STAFF STUDY No. 19

Population, Family, Household and Labour Force Growth to 1980

by

Wolfgang M. Illing

with technical contributions by

Yoshiko Kasahara, Frank T. Denton and M. V. George

Prepared for the

Economic Council of Canada

te

POPULATION, FAMILY, HOUSEHOLD AND LABOUR FORCE GROWTH TO 1980

by

Wolfgang M. Illing

with technical contributions by

Yoshiko Kasahara, Frank T. Denton and M. V. George

Staff Study No. 19
Economic Council of Canada
September 1967

This is one of a series of technical studies prepared as background papers for the Fourth Annual Review of the Economic Council of Canada. Although these studies are published under the auspices of the Council, the views expressed in each case are those of the authors themselves. Other publications of the Council are listed at the end of this paper.

Available by mail from the Queen's Printer, Ottawa,
and at the following Canadian Government bookshops:

HALIFAX
1735 Barrington Street

MONTREAL
Æterna-Vie Building, 1182 St. Catherine St. West

OTTAWA
Daly Building, Corner Mackenzie and Rideau

TORONTO
221 Yonge Street

WINNIPEG
Mall Center Bldg., 499 Portage Avenue

VANCOUVER
657 Granville Street

or through your bookseller

Price $1.00 Catalogue No. EC22-1/19

Price subject to change without notice

ROGER DUHAMEL, F.R.S.C.
Queen's Printer and Controller of Stationery
Ottawa, Canada
1967

PREFACE

The most generous co-operation and assistance received from the Dominion Bureau of Statistics in the preparation of the projections contained in this study are gratefully acknowledged. In particular, special acknowledgement is made of the expert services of the late Dr. Yoshiko Kasahara who prepared the population projections just prior to her untimely death in the fall of 1966, and of Mr. Frank T. Denton and Dr. M. V. George, who made contributions in connection with the labour force and population projections. Valuable assistance was provided too by Dr. L. O. Stone, also of the Dominion Bureau of Statistics, in connection with the population projections.

In addition, liberal help and many useful comments were provided by other Dominion Bureau of Statistics officials, by officials of the Economics and Statistics Division of the Central Mortgage and Housing Corporation, and by members of the professional staff of the Economic Council of Canada.

TABLE OF CONTENTS

	Page
Preface	iii
Chapter 1 - INTRODUCTION	1
Chapter 2 - POPULATION	5
Method	6
Assumptions	9
Summary of the Results	23
Tables - Population	31
Chapter 3 - FAMILIES AND HOUSEHOLDS	49
Methods and Assumptions	51
Summary of the Results	59
Tables - Families and Households	65
Chapter 4 - LABOUR FORCE	71
Methods and Assumptions	72
Summary of the Results	75
Tables - Labour Force	91

LIST OF TABLES

		Page
Table 2-A	Changes in Births and Marriages, 1960-66	11
Table 2-B	Proportion of Persons Married in Selected Age-Sex Groups, and Median Age at Marriage, 1941, 1951, 1961	16
Table 2-C	Crude Birth Rates Implied by the Fertility Assumptions to 1980	19
Table 2-D	Assumed Average Annual Immigration and Emigration to 1980	23
Table 2-E	Population Projections under Various Assumptions	25
Table 2-F	Population Growth in Selected Countries, 1965-80	29
Table 2-G	Demographic Changes in Selected Countries, 1965-80	30

Statistical Section Appended to Chapter 2

Table 2-1	Crude and Standardized Death Rates, Both Sexes, 1926-65	33
Table 2-2	Life Table Mortality Rates (q_x) and Survival Ratios (S_x) for Selected Ages, Selected Years, 1961-80	34
Table 2-3	Expectation of Life at Birth (e_0^0), 1951-80	36
Table 2-4	Age-Specific Fertility Rates, Selected Years, 1926-80	37
Table 2-5	Percentage Changes in Age-Specific Fertility Rates, 1925-80	38

Page

Table 2-6 Assumed Age and Sex Breakdown of Immigrants and Emigrants for the Projection Period to 1980 39

Table 2-7 Population Projections to 1980: Medium Immigration, Medium Fertility 40

Table 2-8 Population Projections to 1980: Low Immigration, Low Fertility, Selected Years 46

Table 2-9 Population Projections to 1980: High Immigration, High Fertility, Selected Years 47

Table 2-10 Comparison of Intercensal Population Estimates, and 1966 Census Population Figures 48

Table 3-A Average Annual Net Immigration of Persons and Families, 1965-80, Based on Alternative Assumptions 59

Table 3-B Changes in Families and Households, 1950-80 63

Statistical Section Appended to Chapter 3

Table 3-1 Number of Marriages per 1,000 Persons, in the Total Population, Selected Years, 1921-80 66

Table 3-2 Estimated Net Family Formation, 1951-66 67

Table 3-3 Net Family Formation to 1980 68

Table 3-4 Families and Households, 1950-80 69

		Page
Table 4-A	Labour Force Participation Rates, 1965 and 1970	76
Table 4-B	The Civilian Labour Force, 1950-80	77
Table 4-C	Labour Force Growth in Selected Countries, 1965-80	79
Table 4-D	Changes in the Labour Force, by Sex, 1950-80	80
Table 4-E	Net Labour Force Immigration as a Proportion of Total Labour Force Increases, 1950-80	84
Table 4-F	Ratio of Labour Force to Population in Selected Countries, 1962	86
Table 4-G	Ratio of Labour Force to Population, Selected Years, 1951-80	87
Table 4-H	Females as a Percentage of the Labour Force in Selected Countries, 1962	88
Table 4-I	Changes in the Civilian Labour Force (Numbers and Distribution of Increase), by Age Group and Sex, 1950-80	90

Statistical Section Appended to Chapter 4

Table 4-1	Civilian Labour Force Participation Rates, 1965-80	92
Table 4-2	Source Population for the Civilian Labour Force, Based on Medium Immigration Assumption, 1965-80	94
Table 4-3	Source Population for the Civilian Labour Force, Based on Alternative Immigration Assumptions, 1970, 1975, 1980	97

Page

Table 4-4 Civilian Labour Force, Based on Medium Immigration Assumption, 1965-80 98

Table 4-5 Civilian Labour Force, Based on Alternative Immigration Assumptions, 1970, 1975, 1980 100

Table 4-6 Changes in the Civilian Labour Force, by Age Group and Sex, 1950-80 101

LIST OF CHARTS

		Page
Chart 2-1	Births per Thousand Women by Age Group, 1926-80	13
Chart 2-2	Total Fertility Rate, 1921-80	14
Chart 2-3	Immigration and Emigration, 1951-66	21
Chart 2-4	Population Growth Rates, 1867-1980	27
Chart 2-5	Age Structure of the Population, 1965 and 1980	28
Chart 3-1	Marriages, 1921-80	60
Chart 3-2	Net Family Formation, 1950-80	61
Chart 4-1	Changes in the Labour Force, 1922-80	81
Chart 4-2	Women as a Percentage of the Labour Force, 1931-80	89

CHAPTER 1

INTRODUCTION

The demographic projections in this study are designed to provide the basis for various quantitative estimates of future economic growth discussed in the Fourth Annual Review. Obviously, demographic trends have far-reaching implications for the future potentialities of the economy. This is of particular importance at the present time since Canada is now in a period of dramatic demographic changes. There has been a continuous and rapid decline in birth rates over the past five or six years, implying a significant slowdown in the rate of population growth when compared with the earlier post-war years. On the other hand, the very large number of births one generation ago has now begun to swell the age groups which start new families and which provide new entrants to the labour force. In addition, a sharply growing proportion of females is entering the labour market. The effects of these trends are reinforced by the recently observed rise in the volume of immigration. This study attempts to review the likely course of these major demographic changes in order to provide the basis for assessing their implications for the future of the economy in a more comprehensive and systematic way.

The projections presented here provide annual series up to 1980 for population, families, households and labour force. Since the initial population projections to 1970 were made by the Economic Council in connection with the First Annual Review, a downward revision of birth rates and an upward revision of the net immigration assumptions had become necessary in the light of recent trends. Because of uncertainty about the possible future behaviour of these two variables, three assumptions are made for each of them up to 1980 -- i.e., low, medium and high assumptions. The projection based on the combination of the medium fertility and medium net immigration assumptions is judged to be the preferred one in assessing population growth to 1980, while projections based on other combinations of assumptions provide useful ranges. Only one set

of emigration and mortality assumptions was used. Chapter 2 deals with the new population projections.

Chapter 3 contains estimates of families and households to 1980. Only one projection is made, based on the population series incorporating the medium set of assumptions.

The labour force projections are based on a revised set of participation rate assumptions and the "medium" population projection. Some discussion of the effect of different participation rate assumptions and alternative population growth projections is also included. The labour force projections are treated in Chapter 4.

Generally, each of the following three chapters contains an outline of the methodology, a discussion of the assumptions, an assessment of the most significant results, and a section of detailed statistical tables providing the projection data as well as some of the more important assumptions in greater detail. The main results and implications of these projections are reviewed in a much broader context in Chapter 3 of the Fourth Annual Review.

The projections are not intended to be forecasts or predictions of future events, but rather estimates based upon certain assumptions. Although great care was taken in judging the plausibility and consistency of the various underlying assumptions, some divergence will undoubtedly occur between the time paths of the projected and eventual observed figures. Also, there will undoubtedly be some year-to-year variability in future actual developments, so that the projections should be better indicators of changes extending over several years than of year-to-year changes. Particularly sensitive to possible divergence in this respect would be the earliest years of the projection period. The first year for the projections was 1966, and the starting point on the last date for which actual data were available when the work was carried out was June 1, 1965. If June 1, 1966 could have been taken as the starting point, it is unlikely that the over-all projections to 1980 would have been significantly affected.

A somewhat different source of difficulty lies in the fact that the work had to be carried out before the results of the 1966 Census had become available. Many of the demographic time series which are used are subject to revisions after each Census and these revisions would certainly have had an effect on the projections. However, this is likely to be less important for projections of larger aggregates, such as total population, labour force, etc., than for certain age groups and other components. In appropriate places in this study, the results of the 1966 Census, as far as they are available at the time of the completion of this study, have been included to facilitate comparisons with the projected figures for 1966.

As in any demographic statistical system, current figures are always in a state of some flux, requiring revision, up-dating and reconciliation. Some of the revisions to annual population figures over the past five years, as necessitated by the latest Census, will mean changes for certain vital statistics rates, estimates of labour force, estimates of families, etc. To work out these changes usually requires some considerable time. In these circumstances, projections must be based on the best information and the best judgment available at the time they are made.

CHAPTER 2

POPULATION[1/]

This Chapter sets out the methodology and the assumptions underlying the annual population projections to 1980. A brief review of the more important historical and prospective developments in the Canadian population is also included. The detailed results of the projections, by sex and five-year age groups, are contained in the statistical tables at the end of the Chapter.

As mentioned, three different sets of assumptions with regard to future trends to 1980 are made for fertility and immigration, and one set of assumptions for mortality and emigration. Of the resulting nine sets of population series, based on the nine possible combinations of the assumptions, the set resulting from the combination of medium fertility and medium immigration has been selected as the basis for subsequent calculations. However, as far as the family, household and labour force projections are concerned, there are only three possible sets since the fertility assumptions are of no direct relevance: all persons likely to marry, set up households and enter the labour market up to 1980, were already alive at the beginning of the period. The possible variations in the growth of these variables, based on alternative immigration assumptions, will be referred to in the relevant sections of the study.

The rather dramatic decline in the Canadian birth rate during recent years has been accorded a considerable amount of public attention. Undoubtedly, this is the most significant feature of present demographic developments, and it raises a large number of interesting questions. As background to the assumptions themselves, an attempt is

---

[1/] The projections described and presented in this Chapter were prepared by Yoshiko Kasahara.

made to review some of the possible reasons for these fertility changes, in so far as they can be discerned from the available information, and to assess their impact on such things as crude birth rates, reproduction rates and population growth rates.

Method[1]

As in the case of the previous work of the Economic Council,[2] a "component method" was used for the projections in this study. This method involves separate projections of each of the components of population change, i.e., births, deaths, immigration and emigration on the basis of certain assumptions to obtain the population estimates for the desired projection dates.

There are four main steps in the calculations made here:

(1) Estimate the expected survivors of the June 1, 1965 base population by age and sex for June 1 of each of the years from 1966 to 1980 by successive multiplication of each cohort by the appropriate survival ratios.

(2) Add the survivors of children born after June 1, 1965, estimated year by year, by (i) applying the assumed age-specific fertility rates to the projected number of women in each of the child-bearing ages (ages 15-49 obtained in the first step), and (ii) applying appropriate survival ratios to the births thus obtained.

---

[1] This section is based on work undertaken by M. V. George.

[2] See Frank T. Denton, Yoshiko Kasahara and Sylvia Ostry, Population and Labour Force Projections to 1970, Staff Study No. 1, Economic Council of Canada, Ottawa, Queen's Printer, 1964.

(3) Add the survivors of immigrants and their children born since their entry into Canada.

(4) Subtract the survivors of emigrants and their children born since their departure from Canada.

The base population

Estimates of population by sex and single years of age for June 1, 1965, are used as a base for the projections.[1] Applying the appropriate survival ratios to the base population, survivors of the age-sex cohorts are estimated for each year during 1966-80.

Deaths

Only one set of age-specific mortality rates (q_x)[2] is used for all series of population projections made here under various assumptions of fertility and migration. From the projected values of q_x, the required survival ratios (S_x) by single years of age are first derived for 1965, 1970, 1975 and 1980.[3] The survival ratios for the intervening years are interpolated by assuming a constant annual rate of change for each age by sex over each five-year period.

The resulting survival ratios by single years of age and sex are then applied to the appropriate age and sex estimates in 1965 to estimate their expected survivors for each year from 1966 to 1980.

---

[1] The estimates of population by single years of age are not generally published by the Dominion Bureau of Statistics, except for Census dates. The 1965 single-age figures used here are from unpublished sources.

[2] This is the probability that persons at age x will die before reaching age x+1.

[3] S_x is obtained by dividing L_{x+1} (the life table population aged x+1) by L_x (the corresponding population aged x).

Births

For projecting births the annual age-specific fertility rate method is used. This involves projecting age-specific fertility rates[1/] by single years of age for women 15-49. Three assumptions are made (high, medium and low) regarding the future course of fertility. The calculations are carried out for 1970, 1975 and 1980 on the basis of graduated data by single years of age of women. Figures for intervening years are obtained by linear interpolation.

The births for each year after 1965 are estimated by applying the projected age-specific fertility rates to the corresponding female population. The sex breakdown of each birth cohort is estimated by applying the average sex ratio at birth in Canada for the period 1926-65 (105.7 males per 100 females).

Immigration and emigration

Three assumptions are made in regard to the volume of future immigration and one assumption in regard to emigration. For all three assumptions, an excess of males over females for immigrants, and females over males for emigrants, is assumed during the projection period. Thus, it is assumed that there would be 1,028 males per 1,000 females among immigrants and 885 males per 1,000 females among emigrants.[2/] The five-year age distributions of the projected immigrants and emigrants are estimated on the basis of the age distribution of total immigrants to Canada and the age distribution of Canadian-born emigrants to the United States, respectively, since 1951. Single-year age

---

[1/] I.e., the number of births per 1,000 women in a given age group, regardless of the proportion married.

[2/] This corresponds to the experience recorded over the period 1951-66.

distributions are then derived for both immigrants and emigrants by the use of Sprague's multipliers.[1/]

In the absence of any reliable data to support alternative assumptions, the mortality and fertility rates used for the domestic population were used also for the migrant population.

Assumptions

Mortality

The assumptions about changes in mortality rates over the projection period are of relatively small importance for the over-all growth rate of the population, at least at the already very low levels of the rates now prevailing in Canada, as well as in other industrialized countries. Nevertheless, mortality rate changes are of some interest, particularly in so far as they bear on life expectancy, infant deaths, etc., and in so far as they also have an influence on the relative size of the aged population requiring higher standards of income support and health care.

There are several significant features which emerge from an analysis of past mortality trends. The long-term trends, of course, show continuous declines at all age levels. However, since about the mid-1950's, these declines have tended to level out in Canada. This phenomenon is generally explained by the fact that fatal diseases which were more readily amenable to successful scientific research and improvements in methods of medical treatment have been virtually eliminated, and that a significant reduction of the remaining main causes of death must await further scientific break-throughs. In this category would

---

[1/] For details on the use of Sprague's multipliers, see A. J. Jaffe, Handbook of Statistical Methods for Demographers, U.S. Department of Commerce, Bureau of the Census, 1951.

be such causes of death as cancer and heart disease, and such causes of infant mortality as immaturity, malformations, etc. On the other hand, some of the traditional but now virtually eliminated causes of death are being replaced to a rising extent by accidents of all sorts -- traffic, industrial, home, etc. Similar trends have been observed in the United States. In view of such tendencies, the assumption is made that age-specific mortality rates would show only gradual further declines over the next 15 years. It should be noted that mortality rates in several Western European countries are lower than those in both Canada and the United States and are still declining. What explains the different behaviour in North America is not immediately apparent.

Table 2-1 in the statistical section shows the crude death rate (actual number of deaths per 1,000 persons in the population) and the standardized death rate (deaths per 1,000 persons for a hypothetical population of fixed age distribution) in long-term perspective (1926-65). The projections of age-sex specific mortality rates (q_x) and survival ratios (S_x) to 1980 are provided in Table 2-2. The expectation of life at birth (e_0^0), as implied by these assumptions, is shown in Table 2-3. Life expectation at birth is estimated to increase for both males and females over the next 15 years, but at diminishing rates.

Fertility

Birth rates in Canada have declined for several generations. This is also the case in other industrialized countries in varying degrees, and is related to a variety of social and economic factors. However, in Canada, as in the United States, this long-term decline in birth rates has been characterized by checks and occasional reversals. The most recent upturn in the birth rate occurred during the two decades of the 1940's and 1950's. But more recently, a rapid and accelerating decline has re-emerged. Recent declines in fertility have more than offset the recent increases in the number of young women in child-bearing ages, with the result that the total number of births has been falling over the past several years. This has been so in spite of the increases in the number of young

adults and the consequent increases in the number of marriages[1/] over this period (see Table 2-A).

Table 2-A

Changes in Births and Marriages
(Percentage change from preceding year)

	Births	Marriages
1961	-0.6	-1.8
1962	-1.3	1.2
1963	-0.9	0.3
1964	-2.7	5.3
1965	-7.6	5.0
1966[(1)]	-7.7	6.7

[(1)] Preliminary.

Source: Based on data from Dominion Bureau of Statistics, Vital Statistics, and idem, Canadian Statistical Review.

In view of such major changes, an assessment of the growth in the number of births requires a more detailed analysis of tendencies in the behaviour of age-specific fertility rates -- i.e., the number of children born during a given year per 1,000 women in each of the age groups between 15 and 49 years. The levels of these rates, together with the existing numbers of females in the various childbearing ages, determine the total number of births. On the other hand, the crude birth rate is defined as the total number of births expressed as a ratio to the total number of persons in the population regardless of age and sex.

[1/] See Chapter 3 below for a detailed discussion of trends in marriages.

Age-specific fertility rates in Canada have reflected an underlying trend towards child-bearing at younger ages, judging by the available records back to the 1920's. At the same time, there have also been considerable variations over time in fertility in the younger age groups (i.e., the 20-29 and, to some extent, the 15-19 group). Births to females in these age groups rose steeply after the Second World War, reached a peak in 1959, and dropped sharply from then on. In fact, declines were experienced in all age groups between 15-49, but because of the long-term shift of child-bearing into the age span below 30, the over-all effect on declining births in recent years was magnified by the sharp adjustment in the rates in the age groups below 30 (see Tables 2-4 and 2-5 in the statistical section below).

These changes in fertility since the 1920's are illustrated in Chart 2-1, showing age-specific fertility rates, and Chart 2-2, showing the "total fertility" rate. The latter concept denotes the total births which 1,000 women would experience if, during their entire child-bearing life span (assumed to be from 15 to 49), they were subjected to the age-specific fertility patterns prevailing at a given point in time. (No allowance for mortality is made in calculating this measure.) For example, with the age-specific fertility pattern prevailing in the early 1920's, a female would have given birth to an average of 3.5 children by the time she had completed her child-bearing age span. By the mid-1930's, this figure was 2.7. It rose to an average of about 3.9 births in the period 1956-61, and then dropped to about 3.2 by 1965. The percentage decline in "total fertility" has been remarkably steep in comparison with any period of comparable duration since the early 1920's. This decline stands in sharp contrast with the large increases in total fertility from the Second World War on to the end of the 1950's.

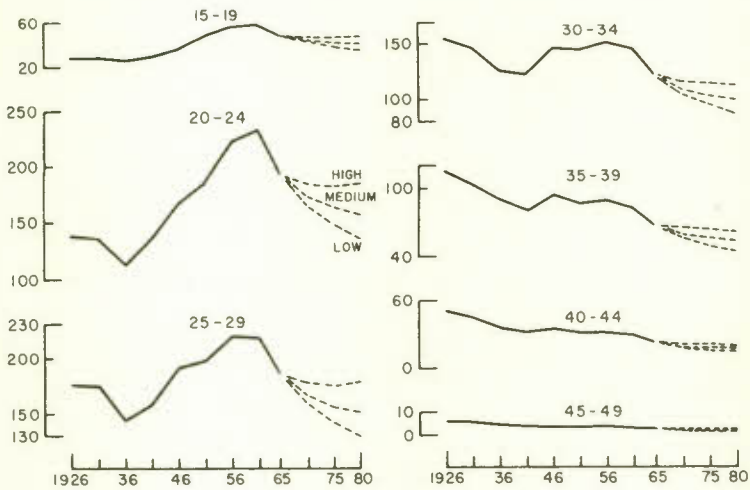
It might be surmised that the post-war upswing in fertility rates was closely related to economic developments which brought in their train a rising demand for labour as well as structural changes in the economy, substantial internal migration, relatively heavy immigration, and favourable opportunities for new family formation.

CHART 2-1

BIRTHS PER THOUSAND WOMEN

BY AGE GROUP

(Age-specific fertility rates)

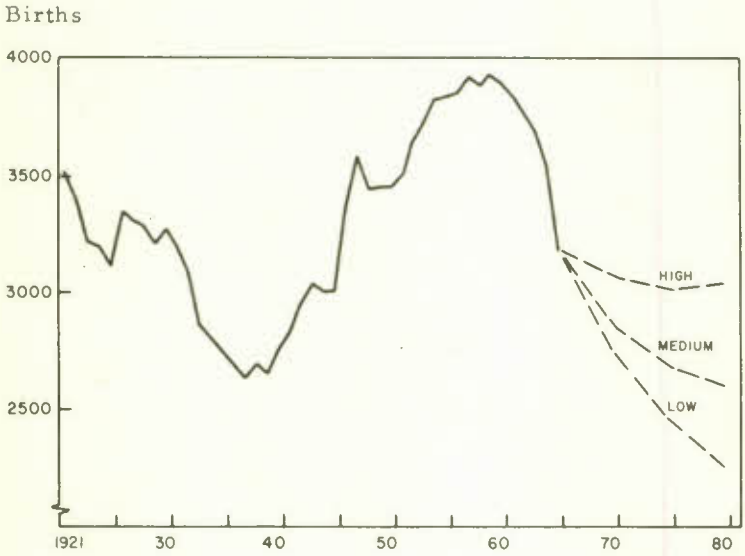


Source: Based on data from Dominion Bureau of Statistics, Vital Statistics, and estimates by Economic Council of Canada.

CHART 2-2

TOTAL FERTILITY RATE[1]

(Births per 1,000 women)



[1] The total fertility rate represents the total births that 1,000 women would experience if, during their entire child-bearing life span (assumed to be from 15-49), they were subjected to the age-specific fertility patterns prevailing at a given point in time. (No allowance for mortality is made in calculating this measure.)

Source: See Chart 2-1.

It is a well-known fact that Canada experienced exceedingly high rates of urban growth during this period. Workers from farming and other rural areas, and the record numbers of immigrants which came to Canada during those years, were attracted into the cities by the strong demand for labour prevailing there. The younger age groups in the labour force were particularly heavily involved in these migrations.[1/] Favourable labour market conditions and exceptionally good earnings opportunities for young persons in marrying ages were conducive to high marriage rates, a falling average age at marriage, and an accelerating pace of family formation and rising birth rates. Not only did increasing proportions of persons in the relevant age groups get married, but they got married and started families at younger ages (Table 2-B).

[1/] The younger age groups in the labour force were in short supply during that period, as a consequence of the extended years of low birth rates before the Second World War. In studying this phenomenon in the United States, R. A. Easterlin (c.f., "The American Baby Boom in Historical Perspective", American Economic Review, Dec. 1961) notes that young males in family formation ages were in short supply in relation to the older age groups in the labour force. They encountered attractive employment opportunities, which were reflected in average earnings much closer to the earnings of older workers than they would otherwise have been. This improvement in their relative economic status favoured accelerated family formation. An additional important element in the relative earnings improvement of young workers in the post-war period was their higher level of educational achievement in relation to the average level of the total labour force as a consequence of the broadening of high school education beginning in the 1920's in the United States.

Table 2-B

Proportion of Persons Married in Selected Age-Sex Groups, and Median Age at Marriage

	Married Persons as a Percentage of All Persons in the Age Group			Median Age at Marriage[1]	
	Males		Females	Males	Females
	20-24	25-29	20-24		
	(Per cent)			(Years)	
1941	16	50	40	26.3	23.0
1951	26	65	50	24.8	22.0
1961	31	70	60	24.0	21.1

(1) Median age at first marriage.

Source: Based on data from Dominion Bureau of Statistics, Census; and idem, Vital Statistics.

According to a recent study[1/] on fertility trends, about nine tenths of the increase in birth rates from 1941 to 1961 was accounted for by the rise in the proportion of married females, and only about one tenth by increased fertility of married females[2/] and by other factors. Thus the underlying reasons for the sharp increases in fertility and births over the post-war period are primarily related to the factors which promoted higher rates of family formation -- i.e., such factors as favourable labour market

1/ Jacques Henripin, Tendances et Facteurs de la Fécondité au Canada (Tableau 3.1), Bureau fédéral de la statistique, Ottawa, 1967.

2/ It should be recalled that the age-specific fertility rates employed elsewhere in this study relate to all females in an age group, regardless of marital status.

conditions for young persons, employment shifts to high-income industries, mainly in urban areas, and immigration from other countries.

Clearly, the factors which gave rise to the high birth rates in the post-war period have been replaced by a substantially different set of influences since the beginning of the 1960's. Expanding labour requirements are now, to a growing extent, for occupations in the service industries and in certain skill-intensive goods-producing industries. Opportunities for better-educated persons, and for women generally, have been growing extremely rapidly and are likely to continue to grow rapidly. The source of supply of such labour is mainly the urban population, while rural-urban shifts and the contribution of net immigration are relatively much less significant. As a result of the developments since the Second World War, the Canadian population is now relatively highly urbanized, and is expected to become even more so in the future.

Available data indicate that the trend towards younger age at marriage has abated, and that the number of births per married female is falling. Despite the prospects for further substantial increases in average living standards, attitudes towards the timing and eventual size of the family appear to be different from those in earlier periods. One of the elements giving rise to these attitudes is the high cost of raising a large family in an urbanized environment. The increasing cost of living space commensurate with a desired standard and way of life not only deters the formation of large families, but also delays the arrival of children among young couples. Thus, the first child in many young families is apparently being postponed. Also, subsequent births are being spaced further apart. It is likely that a family started at a later stage in life will be smaller, and that postponements of births will tend to reduce the average number of children per family. In other words, the "loss" in current births due to postponement is not likely to be entirely regained later on.

Other elements influencing the change in attitudes are the recent substantial increases in labour force participation by females in child-bearing ages (especially in the

20-29 age group), and rising school attendance by young adults.

Clearly, the development and increasing availability of more effective means of birth control and family planning information is a crucial factor facilitating desired postponements, spacing and reductions in births and in the size of completed families.

The full nature and scope of recent changes still remain largely unexplained, however, and in developing population projections into the future, considerable uncertainty is necessarily attached to any conclusions about the forces likely to determine the total number of births over the next 15 years. Having regard to current trends and changes as far as they can be assessed, it is assumed that fertility rates would continue to decline from the mid-1960's to 1980, but that the rates of decline would moderate gradually. As illustrated in Chart 2-1 above, this assumption is made with respect to the low, medium and high variants, which differ from each other merely in the extent of the decline. The implied total fertility rate, depicted in Chart 2-2, is expected to fall to 2.6 births per female under the medium assumption. This is approximately equal to the lowest level during the 1930's.

However, it should be noted that, under this medium assumption, the projected level of fertility for 1980 is still fairly high in comparison with the recent experience of other industrialized countries, and that the implied net reproduction rate is still well on the positive side (this rate is the number of female children which 1,000 women, adjusted for age-specific mortality, could be expected to have if given birth rates continued for a generation). During the 1930's, many countries had net reproduction rates below 1.0, which means that 1,000 women could be expected to have fewer than 1,000 female children during their lifetime. In other words, their populations were not maintaining themselves at those rates. Since the mid-1930's, most of these countries, including the United States, have experienced rising net reproduction rates, at least up until about 1960. Even at the low point in 1937, Canada was still experiencing a positive rate -- one of the very few industrialized countries having a positive rate at that time.

The crude birth rate (the number of births per 1,000 persons in the population) is a function of both fertility rates and the age-sex structure of the population. While the number of children born to each female in the child-bearing ages is expected to decline to 1980, the proportion of females in prime child-bearing age groups will be expanding substantially. The latter factor is expected to outweigh the former in the near future, resulting in a moderate rise in the total number of births per year to 1980. Changes in the crude birth rate, as implied by the fertility assumptions and the changing age structure of the population, are shown in Table 2-C.

Table 2-C

Crude Birth Rates Implied by the Fertility

Assumptions to 1980

	Births per 1,000 Persons		
	Low	Medium	High
1965	21.4	21.4	21.4
1970	20.1	20.9	22.2
1975	19.4	21.1	23.4
1980	18.8	21.2	24.3

Note: For each of the years shown here, the total number of births, as derived on the basis of the age-specific fertility assumptions, is expressed as a rate per 1,000 persons of the low, medium and high population projections. The low population projection is derived from the combination of low fertility and low net immigration assumptions, etc.

Source: Based on data from Dominion Bureau of Statistics, Vital Statistics, and estimates by Economic Council of Canada.

Immigration and emigration

The formulation of immigration assumptions for the next 15 years must largely be a matter of conjecture and judgment, based on very little concrete evidence which might point to trends or tendencies. The pattern of immigration over the past two decades has been irregular and volatile, while the volume of emigration has exhibited only rather mild movements along a gradually rising trend (Chart 2-3).[1/]

The high but volatile volume of immigration up to the latter part of the 1950's appears to have been influenced by a set of circumstances somewhat unique to the period:

-- the readiness by Canada to accept large numbers of persons displaced from their countries in Europe after the war;

-- the high levels of unemployment existing in some Western European countries up to the middle of the 1950's; and the large disparity between European and North American living standards;

-- Canada's labour shortage, with particularly acute shortages of various special skills and occupations;

-- the large number of political refugees during the Hungarian Revolution; and massive immigration from Britain as an aftermath of the 1956 Suez crisis.

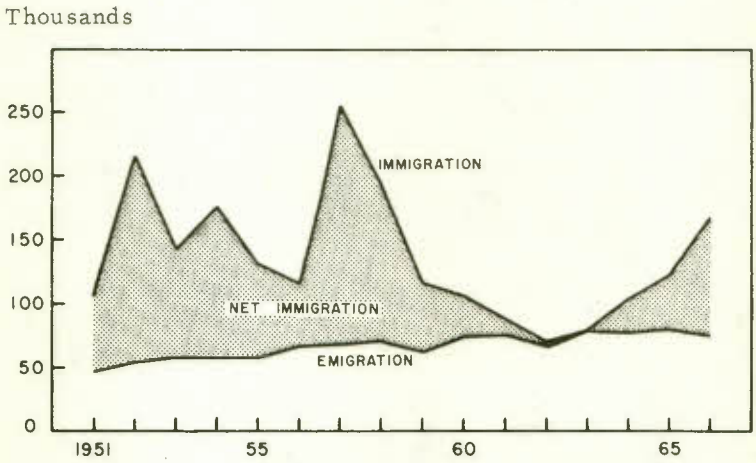
At the end of the 1950's and the beginning of the 1960's, North American labour markets were slack; most of the European countries had fully restored their economies and were experiencing acute labour shortages themselves; and

---

[1/] It should be noted that a direct account of emigrants is not made, and that the available figures are only rough estimates.

CHART 2-3

IMMIGRATION AND EMIGRATION[1]



[1] Annual flows for periods ending May 31.

Source: Based on data from Department of Manpower and Immigration, and estimates by Economic Council of Canada.

European average living standards had moved much closer to those in Canada. During these latter years, immigration to Canada declined substantially. More recently, however, immigration has once again risen sharply. In fact, the 195,000 arrivals in the calendar year 1966 represent the second largest number recorded since the end of the war, and an even larger number is anticipated for 1967. Even if one could postulate the effects of immigration policy, which is now being reoriented to favour, to a larger extent than in the past, the admission of persons with special skills, much will continue to depend on particular and unforeseeable circumstances. Further, the growth of the domestic labour force itself is at record levels, although there are shortages in certain age groups and occupations. For the next 15 years, an annual average of at least 150,000 immigrants appears to be a reasonable possibility. Of course, actual figures for individual years may vary considerably. For example, over the past decade and a half, the average annual volume of immigration was close to 140,000, with a range from 72,000 in 1961 to 282,000 in 1957.

It is assumed that the annual average volume of emigration over the next 15 years would be 80,000, which would represent a small increase over the average of recent years.

Three assumptions are made with respect to the volume of immigration over the next 15 years. As mentioned, the medium assumption, together with the medium fertility assumption, underlies the population projection used for subsequent calculations. The projections based on alternative assumptions provide useful means for exploring the quantitative impact of varying assumptions on growth rates to 1980. The net immigration assumptions are summarized in Table 2-D. The estimated age breakdown, as mentioned in the preceding description of methodology, is given in Table 2-6 in the statistical section.

Table 2-D

Assumed Average Annual Immigration

and Emigration to 1980

	Medium Assumption	Alternative Assumptions High	Low
	(Thousands of persons)		
Gross immigration	150	200	100
Gross emigration	80	80	80
Net immigration	70	120	20

Summary of the Results

Based on the medium fertility and medium net immigration assumption, the population is projected to rise to some 25.1 million persons by 1980. The alternative calculations, using the other possible combinations of assumptions, range from a low of 23.8 to a high of 26.7 million persons by 1980. The former figure is the result of combining low fertility trends with 20,000 annual net immigration, while the latter figure is the result of combining high fertility trends with 120,000 net immigration. It is interesting to note that the low fertility assumption and the high average net immigration assumption of 120,000 per year to 1980 would yield a population figure of 25.6 million persons, which is fairly close to that based on the combination of medium assumptions and which, in terms of population growth rates, would differ from that derived on the basis of the medium assumptions by only 0.1 percentage point per year.

The various population levels in 1970 and 1980, calculated on the basis of the nine possible combinations of assumptions, are shown in Table 2-E. Included in this Table also are selected earlier projections of the Canadian population to indicate the cumulative effect of difference in the underlying assumptions over long periods of time. For

example, the sizeable and unexpectedly swift declines in fertility rates in recent years, and the expectation of further declines, resulted in a population estimate for 1970 which is lower than the population estimate for 1970 projected in the First Annual Review. As is evident from Table 2-E, even the highest variant of the present set of projections -- 21.6 million persons -- is somewhat lower than the previous estimate of 21.7 million persons, despite the substantially higher immigration assumption used here. This comparison helps to emphasize the magnitude of the change in fertility trends since the assumptions for the First Annual Review were being considered.

Given the assumptions employed here, two observations can be made with regard to the relative importance of the sources of population growth to 1980. First, net immigration under any of the three adopted possibilities would tend to play a relatively less significant role than during the decade of the 1950's. Second, although the main source of population expansion is natural growth (i.e., the excess of births over deaths), the level of net immigration postulated here is responsible for generating the bulk of the differential from one projection variant to the next. For example, in the lowest variant, the population is projected to grow by 4.2 million persons between 1965 and 1980. In the highest variant, the total addition would be 7.1 million persons. About two thirds of the difference of 2.9 million persons is accounted for by the difference in the assumed net immigration (adjusted for births and deaths).[1/]

[1/] The low net immigration assumption is 20,000 per year, or 300,000 for the entire period 1965-80. The high net immigration assumption is 120,000 per year, or 1,800,000 for the whole period. The difference between low and high, cumulated for 15 years, would be 1,500,000. However, when births and deaths among migrants are also taken into account, the difference emerges as 1,880,000, and this is the appropriate figure for assessing the share of net immigration in the difference of 2.9 million between the low and high population estimates. It amounts to 65 per cent. Similar proportions are obtained for differences between other variants.

Table 2-E

Population Projections under Various Assumptions

(Thousands of Persons, as of June 1)

		1970	1971	1980	1981
A. Summary of the projections based on the nine possible combinations of the underlying assumptions:					
Annual net immigration of 20,000 and low fertility assumption		20,993		23,777	
20,000	medium	21,024		24,192	
20,000	high	21,084		24,797	
70,000	low	21,262		24,681	
70,000	medium	21,294		25,110	
70,000	high	21,354		25,734	
120,000	low	21,532		25,585	
120,000	medium	21,564		26,027	
120,000	high	21,625		26,670	
B. Selected earlier projections of the Canadian population:(1)					
Economic Council of Canada (1964). (50,000 annual net immigration)		21,729			
Royal Commission on Health Services (1964)					
Annual net immigration	0		21,984		26,859
	25,000		22,287		27,553
	50,000		22,590		28,247
	100,000		23,195		29,635
Royal Commission on Canada's Economic Prospects (1957)					
Annual net immigration	0	20,190		24,010	
	50,000	21,160		25,770	
	75,000	21,640		26,650	
	100,000	22,130		27,530	

(1) Apart from the indicated differences in the net immigration assumptions, these projections also used different fertility and mortality assumptions.

Source: Royal Commission on Health Services, 1964, Volume 1, Table 4-3; Royal Commission on Canada's Economic Prospects, Final Report, November 1957, Table 6-2; and projections by Economic Council of Canada.

The average growth rate of the population from 1965 to 1980, implied by the medium assumptions, amounts to 1.7 per cent per year. Although this is somewhat below the long-term average of over 2 per cent recorded for the period 1900-65, it still exceeds the rate of expansion over several extended periods during the past 100 years. The projected growth rate for the next 15 years in relation to rates experienced over the last 100 years is illustrated in Chart 2-4. This Chart also shows the high volatility of past population growth. The extended swings in the past were the consequence of synchronous movements of natural growth and net immigration.

Despite recent declines in fertility levels and allowances for further substantial declines to 1980, Canada's population growth rate would still remain well above the rates expected in other major industrialized countries. In fact, between 1965 and 1980, Canada is estimated to add about as many persons to its population as West Germany, France, Italy or Britain, all of which currently have populations between two and one half to three times as large as Canada's (Table 2-F). Canada's higher population growth is largely a consequence of the rapid expansion in the number of young adults in family-formation ages.

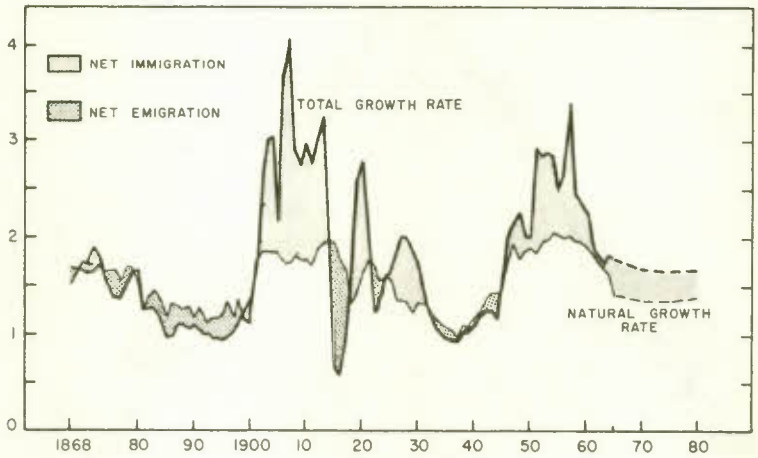
The low rate of natural growth during the 1930's, the remarkably high levels of births and immigration in the post-war years, and the recent decline in births have given the age pyramid of the Canadian population a distinctive configuration which will have repercussions for many years. The changes in the age structure between now and 1980, as implied by the medium population projections, are portrayed in Chart 2-5.

The fastest-growing segment of the Canadian population will be in the age groups coming into the labour force. Between 1965 and 1980, the working age population (defined as 15-64) as a share of the total population is projected to rise from 59 to 64 per cent. The share of the population over 65 will also increase -- from 7.6 to 8.4 per cent.

CHART 2-4

POPULATION GROWTH RATES

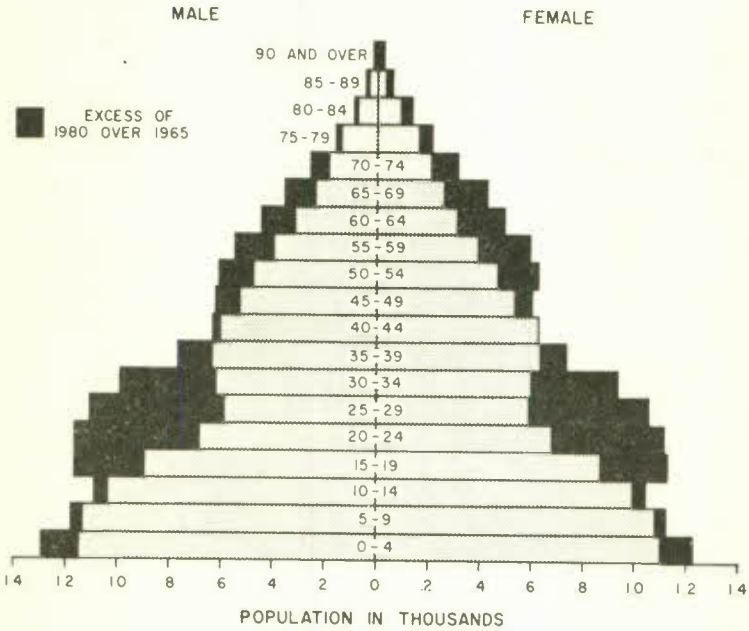
(Year-to-year percentage change)



Source: Based on data from O. J. Firestone, Canada's Economic Development, 1867-1953, Bowes and Bowes, London, 1958; Historical Statistics of Canada, M. C. Urquhart and K.A.H. Buckley, eds., The Macmillan Co., Toronto, 1965; Bank of Canada; and estimates by Economic Council of Canada.

CHART 2-5

AGE STRUCTURE OF THE POPULATION, 1965 AND 1980



Source: Based on data from Dominion Bureau of Statistics, and estimates by Economic Council of Canada.

Table 2-F

Population Growth in Selected Countries, 1965-80

	1965 Population	Growth 1965-80	
	(Millions)	(Millions)	(Per cent)
Britain	54.4	6.1	11
France[1]	48.2	5.6	12
Germany (F.R.)	58.2	4.2	7
Italy	52.2	6.2	12
Sweden	7.7	1.0	13
United States	193.3	50.1	26
CANADA	19.6	5.5	28

[1] Excluding migration 1965-80.

Source: Based on data from Organization for Economic Co-operation and Development, Demographic Trends 1965-80 in Western Europe and North America (Paris, 1966); and estimates by Economic Council of Canada.

On the other hand, the share of young dependents -- that is, the population under 15 years of age -- is expected to decline from 33.3 to 27.7 per cent. These developments contrast significantly with those expected in other major industrialized countries, as shown in Table 2-G.

Table 2-G

Demographic Changes in Selected Countries[1]

	Percentage Change in Working Age Population[2]	Aged Population per 1,000 Persons of Working Age[2]		Young Population per 1,000 Persons of Working Age[2]	
	1965-80	1965	1980	1965	1980
Britain	4.4	241	278	376	429
France	12.0	253	264	429	413
Germany (F. R.)	2.1	242	277	359	368
Italy	8.8	193	235	380	401
Sweden	0.3	244	330	329	404
United States	25.4	198	205	536	533
CANADA	38.2	161	168	579	448

(1) Excluding migration 1965-80, except for Canada and the United States.

(2) Working age population: males, 15-64; females, 15-59. Aged population: males, 65 and over; females, 60 and over. Young population: both sexes, under 15 years of age. These definitions were used in the OECD study referred to in the source below, and the Canadian and U. S. data were accordingly adjusted to facilitate comparison.

Source: Based on data from Organization for Economic Co-operation and Development, Demographic Trends 1965-80 in Western Europe and North America, Paris, 1966; U.S. Manpower Report of the President, March 1966 (Table E-2); Dominion Bureau of Statistics, Vital Statistics; and estimates by Economic Council of Canada.

TABLES

POPULATION

Table 2-1

Crude and Standardized Death Rates,

Both Sexes, 1926-65

(Deaths per 1,000 persons in the total population)

	Crude Death Rate	Standardized Death Rate[1]
1926	11.4	13.9
1927	11.0	13.3
1928	11.2	13.5
1929	11.4	13.8
1930	10.8	13.0
1931	10.2	12.2
1932	10.0	12.1
1933	9.7	11.6
1934	9.5	11.4
1935	9.9	11.6
1936	9.9	11.5
1937	10.4	12.1
1938	9.7	11.1
1939	9.7	11.1
1940	9.8	11.0
1941	10.1	11.2
1942	9.8	10.7
1943	10.1	11.0
1944	9.8	10.5
1945	9.5	10.1
1946	9.4	9.9
1947	9.4	9.7
1948	9.3	9.5
1949	9.3	9.4
1950	9.1	9.1
1951	9.0	9.0
1952	8.7	8.8
1953	8.6	8.6
1954	8.2	8.2
1955	8.2	8.2
1956	8.2	8.2
1957	8.2	8.3
1958	7.9	8.0
1959	8.0	8.0
1960	7.8	7.8
1961	7.7	7.6
1962	7.7	7.6
1963	7.8	7.6
1964	7.6	7.3
1965	7.6	

(1) The effects of changes in age composition over time were removed by adjusting death rates from 1926 to 1965 to the 1956 population age-distribution, thereby indicating what death rates would have been had the 1956 "standardized" population been constant over this period.

Source: Based on data from Dominion Bureau of Statistics, Vital Statistics.

Table 2-2

Life Table Mortality Rates (q_x) and

Survival Ratios (S_x) for Selected Ages

(Males)

Age	Mortality rates (q_x)					Survival ratios (S_x)				
	1961	1965	1970	1975	1980	1961	1965	1970	1975	1980
0	.03058	.02630	.02341	.02154	.02046	.97323	.97696	.97949	.98113	.98208
1	.00185	.00148	.00126	.00112	.00103	.99493	.99579	.99630	.99662	.99681
2	.00114	.00100	.00092	.00088	.00086	.99871	.99884	.99897	.99905	.99910
3	.00099	.00088	.00081	.00077	.00075	.99896	.99909	.99916	.99920	.99921
4	.00083	.00076	.00071	.00068	.00066	.99909	.99919	.99925	.99928	.99930
5	.00073	.00068	.00065	.00063	.00062	.99923	.99930	.99933	.99936	.99938
7	.00060	.00056	.00053	.00051	.00050	.99938	.99942	.99945	.99696	.99948
10	.00050	.00048	.00047	.00046	.00045	.99950	.99952	.99953	.99952	.99955
12	.00054	.00052	.00050	.00049	.00048	.99947	.99949	.99952	.99952	.99953
15	.00089	.00085	.00082	.00080	.00079	.99918	.99922	.99924	.99925	.99926
17	.00117	.00112	.00109	.00107	.00105	.99889	.99894	.99897	.99898	.99901
20	.00153	.00147	.00143	.00140	.00139	.99853	.99858	.99863	.99867	.99868
25	.00157	.00151	.00146	.00143	.00142	.99840	.99846	.99849	.99852	.99854
30	.00150	.00144	.00140	.00137	.00136	.99851	.99857	.99861	.99864	.99865
35	.00193	.00187	.00183	.00181	.00179	.99813	.99820	.99825	.99828	.99829
40	.00282	.00274	.00269	.00266	.00263	.99729	.99737	.99740	.99744	.99747
45	.00465	.00452	.00443	.00439	.00435	.99558	.99572	.99581	.99584	.99588
50	.00772	.00757	.00742	.00735	.00728	.99263	.99281	.99297	.99303	.99310
55	.01265	.01240	.01215	.01203	.01191	.98794	.98817	.98842	.98852	.98866
60	.01999	.01959	.01920	.01901	.01882	.98086	.98124	.98161	.98180	.98198
65	.02972	.02942	.02913	.02884	.02855	.97136	.97164	.97193	.97221	.97248
70	.04467	.04445	.04423	.04421	.04399	.95714	.95746	.95777	.95799	.95831
75	.06706	.06663	.06630	.06597	.06565	.93554	.93594	.93625	.93657	.93687
80	.10091	.09989	.09889	.09790	.09692	.90322	.90422	.90515	.90609	.90705
85	.15231	.15079	.14928	.14779	.14631	.85410	.85551	.85694	.85841	.85982
90	.22712	.22598	.22485	.22373	.22261	.78227	.78338	.78451	.78553	.78666
95	.33123	.33123	.33123	.33123	.33123	.68263	.68325	.68405	.68491	.68637

Table 2-2 (concluded)

Life Table Mortality Rates (q_x) and

Survival Ratios (S_x) for Selected Ages

(Females)

Age	Mortality rates (q_x)					Survival ratios (S_x)				
	1961	1965	1970	1975	1980	1961	1965	1970	1975	1980
0	.02387	.02053	.01827	.01681	.01597	.97938	.98231	.98426	.98552	.98624
1	.00164	.00131	.00110	.00097	.00089	.99566	.99631	.99676	.99705	.99722
2	.00096	.00085	.00078	.00075	.00074	.99886	.99900	.99913	.99920	.99923
3	.00071	.00067	.00064	.00063	.00062	.99919	.99927	.99932	.99933	.99934
4	.00061	.00057	.00055	.00054	.00053	.99934	.99940	.99941	.99943	.99943
5	.00053	.00051	.00049	.00048	.00047	.99944	.99948	.99950	.99950	.99952
7	.00039	.00037	.00036	.00035	.00034	.99958	.99960	.99961	.99962	.99963
10	.00029	.00028	.00027	.00026	.00025	.99971	.99971	.99973	.99973	.99975
12	.00029	.00028	.00027	.00026	.00025	.99972	.99972	.99974	.99974	.99975
15	.00040	.00038	.00037	.00036	.00035	.99962	.99964	.99965	.99966	.99967
17	.00048	.00046	.00045	.00044	.00043	.99953	.99955	.99957	.99957	.99959
20	.00055	.00053	.00051	.00050	.00049	.99946	.99947	.99950	.99951	.99952
25	.00064	.00061	.00059	.00058	.00057	.99937	.99939	.99941	.99943	.99944
30	.00079	.00076	.00074	.00073	.00072	.99923	.99925	.99928	.99929	.99930
35	.00115	.00110	.00107	.00105	.00104	.99890	.99895	.99897	.99900	.99900
40	.00174	.00167	.00162	.00159	.00157	.99833	.99839	.99843	.99847	.99848
45	.00277	.00266	.00258	.00253	.00250	.99736	.99746	.99753	.99759	.99762
50	.00436	.00423	.00414	.00410	.00406	.99582	.99594	.99603	.99607	.99611
55	.00675	.00655	.00642	.00636	.00630	.99353	.99373	.99385	.99391	.99397
60	.01064	.01032	.01011	.01001	.00991	.98983	.99012	.99032	.99042	.99052
65	.01718	.01666	.01633	.01617	.01601	.98362	.98410	.98443	.98458	.98473
70	.02774	.02690	.02636	.02610	.02584	.97352	.97431	.97484	.97509	.97533
75	.04664	.04527	.04436	.04392	.04348	.95573	.95705	.95789	.95832	.95874
80	.07941	.07703	.07549	.07474	.07399	.92465	.92690	.92838	.92907	.92977
85	.13118	.12856	.12599	.12473	.12348	.87520	.87833	.88077	.88195	.88309
90	.20708	.20604	.20501	.20398	.20296	.80247	.80339	.80442	.80539	.80631
95	.31226	.31070	.30915	.30760	.30606	.70168	.70284	.70450	.70585	.70737

Source: Based on data from Dominion Bureau of Statistics, Canadian Life Tables, and estimates in projections by Economic Council of Canada.

Table 2-3

Expectation of Life at Birth (e_0^0)

1951-80

	Males e_0^0	Females e_0^0
	(Years)	
1951	66.33	70.83
1956	67.61	72.92
1961	68.35	74.17
1965	68.92	74.78
1970	69.33	75.19
1980	69.80	75.62

Source: Based on data from Dominion Bureau of Statistics, Canadian Life Tables; and estimates by Economic Council of Canada.

Table 2-4

Age-Specific Fertility Rates

(Births per 1,000 women by age group)

		Age Groups of Women							Total Fertility[1]
		15-19	20-24	25-29	30-34	35-39	40-44	45-49	
1926		29.0	139.9	177.4	153.8	114.6	50.7	6.0	3,357
1930		30.5	143.0	176.0	148.0	106.7	46.6	5.5	3,282
1935		26.5	112.5	148.5	128.6	92.6	37.3	4.9	2,755
1940		29.3	130.3	152.6	122.8	81.7	32.7	3.7	2,766
1945		31.6	143.3	166.8	134.3	90.3	33.5	3.7	3,018
1950		46.0	181.3	200.6	141.3	87.9	30.8	3.0	3,455
1955		54.2	218.3	215.1	153.8	89.8	32.3	2.9	3,831
1960		59.8	233.5	224.4	146.2	84.2	28.5	2.4	3,895
1965		49.5	192.4	185.3	121.0	66.2	21.8	2.0	3,192
		Projections under Various Assumptions							
1970	High Fertility	47.9	185.9	178.8	116.9	63.4	20.8	2.0	3,078
	Medium Fertility	44.9	173.4	166.4	109.0	58.3	18.9	1.8	2,863
	Low Fertility	43.2	166.8	159.9	104.9	55.5	17.9	1.8	2,750
1975	High Fertility	47.2	182.7	175.6	114.8	62.1	20.3	1.9	3,023
	Medium Fertility	42.4	163.5	156.5	102.7	54.2	17.5	1.7	2,693
	Low Fertility	38.9	149.5	142.8	94.0	48.5	15.5	1.6	2,454
1980	High Fertility	48.1	186.4	179.2	112.9	60.8	19.9	1.9	3,046
	Medium Fertility	41.1	158.1	151.1	99.3	52.0	16.7	1.6	2,601
	Low Fertility	35.9	137.5	130.9	86.4	43.8	13.9	1.5	2,250

[1] Sum of age-specific rates for women aged 15-49.

Source: Based on data from Dominion Bureau of Statistics, Vital Statistics; and estimates by Economic Council of Canada.

Table 2-5

Percentage Changes in Age-Specific Fertility Rates, 1925-80

(Total percentage change)

		Age Groups of Women							Total Fertility
		15-19	20-24	25-29	30-34	35-39	40-44	45-49	
1925-30		- 9.2	+ 3.0	+ 5.1	+ 6.0	+ 7.5	+ 9.6	+ 7.8	+ 4.8
1930-35		-13.1	-21.3	-15.6	-13.1	-13.2	-20.0	-10.9	-16.1
1935-40		+10.6	+15.8	+ 2.8	- 4.5	-11.8	-12.3	-24.5	+ 0.4
1940-45		+ 7.8	+10.0	+ 9.3	+ 9.4	+10.5	+ 2.4	-	+ 9.1
1945-50		+45.6	+26.5	+20.3	+ 5.2	- 2.7	- 8.1	-18.9	+14.5
1950-55		+17.8	+20.4	+ 7.2	+ 8.8	+ 2.2	+ 4.9	- 3.3	+10.9
1955-60		+10.3	+ 7.0	+ 4.3	- 4.9	- 6.2	-11.8	-17.2	+ 1.7
1960-65		-17.2	-17.6	-17.4	-17.2	-21.4	-23.5	-16.7	-18.0
		Projections under Various Assumptions							
1965-70	High Fertility	- 3.2	- 3.4	- 3.5	- 3.4	- 4.2	- 4.6	-	- 3.6
	Medium Fertility	- 9.3	- 9.9	-10.2	- 9.9	-11.9	-13.3	-10.0	-10.3
	Low Fertility	-12.8	-13.3	-13.7	-13.3	-16.2	-17.9	-10.0	-13.8
1970-75	High Fertility	- 1.5	- 1.7	- 1.8	- 1.8	- 2.1	- 2.4	- 5.0	- 1.8
	Medium Fertility	- 5.6	- 5.7	- 5.9	- 5.8	- 7.0	- 7.4	- 5.6	- 5.9
	Low Fertility	-10.0	-10.4	-10.7	-10.4	-12.6	-13.4	-11.1	-10.8
1975-80	High Fertility	+ 1.9	+ 2.0	+ 2.1	- 1.7	- 2.1	- 2.0	-	+ 0.8
	Medium Fertility	- 3.1	- 3.3	- 3.5	- 3.3	- 4.1	- 4.6	- 3.0	- 3.4
	Low Fertility	- 7.7	- 8.0	- 8.3	- 8.1	- 9.7	-10.3	- 6.2	- 8.3

Source: See Table 2-4.

Table 2-6

Assumed Age and Sex Breakdown of Immigrants and Emigrants

for the Projection Period to 1980

	Immigrants						Emigrants	
	High Assumption		Medium Assumption		Low Assumption			
Age	Males	Females	Males	Females	Males	Females	Males	Females
0-4	9,430	8,874	7,073	6,656	4,715	4,437	4,319	4,244
5-9	8,416	7,789	6,312	5,842	4,208	3,895	3,869	3,735
10-14	5,982	5,522	4,487	4,141	2,991	2,761	2,442	2,715
15-19	8,011	8,085	6,008	6,064	4,006	4,044	3,304	3,947
20-24	18,660	19,721	13,994	14,790	9,329	9,858	5,146	8,318
25-29	18,353	15,677	13,766	11,758	9,178	7,838	5,071	6,621
30-34	11,964	10,254	8,974	7,692	5,983	5,127	4,168	3,989
35-39	7,706	6,509	5,780	4,881	3,853	3,254	2,704	2,505
40-44	4,462	3,846	3,347	2,884	2,231	1,923	2,330	2,164
45-49	2,940	3,057	2,204	2,292	1,471	1,528	1,539	1,699
50-54	1,927	2,564	1,446	1,923	963	1,282	1,015	933
55-59	1,318	2,169	988	1,627	658	1,084	714	765
60-64	810	1,873	608	1,405	406	937	413	298
65-69	710	1,282	532	961	355	641	338	255
70 +	709	1,381	532	1,035	355	690	188	255
All ages	101,398	98,603	76,051	73,951	50,702	49,299	37,560	42,443

Table 2-7

Population Projections to 1980: Medium Immigration, Medium Fertility[1]

(Thousands, as of June 1)

Both Sexes	1966	1967	1968	1969	1970	1971	1972	1973
All ages	19,910.4	20,251.8	20,596.3	20,943.7	21,294.0	21,647.7	22,008.1	22,374.9
0-4 years	2,211.9	2,171.3	2,133.1	2,111.4	2,111.1	2,137.8	2,169.9	2,206.6
5-9 "	2,251.1	2,280.5	2,296.1	2,295.6	2,276.1	2,228.4	2,187.9	2,149.4
10-14 "	2,077.0	2,110.6	2,152.8	2,192.5	2,228.5	2,265.6	2,295.1	2,310.8
15-19 "	1,855.8	1,920.0	1,971.6	2,013.9	2,052.3	2,089.2	2,122.7	2,164.8
20-24 "	1,457.6	1,545.4	1,640.8	1,737.4	1,826.8	1,903.3	1,967.1	2,018.6
25-29 "	1,213.9	1,255.3	1,308.7	1,373.1	1,446.1	1,526.0	1,613.4	1,708.2
30-34 "	1,219.8	1,215.4	1,212.9	1,216.6	1,231.3	1,260.3	1,301.5	1,354.6
35-39 "	1,273.8	1,268.8	1,263.3	1,256.8	1,250.0	1,243.8	1,239.6	1,237.1
40-44 "	1,260.5	1,274.8	1,281.5	1,282.1	1,279.5	1,275.7	1,270.9	1,265.4
45-49 "	1,097.7	1,125.7	1,159.0	1,193.8	1,223.6	1,245.4	1,259.5	1,266.0
50-54 "	985.6	1,004.7	1,019.7	1,034.0	1,051.4	1,074.1	1,101.4	1,133.9
55-59 "	826.7	852.3	878.2	903.5	927.2	948.0	966.4	980.8
60-64 "	659.3	680.6	703.2	727.2	751.2	775.5	799.5	824.0
65-69 "	524.5	535.4	548.0	561.7	577.3	595.1	614.4	634.9
70 years and over	995.2	1,011.0	1,027.4	1,044.1	1,061.6	1,079.5	1,098.8	1,119.8

(1) See note at end of Table.

Table 2-7 (continued)

Population Projections to 1980: Medium Immigration, Medium Fertility[1]

(Thousands, as of June 1)

Both Sexes	1974	1975	1976	1977	1978	1979	1980
All ages	22,747.9	23,126.5	23,509.9	23,900.3	24,297.7	24,701.2	25,110.0
0-4 years	2,246.9	2,290.0	2,335.6	2,381.6	2,427.5	2,473.4	2,519.0
5-9 "	2,127.3	2,126.1	2,151.9	2,183.7	2,220.4	2,261.1	2,305.0
10-14 "	2,310.2	2,290.6	2,242.7	2,202.0	2,163.3	2,140.9	2,139.7
15-19 "	2,204.5	2,240.4	2,277.4	2,306.8	2,322.5	2,321.9	2,302.4
20-24 "	2,060.6	2,098.9	2,135.6	2,169.1	2,211.0	2,250.5	2,286.3
25-29 "	1,804.4	1,893.5	1,969.5	2,033.1	2,084.3	2,126.2	2,164.3
30-34 "	1,418.6	1,491.3	1,570.8	1,657.7	1,752.1	1,847.8	1,936.3
35-39 "	1,240.7	1,255.6	1,284.4	1,325.3	1,378.1	1,441.7	1,513.9
40-44 "	1,258.9	1,252.3	1,246.3	1,242.0	1,239.7	1,243.4	1,258.1
45-49 "	1,266.7	1,264.2	1,260.6	1,255.8	1,250.4	1,244.2	1,237.7
50-54 "	1,168.0	1,197.0	1,218.3	1,231.9	1,238.3	1,239.0	1,236.6
55-59 "	994.7	1,011.6	1,033.5	1,059.8	1,091.1	1,123.7	1,151.6
60-64 "	847.7	870.0	889.6	906.8	920.5	933.7	949.7
65-69 "	656.6	678.4	700.3	722.2	744.4	765.9	786.1
70 years and over	1,142.1	1,166.6	1,193.4	1,222.5	1,254.1	1,287.8	1,323.3

(1) See note at end of Table.

Table 2-7 (continued)

Population Projections to 1980: Medium Immigration, Medium Fertility[1]

(Thousands, as of June 1)

Males	1966	1967	1968	1969	1970	1971	1972	1973
All ages	10,030.2	10,198.9	10,369.1	10,541.0	10,714.5	10,890.0	11,069.0	11,251.3
0-4 years	1,132.1	1,111.9	1,093.1	1,082.3	1,082.4	1,096.2	1,112.7	1,131.6
5-9 "	1,150.9	1,165.6	1,173.7	1,173.7	1,164.2	1,140.5	1,120.2	1,101.1
10-14 "	1,063.1	1,080.5	1,101.8	1,122.0	1,140.1	1,158.8	1,173.6	1,181.7
15-19 "	947.8	981.1	1,008.0	1,030.2	1,050.3	1,069.3	1,086.7	1,107.9
20-24 "	739.6	787.4	837.7	887.7	933.8	973.4	1,006.4	1,033.2
25-29 "	604.6	626.5	656.8	694.1	735.9	780.3	827.8	877.7
30-34 "	621.2	617.9	614.3	613.2	618.2	632.1	653.9	683.9
35-39 "	644.5	643.7	642.3	640.0	637.1	633.8	630.6	627.0
40-44 "	624.7	633.5	639.3	642.8	644.5	644.8	644.1	642.7
45-49 "	547.0	559.1	573.9	589.6	603.7	614.9	623.5	629.2
50-54 "	495.4	503.0	508.5	513.7	520.6	530.2	541.9	556.2
55-59 "	417.4	428.5	439.7	450.5	460.2	468.5	475.7	480.9
60-64 "	329.5	339.4	349.5	360.1	370.5	381.0	391.2	401.6
65-69 "	253.6	258.5	264.3	270.8	278.1	286.4	295.0	303.9
70 years and over	458.8	462.3	466.2	470.3	474.9	479.8	485.7	492.7

(1) See note at end of Table.

Table 2-7 (continued)

Population Projections to 1980: Medium Immigration, Medium Fertility[1]

(Thousands, as of June 1)

Males	1974	1975	1976	1977	1978	1979	1980
All ages	11,437.0	11,625.6	11,816.6	12,011.5	12,209.9	12,412.0	12,617.1
0-4 years	1,152.3	1,174.5	1,197.9	1,221.5	1,245.1	1,268.7	1,292.1
5-9 "	1,089.8	1,089.1	1,102.0	1,118.2	1,137.1	1,158.3	1,181.2
10-14 "	1,181.7	1,172.1	1,148.1	1,127.6	1,108.2	1,096.6	1,095.8
15-19 "	1,128.1	1,146.1	1,164.8	1,179.5	1,187.6	1,187.5	1,178.0
20-24 "	1,055.2	1,075.2	1,094.1	1,111.5	1,132.5	1,152.6	1,170.5
25-29 "	927.4	973.2	1,012.5	1,045.3	1,071.9	1,093.8	1,113.7
30-34 "	721.0	762.6	806.7	853.8	903.4	952.8	998.2
35-39 "	625.9	631.0	644.8	666.4	696.2	733.0	774.2
40-44 "	640.4	637.6	634.4	631.2	627.7	626.7	631.7
45-49 "	632.7	634.4	634.8	634.0	632.7	630.5	627.8
50-54 "	571.5	585.1	596.0	604.3	609.8	613.2	614.9
55-59 "	485.9	492.6	501.7	512.8	526.4	540.8	553.8
60-64 "	411.4	420.4	428.0	434.6	439.4	444.1	450.3
65-69 "	313.2	322.3	331.5	340.5	349.6	358.2	366.1
70 years and over	500.5	509.4	519.3	530.3	542.3	555.2	568.8

(1) See note at end of Table.

Table 2-7 (continued)

Population Projections to 1980: Medium Immigration, Medium Fertility[1]

(Thousands, as of June 1)

Females	1966	1967	1968	1969	1970	1971	1972	1973
All ages	9,880.2	10,052.9	10,227.2	10,402.7	10,579.5	10,757.7	10,939.1	11,123.6
0-4 years	1,079.8	1,059.4	1,040.0	1,029.1	1,028.7	1,041.6	1,057.2	1,075.0
5-9 "	1,100.2	1,114.9	1,122.4	1,121.9	1,111.9	1,087.9	1,067.7	1,048.3
10-14 "	1,013.9	1,030.1	1,051.0	1,070.5	1,088.4	1,106.8	1,121.5	1,129.1
15-19 "	908.0	938.9	963.6	983.7	1,002.0	1,019.9	1,036.0	1,056.9
20-24 "	718.0	758.0	803.1	849.7	893.0	929.9	960.7	985.4
25-29 "	609.3	628.8	651.9	679.0	710.2	745.7	785.6	830.5
30-34 "	598.6	597.5	598.6	603.4	613.1	628.2	647.6	670.7
35-39 "	629.3	625.1	621.0	616.8	612.9	610.0	609.0	610.1
40-44 "	635.8	641.3	642.2	639.3	635.0	630.9	626.8	622.7
45-49 "	550.7	566.6	585.1	604.2	619.9	630.5	636.0	636.8
50-54 "	490.2	501.7	511.2	520.3	530.8	543.9	559.5	577.7
55-59 "	409.3	423.8	438.5	453.0	467.0	479.5	490.7	499.9
60-64 "	329.8	341.2	353.7	367.1	380.7	394.5	408.3	422.4
65-69 "	270.9	276.9	283.7	290.9	299.2	308.7	319.4	331.0
70 years and over	536.4	548.7	561.2	573.8	586.7	599.7	613.1	627.1

(1) See note at end of Table.

Table 2-7 (concluded)

Population Projections to 1980: Medium Immigration, Medium Fertility[1]

(Thousands, as of June 1)

Females	1974	1975	1976	1977	1978	1979	1980
All ages	11,310.9	11,500.9	11,693.3	11,888.8	12,087.8	12,289.2	12,492.9
0-4 years	1,094.6	1,115.5	1,137.7	1,160.1	1,182.4	1,204.7	1,226.9
5-9 "	1,037.5	1,037.0	1,049.9	1,065.5	1,083.3	1,102.8	1,123.8
10-14 "	1,128.5	1,118.5	1,094.6	1,074.4	1,055.1	1,044.3	1,043.9
15-19 "	1,076.4	1,094.3	1,112.6	1,127.3	1,134.9	1,134.4	1,124.4
20-24 "	1,005.4	1,023.7	1,041.5	1,057.6	1,078.5	1,097.9	1,115.8
25-29 "	877.0	920.3	957.0	987.8	1,012.4	1,032.4	1,050.6
30-34 "	697.6	728.7	764.1	803.9	848.7	895.0	938.1
35-39 "	614.8	624.6	639.6	658.9	681.9	708.7	739.7
40-44 "	618.5	614.7	611.9	610.8	612.0	616.7	626.4
45-49 "	634.0	629.8	625.8	621.8	617.7	613.7	609.9
50-54 "	596.5	611.9	622.3	627.6	628.5	625.8	621.7
55-59 "	508.8	519.0	531.8	547.0	564.7	582.9	597.8
60-64 "	436.3	449.6	461.6	472.2	481.1	489.6	499.4
65-69 "	343.4	356.1	368.8	381.7	394.8	407.7	420.0
70 years and over	641.6	657.2	674.1	692.2	711.8	732.6	754.5

(1) Based on assumptions of an annual average of 70,000 net immigrants (150,000 immigrants, and 80,000 emigrants), and medium fertility.

Table 2-8

Population Projections to 1980: Low Immigration, Low Fertility[1]

Selected Years

(Thousands, as of June 1)

	Both Sexes			Males			Females		
	1970	1975	1980	1970	1975	1980	1970	1975	1980
All ages	20,992.8	22,385.8	23,776.7	10,561.6	11,248.9	11,938.5	10,431.2	11,136.9	11,838.2
0-4 years	2,044.8	2,081.6	2,152.3	1,048.4	1,067.6	1,104.0	996.4	1,014.0	1,048.3
5-9 "	2,253.9	2,038.1	2,075.3	1,152.7	1,043.9	1,063.4	1,101.2	994.2	1,011.9
10-14 "	2,212.2	2,252.1	2,035.6	1,131.6	1,152.1	1,042.3	1,080.6	1,100.0	993.3
15-19 "	2,036.3	2,208.2	2,248.1	1,042.2	1,129.5	1,150.0	994.1	1,078.7	1,098.1
20-24 "	1,789.5	2,045.7	2,217.0	915.7	1,049.1	1,136.0	873.8	996.6	1,081.0
25-29 "	1,399.3	1,809.5	2,064.5	711.8	931.1	1,063.6	687.5	878.4	1,000.9
30-34 "	1,197.8	1,411.2	1,819.4	600.0	720.4	938.3	597.8	690.8	881.1
35-39 "	1,228.7	1,201.0	1,413.0	625.6	601.5	720.9	603.1	599.5	692.1
40-44 "	1,266.6	1,218.3	1,191.0	637.5	619.3	595.5	629.1	599.0	595.5
45-49 "	1,215.3	1,243.2	1,195.8	599.5	623.3	605.5	615.8	619.9	590.3
50-54 "	1,045.2	1,182.7	1,209.8	517.8	578.2	601.3	527.4	604.5	608.5
55-59 "	922.4	1,000.9	1,133.2	458.3	488.0	545.4	464.1	512.9	587.8
60-64 "	747.6	862.0	936.1	369.3	417.5	445.0	378.3	444.5	491.1
65-69 "	574.7	672.5	776.2	277.3	320.5	362.7	297.4	352.0	413.5
70 years and over	1,058.5	1,158.8	1,309.4	473.9	506.9	564.6	584.6	651.9	744.8

(1) Based on assumptions of an annual average of 20,000 net immigrants (100,000 immigrants, and 80,000 emigrants), and low fertility.

Table 2-9

Population Projections to 1980: High Immigration, High Fertility[1]

Selected Years

(Thousands, as of June 1)

	Both Sexes			Males			Females		
	1970	1975	1980	1970	1975	1980	1970	1975	1980
All ages	21,624.9	23,983.6	26,670.1	10,882.7	12,061.7	13,411.7	10,742.2	11,921.9	13,258.4
0-4 years	2,206.8	2,585.5	2,996.7	1,131.5	1,326.0	1,537.1	1,075.3	1,259.5	1,459.6
5-9 "	2,298.1	2,243.4	2,621.4	1,175.6	1,149.3	1,343.4	1,122.5	1,094.1	1,278.0
10-14 "	2,244.9	2,329.0	2,273.0	1,148.6	1,192.0	1,164.3	1,096.3	1,137.0	1,108.7
15-19 "	2,068.1	2,272.7	2,356.6	1,058.3	1,162.7	1,205.9	1,009.8	1,110.0	1,150.7
20-24 "	1,864.2	2,152.0	2,355.8	951.9	1,101.3	1,205.1	912.3	1,050.7	1,150.7
25-29 "	1,492.9	1,977.3	2,263.9	760.0	1,015.2	1,163.7	732.9	962.1	1,100.2
30-34 "	1,265.0	1,571.4	2,053.4	636.5	804.7	1,058.2	628.5	766.7	995.2
35-39 "	1,271.3	1,310.1	1,614.7	648.6	660.5	827.4	622.7	649.6	787.3
40-44 "	1,292.5	1,286.3	1,325.1	651.5	655.9	667.9	641.0	630.4	657.2
45-49 "	1,232.0	1,285.3	1,279.5	608.0	645.5	650.0	624.0	639.8	629.5
50-54 "	1,057.6	1,211.4	1,263.3	523.4	592.1	628.4	534.2	619.3	634.9
55-59 "	931.9	1,022.3	1,170.1	462.1	497.1	562.2	469.8	525.2	607.9
60-64 "	754.8	878.1	963.3	371.7	423.3	455.6	383.1	454.8	507.7
65-69 "	580.0	684.3	796.0	279.0	324.2	369.4	301.0	360.1	426.6
70 years and over	1,064.8	1,174.5	1,337.3	476.0	511.9	573.1	588.8	662.6	764.2

(1) Based on assumptions of an annual average of 120,000 net immigrants (200,000 immigrants, and 80,000 emigrants), and high fertility.

Table 2-10

Comparison of Intercensal Population Estimates,

and 1966 Census Population Figures

(Thousands, as of June 1)

Age Groups	Intercensal Estimates 1965	Intercensal Estimates 1966	Census 1966
All ages	19,571	19,919	20,015
0-4 years	2,260	2,200	2,197
5-9 "	2,214	2,254	2,301
10-14 "	2,040	2,079	2,094
15-19 "	1,779	1,856	1,838
20-24 "	1,377	1,458	1,461
25-29 "	1,185	1,216	1,242
30-34 "	1,226	1,223	1,242
35-39 "	1,278	1,277	1,286
40-44 "	1,238	1,264	1,257
45-49 "	1,075	1,098	1,090
50-54 "	964	986	988
55-59 "	801	828	816
60-65 "	640	660	663
65-70 "	515	526	532
70 years and over	980	994	1,008

Source: Based on data from Dominion Bureau of Statistics. Intercensal population estimates are preliminary and subject to revision on the basis of the 1966 Census results.

CHAPTER 3

FAMILIES AND HOUSEHOLDS

The post-war birth wave is now beginning to be reflected in an upsurge of marriages. Thus family and household formation will advance substantially over the next 15 years. This Chapter is designed to provide estimates of their growth to 1980, and to delineate the changes in the various components of which they are comprised. The projections are based on the relevant age groups from the medium population series described in the preceding Chapter.

There are basically two types of households -- those established by families, and those made up of one or several individuals such as young adults, widowed persons, and others not constituting a family unit. Since there are also families living in shared accommodation but wishing to establish a household of their own, there are three possible sources of household formation:[1/]

-- net family formation;

-- net "undoubling" (reduction in the numbers of families living in shared accommodation);

-- net nonfamily household formation.

This Chapter deals with the methods of projecting these sources and with the various underlying assumptions. There is also a brief presentation of the more important highlights of the results. Before proceeding, however, several points need clarification. These relate to stock-flow concepts, to the conditional nature of the projections, and to the comparability of the data.

1/ For a more detailed discussion of the family and household concepts, see Wolfgang M. Illing, Housing Demand to 1970, Staff Study No. 4, Economic Council of Canada, Ottawa, 1964.

The annual net additions to the total stock of families or households are defined as net family or net household formation. As in the case of other stock-flow series, the changes in these flows tend to be much more volatile than the changes in the stocks. For example, net family formation rose from 59,000 in 1963 to 72,000 in 1964, or by 22 per cent. From 1963 to 1964, there was, however, only a 1.7 per cent increase in the total stock of families. When such time series are used for analytical purposes, it is necessary to keep the distinction between changes in flows and stocks clearly in mind. Net household formation, for example, is an important component of new housing demand, and also affects expenditures on certain types of social capital and various consumer durables -- in brief, it affects economic decisions which have an impact on the economy that is not only quantitatively significant but also of a rather long-term nature. Volatility in this series can therefore strongly affect certain expenditure patterns. The stock series of total families or households, on the other hand, should be considered analogously to the series of total population, exhibiting a much more stable growth path than the changes in the stock.

The projections are designed to indicate broad changes extending over several years rather than year-to-year movements. This is particularly relevant for linking the actual data to the initial projections. Many of the component variables are based on 1965 intercensal estimates which are subject to possible revisions when the 1966 Census results can be fully evaluated, and which may also reflect special elements of short-run volatility (for example, in immigration).

In addition to annual vital statistics records,[1/] two other main sources (for family and household data) are used in this study:

-- Dominion Bureau of Statistics, Census, various years;

[1/] Dominion Bureau of Statistics, Vital Statistics, various years.

-- Central Mortgage and Housing Corporation, Canadian Housing Statistics, 1966.

When comparing the data in this Staff Study with those in the above two sources, the following differences should be noted:

1. The stock estimates for families and households in this Staff Study relate to year-end dates, and cover Canada, including the Yukon and Northwest Territories. Net family and net household formation are flows covering calendar years.

2. The Census provides quinquennial stock estimates of families and households as of June 1 in the census years.

3. The Canadian Housing Statistics publications provide up-to-date estimates of the year-end stock of families, and calendar-year flows of the major components in net family formation for Canada, excluding the Yukon and the Northwest Territories.

Methods and Assumptions

The approach followed here is, first, to estimate the stock of families by projecting net family formation, and then to estimate the stock of households by projecting family and nonfamily household formation. Net family formation is dominated by the trend in marriages, while net family-household formation includes an additional allowance for the reduction in the number of families living in shared accommodation. Total household formation is obtained by further taking into account the establishment of nonfamily households.

Families and net family formation

Among the many possible approaches, the component method has been selected for the projection of changes in the stock of families. This method is considered preferable for a number of reasons. First, changes in the individual components can be related to historical trends, and their behaviour patterns can be studied separately. Second, this method is

best suited to take changes in the age structure of the population into account; this is particularly important for the period under discussion here. Third, unlike other methods which project net family formation or the stock of families directly, this method yields information on future trends of the various components (such as marriages) thereby providing information which is, of course, in itself very useful.

The stock of families at the end of a given year t may be defined as

$$F_t = F_{t-1} + \Delta F_t$$

where ΔF_t represents the net additions -- i.e., net family formation -- during that year. These can be summarized as

$$\Delta F_t = M_t - D_t^m - S_t + N_t^m ,$$

i.e., the net sum of marriages (M), deaths of married persons (D^m), divorces (S) and net immigration of families (N^m) in year t. To build a stock-of-families time series from a given base year (o), the following formulation is used:

$$F_t = F_o + \sum_{j=1}^{t} (M_j - D_j^m - S_j + N_j^m).$$

Marriages. This is the most important of the individual components. From a purely technical point of view, total marriages in each year may be viewed as a function of the changes in certain age groups of the population and the specific marriage rates for the various age groups. The age distribution of the population over the projection period was discussed in the preceding Chapter. Age-specific marriage rates for past years are provided in the published tables of vital statistics for both males and females. Thus total marriages can be calculated from the following formula:

$$M_t = 1/2 \sum_i (A_t^i \; a_t^i + B_t^i \; b_t^i),$$

where A and B represent the number of males and females, respectively, in the various age groups (i), and a and b, the

corresponding age-specific marriage rates. To obtain an annual series of total marriages to 1980, both male and female rates are projected. The two resulting sets of total marriages which, for a number of reasons, are not exactly the same, are then averaged. As indicated by the past record, age-specific marriage rates change over time. Since the sex ratios for the various age groups are also subject to slight changes, only a fortuitous set of assumptions would yield exactly the same number of marriages by using either male or female rates, given the framework of this approach. The method of averaging the two results is preferable, since the one acts as a cross-check on the other, and since it would be difficult to decide which of the two rates -- male or female -- would be the best one to use by itself.

Historical and projected age-specific marriage rates for males and females are summarized in Table 3-1 in the statistical section below. Some of the more important factors considered in the projection of these rates to 1980 are the following:

-- Marital status. Age-specific marriage rates relate to the number of marriages per 1,000 persons in a given age group, regardless of marital status. Thus the higher the proportion already married (at a younger age), the lower will tend to be the marriage rate for the group. Past trends to younger marriages imply falling marriage rates for older age groups. Rates for persons under 30 years of age have been rising, and rates for persons over 30 have been falling (see Table 3-1).

-- Changes in preference. Successive census data indicate that the proportion of married persons in each age group of marriageable age has been rising over time, and that progressively fewer persons tend to remain unmarried. However, there will undoubtedly always be individuals who cannot, or do not want to, get married, and this proportion may vary over time. The steepest increase in the ratios of married to unmarried people occurred between 1941 and 1951, especially in the younger age groups. Since 1951, the proportions of married persons in each age group have increased further, but at somewhat slower rates.

-- Economic factors. The factors facilitating younger marriages appear to have been largely associated with economic developments. The post-war period was characterized by very favourable employment and earnings opportunities for young persons entering the labour force. Because of low birth rates before the Second World War, new labour force entrants were in short supply, particularly in urban centres where demand for labour was expanding, and where strongly advancing earnings opportunities were available. During this period, large numbers of young persons from low-income agricultural and other primary sectors of the economy found employment in high-income urban areas. Internal migration played an important role in the up-grading of average living standards, especially as far as young adults were concerned. For the years ahead, conditions for high marriage rates continue to be favourable. Record numbers of relatively better-educated young adults have begun to enter the labour market in recent years, and even larger numbers are at the threshold of entering. Unemployment has reached relatively low levels, and incomes have risen at high and sustained rates over the past several years. Also, the demand for labour is expanding in the service industries and in certain goods industries favouring employment for females and for persons with higher levels of education and specialization.

-- Social factors. Further large increases in marriage rates for young adults, which are high already, and further large reductions in the average age at marriage, would appear to be unlikely. The above-mentioned trend towards younger marriages already appears to have abated as attendance at post-secondary levels of schooling becomes more widespread. Of course, marriage while pursuing post-secondary education is facilitated by rising employment opportunities for wives.

In view of factors such as these, it is assumed that over the next 15 years there would be only a very moderate redistribution of marriage rates among the various age groups. Consistent with the pattern and trend over the past five years, male marriage rates are projected to increase slightly for the younger age groups and to decline somewhat for the older. The resulting over-all number of marriages

obtained for 1980 is very close to that which would be obtained by holding the observed 1965 rates constant. The projected rise in the number of marriages is thus mainly the consequence of population growth rather than the consequence of changes in marriage rates. The projections of annual marriages are summarized in Table 3-3.

Marriages, as published in the vital statistics tables, relate mainly to first marriages, but include also a relatively small percentage of remarriages by widowed or divorced persons. If among the latter two groups there are persons still young enough to be in charge of children, then according to the census definition of a family unit[1/] their remarriages would not result in the formation of a new family, but only in a change of their marital status. The number of such cases is likely to be small, and the assumption was made that each marriage represents one addition to the stock of families.

Deaths of Married Persons. It is similarly assumed that each death of a married person represents a deduction from the stock of families, although the death of a married person does not necessarily dissolve a family right away. However, this would apply only in a relatively small number of cases, when dependent children are left in the custody of the surviving parent, since mortality rates for persons young enough to have children are relatively low.

The number of deaths of married persons is calculated by projecting its past relationship to the number of deaths of all persons 30 years and over. Historically, the ratio between these two figures has been very stable (between .53 and .55 since 1951), and it is assumed that this would also hold for the next 15 years. This ratio, multiplied by the number of deaths of persons 30 and over, as

---

[1/] Husband and wife with or without dependent children, or one parent with dependent children. (For a more explicit definition, see Dominion Bureau of Statistics, Census 1961, Volume II.)

implied by the population projections discussed above, yields the annual number of deaths of married persons to 1980 (see Table 3-3).

Divorces. Each divorce is assumed to represent one deduction from the stock of families, although this assumption might result in a very small overstatement of deductions. The number of divorces are projected to rise relatively faster to 1980 than in the past, mainly because of changes in institutional factors. Such changes appear to be reflected already in the number of divorces recorded for the past two or three years (see Tables 3-2 and 3-3).

Net Immigration of Families. This component is measured and projected on the basis of the number of married female immigrants. It is customarily assumed that migrating families are completed by the arrival of wives or mothers with their children. Thus the assumption is made that immigration or emigration of a married woman constitutes one addition to, or one deduction from, the total stock of families.

Net immigration of families is projected on the basis of (1) past proportions of married women in total immigration and emigration, and (2) the basic total migration assumptions to 1980. Over the period 1951 to 1965, about 21 per cent of gross immigration consisted of married females. The ratio was fairly stable over this period, without major annual fluctuations or trends. Similarly, about 19 per cent of emigration consisted of married females over this period, but this ratio had somewhat larger annual fluctuations.

For the period to 1980, the proportion of married females is assumed to be 21 per cent for immigrants, and 19 per cent for emigrants. With the medium immigration assumption, this yields a weighted percentage of about 23 per cent married females in 70,000 net immigration, or some 16,500 average annual additions to the stock of families (see Table 3-3).

Households

It is becoming increasingly evident that the concept

of a household, as distinct from that of a family, constitutes a very useful analytical tool. For example, the growth in households has significantly exceeded the growth in the stock of families since the end of the Second World War. Since, by census definition, the number of households equals the number of occupied dwelling units, very important implications for new dwelling construction and other investment and spending requirements can be derived from changes in the stock of households. The more frequently these changes can be measured, the better would be the foundation on which many public and private decisions are based. The most detailed record of households is in the census which, since 1951, provides observations for every fifth year. An attempt is made here to estimate annual observations for the intercensal years, and to project an annual series to 1980. Due to the limited number of observations in the past, these estimates should be considered as being rather rough. Also, the findings of the 1966 Census were not available when this work was done.

The total stock of households in a given year t may be defined as $H_t = \frac{h_t}{1-n_t} F_t$, where h_t is the ratio of the number of family households to the number of families, and n_t the ratio of nonfamily to total households.

Family Households. The 1941-61 Censuses provide data on the relationship between family households and families. The ratio between the two series (a rising one, as progressively more families are willing or able to set up their own households) is estimated annually by intercensal interpolation up to 1961, and projected to 1980. The ratio is estimated to increase from .943 in 1961 to .980 in 1980. This is based on the assumption that further increases in living standards, and construction of suitable housing, will enable all but a small residual proportion of total families to establish their own households.

Nonfamily Households. These are also recorded in the 1941-61 Censuses. Annual ratios of nonfamily to total households are estimated by intercensal interpolation to 1961, and projected to 1980. This component began to accelerate sharply about a decade ago, as a result of several

factors, including an unprecedented upsurge in the construction of suitable apartments for nonfamily households in the large cities. During the latter part of the 1950's, the increases were largely accounted for by females in the older age groups, but also, to some extent, by older males. Living standards of the older population groups were beginning to improve more rapidly than in earlier years, facilitating the maintenance of separate households. Important factors in the process are likely to have been rising incomes (in particular, improving pension benefits), relatively stable prices and increasing holdings of assets at retirement, including, in many cases, substantial or full equity in home ownership.

The establishment of separate households by unattached young adults over this period has also been at a significant level. Some of the reasons for this may be found in the increased mobility associated with the expansion of urban employment opportunities, rising earnings, and the larger numbers of young people attending university away from home. Looking back at the last eight or ten years the remarkably high nonfamily household additions may have been the consequence of exceptional developments reflecting, to a large extent, rapid adjustments in effective demand for this type of accommodation. In the light of this, it would be reasonable to assume that the growth in such effective demand will moderate somewhat over the next 15 years. However, the age groups which provide the bulk of persons likely to establish nonfamily households will be growing rapidly. Weighing these various considerations, the ratio of nonfamily to total households is assumed to rise over the next 15 years, but at a declining rate. A ratio of .171 is projected for 1980, compared with .145 at the time of the 1961 Census.

The results of these calculations are shown in Table 3-4. In summary, it should be pointed out that the annual series of households conforms to census bench-marks (adjusted to a year-end definition), and that the intercensal variations are influenced by annual vital statistics records as far as family formation is concerned and, to a lesser degree, by the interpolation of undoubling and nonfamily household formation.

Summary of the Results

The years to 1980 will be characterized by a steep increase in the number of marriages, mainly as a consequence of the age-structure of the population. By 1980, marriages may amount to some 240,000 per year, as compared with about 155,000 in 1966. Chart 3-1 indicates that the expected upswing in marriages is now well in progress.

The boost in marriages is already being reflected in net family formation, which by the first half of the 1970's is expected to have almost doubled in comparison with the first half of the 1960's -- from about 330,000 to about 635,000. Still higher rates may be anticipated for the latter portion of the 1970's, when new family formation is projected to rise to around 725,000 (Chart 3-2).

Chart 3-2 also illustrates the significant variability in the additions to the stock of families since 1950, and the volatility in the relative contribution arising out of the immigration of families. Up to 1980, some 250,000 out of the total net family formation of 1.9 million are estimated to be the result of net immigration, corresponding to an average share of some 13 per cent. By contrast, during the two halves of the 1950's, net immigration of families constituted 23 and 28 per cent of net family formation. The contribution of immigration is likely to vary from year to year, and the range of this fluctuation is illustrated by the implied family immigration under the three basic net immigration assumptions discussed in the previous Chapter.

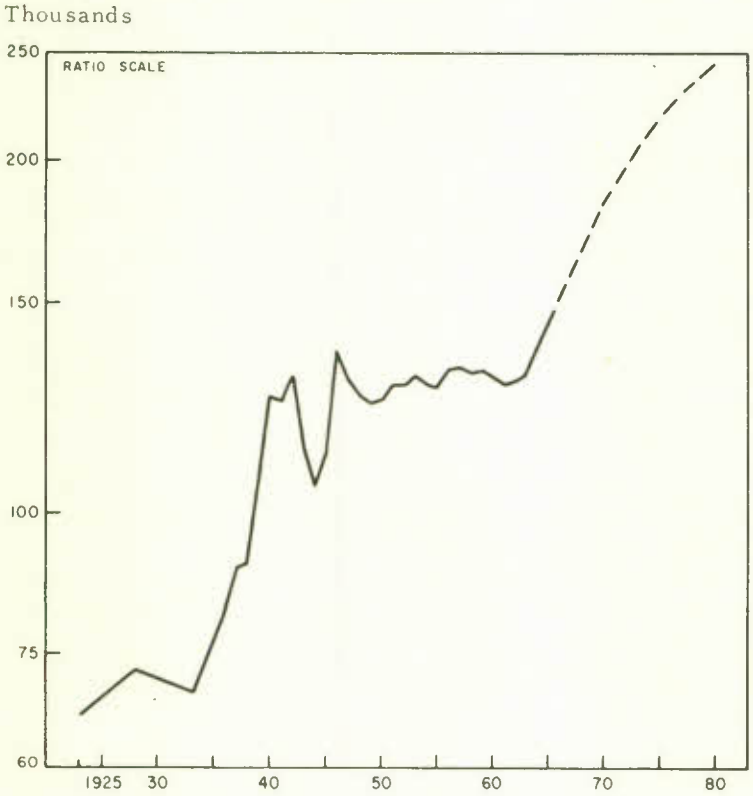
Table 3-A

Average Annual Net Immigration of Persons and Families, 1965-80, Based on Alternative Assumptions

	Persons	Families
Low	20,000	6,000
Medium	70,000	16,500
High	120,000	27,000

CHART 3-1

MARRIAGES



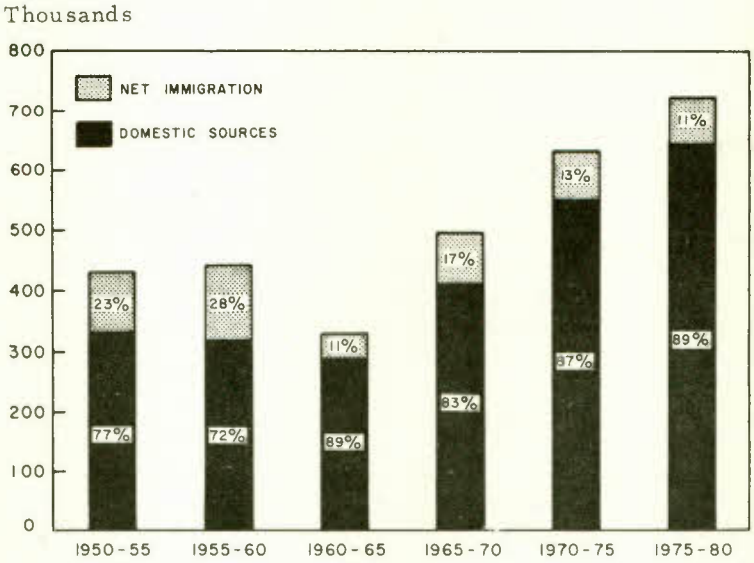
Note: Data for 1921-35 are centred five-year averages.

Source: Based on data from Dominion Bureau of Statistics, Vital Statistics, and estimates by Economic Council of Canada.

CHART 3-2

NET FAMILY FORMATION

(Five-year totals)



Note: Numbers in columns refer to percentage distribution.

Source: Based on data in Tables 3-2 and 3-3 below.

The number of family households to be formed up to 1980 is estimated to exceed the number of new families as increasingly fewer families share living quarters. This would be a continuation of past tendencies. For example, census data indicate that at the beginning of the 1950's there were over 315,000 households containing two or more families, implying that almost 10 per cent of all families, for economic or other reasons, lived in shared accommodation. It is estimated that by 1965 fewer than five per cent of all families remained in this category. Thus the contribution to household formation from this particular source over the past decade and a half appears to have been around 100,000. For the next 15 years, the projection of the rate of undoubling implies additions to total households, from this source alone, of a similar order of magnitude.

Nonfamily households are estimated to have risen from some 450,000 at the beginning of the 1950's to over 800,000 by the mid-1960's. According to the projections, they will rise to close to 1.3 million by 1980. These figures demonstrate the quantitative importance which the total stock of nonfamily households has by now acquired. Owing to its rapid expansion over the past ten years, its relative contribution to total net household formation has been even more significant. For example, new nonfamily households are estimated to have accounted for almost one third of the additions (or 35,000 per year) to the stock of total households during the first half of the 1960's, when the formation of families was rather low. Over the next 15 years, their relative share in total household additions is expected to fall significantly as the role of family formation becomes more prominent.

Table 3-B summarizes the estimated and projected annual changes in families and households for five-year periods from 1950-80.

Table 3-B

Changes in Families and Households

	Families	Households		
		Family	Nonfamily	Total
	(Average annual increases, in thousands)			
1950-55	87	90	11	102
1955-60	89	97	26	122
1960-65	66	75	35	110
1965-70	102	107	32	139
1970-75	127	133	30	164
1975-80	145	151	30	181
	(Average annual percentage change)			
1950-55	2.5	2.9	2.3	2.8
1955-60	2.3	2.7	4.6	2.9
1960-65	1.5	1.9	4.9	2.3
1965-70	2.2	2.4	3.7	2.6
1970-75	2.4	2.6	2.9	2.7
1975-80	2.5	2.6	2.5	2.6

Source: Based on data in Table 3-4 below.

TABLES

FAMILIES AND HOUSEHOLDS

Table 3-1

Number of Marriages per 1,000 Persons

Age Group	1921	1931	1941	1951	1961	1965	1970	1975	1980
				Males					
15-19	n.a.	n.a.	5.4	12.5	12.0	11.2	10.4	9.7	9.0
20-24	44.0	50.8	79.9	101.3	103.0	107.5	110.0	112.5	115.0
25-29	45.3	52.2	84.3	62.7	51.1	55.8	56.6	57.3	58.0
30-34	24.1	24.2	41.8	26.6	18.1	17.3	15.8	14.4	13.0
35-39	13.3	11.7	20.4	13.2	8.5	8.2	8.0	8.0	8.0
40-44	8.0	7.0	16.4	8.3	5.0	5.3	4.8	4.4	4.0
45-49	5.6	4.7	6.7	6.5	4.1	3.9	3.7	3.6	3.5
50-54	4.7	3.7	5.0	5.3	2.3	3.5	3.3	3.1	3.0
55-59	3.8	3.4	4.0	4.8	3.5	3.3	3.2	3.0	3.0
60-64	2.5	3.3	3.5	4.2	3.8	3.6	3.4	3.2	3.0
65-69	1.8	2.8	2.9	3.7	3.8	3.8	3.5	3.2	3.0
70-74	1.3	2.4	2.5	3.4	3.4	3.5	3.3	3.1	3.0
75-79	1.2	1.9	1.6	3.2	2.8	3.6	3.2	2.8	2.5
				Females					
15-19	n.a.	n.a.	42.5	60.4	57.2	51.5	53.0	54.5	56.0
20-24	55.1	65.0	101.6	100.0	91.5	99.0	105.0	110.0	115.0
25-29	30.1	32.3	56.4	36.0	24.2	25.2	26.5	27.8	29.0
30-34	14.3	12.2	23.2	15.4	9.9	9.1	8.0	7.0	6.0
35-39	8.0	6.8	11.0	8.7	5.6	5.2	4.8	4.4	4.0
40-44	5.2	4.2	6.0	6.4	4.2	4.1	3.8	3.3	3.0
45-49	4.4	3.4	4.2	5.2	4.0	3.6	3.4	3.2	3.0
50-54	2.2	2.5	3.1	4.0	3.2	3.4	3.2	3.1	3.0
55-59	1.9	2.1	2.3	3.3	3.2	3.1	3.1	3.1	3.0
60-64	1.2	2.0	2.1	2.5	2.8	2.7	2.6	2.6	2.5
65-69	.6	1.5	1.5	2.0	2.2	2.4	2.4	2.3	2.3
70-74	.4	.9	1.2	1.5	1.7	1.7	1.7	1.6	1.6
75-79	.2	.5	.7	1.0	.6	1.0	1.0	1.0	1.0

Source: Based on data from Dominion Bureau of Statistics, Vital Statistics, and estimates by Economic Council of Canada.

Table 3-2

Estimated Net Family Formation[1]

	Marriages	Net Immigration of Married Females	Deaths of Married Persons	Divorces	Net Family Formation	Adjustment	Number of Families as of Year-End
			(Thousands)				
1950							3,264.0
1951	128.4	27.1	54.9	5.3	93.6	-1.7	3,357.6
1952	128.5	24.3	55.2	5.6	90.0	-2.0	3,447.6
1953	131.0	24.2	56.3	6.2	90.8	-1.9	3,538.4
1954	128.6	21.2	55.8	5.9	86.2	-1.9	3,624.6
1955	128.0	11.6	57.3	6.1	74.6	-1.6	3,699.2
1956	132.7	21.7	58.7	6.0	88.4	-1.3	3,787.6
1957	133.2	59.5	61.2	6.7	120.6	-4.2	3,908.2
1958	131.5	18.4	61.1	6.3	81.3	-1.2	3,989.5
1959	132.5	13.1	63.4	6.5	74.9	-0.8	4,064.4
1960	130.3	21.1	64.5	7.0	78.6	-1.3	4,143.0
1961	128.5	2.2	65.5	6.6	58.5	-0.1	4,201.5
1962	129.4	.3	66.9	6.7	56.1	-	4,257.6
1963	131.1	4.3	68.4	7.7	59.3	-	4,316.9
1964	138.1	11.8	69.3	8.6	72.0	-	4,388.9
1965	145.5	18.7	70.0	9.0	85.2	-	4,474.1
1966[2]	155.3	26.6	71.4	10.0	100.5	-	4,574.6

(1) Including estimates for Yukon and Northwest Territories.

(2) The 1966 Census results were not available when these estimates were prepared.

Source: Based on data from Central Mortgage and Housing Corporation, Canadian Housing Statistics, 1966 (Table 79); Dominion Bureau of Statistics, Vital Statistics; idem, Census; and estimates by Economic Council of Canada.

Table 3-3

Net Family Formation to 1980[1]

	Marriages	Net Immigration of Married Females[2]	Deaths of Married Persons	Divorces	Net Family Formation[2]	Number of Families as of Year-End
			(Thousands)			
1967	159.2	16.5	73.5	10.0	92.2	4,666.8
1968	167.0	16.5	74.9	10.0	98.7	4,765.5
1969	174.9	16.5	76.0	10.2	105.2	4,870.7
1970	182.8	16.5	77.4	10.6	111.3	4,982.0
1971	190.2	16.5	78.9	10.9	116.9	5,098.9
1972	197.4	16.5	80.3	11.2	122.4	5,221.3
1973	204.1	16.5	81.6	11.5	127.5	5,348.8
1974	210.6	16.5	83.5	11.8	131.8	5,480.6
1975	216.6	16.5	85.0	12.2	135.9	5,616.5
1976	222.2	16.5	86.6	12.5	139.6	5,756.1
1977	227.1	16.5	88.2	12.8	142.6	5,898.7
1978	232.2	16.5	89.9	13.2	145.6	6,044.3
1979	236.7	16.5	91.7	13.6	147.9	6,192.2
1980	240.7	16.5	93.7	14.0	149.5	6,341.7

(1) Including Yukon and Northwest Territories.

(2) These figures are based on the average annual net immigration assumption of 70,000 persons per year to 1980, and are subject to considerable year-to-year fluctuations. For example, the 1967 figure is likely to be somewhat higher than indicated here.

Source: Based on estimates by Economic Council of Canada.

Table 3-4

Families and Households[1]

(As of year-end)

	Families	Households		
		Family[2]	Nonfamily	Total
	(Thousands)			
	Estimated			
1950	3, 264	2, 951	457	3, 407
1951	3, 358	3, 029	469	3, 497
1952	3, 448	3, 127	474	3, 601
1953	3, 538	3, 224	482	3, 705
1954	3, 625	3, 320	495	3, 815
1955	3, 699	3, 403	512	3, 915
1956	3, 788	3, 496	532	4, 028
1957	3, 908	3, 623	555	4, 178
1958	3, 990	3, 710	581	4, 291
1959	4, 064	3, 796	609	4, 405
1960	4, 143	3, 886	640	4, 526
1961	4, 202	3, 962	672	4, 634
1962	4, 258	4, 023	707	4, 731
1963	4, 317	4, 092	743	4, 835
1964	4, 389	4, 170	779	4, 948
1965	4, 474	4, 259	814	5, 074
1966	4, 575	4, 364	850	5, 214
	Projected			
1967	4, 667	4, 462	882	5, 344
1968	4, 766	4, 565	914	5, 480
1969	4, 871	4, 676	946	5, 622
1970	4, 982	4, 793	976	5, 769
1971	5, 099	4, 915	1, 007	5, 922
1972	5, 221	5, 044	1, 037	6, 081
1973	5, 349	5, 178	1, 067	6, 245
1974	5, 481	5, 316	1, 097	6, 414
1975	5, 617	5, 459	1, 128	6, 587
1976	5, 756	5, 612	1, 158	6, 770
1977	5, 899	5, 763	1, 188	6, 951
1978	6, 044	5, 911	1, 218	7, 129
1979	6, 192	6, 062	1, 248	7, 310
1980	6, 342	6, 215	1, 278	7, 493

(1) See Notes to Tables 3-2 and 3-3.

(2) Total families, excluding those not maintaining a household. For a detailed description, see text.

Source: Based on data from Dominion Bureau of Statistics, and Central Mortgage and Housing Corporation; and estimates by Economic Council of Canada.

Table 3-4

Families and Households[1]

(As of year-end)

	Families	Households		
		Family[2]	Nonfamily	Total
	(Thousands)			
	Estimated			
1950	3, 264	2, 951	457	3, 407
1951	3, 358	3, 029	469	3, 497
1952	3, 448	3, 127	474	3, 601
1953	3, 538	3, 224	482	3, 705
1954	3, 625	3, 320	495	3, 815
1955	3, 699	3, 403	512	3, 915
1956	3, 788	3, 496	532	4, 028
1957	3, 908	3, 623	555	4, 178
1958	3, 990	3, 710	581	4, 291
1959	4, 064	3, 796	609	4, 405
1960	4, 143	3, 886	640	4, 526
1961	4, 202	3, 962	672	4, 634
1962	4, 258	4, 023	707	4, 731
1963	4, 317	4, 092	743	4, 835
1964	4, 389	4, 170	779	4, 948
1965	4, 474	4, 259	814	5, 074
1966	4, 575	4, 364	850	5, 214
	Projected			
1967	4, 667	4, 462	882	5, 344
1968	4, 766	4, 565	914	5, 480
1969	4, 871	4, 676	946	5, 622
1970	4, 982	4, 793	976	5, 769
1971	5, 099	4, 915	1, 007	5, 922
1972	5, 221	5, 044	1, 037	6, 081
1973	5, 349	5, 178	1, 067	6, 245
1974	5, 481	5, 316	1, 097	6, 414
1975	5, 617	5, 459	1, 128	6, 587
1976	5, 756	5, 612	1, 158	6, 770
1977	5, 899	5, 763	1, 188	6, 951
1978	6, 044	5, 911	1, 218	7, 129
1979	6, 192	6, 062	1, 248	7, 310
1980	6, 342	6, 215	1, 278	7, 493

(1) See Notes to Tables 3-2 and 3-3.

(2) Total families, excluding those not maintaining a household. For a detailed description, see text.

Source: Based on data from Dominion Bureau of Statistics, and Central Mortgage and Housing Corporation; and estimates by Economic Council of Canada.

CHAPTER 4

LABOUR FORCE[1/]

The labour force is expanding at a remarkably high rate. The present rate of growth is, in fact, near the highest ever attained, and it far exceeds the recent and current rates of growth of all other major industrialized countries. Although the present rate is not likely to be maintained for the whole period to 1980, the rate will still be unusually high and sustained. The high growth to 1980 is mainly due to the post-war baby boom which has now begun to manifest itself in a rapid expansion of the young adult population. To a lesser extent, rising female participation rates and immigration are also contributing factors.

This Chapter examines in greater detail the factors underlying this massive expansion. Basically, the projections are made by combining the medium projections of the population in working ages with projections of age-specific participation rates. In order to assess the impact of different immigration assumptions, alternative high and low projections have also been prepared, based on the alternative population projections described in Chapter 2 above. Since virtually all persons who will enter the labour force over the period to 1980 are alive already, the three immigration assumptions, but not the fertility assumptions, are of relevance in the calculation of the working-age population. On the other hand, only one set of participation rate assumptions is necessary, since the effect on total labour force growth of reasonable alternative assumptions has not been found to be very large. All relevant calculations in the Fourth Annual Review are based on the medium projections.

[1/] The projections described and presented in this Chapter were prepared by Frank T. Denton.

Methods and Assumptions[1/]

The projections in this Chapter are made by combining the estimated number of men and women in working-age groups (based on the population projections described in Chapter 2) with projected proportions of the various age groups belonging to the labour force. This section provides a brief discussion of these two steps, i.e., of the estimation of the source population, and the projections of participation rates. The labour force figures derived in this manner are annual averages which accord in concept and definition with the historical Dominion Bureau of Statistics Labour Force Survey series.

Labour Force Source Population

This aggregate is comprised of the population 14 years and over. Since the Labour Force Survey excludes certain groups and since the basic population projections of Chapter 2 relate to June 1 rather than to the calendar year as a whole, a number of further adjustments are necessary. These are as follows:

Exclusion of Armed Forces -- Only the civilian labour force is measured. It is necessary, therefore, to make some assumptions as to the probable numbers of persons in each age-sex group who would be in the Armed Forces and to subtract these numbers from the population. The assumption underlying the projections in this Chapter is that the Armed Forces would decline slightly and then level off at about 100,000, beginning in 1968. It is further assumed that the total would be distributed by age and sex in the same proportions as in 1966.

Exclusion of Inmates of Institutions -- This group is excluded from the population base in all calculations relating to the labour force. For men and women over 70, continuous increases in the institutional population are

---

[1/] This section is based on work undertaken by Frank T. Denton.

projected on the basis of trends observable in the 1951, 1956 and 1961 Census data. However, for all other age groups no change is projected, the numbers being held constant at their 1966 levels.

Exclusion of Indians on Reserves -- Indians living on reserves are also excluded. It is assumed that the number in each age-sex group would remain constant at or near its 1961 Census level.

Exclusion of Yukon and Northwest Territories -- Residents of these areas are not covered by the Labour Force Survey and hence are excluded also in the present projections. The necessary deductions from the base population are arrived at by projecting each age-sex group separately on the basis of recent growth rates.

Adjustment to Annual Average Basis -- After making deductions for the above four groups, a further small adjustment is made to put the population figures on an annual average basis. For each age-sex group, the difference between the annual average and the May-June average population is calculated for 1965. The projection for each subsequent year is then adjusted by the amount of this difference.

The "source" population for the labour force, derived in this manner, is shown in Table 4-2, pertaining to the medium immigration assumption, and in Table 4-3, pertaining to the alternative immigration assumptions.

Participation Rates

The labour force participation rates are projected by first plotting annual average rates for the period since World War II, or for as much of it as the existing time series would permit. The last year for which actual annual averages could be obtained from Labour Force Survey data was 1965. However, the availability of nine months of data for 1966 made it possible to make quite reliable estimates for this year,

and 1966 may be regarded more or less as the base-year for the participation rate projections. (Note, though, that the base-year for the population component of the labour force projections is 1965.) Participation rates for 1970, 1975 and 1980 are then projected graphically, taking into account recent trends and the levels and trends in other countries, in particular the United States. The projected rates are intended as indicators of medium- and longer-run movements. No attempt is made to predict shorter-term fluctuations, and the rates for years between 1966 and 1970, 1970 and 1975, and 1975 and 1980 are calculated by linear interpolation.

Separate projections are made for men and women in each of ten age groups: 14; 15-16; 17-19; 20-24; 25-34; 35-44; 45-54; 55-64; 65-69; and 70 and over. The labour force projections for the three youngest and two oldest groups are then combined into 14-19 and 65-and-over projections and the implicit participation rates for these broader age groups calculated. The advantage of carrying out the calculations at the finer level of detail is that this automatically takes account of the effects of intragroup age shifts which can be quite important for the 14-19 and 65-and-over groups. However, the annual average participation rate series for the 14, 15-16, 17-19, 65-69, and 70-and-over groups extend back only to 1962, making the detection of underlying trends less reliable than in the case of longer series. The over-all 14-19 and 65-and-over series, on the other hand, extend back to 1946. As a check on the calculations, direct projections of the rates for these groups were also made. The projections of annual participation rates for men and women in the various age groups are summarized in Table 4-1 below.

The participation rates for males 14-19 and 65 and over are expected to decline throughout most of the period up to 1980 but at a much more moderate pace than in the previous decade and a half. Further decline is also expected for males in the 20-24 age group as the proportion enrolled in post-secondary education institutions increases. In the case of the other male groups,

Table 4-A

Labour Force Participation Rates,

1965 and 1970

	Men			Women		
	1965	1970		1965	1970	
		First Annual Review	Fourth Annual Review		First Annual Review	Fourth Annual Review
14-19	38.7	37.1	37.5	30.2	30.9	30.9
20-24	87.6	87.4	86.2	52.6	51.4	59.0
25-34	97.5	97.6	97.3	31.1	33.0	36.5
35-44	97.7	97.8	97.7	34.1	37.0	40.0
45-54	95.8	96.0	96.0	37.0	43.5	42.5
55-64	86.4	85.5	86.0	27.0	32.0	33.7
65 +	26.3	25.1	24.4	6.0	7.0	6.3
All ages	77.9	77.2	77.2	31.3	34.1	36.1

Source: Table 4-1 below; and Frank T. Denton, Yoshiko Kasahara and Sylvia Ostry, op. cit.

the rates have been relatively constant in the past and little or no change is expected in the period ahead.

The trends in prospect for women are more spectacular. Teen-age rates may change little between now and 1980 because of the offsetting effects of prolonged education on the one hand and more abundant employment opportunities for young women on the other. For the age groups over 20, though, very substantial gains are expected, especially as increasing numbers of housewives take full or part-time jobs outside the home.

Participation rates have moved in a somewhat different manner than was assumed at the time the projections for the First Annual Review were being prepared. For example, by 1965 rates for females aged 20-24 had risen to higher levels, and rates for males aged 14-19 had declined more slowly, than had originally been assumed for 1970. In the light of recent trends, female rates (especially for the 20-24 age group) are now assumed to rise even faster than in the original projections. Table 4-A provides a comparison of the participation rate projections to 1970 used in the First and Fourth Annual Reviews.

Summary of the Results

From 1965 to 1980, the labour force is projected to increase by about 50 per cent, or by 3 1/2 million persons. This is substantially higher than the increase of 2 million over the past 15 years, and would bring the country's total labour force in 1980 to over 10 1/2 million. Women would probably account for over 1 1/2 million, and men for slightly under 2 million, of the over-all growth to 1980. These figures are based on the medium gross immigration assumption of an average annual 150,000 arrivals. The low immigration (100,000) assumption would imply a labour force of some 10.3 million in 1980, while the figure would be raised to 11.1 million under the high immigration (200,000) assumption (Table 4-B).

Table 4-B

The Civilian Labour Force, 1950-80

		Actual, and Projections under Medium Immigration Assumptions	Projections under Alternative Immigration Assumptions	
			High	Low
		(Thousands)		
Both Sexes	1950	5, 163		
	1955	5, 610		
	1960	6, 405		
	1965	7, 141		
	1970	8, 350	8, 477	8, 221
	1975	9, 545	9, 812	9, 275
	1980	10, 698	11, 122	10, 273
Men	1950	4, 050		
	1955	4, 341		
	1960	4, 748		
	1965	5, 065		
	1970	5, 659	5, 748	5, 572
	1975	6, 326	6, 507	6, 141
	1980	7, 017	7, 301	6, 733
Women	1950	1, 112		
	1955	1, 269		
	1960	1, 657		
	1965	2, 076		
	1970	2, 691	2, 729	2, 649
	1975	3, 219	3, 305	3, 134
	1980	3, 681	3, 821	3, 545

Source: Based on data in Tables 4-4 and 4-5 below.

The growth of the Canadian labour force to 1980 is substantially larger than that anticipated in any of the major Western European countries. For example, it exceeds by over half a million the increases expected in Britain, West Germany and Italy combined, and almost equals the entire existing Swedish labour force (Table 4-C)

The U. S. labour force growth to 1980, although still much higher than that in Western Europe, is not expected to reach the same rate as the Canadian labour force growth. The U. S. working-age population is not expanding quite as rapidly as the Canadian, and there may also be less scope for U. S. participation rates to rise to the same extent from their already high levels.

According to the medium projections, the labour force will grow by some 240,000 per year, on the average, from 1965 to 1970, compared with 150,000 per year in 1960-65, 160,000 per year in 1955-60, and 90,000 per year in 1950-55. In the 1970's, the rate of increase is expected to moderate gradually, but in terms of absolute numbers, the additions will still be large -- between 230,000 and 240,000 per year over the period 1970 to 1980. Table 4-D and Chart 4-1 provide comparisons of past and future average annual growth rates.

The labour force has grown since 1963 at a rate even greater than the very high rate projected by the Economic Council three years ago. [1/] Greater net immigration and higher rates of female participation in the labour force (especially in the 20-24 age group) than had been allowed for in the original projections are the principal factors accounting for the under-estimation. On the basis of the revised assumptions used here, the labour force is also estimated to grow somewhat more rapidly in the remaining years to 1970 than had been estimated earlier. The average annual net immigration now assumed for the projections is 70,000, compared with 50,000 in the original projections to 1970. Also,

---

[1/] See Frank T. Denton, Yoshiko Kasahara and Sylvia Ostry, op. cit.

Table 4-C

Labour Force Growth in Selected Countries, 1965-80

	Total Labour Force 1965	Total Change in Labour Force 1965-80(1)	
	(Thousands)	(Thousands)	(Per cent)
Britain	25, 860	1, 130	4. 4
France	20, 690	2, 790	13. 5
Germany (F. R.)	26, 940	1, 470	5. 5
Italy	20, 910	350	1. 7
Sweden	3, 680	-10	-0. 3
United States	77, 670	22, 960	29. 5
CANADA	7, 140	3, 560	49. 8

(1) Including migration.

Source: Based on data from Organization for Economic Co-operation and Development, Demographic Trends 1965-80 in Western Europe and North America, (Paris, 1966); and estimates by Economic Council of Canada.

Table 4-D

Changes in the Labour Force, by Sex

(Average annual percentage change)

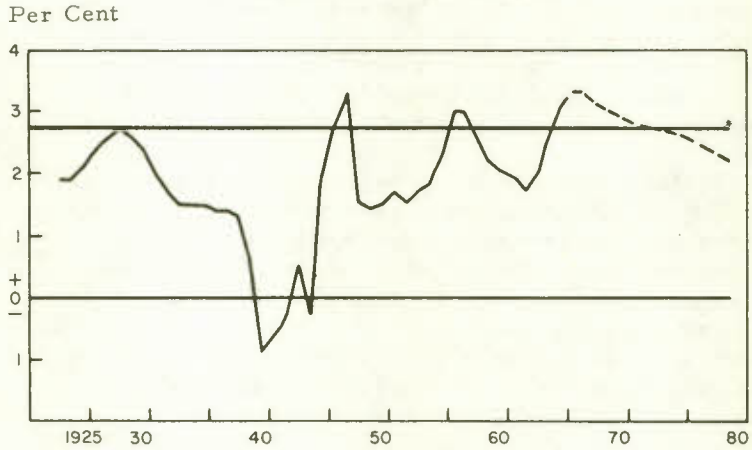
	1950-55	1955-60	1960-65	1965-70	1970-75	1975-80
			(Per cent per year)			
Both Sexes	1.7	2.7	2.2	3.2	2.7	2.3
Men	1.4	1.8	1.3	2.2	2.3	2.1
Women	2.7	5.5	4.6	5.3	3.6	2.7

Source: Based on data in Table 4-4 below.

CHART 4-1

CHANGES IN THE LABOUR FORCE

(Annual rates of change, smoothed by three-year moving averages)



* Average 1965-80.

Source: Based on data from Dominion Bureau of Statistics, and estimates by Economic Council of Canada.

in the light of recent trends, it seems likely that female participation rates will rise even faster than originally anticipated. The total net effect of these and all other differences is to increase the 1965-70 labour force growth rate from 2.8 to 3.2 per cent per year. In terms of absolute numbers, this represents an upward revision of the total increase from 1,035,000 to 1,209,000, or 184,000 more, for the period from 1965 to 1970. The increase for this period in the male labour force is raised from 548,000 to 594,000, and in the female labour force from 487,000 to 615,000.

The growth of the domestic population in working ages contributes the bulk of the projected increase to 1980, while participation rate changes and net immigration are likely to be relatively much less important. This is an important feature of the anticipated large increase which distinguishes it from the type of labour force growth experienced over certain periods in the past.

Since participation rates for males are expected to decline slightly between now and 1980 (owing to rising school enrolment for the younger age groups, and earlier retirement for the older groups), the male labour force is expected to expand at a slightly lower rate than the male working-age population. With unchanged 1966 participation rates, the male labour force would expand by 1.9 million between 1966 and 1980, whereas on the basis of the changes in male participation rates assumed here, the actual projected growth amounts to some 1.8 million persons. On the other hand, the female labour force is expected to grow almost twice as fast as the underlying female working-age population, owing to the anticipated further increases in participation rates of females over 20. The projected increases in female participation rates account for almost one half of the 1 1/2 million additional females in the labour force by 1980, or for about one fifth of the 3.5 million total additions of males and females combined.

Reasonable alternative participation rate assumptions would only have a moderate impact on the projected rate of labour force growth to 1980. There is relatively

little scope for varying the assumptions about male participation rates. Consistently very high rates have existed in the past for adult males in the 25-60 age groups, and will undoubtedly continue in the future, while rates for younger males of school age and older males of retirement age have declined, and undoubtedly will continue to decline, albeit at a slower rate. However, more uncertainty exists about future trends in female participation rates. But because of the relatively small proportion of females in the total labour force (a proportion which is rising from 29 per cent in 1965 to 34 per cent in 1980), alternative assumptions about female participation rates would not result in large changes of total labour force growth. If, for example, the female rates projected for 1970 were not attained until 1975, the growth rate of the total labour force between 1966 and 1975 would decline from 2.9 to 2.6 per cent per year. If, on the other hand, female participation rates were to grow even more rapidly than assumed here, and the rates projected for 1980 were attained by 1975, the annual average rate of increase in the total labour force between 1966 and 1975 would rise from 2.9 to 3.0 per cent.

Net immigration is likely to be a much less significant source of labour force growth during the period of projection than during certain periods in the past. (It should be noted, however, that because of the concentration of migrants in the working ages, the assumptions about immigration are more important in their impact on labour force growth than on total population growth.) In past periods, net immigration has played a major role in the growth of the Canadian labour force. During the first half of the 1950's, for example, it contributed over two thirds of total labour force growth. Further, it is also the most volatile and most unforeseeable component. Table 4-E illustrates its volatility during the post-war period, and its contribution to future growth under various assumptions.

On the basis of the medium immigration assumptions, the over-all average annual rate of labour force growth in the period 1965-80 would be 2.7 per cent. The low immigration assumption would reduce this figure to 2.5 per cent, and the high assumption would raise it to 3 per cent.

Table 4-E

Net Labour Force Immigration as a Proportion of Total Labour Force Increases, 1950-80[1]

1950-55	67		
1955-60	34		
1960-65	7		
	(Medium)	(High)	(Low)
1965-70	15	23	5
1970-75	16	25	5
1975-80	18	28	6

(1) Projections in the first column are based on the "medium" assumption of total net immigration of 70,000 per year. The "high" and the "low" projections relate, respectively, to the assumptions of total net immigration of 120,000 and 20,000.

Source: Based on data from Dominion Bureau of Statistics, and estimates by Economic Council of Canada.

There are several features about the anticipated labour force growth to 1980 which have far-reaching and important implications. Particularly noteworthy is the fact that the labour force will grow significantly faster over this period than the total population. In recent years, Canada has had a relatively low proportion of population participating in the labour market -- 36 per cent compared with 40-48 per cent in other major OECD countries. Even in terms of working-age population (here defined as ages 15-64), Canada has had the lowest rate of participation for both sexes (Table 4-F).

Over the next 15 years, however, the share of the population participating in the labour market is estimated to increase very substantially. The proportion of the labour force in the total population is expected to rise from 36.5 per cent in 1965 to 42.6 per cent in 1980. This is in sharp contrast to the decade of the 1950's when population growth exceeded labour force growth, and the proportion fell from 37.3 per cent in 1951 to 35.8 per cent in 1961. The prospective increases in this proportion to 1980 are due to the slowdown in natural population growth, the impact of the great upsurge in the numbers of young adults, and the continuing sharp increases in participation rates for females. Table 4-G shows past and prospective changes in the proportion of the labour force in the total population and in the working-age population for men and women.

It is particularly noteworthy that Canada is moving towards a much fuller use of its female labour resources. At the beginning of the 1960's, women made up no more than one quarter of the Canadian labour force, compared with one third or more in most other major OECD countries (Table 4-H).

As a consequence of recent and anticipated changes, the proportion of females in the Canadian labour force will be approaching levels now prevailing in other major OECD countries. Chart 4-2, pertaining to the share of women in the labour force, illustrates past and prospective changes. By 1980, women will probably account for 35 per cent of the labour force.

Table 4-F

Ratio of Labour Force to Population in Selected Countries, 1962

	Ratio of Labour Force to Total Population			Ratio of Labour Force to Population 15-64		
	Both Sexes	Males	Females	Both Sexes	Males	Females
	(Per cent)					
Britain	47.7	64.9	31.4	73.1	97.7	49.0
France	42.3	57.9	27.4	68.2	91.1	45.3
Germany (F. R.)	47.8	64.2	33.1	72.0	96.7	49.7
Italy	41.3	61.0	22.5	60.8	90.3	33.2
Sweden	45.0	61.9	28.2	67.9	92.7	42.8
United States	40.0	54.5	25.9	67.2	91.5	43.5
CANADA	36.3	52.7	19.5	62.0	90.2	33.3

Source: Based on data from B. Mueller, A Statistical Handbook of the North Atlantic Area, Twentieth Century Fund, 1965; and Dominion Bureau of Statistics.

Table 4-G

Ratio of Labour Force to Population

	Ratio of Labour Force to Total Population			Ratio of Labour Force to Population 15-64[1]		
	Both Sexes	Males	Females	Both Sexes	Males	Females
	(Per cent)					
1951	37.3	57.1	17.0	60.2	92.6	27.3
1961	35.8	51.9	19.3	61.2	88.9	34.9
1965	36.5	51.4	21.4	61.8	86.9	36.2
1970	39.2	52.8	25.4	64.0	86.1	41.6
1975	41.3	54.4	28.0	65.5	86.0	44.6
1980	42.6	55.6	29.5	66.7	86.5	46.5

(1) These figures are not directly comparable with the participation rates in Table 4-1 because of different definitions of the source population. Participation rates are defined there as the labour force as a percentage of the noninstitutional population 14 years and over.

Source: Based on data from Dominion Bureau of Statistics, Labour Force Survey; idem, Vital Statistics; and estimates by Economic Council of Canada.

Table 4-H

Females as a Percentage of the Labour Force

in Selected Countries, 1962

Britain	33.8
France	33.3
Germany (F.R.)	36.4
Italy	27.8
Sweden	31.4
United States	32.8
CANADA	27.2

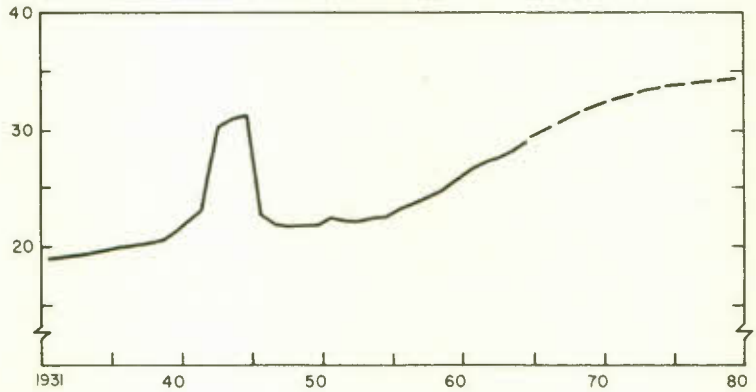
Source: Based on data from B. Mueller, op. cit., and Dominion Bureau of Statistics.

Finally, the proportions of females and of males under 25 in total net additions to the labour force are unusually large during the entire 1960's (over 70 per cent). Of the total increase in the labour force in 1960-65, amounting to some 740,000 persons, about 420,000 were females and 120,000 were males under 25. Similarly, out of the projected 1.2 million additions from 1965-70, 620,000 are estimated to be females and 250,000 males under 25. The importance of these two groups in total additions is likely to decline during the decade of the 1970's as a consequence of the slowdown in the growth rate of the working-age population under 25, the more moderate female participation rate increases, and the moderate further decline in participation rates for young males. Table 4-I provides past and prospective labour force increases by age and sex, in terms of absolute numbers and in terms of the relative contributions to total growth ascribable to the various age groups of men and women.

This Table also shows that the male age group 35-44 will grow very slowly up to 1970, and even decline in terms of absolute numbers from 1970-75. This age group is expected to grow substantially after 1975.

CHART 4-2

WOMEN AS A PERCENTAGE OF THE LABOUR FORCE



Source: Based on data from Dominion Bureau of Statistics, and estimates by Economic Council of Canada.

Table 4-I

Changes in the Civilian Labour Force (Numbers and Distribution of Increase)

by Age Group and Sex

	1950-55		1955-60		1960-65		1965-70		1970-75		1975-80	
	Total In-crease	Dis-tribution of Increase	Total In-crease	Dis-tribution of Increase	Total In-crease	Dis-tribution of Increase	Total In-crease	Dis-tribution of Increase	Total In-crease	Dis-tribution of Increase	Total In-crease	Dis-tribution of Increase
	(000)	(Per cent)	(000)	(Per cent)	(000)	(Per cent)	(000)	(Per cent)	(000)	(Per cent)	(000)	(Per cent)
Both Sexes, All ages	447	100.0	795	100.0	736	100.0	1,209	100.0	1,195	100.0	1,153	100.0
14-19	-11	- 2.5	88	11.1	102	13.9	101	8.4	55	4.6	17	1.5
20-24	- 6	- 1.3	58	7.3	148	20.1	368	30.4	211	17.7	143	12.4
25-34	134	30.0	111	14.0	3	0.4	250	20.7	538	45.0	529	45.9
35-44	178	39.8	209	26.3	165	22.4	94	7.8	35	2.9	228	19.8
45-54	139	31.1	214	26.9	185	25.1	211	17.5	185	15.5	54	4.7
55-64	31	6.9	101	12.7	138	18.7	179	14.8	150	12.6	157	13.6
65+	-17	- 3.8	14	1.8	- 5	- 0.7	6	0.5	21	1.8	25	2.2
Males, All ages	291	65.1	407	51.2	317	43.1	594	49.1	667	55.8	691	59.9
14-19	-25	- 5.6	38	4.8	55	7.5	47	3.9	28	2.3	7	0.6
20-24	- 5	- 1.1	30	3.8	73	9.9	200	16.5	114	9.5	76	6.6
25-34	106	23.7	67	8.4	-35	-4.8	139	11.5	371	31.0	365	31.7
35-44	120	26.8	105	13.2	82	11.1	25	2.1	-13	- 1.1	134	11.6
45-54	97	21.7	113	14.2	80	10.9	98	8.1	91	7.6	22	1.9
55-64	17	3.8	52	6.5	77	10.5	86	7.1	68	5.7	76	6.6
65+	-19	- 4.3	1	0.1	-14	- 1.9	- 2	- 0.2	8	0.7	11	1.0
Females, All ages	157	35.1	388	48.8	419	56.9	615	50.9	528	44.2	462	40.1
14-19	15	3.4	49	6.2	47	6.4	54	4.5	27	2.3	10	0.9
20-24	- 1	- 0.2	28	3.5	75	10.2	168	13.9	97	8.1	67	5.8
25-34	27	6.0	45	5.7	38	5.2	111	9.2	167	14.0	164	14.2
35-44	58	13.0	104	13.1	83	11.3	69	5.7	48	4.0	94	8.2
45-54	41	9.2	101	12.7	105	14.3	113	9.3	94	7.9	32	2.8
55-64	14	3.1	48	6.0	62	8.4	92	7.6	82	6.9	81	7.0
65+	2	0.4	13	1.6	9	1.2	8	0.7	13	1.1	14	1.2

TABLES

LABOUR FORCE

Table 4-1

Civilian Labour Force Participation Rates

(Annual averages)

	1965	1966**	1967	1968	1969	1970	1971	1972
			(Per cent)					
Men								
14-19	38.7	38.5	38.4	38.1	37.9	37.5	37.3	37.0
20-24	87.6	87.3	87.0	86.8	86.5	86.2	86.0	85.9
25-34	97.5	97.3	97.3	97.3	97.3	97.3	97.3	97.3
35-44	97.7	97.7	97.7	97.7	97.7	97.7	97.7	97.7
45-54	95.8	96.0	96.0	96.0	96.0	96.0	96.0	96.0
55-64	86.4	86.4	86.3	86.2	86.1	86.0	85.9	85.9
65 and over	26.3	26.4	25.9	25.5	25.0	24.4	24.3	24.0
All ages, 14 and over	77.9	77.7	77.6	77.5	77.4	77.2	77.2	77.2
Women								
14-19	30.2	31.4	31.4	31.3	31.1	30.9	30.9	30.7
20-24	52.6	56.0	56.8	57.5	58.2	59.0	59.4	59.8
25-34	31.1	32.6	33.6	34.5	35.5	36.5	37.1	37.7
35-44	34.1	35.6	36.7	37.8	38.9	40.0	40.8	41.7
45-54	37.0	37.8	39.0	40.2	41.3	42.5	43.4	44.3
55-64	27.0	28.6	29.9	31.2	32.4	33.7	34.6	35.4
65 and over	6.0	6.0	6.0	6.1	6.2	6.3	6.4	6.6
All ages, 14 and over	31.3	32.8	33.6	34.5	35.3	36.1	36.6	37.1

* Actual Labour Force Survey estimates.

** Based on actual Labour Force Survey estimates for nine months of 1966.

Table 4-1 (concluded)

Civilian Labour Force Participation Rates

(Annual averages)

	1973	1974	1975	1976	1977	1978	1979	1980
			(Per cent)					
Men								
14-19	36.9	36.5	36.4	36.4	36.4	36.4	36.5	36.7
20-24	85.7	85.6	85.4	85.3	85.2	85.2	85.1	85.0
25-34	97.3	97.3	97.3	97.3	97.3	97.3	97.3	97.3
35-44	97.7	97.7	97.7	97.7	97.7	97.7	97.7	97.7
45-54	96.0	96.0	96.0	96.0	96.0	96.0	96.0	96.0
55-64	85.8	85.8	85.7	85.7	85.6	85.6	85.5	85.5
65 and over	23.8	23.4	23.1	22.9	22.6	22.4	22.0	21.7
All ages, 14 and over	77.2	77.2	77.1	77.2	77.2	77.3	77.5	77.7
Women								
14-19	30.6	30.4	30.4	30.5	30.5	30.6	30.8	31.1
20-24	60.2	60.6	61.0	61.2	61.4	61.6	61.8	62.0
25-34	38.3	38.9	39.5	39.8	40.1	40.4	40.7	41.0
35-44	42.5	43.4	44.2	44.8	45.3	45.9	46.4	47.0
45-54	45.2	46.1	47.0	47.6	48.2	48.8	49.4	50.0
55-64	36.3	37.1	38.0	38.6	39.2	39.8	40.4	41.0
65 and over	6.7	6.9	6.9	7.0	7.1	7.2	7.2	7.2
All ages, 14 and over	37.7	38.1	38.6	38.8	39.1	39.5	39.8	40.1

Source: Based on data from Dominion Bureau of Statistics, Labour Force Survey, and estimates by Economic Council of Canada.

Table 4-2

Source Population for the Civilian Labour Force, Based on Medium Immigration Assumption

(Annual averages)

	1965*	1966	1967	1968	1969	1970	1971	1972
				(Thousands)				
Both Sexes								
14-19	2, 139	2, 221	2, 293	2, 352	2, 403	2, 447	2, 487	2, 537
20-24	1, 339	1, 422	1, 511	1, 607	1, 703	1, 792	1, 869	1, 932
25-34	2, 341	2, 367	2, 406	2, 457	2, 525	2, 613	2, 721	2, 849
35-44	2, 461	2, 479	2, 490	2, 491	2, 485	2, 476	2, 466	2, 457
45-54	2, 007	2, 051	2, 098	2, 146	2, 195	2, 243	2, 287	2, 328
55-64	1, 422	1, 466	1, 513	1, 561	1, 611	1, 659	1, 704	1, 746
65 and over	1, 419	1, 441	1, 466	1, 492	1, 520	1, 551	1, 584	1, 621
All ages, 14 and over	13, 128	13, 447	13, 777	14, 106	14, 442	14, 781	15, 118	15, 470
Men								
14-19	1, 086	1, 127	1, 165	1, 196	1, 223	1, 245	1, 266	1, 291
20-24	660	708	757	808	857	903	943	976
25-34	1, 157	1, 172	1, 192	1, 219	1, 255	1, 302	1, 360	1, 429
35-44	1, 214	1, 226	1, 235	1, 240	1, 241	1, 240	1, 237	1, 233
45-54	1, 001	1, 019	1, 039	1, 059	1, 080	1, 101	1, 122	1, 142
55-64	715	735	756	777	799	819	838	855
65 and over	672	678	686	695	704	716	728	742
All ages, 14 and over	6, 505	6, 665	6, 830	6, 994	7, 159	7, 326	7, 494	7, 668
Women								
14-19	1, 053	1, 094	1, 128	1, 156	1, 180	1, 202	1, 221	1, 246
20-24	679	714	754	799	846	889	926	956
25-34	1, 184	1, 195	1, 214	1, 238	1, 270	1, 311	1, 361	1, 420
35-44	1, 247	1, 253	1, 255	1, 251	1, 244	1, 236	1, 229	1, 224
45-54	1, 006	1, 032	1, 059	1, 087	1, 115	1, 142	1, 165	1, 186
55-64	707	731	757	784	812	840	866	891
65 and over	747	763	780	797	816	835	856	879
All ages, 14 and over	6, 623	6, 782	6, 947	7, 112	7, 283	7, 455	7, 624	7, 802

* Actual Labour Force Survey estimates.

Table 4-2 (concluded)

Source Population for the Civilian Labour Force, Based on Medium Immigration Assumption

(Annual averages)

	1973	1974	1975	1976	1977	1978	1979	1980
			(Thousands)					
Both Sexes								
14-19	2, 585	2, 629	2, 672	2, 706	2, 738	2, 743	2, 726	2, 684
20-24	1, 983	2, 025	2, 063	2, 100	2, 133	2, 176	2, 215	2, 250
25-34	2, 997	3, 158	3, 319	3, 474	3, 625	3, 770	3, 908	4, 034
35-44	2, 449	2, 445	2, 453	2, 476	2, 512	2, 562	2, 630	2, 716
45-54	2, 367	2, 402	2, 428	2, 446	2, 455	2, 456	2, 450	2, 441
55-64	1, 784	1, 822	1, 862	1, 903	1, 946	1, 992	2, 037	2, 081
65 and over	1, 661	1, 703	1, 748	1, 794	1, 844	1, 897	1, 951	2, 007
All ages, 14 and over	15, 826	16, 184	16, 545	16, 899	17, 253	17, 596	17, 917	18, 213
Men								
14-19	1, 316	1, 338	1, 360	1, 377	1, 393	1, 396	1, 387	1, 367
20-24	1, 002	1, 024	1, 044	1, 063	1, 080	1, 102	1, 122	1, 139
25-34	1, 509	1, 596	1, 683	1, 766	1, 846	1, 922	1, 994	2, 059
35-44	1, 228	1, 224	1, 226	1, 237	1, 255	1, 281	1, 317	1, 363
45-54	1, 162	1, 181	1, 196	1, 207	1, 215	1, 219	1, 220	1, 219
55-64	870	885	901	918	935	954	973	992
65 and over	757	774	791	809	829	850	871	892
All ages, 14 and over	7, 844	8, 022	8, 201	8, 377	8, 553	8, 724	8, 884	9, 031
Women								
14-19	1, 269	1, 291	1, 312	1, 329	1, 345	1, 347	1, 339	1, 317
20-24	981	1, 001	1, 019	1, 037	1, 053	1, 074	1, 093	1, 111
25-34	1, 488	1, 562	1, 636	1, 708	1, 779	1, 848	1, 914	1, 975
35-44	1, 221	1, 221	1, 227	1, 239	1, 257	1, 281	1, 313	1, 353
45-54	1, 205	1, 221	1, 232	1, 239	1, 240	1, 237	1, 230	1, 222
55-64	914	937	961	985	1, 011	1, 038	1, 064	1, 089
65 and over	904	929	957	985	1, 015	1, 047	1, 080	1, 115
All ages, 14 and over	7, 982	8, 162	8, 344	8, 522	8, 700	8, 872	9, 033	9, 182

Source: See Table 4-1.

Table 4-3

Source Population for the Civilian Labour Force, Based on Alternative Immigration Assumptions

(Annual averages)

	Low Immigration Assumption				High Immigration Assumption		
	1970	1975	1980		1970	1975	1980
				(Thousands)			
Both Sexes							
14-19	2, 429	2, 632	2, 619		2, 465	2, 711	2, 750
20-24	1, 755	2, 010	2, 181		1, 829	2, 116	2, 320
25-34	2, 532	3, 155	3, 818		2, 693	3, 483	4, 251
35-44	2, 441	2, 364	2, 549		2, 510	2, 542	2, 885
45-54	2, 228	2, 393	2, 372		2, 257	2, 464	2, 509
55-64	1, 651	1, 842	2, 049		1, 667	1, 880	2, 113
65 and over	1, 545	1, 733	1, 982		1, 557	1, 761	2, 030
All ages, 14 and over	14, 581	16, 129	17, 570		14, 978	16, 957	18, 858
Men							
14-19	1, 236	1, 339	1, 333		1, 255	1, 380	1, 401
20-24	885	1, 018	1, 105		921	1, 070	1, 174
25-34	1, 260	1, 599	1, 949		1, 344	1, 767	2, 169
35-44	1, 221	1, 178	1, 274		1, 258	1, 274	1, 453
45-54	1, 094	1, 178	1, 183		1, 108	1, 214	1, 254
55-64	816	893	978		822	908	1, 006
65 and over	714	786	884		718	795	900
All ages, 14 and over	7, 226	7, 991	8, 706		7, 426	8, 408	9, 357
Women							
14-19	1, 193	1, 293	1, 286		1, 210	1, 331	1, 349
20-24	870	992	1, 076		908	1, 046	1, 146
25-34	1, 272	1, 556	1, 869		1, 349	1, 716	2, 082
35-44	1, 220	1, 186	1, 275		1, 252	1, 268	1, 432
45-54	1, 134	1, 215	1, 189		1, 149	1, 250	1, 255
55-64	835	949	1, 071		845	972	1, 107
65 and over	831	947	1, 098		839	966	1, 130
All ages, 14 and over	7, 355	8, 138	8, 864		7, 552	8, 549	9, 501

Source: Based on estimates by Economic Council of Canada.

Table 4-4

Civilian Labour Force, Based on Medium Immigration Assumption

(Annual averages)

	1965*	1966	1967	1968	1969	1970	1971	1972
			(Thousands)					
Both Sexes								
14-19	738	777	801	818	830	839	849	861
20-24	935	1,018	1,087	1,160	1,233	1,303	1,361	1,410
25-34	1,496	1,530	1,568	1,614	1,672	1,746	1,828	1,925
35-44	1,611	1,644	1,668	1,684	1,696	1,705	1,710	1,715
45-54	1,331	1,368	1,410	1,454	1,497	1,542	1,583	1,621
55-64	808	844	878	915	951	987	1,020	1,049
65 and over	222	224	225	226	227	228	232	236
All ages, 14 and over	7,141	7,405	7,637	7,871	8,106	8,350	8,583	8,817
Men								
14-19	420	434	447	456	463	467	472	478
20-24	578	618	659	701	741	778	811	838
25-34	1,128	1,140	1,160	1,186	1,221	1,267	1,323	1,390
35-44	1,186	1,198	1,207	1,211	1,212	1,211	1,209	1,205
45-54	959	978	997	1,017	1,037	1,057	1,077	1,096
55-64	618	635	652	670	688	704	720	734
65 and over	177	179	178	177	176	175	177	178
All ages, 14 and over	5,065	5,182	5,300	5,418	5,538	5,659	5,789	5,919
Women								
14-19	318	343	354	362	367	372	377	383
20-24	357	400	428	459	492	525	550	572
25-34	368	390	408	428	451	479	505	535
35-44	425	446	461	473	484	494	501	510
45-54	372	390	413	437	460	485	506	525
55-64	191	209	226	245	263	283	300	315
65 and over	45	45	47	49	51	53	55	58
All ages, 14 and over	2,076	2,223	2,337	2,453	2,568	2,691	2,794	2,898

* Actual Labour Force Survey estimates.

Table 4-4 (concluded)

Civilian Labour Force, Based on Medium Immigration Assumption

(Annual averages)

	1973	1974	1975	1976	1977	1978	1979	1980
			(Thousands)					
Both Sexes								
14-19	873	882	894	906	917	920	918	911
20-24	1,450	1,484	1,514	1,542	1,567	1,601	1,630	1,657
25-34	2,038	2,161	2,284	2,398	2,509	2,617	2,719	2,813
35-44	1,719	1,726	1,740	1,764	1,795	1,840	1,896	1,968
45-54	1,661	1,697	1,727	1,749	1,764	1,774	1,779	1,781
55-64	1,078	1,107	1,137	1,161	1,196	1,230	1,262	1,294
65 and over	241	245	249	254	259	265	270	274
All ages, 14 and over	9,060	9,302	9,545	9,774	10,007	10,247	10,474	10,698
Men								
14-19	485	489	495	501	507	508	506	502
20-24	859	877	892	907	920	939	955	968
25-34	1,468	1,553	1,638	1,718	1,796	1,870	1,940	2,003
35-44	1,200	1,196	1,198	1,209	1,226	1,252	1,287	1,332
45-54	1,116	1,134	1,148	1,159	1,166	1,170	1,171	1,170
55-64	746	759	772	787	800	817	832	848
65 and over	180	181	183	185	187	190	192	194
All ages, 14 and over	6,054	6,189	6,326	6,466	6,602	6,746	6,883	7,017
Women								
14-19	388	393	399	405	410	412	412	409
20-24	591	607	622	635	647	662	675	689
25-34	570	608	646	680	713	747	779	810
35-44	519	530	542	555	569	588	609	636
45-54	545	563	579	590	598	604	608	611
55-64	332	348	365	374	396	413	430	446
65 and over	61	64	66	69	72	75	78	80
All ages, 14 and over	3,006	3,113	3,219	3,308	3,405	3,501	3,591	3,681

Source: See Table 4-1.

Table 4-5

Civilian Labour Force, Based on Alternative Immigration Assumptions

(Annual averages)

	Low Immigration Assumption			High Immigration Assumption		
	1970	1975	1980	1970	1975	1980
	(Thousands)					
Both Sexes						
14-19	833	880	889	845	907	934
20-24	1,276	1,474	1,606	1,330	1,552	1,709
25-34	1,690	2,171	2,562	1,800	2,397	2,964
35-44	1,681	1,675	1,844	1,730	1,805	2,093
45-54	1,532	1,702	1,731	1,552	1,753	1,832
55-64	983	1,126	1,275	992	1,147	1,314
65 and over	226	247	271	228	251	276
All ages, 14 and over	8,221	9,275	10,278	8,477	9,812	11,122
Men						
14-19	464	487	489	471	502	514
20-24	763	869	939	794	914	998
25-34	1,226	1,556	1,896	1,308	1,719	2,110
35-44	1,193	1,151	1,245	1,229	1,245	1,420
45-54	1,050	1,131	1,136	1,064	1,165	1,204
55-64	702	765	836	707	778	860
65 and over	174	182	192	175	184	195
All ages, 14 and over	5,572	6,141	6,733	5,748	6,507	7,301
Women						
14-19	369	393	400	374	405	420
20-24	513	605	667	536	638	711
25-34	464	615	766	492	678	854
35-44	488	524	599	501	560	673
45-54	482	571	595	488	588	628
55-64	281	361	439	285	369	454
65 and over	52	65	79	53	67	81
All ages, 14 and over	2,649	3,134	3,545	2,729	3,305	3,821

Source: Based on estimates by Economic Council of Canada.

Table 4-6

Changes in the Civilian Labour Force, by Age Group and Sex

(Under medium immigration assumption)

	1950-55	1955-60	1960-65	1965-70	1970-75	1975-80
	(Total percentage change)					
Both Sexes						
All ages	8.7	14.2	11.5	16.9	14.3	12.1
14-19	- 2.0	16.1	16.0	13.7	6.6	1.9
20-24	- 0.8	8.0	18.8	39.4	16.2	9.4
25-34	10.7	8.0	0.2	16.7	30.8	23.2
35-44	16.8	16.9	11.4	5.8	2.1	13.1
45-54	17.5	23.0	16.1	15.9	12.0	3.1
55-64	5.8	17.8	20.6	22.2	15.2	13.8
65 and over	- 7.4	6.6	- 2.2	2.7	9.2	10.0
Males						
All ages	7.2	9.4	6.7	11.7	11.8	10.9
14-19	- 7.1	11.6	15.1	11.2	6.0	1.4
20-24	- 1.0	6.3	14.5	34.6	14.7	8.5
25-34	10.7	6.1	- 3.0	12.3	29.3	22.3
35-44	13.7	10.5	7.4	2.1	- 1.1	11.2
45-54	14.5	14.8	9.1	10.2	8.6	1.9
55-64	3.6	10.6	14.2	13.9	9.7	9.8
65 and over	- 9.1	0.5	- 7.3	- 1.1	4.6	6.0
Females						
All ages	14.1	30.6	25.3	29.6	19.6	14.4
14-19	7.2	22.1	17.3	17.0	7.3	2.5
20-24	- 0.4	11.0	26.6	47.1	18.5	10.8
25-34	10.5	15.8	11.5	30.2	34.9	25.4
35-44	32.2	43.7	24.3	16.2	9.7	17.3
45-54	32.8	60.8	39.3	30.4	19.4	5.5
55-64	20.9	59.3	48.1	48.2	29.0	22.2
65 and over	9.5	56.5	25.0	17.8	24.5	21.2

PUBLICATIONS OF ECONOMIC COUNCIL OF CANADA

Annual Reviews	Author — Auteur
First Annual Review: Economic Goals for Canada to 1970 (EC21-1, 1964, $3.50)	Council — Conseil
Second Annual Review: Towards Sustained and Balanced Economic Growth (EC21-1, 1965, $2.75)	Council — Conseil
Third Annual Review: Prices, Productivity and Employment (EC21-1, 1966, $2.75)	Council — Conseil
Fourth Annual Review: The Canadian Economy From the 1960's to the 1970's (EC21-1, 1967, $2.75)	Council — Conseil

Staff Studies

1. Population and Labour Force Projections to 1970 (EC22-1, 1, $.75)	F. T. Denton Y. Kasahara S. Ostry
2. Potential Output, 1946 to 1970 (EC22-1/2, $1.00)	B. J. Drabble
3. An Analysis of Post-War Unemployment (EC22-1, 3, $.75)	F. T. Denton S. Ostry
4. Housing Demand to 1970 (EC22-1, 4, $.75)	W. M. Illing
5. Business Investment to 1970 (EC22-1/5, $1.00)	D. A. White
6. Special Survey of Longer Range Investment Outlook and Planning in Business (EC22-1/6, $.25)	B. A. Keys
7. Canada and World Trade (EC22-1/7, $.50)	M. G. Clark

PUBLICATIONS DU CONSEIL ÉCONOMIQUE DU CANADA

Exposés annuels

Premier exposé annuel: Objectifs économiques du Canada pour 1970 (EC21-1, 1964F, $3.50)

Deuxième exposé annuel: Vers une croissance économique équilibrée et soutenue (EC21-1, 1965F, $2.75)

Troisième exposé annuel: Les prix, la productivité et l'emploi (EC21-1, 1966F, $2.75)

Quatrième exposé annuel: L'économie canadienne des années 1960 aux années 1970 (EC21-1, 1967F, $2.75)

Études préparées par le personnel

1. Projections de la population et de la main-d'œuvre jusqu'à 1970 (EC22-1, 1F, $.75)	
2. Potentiel de production, 1946 à 1970 (EC22-1, 2F, $1.00)	
3. Une analyse du chômage depuis la fin de la guerre (EC22-1, 3F, $.75)	
4. Demande d'habitations pour 1970 (EC22-1, 4F, $.75)	
5. Investissements privés pour 1970 (EC22-1, 5F, $1.00)	
6. Enquête spéciale sur les intentions et la programmation à moyen terme des entreprises privées (EC22-1/6F, $.25)	
7. Le Canada et le commerce mondial (EC22-1/7F, $.50)	

Staff Studies (*continued*)

8.	Export Projections to 1970 (EC22-1/8, $.75)	J. R. Downs
9.	Federal Tax Revenues at Potential Output, 1960 and 1970 (EC22-1/9, $.50)	D. J. Daly
10.	National Saving at Potential Output to 1970 (EC22-1/10, $.50)	F. Wildgen
11.	Changes in Agriculture to 1970 (EC22-1/11, $.50)	J. Dawson
12.	The Contribution of Education to Economic Growth (EC22-1/12, $1.90)	Gordon W. Bertram
13.	Internal Migration in Canada, 1921-1961 (EC22-1/13, $1.60)	Isabel B. Anderson
14.	Interregional Disparities in Income (EC22-1/14, $1.75)	S. E. Chernick
15.	An Analysis of Interregional Differences in Manpower Utilization and Earnings (EC22-1/15, $1.00)	F. T. Denton
*17.	Business Cycles in Canada (EC22-1/17)	D. A. White
18.	Manpower Planning in Industry: A Case Study (EC22-1/18, $1.00)	B. A. Keys H. H. Wright
19.	Population, Family, Household and Labour Force Growth to 1980 (EC22-1/19)	W. M. Illing Y. Kasahara M. V. George F. T. Denton
*20.	Enrolment in Schools and Universities, 1951-52 to 1975-76 (EC22-1/20)	Z. Zsigmond W. M. Illing
*21.	Scale and Specialization in Canadian Manufacturing (EC22-1/21)	D. J. Daly B. A. Keys

Études préparées par le personnel (*suite*)

8.	Projections des exportations jusqu'à 1970 (EC22-1/8F, $.75)
9.	Rendement des impôts fédéraux dans l'hypothèse de la réalisation du potentiel de production 1960 et 1970 (EC22-1/9F, $.50)
10.	L'épargne nationale dans l'hypothèse de la réalisation du potentiel de production pour 1970 (EC22-1/10F, $.50)
11.	Changements dans le secteur agricole jusqu'à 1970 (EC22-1/11F, $.50)
12.	Apport de l'éducation à la croissance économique (EC22-1/12F, $1.90)
13.	Migration à l'intérieur du Canada, 1921-1961 (EC22-1/13F, $1.60)
14.	Disparités interrégionales du revenu (EC22-1/14F, $1.75)
15.	Analyse des différences interrégionales dans l'utilisation de la main-d'œuvre et le revenu gagné (EC22-1/15F, $1.00)
†17.	Les cycles économiques au Canada (EC22-1/17F)
18.	La planification de la main-d'œuvre dans l'industrie (Étude de cas) (EC22-1/18F, $1.00)
†19.	La croissance de la population, du nombre de familles et de la main-d'œuvre, jusqu'en 1980 (EC22-1/19F)
†20.	Instructions aux écoles et aux universités, 1951-1952 à 1975-1976 (EC22-1/20F)
†21.	L'échelle et la spécialisation dans l'industrie manufacturière canadienne (EC22-1/21F)

Special Studies

1. Immigration and Emigration of Professional and Skilled Manpower During the Post-War Period — L. Parai
(EC22-2/1, $1.50)

2. A Survey of Labour Market Conditions, Windsor, Ontario, 1964: A Case Study — G. R. Horne, W. J. Gillen, R. A. Helling
(EC22-2/2, $.50)

3. Perspective on Canada's International Payments — David W. Slater
(EC22-2/3, $1.60)

4. Incomes Policies—Some Foreign Experiences and their Relevance for Canada — David C. Smith
(EC22-2/4, $1.75)

*5. Price Stability and High Employment: The Options for Canadian Economic Policy: An Econometric Study — R. G. Bodkin, E. P. Bond, G. L. Reuber, T. R. Robinson
(EC22-2/5, $3.25)

*6. Canadian Labour Relations in an Era of Technological Change — J. R. Cardin
(EC22-2/6, $1.25)

Conference Papers and Reports

National Conference on Labour-Management Relations (1964)
(EC22-364, $2.00)

Conference on Stabilization Policies, Report of the Conference at University of Western Ontario, August 1965
(EC22-665, $3.00)

Conference on International Trade and Canadian Agriculture, Banff, Alberta, January 1966
(EC22-766, $3.00)

Études spéciales

1. Immigration et émigration de spécialistes et de travailleurs qualifiés depuis la fin de la guerre
(EC22-2/1F, $1.50)

2. Relevé des conditions du marché du travail à Windsor (Ontario), 1964 (Étude de cas)
(EC22-2/2F, $.50)

3. Perspectives quant aux paiements internationaux du Canada
(EC22-2/3F, $1.60)

4. Politiques des revenus—certaines expériences à l'étranger et les conclusions à en tirer pour le Canada
(EC22-2/4F, $1.75)

†6. Les relations du travail au Canada face aux changements technologiques
(EC22-2/6F, $1.25)

Documents et rapports de colloques

Colloque national sur les relations patronales-ouvrières (1964)
(EC22-364F, $2.00)

Colloque sur les politiques de stabilisation, Rapport du colloque tenu à l'Université Western Ontario, août 1965
(EC22-665F, $3.00)

Colloque sur le commerce international et l'agriculture canadienne, Rapport du colloque tenu à Banff (Alberta), janvier 1966
(EC22-766F, $3.00)

Papers presented at Conferences on Productivity through New Technology

Modern Management (EC22-4/1, $.50)	G. G. Fisch	La gestion moderne (EC22-4/1F, $.50)
Practical Application of Data Processing in Small and Medium Manufacturing Companies (EC22-4/2, $.75)	H. S. Gellman R. C. Carroll	Application pratique du traitement de l'information dans les petites et les moyennes entreprises industrielles (EC22-4/2F, $.75)
A Practical Approach to Automatic Production (EC22-4/3, $.50)	D. J. Clough J. W. Abrams R. W. P. Anderson	Manière pratique d'envisager la production automatique (EC22-4/3F, $.50)
Advances in Metal Working (EC22-4/4, $.75)	J. Vande Vegte	Les progrès dans le travail des métaux (EC22-4/4F, $.75)
Improving Material Movement Through the Manufacturing Cycle (EC22-4/5, $.50)	J. A. Brown B. D. Beamish	L'amélioration du mouvement du matériel à travers le cycle manufacturier (EC22-4/5F, $.50)
The Economic Justification of New Equipment (EC22-4/6, $.75)	C. G. Edge	Justification économique du renouvellement de l'équipement (EC22-4/6F, $.75)
New Technology in Materials and Processes (EC22-4/7, $.70)	J. Vande Vegte	Nouvelle technologie visant les matières premières et les procédés (EC22-4/7, $.70)

Other Studies and Reports

Annual Report (1964) (EC1-1964, $.50)	John J. Deutsch	Rapport annuel (1964) (EC1-1964F, $.50)
Annual Report (1965) (Fo 1/1965, $.50)	John J. Deutsch	Rapport annuel (1965) (Fo 1/1965F, $.50)
Annual Report (1966) (EC1-1966, $.50)	John J. Deutsch	Rapport annuel (1966) (EC1-1966F, $.50)
Annual Report (1967) (EC1-1967)	John J. Deutsch	Rapport annuel (1967) (EC1-1967F)

Other Studies and Reports (*continued*)		**Autres études et rapports** (*suite*)
A General Incentive Programme to Encourage Research and Development in Canadian Industry, A Report to the Economic Council of Canada (EC22-565, $.60)	Advisory Committee on Industrial Research and Technology — Comité consultatif sur la recherche industrielle et la technologie	Programme général de stimulation des travaux de recherche et de développement dans l'industrie canadienne, Rapport présenté au Conseil économique du Canada (EC22-565F, $.60)
A Declaration on Manpower Adjustments to Technological and Other Change (EC22-866, $.75)	Council — Conseil	Une déclaration au sujet de l'adaptation de la main-d'œuvre aux changements technologiques et autres (EC22-866F, $.75)
Towards Better Communications Between Labour and Management (EC22-967, $.25)	Council — Conseil	Vers une amélioration de la communication entre patrons et travailleurs (EC22-967F, $.25)
Interim Report—Consumer Affairs and the Department of the Registrar General (EC22-1067, $.25)	Council — Conseil	Rapport provisoire sur les affaires du consommateur et le ministère du Registraire général (EC22-1067F, $.25)

*forthcoming

†en préparation

Copies of the above publications may be obtained in English and French from the Queen's Printer, Ottawa. Payment should accompany orders to avoid possible delay in shipment.

On peut se procurer des exemplaires de ces publications, en anglais et en français, chez l'Imprimeur de la Reine, à Ottawa. Afin d'éviter les retards d'expédition, prière d'envoyer les chèques en même temps que les commandes.

Date Due

~~Jul. 17/75~~	
JUN 23 1983	
JUL 22 1983	

Population, Family, Household and Labour Force Growth to 1980, *by* Wolfgang M. Illing *with technical contributions by* Yoshiko Kasahara, Frank T. Denton and M. V. George

Economic Council of Canada