmother families are significantly less at risk of family disruption than those born into stepfather families. Putting the focus specifically on children with half-siblings in their family environment highlights the link between the earlier conjugal and parental life course of parents and a child’s subsequent family life course. Not only is the current union type strongly related to family stability, but the circumstances surrounding the birth of the half-siblings themselves continue to have an impact.

### **Conclusion**

An inevitable consequence of changing marital norms, the blended family is here to stay, and likely to become increasingly common. While not a new family form, in that, in the past, widowed lone parents often remarried and had additional children with their new spouse, the trajectory leading up to the creation of these families is certainly unprecedented. Higher separation rates among couples in intact families mean rising numbers of lone-parents, the units upon which stepfamilies are built. The rising number of stepfamilies formed earlier in the family life course leads directly to the emergence of the blended family, as a high proportion—even the majority—of stepfamily couples decide to cement their relationship by having a child together.

Arising in response to these developments, stepfamily research has tended to oppose stepfamilies to intact families, focusing on their greater fragility and assuming them to be problematic; consequently, stepfamily diversity has been largely ignored (Coleman and Ganong, 1990). The life-course approach taken in this research, however, highlights the great variations in stepfamilies resulting from the complex conjugal and parental histories of both members of the stepfamily couple prior to their union. It shows that, beyond the simple differentiation of stepfamilies according to the sex of the stepparent, it is essential also to take into account the family life course preceding stepfamily formation; stepfather families, for instance, created around young single mothers differ in important respects from those formed around separated or divorced mothers. Taking account of previous family history also provides a new perspective on intact families, uncovering differences that remain hidden by the residence-based definition normally used. In this research, intact families were divided only according to whether or not the children born into them had half-siblings living elsewhere at their birth. However, a third important means of entry into an intact family should also be mentioned here, in that for stable blended families it is likely to constitute the next family transition. When the last of the children from an earlier union grows up and leaves home, the “stepfamily” couple will find themselves living only with children from the current union.

The movement of children in and out of households over time, the fact that siblings may not all share the same living arrangements, and the fact that they can live in more than one household at one time, all create a reality that is difficult to get a handle on. While many problems of definition remain, looking at the stepfamily from the child’s rather than the parent’s perspective has at least clarified one important aspect. Classifying these new family types as they appear is quite a challenge, but essential for comparative research. At the beginning of the text, we explained our decision to restrict the term “blended family” to stepfamilies in which the parents have a common child. This choice was justified as the research progressed, and the uniqueness of this type of family became increasingly evident. Treating the creation of a blended family as a transition occurring within a stepfamily that creates a genetic link between all members of the family makes it possible to study the specificity of this type of family—a process that is all the more essential given the growing importance of this phenomenon.

Whether or not a stepfamily couple decides to have a child together is strongly influenced by the same factors that determine intact family fertility—mother’s age and the age of the youngest child. However, the absence of any significant link with the number of children already present shows that stepfamily fertility decisions are also subject to different forces. Likewise, blended families also have a dynamic all of their own, with a more complex set of family relationships both within and outside the residential group than the intact family. As suggested by Cherlin (1978), stepfamilies are under stress because they lack guidelines for role performance, institutionalised procedures



for dealing with problems, and social support. However, although having a child within the second union may add further complexity to an already complicated system, it is also associated with greater stepfamily stability. Does the fact that the stepparent also assumes the role of biological parent at the birth of the common child restore some level of “institutionalisation” to the blended family?

As a result of changes in conjugal norms, the family experience of children born at the end of the twentieth century bears little resemblance to that of their parents. The novelty, diversity and complexity of the modern family life course present a challenge for parents, children and policy makers alike, and at many different levels. Studies of father/child contact following separation or divorce have shown, for example, that the younger children are when their parent’s separate, the less contact they are likely to have with their father; they have also demonstrated a strong link between levels of father/child contact, and the regularity of child support payments. In other words, with parents separating earlier in a child’s life, measures need to be taken to encourage the relationship fathers maintain with young children after separation.

Being born into a blended family may expose children to a higher risk of family breakdown than if they had been born to parents in an intact family; however, it also means that they have experienced parents, and at least one brother or sister, something denied to growing numbers of children born into intact families. The question, however, is not whether recent family transformations are positive or negative—the family has always been a vehicle for social change, and continues to be so. The real issue is how best to manage these changes at the individual and social level, in order to ensure children’s well-being throughout childhood however simple or complex their family life course.

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