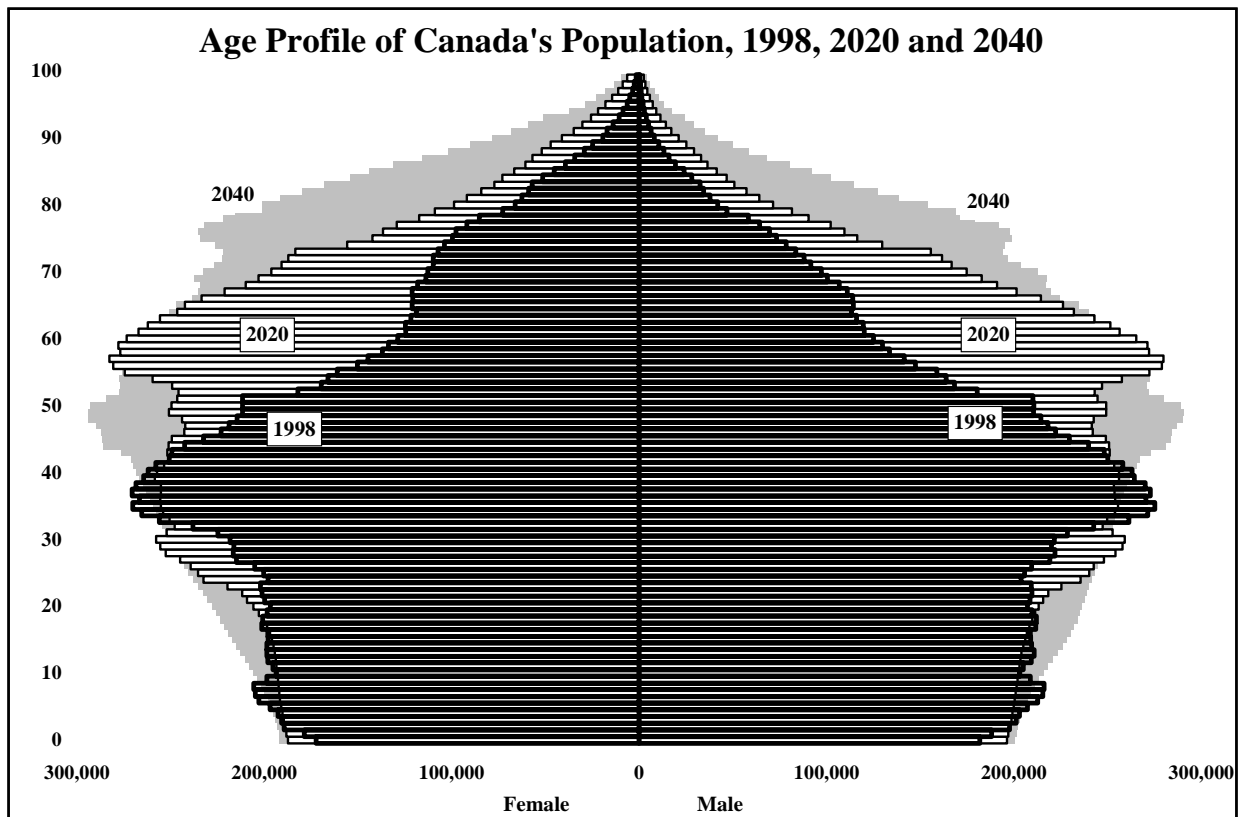


The Urban Futures Institute

Research on Population, Community Change and Land Use

Forty Million: Canada's Population in the Next Four Decades

By David Baxter, Jim Smerdon and Andrew Ramlo



The Urban Futures Institute Report 36

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June 1999

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Forty Million: Canada's Population in the Next Four Decades

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Summary

1. Population Growth. There were just over 30 million people in Canada in 1998. The country's population reached 10 million in 1929, took forty years to double to 20 million in 1968, and another 30 years to add the next 10 million, reaching 30 million in 1998. The country's projected population for 2010 is 33,917,300, for 2020 is 36,885,000, for 2030 is 39,522,200 people, and for 2040 is 41,542,700 people. The addition of 11,242,400 people (a 37% increase) to the country's population over the 42 year period from 1998 to 2040 (an average of 267,700 people per year), will be slightly less than the 14,219,300 people added (a 110% increase) to the country's population in the 42 years from 1956 to 1998 (an average of 340,618 people per year).

2. Population Composition. The baby boom generation – accounting for one third of the country's population – was born between 1947 and 1966. In 1998 baby boomers were between the ages of 32 and 51, with the typical Canadian being the typical baby boomer, a 35 year old. The bulge of the baby boom is made up of 34 to 38 year-olds, with over 535,000 people of each age in this 5-year age group. There were 5,269,000 people aged 32 to 41 and 4,520,000 aged 42 to 51 for a total of 9,789,000 boomers. The generation before the baby boom, now aged 52 to 71, is smaller than the baby boom, the result of the very low level of births that occurred in the 1930 Depression and pre-War period: 17% of the population was in this older generation in 1998. The generation following the baby boom were 1998's 12 to 31 year olds: this generation is also smaller than the baby boom generation, the result of the low level of births that urbanization and the birth control pill brought to the 1967 to 1986 period. Twenty-eight percent of the population was in the 12 to 31 year-old age group in 1998. The remaining population was divided among the 92 plus (0.2%), 72 to 92 (7.0%), and under 12 (15.4%) age groups.

3. Dependency Ratios. Populations are often described in terms of the ratio of the number of people in one age group to the number in another. The most common such ratios are the elderly and youth "dependency" ratios: the number of people 65 and older (elderly), and under 15 (youth), divided by the number of people of working age (15 to 64). These ratios are meant to generally represent the magnitude of the relationship between the beneficiary population (of pension plans, health care and education) and the contributory population (those of working age who contribute via taxation and plan installments).

In 1998, there were 181 persons 65 and older, and 291 persons under the age of 15, per 1,000 people of working age, for a total dependency ratio of 472 persons per 1,000 persons of working age. Natural increase alone (births and death but no immigration nor emigration) would result in a situation in 2040 where there would be 477 elderly people per 1000 people of working age (a 164% increase) while the number of young people per 1000 people of working age would decline to 226 (a 19% decline). The total dependency ratio would increase by 50%, from 472 per 1000 in 1998 to 702 per 1000 by 2028.

Immigration reduces Canada's dependency ratio. With the rate of immigration and emigration projected for the next four decades, the overall dependency ratio in 2040 will be 609 per 1000 people of working age. There will be 239 people under the age of 15 for every 1000 people of working age in 2040, not significantly different from the 226 of natural increase alone. In contrast, the elderly dependency ratio will be 370 persons 65 and older per 1000 persons of working age, 29% below the 477 of natural increase alone. The direct and indirect impact of net international migration on the age structure of Canada's population is to reduce the relative number of people supported, to one extent or another, by the working population: immigration makes the country's population both larger and younger.

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Introduction

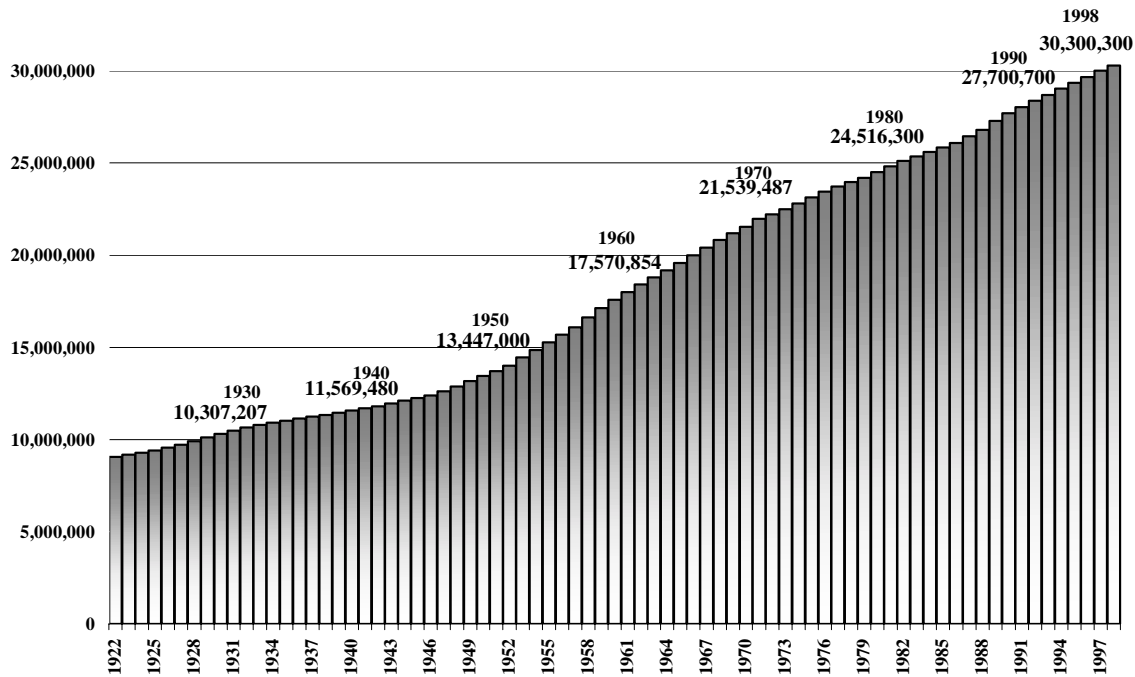
Growth and change has been the history of Canada's population, and growth and change will be its future. Neither growth nor change has been steady in the past, and neither will be in the future. In the short run, resource and economic cycles, structural adjustment, and policy change and uncertainty will continue to bring variance to population growth and change. In the long run, however, the general stability of major demographic variables and the averaging of cycles that occurs over long periods of time permit projection of population growth, and of changes in its composition, in terms of orders of magnitude if not with exact precision.

This report presents a trend based population projection for Canada for the period 1999 to 2040. The assumptions and values used in this projection are developed from the long run patterns of growth and change shown in the historical data for population trends in Canada.

Canada's Population Past and Present

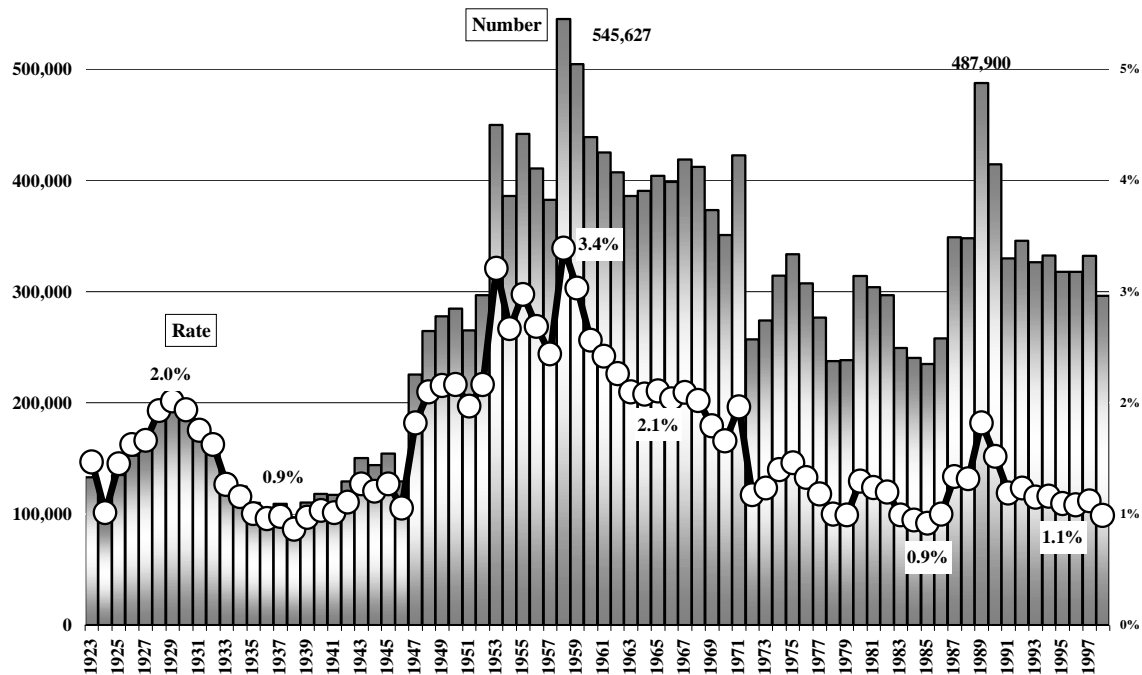
There were just over 30 million people in Canada in 1998ⁱ. The country's population reached 10 million in 1929, took forty years to double to 20 million in 1968, and another 30 years to add the next 10 million, reaching 30 million in 1998 (Figure 1).

Figure 1: Population, Canada, 1922 to 1998



While the population of Canada has always increased, there has been some variance in the annual additions to its population, ranging from a high of 624,000 (in 1949 as a result of the accommodation of people displaced by the Second World War) to a low of 91,000 (1923). Since the end of the Second World War, annual population increases have averaged 344,000 people per year. The rate of growth in the post-war years has varied from a peak of 3.4% growth in 1957 to a low of 0.9% in 1985 (Figure 2).

Figure 2: Net Annual Population Growth, Canada, 1922 to 1998



During the 1950 to 1970 period, Canada's population increased by an average of 400,000 persons per year, the result of a high rate of natural increase (the birth of the baby boom generation) and strong

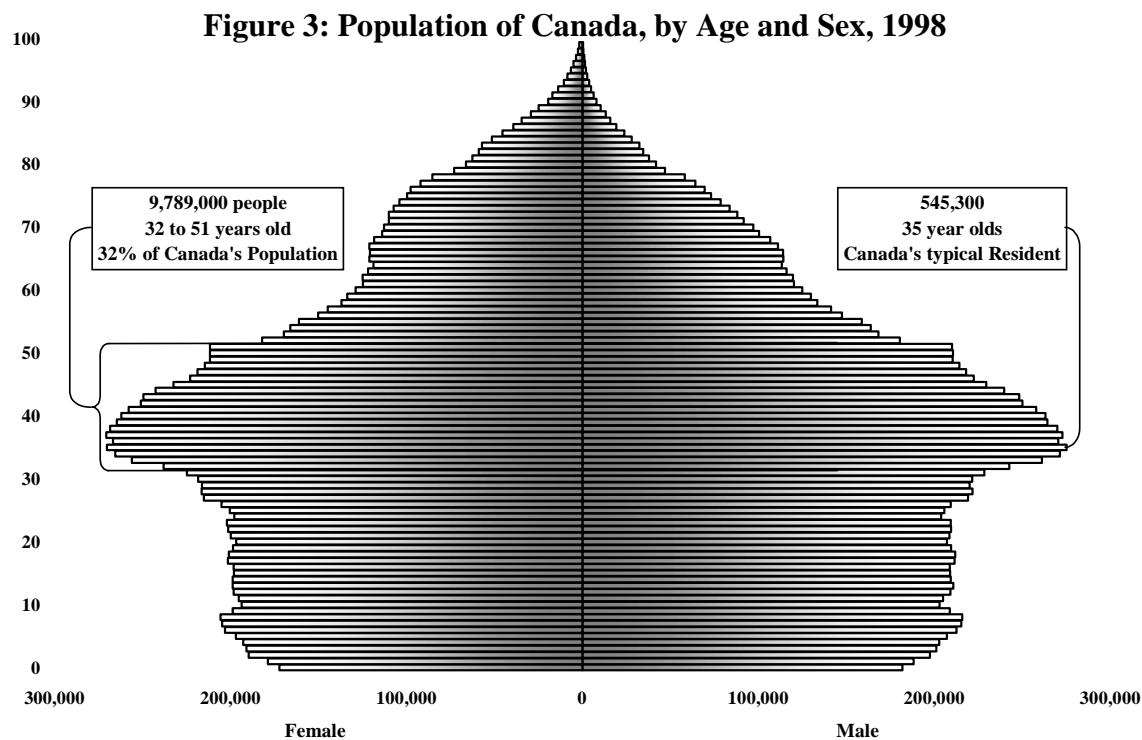
immigration. With relatively constant absolute growth, annual percentage growth declined from the 3% per year range in the 1950s to 2% by the mid 1960s, and to 1.7% by 1970.

Since 1970 Canada's population has grown slowly, averaging 1% per year over the past quarter century. In absolute terms, growth in the 1970s and 1980s was the slowest in the post-war period, with an average of 305,000 people per year added to the country's population. The 1990s have seen slightly higher absolute growth (335,000 per year), although the average annual rates were the same 1% in both periods.

The typicalⁱⁱ Canadian in 1998 was a 35 year-old (Figure 3): there were 545,329 people aged 35, more than the number of people of any other age: of the 35 year-olds, there were 275,201 males and 270,128 females, so the typical Canadian was a 35 year old male. (Note that the typical Canadian was female, as there were 14,999,000 males and 15,299,000 females resident in the country in 1998.) The averageⁱⁱⁱ age of a Canadian in 1998 was 36.7, 35.7 for males and 37.8 for females. Half of the population in Canada in 1998 was under 36 years of age^{iv}.

Canada's population demonstrates a distinct "baby boomer bulge" age profile. In the old days of population analysis, population profiles were referred to as pyramids, with the youngest age groups being largest and annual mortality reducing the number of people with increasing age. Such pyramids only exist when there have been long periods of stable birth and death rates and little migration. None of these characterize Canada's population today. Like all other countries where there was a substantial post world war two boom in births, Canada's age profile looks more like a tree (with a very thick trunk) than a pyramid^v.

The baby boom generation, accounting for one third of the country's population, was born between 1947 and 1966 (or 1946 and 1965, or a number of other combinations in this range, assuming that a generation is a 20 year age group). This means that in 1998 baby boomers were between the ages of 32 and 51, with the typical Canadian being the typical baby boomer, a 35 year old. The bulge of the baby boom is made up of 34 to 38 year-olds, with over 535,000 people of each age in this 5-year age group in 1998.



In 1998, 32% of Canada's population were baby boomers; that is, were between the ages of 32 and 51. There were 5,269,000 people aged 32 to 41 and 4,520,000 aged 42 to 51 for a total of 9,789,000 boomers. The generation before the baby boom, now aged 52 to 71, is smaller than the baby boom, the result of the very low level of births that occurred in the 1930 Depression and pre-War period: 17% of the population was in this older generation in 1998. The generation following the baby boom were 1998's 12 to 31 year olds: this generation is also smaller than the baby boom generation, the result of the low level of births that urbanization and the birth control pill brought to the 1967 to 1986 period. Twenty-eight percent of the population was in the 12 to 31 year-old age group in 1998. The remaining population was divided among the 92 plus (0.2%), 72 to 92 (7.0%), and under 12 (15.4%) age groups.

Populations are often described in terms of the ratio of the number of people in one age group to the number in another. The most common ratios are the elderly and youth "dependency" ratios: the number of people 65 and older (elderly), and under 15 (youth), divided by the number of people of working age (15 to 64). These ratios are meant to generally represent the magnitude of the relationship between the beneficiary population (of pension plans, health care and education) and the contributory population (those of working age who contribute via taxation and plan installments).

In 1998, there were 181 persons 65 and older, and 291 persons under the age of 15, per 1,000 people of working age in Canada, for a total dependency ratio of 472 persons per 1,000 persons of working age. This compares to 1966's elderly dependency ratio of 130 per 1,000 people of working age, and a youth dependency ratio of 555 per 1,000, for a total of 685 per 1,000 people of working age. Over the past 32 years, the total dependency ratio has declined by 31%, the net result of a 48% drop in the youth dependency ratio and 40% increase in the elderly dependency ratio. As is shown by the population projection presented later in this report, the aging of Canada's population is going to bring a dramatic increase to the elderly dependency ratio, and almost none to the youth dependency ratio.

Components of Population Growth

Population growth is the net result of births, deaths, immigration from other countries, the return of Canadians who have been resident outside of the Canada, emigration to other countries, and the net change in the number of non-permanent residents (foreign students, diplomats, etc.) living in the country. While we consider each of these components separately and in detail in subsequent sections of this report and in the projection, they are generally grouped into two categories for discussion (Figure 4): natural increase (births minus deaths), and net immigration (immigration plus returning Canadians minus emigration plus net change in non-permanent residents).

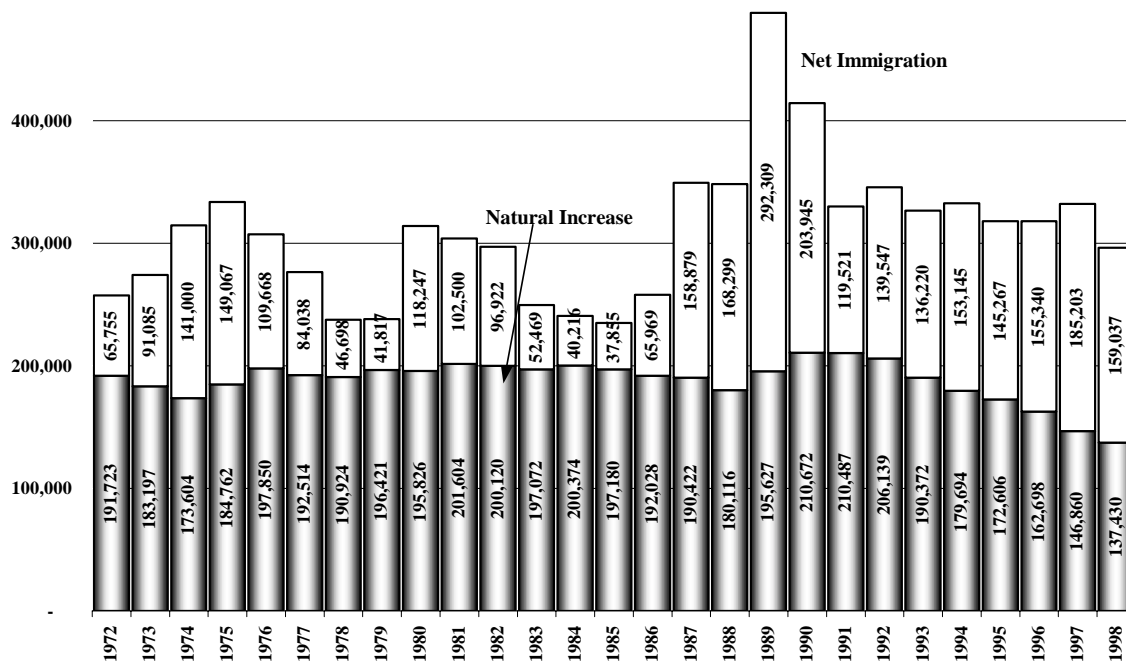
Natural increase, the major source of population growth in Canada over the past quarter century, is much less volatile than net immigration. This is the result of the stability of the variables that affect births and deaths, and the fact these numbers are strongly determined by the absolute size of the country's population. Population growth attributable to natural increase was relatively constant in the 1972 to 1992 era, ranging from a low of 173,600 in 1974 to a high of 210,672 in 1990. Since then, the contribution of natural increase to the country's population growth has declined, the result of the aging of the front edge of the baby boom out of the child bearing stages of the life cycle, and the aging of the country's population, resulting in fewer births and more deaths per year. While future population growth will lead to a modest increase in the annual number of births, the continued aging of the population will lead to a faster increase in the number of deaths each year. As a result, natural increase will play a smaller role in population growth in the future than it has in the past.

Net immigration (immigration plus returning Canadians plus the change in non-permanent residents minus emigration) has added no fewer than 37,800 people to the population of Canada every year since 1972: during the 1997/1998 year, net immigration added 159,037 people to the country's population. The smallest addition to the population attributable to net immigration was in 1985, when 37,855 more

people came to the country from other countries than left Canada for them. The largest contribution of net immigration to the country's population was in 1989, when a net of 292,309 more people immigrated to the country than emigrated from it. The past decade has been one of relative high net immigration to the country, the result of an overall increase in immigration to Canada. The general pattern of net immigration somewhat reflects economic conditions both within and outside of the country, with relatively low levels of net immigration during the recessions of 1976/1977 and 1982/1987.

In spite of fluctuations in these sources of growth, the population of the country has grown every year over the past quarter century. The lowest post-war population increase was recorded in 1985 when there was net immigration of 37,855 and natural increase of 197,180, for a total increase of 235,035 people. The greatest increase was in 1989, when natural increase of 195,627 persons and net immigration of 292,309 added 487,936 people to our population. 1998's 296,467 person increase was comprised of net immigration of 159,037 persons and natural increase of 137,430.

Figure 4: Components of Net Annual Increase, Canada, 1972 to 1998



Each source of population growth changes both the size and the characteristics of the population. In the following sections the effects of these factors on the age and gender composition of Canada's population are presented. However, the most important factor bringing change to Canada's population is not something that causes it to grow or decline, but does cause it to change, not by much in the short run, but dramatically in the long run. This is birthdays, or in the language of demographics, aging.

Aging

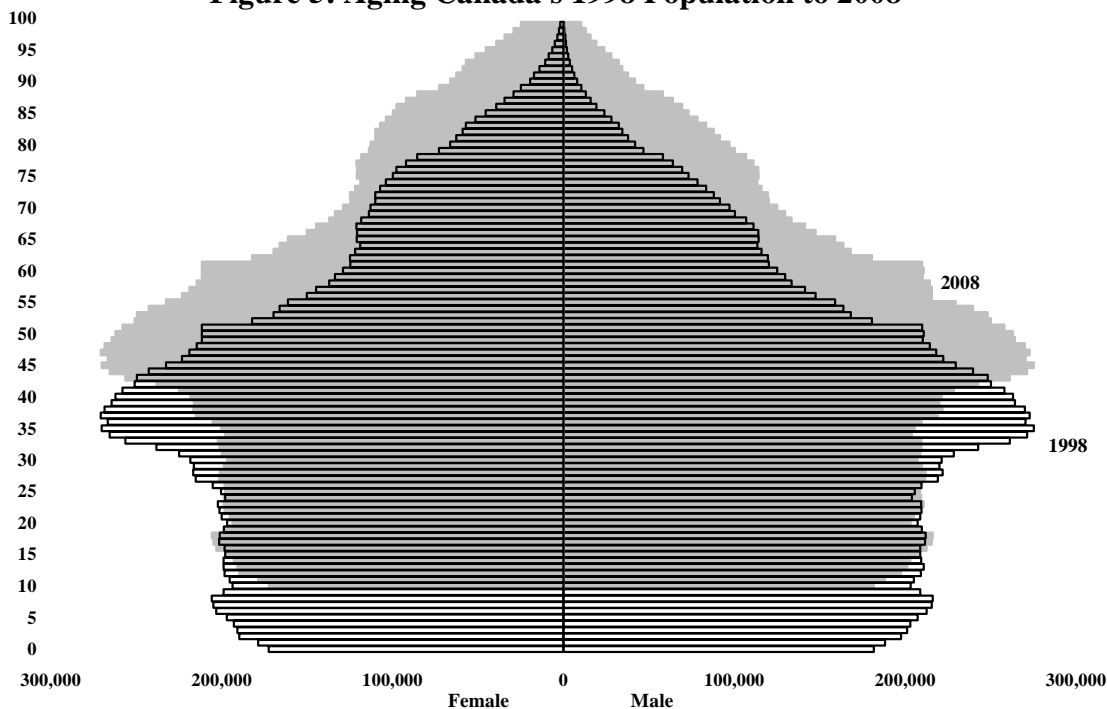
Aging is a process that affects everyone in a population. While a population might increase by 1% per year, 100% (well, almost 100%) of the people in the population get a year older each year. The effects of aging can be illustrated by simply shifting the age profile up (as is shown on Figure 5): in ten years, the population of Canada; with no deaths or births, and no immigration or emigration, would be precisely ten years older than it is today. Aging with no deaths – seems a bit of a stretch – but it is the reality for the

vast majority of the population: mortality rates are not significant in the under 75 population, particularly in the 32 to 51 age groups where one third of Canada's population is today. As is demonstrated in the next sections, aging will have a much greater impact on the composition of the population than migration or natural increase. As a result, the future population of Canada will to a large extent be an older version of today's population.

Given the "tree" shape of Canada's population, aging alone would result in 2008's typical Canadian being a 45 year-old rather than a 35 year-old. In ten years, aging alone would mean that the 4,520,012 people aged 42 to 51 in 1998 would be 4,520,012 people aged 52 to 61 in 2008. As there were only 2,967,211 people aged 52 to 61 in 1998, aging alone would mean that the number of 52 to 61 year olds in Canada would increase by 1,552,801 people, a 34% increase.

This aging would also mean that the number of people aged 32 to 41 would decline, as 1998's 5,269,001 32 to 41 year olds would become 2008's 42 to 51 year olds. The 4,246,350 22 to 31 year olds in 1998, who would become 2008's 32 to 41 year olds, are not numerous enough to replace the people aging out of this age group. Net immigration into this age group, therefore, will be required to offset a 1,022,651 person (24%) decline in the 32 to 41 population that would otherwise be brought about simply by the aging of the baby boom generation.

Figure 5: Aging Canada's 1998 Population to 2008



Mortality

It has been said that the only thing worse than aging is its alternative, death. Mortality is the ultimate demographic variable, one that affects both the size and the composition of the population. The number of deaths in Canada increased from 159,533 in 1972 to 217,860 in 1998, with a record of 218,188 deaths in 1997 (Figure 6). This increase is the result of the growth, and the aging, of the country's population, slightly offset by a slight decline in mortality rates over the past quarter century.

An age specific mortality rate is the number of people of a particular age who die in a year divided by the total number of people in the age group in that year (Figure 7). These rates are expressed as number of deaths per 100,000 people in the age group to avoid having miniscule numbers for rates in the younger ages. As Figure 7 indicates, mortality rates generally increase with increasing age, and rates for males are higher than for females of the same age (hence males have a lower probability of reaching the next age, resulting in females' greater life expectancies)^{vi}. The mortality rates for the newly born (575 deaths per year per 100,000 females, and 686 per 100,000 for males, in their first year of life) are higher than for older children and adults up to the age of 55, showing the vulnerability of the youngest additions to our population. The lowest mortality rates are for people from 2 to 15 years of age, with rates in the range of 11 to 30 deaths per year per 100,000 people.

Figure 6: Annual Number of Deaths, Canada, 1972 to 1998

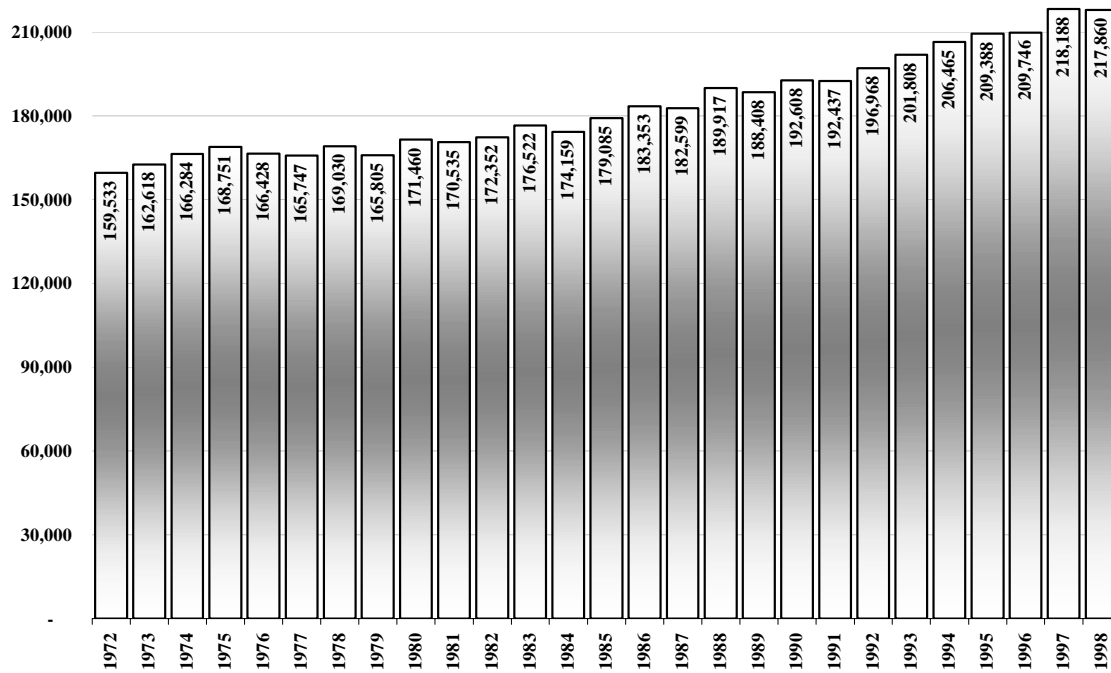
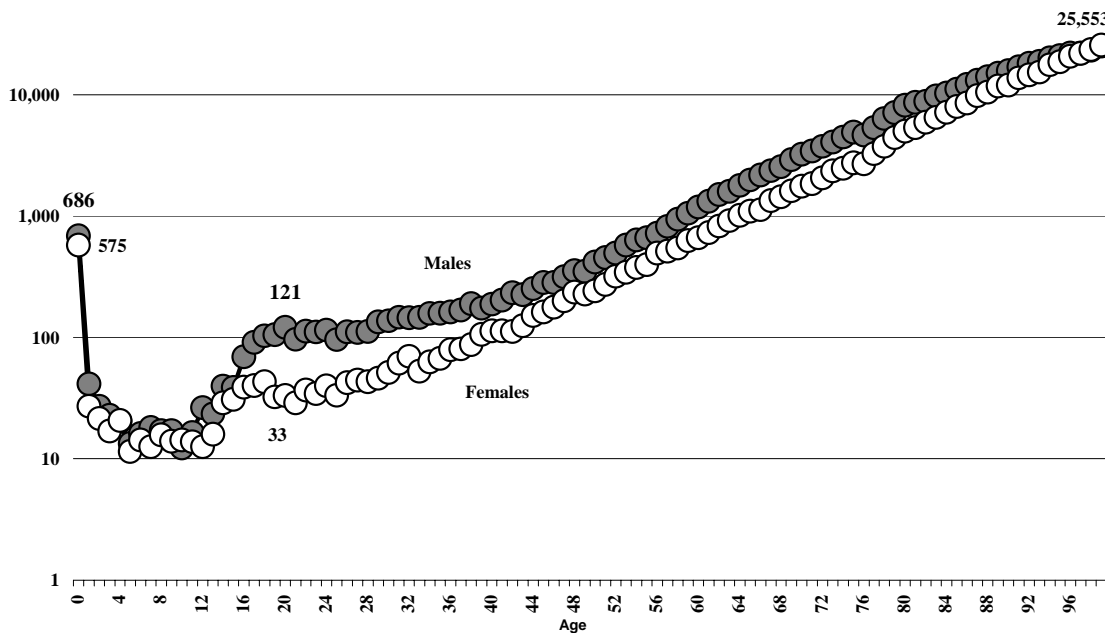


Figure 7: Age Specific Death Rates, Canada, Log Scale (three year average)
(Deaths per 100,000 people of a given age)

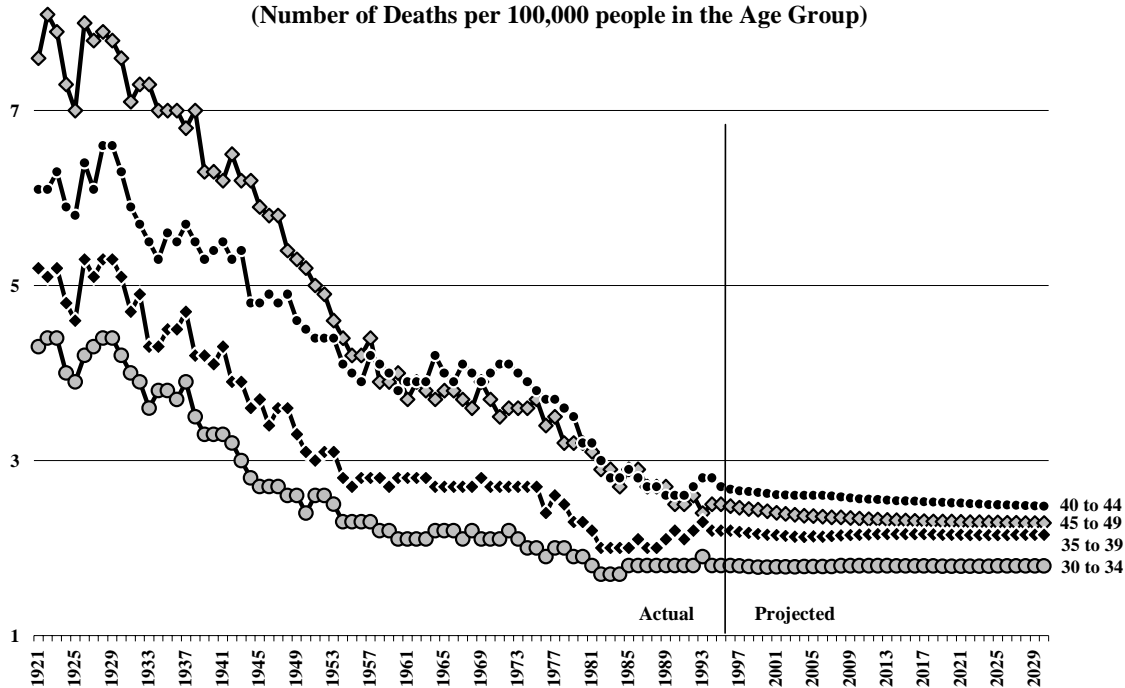


Once males reach the age of 13, their probability of dying increases significantly with each passing year, to 121 deaths per year per 100,000 males aged 20, almost four times the 33 per 100,000 rate for females of the same age (the difference is largely explained by the higher number of male deaths each year in each adult age group due to accidents and violence). As people age into their 40s, the rates for males and females converge. After age 50, the mortality rates for males and females remain close (female mortality rates remain lower than male rates throughout life). The two rates move together, through the 1 in 100 range (1,000 in 100,000) in people's sixties, 1 in 10 in their mid-eighties, to over 1 in 4 in their late nineties.

There are so few people in the 100 plus age group that no data are available for each single year of age: at some point the rate will effectively be 1 in 1.

Mortality rates for both males and females have declined significantly over the past seventy-five years, to the extent that male life expectancies have increased by over 16 years and female life expectancies by over 20 years^{vii}. Figure 8 shows the example of the historical and projected changes at the national level in mortality rates for males in the 30 to 49 age groups^{viii}.

Figure 8: Male Mortality Rates, 1921 to 2030, Selected Age Groups
(Number of Deaths per 100,000 people in the Age Group)

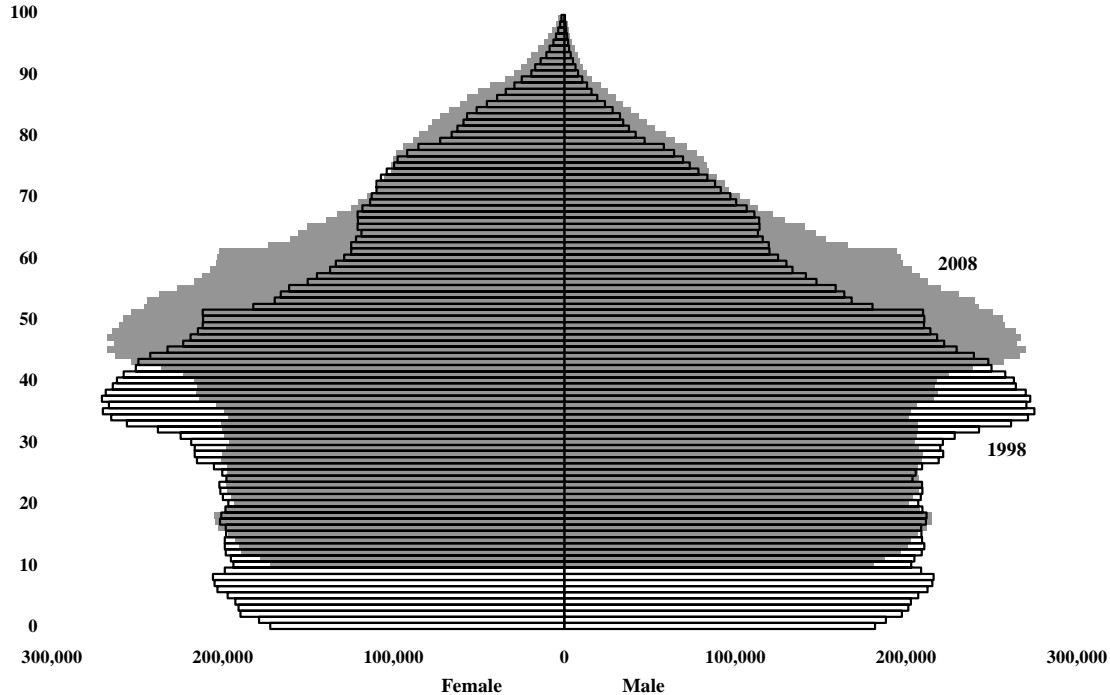


Note that the big declines in mortality rates occurred between 1921 and 1961, with the rate of decline slowing since then. While it is certain that medical technology will result in a continuing decline of mortality rates, the law of diminishing returns will also continue to apply. This means that future declines will be much more modest, and more difficult to achieve, than the declines that have been achieved in the past. For this projection, the trend of change in mortality rates over the past twenty-five years has been extended into the future: the result is an assumption that age and sex specific mortality rates will stabilize by 2030.

In population projections, the focus is not on mortality, but rather on survivorship. Survivorship rates, the percentage of people in each age group who do not die in a year and hence who age into the next older age group, are the inverse of the mortality rates. Applying projected survivorship rates to the aging of Canada's current population shows the impact of mortality on the age profile of the country's population (Figure 9).

Over the next decade aging and mortality alone will not noticeably change the baby boom age profile of Canada's current population: the profile will shift up and the typical person in the population will be ten years older than the typical Canadian of today. Where the noticeable difference between aging alone and aging with mortality will be in the over 75 population: the top of the population tree is a lot narrower in Figure 9 than it was in Figure 5.

Figure 9: Aging and Mortality of Canada's 1998 Population to 2008



Following the last example, there were 4,520,012 people who were between the ages of 42 and 51 in 1998: in 2008 aging and mortality would mean there would be 4,350,033 people in the 52 to 61 age range, rather than the 4,520,012 (today's 42 to 51 year olds) there would be if there was no mortality (a 3.8% difference). In comparison, there were 1,539,546 people in the 72 to 81 age group in 1998: considering only mortality, in 2008 there would be 1,723,325, compared to the 2,267,877 (today's 62 to 71 year olds) there would have been without mortality (a 24% difference). Thus, mortality has a relatively small impact on population in younger and middle age groups, but significant impact in older age groups. This has not always been the case: up to the Second World War, mortality had a significant impact on younger age groups, with disease dramatically reducing the size of the bottom of the age pyramid.

Births

The record number of births in Canada was the 479,275 kids born in 1959. The largest number of births since 1972 was the 403,280 born in 1990 (Figure 10). This is 76,000 fewer (16%) than the baby boom peak. 1998's 355,290 births were the smallest number of births recorded since 1974's 339,888.

The number of births each year is a function of the number of women in the child bearing ages (14 to 50 years of age) and the probability that they will have a child during a year. This age specific rate is calculated as the number of women of each age who give birth during a year divided by the total number of women of that age. As Figure 11 shows, there is a very distinct pattern to age specific birth rates. The highest age specific birth rates are for women in the 26 to 31 age group, where between 10.3% and 11.6% of the women have a child in a year. The rates increase steeply from 0.1% for women of age 14 to peak at 11.6% at age 28 and 29, then drop sharply back to 0.1% by age 44, becoming negligible by the age of 46.

Figure 10: Number of Births, Canada, 1972 to 1998

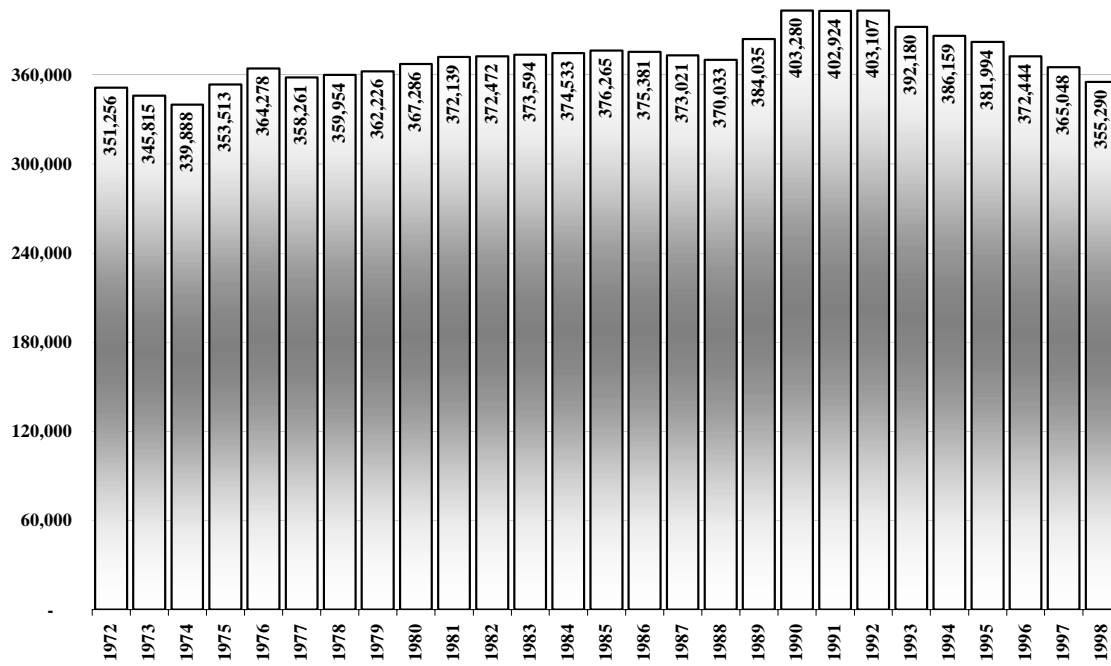
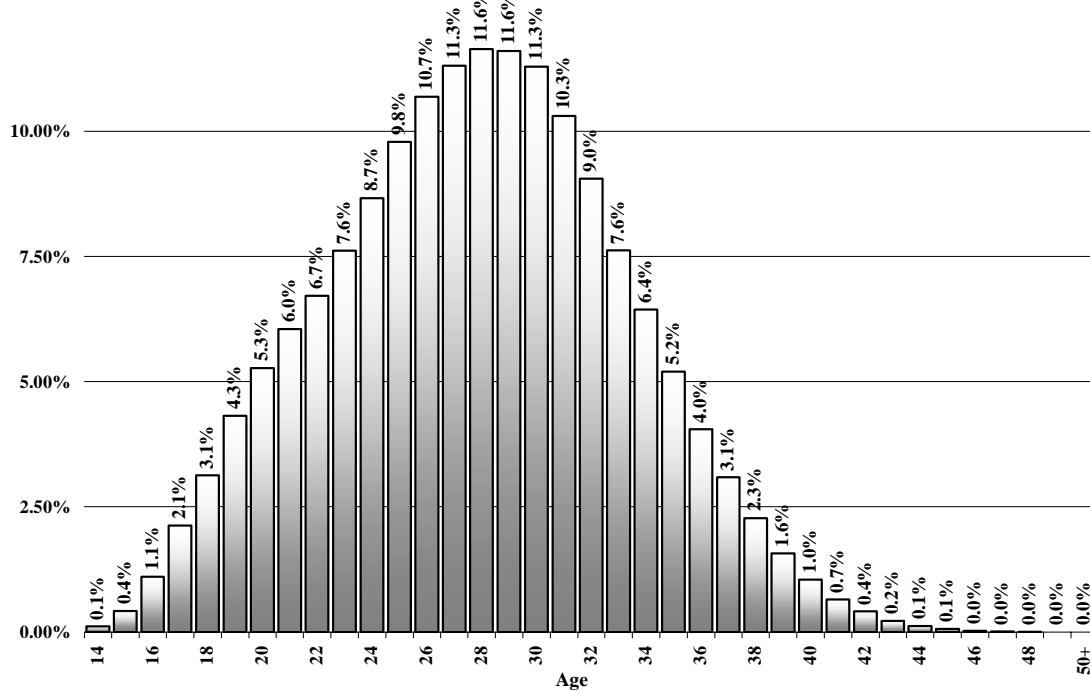
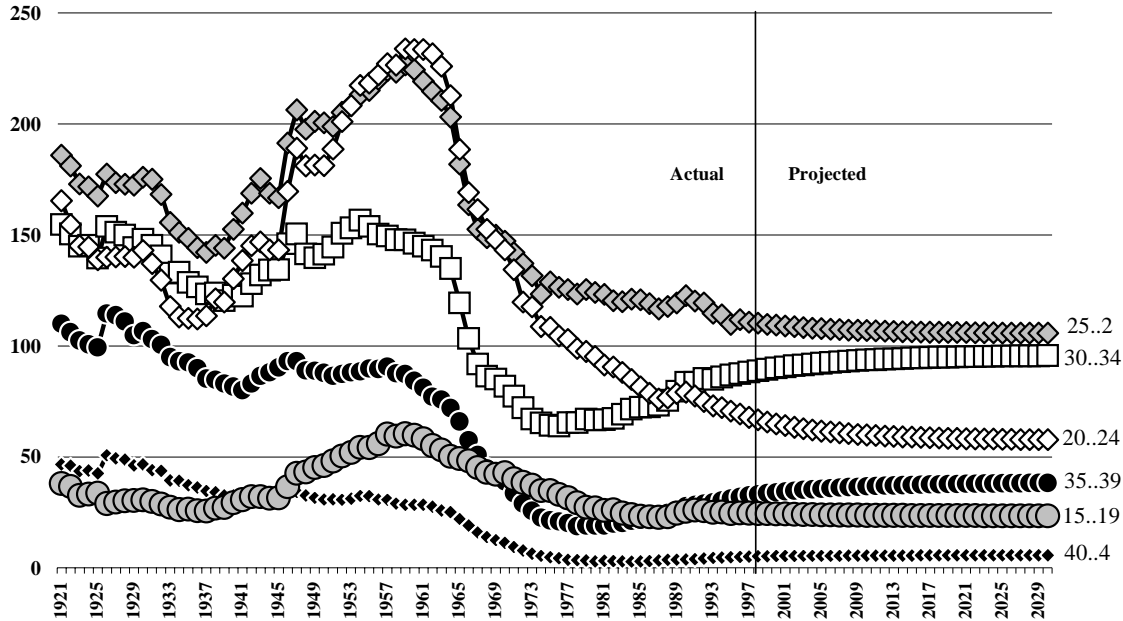


Figure 11: Age Specific Birth Rates, Canada, 1996



Age specific birth rates have changed dramatically over the past seventy-five years, almost doubling for all but the oldest age groups between the and post world war periods, and then dropping to below the pre war levels by the 1970s (Figure 12)^{ix}. Since 1977, there has been a reversal in the pattern of change in the 30 and older age groups, with the continuing declines in the younger age groups being matched by increasing rates in the older age groups. Thus, the typical woman giving birth in Canada is now in the 30 to 34 age group, rather than the 20 to 24 age group of the 1960s. Continuing the trends of the past twenty years will result in a stabilization of age specific birth rates within the next decade or so, with the rates for women in the 30 to 34 age group having the highest age specific birth rates of all age groups. These trended birth rates are used in the population projection presented in this report.

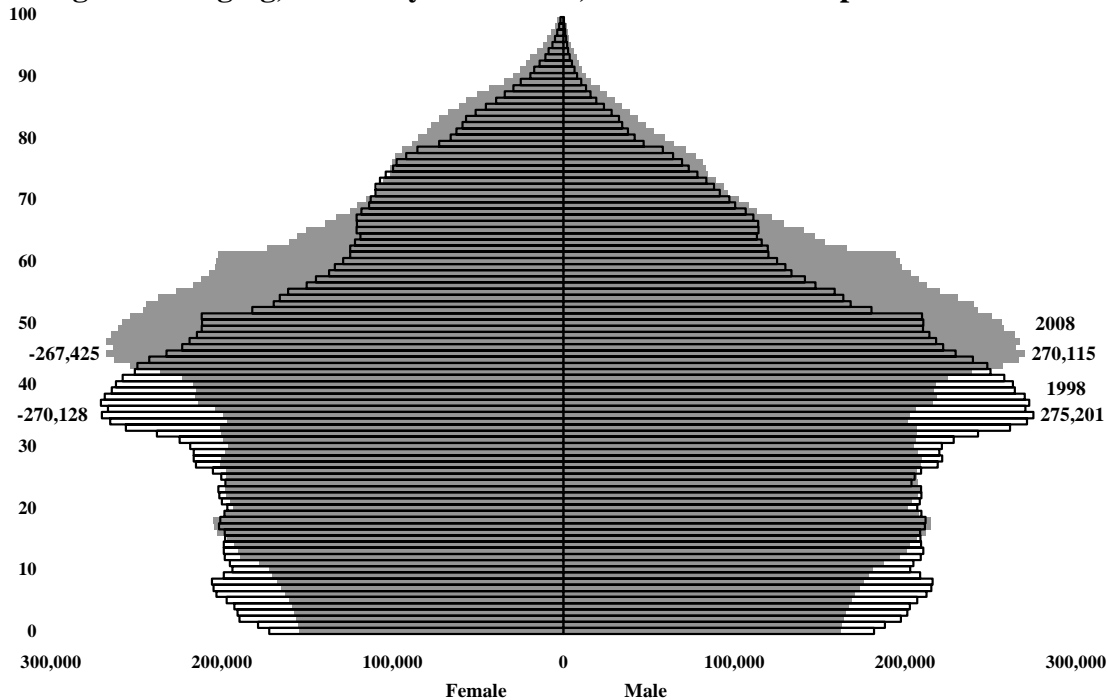
Figure 12: Canada, Age Specific Birth Rates, 1921 to 2021
(Number of Births Per Year Per 100 Women in Age Groups)



There is one other factor about births that must be considered in population projection: the proportion of the births in a particular year that are male and female, as this will have an impact on the future gender composition of the population. In 1996, of a total of 372,300 births, 48.7%, (181,300) were females and 51.3% (191,000) were males: this rate is has remained essentially constant over the past quarter century, and is assumed to be constant during the projection period.

Ageing, survivorship and the trended birth and death rates can be applied to the 1998 population profile to show how these processes would affect the size and composition of the country's future population (Figure 13). Over the 1998 to 2008 period, in the absence of migration^x, there would be 3,325,858 births (1,704,699 males and 1,621,154 females). These new additions to the population would be between 0 and 9 years of age in 2008, and would be the only people in the age group. However, in the absence of migration, there would only be 3,297,266 people in Canada under the age of 10 in 2008. The difference of 28,592 people is explained by the mortality rates of children under the age of 10.

Figure 13: Aging, Mortality and Births, Canada's 1998 Population to 2008



Natural Increase

Traditionally, consideration of the processes of aging, births and deaths without migration has been used to show the change in a population due to "natural processes" (as was done in the previous section). The resultant change was referred to as "natural increase", and (unless one believes that the movie Men In Black was a documentary) would capture all of the forces that shape the population of the world. At any smaller geographic level, migration of people (which given the nomadic nature of people is as natural as births and deaths) must also be accounted for.

Starting with the age and sex characteristics of Canada's population today, and the assumption of trended age and sex specific birth and death rates, natural increase alone (no international migration) would result in a slowing of the growth of, and ultimately a decline in, the country's population over the next 20 years (Figure 14). With the bulk of the country's baby boom generation in the 30 to 40 age group, natural increase alone would result in the population growing from its current 30,300,300 persons to a peak of 31,394,100 in 2018. From that year on, the population of the country

would decline, reaching 29,304,200 in 2040. With Canada's current below replacement level birth rates, in the absence of net international migration to the country, its population will continue every year thereafter.

The reason for the decline is, effectively, the aging of the country's 1998 population. This is clearly shown in the dependency ratio (Figure 15). In 1998, there were 181 people 65 and older, and 291 people under the age of 15, for every 1000 people of working age in Canada. Natural increase alone would result in the number of elderly people increasing to 477 per 1000 of working age (a 164% increase) by 2040, and the number of young people per 1000 people of working age declining to 226 (a 19% decline), by 2040.

The total dependency ratio would drop from 472 per 1000 in 1998 to 442 in 2009, then climb to 640 per 1000 by 2028. Beyond 2030, no international migration would mean that the elderly dependency ratio would continue to increase: the youth dependency ratio, however, would stabilize as the below replacement level of births would become the sole determinant of the relationship between the population under the age of 15 and the working age populations (15 to 65). By 2040, the overall dependency ratio would be 702 per 1000 people of working age.

Figure 14: Canada's Population, 1971 to 2040, Assuming No International Migration

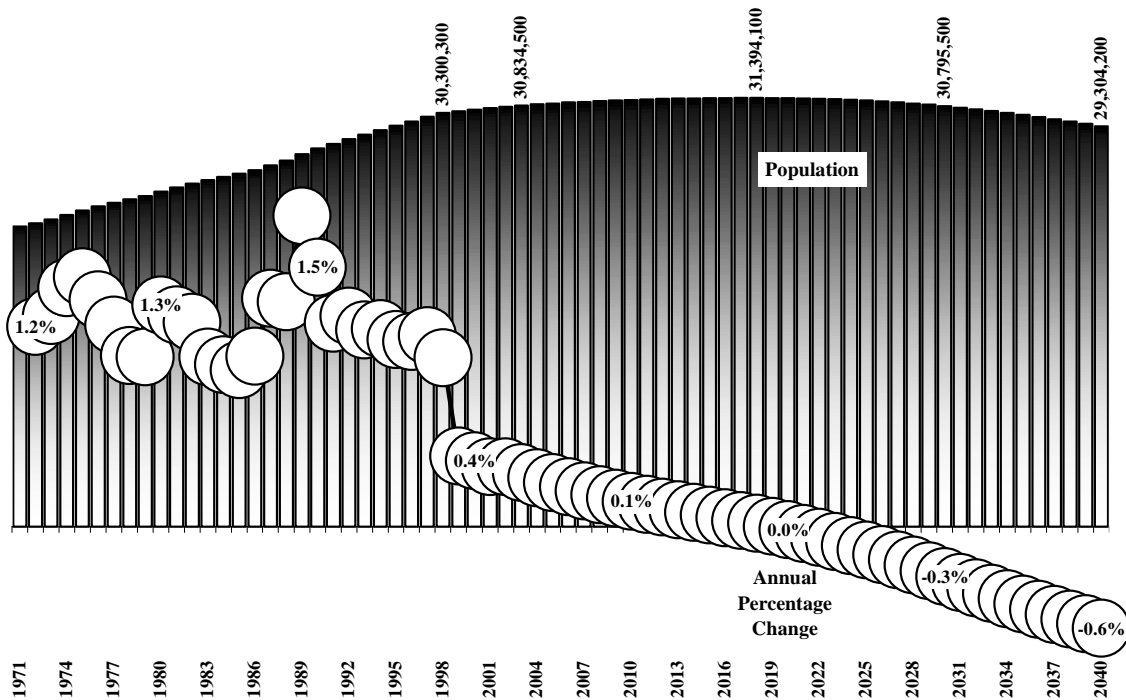
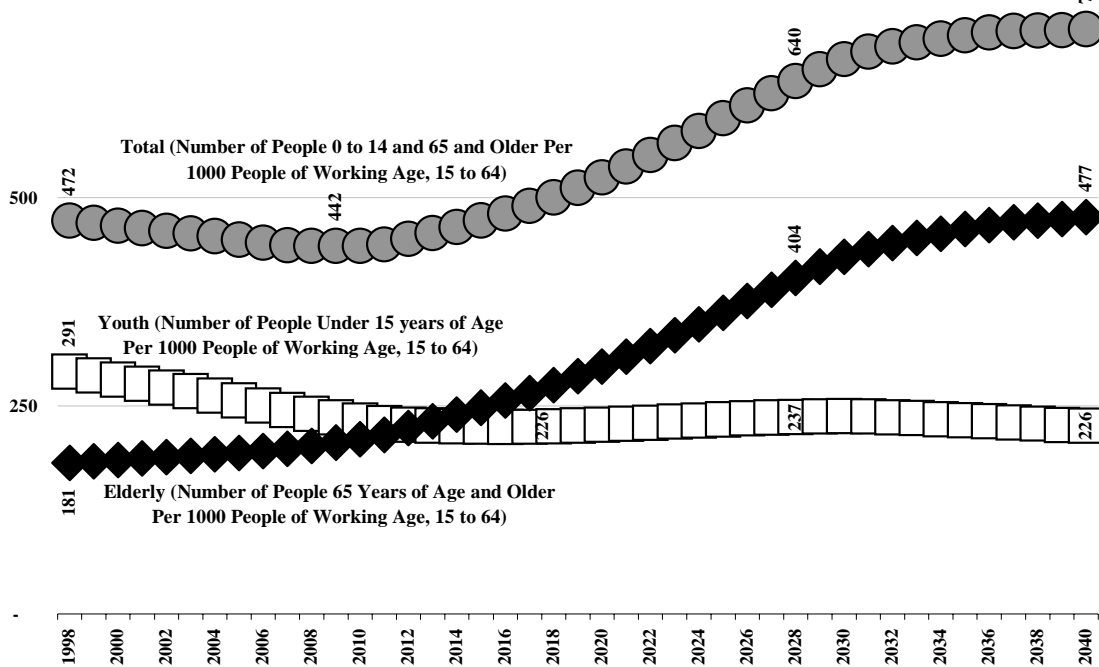


Figure 15: Projected Dependency Ratios, No International Migration, Canada, 1998 to 2040



Natural increase alone would result in a 32% decline in the annual number of births (from 355,290 in 1998 to 242,481 in 2040, Figure 16) as many of the women in today's population will age out of childbearing over the coming four decades. At the same time, the population as a whole will age into the older, high mortality age groups. As a result, the number of deaths each year would increase significantly, from 217,860 in 1998 to 424,654 in 2040. This 95% increase in the annual number of deaths, compared to a 32% decline in the annual number of births, means that net natural increase would decline from 137,430 in 1998 to -182,172 (deaths exceeding births) in 2040.

Figure 16: Natural Increase, Canada, Assuming No International Migration, 1972 to 2040



The annual number of deaths would continue to increase, and the number of births would decrease, until after 2050 (when almost all of the baby boomers have died). After this date, the annual number of deaths would start to decline while the annual number of births would continue to decline, resulting in a slowing of the rate of population decline. It would not, however, stop the overall decline, as birth rates in Canada are below the replacement level.

Without migration Canada's population would age rapidly (the increasing elderly dependency ratio). The number of people in the country would increase very little (and at a declining rate) until 2018, at which point the annual number of deaths would exceed the annual number of births and the country's population would start to decline.

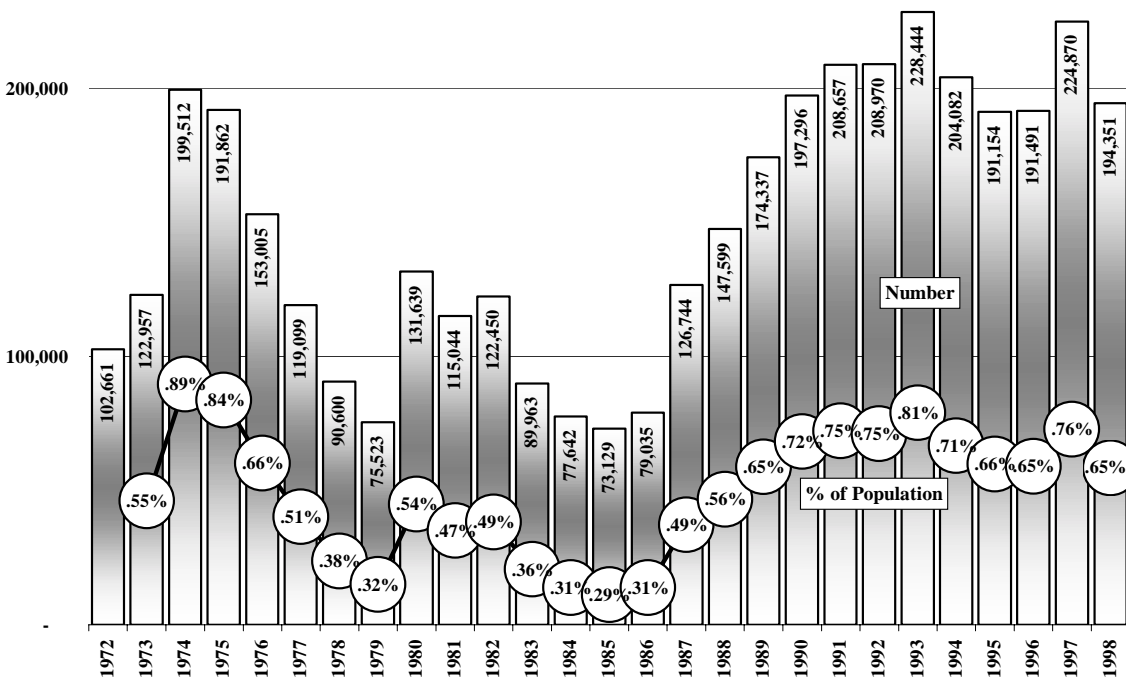
This is exactly the situation that Japan is facing today: without immigration and with a below the replacing level birth rate, Japan's population will decline by 20% over the next half century, and its elderly dependency ratio will increase from 190 people 65 and older today to 460 people 65 and older per 1000 people of working age in 2025, and 590 per 1000 in 2050^{xi}.

International Migration

Canada's international migration is comprised of people previously residing in other countries taking up residency in the country (immigrants, arriving non-permanent residents, and returning Canadians), and of Canadians moving to take up residency in other countries (emigration, which in turn affects the number of Canadians who may return to the country after having been residents of other countries, and departing non-permanent residents).

The first, and largest, of the four components of international migration is immigration^{xii}, people moving to Canada to become Canadian citizens. Immigration varies from year to year (Figure 17). Part of this variance is determined by economics (witness its relatively low level during the recession of the 1980s and since in the onset of the Asian economic crisis). Part of the variance is affected by factors other than economics (for example, changes in immigration regulation). Over the past 25 years, immigration to Canada has ranged from a low of 73,000 (1985) to a high of 228,444 (1993). In 1997/1998, immigration brought 194,351 people to Canada.

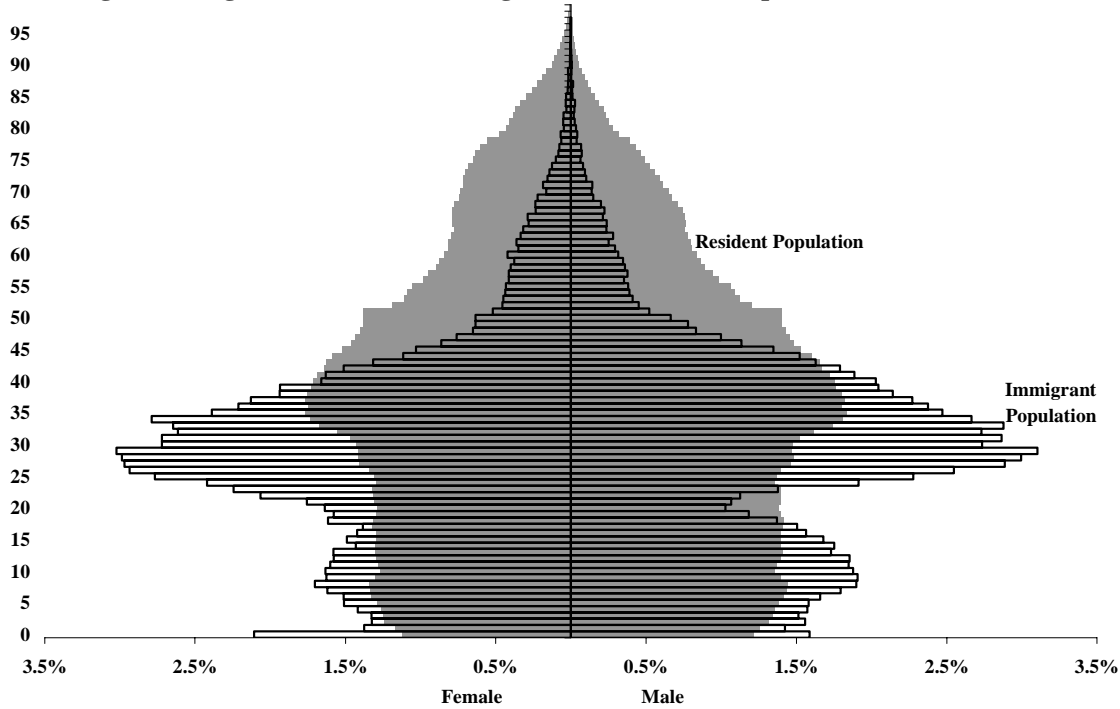
Figure 17: Immigration to Canada, 1972 to 1998



As with all migrant groups, the age profile of the immigrant population is younger than that of the resident population (Figure 18)^{xiii}. Over 31% of the immigrants to Canada in 1997-1998 were between the ages of 18 and 31 (compared to less than 20% of the residents). The under 5 age group accounts for approximately 8% of the immigrant population and 6% of residents. 21% of immigrants are in the 5 to 17 age group, whereas 18% of the resident population is in this range. The 32 and older population is under represented in the immigrant population (40%) compared to the resident population (57%), with the 60 and older population accounting for a significantly smaller share of the immigrant population (4%) compared to the resident population (16%).

The fact that the age profiles of migrant populations are significantly younger than that of the resident population emphasizes the fact that changing regions of residence, whether within a country or between countries, is a challenging and difficult process. As a result, it is most often entered into by young adults, who are generally more adventuresome and are often required to be if they are going to find work and establish careers.^{xiv}

Figure 18: Age Distribution of Immigrant and Resident Populations, Canada, 1998



The counter flow to immigration is emigration, people leaving Canada to take up residence in other countries. This second most significant component of Canada's international migration flow has in some years taken away almost three quarters as many people as immigration brought. The emigrant population includes a wide diversity of people, including, as examples, those leaving Canada to be students in foreign universities, to work overseas (the "brain drain") or to play for the Anaheim Mighty Ducks. It includes people leaving with the intention of returning (and hence may show up as returning Canadians, unless they decide not to come back) as well as those with the intention of permanently emigrating (who may change their minds and become returning Canadians).

In 1998, 49,696 people emigrated from Canada. Since 1972, each year an average of 58,703 people have left Canada to live in other countries (Figure 19), with the annual number of emigrants varying somewhat, from a high of 90,391 in 1974 to a low of 40,873 in 1990. As a general description, immigration was highest in the 1970s, declining in the 1980s, and stabilizing in the 46,000 to 53,000 range in the 1990s. The pattern also demonstrates that much more than the national economy affects emigration, as regardless of national economic conditions at least 40,000 people have emigrated from Canada every year since 1972.

The rate of emigration (the annual number of emigrants expressed as a percentage of Canada's population) has generally dropped since the 1970s. In the mid 1970s, there were 40 emigrants per 10,000 residents, with the rate dropping to 25 emigrants per 10,000 residents in the 1980s. During the 1990s the emigration rate has averaged 0.17% (17 emigrants per 10,000 people resident in the country).

The age composition of the emigrant population, while younger than the resident population, is older than the immigrant population. 28% of the emigrant population is between the ages of 18 and 31, compared to the 20% for the resident, and 31% for the immigrant, populations (Figure 20). The younger and older populations are under-represented in the emigration stream: 22% of the emigrants under the age of 18 (24% of the resident and 29% of the immigrant populations), and 50% of the emigrants are 32 and older (40% in the immigrant, and 57% in the resident populations). The percentage share of every age 48 and older in the resident population exceeds that of the emigrant population.

Figure 19: Emigration from Canada, 1972 to 1998

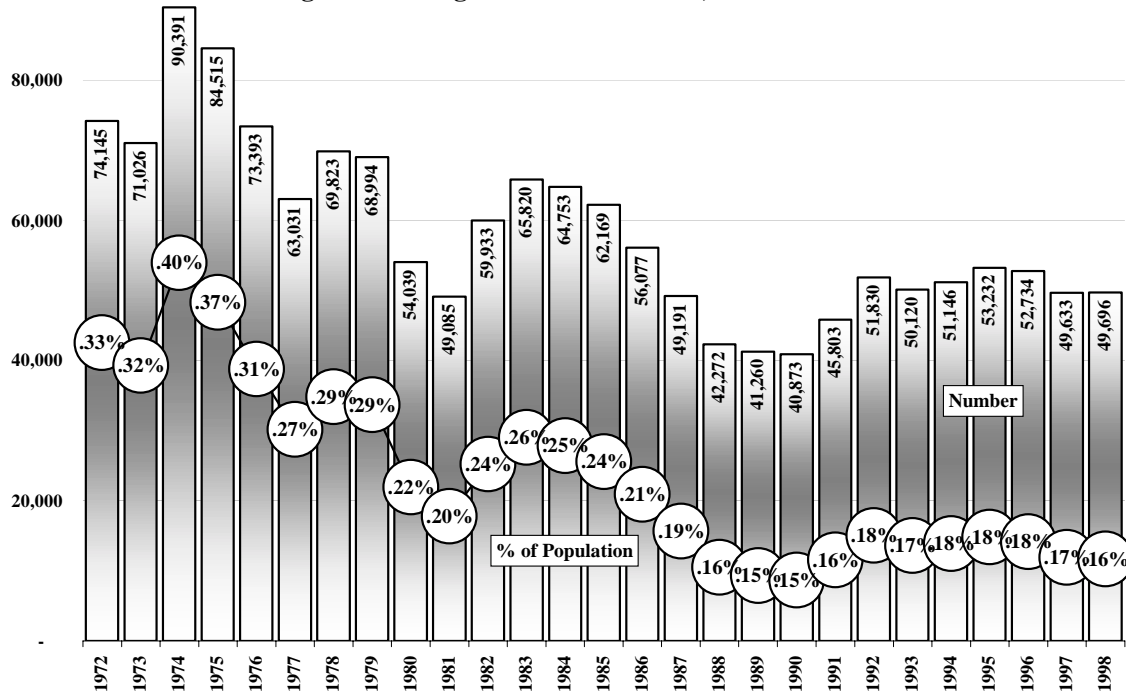
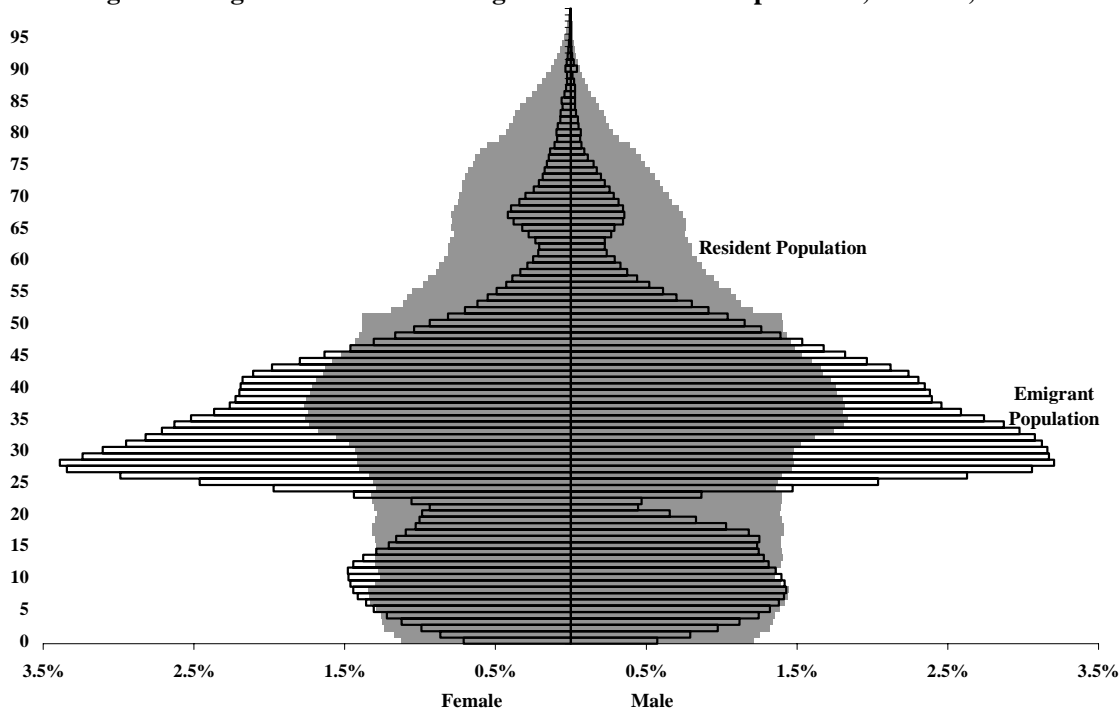


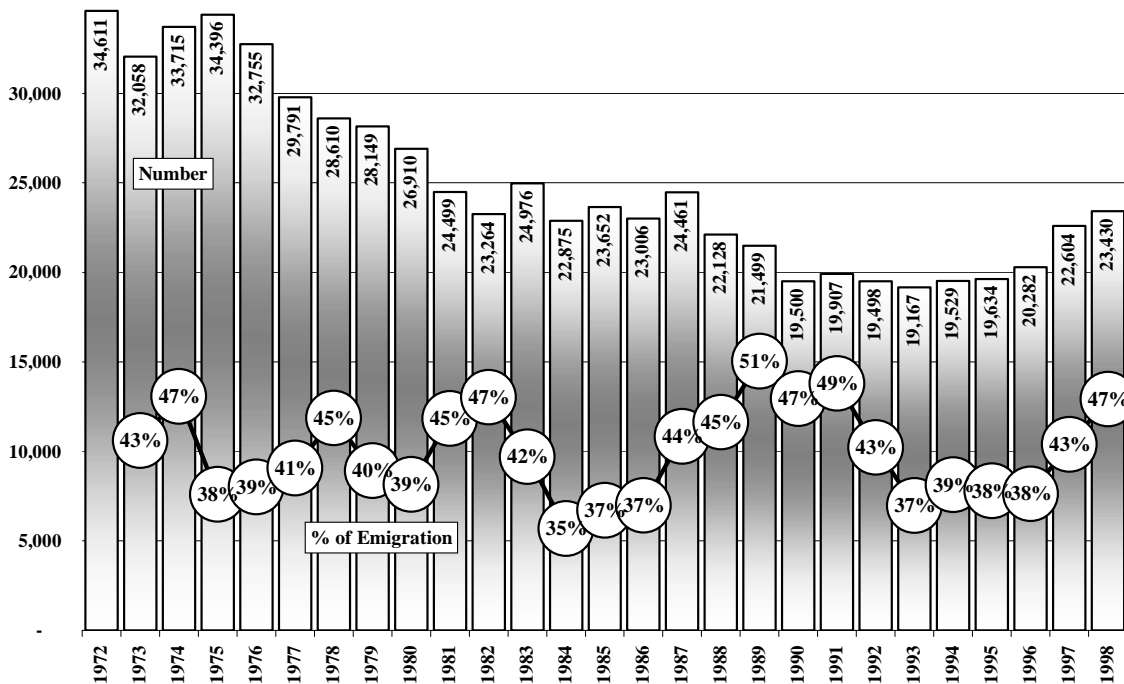
Figure 20: Age Distribution of Emigrant and Resident Populations, Canada, 1998



Much of the emigration from Canada is, intentionally or unintentionally, not permanent. The return of Canadians is dependent upon previous emigration: the question is how long is the lag between emigration and return. In many cases, it is as short as a year; for example, graduate students finishing their courses abroad and returning home. In other cases the lag is much longer; for example, Canadian expatriate professors may be away from the country for decades. In the extreme, we may ask if Gretzky will ever come home?

The flow of Canadian citizens returning from places of residence in other countries to reside in Canada over the 1972 to 1998 period added an average of 24,996 people per year to the country's population (Figure 20). There is not a great deal of variance to this return flow of people into the country, nor is it particularly correlated with economic conditions in the country: it has ranged from a high of 34,611 people added in 1972 to a low of 19,167 in 1993, with 1998's 23,430 being 32% lower than the 25-year average. The only general pattern to the return of Canadians has been (as with emigration) a general decline from the 34,600 per year range in the 1970s to the 19,000 range in the 1990s. Since 1990, the number of returning Canadians has averaged 42% of the previous year's emigration. There has been a range from a low of 37% in 1993 to a high of 49% of the previous year's emigration in 1991 (Figure 21).

Figure 21: Canadians Returning to Canada, 1972 to 1998



Young adults (18 to 31) account for a much greater share of the returning Canadian population (39%) than they do of the emigrant (28%) and resident populations (20%, Figure 22). Over the past five years, 41% of the returning Canadian population was over the age of 31, compared to 50% of the emigrant, and 57% of the resident population. The youngest age groups are also under-represented in returning Canadians compared to residents: only 18% of the returning Canadians are under the age of 17, compared to 24% of residents. Children under the age of 5 account for approximately the same (5%) of the returning Canadian and emigrant populations.

The final, and numerically least significant, component of the international migration flow is the change in the number of people who reside in, but are not permanent residents of, the country. Such residents are primarily foreign students at Universities, colleges and schools, consular and embassy officials, and temporary permit workers such as nannies and domestic assistants. Separate data are not published on the number and characteristics of non-permanent residents arriving and leaving the country: the only data is on the net change in the population of non-permanent residents. As with international migration, this net change demonstrates a significant level of variance, particularly over the last 15 years (Figure 23).

Figure 22: Age Distribution of Returning Canadian and Resident Populations, Canada
(5-year average, 1993 to 1998)

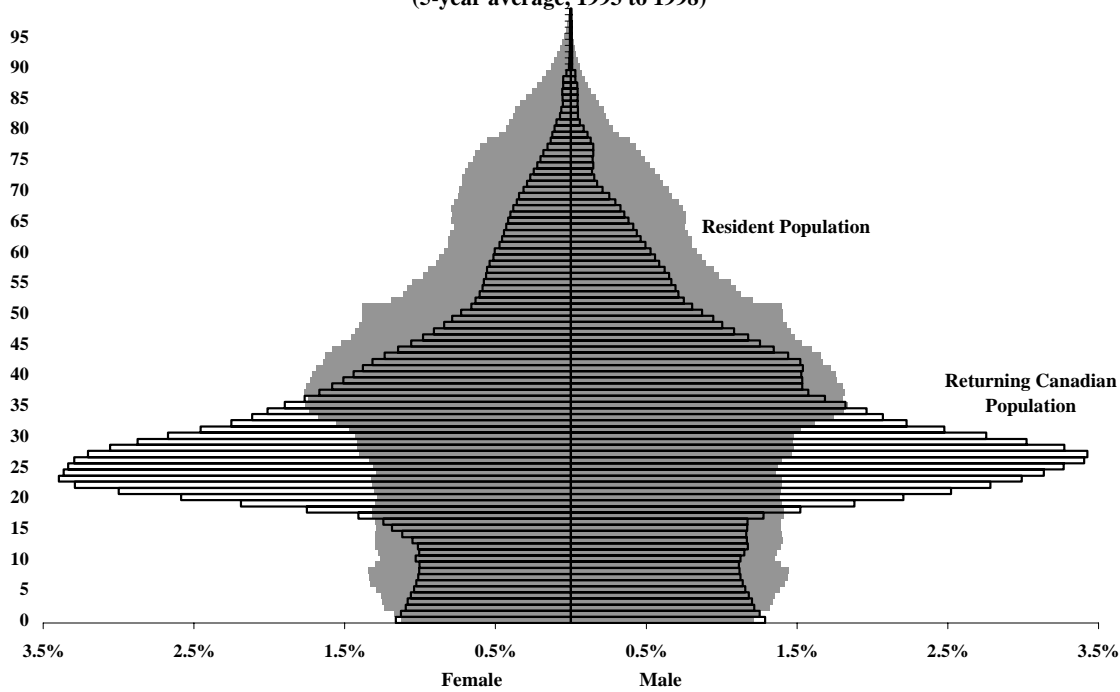
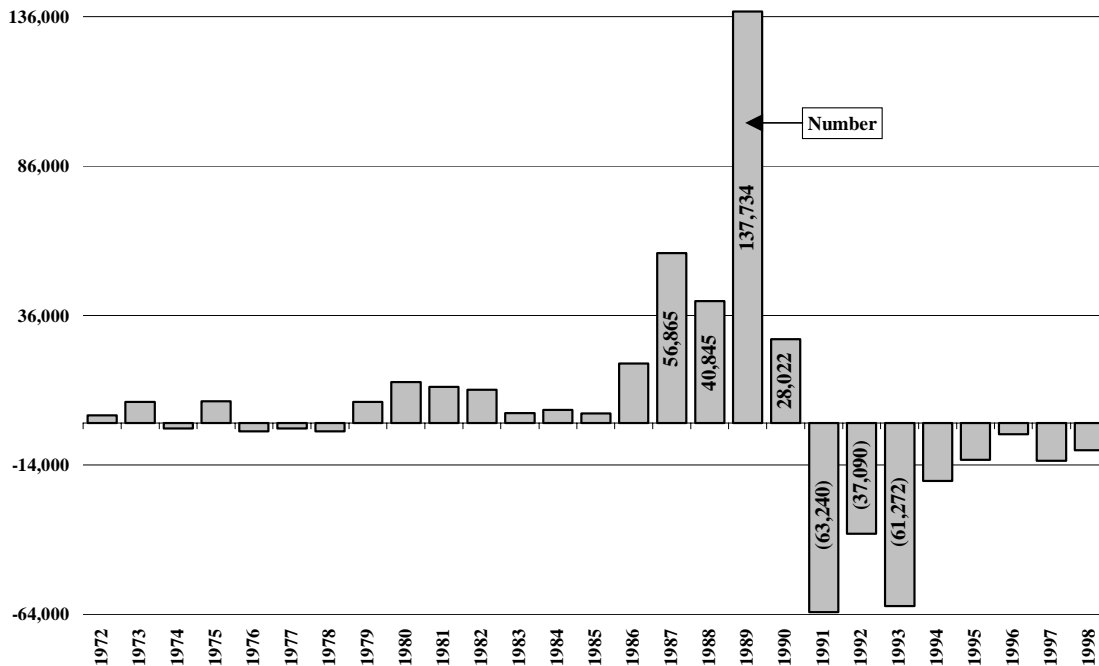


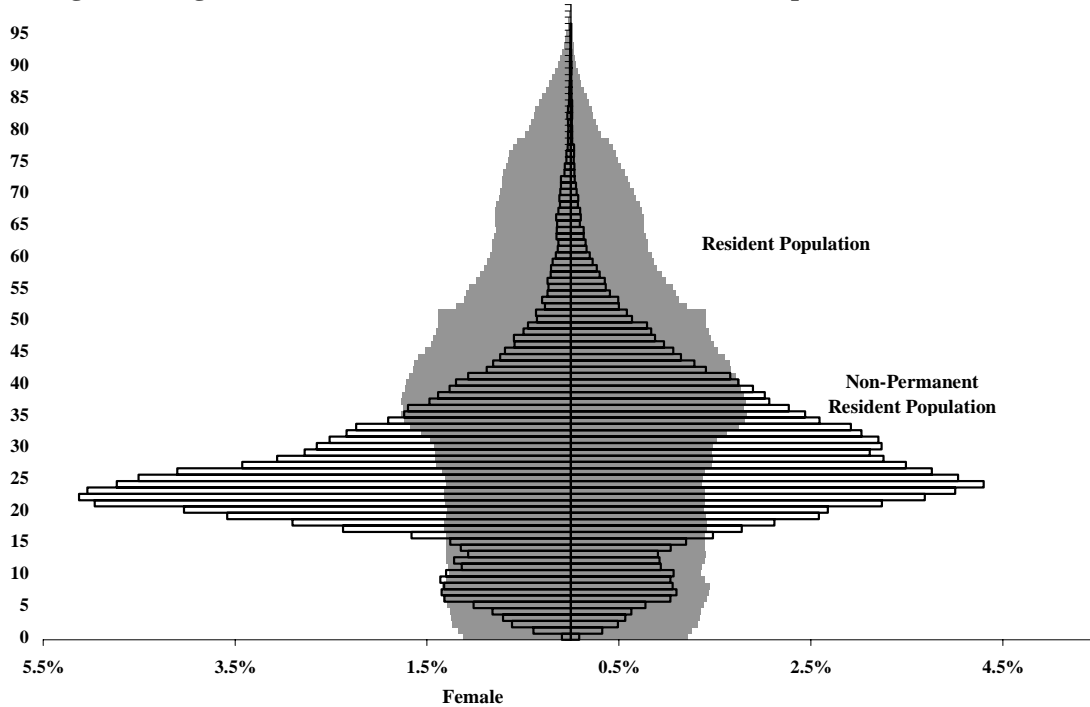
Figure 23: Annual Change in Number of Non Permanent Residents in Canada, 1972 to 1998



Since 1972, the number of non-permanent residents living in Canada has increased by an average of 4,740 people per year. The largest increase in the non-permanent resident population occurred in 1989, when 137,734 more non-permanent residents came to Canada than left it. By 1991, the reverse situation prevailed, with 63,240 more non-permanent residents leaving the country than came to it. After increasing throughout the 1980s, the number of non-permanent residents in the country has dropped every year since 1991: in 1998, 9,048 more non-permanent residents left Canada than came to it.

The age profile of non-permanent residents was decidedly young adults (Figure 24): 50% were in the 18 to 31 age group, compared to 20% of the resident population. Only 18% were under the age of 18, compared to 24% of the resident population, and only 32% were over the age of 31, compared to 57% of the resident population.

Figure 24: Age Distribution of Non-Permanent and Resident Populations, Canada, 1998



In summary, the relative importance of the sources of population growth recently have differed from the 1972 to 1998 pattern. In 1997/1998, the major source (54%) of growth was net international migration: of a total population increase of 296,500 people, net international migration added 159,037 people (194,351 immigrants plus 23,430 returning Canadians, minus 9,048 non-permanent residents and 49,696 emigrants). Natural increase added a further 137,430 people (355,290 births minus 217,860 deaths).

This contrasts slightly to the 1972 to 1998 pattern: over this period, the country's population increased by an average of 308,827 people per year. The major source of growth, accounting for 51% of the total, was natural increase, which added an average of 188,086 people per year. Net international migration, which contributed an average of 149,708 persons per year, accounted for 49% of the growth. With an aging population leading to a reduction in the annual number of births and an increase in the number of deaths, the relative role of natural increase in population growth will continue to decline.

Future Long Run Levels of Migratory Flows

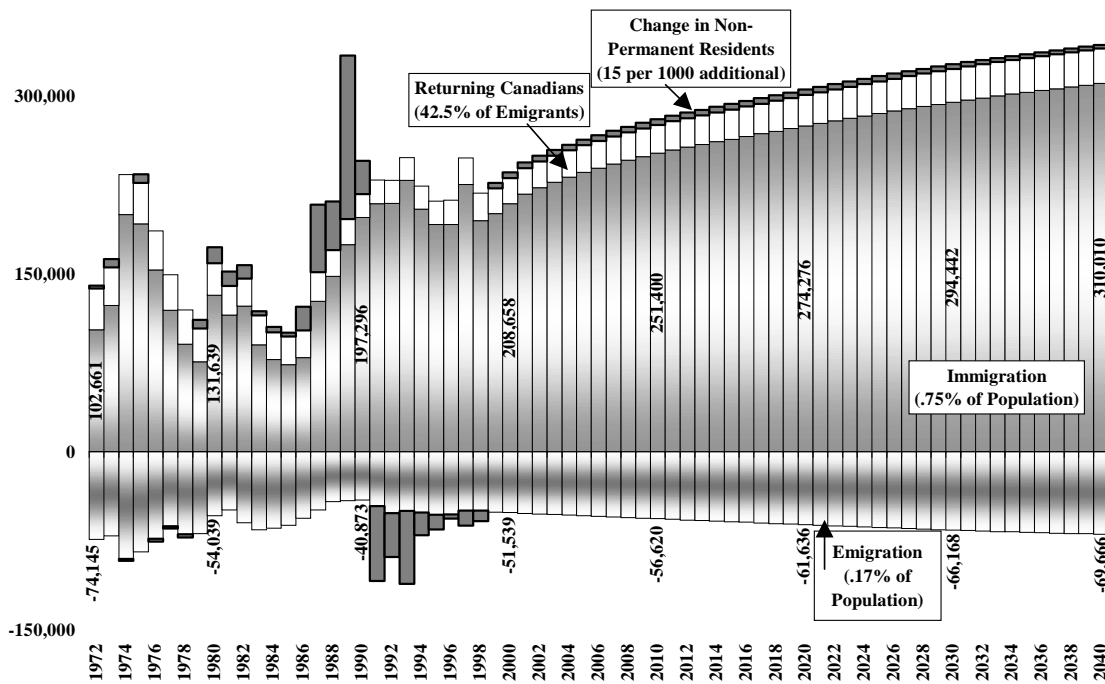
Given the wide and diverse range of factors that affect each of the components of migratory population flows, and the fact these factors are strongly influenced by both international and domestic conditions, it is not realistic to attempt to forecast all of the factors that will affect the movement of people in and out of the country. Rather, given the objective of producing a long run trend population projection, it is appropriate to use past levels as the base for assumption of what future levels may be.

For immigration and emigration, the large number of people arriving and departing each year permits a calculation of age and sex profiles that are not largely affected by single-year anomalies. While there will

certainly be variance in the age profile of migrant populations from year to year, the 1998 average profiles presented in the preceding section will generally represent the average age and gender composition of future migrant flows. For returning Canadians, the 5-year (1993 to 1998) average profile is used to reduce the effect of year to year changes that will show up in such a small population flow. The age profile of the change in non-permanent residents is assumed to be the same as the profile of the stock of non-permanent residents (that is, the age profile of non-permanent residents who lived in Canada in 1998).

The past also provides guidance for estimating the level of future migration. Given the historical fluctuations in the national and provincial economies and policies, future variation of growth will undoubtedly occur. While the timing of these variations cannot be predicted, given the current awareness of the need for diversification and increased competitiveness of the country's economy, it is highly unlikely that their magnitude will exceed that of the variations that the country experienced over the past quarter century. Thus, it can be assumed that the average levels of population flows into and out of the country that have prevailed in the past long run are an appropriate base for estimation of the future flows (Figure 25).

Figure 25: Components of International Migration, 1972 to 2040



The largest component of Canada's international population flow is immigration. Over the past decade immigration to Canada has ranged between 0.64% and 0.80% of the total population, with 1997's level at 0.75% and 1998's at 0.64%. The 1999 immigration target range was set at 200,000 to 225,000 persons, a range of 0.65% to 0.73% of 1998 population. For purposes of this projection, it is assumed that immigration to Canada over the next three decades will average 0.75% of the country's population. This rate is based on the level that prevailed this decade prior to the recent economic reversal in South East Asia and on the assumption that there will be increasing acknowledgement of the importance of immigration in reducing dependency ratios^{xv}.

The result of this assumption about national immigration is a projection of immigration to Canada increasing from 1998's 194,351 persons to reach the top of 1999's target range of 225,000 by 2003, the 275,000 level by 2021, and surpassing the 310,000 mark by 2040. This will represent an increase from 1998's 0.64% immigration rate to the long run 0.75% rate by 2011. The projected number of immigrants to Canada for 1999 is approximately 200,000.

Emigration, in turn, has averaged 0.17% of Canada's population over the last decade, and the number of returning Canadians (who must have been emigrants at some point in the past), has averaged 42.5% of the number of emigrants in the previous year. Assuming that these ratios continue to prevail in the future, emigration from Canada will increase from 1998's 49,700 to 69,700 by 2040, and the number of Canadians returning to take up residency again in the country each year will increase from 1998's 23,430 to 29,502 by 2040 (Figure 25).

Finally, over the past quarter century for every 1,000 additional people in Canada, there were 15 additional non-permanent residents. Assuming that this relationship continues, the number of non-permanent residents in the country will increase by an average of 4,750 per year until 2020, and then slow, as Canada's population growth slows, to about 2,500 per year by 2040.

The Projection: Forty-One Million People by 2040

The result of the aging of the country's current population, combined with the continuation of the demographic trends discussed in the preceding sections, is a continuous but slowing population growth over the next forty years (Figure 26, see Appendix for detailed projection). Canada's population in 1998 was 30,300,300 people. By 2014 it will have passed the 35 million mark, and by 2033 it will have passed the 40 million mark.

The country's projected population for 2010 is 33,917,300, for 2020 is 36,885,000, for 2030 is 39,522,200 people, and for 2040 is 41,542,700 people^{xvi}. The addition of 11,242,400 people (a 37% increase) to the country's population over the 42 year period from 1998 to 2040 (an average of 267,700 people per year), is slightly less than the 14,219,300 people added (a 110% increase) to the population in the 42 years from 1956 to 1998 (an average of 340,618 people per year).

The projection for annual growth in the 1999 to 2002 period is essentially the same 1.0% increase that occurred in 1998, then a gradual decrease to 0.9% by 2006. Even with the assumption of increasing net immigration, the annual population growth rate will continue to decline. This will be the result of the increase in the annual number of deaths reducing the contribution of natural increase to population growth from 137,430 additional persons in 1998 to 76,700 in 2010, 1,000 in 2027 and turning negative after 2028 (Figure 27). By 2040, even with net immigration of young people, there will be a natural decrease, rather than increase, with the number of deaths outpacing the number of births (388,455) by almost 100,000 per year.

As the Baby Boom has aged, the number of births in Canada has decreased from 403,100 in 1990 to 355,300 in 1998. Births are projected to continue to decrease until 2003, when they will reach 346,920, the lowest number since 1974. Given the youthful profile of the international immigration flows, the number of births in the country will then increase from 356,000 births in 2009 to 380,000 in 2020 and 388,500 by 2040.

Figure 26: Canada's Population, 1971 to 1998 Projected to 2040

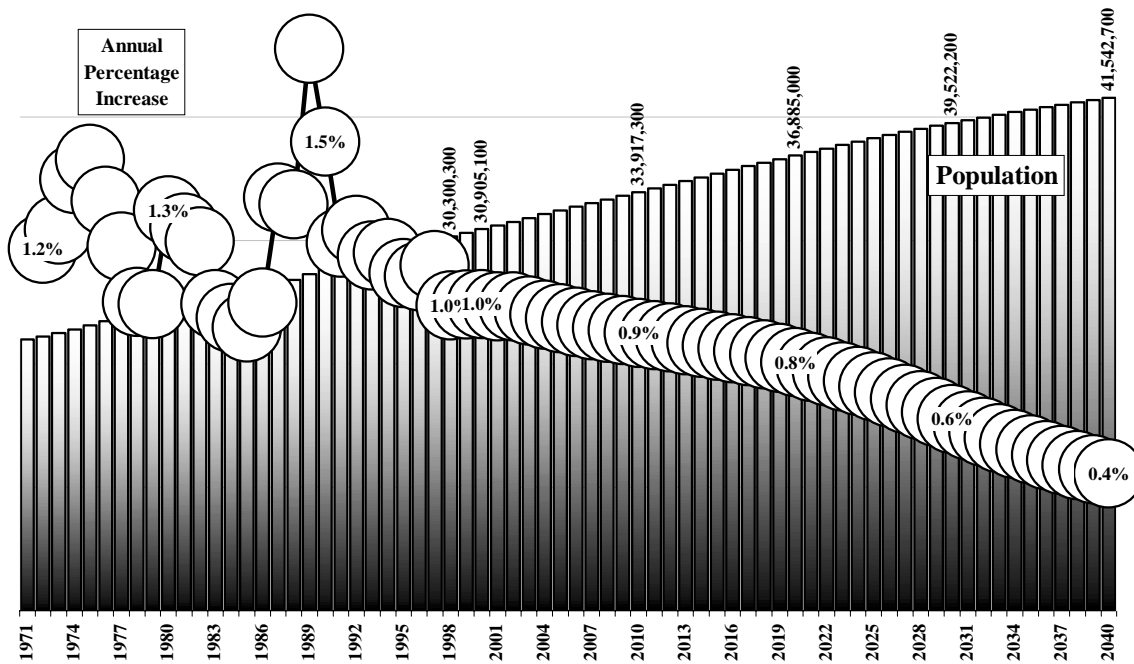
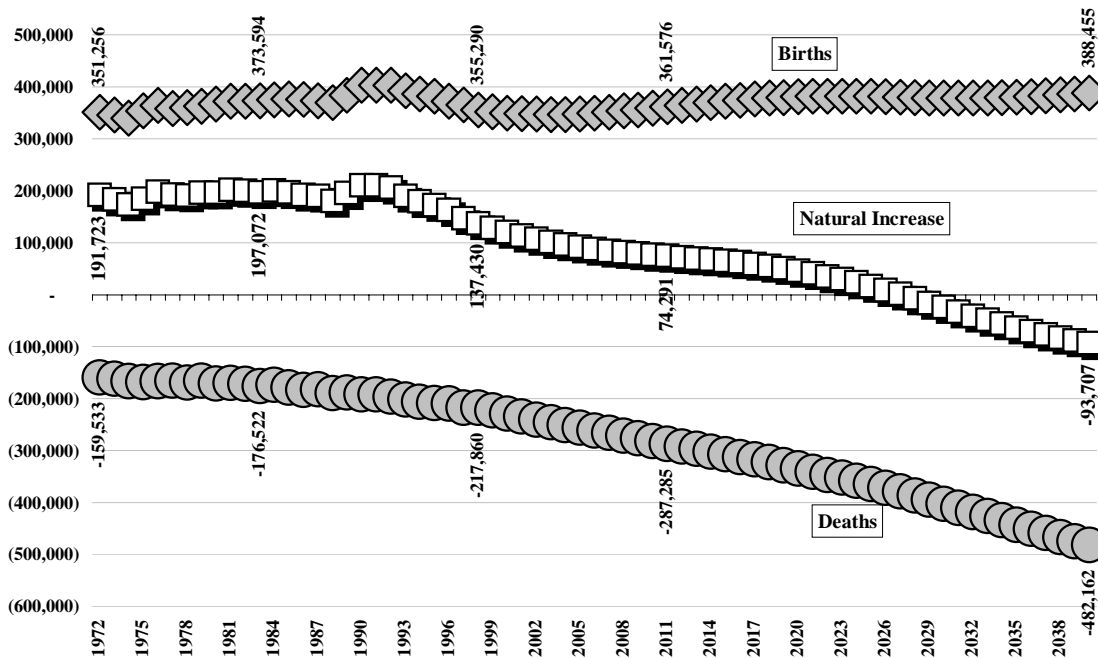


Figure 27: Natural Increase, Canada, 1972 to 2040



In spite of this growth in the annual number of births, increases in the number of deaths due to the aging of Canada's population will slow the contribution of natural increase to population growth, particularly after 2020. The number of deaths will increase steadily every year in the future, from 1998's 217,860 deaths to 287,300 in 2011, 402,700 in 2030, and 482,200 in 2040.

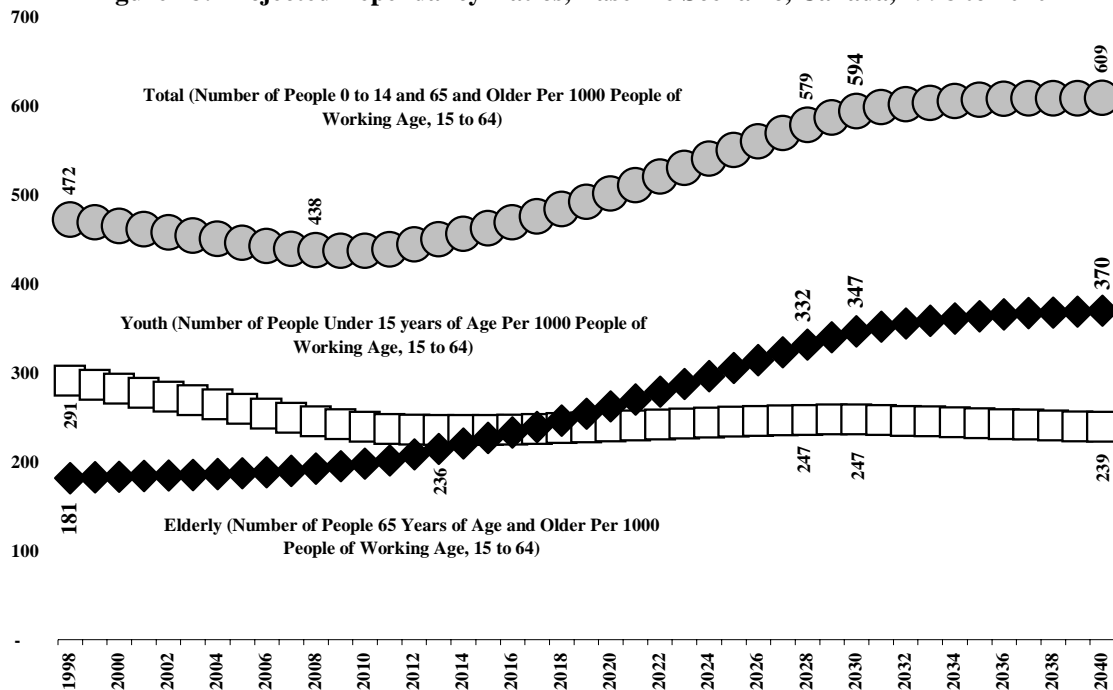
Note that population growth, which in Canada is overwhelmingly comprised of young immigrants and the newly born, does not contribute much to the annual number of deaths in the country: without

immigration, the aging of the country's current population would result in 424,700 deaths in 2040 (compare Figure 27 to Figure 16), 88% of the 482,200 that will occur with immigration. Immigration has a much greater impact on the number of births in the country: without immigration, the number of births in 2040 would be 282,500, only 73% of the 388,500 births that will occur with immigration.

The greater impact of international migration on births, combined with the relatively young age profile of the net migrant population, means that the dependency ratio will be much lower with international migration than without it (compare Figure 28 to Figure 15). The trend projection will result in a youth dependency ratio of 239 people under the age of 15 for every 1000 people of working age in Canada in 2040, not significantly (6%) different from the 226 per 1000 that would occur without international migration.

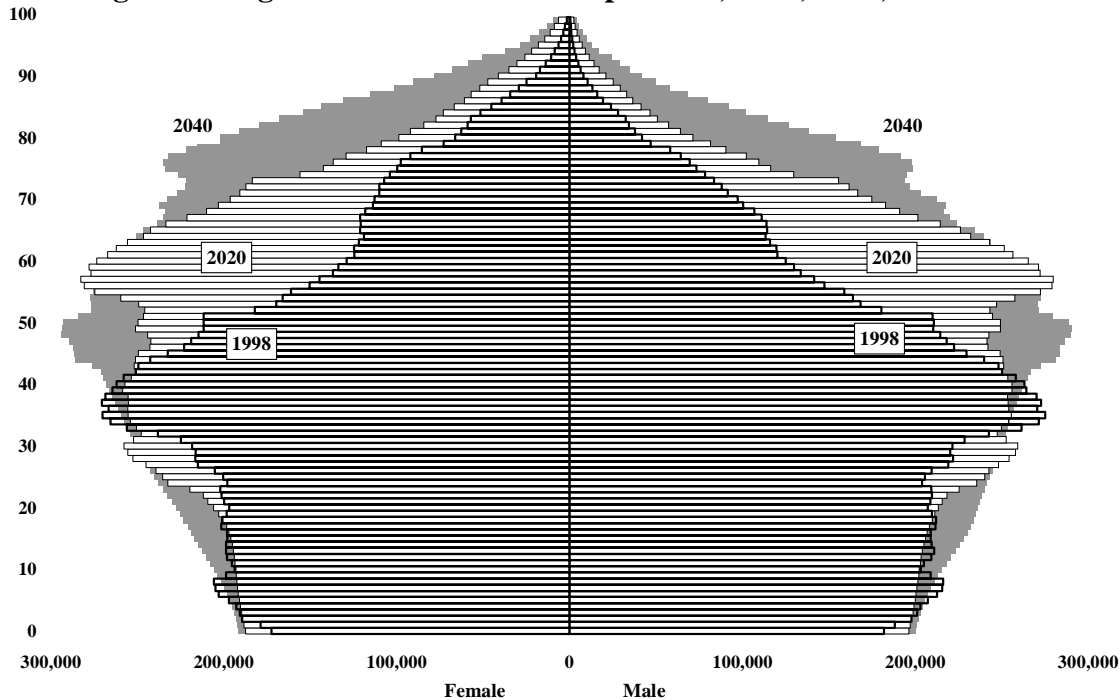
In contrast, the elderly dependency ratio with natural increase alone of 477 people 65 and older per 1000 people of working age in 2040 is 29% higher than the 370 persons 65 and older per 1000 person of working age in 2040 that will result from the trend projection. The direct and indirect impact of international migration on the age structure of Canada's population is to significantly reduce the relative number of people supported, to one extent or another, by the working population: immigration makes the country's population both larger and younger.

Figure 28: Projected Dependency Ratios, Baseline Scenario, Canada, 1998 to 2040



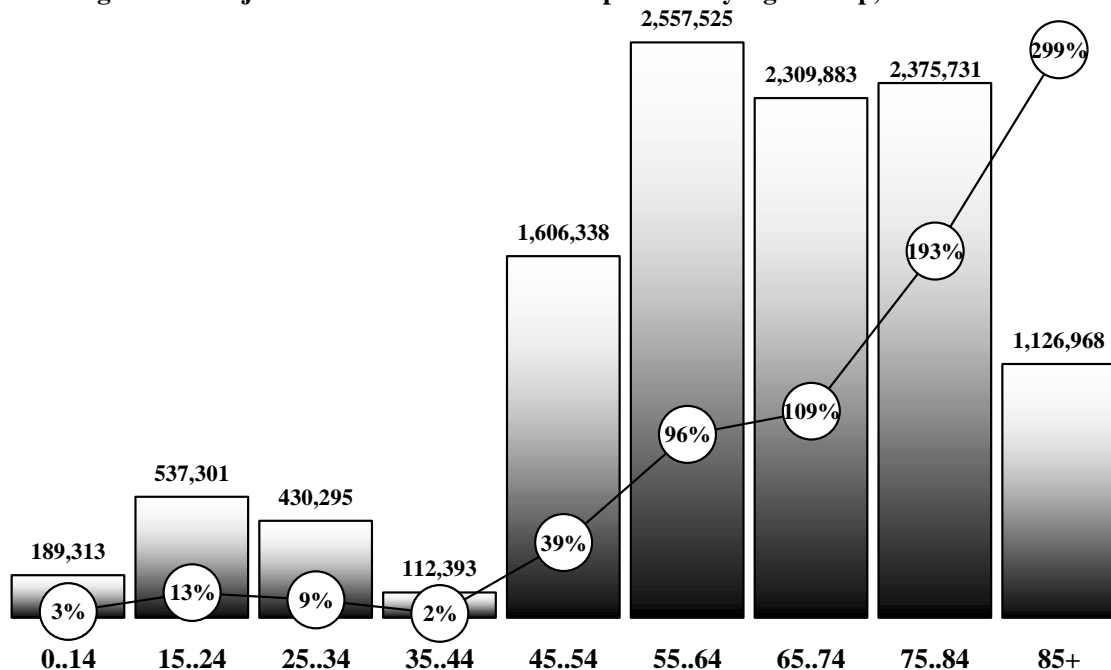
While international migration will slow the aging of the Canada's population, it will not stop it. Aging of 1998's population is clearly shown in a comparison of the 1998, 2020 and 2040 age profiles (Figure 29). Aging will ensure that today's 32 to 51 year-old (the baby boom bulge) will be replicated in the 54 to 73 population in 2020, albeit at a slightly reduced scale due to mortality. The typical person of 1998 (a 35 year old) will be the typical person in 2020 (a 57 year-old). By 2040, the baby boomers will be between 75 and 94 years of age, and will have essentially reached the top, and the end, of the population tree.

Figure 29: Age Profile of Canada's Population, 1998, 2020, and 2040



The shifting up of the baby boom bulge into older age groups where there are currently relatively few people will mean that while the number of people in all age groups will increase, the 45 and older age groups will experience above average increases over the 1998 to 2040 period (Figure 30). The biggest absolute increases, of between 2.3 and 2.6 million more people, will be in the 55 to 64, 65 to 74, and 75 to 84 age groups.

Figure 30: Projected Increase in Canada's Population by Age Group, 1998 to 2040

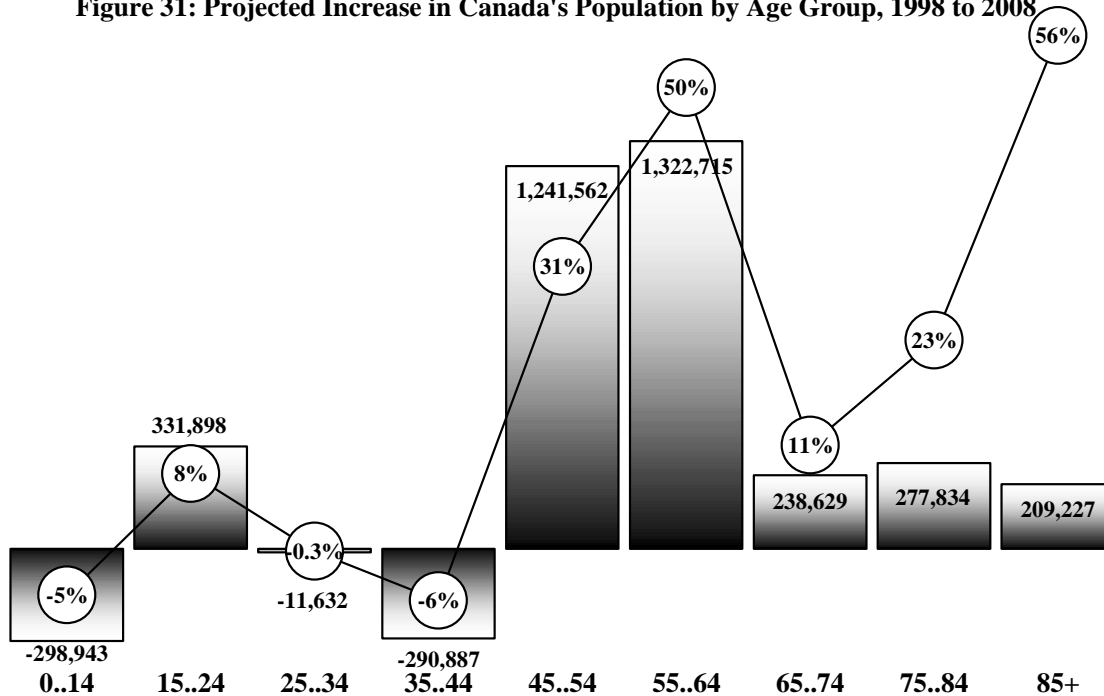


This will double the number of 55 to 64 and 65 to 74 year-olds (96% and 109% increases respectively) in Canada. Aging will increase the number of 75 to 84 year-olds by 193%, with there being almost 3 people

in this age group in 2040 for every one there is today. The largest percentage increase, however, will be the fourfold (299% or 1,126,968 person) increase of the 85 and older age group - the result of the aging of the front edge of the baby boom into this age group. The number of people in the under 45 age groups will increase, as the result of immigration and births, by between the 35 to 44 age group's 112,393 (2.2%) increase, and the 537,301 person (13%) increase of the 15 to 24 age group.

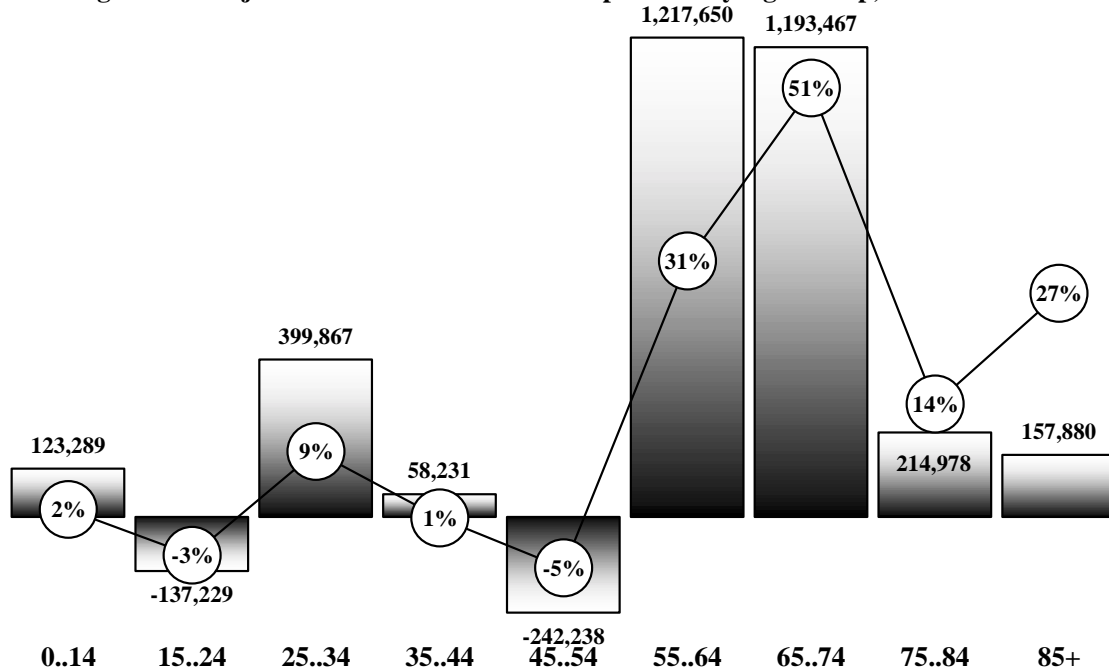
Over the next decade (Figure 31), the greatest absolute growth will be the adding of 1,242,000 more people (31%) to the 45 to 54 age group (the result of the aging of the tail end of the baby boom) and of 1,323,000 people (50%) to the 55 to 64 age group (the aging of the front end of the baby boom). Even with immigration, the 35 to 44 age group will decline by almost 300,000 people (-6%), as there will not be enough entrants to this age group (through aging or immigration) to replace the boomers. Some authors have misrepresented the implications of this decline, claiming that it will cause a "meltdown" of the housing market. The fact that there are not enough people following the baby boomers to "replace them" in the housing market is not relevant if the boomers do not need to be replaced. As the growth of the 45 and older age group shows, the boomers are going to be in their homes a lot longer. The generation following the baby boom will bring about a net increase in housing demand because their parents will remain in the house after the kids move out so that the grandkids and great grand kids will be able to visit.

Figure 31: Projected Increase in Canada's Population by Age Group, 1998 to 2008



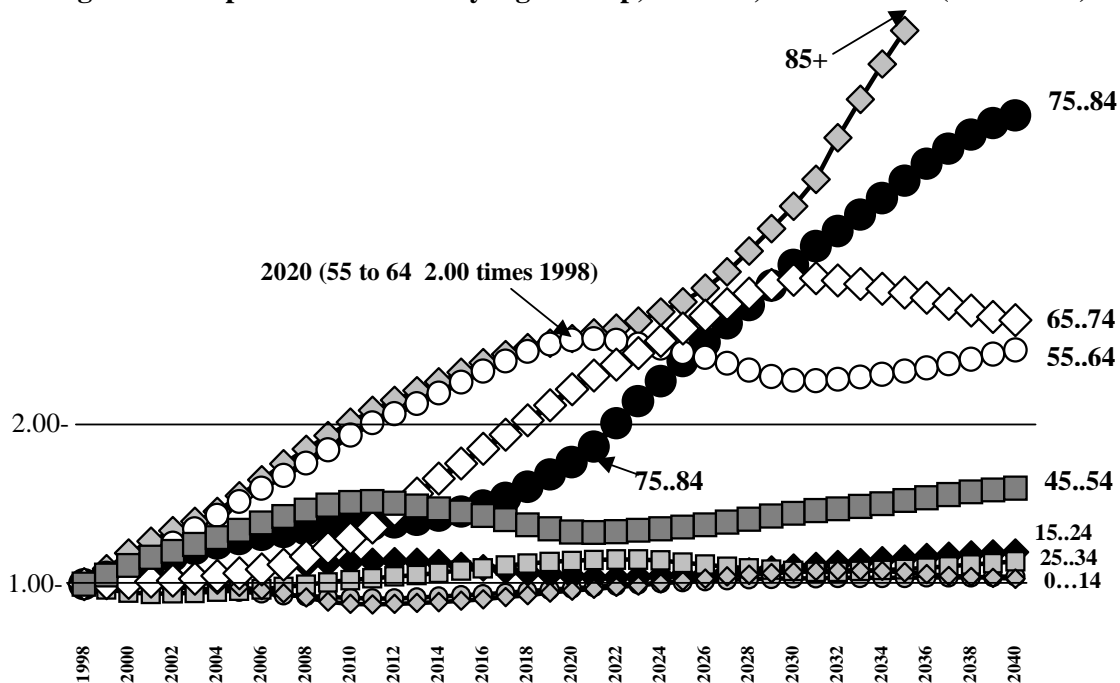
In the 2008 to 2018 decade, the high growth age groups will remain the most rapidly growing ones: the larger absolute increases will shift into the 55 to 64 and 65 to 74 age groups. The 55 to 64 group will add 1,217,650 people (31%) in the 2008 to 2018 decade, while the first boomers aging into the 65 to 74 age group will cause that group to increase by 1,193,467 people (51%). This will be the period of time when the life cycle related challenges to pension plans, health care systems and seniors' discounts will be felt.

Figure 32: Projected Increase in Canada's Population by Age Group, 2008 to 2018



The aging of the baby boom, and the growth in the other age groups, can be shown on a comparative basis by using growth indices, where the number of people in an age group in any future year is divided by the number of people in the age group in 1998 (Figure 33)^{xvii}. The growth of the country's population from 30 million to 41.5 million between 1998 and 2040 is a 37% increase: there will be 1.37 people in Canada in 2040 for every one there was in 1998.

Figure 33: Population Growth By Age Group, Canada, 1998 to 2028 (1998=1.00)



As today's 33 to 42 year olds (the big bulge of the baby boom) age into the 45 to 54 age group it will continue to increase in size until 2010: after that the number of the people in this age group will decline,

as the number of boomers aging out of it will be larger than the combination of the number of post boomers aging into it and net immigration immigrants in this age group. The number of people in the 45 to 54 age group will again increase after 2020, once all of the boomers have aged out of it, and immigration continues: in 2040, there will be 1.39 times (39% more) people in the age group than there were in 1998.

From 2003 to 2011 the 55 to 64 and 85 plus age groups will experience the most rapid increases, and from 1998 to 2024 the greatest increases, of all age groups, the impact of the post World War I and World War II baby booms. As Figure 33 shows, during the 1998 to 2020 period, the 55 to 64 age group will be the second most rapidly growing age group (after the 85 plus). The number of people in this age group will continue to increase significantly until 2020, when it will have twice as many (100% more) people than it had in 1998: its rapid growth period will be from now until 2020. This is the result of the first of the baby boomers aging into the age group by 2002, and all of them reaching this age by 2024. After 2024, most of the boomers will have had their 65th birthday, and aged out of the 55 to 64 age group. As a result, it will decline in size until 2031 before increasing again to its 2040 population of 1.96 times (96%) larger than it was in 1998. The period from 2002 to 2024 will be when markets driven by life cycle demand of the 55 to 64 age group will experience significant growth.

The aging of the baby boom will bring the first of the baby boomers to the 65 to 74 age group by 2012: the impact will be demonstrated by a significant increase in the growth rate of this age group from 2011 to 2030. However, the growth in the number of people aged 65 to 74 will start to accelerate earlier, in 2005. The reason for this "early start" is the fact that the baby boom – but not the post war part of it – actually began in 1940.

The number of births in Canada remained relatively constant in the 240,000 to 265,000 births per year range in the 1920s, and 237,000 to 250,000 per year in the 1930s. In 1940, there were 252,000 births in Canada, the largest number since 1923. In 1941, there 263,000 births, and in 1942, there were 282,000, the record number for Canada to that date. In 1943, 1944, and 1945, records were established each year, with 1945's 300,000 births being 25% greater than the 238,000 births of 1939. While the number of births each year continued to increase until 1959, the war babies were, in fact, the front edge of the baby boom. It is from these babies that rock and roll came, giving the world John Lennon, Mick Jagger, Bob Dylan, Jimi Hendrix, Janis Joplin, Tina Turner, and Keith Richards. The icons of the post war baby boomers were born before it.

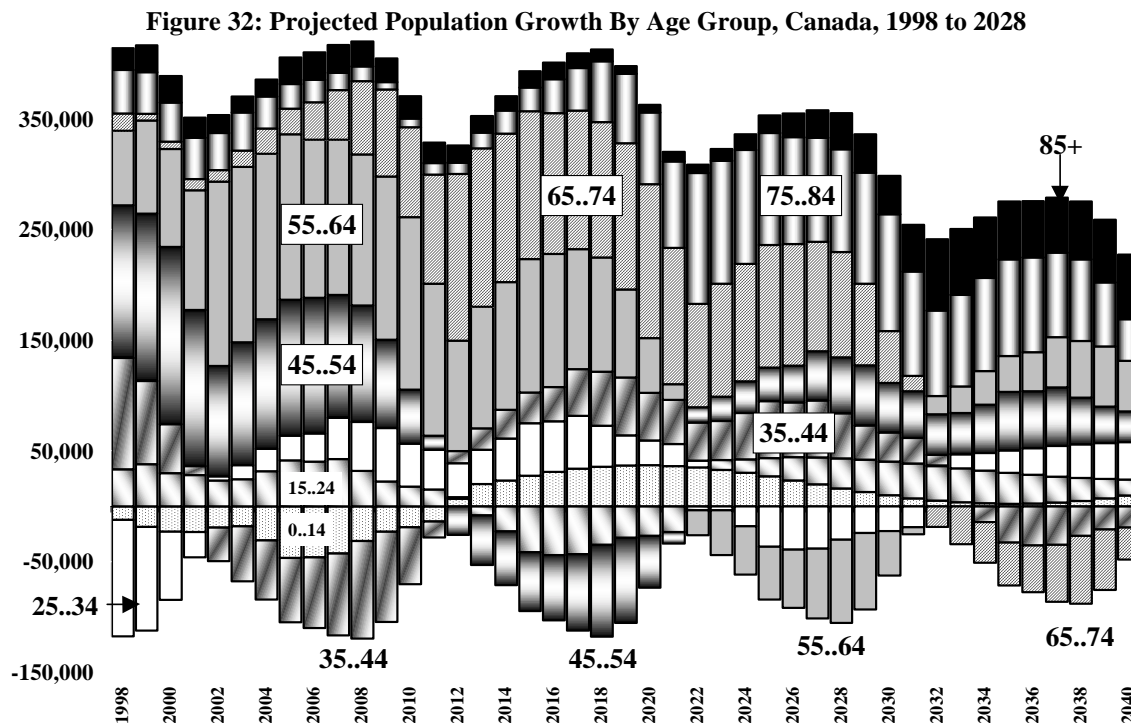
The 65 to 74 age group will have the third largest increase (after the 85 plus and the 75 to 84 age groups) over the 1998 to 2040 period, with there being 2.09 times people aged 65 to 74 in 2040 for every one that there was in 1998. The age group will grow strongly throughout the 2010 to 2040 period, as the last of the boomers (those born in 1966) will not have their 65th birthday until 2031: after this date the size of the age group will decline, increasing only as a result of the aging of migrants and reductions in mortality rates in the under 75 age groups. This age group will be the most rapidly growing one from 2011 to 2021.

In its turn, the 75 to 84 age group will experience its most rapid growth from 2016 on, with the first of the boomers reaching it by 2021, and hence speeding its rate of increase, to reach 2.93 times its size (a 93% increase) by 2040. The number of people in this age group will continue to increase significantly until at least 2045: it will be the most rapidly growing age group in the country from 2021 until 2026.

And, as would be expected, the 85 plus age group experiences an acceleration in its growth in 2026, not as a result of the baby boomers reaching this age, but as a result of the war babies reaching age 85: the really big growth in the 85 plus population will start in 2030, when the first of today's 53 year olds will have their 85th birthday. Note, however, that the population 85 and older grows both significantly and continuously throughout the projection period, surpassing the (percentage) growth of all but the 55 to 64 age group to 2019, and all but the 55 to 64 and 65 to 74 age group to 2026. This is the result of three

factors. The first is the long life expectancy of today's population, which means that a large proportion of today's population can anticipate having an 85th birthday. The second factor is that there were many more births in the 1912 to 1939 period than there were in the preceding decades, so there are more people in every corresponding under 85 age group today than there were in the past: there are more people to benefit of long life expectancies. The third factor is that there are very few people in this age group today, so that even small increases in numbers means large percentage increases.

This final point turns us to consideration of the absolute increment of change each year (Figure 32). In 1998, the three age groups which had the largest increase in size were the 35 to 44 age group (13,500 more people primarily the result of migration and the aging of the last of the boomers), the 45 to 54 age group (20,800 more people primarily the result of the aging of the front edge of the boomers), and the 55 to 64 age group (10,400 more people as a result of the aging of the pre-boomers). The number of people in the 20 to 34 age group declined by 7,200 people as a result of the aging of the boomers out of this age group.



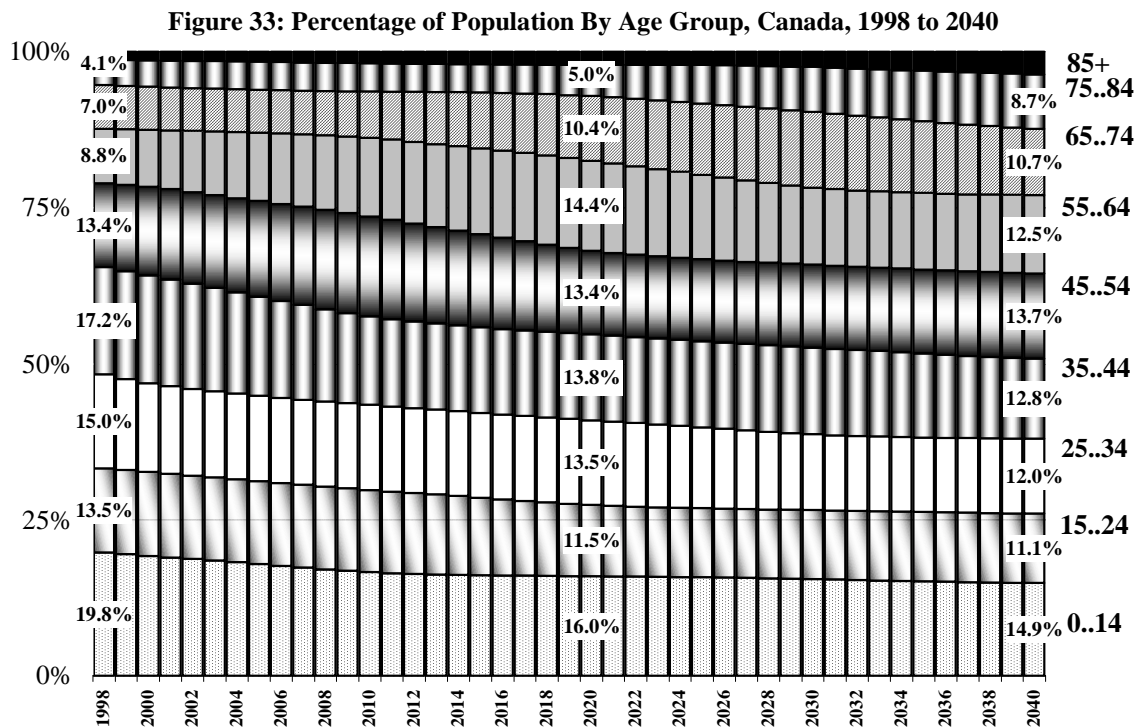
Following this pattern, during the first decade of the next century, the age groups that will experience the largest absolute increases will be the 45 to 54 age group (adding an average of 117,000 people per year), the 55 to 64 age group (adding an average of 139,000 people per year), with almost a tie for third place between the 15 to 24 age group (adding an average of 31,600 people per year) and the 65 to 74 age group (adding an average of 31,100 people per year).

In the second decade, the three age groups with the largest absolute increases will be ten years older than in the first decade. The 55 to 64 age group will increase by an average of 115,000 per year, the 65 to 74 age group by 124,800 per year, and the 25 to 34 age group by 37,900 per year. In the third decade (from 2020 to 2029), the growth will again shift up by ten years, with the 65 to 74 age group adding an average of 105,200 people per year, the 75 to 84 age group adding 98,900, and the 35 to 44 age group adding 41,800 per year.

During the last decade of the projection (2030 to 2039), the age group with the greatest population increases will be the 75 to 84 group, averaging increases of 82,400 per year. Over this period, however, increases in this age group will drop from 105,279 in 2030 to 58,000 by 2039, as high mortality rates take

an increasing toll, and as people age into the 85 plus age group. Despite the decline, the 75 to 84 group will add more people than any other group for each year in the final decade of the projection. The 85 plus age group will average annual increases of 51,700 people during the 2030s, and the 45 to 54 age group will add an average of 43,600 per year.

The focus on significant rates of change in the number of people in specific age groups does not mean that there will be rapid change in the age composition of the country's population (Figure 33). While the 65 and older population will double its share of the country's population over the next thirty years, from 12.3% in 1998 to 23.0% in 2040, the percent of working age people will only decline by 5.8%, from 67.9% of the population being between the ages of 15 and 64 in 1998 to 62.1% in 2040. The rest of the increase in the share of the older population comes from the decline in the younger population's share, from 19.8% in 1998 to 14.9% in 2040. In 2040, 62% of the country's population will be of working age, compared to today's 68%.



Conclusion

The picture that the population projection paints for the future of Canada is one of a growing and aging population. Given its current relatively young age profile, and the youth of the immigrants to Canada, the aging will be a gradual process, with the issues associated with an aging population increasing steadily from 1998 on, but only becoming major after 2021.

The four decades in Canada will be characterized by the significant growth first of the 45 to 54, then the 55 to 64, then the 65 to 74 age group, and finally the 75 to 84 age groups, with the base of the demographic tree expanding, through net international migration and the resulting natural increase, to help support its increasing growth in the upper branches.

The pattern of aging shown for Canada's population will occur whether or not there is migration: adding more than 10 million people to the country's population over the next thirty years will not halt the impacts of the aging of the 30 million who already reside in the country. The future age structure of the country's population will be dominated by the aging of the 10 million Canadian residents currently in the 32 to 51 age group – the baby boom generation. The assumption of stabilizing mortality rates will likely cause an under-projection of the number of people in the older age groups, as mortality rates will likely continue to fall. However, as was noted earlier, the continued decline is likely to be marginal, and hence will have only a minor impact compared to that of the aging of the baby boom generation.

The changes that will occur in the age structure of the country's population will offer significant opportunities and challenges to communities in the country, with population growth and change affecting everything from food and automobile retailing to housing markets, public transit, recreation and health care.^{xviii}

The relative magnitude of the issues of aging in the overall range of demographic issues will be determined by the extent of immigration to the country: the lower the levels of net international migration to the country, the greater will be the impact of aging.

In closing, it must be repeated that this projection addresses long run trends in the country's population. It does not attempt to project cycles, and their turning points, in the country's economy, and hence population growth in the future. Rather, it looks at the average pattern that will prevail over longer periods of time. As such, the projections will not exactly match the size or composition of the country's population in any one year: on average, however, the projection provides a description of the size and composition of the Canada's necessary for long range planning over the next four decades.

The Urban Futures Institute

Research on Population, Community Change and Land Use

Appendix to

Forty Million:

Canada's Population in the Next Four Decades

The Urban Futures Institute Population Projection For Canada By Age Group and Sex

Male	1998		1999		2000		2001		2002	
0..4	972,000	6.5%	954,000	6.3%	936,000	6.1%	920,000	6.0%	911,000	5.8%
5..9	1,060,000	7.1%	1,061,000	7.0%	1,054,000	6.9%	1,043,000	6.8%	1,026,000	6.6%
10..14	1,038,000	6.9%	1,044,000	6.9%	1,057,000	6.9%	1,072,000	6.9%	1,087,000	7.0%
15..19	1,051,000	7.0%	1,057,000	7.0%	1,063,000	6.9%	1,067,000	6.9%	1,071,000	6.9%
20..24	1,039,000	6.9%	1,052,000	6.9%	1,061,000	6.9%	1,070,000	6.9%	1,077,000	6.9%
25..29	1,076,000	7.2%	1,070,000	7.1%	1,068,000	7.0%	1,069,000	6.9%	1,078,000	6.9%
30..34	1,226,000	8.2%	1,183,000	7.8%	1,153,000	7.5%	1,140,000	7.4%	1,132,000	7.3%
35..39	1,353,000	9.0%	1,366,000	9.0%	1,364,000	8.9%	1,341,000	8.7%	1,308,000	8.4%
40..44	1,259,000	8.4%	1,287,000	8.5%	1,313,000	8.6%	1,341,000	8.7%	1,359,000	8.7%
45..49	1,095,000	7.3%	1,125,000	7.4%	1,159,000	7.6%	1,193,000	7.7%	1,231,000	7.9%
50..54	933,000	6.2%	977,000	6.5%	1,021,000	6.7%	1,057,000	6.8%	1,069,000	6.9%
55..59	712,000	4.7%	742,000	4.9%	773,000	5.1%	809,000	5.2%	868,000	5.6%
60..64	595,000	4.0%	605,000	4.0%	616,000	4.0%	633,000	4.1%	655,000	4.2%
65..69	547,000	3.6%	548,000	3.6%	547,000	3.6%	547,000	3.5%	545,000	3.5%
70..74	439,000	2.9%	445,000	2.9%	453,000	3.0%	462,000	3.0%	470,000	3.0%
75..79	312,000	2.1%	327,000	2.2%	335,000	2.2%	342,000	2.2%	347,000	2.2%
80..84	175,000	1.2%	177,000	1.2%	185,000	1.2%	195,000	1.3%	206,000	1.3%
85..89	83,000	0.6%	89,000	0.6%	95,000	0.6%	98,000	0.6%	101,000	0.6%
90 plus	32,000	0.2%	35,000	0.2%	38,000	0.2%	41,000	0.3%	44,000	0.3%
Total Males	14,999,000	100.0%	15,146,000	100.0%	15,293,000	100.0%	15,440,000	100.0%	15,586,000	100.0%
Female	1998		1999		2000		2001		2002	
0..4	924,000	6.0%	908,000	5.9%	892,000	5.7%	876,000	5.6%	869,000	5.5%
5..9	1,009,000	6.6%	1,010,000	6.5%	1,001,000	6.4%	993,000	6.3%	975,000	6.1%
10..14	984,000	6.4%	991,000	6.4%	1,005,000	6.4%	1,019,000	6.5%	1,034,000	6.5%
15..19	997,000	6.5%	1,004,000	6.5%	1,009,000	6.5%	1,013,000	6.4%	1,017,000	6.4%
20..24	998,000	6.5%	1,009,000	6.5%	1,019,000	6.5%	1,030,000	6.5%	1,038,000	6.5%
25..29	1,053,000	6.9%	1,047,000	6.8%	1,046,000	6.7%	1,046,000	6.6%	1,054,000	6.6%
30..34	1,202,000	7.9%	1,164,000	7.5%	1,136,000	7.3%	1,125,000	7.1%	1,119,000	7.0%
35..39	1,340,000	8.8%	1,349,000	8.7%	1,345,000	8.6%	1,322,000	8.4%	1,291,000	8.1%
40..44	1,263,000	8.3%	1,288,000	8.3%	1,312,000	8.4%	1,338,000	8.5%	1,354,000	8.5%
45..49	1,100,000	7.2%	1,132,000	7.3%	1,169,000	7.5%	1,203,000	7.6%	1,241,000	7.8%
50..54	941,000	6.1%	986,000	6.4%	1,031,000	6.6%	1,068,000	6.8%	1,080,000	6.8%
55..59	727,000	4.7%	758,000	4.9%	790,000	5.1%	827,000	5.2%	888,000	5.6%
60..64	619,000	4.0%	631,000	4.1%	644,000	4.1%	663,000	4.2%	687,000	4.3%
65..69	595,000	3.9%	594,000	3.8%	592,000	3.8%	591,000	3.7%	592,000	3.7%
70..74	544,000	3.6%	543,000	3.5%	545,000	3.5%	548,000	3.5%	551,000	3.5%
75..79	447,000	2.9%	464,000	3.0%	473,000	3.0%	478,000	3.0%	479,000	3.0%
80..84	296,000	1.9%	300,000	1.9%	310,000	2.0%	325,000	2.1%	342,000	2.1%
85..89	173,000	1.1%	182,000	1.2%	191,000	1.2%	197,000	1.2%	201,000	1.3%
90 plus	88,000	0.6%	95,000	0.6%	101,000	0.6%	108,000	0.7%	114,000	0.7%
Total Females	15,298,000	100.0%	15,455,000	100.0%	15,612,000	100.0%	15,770,000	100.0%	15,927,000	100.0%
Both Sexes	1998		1999		2000		2001		2002	
0..4	1,896,000	6.3%	1,862,000	6.1%	1,828,000	5.9%	1,796,000	5.8%	1,780,000	5.6%
5..9	2,069,000	6.8%	2,071,000	6.8%	2,055,000	6.6%	2,036,000	6.5%	2,001,000	6.4%
10..14	2,022,000	6.7%	2,035,000	6.7%	2,062,000	6.7%	2,090,000	6.7%	2,121,000	6.7%
15..19	2,048,000	6.8%	2,061,000	6.7%	2,072,000	6.7%	2,080,000	6.7%	2,089,000	6.7%
20..24	2,037,000	6.7%	2,061,000	6.7%	2,081,000	6.7%	2,100,000	6.7%	2,115,000	6.6%
25..29	2,129,000	7.0%	2,117,000	6.9%	2,114,000	6.8%	2,114,000	6.8%	2,132,000	6.8%
30..34	2,428,000	8.0%	2,347,000	7.7%	2,289,000	7.4%	2,266,000	7.3%	2,251,000	7.1%
35..39	2,693,000	8.9%	2,714,000	8.9%	2,709,000	8.8%	2,664,000	8.5%	2,599,000	8.2%
40..44	2,522,000	8.3%	2,576,000	8.4%	2,626,000	8.5%	2,679,000	8.6%	2,713,000	8.6%
45..49	2,195,000	7.2%	2,257,000	7.4%	2,328,000	7.5%	2,397,000	7.7%	2,473,000	7.8%
50..54	1,874,000	6.2%	1,964,000	6.4%	2,052,000	6.6%	2,125,000	6.8%	2,149,000	6.8%
55..59	1,438,000	4.7%	1,500,000	4.9%	1,564,000	5.1%	1,636,000	5.2%	1,756,000	5.6%
60..64	1,213,000	4.0%	1,236,000	4.0%	1,261,000	4.1%	1,296,000	4.2%	1,343,000	4.3%
65..69	1,142,000	3.8%	1,142,000	3.7%	1,139,000	3.7%	1,138,000	3.6%	1,137,000	3.6%
70..74	983,000	3.2%	989,000	3.2%	998,000	3.2%	1,009,000	3.2%	1,021,000	3.2%
75..79	760,000	2.5%	791,000	2.6%	808,000	2.6%	820,000	2.6%	826,000	2.6%
80..84	471,000	1.6%	477,000	1.6%	495,000	1.6%	520,000	1.7%	548,000	1.7%
85..89	256,000	0.8%	271,000	0.9%	286,000	0.9%	295,000	0.9%	301,000	1.0%
90 plus	121,000	0.4%	130,000	0.4%	139,000	0.5%	149,000	0.5%	158,000	0.5%
Total Both Sexes	30,297,000	100.0%	30,601,000	100.0%	30,905,000	100.0%	31,210,000	100.0%	31,513,000	100.0%
Summary	1998		1999		2000		2001		2002	
0..14	5,987,000	19.8%	5,968,000	19.5%	5,945,000	19.2%	5,922,000	19.0%	5,902,000	18.7%
15..24	4,085,000	13.5%	4,122,000	13.5%	4,153,000	13.4%	4,180,000	13.4%	4,204,000	13.3%
25..44	9,772,000	32.3%	9,754,000	31.9%	9,738,000	31.5%	9,723,000	31.2%	9,695,000	30.8%
45..64	6,720,000	22.2%	6,957,000	22.7%	7,205,000	23.3%	7,454,000	23.9%	7,721,000	24.5%
65+	3,733,000	12.3%	3,800,000	12.4%	3,865,000	12.5%	3,931,000	12.6%	3,991,000	12.7%
Dependency Ratio	1998		1999		2000		2001		2002	
Youth per 1000 15 to 64	291		286		282		277		273	
Elderly Per 1000 15 to 64	181		182		183		184		185	

Male	2003		2004		2005		2010		2015	
0..4	908,000	5.8%	906,000	5.7%	906,000	5.7%	924,000	5.5%	960,000	5.5%
5..9	1,007,000	6.4%	991,000	6.2%	974,000	6.1%	947,000	5.7%	967,000	5.5%
10..14	1,100,000	7.0%	1,102,000	6.9%	1,096,000	6.8%	1,019,000	6.1%	995,000	5.7%
15..19	1,074,000	6.8%	1,082,000	6.8%	1,096,000	6.8%	1,138,000	6.8%	1,064,000	6.1%
20..24	1,085,000	6.9%	1,092,000	6.9%	1,099,000	6.9%	1,135,000	6.8%	1,179,000	6.8%
25..29	1,089,000	6.9%	1,103,000	7.0%	1,114,000	7.0%	1,156,000	6.9%	1,196,000	6.9%
30..34	1,128,000	7.2%	1,124,000	7.1%	1,123,000	7.0%	1,175,000	7.0%	1,220,000	7.0%
35..39	1,264,000	8.0%	1,223,000	7.7%	1,195,000	7.5%	1,171,000	7.0%	1,225,000	7.0%
40..44	1,377,000	8.8%	1,391,000	8.8%	1,390,000	8.7%	1,227,000	7.3%	1,206,000	6.9%
45..49	1,268,000	8.1%	1,296,000	8.2%	1,323,000	8.3%	1,402,000	8.4%	1,244,000	7.1%
50..54	1,087,000	6.9%	1,117,000	7.0%	1,152,000	7.2%	1,315,000	7.9%	1,396,000	8.0%
55..59	916,000	5.8%	960,000	6.0%	1,003,000	6.3%	1,132,000	6.8%	1,294,000	7.4%
60..64	685,000	4.4%	714,000	4.5%	744,000	4.6%	965,000	5.8%	1,091,000	6.3%
65..69	549,000	3.5%	559,000	3.5%	570,000	3.6%	690,000	4.1%	896,000	5.1%
70..74	474,000	3.0%	476,000	3.0%	476,000	3.0%	499,000	3.0%	606,000	3.5%
75..79	353,000	2.2%	359,000	2.3%	366,000	2.3%	387,000	2.3%	409,000	2.3%
80..84	216,000	1.4%	226,000	1.4%	232,000	1.4%	256,000	1.5%	272,000	1.6%
85..89	102,000	0.7%	104,000	0.7%	109,000	0.7%	138,000	0.8%	154,000	0.9%
90 plus	48,000	0.3%	51,000	0.3%	55,000	0.3%	66,000	0.4%	83,000	0.5%
Total Males	15,732,000	100.0%	15,877,000	100.0%	16,022,000	100.0%	16,743,000	100.0%	17,457,000	100.0%
Female	2003		2004		2005		2010		2015	
0..4	867,000	5.4%	866,000	5.3%	865,000	5.3%	883,000	5.1%	917,000	5.1%
5..9	957,000	6.0%	943,000	5.8%	928,000	5.7%	904,000	5.3%	924,000	5.1%
10..14	1,045,000	6.5%	1,047,000	6.4%	1,040,000	6.3%	969,000	5.6%	948,000	5.3%
15..19	1,021,000	6.3%	1,028,000	6.3%	1,043,000	6.4%	1,081,000	6.3%	1,014,000	5.6%
20..24	1,049,000	6.5%	1,058,000	6.5%	1,064,000	6.5%	1,102,000	6.4%	1,144,000	6.4%
25..29	1,064,000	6.6%	1,078,000	6.6%	1,089,000	6.6%	1,140,000	6.6%	1,183,000	6.6%
30..34	1,115,000	6.9%	1,111,000	6.8%	1,111,000	6.8%	1,161,000	6.8%	1,216,000	6.8%
35..39	1,251,000	7.8%	1,214,000	7.5%	1,188,000	7.2%	1,169,000	6.8%	1,222,000	6.8%
40..44	1,370,000	8.5%	1,380,000	8.5%	1,377,000	8.4%	1,225,000	7.1%	1,208,000	6.7%
45..49	1,275,000	7.9%	1,302,000	8.0%	1,326,000	8.1%	1,393,000	8.1%	1,244,000	6.9%
50..54	1,102,000	6.9%	1,134,000	7.0%	1,171,000	7.1%	1,329,000	7.7%	1,397,000	7.8%
55..59	938,000	5.8%	983,000	6.1%	1,027,000	6.3%	1,167,000	6.8%	1,324,000	7.4%
60..64	718,000	4.5%	749,000	4.6%	781,000	4.8%	1,013,000	5.9%	1,151,000	6.4%
65..69	597,000	3.7%	609,000	3.7%	622,000	3.8%	754,000	4.4%	976,000	5.4%
70..74	552,000	3.4%	552,000	3.4%	551,000	3.4%	581,000	3.4%	705,000	3.9%
75..79	481,000	3.0%	482,000	3.0%	484,000	3.0%	491,000	2.9%	521,000	2.9%
80..84	357,000	2.2%	371,000	2.3%	378,000	2.3%	389,000	2.3%	398,000	2.2%
85..89	203,000	1.3%	206,000	1.3%	214,000	1.3%	264,000	1.5%	274,000	1.5%
90 plus	121,000	0.8%	128,000	0.8%	135,000	0.8%	160,000	0.9%	194,000	1.1%
Total Females	16,084,000	100.0%	16,240,000	100.0%	16,395,000	100.0%	17,175,000	100.0%	17,957,000	100.0%
Both Sexes	2003		2004		2005		2010		2015	
0..4	1,776,000	5.6%	1,772,000	5.5%	1,771,000	5.5%	1,807,000	5.3%	1,876,000	5.3%
5..9	1,965,000	6.2%	1,933,000	6.0%	1,901,000	5.9%	1,851,000	5.5%	1,891,000	5.3%
10..14	2,145,000	6.7%	2,149,000	6.7%	2,135,000	6.6%	1,989,000	5.9%	1,943,000	5.5%
15..19	2,095,000	6.6%	2,110,000	6.6%	2,139,000	6.6%	2,219,000	6.5%	2,078,000	5.9%
20..24	2,134,000	6.7%	2,150,000	6.7%	2,162,000	6.7%	2,238,000	6.6%	2,323,000	6.6%
25..29	2,153,000	6.8%	2,181,000	6.8%	2,204,000	6.8%	2,296,000	6.8%	2,379,000	6.7%
30..34	2,243,000	7.1%	2,235,000	7.0%	2,235,000	6.9%	2,336,000	6.9%	2,436,000	6.9%
35..39	2,515,000	7.9%	2,438,000	7.6%	2,383,000	7.4%	2,339,000	6.9%	2,447,000	6.9%
40..44	2,747,000	8.6%	2,771,000	8.6%	2,767,000	8.5%	2,452,000	7.2%	2,414,000	6.8%
45..49	2,543,000	8.0%	2,598,000	8.1%	2,649,000	8.2%	2,796,000	8.2%	2,488,000	7.0%
50..54	2,190,000	6.9%	2,252,000	7.0%	2,323,000	7.2%	2,644,000	7.8%	2,792,000	7.9%
55..59	1,854,000	5.8%	1,942,000	6.0%	2,030,000	6.3%	2,300,000	6.8%	2,618,000	7.4%
60..64	1,403,000	4.4%	1,463,000	4.6%	1,525,000	4.7%	1,978,000	5.8%	2,242,000	6.3%
65..69	1,146,000	3.6%	1,168,000	3.6%	1,192,000	3.7%	1,444,000	4.3%	1,872,000	5.3%
70..74	1,027,000	3.2%	1,028,000	3.2%	1,026,000	3.2%	1,079,000	3.2%	1,311,000	3.7%
75..79	835,000	2.6%	841,000	2.6%	849,000	2.6%	878,000	2.6%	929,000	2.6%
80..84	573,000	1.8%	597,000	1.9%	610,000	1.9%	645,000	1.9%	670,000	1.9%
85..89	305,000	1.0%	310,000	1.0%	324,000	1.0%	402,000	1.2%	428,000	1.2%
90 plus	169,000	0.5%	179,000	0.6%	190,000	0.6%	226,000	0.7%	277,000	0.8%
Total Both Sexes	31,816,000	100.0%	32,117,000	100.0%	32,418,000	100.0%	33,917,000	100.0%	35,414,000	100.0%
Summary	2003		2004		2005		2010		2015	
0..14	5,886,000	18.5%	5,854,000	18.2%	5,807,000	17.9%	5,647,000	16.6%	5,710,000	16.1%
15..24	4,229,000	13.3%	4,260,000	13.3%	4,301,000	13.3%	4,457,000	13.1%	4,401,000	12.4%
25..44	9,658,000	30.4%	9,625,000	30.0%	9,589,000	29.6%	9,423,000	27.8%	9,676,000	27.3%
45..64	7,990,000	25.1%	8,255,000	25.7%	8,527,000	26.3%	9,718,000	28.6%	10,140,000	28.6%
65+	4,055,000	12.7%	4,123,000	12.8%	4,191,000	12.9%	4,674,000	13.8%	5,487,000	15.5%
Dependency Ratio	2003		2004		2005		2010		2015	
Youth per 1000 15 to 64	269		264		259		239		236	
Elderly Per 1000 15 to 64	185		186		187		198		227	

Male	2020		2025		2030		2035		2040	
0..4	989,000	5.4%	1,001,000	5.3%	996,000	5.1%	995,000	5.0%	1,011,000	5.0%
5..9	1,005,000	5.5%	1,036,000	5.5%	1,050,000	5.4%	1,046,000	5.3%	1,046,000	5.2%
10..14	1,018,000	5.6%	1,057,000	5.6%	1,090,000	5.6%	1,106,000	5.6%	1,104,000	5.4%
15..19	1,042,000	5.7%	1,067,000	5.7%	1,108,000	5.7%	1,143,000	5.8%	1,159,000	5.7%
20..24	1,108,000	6.1%	1,089,000	5.8%	1,115,000	5.8%	1,158,000	5.8%	1,193,000	5.9%
25..29	1,243,000	6.8%	1,175,000	6.3%	1,158,000	6.0%	1,186,000	6.0%	1,230,000	6.1%
30..34	1,263,000	7.0%	1,312,000	7.0%	1,247,000	6.4%	1,233,000	6.2%	1,263,000	6.2%
35..39	1,272,000	7.0%	1,317,000	7.0%	1,369,000	7.1%	1,306,000	6.6%	1,293,000	6.4%
40..44	1,262,000	7.0%	1,311,000	7.0%	1,358,000	7.0%	1,411,000	7.1%	1,350,000	6.7%
45..49	1,225,000	6.7%	1,282,000	6.8%	1,333,000	6.9%	1,381,000	7.0%	1,435,000	7.1%
50..54	1,242,000	6.8%	1,225,000	6.5%	1,283,000	6.6%	1,335,000	6.7%	1,384,000	6.8%
55..59	1,375,000	7.6%	1,227,000	6.5%	1,213,000	6.3%	1,272,000	6.4%	1,325,000	6.5%
60..64	1,249,000	6.9%	1,329,000	7.1%	1,192,000	6.2%	1,181,000	6.0%	1,240,000	6.1%
65..69	1,016,000	5.6%	1,165,000	6.2%	1,244,000	6.4%	1,119,000	5.6%	1,113,000	5.5%
70..74	789,000	4.3%	899,000	4.8%	1,035,000	5.3%	1,108,000	5.6%	1,001,000	4.9%
75..79	500,000	2.8%	655,000	3.5%	752,000	3.9%	869,000	4.4%	936,000	4.6%
80..84	291,000	1.6%	359,000	1.9%	473,000	2.4%	547,000	2.8%	636,000	3.1%
85..89	166,000	0.9%	180,000	1.0%	225,000	1.2%	299,000	1.5%	348,000	1.7%
90 plus	97,000	0.5%	106,000	0.6%	116,000	0.6%	142,000	0.7%	188,000	0.9%
Total Males	18,150,000	100.0%	18,793,000	100.0%	19,357,000	100.0%	19,836,000	100.0%	20,255,000	100.0%
Female	2020		2025		2030		2035		2040	
0..4	945,000	5.0%	956,000	4.9%	951,000	4.7%	950,000	4.6%	966,000	4.5%
5..9	959,000	5.1%	989,000	5.1%	1,002,000	5.0%	999,000	4.8%	999,000	4.7%
10..14	970,000	5.2%	1,007,000	5.2%	1,039,000	5.2%	1,053,000	5.1%	1,051,000	4.9%
15..19	994,000	5.3%	1,018,000	5.2%	1,057,000	5.2%	1,090,000	5.2%	1,106,000	5.2%
20..24	1,079,000	5.8%	1,062,000	5.5%	1,088,000	5.4%	1,129,000	5.4%	1,163,000	5.5%
25..29	1,227,000	6.6%	1,166,000	6.0%	1,152,000	5.7%	1,180,000	5.7%	1,224,000	5.7%
30..34	1,262,000	6.7%	1,310,000	6.7%	1,252,000	6.2%	1,241,000	6.0%	1,271,000	6.0%
35..39	1,279,000	6.8%	1,328,000	6.8%	1,378,000	6.8%	1,322,000	6.4%	1,313,000	6.2%
40..44	1,264,000	6.7%	1,323,000	6.8%	1,373,000	6.8%	1,425,000	6.9%	1,371,000	6.4%
45..49	1,229,000	6.6%	1,286,000	6.6%	1,346,000	6.7%	1,397,000	6.7%	1,450,000	6.8%
50..54	1,250,000	6.7%	1,237,000	6.4%	1,295,000	6.4%	1,355,000	6.5%	1,407,000	6.6%
55..59	1,392,000	7.4%	1,250,000	6.4%	1,239,000	6.1%	1,297,000	6.2%	1,358,000	6.4%
60..64	1,305,000	7.0%	1,374,000	7.1%	1,237,000	6.1%	1,228,000	5.9%	1,286,000	6.0%
65..69	1,110,000	5.9%	1,259,000	6.5%	1,327,000	6.6%	1,198,000	5.8%	1,191,000	5.6%
70..74	913,000	4.9%	1,040,000	5.3%	1,182,000	5.9%	1,247,000	6.0%	1,130,000	5.3%
75..79	635,000	3.4%	825,000	4.2%	944,000	4.7%	1,075,000	5.2%	1,138,000	5.3%
80..84	425,000	2.3%	521,000	2.7%	682,000	3.4%	784,000	3.8%	897,000	4.2%
85..89	283,000	1.5%	307,000	1.6%	381,000	1.9%	502,000	2.4%	582,000	2.7%
90 plus	213,000	1.1%	223,000	1.1%	241,000	1.2%	293,000	1.4%	385,000	1.8%
Total Females	18,735,000	100.0%	19,481,000	100.0%	20,166,000	100.0%	20,767,000	100.0%	21,287,000	100.0%
Both Sexes	2020		2025		2030		2035		2040	
0..4	1,934,000	5.2%	1,957,000	5.1%	1,948,000	4.9%	1,945,000	4.8%	1,977,000	4.8%
5..9	1,964,000	5.3%	2,025,000	5.3%	2,052,000	5.2%	2,045,000	5.0%	2,045,000	4.9%
10..14	1,987,000	5.4%	2,064,000	5.4%	2,129,000	5.4%	2,159,000	5.3%	2,155,000	5.2%
15..19	2,037,000	5.5%	2,085,000	5.4%	2,165,000	5.5%	2,233,000	5.5%	2,265,000	5.5%
20..24	2,187,000	5.9%	2,151,000	5.6%	2,203,000	5.6%	2,287,000	5.6%	2,357,000	5.7%
25..29	2,470,000	6.7%	2,341,000	6.1%	2,310,000	5.8%	2,367,000	5.8%	2,454,000	5.9%
30..34	2,525,000	6.8%	2,622,000	6.9%	2,499,000	6.3%	2,473,000	6.1%	2,533,000	6.1%
35..39	2,552,000	6.9%	2,645,000	6.9%	2,747,000	7.0%	2,628,000	6.5%	2,606,000	6.3%
40..44	2,526,000	6.8%	2,634,000	6.9%	2,731,000	6.9%	2,836,000	7.0%	2,721,000	6.5%
45..49	2,454,000	6.7%	2,568,000	6.7%	2,679,000	6.8%	2,778,000	6.8%	2,885,000	6.9%
50..54	2,492,000	6.8%	2,462,000	6.4%	2,578,000	6.5%	2,690,000	6.6%	2,791,000	6.7%
55..59	2,767,000	7.5%	2,477,000	6.5%	2,452,000	6.2%	2,569,000	6.3%	2,683,000	6.5%
60..64	2,553,000	6.9%	2,703,000	7.1%	2,428,000	6.1%	2,408,000	5.9%	2,526,000	6.1%
65..69	2,126,000	5.8%	2,424,000	6.3%	2,571,000	6.5%	2,317,000	5.7%	2,304,000	5.5%
70..74	1,702,000	4.6%	1,939,000	5.1%	2,217,000	5.6%	2,356,000	5.8%	2,131,000	5.1%
75..79	1,135,000	3.1%	1,481,000	3.9%	1,695,000	4.3%	1,945,000	4.8%	2,074,000	5.0%
80..84	716,000	1.9%	881,000	2.3%	1,155,000	2.9%	1,330,000	3.3%	1,532,000	3.7%
85..89	449,000	1.2%	487,000	1.3%	606,000	1.5%	801,000	2.0%	930,000	2.2%
90 plus	309,000	0.8%	328,000	0.9%	357,000	0.9%	436,000	1.1%	573,000	1.4%
Total Both Sexes	36,885,000	100.0%	38,275,000	100.0%	39,522,000	100.0%	40,603,000	100.0%	41,543,000	100.0%
Summary	2020		2025		2030		2035		2040	
0..14	5,885,000	16.0%	6,046,000	15.8%	6,129,000	15.5%	6,149,000	15.1%	6,177,000	14.9%
15..24	4,224,000	11.5%	4,236,000	11.1%	4,368,000	11.1%	4,520,000	11.1%	4,622,000	11.1%
25..44	10,073,000	27.3%	10,242,000	26.8%	10,287,000	26.0%	10,304,000	25.4%	10,314,000	24.8%
45..64	10,266,000	27.8%	10,210,000	26.7%	10,137,000	25.6%	10,445,000	25.7%	10,885,000	26.2%
65+	6,437,000	17.5%	7,540,000	19.7%	8,601,000	21.8%	9,185,000	22.6%	9,544,000	23.0%
Dependency Ratio	2020		2025		2030		2035		2040	
Youth per 1000 15 to 64	240		245		247		243		239	
Elderly Per 1000 15 to 64	262		305		347		363		370	

Endnotes:

ⁱ Statistics Canada estimate of Canada's 1998 population is 30,300,400 (Statistics Canada, The Daily, September 24, 1998). Historical data for Canada's population are from Statistics Canada's Annual Demographic Statistics and Census of Canada publications for referenced years. Historical population estimates for previous years will be above the values reported in the Census of Canada, as population estimates are adjusted upwards to account for people missed in the census count, which is referred to as adjusting for the Census undercount.

ⁱⁱ The mode, or most frequently occurring age.

ⁱⁱⁱ The mean age. There are two reasons why the average age of women was older than that for men: first, there are more male babies than female babies, pulling down the average age for males; second, women have longer life expectancies, pulling up the average age for females.

^{iv} The median age.

^v Japan's post war baby boom was very only two years (1947 to 1949) in length, and it had a long "birth dearth" prior to its echo boom in the 1970s. As a result, Japan's age profile looks like an hourglass rather than a tree or a pyramid. For further discussion of the demographic prospects of Japan, please see David Baxter, "An Ancient Land, An Aging People", Business in Vancouver, April 6-12, 1999, pages 11-13.

^{vi} Rather than use the rates for a single year, which could show significant variation for any one age, it is practice to average the rate for two years to get a more stable rate that is reflective of the long run relationship between age and the rate. Thus in all rates and age profiles for components of migration, the data and rates for 1996 are the average of 1996 and 1995. The reason for using data from 1996 is it is the year for which most recent data are available for demographic variables.

^{vii} For a discussion of changes in life expectancy in Canada, see What Can You Expect? Life Expectancy in Canada, 1921 to 2021 (The Urban Futures Institute, July 1998).

^{viii} Age group and sex specific mortality rate projection prepared by The Urban Futures Institute.

^{ix} For a further discussion of birth rates in Canada, please see Babes in Lotus Land: Births, Birthrates and their Demand Implications in Canada, 1921 to 2021 (The Urban Futures Institute, December 1997).

^x Strictly speaking, migration is comprised of people moving from region to region within a country, and between countries. In this context, discussions of migration are limited international migration.

^{xi} David Baxter, "An Ancient Land, An Aging People", Business in Vancouver, April 6-12, 1999.

^{xii} Immigration includes all persons entering Canada as permanent residents, including refugees.

^{xiii} For further discussion on the youthful age profile of intra and inter-regional migrants, see Population Four Million: Alberta's Population in the Next Three Decades (The Urban Futures Institute, April 1999), and Metropolitan Vancouver's Population in the Next Four Decades: Population Four Million (The Urban Futures Institute, May 1999).

^{xiv} The age profiles of the immigrant, and to a lesser degree emigrant, populations are slightly older than those of the in-migrant and out-migrant populations are. International migration is much more serious and arduous, requires more resources, and has entry requirements that require skills and education. These combine to make the immigrant and emigrant populations, while younger than the resident population, older than the in-migration population.

^{xv} For further discussion of the demographics of immigration, see Immigration to Canada: Youth Tonic for an Aging Population (The Urban Futures Institute, July 1997) and Just Numbers: Demographic Change and Immigration in Canada's Future (The Urban Futures Institute, March 1998).

^{xvi} Statistics Canada's current projections for the country for 2041 range from a low of 35 million to a high of 50 million, with the series two (medium growth projection) being 43 million. See Statistics Canada, Population Projections for Canada, Provinces, and Territories, 1993 to 2016, (December 1994) for details.

^{xvii} When a growth index has a value of 1.00 it means that there are the same number of people in the age group in the year under consideration that there were in 1998: when the value is 2.00, it means that there are twice as many, indicating a 100% increase in the number of people in the age group.

^{xviii} Some of these are considered in The Urban Futures Institute's two recent companion reports on Canada, Housing Canada's Future Population: Demographics and Demand, 1996 to 2026, and Housing Canada's Seniors in the Next Thirty Years. Other issues are examined at the national level in The Urban Futures Institute's publications, including Health Choices: Demographics and Health Spending In Canada, Just Numbers: Demographic Change and Immigration in Canada's Future, and Demographics and the Future of Housing Demand in Canada: The Myth of the Vanishing Purchaser.