PART II
ANALYSIS

ANALYSIS

SECTION I

CHANGING ECONOMIC AND INSTITUTIONAL SETTING

ON 1st July 1867 three British colonies in North America united to form a new nation: Canada. This involved at the time some three and a quarter million people spread thinly over a large area and separated from each other by great distances – and in some cases by wilderness not yet penetrated by transportation and communication lines.

POLITICAL AND ECONOMIC INFLUENCES LEADING TO CONFEDERATION

The founding of Canada came partly in response to serious challenges to their way of life with which the people of British North America were confronted. There were two such challenges.

One problem Canadians faced after the middle 1850's was the loss of their traditional markets in Great Britain, as that country turned toward freer trade and discontinued many of the commercial preferences previously granted to colonial territories. Thus the British North American colonies, which had been trading for many years in a sheltered market, were plunged into the harsh reality of world competition. It was necessary to find new markets or face economic catastrophe.

Markets were found in the United States, which in due course was to become Canada's largest customer just as Canada was to become the United States' greatest export market. The conclusion of the Canada–United States Reciprocity Treaty of 1854 and the beginning of the Civil War in the United States in 1861 provided Canadians with increased opportunities for trading on a continental basis. Commercial interests began to look for greater markets southward rather than eastward and sales to the United States rose rapidly, more than offsetting the loss in overseas trade. But the solution of one problem was the beginning of another – too great an economic dependence on the United States. This became all too clear when the United States abrogated the Reciprocity Treaty in 1866. Moreover, the United States was emerging from the Civil War as one of the world's mighty nations – with the attributes of a young and vigorous nation including the urge for expansion.

The creation of Canada was designed to make clear that the 'manifest destiny' of the United States did not include the absorption of Canada. It laid the foundations of an independent nation with two valuable endowments to facilitate its economic growth – a larger domestic market for the industries of the provinces and the opportunity to develop the rich resources of the interior of British North America. Americans and Canadians, who have been on friendly terms for more than two generations, take this happy relationship for granted. But to the Canadians of 1867 nationhood was a question of political and economic survival – of how to avoid being absorbed by the rapidly growing United States and how to put Canada's economic life on a firm and lasting foundation.

Three provinces joined in Confederation in 1867: the Province of Canada (divided by the British North America Act of 1867 – the legal basis of Confederation – into two provinces, Ontario and Quebec), Nova Scotia and New Brunswick. Canada became a virtually autonomous[1] constitutional monarchy, recognizing the Queen of Great Britain as the Queen of Canada. Other parts of British North America shortly joined the new nation. Manitoba was created in 1870 out of lands acquired from the Hudson Bay Company (adding a population of about 28,000). British Columbia joined the Confederation in 1871 (population about 36,000) and Prince Edward Island in 1873 (population about 98,000). Thus, in the short period of seven years, the first great hope of a young people had been achieved – a nation extending from the Atlantic to the Pacific. In 1905 two new provinces were created out of the northwestern territories, Saskatchewan (population 236,000) and Alberta (population 166,000). In 1949 Newfoundland, Britain's oldest dominion (population about 345,000), joined the Confederation with Canada. Today only two territories of Canada do not have the status of provinces. These are the Yukon and the Northwest Territories (with a total population of 25,000 in 1953), the two most northern regions, which are still under federal administration. These areas are moving toward regional self-government, the full achievement of which depends on further expansion and settlement and on the ability to carry the financial and administrative responsibilities that go with representative self-government.

[1] However, it took many years to realize all the attributes of national sovereignty.

The achievement and rounding out of Confederation was, however, only half the battle. It remained to make the union work and realize the economic, social, and cultural potentialities of the diverse regions, resources, and peoples which had been, by an Act of Parliament, brought together into one country.

This study deals with long-term changes in Canadian economic development between 1867 and 1953. But economic growth is closely intertwined with political, social, and international developments. The latter have had an important effect on Canada's economic destiny. Thus, even though only incidental reference is made to political, social, or international occurrences, the reader should bear in mind that, in looking at Canada's economic development, he sees not only the results of a struggle to make nature serve a people's ends but also the effects of political compromise, social evolution, and international co-operation or division.

BASIC FACTORS BEHIND CANADIAN ECONOMIC DEVELOPMENT

Four basic factors have given Canadian economic development its distinctive characteristics: (1) the vastness of the land, (2) the climatic limitations, (3) the character and distribution of the national resources, and (4) the character of the people.

(1) The vastness of the land, the major portion of which is not suitable for agricultural settlement, made it necessary to create a comprehensive network of transportation and communication. This is a heavy overhead burden even today – 1953 – when Canada's population is of the order of 15 million. How much more difficult the task was for a young and struggling nation of about 3½ million people is explained in Sections 5 and 6.

(2) The climatic limitations were for a long time a great obstacle to further settlement. In fact they stood in the way of what ultimately became one of Canada's major staple industries – wheat growing on a large scale in the Prairie Region. It was not until after the turn of the century that the dangers of frost were conquered sufficiently to reduce the hazards of grain growing on a commercial scale and permit extensive settlement of the region (see Section 9).

But agriculture is not the only industry affected by climatic conditions. Construction and lumbering in most of Canada are seasonal operations. Inland harbours are frozen in winter,

restricting water transportation. Fog, storms, and ice limit air transportation in wintertime. The search for minerals located in the more northern regions is confined to the short summer. Even when extensive finds are made, which justify economic operations because of the high quality, costs of extraction and transportation are comparatively high and production efforts are often limited by inclement weather.

(3) Canada's natural resources, bountiful as they are, could only be developed with great effort, technological skill and, in most cases, large capital expenditures. There were three major stumbling blocks:

(*a*) Many resources were land-locked and necessitated the building of railways and other means of transportation before they could be tapped. The northern frontier proved to be even more stubborn than the western, requiring much effort in order to extract the vast resources under ice, rock, water and muskeg. The development of non-ferrous metals deposits in Northern Ontario and Quebec and of uranium ore in Saskatchewan and Ontario are examples of this.

(*b*) Many resources could be developed only after scientific discoveries and advances in technology had been made. The combination of large timber resources and the development of hydro-electric power made Canada a leading newsprint producer in the 'twenties. The tar-sands of Alberta still await the development of an economical method of extraction.

(*c*) Vast resources, because of distant locations and difficulties of extraction, could only be developed economically on a large scale. But large-scale production was justified only if extensive and continuing markets could be found. Since the Canadian market was small, many natural resources were developed only after dependable export markets were found.[1] Markets were found for wheat and other grains in the first decade of the twentieth century, and for newsprint and non-ferrous metals after World War I. Non-ferrous metals production was given an added spurt by military exigencies of World War II, reconstruction and development needs on a world-wide scale in the uneasy peace that followed World War II, and the rearmament programme after the outbreak of the war in Korea. In recent

[1] There are exceptions to this, e.g. in oil and natural gas, where the rapid growth and increasing industrialization of the Canadian economy provided ample opportunities to absorb domestically most of the newly found resources.

years, declining reserves of United States high-grade iron ore have induced that country to turn to Canada for supplies of iron. The arrival of the atomic age has focused world attention on Canada's large deposits of high-grade uranium.

(4) What of the people, who have passed in the short space of eighty-six years from a pioneering society to the nation Canada is today?

Appearances and historical facts are sometimes at variance, as Dr. W. A. Mackintosh, the principal of Queen's University, has pointed out so aptly: 'In the world outside Canadians have the reputation for being cautious, or even over-cautious. They may even be considered a little slow. In fact, however, the historical evidence is overwhelming that in terms of their environment the opposite has been true. The extension of boundaries, the building of railways, the setting up of the machinery of government, the machinery for the administration of justice, have always tended in Canada's history to outrun the limits of settlement. In the course of United States' history there were periods when it was difficult for the apparatus of transportation and government to catch up with the rapidity of settlement. In contrast, Canada went through long periods of waiting for the possibilities of settlement to catch up with the projects which had been set out for government and for economic expansion. The bases of economic development in the northern half of the continent have disclosed themselves slowly and reluctantly. Opportunity waited on technical development and on world markets. Plans and organizations have frequently been far ahead of opportunity.'[1]

THE PROBLEM OF PERSPECTIVE

This study considers quantitative and qualitative evidence covering many facets of Canadian economic development: how its population grew, how its make-up changed, its health and educational standards increased, and how new attitudes pervaded the working force; how the development of resources and industries was translated into rising output and growing markets, higher living standards, greater government services, greater security and more leisure, expanded capital facilities, a larger volume of international trade, increased productivity of

[1] W. A. Mackintosh, 'The People and Their History', *Canada: Nation on the March*, Toronto, 1953, pp. 17–18.

men and machinery, higher real earnings notwithstanding a long-term rise in the price level and, finally, a substantial change in the industrial structure of the country.

Two difficulties are encountered in a study of this nature: (1) the problem of perspective and (2) the problem of measurement.

A comparison of Canada in 1953 with the Canada of 1867 is a comparison of:

A pioneering society with an industrially advanced nation;
A predominantly family economy with an intricate market economy;
A country with small-scale business serving local markets with one of large-scale and specialized operations serving national and international markets;
A substantially rural country with one that is highly urbanized;
A simple consumption pattern with one of great variety and including many items requiring a high degree of processing and fabrication;
A country which for several years after its birth had no uniform medium of exchange with one whose currency is among the strongest in the world;

A largely individualistic people with one that has accepted collective action and social responsibilities;

A country in which organization of groups with similar economic interests was largely unknown with one with a high degree of organization: labour in trade unions, farmers and fishermen in regional and national associations, and businessmen in various trade associations – all groups with influence in the formulation of economic decisions;
Finally, a country where the impact of economic fluctuations was softened by the possibility of drawing subsistence from the land and by the self-sufficiency of the family with one where the uncertainties of making a livelihood have increased considerably with the growing industrialization, specialization and urbanization of the economy.

These basic differences make it difficult for most Canadians today to place the achievements of their forefathers in their proper perspective. The problem is further complicated by the fact that Canadians living three generations ago themselves

found it difficult to avoid evaluating their own progress in terms of that of their next-door neighbour – the United States – which was undergoing phenomenal development at the time.

It is important to view the achievements in the light of the challenges and problems that nation faced and the resources at its disposal to overcome obstacles in the way of further progress. For this reason, where appropriate, some qualitative observations are made to illustrate the kinds of situations that confronted Canadians and led them to do one thing or another. If the background information is limited either in quality or extent, the fault is the author's, and should not detract from the desirability of combining a quantitative-economic approach with a qualitative-historical approach in an attempt to appraise Canada's long-term economic growth.

THE PROBLEM OF MEASUREMENT

The analysis in Sections 2–10 is to a large degree carried out in the framework of the national accounts, an integrated system of economic measurement, where each economic flow has its proper place, and the components are articulated into a national whole, whether the latter is the total output of the nation (gross national product) or the uses to which the nation's output is devoted (gross national expenditure). For the period from 1926 to 1953, comprehensive national accounts data, the official estimates of the Dominion Bureau of Statistics, are available. But for earlier years estimates had to be made based on data collected for other purposes. Many of the earlier data are not comparable with statistics for recent periods and adjustments and assumptions had to be made to fit them into the framework of modern economic analysis.

Thus the estimates for the period before 1926 are definitely more tentative than those for the more recent period. Despite a number of other inadequacies – and these are referred to throughout and particularly in Section 11 – the data do serve as an illustration of the direction, character, and extent of Canadian economic growth over the last eighty-six years. Sometimes the estimates reflect the judgment of the investigator as to what economic changes have taken place between 1867 and 1953 and how they have changed the way of life and institutions. But the judgments of other investigators may differ and they may come to different conclusions. The reader of this study

will be well advised to look only for indications of the general order of change and their meaning in terms of Canada's continuing economic growth, rather than attempt to draw fine conclusions because the data indicate for one period or for one sector of the economy increases of a few more percentage points than for another period or sector. This study is designed to indicate broad trends rather than provide precise measures.

VARIATIONS IN THE RATE OF ECONOMIC PROGRESS

The economic progress over the eighty-six years has not taken place at an even pace. At times nature and good fortune combined, and progress was particularly rapid. At other times advance was slower and at still other times domestic difficulties and international economic setbacks reversed the trend. Twice during the period, Canada participated in world conflicts, contributing heavily in men and munitions (see Section 6). During these two periods the loss in manpower and in material wealth was great but Canada came out of both wars economically stronger than ever before. (For an appraisal of the effect of the two world wars, see Section 9.)

The eighty-six years since Confederation cover the life of roughly three generations. During this period, four phases can be discerned each of which has a character of its own and differs from the others in a number of important respects. It is not easy, however, to determine the exact point of time at which one phase passes into another.

In this study the years chosen as turning points have been governed to some extent by the availability of data. The periods are:

1867–1890. This period includes a few years of economic expansion and national prosperity, from 1867 to 1873. A period of highly unsettled economic conditions and protracted price declines, frequently described as the 'great depression' of the nineteenth century, ensued and lasted well beyond 1890, until 1896 in fact. If the data available for 1896 had been as satisfactory as that for 1890 (mainly based on the Census of 5th April 1891), 1896 would have been taken as the terminal point of this first period. The year 1890 appears to have been a fairly prosperous one, however, and is believed to be comparable with the other years selected. In many cases it has been necessary to substitute 1870 for 1867, again because of greater availability of

data. However, since both years were fairly prosperous ones, the difference between the two dates is not important for long-term analysis.

1890–1910. The 'great depression' lasted until the mid-'nineties with economic conditions taking a definite turn for the better after 1896. A period of rapid economic expansion followed, the years from 1902 on were especially prosperous. These years saw the opening up and settlement of the Prairie Provinces and a particularly rapid rate of urbanization.

1910–1930. Prosperity continued unabated until about 1913. A brief economic setback followed but the events brought about by World War I turned the tide. The booming war period, 1914–18, and its aftermath are included in this period. The first signs of a serious post-war recession were apparent in late 1920 but the year as a whole was a fairly prosperous period during which the highest general price level up to that time was recorded. The short but sharp recession of the early 'twenties and the moderate economic decline of 1924 gave way to the 'prosperous 'twenties' which reached their culmination in 1929.

1930–1953. Indications of an impending economic crisis became apparent late in 1929, continuing into 1930. But the year as a whole was fairly prosperous. The severe depression of the early 'thirties, which reached its lowest point in 1933, was followed by a period of slow recovery until 1937. Then came a brief recession in 1938, with the economy turning upward before the year was out. World War II broke out in 1939, followed by six hectic years of substantial military effort and rapid industrial expansion of a specialized character. The eight years that followed the end of World War II turned out to be one of the periods of Canada's greatest economic growth. The post-World War II years also saw a significant rise in the general price level, spread over a longer period however, so that the annual rate of increase was much more moderate than that experienced after World War I. Since the transition from war to peace was more gradual, the adjustment in the 1940's was somewhat easier than that of a quarter of a century earlier.

Conversion to civilian production, resources development, commercial, residential, and institutional expansion, and heavy demands from abroad in large part by gifts and loans from Canada in the immediate post-war period – as well as endeavours

by consumers to make up for deficiencies kept economic activity at high levels. In fact, Canada was spared most of the effects of the inventory recession that the United States experienced in 1948–49, and economic activity continued to rise. The rearmament programme following the outbreak of the war in Korea added new strains to an economy already operating at a high level, but by 1953 the necessary adjustments had been completed and the economy was again functioning smoothly.

YEARS CHOSEN FOR LONG-TERM AND SHORT-TERM ECONOMIC ANALYSIS

The appraisal of long-term economic changes in the analyses that follow is made by comparing 1867 or 1870 with 1950 or 1953; for intermediate-term economic changes, the comparisons are for 1867 or 1870 and 1890, 1890 and 1910, 1910 and 1930 and 1930 and 1950 or 1953.

Comparison between two single years may yield seriously misleading results if care is not exercised in the selection of the years. The point is illustrated in Section 5 where comparison is made between 1870 and 1933, suggesting that 1870 could be interpreted as the better year on the basis of certain per capita data in constant dollar terms. Such a conclusion, however, is not warranted since the data relate to different stages of the trade cycle.

It is imperative that the years chosen represent fairly comparable phases in the business cycle. The years 1867, 1870, 1890, 1910, 1930, 1950, and 1953 were all characterized by a fairly high level of economic activity. Thus, a comparison based on the years chosen is not likely to be biased to any serious extent by short-term economic changes which may understate or overstate the long-term rate of economic expansion.

Some difficulties that single year comparisons present can be overcome by using annual averages covering longer periods of time, e.g. overlapping decades such as Kuznets has used[1] or quinquennial annual averages. For this study a test was made by using the averages for the five-year periods beginning with the individual years used. Since the trends in the growth of real output, shown by these, in both aggregate and per capita terms, were similar to those for the individual years chosen, it was

[1] Simon Kuznets, 'Long-Term Changes in the National Income of the United States of America Since 1870', *Income and Wealth of the United States, Trends and Structures*, International Association for Research in Income and Wealth, Bowes and Bowes, England, 1952.

decided to use the latter. Quinquennial data, however, are also included in the tabular material enabling the investigators to vary the methods of analysis.

While the above-mentioned years have been chosen to delineate intermediate – and long-term economic changes, other years have been added to illustrate short-term economic changes and indicate their effect on long-term economic growth. The years are 1929, 1933, 1939, 1945, 1951, and 1952. The first three years are the high and low points of the depressed 'thirties, ending with the outbreak of war in 1939. The years 1945 and 1951 and 1952 taken in conjunction with 1950 and 1953 cover the post-war period, involving economic adjustment and expansion unaffected by the threat of war, and developments after the outbreak of war in Korea in mid-1950 followed by a period of rearmament lasting up to 1953.

SECTION 2

POPULATION, FAMILIES, AND THE LABOUR FORCE

The Confederation of Ontario, Quebec, New Brunswick, and Nova Scotia in 1867 brought together an overwhelming majority of the people inhabiting the territory of present-day Canada. In fact, about 95 per cent of the total population of about 3½ million (excluding Newfoundland) was involved in this union. In the eighty-six years since Confederation the population has more than quadrupled, exceeding 15 million at the end of 1953. This means the population has increased at an annual rate of 1.67 per cent[1] over the entire period from 1867 to 1953.

Over the same period the number of families rose from 761 thousand to about 3½ million, or at an annual rate of 1.78 per cent. The labour force increased from over one million persons to about 5½ million, or at an annual rate of 1.86 per cent. What are the reasons for these different rates and how have they affected economic growth, especially the expansion of the market?

Before an explanation is attempted the approximate character of the data for the earlier years should be noted. For the earlier period only the population figures are based on fairly firm data, the other series being estimates of varying quality, some quite

[1] To assure comparability over the eighty-six-year period the annual rates in this section are based on data for Canada excluding Newfoundland. The rates of increase in this and subsequent sections are compound.

crude. Therefore, errors in the estimates themselves may well be the reason for some of the differences. But there may be other, more basic human and economic factors, which the data reveal only inadequately.

The somewhat greater rate of increase in the number of families and the significantly greater expansion rate of the labour force are the results of the transformation from a predominantly pioneering country to the present highly industrialized and urbanized one.

POPULATION GROWTH AND TRENDS

The level and trend of population have an important bearing on a nation's economic development, since they determine both the size and the structure of the domestic market for goods and services. The level of population sets the nation's basic requirements of food, clothing, shelter, and services. The structure of the domestic market is affected by the number of consumers and consumer units (families), their geographical distribution, and their social characteristics. The level, rate of growth, and composition of the population influence the size and the sex and age composition of the labour force, the degree of urbanization, the development of transportation facilities, and the growth of educational, health and recreational facilities.

POPULATION GROWTH

Population growth depends upon two factors which frequently work in opposite directions, natural increase and net migration. However, because the natural increase in each year since Confederation has been large enough to more than offset the frequent losses that resulted from an excess of emigration over immigration, Canada's population has increased in every year since 1867.

Natural increase is the excess of the number of births over the number of deaths in a specified period. The number of births is frequently expressed as a proportion of the population, i.e. the birth rate or the number of live births per thousand population per year. In Canada the long-term trend of the birth rate has been downward although there have been brief periods of rise either as the result of large-scale immigration of people accustomed to larger families or as the after-effects of wars which partly for psychological reasons and partly for economic

reasons lead to a temporary rise in the birth rate. The recession of the early 'twenties and the depression of the 'thirties with their abnormally low marriage and birth rates intensified this long-term decline while the prosperous late 'twenties and the boom following World War II brought temporary upward surges. The effect of this declining birth rate upon population level and growth has been partly offset by the fairly steady decline in the death rate. Better nutrition, greater health services, and a reduction in the exertion of making a living are among the reasons for the increasing life expectancy and a corresponding falling-off in the mortality rate. The decline in infant mortality is another important factor in the overall decline of the death rate. The number of deaths per thousand population per year, decreased from 17.7 in 1867 to 8.4 in 1953, or over one-half.

Between 1867 and 1953 the number of births totalled 18 million while deaths numbered about 8 million, leaving a natural increase of about 10 million persons. The high point of the Canadian birth rate was in 1867 when it stood at 35.1 per thousand, while the low was 19.8 in 1937. The years 1877 and 1881 share the highest death rate, 18.3, while the lowest was recorded in 1953, 8.4. The rate of natural increase was highest in 1915, 19.4, and lowest, 9.5, in 1937 (see Table 1 and Table 84 in Section 11).

In the five sub-periods selected for detailed examination in this section, 1870–74 was marked by the highest levels of both birth and death rates. The 1926–30 period was marked by the lowest level for the birth rate and the 1950–53 period for the death rate. The rate of natural increase was highest in the most recent period and lowest in 1890–94 (see Tables 2 and 3).

Within migration, there are two flows moving in opposite directions, immigration, i.e. the number of persons entering the country to take up permanent residence, and emigration, i.e. the number of persons leaving the country and seeking permanent residence elsewhere. Net migration is the excess or deficit of the number of immigrants within a specified time, usually one year, over the number of emigrants in the same period. The term 'net migration' does not imply any close relationship between immigration and emigration although at times there does appear to be some interdependence. Among the factors determining the levels of immigration and emigration are the level of economic activity prevailing in both Canada and other

TABLE 1

Births, Deaths, Natural Increase, Immigration, Emigration, and Net Migration Per Thousand Population, Canada, Selected Years, 1867–1953

Year	Births		Deaths		Natural Increase		Immigration		Emigration		Net Migration	
	Number 000	Per Thousand Population	Number 000	Per Thousand Population	Number 000	Per Thousand Population	Number 000	Per Thousand Population	Number 000	Per Thousand Population	Number 000	Per Thousand Population
1867	123	35.1	62	17.7	61	17.4	15	4.3	24	6.9	−9	−2.6
1870	124	33.7	64	17.4	60	16.3	25	6.8	22	6.0	3	0.8
1880	140	32.5	73	16.9	67	15.6	38	8.8	34	7.9	4	0.9
1890	138	28.6	82	17.0	56	11.6	75	15.6	77	16.0	−2	−0.4
1900	146	27.2	87	16.2	59	11.0	42	7.8	30	5.6	12	2.2
1910	216	30.4	93	13.1	123	17.3	287	40.3	204	28.6	83	11.7
1920	254	29.2	116	13.3	138	15.9	139	16.0	40	4.6	99	11.4
1929	235	23.1	114	11.2	121	11.9	165	16.3	101	10.0	64	6.3
1930	243	23.6	109	10.6	134	13.0	105	10.2	66	6.4	39	3.8
1933	223	20.8	102	9.5	121	11.3	14	1.3	20	1.9	−6	−0.6
1939	229	20.2	109	9.6	120	10.6	17	1.5	24	2.1	−7	−0.6
1945	289	23.6	114	9.3	175	14.3	23	1.9	17	1.4	6	0.5
1950	371	26.7	124	8.9	247	17.8	74	5.3	38	2.7	36	2.6
1951	380	26.7	125	8.8	255	17.9	194	13.6	78	5.5	116	8.1
1952	403	27.5	126	8.6	277	18.9	164	11.2	49	3.3	115	7.9
1953	417	27.7	127	8.4	290	19.3	169	11.2	72	4.7	97	6.5

countries and for the recent years, the immigration policies in effect in various countries. In general, immigration was high when Canada was prosperous and low when economic conditions were depressed or this country was at war. The peak in the number of immigrants was recorded for 1913. The low mark was registered in 1942. The levels of emigration have also been high, largely because of the strong attraction of the United States for Canadians. In fact, annual emigration exceeded immigration by more than 10,000 persons in 19 years, and in 37 years the two were within 10,000 of each other. Interestingly, in in 1913 the largest number of emigrants left Canada and the largest number of immigrants arrived. But quite a different situation has prevailed in the post-World War II period, as indicated in Tables 1–3.

From 1867 to 1953 immigrants numbered 7.4 million, while emigrants numbered about 6.1 million, resulting in a net migration gain of 1.3 million (see Table 83). The greatest number of both immigrants and emigrants is shown for 1910–14, while the smallest in both cases is for 1870–74. The gain from net migration was largest for 1950–53 while a small loss occurred in the 1890–94 period. The rates of immigration, emigration, and net migration follow this pattern also except that the lowest rate of emigration is for 1950–53 (see Tables 2 and 3).

To some extent immigration and emigration take place independently of one another. People enter or leave the country not only for economic reasons but also for a variety of non-economic reasons, e.g. to join their families or friends, in the pursuit of education or culture, or for the sake of their health. In addition, the proximity of similar economic areas – of Canada and the United States – gives rise to a two-way flow of dissatisfied or restless persons. These persons find it more convenient to migrate to neighbouring parts of Canada or the United States, as the case may be, where the work and the working conditions are similar to what they have been used to, than to seek work of a different type in a more distant part of their own country. Thus, a dissatisfied British Columbia logger tends to go to Oregon or Washington rather than to, say, Quebec, while a restless auto worker in Windsor gravitates to Detroit rather than to the more distant Oshawa.

Probably the two most interesting periods reviewed in this study in regard to migration are 1910–14 and 1950–53. Both

TABLE 2

Population, Families, Births, Deaths, Natural Increase, Immigration, Emigration, Net Migration, Annual Population Increase, Marriages, and Net Family Formation, Canada, Selected Periods, 1867–1953

(In thousands)

	Population	Families	Births	Deaths	Natural Increase	Immigration	Emigration	Net Migration	Annual Population Increase	Marriages	Net Family Formation
Averages for Periods:											
1870–74	3,807	803	128	66	62	36	32	4	66	25	11
1890–94	4,918	1,016	136	79	57	48	55	−7	50	32	11
1910–14	7,535	1,529	234	98	136	309	239	70	206	66	47
1926–30	9,940	2,054	236	108	128	147	90	57	184	72	43
1950–53	14,456	3,408	393	126	267	150	59	91	358	128	87
Single Years:											
1870	3,673	779	124	64	60	25	22	3	63	22	8
1890	4,820	995	138	82	56	75	77	−2	54	31	11
1910	7,116	1,431	216	93	123	287	204	83	206	58	44
1930	10,306	2,142	243	109	134	105	66	39	173	72	39
1950	13,885	3,268	371	124	247	74	38	36	283	125	71
1953	15,035	3,547	417	127	290	169	72	97	387	133	92

TABLE 3

Families, Births, Deaths, Natural Increase, Immigration, Emigration, Net Migration, Annual Population Increase, Marriages and Net Family Formation, Per Thousand Population, Canada, Selected Periods, 1870–1953

	Families	Births	Deaths	Natural Increase	Immigration	Emigration	Net Migration	Annual Population Increase	Marriages	Net Family Formation
Average for Periods:										
1870–74	210.9	33.6	17.3	16.3	9.4	8.4	1.0	17.3	6.6	2.9
1890–94	206.7	27.6	16.0	11.6	9.7	11.2	−1.5	10.2	6.5	2.2
1910–14	202.9	31.0	13.0	18.0	41.0	31.7	9.3	27.3	8.8	6.2
1926–30	206.7	23.7	10.8	12.9	14.7	9.0	5.7	18.5	7.2	4.4
1950–53	235.8	27.2	8.7	18.5	10.4	4.1	6.3	24.8	8.9	6.1
Single Years:										
1870	212.1	33.7	17.4	16.3	6.8	6.0	0.8	17.2	6.0	2.2
1890	206.4	28.6	17.0	11.6	15.6	16.0	−0.4	11.2	6.4	2.3
1910	201.1	30.4	13.1	17.3	40.3	28.6	11.7	28.9	8.1	6.2
1930	207.8	23.6	10.6	13.0	10.2	6.4	3.8	16.8	7.0	3.8
1950	235.4	26.7	8.9	17.8	5.3	2.7	2.6	20.4	9.0	5.1
1953	235.9	27.7	8.4	19.3	11.2	4.7	6.5	25.7	8.8	6.1

these were periods of unusually high economic activity and were similar in other ways but they show important differences in migration patterns.

In 1910–14 great things were happening in Canada – the opening of the West on a grand scale, the accelerated growth of manufacturing industries, and in general a great coming and going of people. A feeling of change was in the air and an expectation of great things to come. In retrospect, however, it seems clear that many more immigrants came to Canada in this period – and in the preceding decade as well – than could be absorbed without some problems of adjustment. There was a great flow of people into and out of the country. From 1910 to 1913 more and more people arrived and more and more departed. This tendency toward high levels of immigration and emigration at the same time has led to the formulation of a 'displacement theory'. This theory appears to be based on a 1935 analysis of Canada's population growth[1] by M. C. MacLean, in which he commented that 'the increase in population in the eighty years due to immigration was 1,844,000 and that this about balances the loss of Canadians to the United States and certainly only balances the loss of Canadians to the United States and elsewhere', and (*b*) 'except as regards definite points (this refers to the timing of ebbs and flows of population growth) a fairly good indication of what will probably happen in the future is indicated by a series of repetitions in the past'. Professor A. R. M. Lower develops this point further by stating that 'immigration is not a major factor in determining the size of a country's population' and that 'one of the chief effects of immigration in Canada has been to lead to emigration'.[2]

Other investigators do not quite share this view. For example, Herbert Marshall, Dominion Statistician, observed before the Standing Committee on Immigration and Labour: 'It has been claimed also that immigrants displaced Canadian-born, meaning that Canadians were forced to emigrate because of the presence of immigrants. This is much too general a statement. There were occasions when that happened. In the decade 1921–31, for example, when restrictions were being placed on immigrants into the United States and Canadians were 'non-quota' the

[1] *Analysis of the Stages in the Growth of Population in Canada*, Dominion Bureau of Statistics, 1935, pp. 1 and 47.

[2] 'The Myth of Mass Immigration', *MacLean's Magazine*, May 1949, pp. 69 and 71.

immigrant movement to Canada was fairly heavy. A condition existed in Canada in which the competition of immigrants displaced Canadian-born and caused them to move into the United States. For many decades, however, Canadians entered the United States in large numbers, not because they were being displaced by immigrants, but because they sought larger opportunities there. The movement of French Canadians into the New England States, which began as far back as 1851–61, was not due to displacement by immigrants but because the available openings of the time did not afford them the opportunities which they could find in the United States. Many Canadian-born farmers left Canada in earlier decades because new accessible regions were not available in Canada at the time and the counties in which they lived had reached the saturation point. On the other hand, new and accessible regions were opening up in the United States.'[1]

Mabel F. Timlin, of the University of Saskatchewan, questions the validity of assuming a fixed relationship between immigration and emigration, which forms the basis for the displacement theory: 'The annual rate of population growth, or annual absorption, will be determined by three factors: the rate of natural increase, the rate of immigration, and the rate of emigration. Sometimes the number of emigrants is subtracted from the number of immigrants in the period to reach a figure called "net immigration". The danger in this practice is that some may infer from it that emigration is a consequence of immigration, whereas there are probably several alternative relationships between the two. Sometimes, people may leave Canada just because others have come in; in other situations, people may be able to come into Canada just because others have gone elsewhere; and under still other circumstances the two movements, or some parts of them, may be completely independent of each other. There is also the possibility that under some economic conditions the entry of immigrants may have the effect of reducing rather than increasing emigration. Since the possible causal relationships are extremely complex, it seems safest to treat the three constituents of absorption as independant facts.'[2]

[1] *Proceedings of the Standing Committee on Immigration and Labour*, 30th July 1956, p. 256.

[2] Mabel F. Timlin, *Does Canada Need More People?*, Oxford University Press, 1951, p. 6.

The thinking on the 'displacement theory' was developed in the 1930's against the background of trends in immigration and emigration over the preceding 60 to 80 years. If this theory were put to a test against the experiences in the post-World War II period, the available evidence would not support it, as is indicated below.

Rather than try to establish the causal relationship between immigration and emigration which so far has not been substantiated in the literature, we prefer to consider the reasons why immigration and emigration have varied over long periods of time.

As far as immigration is concerned, Canada's attraction was its growing economic opportunities: the opening up of the prairie land for farming at the beginning of the twentieth century, the rapid growth of manufacturing industries in the 1920's, and the resources development and industrialization programme in the post-World War II period. Other factors which at certain periods contributed to the increasing flow of immigrants were political difficulties in the home countries, e.g. in Eastern Europe at the beginning of the twentieth century and in Central and Western Europe before and after World War II. Still another factor which affected the immigration statistics was the number of immigrants who came to Canada with the avowed purpose of going on to the United States. Immigration was at low levels in the war periods, 1914–18 and 1939–45, and when economic conditions were depressed, with the outstanding example of the severe depression of the 1930's.

The reasons for emigration differed for different periods. Among the most important reasons in the latter part of the nineteenth century were: (*a*) The difficulties farmers faced in settling marginal land in central Canada as well as in the West. These difficulties led to large emigration either to the United States where settlement opportunities seemed more promising, or to Canada's urban areas where a transformation of the old shop system to a factory system was under way. (*b*) However, the employment opportunities created by this industrialization process were not large enough to absorb the great numbers of workers streaming into the cities and there was large-scale unemployment. Since provisions for unemployment relief were practically non-existent, or wholly inadequate, many of those who could not find work, being unwilling to return to the farms,

moved on to the United States where the process of industrialization was more advanced and job opportunities were more plentiful.

During the first three decades of the twentieth century, emigration was frequently motivated by two factors: First, the United States experienced a great boom associated with the munitions and industrial expansion programmes during World War I, and again in the late 'twenties when expansion and speculation reached a fever pitch. High wages across the border were frequently a great attraction for Canadians. Second, and especially in the earlier part of the twentieth century, a large number of so-called 'immigrants' to Canada were, in fact, immigrants to the United States who preferred to enter the United States via Canada because this was an easier way of entry into the States.[1] In the 1930's emigration was small. The depression hit the United States even more severely than Canada so that the incentive to emigrate to the United States was limited. However, some immigrants returned to their native countries overseas where economic conditions were somewhat better than in North America. Emigration continued at very low levels, during World War II because of the National Selective Service provisions, and after World War II because of the economic opportunities that opened up in Canada. The post-war pattern of immigration and emigration appears to differ materially from earlier experiences. Immigration continued to be controlled and immigrants were hand-picked for their ability to fit into the country's growth requirements. In other words, there was greater emphasis on absorptive capacity than on numbers. Special care was exercised to keep out persons with occupations or trades of which there was a surplus or sufficiency and the immigration of family units was encouraged. Thus, problems associated with the placement of immigrants were kept to a minimum. The continuing high level of prosperity and a growing belief in the economic future kept emigration at a very low level during this period with a resultant large gain from net migration. Thus, while there was only a net migration gain of about 350 thousand from the 1½ million immigrants in

[1] 'As the control at the ports of the United States became stricter and more efficient, European emigrants bent on reaching America but fearing the increasing rigours of the law, resorted more and more to the back door from Canada', Brinley Thomas, *Migration and Economic Growth*, Cambridge University Press, 1954, p. 46.

1910–14, the corresponding gain in 1950–53 was approximately 365 thousand when only about 600 thousand immigrants were admitted.

During the full period of record immigration, 1904–13, the increase from net migration represented about one-third of the number of immigrants whereas in the recent period of high-level immigration, 1948–53 (and beyond), it was better than one-half. In forty years of the 1867–1953 period, net migration was a positive factor in population growth, in forty-six years a negative factor, and in one year a neutral factor.

FAMILIES

Changes in the number of families are determined by annual net family formation, of which the number of new families formed by marriage is the most important factor. Marriage rates as a rule respond to economic conditions, rising in times of prosperity and falling in times of depression. Furthermore, marriage rates rise when war seems imminent and in the early stages of actual war, decline in the later stages of war and rise sharply again in the immediate post-war periods.

However, the difficulties faced in founding families were much greater in the pioneering stage of Canadian development than in recent times – ranging from the time it took for a new settler to reach the point where he could eke a living out of the wilderness to the uneven regional distribution of males and females of marriageable age. While males and females were roughly equal in number at the time of Confederation (Table 5), a larger proportion of females were residents of urban communities while a larger proportion of males were working on farms and in frontier areas, in the northern parts of the more settled areas in the East, and in the undeveloped territories of the West. Moreover, in the second half of the nineteenth century labour was encouraged to come to Canada to work on the railroads, in the mines, and on the farms, emphasis being placed on immigrants of working age.

But the situation changed in the twentieth century. Except in the depressed 'thirties, when the marriage rate was particularly low, marriages and net family formation ran ahead of population increase for most years (Table 4). Two world wars have had a good deal to do with this. Young men joining the forces frequently married earlier than they would have under peace-

TABLE 4

Marriages, Families, Net Family Formation and Annual Population Increase in Relation to Total Population, Canada, Selected Years, 1867–1953

Year[a]	Marriages		Families		Net Family Formation		Population Increase	
	Number 000	Per Thousand Population	Number 000	Per Thousand Population	Number 000	Per Thousand Population	Number 000	Per Cent of Total Population
1867 . . .	20	5.7	761	217.5	4	1.1	52	1.5
1870 . . .	22	6.0	779	212.1	8	2.2	63	1.7
1880 . . .	28	6.5	886	205.7	13	3.0	71	1.6
1890 . . .	31	6.4	995	206.4	11	2.3	54	1.1
1900 . . .	37	6.9	1,098	205.0	14	2.6	71	1.3
1910 . . .	58	8.1	1,431	201.1	44	6.2	206	2.9
1920 . . .	80	9.2	1,784	205.3	61	7.0	237	2.7
1929 . . .	77	7.6	2,103	207.5	48	4.7	185	1.8
1930 . . .	72	7.0	2,142	207.8	39	3.8	173	1.7
1933 . . .	64	6.0	2,210	206.6	20	1.9	115	1.1
1939 . . .	104	9.2	2,432	214.6	54	4.8	113	1.0
1945 . . .	108	8.9	2,795	229.1	50	4.1	181	1.5
1950[b] . . .	125	9.0	3,268	235.4	71	5.1	283	2.0
1951[b] . . .	128	9.0	3,363	235.9	95	6.7	371	2.6
1952[b] . . .	128	8.7	3,455	235.9	92	6.3	392	2.7
1953[b] . . .	133	8.8	3,547	235.9	92	6.1	387	2.6

[a] As of 31st December.
[b] Including Newfoundland.

time conditions. Many members of the Armed Forces married overseas and brought their brides back after the end of the war. In 1946 and 1947 some 40,000 war brides entered Canada.

Prosperous economic conditions and opportunities for women to continue working after marriage enabled young couples to take on the responsibilities of a home. In many cases this would have been difficult if the couple had had to rely on the income of one young breadwinner starting out at or near the bottom of the income scale.

Immigration in the 'twenties and again after the mid-'forties encouraged the movement of whole families to Canada if the occupation of the breadwinner and the ethnical background of the immigrant made it appear likely that the family would settle successfully in Canada.

Furthermore, the number of families leaving Canada to take up residence elsewhere has declined. Opportunities for economic advancement have been especially good in Canada during the last decade and a half and the pull to the South has been weaker than it was in earlier periods. This is apparent in the much smaller number of persons emigrating in the post-World War II period than in the 1880's, for example. In the first three decades following Canada's achievement of nationhood, economic conditions were unsettled and many families sought greener fields in the United States. Frequently these were people in the prime of life. On the other hand, many of the people who left Canada in the recent period were students and young workers without family attachments or older persons returning to the countries of their birth.

However, as mentioned previously, it is the annual net increase in the number of families, or net family formation, that is more important than the mere number of families in the population. Net family formation is the number of new families formed by marriage, plus the number of married female immigrants, minus the number of families dissolved by death and divorce, and the number of married female emigrants. Net family formation is an important factor in determining the demands for housing, household furniture and appliances, and motor cars although the levels of such demands are governed by current economic conditions as well.

The peak year for both the number and rate of net family formation in Canada was 1946 when both the marriage rate

and immigration of married females were especially high. The high points in the five selected sub-periods were 1950–53 for numbers and the marriage rate and 1910–14 for rate of net family formation. The number of families formed was smallest in 1870–74 and 1890–94 and the rate was lowest in 1890–94.

AGE STRUCTURE AND LABOUR FORCE

Changes have also taken place in the sex and age composition of the population. While the ratio of males to females has remained remarkably steady, the proportion of males of working age,[1] mainly the age group 15 to 64, has varied considerably. The proportion of males of working age in total male population rose from 54 per cent in 1870 to 64 per cent in 1910, fell to about 61½ per cent in 1920, rose fairly steadily from then on, and stood at 65½ per cent in 1939. The proportion has been declining again since the beginning of World War II and was about 61 per cent in 1953. The high ratio in 1910 was due to the heavy immigration of male workers from 1890 on, but casualties during World War I and emigration reduced this proportion to the low level for 1920. The drop recorded after World War II is associated with the effects of the war itself and with the changing age composition of immigrants and emigrants.

Not since 1900 has the ratio of males in the 15 to 64 age group been as low as in 1953. And the situation at the turn of the century was different from that in recent years. In 1900 about 34 per cent of the male population was in the age group 15 years and under and about 5 per cent in the 65 years and over group. The corresponding ratios for 1951 are 31 and 8 per cent (Table 5).

This changing age pattern has serious economic implications. The effect of the growing proportion of population 65 years of age and over has two aspects. First, scarcities have already developed of workers with certain skills as the result of the inadequate replacement of skilled persons retiring, e.g. bricklayers and stone masons in the construction trade. Second, the specialized demand pattern of older people will have a more

[1] The concept of working age has varied a good deal over the eighty-six-year period. Child labour was common at the time of Confederation and retirement at the age of 65, an accepted practice in recent years, was unknown then. The common working age in 1867 was more like 12 years – with some younger children reported as working – to 75 years or at whatever age the state of health made work difficult or impossible.

marked effect on the domestic market. For example, the demand for prams and baby foods may rise less rapidly than the market for spectacles and medicines, and the trend in housing may be away from larger homes toward smaller or more conveniently laid out dwellings.

But more important than these is the meaning of this changing age pattern for future production. If industrial production is not to be retarded, this long-term decline in the rate at which young males are reaching working age may have to be offset by larger proportionate immigration of males of working age, further increase in female participation in the labour force, extension of the working age of males, and greater part-time use of males of working age engaged in training or study.

The recent increase in the proportions of both the old and the young means that the population total is rising more rapidly than the number of persons of working age. The effects of this increase in the 'ratio of dependency' on the economy in the future will not be serious if the ageing of the population – which has been going on for the last half-century – levels off. This appears likely if the birth rate remains high and substantial immigration of the present type is maintained for the next few years. Furthermore, if a higher proportion of 'dependents' in the 65 and over age group continues to work in the future, as is possible, actual dependency arising from old age will be reduced without any change in proportions of the various age groups. And a rise in the 'ratio of dependency' stemming from an increase in the number of youngsters is a healthy sign, betokening a young and dynamic population with plenty of capacity for growth.

On the other hand, two factors have been operating to increase the proportion in the labour force. One is the reduction in hours worked per week, a development which, assuming no increase in productivity (see Section 10) necessitated a large labour force to produce the same output. The other is the growing number of women in the labour force, in response to a demand for workers which was not fully met by immigrant males of working age, especially after World War II.

Rapid industrialization created many new jobs involving light machine work in factories, and the growth of commercial and service industries provided new clerical posts. Two world wars and a change in social attitudes made it acceptable for

TABLE 5

Male and Female Population and Age Distribution of Males, Canada, Selected Years, 1867–1953

Year[a]	Males				Per Cent of Total Males			Females 000	Total Population 000	Males as Per Cent of Total Population
	Less than 15 Years of Age 000	Aged 15 to 64 000	Aged 65 Years and Over 000	Total 000	Less than 15 Years of Age	Aged 15 to 64	Aged 65 Years and Over			
1867	—	—	—	—	—	—	—	—	3,499	—
1870	778	1,008	73	1,859	41.9	54.2	3.9	1,814	3,673	50.6
1880	847	1,240	93	2,180	38.8	56.9	4.3	2,128	4,308	50.6
1890	888	1,450	116	2,454	36.2	59.1	4.7	2,366	4,820	50.9
1900	933	1,672	139	2,744	34.0	60.9	5.1	2,612	5,356	51.2
1910	1,187	2,418	169	3,774	31.4	64.1	4.5	3,342	7,116	53.0
1920	1,509	2,758	212	4,479	33.7	61.6	4.7	4,212	8,691	51.5
1929	1,648	3,315	280	5,243	31.4	63.2	5.4	4,890	10,133	51.7
1930	1,664	3,388	283	5,335	31.2	63.5	5.3	4,971	10,306	51.8
1933	1,670	3,544	315	5,529	30.2	64.1	5.7	5,167	10,696	51.7
1939	1,638	3,812	373	5,823	28.1	65.5	6.4	5,510	11,333	51.4
1945	1,785	3,970	440	6,195	28.8	64.1	7.1	6,005	12,200	50.8
1950[b]	2,130	4,296	539	6,965	30.6	61.7	7.7	6,920	13,885	50.2
1951[b]	2,207	4,365	560	7,132	30.9	61.2	7.9	7,124	14,256	50.0
1952[b]	—	—	—	—	—	—	—	—	14,648	—
1953[b]	—	—	—	—	—	—	—	—	15,035	—

[a] As of 31st December.
[b] Including Newfoundland.

young women to work in factories or offices. Labour saving equipment in the household, the growth of the nursery school and kindergarten and the raising of the school-leaving age, made it easier for married women to work outside the home. The process of specialization in industry and commerce and the service sector provided increasing opportunities for women to do part-time work.

The net result of these various factors is that, over the entire period, the labour force has grown more rapidly than the population although the proportion in the labour force has varied from time to time, depending partly upon the age groups making up population and partly upon prevailing economic conditions. Thus, the high level reached in 1910 of about 394 persons in the labour force per thousand population was due to the large-scale immigration of persons of working age during the previous decade and to the current prosperity. The highest rate of all, that for 1945 – about 432 per thousand population – was,

TABLE 6

Employed, Unemployed, and Labour Force, Canada, Selected Years, 1867–1953

Year[a]	Labour Force					Persons in Total Labour Force per 1,000 Population
	Civilian Labour Force			Armed Forces 000	Total Labour Force 000	
	Employed 000	Unemployed 000	Total 000			
1867	1,060	44	1,104	—	1,104	315.5
1870	1,119	47	1,166	—	1,166	317.5
1880	1,343	86	1,429	—	1,429	331.7
1890	1,590	84	1,674	1	1,675	347.5
1900	1,781	74	1,855	6	1,861	347.5
1910	2,714	84	2,798	3	2,801	393.6
1920	3,160	65	3,225	4	3,229	377.4
1929	3,811	118	3,929	5	3,934	392.3
1930	3,719	300	4,019	5	4,024	394.2
1933	3,411	817	4,228	5	4,233	398.1
1939	4,075	523	4,598	9	4,607	408.9
1945	4,411	72	4,483	736	5,219	432.3
1950	5,056	142	5,198	47	5,245	382.5
1951	5,155	81	5,236	75	5,311	379.1
1952	5,229	106	5,335	98	5,433	376.5
1953	5,356	91	5,447	105	5,552	375.6

[a] The data for 1867–1910 relate to the end of the year, and for 1920–53 relate to June.

of course, due to the intense war effort. The decline in the post-war period was due to the withdrawal of many who would not normally be in the working force, i.e. the younger women, older persons, and students returning from the Armed Forces; the very high birth rate; and the long-term trend of increased life expectancy (Table 6).

The more rapid increase of the labour force than of population has taken place despite factors operating in the opposite direction.

There has been a tendency toward entry into the labour force at a later age, mainly because of compulsory schooling provisions and greater opportunities for advanced education. There has also been the long-term trend toward retirement at an earlier age. This has been made possible by the rising productivity of the nation, as well as by the more comprehensive provisions for retirement, made partly by the individuals themselves and partly by industrial, institution, and government pension plans and public old age assistance arrangements.

URBANIZATION OF POPULATION

There has been a steady trend toward urbanization ever since Confederation. 'Urban' as used here follows the definition employed in the Census and data on this basis are comparable for the period under review. It covers incorporated municipalities only.[1] In 1867 less than 20 per cent of Canada's population lived in urban communities, the remainder living either on farms or in rural settlements. The process of urbanization, a significant factor in the development of a market economy, was so rapid that by the 1950's about three out of five Canadians lived in cities and towns (Table 7).

As in other countries undergoing rapid industrial expansion, Canada's farm population has been declining significantly in relation to total population. In 1920 the ratio was about 37 per cent, but by 1951 the proportion had declined almost one-half, to 20 per cent. However, despite this decline, which has taken place over a longer period than that for which statistics are

[1] The 1951 Census has a new definition of 'urban' to cover all persons residing in cities, towns and villages of 1,000 and over, whether incorporated or unincorporated, as well as the population of all parts of Census metropolitan areas. On this basis Canada's urban population comprised 62 per cent of the total in 1951, as compared with 56 per cent under the old definition of 'urban'.

TABLE 7

Population, Urban, Rural Farm and Non-Farm, Canada, Selected Years, 1867–1953

Year[a]	Urban 000	Rural			Urban and Non-Farm 000	Total 000	Per Cent of Total	
		Farm 000	Non-Farm 000	Total 000			Urban	Farm
1867	—	—	—	—	—	3,499	—	—
1870	719	—	—	2,954	—	3,673	19.6	—
1880	1,105	—	—	3,203	—	4,308	25.6	—
1890	1,533	—	—	3,287	—	4,820	31.8	—
1900	2,008	—	—	3,348	—	5,356	37.5	—
1910	3,231	—	—	3,885	—	7,116	45.4	—
1920	4,304	3,178	1,209	4,387	5,513	8,691	49.5	36.6
1929	5,356	3,260	1,517	4,777	6,873	10,133	52.9	32.2
1930	5,491	3,258	1,557	4,815	7,048	10,306	53.3	31.6
1933	5,758	3,238	1,700	4,938	7,458	10,696	53.8	30.3
1939	6,144	3,161	2,028	5,189	8,172	11,333	54.2	27.9
1945	6,744	2,968	2,488	5,456	9,232	12,200	55.3	24.3
1950[b]	7,838	2,899	3,148	6,047	10,986	13,885	56.4	20.9
1951[b]	8,081	2,878	3,297	6,175	11,378	14,256	56.7	20.2
1952[b]	—	—	—	—	—	14,648	—	—
1953[b]	—	—	—	—	—	15,035	—	—

[a] As of 31st December.
[b] Including Newfoundland.

available, the output of the agricultural industry has been rising steadily, partly because of increased mechanization and partly because of the application of scientific and mass-production methods to farming (see also the appraisal of the role of agriculture in Canada's changing industrial structure, discussed in Section 9).

VARIATIONS IN THE RATE OF GROWTH

The varying rates of increase in population, families and the labour force are summarized below in Table 8. The labour force increased at a more rapid rate than population in all but three of the eleven sub-periods – 1910–20 and 1945–53, when it increased more slowly and 1890–1900, when the rates were about the same. The effect of this variability on the nation's output and the domestic market are reviewed in Section 3.

Two of the effects that the more rapid long-term rate of family formation and growth of the labour force have had on economic development, are worthy of note:

(1) The rate of net family formation has had an important influence on the national pattern of consumer demand. A new family sooner or later exerts pressure on the housing market in

TABLE 8

Annual Percentage Increases of Population, Families, and Labour Force, Canada, Eleven Sub-Periods, 1867–1953

Period	Population	Families	Labour Force
1867–70	1.63	0.78	1.84
1870–80	1.61	1.30	2.05
1880–90	1.13	1.17	1.60
1890–1900	1.06	0.99	1.06
1900–10	2.88	2.68	4.17
1910–20	2.02	2.23	1.43
1920–30	1.72	1.85	2.23
1930–33	1.24	1.05	1.70
1933–39	0.97	1.60	1.42
1939–45	1.24	2.35	2.10
1945–53[a]	2.31	2.73	0.37

[a] Excluding Newfoundland, which entered into Confederation with Canada in 1949.

the quest for separate housing accommodation.[1] A new household in most cases involves the purchase of furniture, appliances, and the multitude of other articles required for its operation, from cooking utensils to linen. Also, the rate of family formation affects the birth rate (although the tendency toward smaller families is an offsetting factor). The arrival of children in turn means new demands, not only in terms of food, clothing, and education but also in terms of increased facilities in the household, from the need for larger accommodation[2] to the purchase of baby carriages. Thus the number of new families formed is perhaps a more meaningful indicator of the new demand in prospect for the consumer sector of the economy than population increase alone. And as the domestic demand for consumer goods and services rises its effects are felt throughout the industrial, commercial, and service sectors.

(2) The entry of females into the labour force and their exit when pressure subsides have given the labour force increased flexibility.[3] The situation is similar in regard to persons of retirement age and students who are available for part-time or seasonal employment.

The addition of one and, in some cases, several members of the family to the working force increases the income of the average family far beyond the level indicated by the data of income received by the main breadwinner. Real incomes per capita have risen not only because of increased productivity but also because of a pooling of income within the bounds of families which has made it possible to make more economic use of these earnings. There is little doubt that the presence of more than one earner in a family affects the pattern of consumer spending of families (see also the discussion of long-term changes in consumer spending patterns in Section 4).

[1] A study of the experience of the period 1921 to 1929 suggests that seven out of eight families usually end up by occupying separate housing accommodation. (See *Residential Real Estate in Canada*, p. 206.)

[2] The arrival of first children in particular has turned out to be a significant influence inducing parents to purchase new homes or to seek separate apartments to rent (see, for example, Central Mortgage and Housing Corporation, *Housing in Canada*, Second Quarter, 1953, pp. 11 and 32).

[3] There are limitations to this flexibility since many females, once having entered the labour force, show a reluctance to leave it.

SECTION 3
THE NATION'S OUTPUT AND MARKETS

A nation's output equals the size of the nation's market if additions to inventory are regarded in the same light as sales to customers. Thus, identity of a nation's output and markets is the basis of national accounting, which is a method of measuring the production and disposition of a nation's output and its income and presenting these aggregates and their components so that the essential relationships among them are brought into relief (see also Section 13). The two aggregates used in national accounting are gross national product and gross national expenditure.

Gross national product measures 'the value of goods and services produced by Canadian residents in a given period (a year) by adding together all costs arising in production. For the economy as a whole, these costs consist first of factor costs, that is to say, the earnings of the factors of production employed: wages and salaries, investment income including corporation profits before taxes, and net income of unincorporated business. The sum of these factor costs is the national income. To arrive at the total which measures production at market prices it is necessary to add elements of market prices which do not represent incomes of factors of production, that is, depreciation allowances and similar business costs, and indirect taxes less subsidies.'[1] The resulting total, called gross national product, is the valuation in current dollars of the nation's output in a given year. Now those who purchase or otherwise acquire the goods and services produced make expenditures, and the total of these expenditures is gross national expenditure. This aggegate is defined as the sum total of the expenditures on all *final* goods and services, measured by the total value of their sales at market prices. Conceptually, gross national product equals gross national expenditure simply because 'what is produced must be disposed of, either by sales or addition to inventories'.[2]

Gross national product and gross national expenditure are estimated independently. Because the basic data differ in quality,

[1] *National Accounts, Income and Expenditure, 1926–1950*, p. 9.
[2] *ibid.*, p. 10.

the two aggregate estimates will as a rule differ somewhat also. The resulting gap in the Canadian national accounts is bridged by splitting the residual error. This means deducting half the difference from the larger of the two (usually the gross national product) and adding the other half to the smaller estimate.

Thus, gross national product and gross national expenditure appear in the Canadian National Accounts as statistical as well as conceptual identities. The official Canadian National Accounts which include estimates of gross national product and gross national expenditure, are available only back to 1926. To facilitate long-term economic analysis, estimates of gross national product and gross national expenditure are made in this study for selected years back to 1867 (Table 9).

MEASUREMENT OF GROSS NATIONAL PRODUCT AND GROSS NATIONAL EXPENDITURE

Detailed gross national product estimates have been made by a value added technique (that is, based on estimates of the value of production of all sectors of the economy netted to eliminate duplication) for the years 1870, 1880, 1890, 1900, 1910, and 1920. Similarly, detailed estimates of gross national expenditure have been prepared for each of these years except 1880 by making separate estimates of its four major components. Estimates of gross national expenditure for 1867 and 1880, made mainly for purposes of illustration, were based on changes in the levels of employment, productivity, and prices that took place between 1867 and 1870 and 1870 and 1880. The analysis itself commences with the more reliable estimates for 1870 and from 1890 onward.

The data given in Table 9 indicate the greater crudeness of the earlier estimates. The residual error in the official National Accounts series varies for most years between $\frac{1}{2}$ and $\frac{3}{4}$ of one per cent. In two of the five earlier years for which independent checks are possible the residual error has turned out to be somewhat greater, 1.1 per cent in 1900 and 2.2 per cent in 1910. In the other three years the margin of error is about one-half of one per cent, more in line with the error in estimates for the recent years.

It was necessary to decide whether to use, for the earlier period, the gross national product and gross national expenditure estimates adjusted for the residual error, or whether the

TABLE 9

Adjusted and Unadjusted Estimates of Gross National Product and Gross National Expenditure, Canada, Selected Years, 1867–1953[a]

Year	Unadjusted Estimates			Adjusted Estimates of Gross National Product and Gross National Expenditure[b]	Allowed for in the Adjusted Estimates	
	Gross National Product $ million	Gross National Expenditure $ million	Difference $ million	$ million	$ million	Per Cent of Adjusted Estimates
1867	—	419	—	—	—	—
1870	459	458	1	459	1	0.2
1880	581	612	31	597	16	2.7
1890	803	815	12	809	6	0.7
1900	1,057	1,032	25	1,044	12	1.1
1910	2,235	2,138	97	2,186	48	2.2
1920	5,529	5,543	14	5,536	7	0.1
1929	6,179	6,153	26	6,166	13	0.2
1930	5,560	5,532	28	5,546	14	0.3
1933	3,536	3,568	32	3,552	16	0.4
1939	5,716	5,698	18	5,707	9	0.2
1945	11,771	11,928	157	11,850	78	0.7
1950	18,204	18,201	3	18,203	2	—
1951	21,526	21,422	104	21,474	52	0.2
1952	23,083	23,321	238	23,202	119	0.5
1953	24,350	24,482	132	24,416	66	0.3

[a] New estimates for 1867 to 1920, official estimates 1929 to 1953.
[b] After adding or subtracting one-half the difference between the estimates of gross national product and gross national expenditure.

unadjusted data would be satisfactory for the appraisal of long-term changes in economic growth.

After careful consideration it was decided to use the unadjusted data on gross national *expenditure* in the analysis in Sections 3–8 and 10,[1] because the use of adjusted national expenditure estimates for those years where the residual errors were larger than in the official National Accounts would have distorted the distribution of the components. The unadjusted estimates of gross national *product* were used in Section 9 because they provide an industrial breakdown.

Investigators interested in achieving greater comparability with the more recent data can, if they wish, make the calculations in terms of the adjusted estimates. But they will find that

[1] In these sections the term 'gross national product' is frequently used instead of 'gross national expenditure', but the data for the years up to and including 1920 refer to the estimates arrived at by the gross national expenditure method.

the differences in the rate of change over the period both in the aggregate and component sector estimates, particularly if calculated on an annual compound basis in real terms, are minor. Further, since the estimates for the early period are approximate and since the main objective is to describe broad trends rather than to provide precise measurement we doubt that such refinements are worthwhile.

LONG-TERM AGGREGATE CHANGE

Canada's gross national product (and expenditure) in current prices amounted to about $24½ billion in 1953 compared with somewhat less than half a billion dollars in 1870. After allowance for price changes, the 1953 gross national product was about sixteen times that of 1870 (Table 10). Since Canada's

TABLE 10

Gross National Expenditure [a] *in Current and Constant* (1935–1939) *Dollars, and Implicit Price Index, Canada, Selected Years*, 1867–1953

Year	Gross National Expenditure			Gross National Expenditure per Capita		Gross National Expenditure per Person Working[b]	
	Current Dollars $ mill.	Constant Dollars $ mill.	Implicit Price Index (1935–1939 = 100)	Current Dollars $	Constant Dollars $	Current Dollars $	Constant Dollars $
1867	419	695	60.3	120	199	395	656
1870	458	762	60.1	125	207	409	681
1880	612	1,034	59.2	142	240	456	770
1890	815	1,386	58.8	169	288	512	871
1900	1,032	1,833	56.3	193	342	578	1,026
1910	2,138	3,087	69.3	300	434	787	1,136
1920	5,543	3,844	144.2	638	442	1,752	1,215
1929	6,166	5,337	115.3	609	527	1,616	1,399
1930	5,546	5,127	111.9	538	497	1,489	1,377
1933	3,552	3,772	93.7	332	353	1,040	1,104
1939	5,707	5,664	100.0	504	500	1,397	1,387
1945	11,850	9,315	127.0	971	764	2,302	1,810
1950	18,203	10,330	171.9	1,311	744	3,567	2,024
1951	21,474	10,935	191.3	1,506	767	4,106	2,091
1952	23,202	11,642	200.1	1,584	795	4,356	2,185
1953	24,416	12,098	201.2	1,624	805	4,471	2,215

[a] Unadjusted estimates for 1870–1920, official estimates 1929–53.
[b] Based on the number of persons with civilian jobs plus members of the armed forces.

population only about quadrupled during the period, about one-half of this increase in the real output of the nation was due to the increased productivity of the various factors of production, i.e. management, labour, capital, and resources. The importance of this increased productivity can be appreciated when it is realized that the 1870 rate of output per man-year in 1953 prices would have yielded a gross national product of only about $7 billion, less than one-third the level actually achieved, and the standard of living would have been only about one-third as high as it was.

In rough terms, the real aggregate national output has been doubling every twenty years since 1870. The actual increases range from a high of 123 per cent between 1890 and 1910 to a low of 66 per cent between 1910 and 1930.

OUTPUT PER CAPITA AND PER WORKER

Between 1870 and 1953 real gross national product per capita basis rose about 289 per cent or at an annual rate of 1.65 per cent.[1] The long-term growth of real output per person working has been somewhat smaller, the overall increase being 225 per cent, which represents an annual rate of 1.43 per cent (Table 11). As mentioned above, one reason for the difference between these rates of increase is the higher proportion of the population in the working force in 1953.

However, the actual increase in productivity per worker is greater. The annual rate of 1.43 per cent quoted above refers to the gain in real output per *man-year*, but the length of the man-year has been reduced considerably.[2] Hence, some of the benefits arising from productivity increases have been taken out in the form of increased leisure. As is pointed out in Section 9, the average worker in manufacturing has increased his leisure time about one-third between 1870 and 1953. Output per *man-hour* must, therefore, have increased at a higher rate than the 1.43 per cent indicated for the gain per *man-year*.

[1] All annual percentages in this section are compound rates unless otherwise specified.

[2] G. D. Sutton, in his study on productivity, places the decline in hours worked per man at 1 per cent per year (compound) for the period 1926 to 1939, followed by an increase of 0.65 per cent per year for the period 1939 to 1946, with the trend reversing again in the period 1946 to 1950, when a decline of 1.68 per cent per year is indicated. For the period 1926 to 1950 as a whole, a decline of 0.58 per cent per annum in the number of hours worked per man is suggested ('Productivity in Canada', *Canadian Journal of Economics and Political Science*, May 1953, p. 192).

TABLE 11

Percentage Changes in Gross National Product in Constant (1935–1939) *Dollars, Canada, Selected Periods,* 1870–1953

Period	Percentage Changes in Gross National Product in Constant Dollars					
	Total		per Capita		per Person Working	
	Whole Period	Annual Average[a]	Whole Period	Annual Average[a]	Whole Period	Annual Average[a]
Single Year Estimates						
1870–90 . . .	81.9	3.04	39.1	1.67	27.9	1.24
1890–1910 . .	122.7	4.09	50.7	2.07	30.4	1.33
1910–30 . . .	66.1	2.57	14.5	0.68	21.2	0.97
1930–53 . . .	136.0	3.80	62.0	2.12	60.9	2.09
1870–1953 . .	1,487.7	3.39	288.9	1.65	225.3	1.43
1890–1953 . .	772.9	3.50	179.5	1.65	154.3	1.49
1910–53 . . .	291.9	3.23	85.5	1.45	95.0	1.56
Annual Averages for Five-year Periods[b]						
1870–74 to 1890–94	108.6	3.75	61.2	2.42	—	—
1890–94 to 1910–14	119.4	4.01	43.4	1.82	—	—
1910–14 to 1926–30	48.2	2.49	12.1	0.72	—	—
1926–30 to 1950–53[c]	122.6	3.46	53.2	1.83	—	—
1870–74 to 1950–53[c]	1,410.2	3.47	296.9	1.75	—	—
1890–94 to 1950–53[c]	624.0	3.38	146.2	1.53	—	—
1910–14 to 1950–53[c]	229.9	3.07	71.7	1.38	—	—

[a] Compound rates.
[b] Based on Table 88.
[c] Covers four years only.

The rates of change in real output per capita and per person working show significant variations. Between 1870 and 1890 real output per capita rose at an annual rate of 1.67 per cent while production per person working increased 1.24 per cent per year. In the next period, 1890 to 1910, the differences are even more marked, the rate for real output per capita being 2.07 per cent and that for production per worker 1.33 per cent. The annual rates for both real output per capita and per worker are more modest in the third period, 1910 to 1930, with the latter, 0.97 per cent, slightly exceeding the former 0.68 per cent. For the final period, 1930–53, the annual average rates of increase, both per capita and per worker, are the highest in this study and are almost in balance at 2.12 and 2.09 per cent, respectively.

If the averages for five-year periods are used instead of the

estimates for the individual years chosen as representative of these periods, the trends in the growth of real output are similar both in aggregate and per capita. In fact, only when the data for the early years are used in the comparison do marked differences occur and in these cases comparison with the year 1870 is preferable to that of the annual average for 1870–74. The year 1870 was a fairly prosperous one, but economic conditions deteriorated materially after 1871. On the other hand, the subsequent five-year periods reflect years of economic expansion and either a fair or high degree of prosperity. Hence, comparison of the five-year average, 1870–74, with any subsequent five-year average is a comparison of a down-swing phase of the business cycle with an up-swing phase.

It is not surprising that the increase in productivity (real output per working person per man-year) was highest in 1930 to 1953. Although both were good years in the economic sense, there were differences. The economy was booming in 1953 and there was little slack in the use of the nation's capital assets and manpower. The stock was at its peak and a good portion was modern as a result of the extensive industrial expansion programmes in the post-World War II years. Overall productivity had been increased by the gradual transfer of workers from low to high productivity industries, and by the increased efficiency of the primary industries through mechanization and better integration. Moreover, in 1953 the Canadian economy was not experiencing any ill effects as the result of the recent world war and its aftermath. On the contrary, the transition to a peacetime economy following the end of World War II had taken place smoothly. Much of the course of the post-war economy had been planned by both business and government before the end of the war, and a gradual relaxation of controls imposed during World War II played an important part in avoiding dislocation of the sort experienced after World War I. Again, unlike the experience after World War I, most of the industrial capacity created during World War II was readily adaptable to peacetime needs and little excess industrial capacity was in evidence. In fact, expansion programmes had to be undertaken in many fields to satisfy the heavy demands in the post-war period. The resulting gains were only slightly offset by the somewhat shorter work week. In 1930, on the other hand, the economy was declining slightly from the peak achieved in 1929

and, as a result, Canada's resources, both material and manpower, were being used less efficiently. Furthermore, the industrial base of the country was narrower, the economy was less diversified, and the low productivity industries were relatively more important than in 1953.

The second highest rate of increase in productivity is shown for the years 1890 to 1910. In 1910 the economy was booming, employment was high, the factory system was in full operation, and the West was being opened rapidly.

The third highest rate of increase in productivity is shown for the years 1870 to 1890. However, it must be borne in mind that the base year, 1870, was a low one, since the nation was only three years old and the economy was largely rural. But by 1890 considerable progress had been made toward industrialization with a resultant increase in productivity. Moreover, the work week was still long.

The smallest increase in productivity is shown for 1910–30. This is not surprising, since 1910 was such a good year while 1930 was only a fairly prosperous one, and since the 'work year' was considerably shorter in 1930 than twenty years earlier. In addition, some factors stemming from World War I tended to hold down productivity gains from 1919 on. While World War I did stimulate industrialization, its effects were specialized and restricted to a narrow front. Consequently, only a small part of the new capacity created for the war effort proved usable in a civilian economy. The extensive munitions industry and the sizeable aircraft industry established for war purposes all but disappeared in the years after World War I – many plants were dismantled and others remained idle for years. Other war-created capacity was absorbed slowly and with difficulty. For example, not until the late 'twenties were sufficient peacetime uses found for nickel to enable full employment of the productive capacity set up during World War I and not until the onset of World War II was Canada's basic steel capacity – which had been greatly expanded during World War I – operating at anything like its full capacity. The adjustment from a war to a peacetime economy after World War I was a stormy one, accompanied by the greatest inflationary experience in Canada's history, industrial turmoil, general unsettlement, and uncertainty. The effects of these economic conditions on productivity were still apparent in 1930.

Data for a more detailed examination are given in Tables 87 and 88. These tables give annual estimates and averages for five-year periods of real gross national product, population, and real gross national product per capita.

The absolute figures in Table 88 show an increase in total population in each successive five-year period since 1870. They also indicate a fairly steady growth in real aggregate gross national output until the 1930–34 period when a decline of about 14 per cent is shown, with the upward trend being resumed in 1935–39 and continuing until 1950–53. On a per capita basis, a similar steady growth is apparent until 1920–24 when depressed conditions resulted in a decline of about 8 per cent from the 1915–19 level. Output per capita forged ahead in the next five-year period only to fall off sharply again in 1930–34, with the onset of the great depression which reduced output per head almost to the level of a quarter of a century previous. The increased output per capita that took place in 1935–39 still did not bring output up to the level of 1915–19 but the sharp increase recorded for the World War II years dwarfed that between any other two successive five-year periods covered in this study. The more modest but continuing increases in per capita output that followed resulted in a peak for 1950–53. However, to assess properly these changes in real output per capita, the current sex and age composition of the population and the proportion participating in the labour force, must be taken into consideration (see Section 2).

CHANGES IN THE COMPOSITION OF GROSS NATIONAL EXPENDITURE

The long-term changes in the composition of gross national expenditure are, by and large, indicative of the maturing of the economy itself. Over the period stronger emphasis has been placed on the accumulation of capital, government has played an increasingly important part in economic affairs, and dependence on foreign trade has grown. As these sectors of demand have increased, the proportion of total output devoted to filling the wants of consumers has correspondingly declined. But notwithstanding this long-term decline in the relative importance of consumer spending, the actual improvement in the standard of living has been substantial (see Section 4). The reasons for these changes and the manner in which they were achieved are discussed in detail in Section 4–7. Briefly, however, the changing

TABLE 12

Percentage Distribution of Gross National Expenditure in Current Dollars, Canada, Selected Years, 1870–1953

Year	Personal Expenditure on Consumer Goods and Services	Gross Investment[a]	Government Expenditure on Goods and Services	Exports of Goods and Services	Imports of Goods and Services	Net Foreign Balance	Residual Error	Gross National Expenditure
1870	88.2	14.9	4.6	17.2	−24.9	−7.7	—	100.0
1890	84.8	15.5	6.6	13.5	−20.4	−6.9	—	100.0
1900	83.1	13.4	7.5	19.7	−23.7	−4.0	—	100.0
1910	78.4	26.5	8.1	16.3	−29.3	−13.0	—	100.0
1920	71.6	23.2	10.0	29.2	−34.0	−4.8	—	100.0
1929	71.2	22.6	11.0	26.5	−31.5	−5.1	0.2	100.0
1930	75.8	16.2	13.8	23.2	−29.3	−6.1	0.3	100.0
1933	81.3	4.4	14.8	23.2	−23.3	−0.1	−0.4	100.0
1939	68.4	16.4	12.9	25.4	−23.3	+2.2	0.2	100.0
1945	57.5	6.1	31.3	30.4	−24.6	+5.8	−0.7	100.0
1950	66.1	22.9	12.8	23.0	−24.8	−1.8	—	100.0
1951	61.8	25.3	15.1	23.7	−26.1	−2.4	0.2	100.0
1952	61.9	19.5	18.4	24.0	−23.3	+0.7	−0.5	100.0
1953	61.9	22.3	17.9	22.2	−24.0	−1.8	−0.3	100.0

[a] Comprises new residential construction, new non-residential construction, new machinery and equipment and change in inventories.

pattern in the use of the nation's output has been a consequence of the transition of the economy from a pioneering community to a highly industrialized society, which has placed increasing emphasis on the provision of more services, greater employment, and income security.

In 1870, 88.2 per cent of gross national expenditure was for personal expenditure on consumer goods and services, 14.9 per cent went into gross investment (outlay on residential construction, non-residential construction, and new machinery and equipment, and changes in inventories), and 4.6 per cent into government expenditures on goods and services (Table 12). Exports of goods and services comprised 17.2 per cent and imports 24.9 per cent, leaving a negative net balance of 7.7 per cent. The deficit on net foreign balance was common in the earlier years since Canada was then a heavy importer of capital, mainly from the United Kingdom (see Section 7).

By 1953 consumer expenditures were down to 61.9 per cent and investment and government expenditure had risen notably, to 22.3 and 17.9 per cent, respectively. Exports of goods and services were higher, at 22.2 per cent, while imports had declined slightly to 24.0 per cent, yielding a small negative net foreign balance of 1.8 per cent. Of course, there are many reasons why 1870 and 1953, representing different eras as they do, are not fully comparable. Perhaps the fact that military expenditures in 1953 were the largest on record (except for four years during World War II) is one reason for the basic differences. But even if 1870 and 1950 or 1951 (when military expenditures were less important) are compared, a similar long-term trend is indicated. In this comparison, however, gross investment, because of heavy inventory accumulation, particularly in the agricultural sector, is relatively more important, and government expenditures are correspondingly smaller, mainly because the rearmament programme was just getting under way.

NET NATIONAL PRODUCT

Net national product is simply gross national product minus depreciation and similar business costs which represent the capital goods consumed in the production process, excluded. The spectacular increase, both absolute and relative, in the depreciation and similar business costs between 1870 and 1953 is itself an indicator of the rapid process of industrialization.

TABLE 13

Gross National Product at Market Prices and Factor Cost, Net National Product, and Net National Income at Factor Cost, Canada, Selected Years, 1870–1953

(In millions of dollars)

Year	Gross National Product at Market Prices[a] Current Dollars	Indirect Taxes Less Subsidies Current Dollars	Gross National Product at Factor Cost Current Dollars	Depreciation Allowances and Similar Business Costs Current Dollars	Net National Income at Factor Cost[b] Current Dollars	Net National Product[c]	
						Current Dollars	Constant Dollars[d]
1870 . . .	458	17	441	36	405	422	702
1890 . . .	815	30	785	70	715	745	1,267
1900 . . .	1,032	38	994	96	898	936	1,663
1910 . . .	2,138	87	2,051	222	1,829	1,916	2,765
1920 . . .	5,543	268	5,275	409	4,866	5,134	3,560
1929 . . .	6,166	681	5,485	709	4,789	5,457	4,725
1930 . . .	5,546	593	4,953	684	4,283	4,862	4,345
1933 . . .	3,552	537	3,015	547	2,452	3,005	3,207
1939 . . .	5,707	733	4,974	610	4,373	5,097	5,097
1945 . . .	11,850	1,003	10,847	928	9,840	10,922	8,600
1950 . . .	18,203	2,018	16,185	1,636	14,550	16,567	9,638
1951 . . .	21,474	2,478	18,996	1,910	17,138	19,564	10,227
1952 . . .	23,202	2,714	20,488	2,115	18,254	21,087	10,538
1953 . . .	24,416	2,900	21,516	2,364	19,086	22,052	10,960

[a] For 1870–1920 the unadjusted gross national expenditure estimates are used, while for 1929–53 the adjusted gross national product figures from the official National Accounts are used.

[b] Net national income at factor cost is not exactly the same as gross national product at market prices minus the sum of indirect taxes less subsidies and depreciation and similar business costs, because allowance for the residual error is made in gross national product only.

[c] Gross national product at market prices minus depreciation allowances and similar business costs.

[d] 1935–39 dollars.

Net national product in 1953 in current prices was slightly more than $22 billion compared with 422 million in 1870 (Table 13). In real terms this represents an annual rate of increase of 3.36 per cent, slightly less than the corresponding rate of growth in real gross national product.

Real net national product per capita increased 282 per cent from 1870 to 1953, or at an annual rate of 1.63 per cent, slightly less than the 1.65 per cent rate for real gross national product per capita. The gain in real net national product per worker was 220 per cent, or at an annual rate of 1.41 per cent, also somewhat less than the corresponding rate for real gross national product per worker, 1.43 per cent.

The increases in real net national product, like those in real gross national product, have not taken place at anything like equal rates in the four sub-periods. The largest gain in real net national product is shown for 1930–53, averaging 4.10 per cent per year, while the smallest is 2.28 per cent per year from 1910–30. The gains in real net national output (product) per capita follow the same pattern as those for the aggregate except that all increases are smaller. As might be expected, the increases in real net national product per worker resemble those shown for both the aggregate and the per capita estimates. Thus, the highest annual rate of increase, 2.39 per cent, is for 1930–53, and the lowest, 0.68 per cent, is for 1910–30.

POSSIBLE BIAS IN USING GROSS FLOWS RATHER THAN NET FLOWS

In this study gross national product and gross national expenditure and its components have been employed as basic measures of Canada's long-term economic growth. The question arises whether the long-term trends would be materially different if a net concept, e.g. net national income at factor cost or net national product, were used. In the tabulation below, rates of

Annual Rates of Increase

Period	Gross National Product at Market Prices	Net National Product	Net National Income at Factor Cost
	(Constant (1935–39) dollars)		
1870–90	3.04	3.00	2.99
1890–1910	4.09	3.98	3.95
1910–30	2.57	2.28	1.88
1930–53	3.80	4.10	4.02
1870–1953	3.39	3.36	3.24
1890–1953	3.50	3.48	3.31
1910–53	3.23	3.25	3.02

increase in gross national product at market prices, net national income at factor cost and net national product are assembled for selected periods from 1870 to 1953. It is apparent that both the long-term and the intermediate-term increases for all three items are similar both in size and general pattern. This suggests that the use of gross figures for the broad appraisal of long-term economic changes is sufficiently reliable.

Furthermore, gross figures have the advantage of greater reliability than the net figures for the years before 1929. The net aggregates are fairly reasonable because of the offsetting error principle, but the error is apt to be much greater when the various components are expressed in net terms.

SECTION 4

CONSUMER EXPENDITURES

What has the tremendous economic expansion Canada has undergone over the last eighty-six years meant in terms of bettering the life of the Canadian people?

Incomes in real terms have risen notably, and so has the time at the disposal of the people to enjoy the lighter side of life. Also, more far-reaching provisions are possible today for protection against the hazards of life, the premature loss of the breadwinner, sickness, and unemployment. This section deals with the improvement in the standard of living, as reflected in the quantity and quality of consumer goods and services purchased and the changes in the pattern of consumer expenditures.

LONG-TERM AND INTERMEDIATE-TERM IMPROVEMENTS IN THE STANDARD OF LIVING

In 1953 consumer expenditures in current prices were $15.1 billion compared with $404 million in 1870, and in constant prices the 1953 volume was nearly thirteen times the 1870 volume. This long-term increase is a result to about an equal degree of population growth and increased real consumer expenditures per capita. Between 1870 and 1953 population increased at an annual rate of 1.68 per cent and consumer expenditures per capita in constant dollars at an annual rate of 1.40 per cent. In 1953 the average Canadian consumed about three times as much goods and services as his ancestors did

three generations ago (Table 14). However, the rate of improvement has not been constant.

TABLE 14

Consumer Expenditures in Current and Constant (1935-1939) *Dollars, Canada, Selected Years*, 1870–1953

Year	Total Consumer Expenditures			Consumer Expenditures per Capita	
	Current Dollars $ million	Constant Dollars $ million	Implicit Price Index (1935–1939 = 100)	Current Dollars $	Constant Dollars $
1870	404	600	67.3	110	163
1890	691	1,112	62.1	143	231
1900	858	1,476	58.1	160	276
1910	1,677	2,276	73.7	236	320
1920	3,971	2,768	143.5	457	318
1929	4,393	3,685	119.2	434	364
1930	4,204	3,557	118.2	408	345
1933	2,887	3,055	94.5	270	286
1939	3,904	3,820	102.2	344	337
1945	6,811	5,471	124.5	558	448
1950	12,029	7,022	171.3	886	506
1951	13,273	6,978	190.2	931	489
1952	14,363	7,381	194.6	981	504
1953	15,115	7,771	194.5	1,005	517

The greatest improvement took place in the first and last of the four sub-periods (Table 15). Consumer expenditures per capita in constant dollars rose at an annual rate of 1.76 per cent from 1870 to 1890 and at the slightly higher rate of 1.77 per cent from 1930 to 1953. The increases achieved in the two middle periods were 1.64 per cent per year from 1890 to 1910 and 0.38 per cent from 1910 to 1930. Some of the reasons for the remarkably high rate from 1870 to 1890 are discussed in detail in Sections 8 and 10. But the two most important factors may be mentioned here: the industrial revolution and the change-over from a family to a market economy that were in progress during this period.[1]

The small increase in real consumer expenditures per capita

[1] The tentative character of the estimate for 1870 should also be mentioned. The Canadian estimate suffers from problems similar to those in other countries, particularly in regard to making allowances for goods and services consumed that do not enter into the market.

TABLE 15

Percentage Changes in Consumer Expenditures on Goods and Services in Constant (1935–1939) *Dollars, Canada, Selected Periods*, 1870–1953

Item	1870–1890	1890–1910	1910–1930	1930–1953	1870–1953	1890–1953	1910–1953
Consumer Expenditures Total:							
Whole Period	85.3	104.7	58.3	118.5	1,195.2	598.8	241.4
Annual Average	3.13	3.65	2.26	3.46	3.13	3.13	2.90
Consumer Expenditures per Capita:							
Whole Period	41.7	38.5	7.8	49.9	217.2	123.8	61.6
Annual Average	1.76	1.64	0.38	1.77	1.40	1.29	1.12

between 1910 and 1930 is puzzling. One possible explanation is the small increase in real output per capita during this period (see Section 3). Other factors were the use of a good deal of the nation's resources for essential capital facilities for newly arrived settlers – from homes to hospitals, from factories to farm equipment, and from stores to streets, the change in the industrial pattern brought about by World War I and its aftermath (also discussed in Section 3), and the growing importance of exports. There are, moreover, many indications that while there was little change in the volume of consumer expenditures per capita, the quality and service aspects in 1936 were notably superior. During this period the motor car came into widespread use, replacing the horse and buggy to a great extent and providing many thousands with their first personal means of transportation. In 1910 only about 9 thousand motor vehicles were reported in Canada but by 1930 about 1¼ million passenger cars were in use.

The 1.77 per cent annual rate of increase in real per capita consumer expenditures between 1930 and 1953 suggests a steady improvement and, in fact, conceals the true picture. There was a significant decline in the 'thirties after the rapid increase of the 'twenties, followed by a notable improvement during World War II despite the allocation of a large portion of the nation's resources to war purposes, and the continuation of that improvement up to 1950. This improvement halted in 1951 and 1952 when rearmament and industrial expansion required a greater part of the resources and output. However, the upward trend was resumed in 1953.

CHANGES IN THE PATTERN OF CONSUMER EXPENDITURES

The changes in the pattern of consumer expenditures over the entire period are shown in Tables 16 and 17. Additional information derived from family budget studies, for 1910, 1937–38, and 1947–48, is shown in Tables 26–28. The eight sub-groups of consumer expenditures are described below and the percentages that each constituted of the total in 1870 and 1953 are given in parentheses:

(1) Food, including food consumed on farms (34.9 and 24.8 per cent).

(2) Tobacco and alcoholic beverages (5.5 and 8.8 per cent).

(3) Clothing and personal furnishings, including footwear, jewellery and watches, notions and small wares, and related services – laundering, dry and shoe cleaning, and repairs to all commodity items covered (16.3 and 12.4 per cent).

(4) Shelter, including rents paid by tenants and imputed rental cost for home owners as well as lodging expenses (13.6 and 12.9 per cent).

(5) Household operations, including fuel, electricity, telephone, household supplies, as well as the purchase of furniture and a variety of household appliances and services related to the maintenance of these items; domestic service is also included (13.1 and 12.7 per cent).

(6) Transportation, in which the major component nowadays is the purchase of motor cars and their operating costs (3.2 and 12.6 per cent).

(7) Personal, medical, and death expenses, including medical, dental, nursing, and hospital care, drugs, medicines, and toilet preparations, and related services such as those provided by barber shops and beauty parlours (4.2 and 6.3 per cent).

(8) Miscellaneous, including expenditures on education, recreation, holidays, life insurance, religious and welfare activities, and other goods and services that do not fit into any of the preceding categories (9.2 and 9.5 per cent).

The long-term changes are: a major relative decline in food; moderate declines in clothing and personal furnishings, shelter, and household operation; a major increase in transportation – reflecting the introduction of the motor car; a significant increase in tobacco and alcoholic beverages and medical care; and a modest increase in the miscellaneous category.

To see the long-term changes in the pattern of consumer expenditures in their proper perspective, two related developments have to be taken into account, variations in the rate and direction of the change in the different sub-groups and variations in the long-term change of the items within each sub-group. In fact, the long-term trend for some sub-groups is the result of increases in some constituent items and declines in others.

TABLE 16

Consumer Expenditures by Type, Canada, Selected Years, 1870–1953

(In millions of dollars)

Year	Food	Tobacco and Alcoholic Beverages	Clothing and Personal Furnishings	Shelter	Household Operation	Transportation	Personal and Medical Care and Death Expenses	Miscellaneous	Total	Durable Goods	Non-Durable Goods	Services	
												Total	Excluding Shelter
1870	141	22	66	55	53	13	17	37	404	—	—	—	—
1890	203	40	120	90	95	30	34	79	691	—	—	—	—
1900	266	51	143	117	99	39	42	101	858	—	—	—	—
1910	487	117	291	234	174	113	77	184	1,677	—	—	—	—
1920	1,362	191	654	463	424	381	190	306	3,971	—	—	—	—
1930	1,068	277	570	692	551	374	273	399	4,204	308	2,363	1,533	841
1933[a]	—	—	—	526	—	249	186	318	2,887	150	1,609	1,128	602
1939	919	281	490	629	522	392	257	414	3,904	292	2,210	1,402	773
1945	1,885	751	1,063	828	729	521	409	625	6,811	338	4,327	2,146	1,318
1950	3,039	1,094	1,568	1,376	1,504	1,475	730	1,243	12,029	1,343	7,241	3,445	2,069
1951	3,488	1,155	1,708	1,560	1,590	1,559	813	1,400	13,273	1,399	7,929	3,945	2,385
1952	3,672	1,276	1,843	1,757	1,811	1,696	902	1,406	14,363	1,590	8,366	4,407	2,650
1953	3,747	1,322	1,881	1,945	1,913	1,910	957	1,440	15,115	1,795	8,571	4,749	2,804

[a] Consumer expenditures by type for 1933 are available only for the items shown.

TABLE 17

Percentage Distribution of Consumer Expenditures by Type, Canada, Selected Years, 1870–1953

Year	Food	Tobacco and Alcoholic Beverages	Clothing and Personal Furnishings	Shelter	Household Operation	Transportation	Personal and Medical Care and Death Expenses	Miscellaneous	Total	Durable Goods	Non-Durable Goods	Services	
												Total	Excluding Shelter
1870	34.9	5.5	16.3	13.6	13.1	3.2	4.2	9.2	100.0	—	—	—	—
1890	29.4	5.8	17.4	13.0	13.8	4.3	4.9	11.4	100.0	—	—	—	—
1900	31.0	5.9	16.7	13.6	11.5	4.6	4.9	11.8	100.0	—	—	—	—
1910	29.0	7.0	17.3	14.0	10.4	6.7	4.6	11.0	100.0	—	—	—	—
1920	34.3	4.8	16.5	11.6	10.7	9.6	4.8	7.7	100.0	—	—	—	—
1930	25.4	6.6	13.5	16.5	13.1	8.9	6.5	9.5	100.0	7.3	56.2	36.5	20.0
1933[a]	—	—	—	18.2	—	8.6	6.4	11.0	100.0	5.2	55.7	39.1	20.9
1939	23.5	7.2	12.6	16.1	13.4	10.0	6.6	10.6	100.0	7.5	56.6	35.9	19.8
1945	27.7	11.0	15.6	12.2	10.7	7.6	6.0	9.2	100.0	5.0	63.5	31.5	19.4
1950	25.3	9.1	13.0	11.4	12.5	12.3	6.1	10.3	100.0	11.2	60.2	28.6	17.2
1951	26.4	8.7	12.9	11.7	12.0	11.7	6.1	10.5	100.0	10.5	59.8	29.7	18.0
1952	25.6	8.9	12.8	12.2	12.6	11.8	6.3	9.8	100.0	11.1	58.2	30.7	18.5
1953	24.8	8.8	12.4	12.9	12.7	12.6	6.3	9.5	100.0	11.9	56.7	31.4	18.5

[a] Consumer expenditures by type for 1933 are available only for the items shown.

VARIATION IN THE RATE AND DIRECTION OF CHANGE

The long-term decline in the relative importance of the outlay for food has not taken place at a constant rate. During World War II expenditures on food actually increased in relation to other types of consumer expenditures notwithstanding the rationing of some food items. Reduced opportunities to spend money on other commodities because they were in short supply, and lower food prices in relation to earnings because of price controls were among the reasons for interruption of the long-term trend. Similarly, the upward trend in expenditures on transportation was reversed during World War II when production of automobiles was discontinued, and gasoline for non-essential purposes was rationed.

The proportion of expenditures on shelter to the total which declined moderately over the period as a whole and rose notably in the inter-war period. In fact, in the case of shelter the long-term trend may not necessarily be downward. Shelter expenditures during the war and post-war years were lower than they would have been had market forces been allowed full play. Rents were controlled during most of World War II and up to 1951 under federal administration. In that year rent controls were taken over by the provincial governments and were continued in an overwhelming number of urban communities up to and including 1952. If rentals had not been controlled the ratio of shelter expenses to total consumer spending in the early 1950's might have been higher than it was, and possibly higher than in 1870 and 1900. Some support for this view can be found in the increasing proportion spent on housing in the inter-war period. This point is discussed below, when the evidence in Tables 16 and 17 is appraised. What the situation would have been if rent controls had not been introduced is a matter for conjecture. The fact remains that on the basis of the record, the ratio of shelter expenditures to total consumer expenditures is less for 1945 and 1953 than for 1870 and 1900.

LONG-TERM VARIATIONS IN CONSTITUENT ITEMS

Food

In the food category, notwithstanding the long-term decline of the relative importance of the group as a whole, consumption of certain items has increased. The diet of the average Canadian has been enriched, and diversified by the addition of more fresh

vegetables and fruits (including many non-native items), cereal, milk, and preserved and processed foods to the predominantly bread, potato, and meat diet of the early days.

Tobacco and alcoholic beverages

The per capita consumption of tobacco (i.e. pounds per person per year) in 1951 was almost three times the 1870 level. Beer consumption has also risen at an extraordinarily rapid rate with per capita consumption in 1951 being about five times that of 1870. On the other hand, per capita consumption of spirits in 1951 was only about two-fifths of what it was in 1870 (Table 18).

TABLE 18

Real Per Capita Consumption of Spirits, Beer and Tobacco, Canada, Selected Years, 1871–1951

Year[a]	Spirits (Gallons)	Beer (Gallons)	Tobacco (Pounds)
1871 . .	1.58	2.49	2.05
1881 . .	0.92	2.29	2.04
1891 . .	0.75	3.79	2.29
1901 . .	0.75	4.74	2.44
1911 . .	0.93	5.96	3.18
1921 . .	0.72	4.05	3.28
1931 . .	0.30	5.78	3.77
1941 . .	0.34	6.91	4.74
1951 . .	0.59	13.00	5.68

[a] Fiscal year ending 30th June, 1871–1901, and 31st March, 1911–51.

Clothing and personal furnishings

In this group, the downward trend of expenditures on clothing and footwear has in part been offset by relatively greater expenditures on personal services, some of which were unknown or used by only a few people in Canada at the time of Confederation. In fact, the growth of these services is another illustration of the transition from the family economy to the market economy.

Shelter

The long-term trend in the relative importance of shelter expenses is not clearly established. However, there is considerable evidence of improvement in housing standards. Two

sets of data illustrate this trend: the number of persons per dwelling (Table 19), and the relationship of dwellings completed to net family formation (Table 20).

Persons per dwelling declined from 6.2 in 1867 to 4.0 in 1953, suggesting that the housing standard has improved about one-third. But the trend toward smaller families and smaller homes is partly responsible for the declining ratio of persons per dwelling. The number of persons per room would probably show a more modest decline.

The comparison of the data on dwellings completed with net family formation must be qualified somewhat. The dwellings completed statistics overstate somewhat the improvement in housing because they do not reflect the number of houses demolished or destroyed – about 10 per cent of dwellings completed in the post-war period. On the other hand, the net family formation series overstates the potential housing demand

TABLE 19

Population, Housing Stock and Persons Per Dwelling, Canada [a], *Selected Years*, 1867–1953

Year[b]	Population (000)	Housing Stock Number of Dwellings (000)	Persons per Dwelling
1867 . .	3,441	553	6.2
1871 . .	3,689	621	5.9
1881 . .	4,324	790	5.5
1891 . .	4,734	874	5.4
1901 . .	5,324	1,038	5.1
1911 . .	7,192	1,475	4.9
1921 . .	8,853	1,909	4.6
1929 . .	10,120	2,271	4.5
1930 . .	10,293	2,318	4.4
1933 . .	10,682	2,395	4.5
1939 . .	11,316	2,598	4.4
1945 . .	12,183	2,840	4.3
1950 . .	13,861	3,277	4.2
1951 . .	14,231	3,358[c]	4.2
	14,231	3,582[d]	4.0
1952 . .	14,623	3,650[d]	4.0
1953 . .	*15,010*	3,742[d]	4.0

[a] Excluding the Yukon and Northwest Territories for all years; including Newfoundland from 1950 on.

[b] As of 1st April for 1867–1901, 1st June, 1911, and 31st December for 1921 and subsequent years.

[c] Based on the 1941 Census definition of a dwelling.

[d] Based on the 1951 Census definition of a dwelling.

because only seven out of eight new families require separate housing of their own (see Section 2). This is roughly the same proportion as the ratio of dwellings destroyed and demolished to total completions, and these two gross series can therefore be used as indicators of broad trends in the demand for, and supply of, new housing accommodation.

Between 1900 and 1953 2.7 million dwellings were completed and 2.4 million (net) families were formed, indicating an excess of dwellings completed of about one-third of a million for the period as a whole. The relationship has varied a good deal over

TABLE 20

Dwellings Completed and Net Family Formation, Canada, Selected Periods, 1867–1953

(In thousands)

Period	Dwellings Completed	Net Family Formation	Excess of Dwellings Completed Over Net Family Formation
Annual Average:			
1867–81	24	9	15
1881–91	15	11	4
1891–1901	21	12	9
1900–04	35	24	11
1905–09	48	37	11
1910–14	51	47	4
1915–19	43	20	23
1920–24	41	34	7
1925–29	57	42	15
1930–34	36	27	9
1935–39	43	39	4
1940–44	47	63	−16
1945–49	73	76	−3
1950–53	88	87	1
Single Years:			
1900	29	14	15
1910	60	44	16
1920	45	61	−16
1930	53	39	14
1940	53	70	−17
1950	92	71	21
1953	101	92	9
TOTAL, 1900–53	2,726	2,390	336

the period. In thirty-seven years dwellings completed exceeded net family formation, in two years the two were equal, and in fifteen years new families exceeded new house building. The excess of new families over additions to the housing stock occurred in periods of heavy immigration immediately preceding and following World War I and following World War II.

While the two sets of data point toward an improvement in housing standards, another offsetting factor has been operating. The rising incomes and the process of urbanization have led to a rapid growth of 'non-family households', i.e. dwellings occupied by a person or group of persons not representing a natural family. As these groups have made increasing demands on the housing stock, the doubling up of families has increased.[1]

Families are therefore in competition with non-family households for available housing accommodation. Unless they are willing to devote a greater proportion of their income to shelter expenses, and thus increase the volume of house building (or the transfer of dwellings from non-family household groups to families), the number of families sharing housing accommodation is likely to increase rather than decrease. Of course, if a greater proportion of income is devoted to shelter by family groups in search of separate housing accommodation the present ratio of shelter expenses to total consumer expenditures will rise. It is likely to rise also because of the fairly rapid removal of rental controls since 1952.

Household operations

In this group, fuel costs have declined because of better insulation of homes built in more recent times and because of improved types of heating equipment. On the other hand, expenses for electricity and telephone service have risen as these household facilities have become more widespread. Expenditures on two other complementary items in this sub-group show widely divergent trends. Expenses for domestic service declined significantly in relative importance. On the other hand, outlays

[1] For example, non-family households occupying separate dwellings rose from 239,000 in 1921 to 379,000 in 1949; over the same period families without homes of their own (measured in terms of families and non-family households less the total number of occupied dwellings – Census 1941 definition) rose from 197,000 to 473,000 (see O. J. Firestone, *Residential Real Estate in Canada*, Toronto, 1951, p. 289).

on household appliances, e.g. washing machines, vacuum cleaners, and refrigerators, increased (Table 21).

TABLE 21

Indicators of Household Facilities and Living Conveniences, Canada, 1931, 1941 and 1951

Item	1931		1941		1951[a]	
	No. 000	Per Cent of Total	No. 000	Per Cent of Total	No. 000	Per Cent of Total
Total Number of Occupied Dwellings	2,253[b]	—	2,576	—	3,338	—
Dwellings with:						
Electricity	—[c]	—	1,781	69.1	2,929	87.7
Inside Running Water	—[c]	—	1,559	60.5	2,503	75.0
Radio	19[b]	0.8	2,003	77.8	3,087	92.5
Telephone	—[c]	—	1,037	40.3	2,014	60.3
Passenger Automobile	—[c]	—	945	36.7	1,436	43.0
Electric Vacuum Cleaner	—[c]	—	624	24.2	1,409	42.2
Washing Machine	—[c]	—	—[c]	—	2,453	73.5

[a] Excluding Newfoundland.
[b] Households.
[c] Not available.

Transportation

The development of the motor car increased the importance of this type of consumer expenditure. In 1953, for example, out of a total of $1.9 billion for transportation, about four-fifths was spent on the purchase and running expenses of automobiles. The tremendous impact of the motor car on the Canadian way of life is indicated by its rapid acceptance and continuously growing popularity (Table 22). Two reasons for this demand are: (*a*) the process of urbanization and the spreading out of cities and towns which have increased substantially the distance between homes and place of work, making it desirable to own a car in order to cut down the travelling time to work, to shop more conveniently, and to get away from the city on week-ends; (*b*) the improved relationship between incomes and prices of motor cars, which incidentally have improved in quality and in the service they provide. Incomes have risen more rapidly than prices of motor cars because increased productivity and the

TABLE 22

Passenger Cars and Other Types of Motor Vehicles Registered, Total and Per Thousand Population, Canada, Selected Years, 1904–1953

Year	Number of Motor Vehicles Registered			
	Passenger Cars 000	All Other Motor Vehicles 000	Total Motor Vehicles 000	Registration per 1,000 Population
1904	—	—	1	0.2
1910	—	—	9	1.3
1920	—	—	409	47.1
1929	1,023	164	1,187	117.1
1930	1,056	176	1,232	119.5
1933	917	166	1,083	101.3
1939	1,190	249	1,439	127.0
1945	1,160	337	1,497	122.7
1950	1,907	694	2,601	187.3
1953	2,514	917	3,431	228.2

TABLE 23

Indicators of Health Standards, Canada, Selected Years, 1871–1951

Year	Physicians and Surgeons		Dentists		Nurses		Patients in [d] Hospitals	
	No. 000	Per 1,000 Population	No. 000	Per 1,000 Population	No. 000	Per 1,000 Population	No. 000	Per 1,000 Population
1871[a]	2.8	0.80	0.3	0.09	—	—	1.8	0.52
1881	3.5	0.81	0.5	0.12	—	—	5.1	1.18
1891	4.4	0.91	0.8	0.17	—	—	4.8	0.99
1901	5.5	1.02	1.3	0.24	—	—	7.0	1.30
1911	7.4	1.03	2.2	0.31	5.6[b]	0.78[b]	—[c]	—[c]
1921	8.7	0.99	3.2	0.36	21.4	2.44	—[c]	—[c]
1931	10.0	0.96	4.0	0.39	31.9	3.07	35.5[d]	3.42
1941	11.9	1.03	4.2	0.36	39.0	3.39	28.3	2.46
1951	14.3	1.02	4.6	0.33	50.8	3.63	60.1[e]	4.29[e]

[a] Covers four provinces only.
[b] Excludes nurses in training in 1911 and includes them in subsequent years.
[c] Not available.
[d] Patients in hospitals for 1871–1931 relate to the date of the census, about 1st April, from 1871 to 1901 and 1st June for 1931. Data for 1941 and 1951 are the average for the calendar year.
[e] Preliminary.

advantages of mass production techniques have kept the cost of producing new motor cars from rising as rapidly as the costs of many other items.

Personal and medical care

The large increase in relative importance of the group covering personal and medical care and death expenses is largely due to increased emphasis on health and grooming (cosmetics, hairdresser services, etc.). The improvement in health standards is illustrated by the data in Table 23. On the other hand, funeral expenses declined in relative importance as the life expectancy of the population increased and mortality rates declined (see Section 2).

Miscellaneous group

In this category expenditures on education, recreation and holidays, and life insurance have all been rising. Emphasis on education is greater than ever before. In 1871 four out of every ten persons between the ages of 5 and 24 were at school, by 1951 the proportion had risen to six out of ten. Higher general education and technical training are also more widespread than ever before[1] (Table 24).

The desire for security is reflected in the greater protection through life insurance which Canadians now enjoy. For example, life insurance in force per capita in current dollars was $1,412 in 1953 compared with $12 in 1870. Even though prices rose notably over this period, the increase in life insurance protection has been quite extraordinary– the per capita protection in real terms in 1953 being forty-three times what it had been in 1870 (Table 25).

Rapid as the increase in miscellaneous consumer expenditures has been over the long term, there is some evidence that these expenditures have not kept up in recent years with the growth of the country. One indication is the difficulty universities are having making ends meet. Also, life insurance companies have not been finding it easy to maintain their role as the major source

[1] Expenditures on education in public schools and state-operated technical schools and universities are included in the national accounts under government expenditures. Under consumer expenditures only outlay of persons for private education and instruction is covered. However, the data in Table 24 reflect the public's growing awareness of the importance of education.

TABLE 24

Indicators of Educational Standards, Canada, Selected Years, 1871–1951

Year	Population Aged 5–24 Years 000	Pupils	
		Number 000	Per 1,000 Population
1871	1,658	682	411
1881	1,968	789	401
1891	2,121	—[a]	—[a]
1901	2,258	912	404
1911	2,870	1,154	402
1921	3,475	1,711	492
1931	4,158	2,155	518
1941	4,299	2,170	505
1951	4,675	2,882	616

[a] Not available.

TABLE 25

Life Insurance in Force, Total and Per Capita, in Current and Constant (1935–1939) *Dollars, Canada, Selected Years,* 1870–1953

Year	Life Insurance in Force ($ million)		Life Insurance in Force per Capita ($)	
	Current Dollars	Constant Dollars	Current Dollars	Constant Dollars
1870	43	64	12	17
1890	248	399	51	83
1900	431	742	80	139
1910	856	1,161	120	163
1920	2,657	1,852	306	213
1929	6,157	5,165	608	510
1930	6,492	5,492	630	533
1933	6,248	6,612	584	618
1939	6,777	6,631	598	585
1945	9,752	7,833	799	642
1950	15,746	9,192	1,134	662
1951	17,236	9,062	1,209	636
1952	19,091	9,810	1,303	670
1953	21,227	10,914	1,412	726

of funds for certain types of investment.[1] The churches have also found it difficult to provide adequate salaries for their clergy and new places of worship. In terms of percentages the decline of the miscellaneous group, post-war compared with pre-war, is minor but its impact on such sectors as education and life insurances has been notable.

It was emphasized in Section 2 that the rate of family formation can have important repercussions on the pattern of consumer spending in particular and on economic growth in general. It would of course be desirable to examine consumer expenditures by families as distinct from those by individuals living either singly or in a household with others, and to compare family spending patterns by size of family and by income but such information is not available on a comprehensive basis. However, a few family budget studies have been made at different intervals and they shed some light on some of the points raised.

Period; 1910–1948. The earliest records of a complete family budget survey for a Canadian city are for Winnipeg in 1910. There is also a consumer expenditure pattern for Winnipeg for 1948, the year in which the Dominion Bureau of Statistics took a comprehensive family expenditure and income survey. Thus, the comparison covers changes in buying habits over a period of close to forty years (Table 26). The data are approximate and

[1] The point that life insurance protection was more rapid than the general growth of the country in the earlier period of Canada's development, but that the position has been reversed in more recent times, particularly the last decade, is indicated in the following observations by the President of the Central Mortgage and Housing Corporation in Canada: 'Encouraging as this long-term expansion of the life insurance business is, the record of the last decade is less reassuring. What seems to be happening is that the life insurance business is not keeping pace with economic growth and, in fact, appears to have lost some of its relative position in the economic life of our two countries (Canada and the United States). I realize that a sharp expansion of our economy cannot be immediately paralleled by a comparable change in the volume of life insurance. But here are a few figures that should make us reflect on recent developments. Premium income in Canada approximated 3.5 per cent of the gross national product in 1939, as compared with 2.1 per cent in 1950. In the United States corresponding ratios are 5.3 per cent in 1939 and 3 per cent in 1950. During this period from 1939 to 1950, the gross national product in Canada had risen, as I indicated earlier, by four-fifths in volume terms but the number of policies rose by only two-thirds. In the United States, the gross national product rose by two-thirds in real terms but the number of policies lagged behind, rising by about one-half only. The obvious challenge before the industry at the moment is its return to the earlier, more important position in the economic life of our two nations.' (D. B. Mansur, 'Economic Growth and Life Insurance', paper given at the Forty-sixth Annual Meeting of the American Life Convention, Toronto, 9th-12th October 1951, p. 7.)

the living pattern of Winnipeg is not necessarily representative of consumer habits in Canada as a whole. However, the broad changes in buying habits that have occurred in this city may serve for purposes of illustration.

In general, these two surveys confirm the findings regarding changes in the composition of total consumer expenditures.

TABLE 26

Consumer Expenditures, by Type of Expenditure, Based on Family Expenditure Surveys, Winnipeg, 1910 *and* 1947–1948

Item	1910		1947–48	
	Amount $	Per Cent	Amount $	Per Cent
Food, Tobacco, and Alcoholic Beverages	419.16	40.1	1,076.91	31.9
Clothing:				
Men's	41.64	4.0	127.38	3.8
Women's	38.64	3.7	173.09	5.1
Children's[a]	55.68	5.4	49.74	1.5
Other	—	—	46.52	1.4
Sub-total	135.96	13.1	396.73	11.8
Shelter	255.24	24.4	343.03	10.2
Household Operations:				
Fuel	47.28	4.5	95.79	2.8
Furnishings, Household Equipment	36.12	3.5	271.56	8.1
Other Household Expenses	31.08	3.0	139.34	4.1
Sub-total	114.48	11.0	506.69	15.0
Transportation:				
Automobile Purchases and Operation	—	—	129.02	3.8
Other (Carfare etc.)	13.44	1.3	72.49	2.2
Sub-total	13.44	1.3	201.51	6.0
Medical and Dental Care	20.88	2.0	102.60	3.0
Miscellaneous:				
Insurance, Charity Church, etc.	38.88	3.7	478.01	14.2
Recreation, Reading, Education, Vacations, etc.	46.20	4.4	255.22	7.6
Non-classified	—	—	9.97	0.3
Sub-total	85.08	8.1	743.20	22.1
GRAND TOTAL	1,044.24	100.0	3,370.67	100.0

[a] The inclusion of some families comprising three or four adults but with no children in the 1947–48 survey would be in part responsible for this apparent decline.

They show a decline in the relative importance of shelter, food, and clothing, and an increase in household equipment and furnishings, motor cars, and education, health, holidays, insurance, charity, and other services.

Period; 1938–1948. The results of two more recent family expenditure surveys made in 1938 and 1948 are summarized in Table 27. A comparison of the results of family budget studies on a national scale is much more difficult than a comparison for a single city. Not only does the weighting among the several regions vary but family composition and income levels are also different. It is impossible to make allowances for these factors in the national surveys. Moreover, differences in concept and statistical technique are likely to be more important in short period comparisons than in an analysis covering several decades during which there were major shifts in the pattern of spending. It is, therefore, important to bear in mind that the surveys taken in 1937–38 and 1947–48 are not comparable for a number of reasons. In the earlier survey the natural family was the base and single persons were included; in the later survey the economic family or spending unit was defined as 'a group of persons who pool their income and meet living expenses from this common fund'. The two surveys also differ in the method of selecting the sample and in the classification of items that enter the family budget. Differences in the latter respect, however, are minor. The earlier survey emphasized the classification by racial extraction, and the later survey emphasized the regional classification. However, the data for French families in the earlier survey correspond to the data for the Province of Quebec in the later survey and the data for British families to those for Ontario. In view of the numerous qualifications only some general impressions are warranted.

Perhaps the outstanding feature of the comparison – on the basis of British and Ontario family expenditure data – is the substantial drop in the importance of shelter costs and the corresponding increase in the importance of 'miscellaneous', which includes expenditures on education, recreation and holidays, life insurance, and religious and welfare activities. Apparently the savings that families were able to make on shelter – either because rents were controlled or because an apartment or small house was made to do – were devoted among other

TABLE 27

Consumer Expenditures by Type of Expenditure Based on Family Expenditure Surveys, Canada, 1937–1938 *and* 1947–1948

Item	1937–1938				1947–1948					
	British Families		French Families		Ontario		Quebec		Canada	
	Amount $	Per Cent	Amount $	Per Cent	Amount $	Per Cent	Amount $	Per Cent	Amount $	Per Cent
Food, Tobacco and Alcoholic Beverages	431	30.2	445	33.4	801	27.2	914	32.6	804	28.9
Clothing and Footwear	159	11.1	175	13.1	340	11.6	380	13.5	339	12.2
Shelter	283	19.8	245	18.4	295	10.0	298	10.6	274	9.9
Household Operations	223	15.6	217	16.2	488	16.6	486	17.3	475	17.1
Transportation	93	6.5	46	3.5	266	9.0	142	5.1	218	7.8
Personal and Medical Care	89	6.3	86	6.5	138	4.7	135	4.8	131	4.7
Miscellaneous[a]	150	10.5	119	8.9	616	20.9	451	16.1	540	19.4
TOTAL	1,428	100.0	1,333	100.0	2,944	100.0	2,806	100.0	2,781	100.0

[a] Includes education and recreation, insurance premiums, and charitable contributions.

TABLE 28

Consumer Expenditures by Type of Expenditure and Size of Family and Size of Income Based on Family Expenditure Surveys, Canada, 1947–1948

Item	Single Persons		Medium Sized Families[a]		Percentage Distribution for Families with Income of		
	Amount $	Per Cent	Amount $	Per Cent	$2,051–2,549	$3,051–3,549	$5,051 and over
Food, Tobacco and Alcoholic Beverages	401	27.0	940	28.7	31.1	26.8	19.7
Clothing and Footwear	187	12.6	386	11.8	10.8	11.7	13.3
Shelter	209	14.1	303	9.2	10.9	10.0	7.5
Household Operations	170	11.5	600	18.3	18.5	17.4	14.9
Transportation	112	7.6	266	8.1	6.3	9.0	9.8
Personal and Medical Care	67	4.5	159	4.9	5.0	4.4	4.4
Miscellaneous[b]	337	22.7	624	19.0	17.4	20.7	30.4
TOTAL	1,483	100.0	3,278	100.0	100.0	100.0	100.0

[a] Consisting of two adults and one to four children or three to four adults.
[b] Includes education and recreation, insurance premiums and charitable contributions.

things to greater educational opportunities and security against a rainy day. The family budget data show a much greater relative change in the importance of these two segments of consumer expenditures than do the national data on expenditures on consumer goods and services.

Food, tobacco, and alcoholic beverages show a moderate drop and transportation shows a greater relative increase. Incidentally, the data indicate that families in Ontario attach greater importance to owning a motor car than families in Quebec. The difference is more than made up by the greater importance for Quebec families of food, tobacco, and alcoholic beverages.

Two other bases of comparison are used in Table 28 which shows variations in the pattern of consumer spending between single individuals and medium-sized families and among families of different income brackets:

$2,051–$2,549 (corresponding to families headed by wage earners with a semi-skilled occupation, making about $45 per week);

$3,051–$3,549 (corresponding to families headed by a wage earner with a skilled trade making approximately $65 per week) and

$5,051 and over (corresponding to families in the upper range of the middle income group and to families with high incomes).

SECTION 5

GROSS INVESTMENT AND CAPITAL CONSUMPTION

This section reviews long-term changes in the composition of gross investment and in its role in economic development. Some tentative evidence on capital consumption is also examined to illustrate the significance of net additions to the stock of capital.

CONCEPTS USED

The concept of gross investment is that used and referred to in the official National Accounts, as 'gross domestic investment'. It is defined as 'expenditures for new construction and new machinery and equipment, and changes in inventories of

private and government business enterprises and private non-commercial institutions. Personal expenditure on new housing (including major improvements and alterations) are also included. . . . Thus, this component covers gross capital formation (including changes in inventories) of the private sector of the economy and government business concerns.'[1]

The concept of capital consumption is what the Dominion Bureau of Statistics describes in the National Accounts as 'depreciation allowances and similar business costs'. The Bureau comments on this concept: 'In view of the impossibility of arriving at a figure of the true economic consumption of capital, it is necessary to use current accounting allowances for depreciation, obsolescence and amortization as a basis for the estimate, although these may vary widely from capital consumption in the economic sense. . . . Estimates of national income and net capital formation based on these depreciation figures will be overstated to the extent that business accounting practices understate true capital consumption, and understated to the extent that such practices overstate true capital consumption.'[2]

The item 'depreciation allowances and similar business costs' includes besides an accounting estimate of depreciation, obsolescence, and amortization, such things as the claim portion of business and residential insurance (against fire and other damage to property) and net bad debt charges. Allowances for damages to capital stock can properly be included under capital consumption. A case could have been made for excluding bad debt charges, but this was not done because of its minor significance[3] and the need to ensure comparability of the data over the whole period.

As the Bureau of Statistics points out, the series on 'depreciation allowances and similar business costs' may sometimes understate and at other times overstate actual capital consumption in the sense of the value of real capital used up in the course of a year. But rather than use a new concept of capital consumption and prepare estimates for the earlier period that would not be comparable with the official data for recent years, the concept

[1] *National Accounts, Income and Expenditure, 1926–1950*, Dominion Bureau of Statistics, Ottawa, December 1951, p. 109.

[2] *Ibid.*, p. 101.

[3] In 1953 net bad debt charges were only about 1 per cent of total depreciation allowances and similar business costs, as shown in the National Accounts.

underlying the current official estimates was employed. In any event the difficulties in preparing different estimates of capital consumption for the earlier period would have been enormous, because of the inadequacy of the statistics. Furthermore, since for long-term economic analysis only an indication of broad trends is wanted, the approximate data available back to 1870 seem to be adequate.

This chapter deals first with gross investment in durable physical assets, covering new construction and investment in plant and equipment by private entrepreneurs, home owners, institutions, and government business enterprises, and, secondly, with capital consumption and net capital formation. Then follows a brief appraisal of the role of investment in inventories in the economy. The section concludes with a brief description of sources of funds for financing investment. The emphasis is on long-term changes since comprehensive information is available elsewhere on short-term changes in investment.[1]

Private capital expenditures on new construction and machinery and equipment (including outlays by government business enterprise and institutions) in current dollars amounted to $4.8 billion, or 20 per cent of gross national expenditure in

[1] Investment in durable physical assets and in inventories covering both the private and the public sectors is reviewed in *Public Investment and Capital Formation, A Study of Public and Private Investment Outlook in Canada, 1926–1941*, Dominion-Provincial Conference on Reconstruction, Ottawa, August 1945. The economic impact of the investment boom in the immediate post-World War II period is appraised in *Investment and Inflation, with Special Reference to the Immediate Post-War Period, Canada, 1945–1948*, Department of Trade and Commerce, Ottawa, 1949. Investment in housing and changes in the stock of residential capital mainly between 1921 and 1949 are appraised in *Residential Real Estate in Canada* (by the author of this study), Toronto, 1951. The data on investment in durable physical assets in the study prepared for the Dominion-Provincial Conference on Reconstruction were substantially revised and brought up to date and their meaning for national and regional economic development and industrial growth appraised in a subsequent report, *Private and Public Investment in Canada, 1926–1951*, Department of Trade and Commerce, Ottawa, 1951. Further, the comprehensive report, *National Accounts, Income and Expenditure, 1926–1950*, published by the Dominion Bureau of Statistics in December 1951, contains detailed data and an appraisal of the economic impact of investment in durable physical assets and in inventories in the quarter century covered in this study. Also, comprehensive information on investment and some comments on short-term changes will be found in the White Papers on the economic situation attached in recent years to the budget address of the Minister of Finance. (See, for example, *House of Commons Debates*, 19th February 1953, pp. 13–16, of the 'Economic Review of 1952' attached as an appendix to the *House of Commons Debates*.) Comments on housing demand and supply are made in *Housing in Canada* and more recently in *Canadian Housing Statistics* (published quarterly by Central Mortgage and Housing Corporation) and in the *Annual Report of Central Mortgage and Housing to the Minister of Resources and Development*, more recently, *the Minister of Public Works*.

TABLE 29

Gross Investment in Durable Physical Assets, in Current Dollars, Canada, Selected Years, 1870–1953

Year	Construction			Machinery and Equipment	Total Investment	Total Investment per		Total Investment as Per Cent of Gross National Expenditure
	New Residential Construction $ million	Other Construction $ million	Total $ million	$ million	$ million	Capita $	Person Working $	
1870	—	—	33	21	54	15	48	11.8
1890	—	—	74	39	113	23	71	13.9
1900	51	28	79	47	126	24	71	12.2
1910	140	101	241	148	389	55	143	18.2
1920	236	332	568	440	1,008	116	319	18.2
1929	247	486	733	597	1,330	131	349	21.6
1930	204	381	585	469	1,054	102	283	19.0
1933	76	79	155	84	239	22	70	6.7
1939	185	166	351	254	605	53	148	10.6
1945	272	252	524	462	986	81	192	8.3
1950	801	1,026	1,827	1,389	3,216	232	630	17.7
1951	781	1,260	2,041	1,769	3,810	267	728	17.7
1952	786	1,554	2,340	1,916	4,256	291	799	18.3
1953	1,061	1,706	2,767	2,073	4,840	322	886	19.8

TABLE 30

Gross Investment in Durable Physical Assets, in Constant 1935–1939 *Dollars, Canada, Selected Years,* 1870–1953

Year	Construction			Machinery and Equipment	Total Investment	Total Investment per		Total Investment as Per Cent of Gross National Expenditure
	New Residential Construction $ million	Other Construction $ million	Total $ million	$ million	$ million	Capita $	Person Working $	
1870	—	—	80	20	100	27	89	13.1
1890	—	—	162	48	210	44	132	15.2
1900	108	59	167	60	227	42	127	12.4
1910	222	161	383	227	610	86	225	19.8
1920	167	235	402	249	651	75	206	16.9
1929	214	439	653	575	1,228	121	322	23.0
1930	181	357	538	471	1,009	98	271	19.7
1933	84	86	170	89	259	24	76	6.9
1939	180	164	344	247	591	52	145	10.4
1945	177	199	376	374	750	61	146	8.1
1950	340	554	894	784	1,678	121	329	16.2
1951	290	606	896	890	1,786	125	341	16.3
1952	284	699	983	969	1,952	133	366	16.8
1953	372	738	1,110	1,038	2,148	143	393	17.8

Canada in 1953 (Table 29).[1] If public investment (capital expenditures by government departments) is added, total private and public investment was $5.8 billion, or 24 per cent of gross national expenditure, a higher proportion than that for most other industrialized nations. In most of the tables that follow investment by government departments was excluded from the totals. Since the latter form an increasing proportion, at least since 1929 (Table 33), the rate of growth in the more comprehensive total would be even higher than that shown here.

Notwithstanding the remarkable extent and the continuity of economic expansion since the end of World War II – for some nine years – the ratio of gross investment in new construction and machinery and equipment to gross national expenditure (excluding investment by government departments) was lower than in 1929, when it was 21.6 per cent. On this phenomenon the recent investigation into the economic role of investment comments: '. . . If the growth of the economy is taken into account in terms both of the working force and of its ability to turn out more goods with less labour. Canada's post-war investment boom does not match the achievements of the late 'twenties. The figures indicate the tremendous investment efforts that took place in the earlier period, and are a reflection of the feeling of buoyancy and confidence that permeated the American and Canadian economies in the latter half of the 'twenties, leading to widespread stock market speculation and over-expansion of industrial capacity.'[2]

The 1930 ratio, based on current dollar figures, is about the same. However, after allowance for price changes the 1930 ratio is higher than that for 1953 (Tables 29 and 30). In 1910 the ratio of investment to gross national expenditure measured in current dollar terms was somewhat smaller than in either 1930 or 1953.[3] In constant dollar terms, however, the reverse is true.

[1] Gross investment in plant, equipment and housing in the United States was 14 per cent of gross national expenditure in 1953 (*Survey of Current Business*, U.S. Department of Commerce, August 1954, p. 4).

[2] *Private and Public Investment in Canada, 1926–1951*, p. 17.

[3] Even though less of the nation's resources was devoted to capital accumulation in that earlier period, the dynamic influence of capital expenditures on economic development was substantial, as the following comments by the Royal Commission on Dominion-Provincial Relations indicate:

'The pace of economic development during 1896–1913 was made possible by a huge investment of capital. The expansion took place in the centre of a country of vast distances. It was based on the exploitation of the natural resources of an immense area. These facts, combined with the bulky character of the products and the scarcity of labour, made necessary a large physical equipment. The

In 1870 and 1890 investment played a relatively less important part as is evident from the smaller ratios, in both current and constant dollar terms.

LONG-TERM RATE OF CAPITAL GOODS EXPANSION

Another way of studying the long-term changes in the demand for capital goods is in relation to population. Investment per capita in 1953 was $322 in current dollars, and about five times as much as in 1870 in constant dollars. Investment per worker in 1953 amounted to $886 in current dollars and about four and a half times as much as in 1870 in constant dollars. The rates of growth are given in Table 31.

These data suggest that in recent years Canadians have devoted a notably greater proportion of their output to investment in durable physical assets than at Confederation, in 1890, or in 1900, and that capital requirements per capita or per worker are larger than ever before. Why is this so?

The reasons are examined in more detail below but may be summed up under three headings:

1. The growing complexity of modern society with wants rising in extent and quality, leading to the production of more highly fabricated commodities. As a result more expensive production equipment and distribution facilities are needed (see Sections 4 and 10).

required capital could have been obtained at home only very slowly. One of the important factors in this rapid growth was the ease with which money could be borrowed abroad. . . .

'The boom in investment, although comprising a wide range of industries and activities, was most marked in the field of transportation. Between 1900 and 1913, nearly $1,400 million were invested in railways, canals and harbours. These were the main instruments of development and the necessary means for the promotion of internal trade. . . .

'The equipping of western agriculture in so short a time also involved a heavy investment of capital. . . .

'. . . There were important developments in other primary industries. The spectacular but, in many cases, short-lived activities in the gold fields of the Yukon, the silver mines of Ontario and the lead-zinc-copper ventures of British Columbia, and the less dramatic but more continuous progress of coal mining in Nova Scotia and Alberta attracted considerable amounts of capital. The rising prairie demand for lumber stimulated the saw-mill and logging enterprises of the Pacific Coast. The pre-war years also saw in Ontario and Quebec the beginnings of the hydro-electric and pulp and paper industries which require heavy investments of fixed capital.

'. . . The transformation and extension of manufacturing facilities required a large investment and between 1900 and 1910 capital employed in manufacturing increased by about $800 million. . . .

'During the fourteen years prior to the war, between $4,500 and $5,000 million was invested in capital goods. The expenditure of this vast sum was the chief basis of the rising prosperity of the time.' (*Canada: 1867–1939*, pp. 75 and 76.)

TABLE 31

Percentage Changes in Gross Investment in Durable Physical Assets in Constant (1935–1939) *Dollars, Canada, Selected Periods*, 1870–1953

Item	1870–1890	1890–1910	1910–1930	1930–1953	1870–1953	1890–1953	1910–1953
Gross Investment:							
Total Period	110.0	190.5	65.4	112.9	2,048.0	922.9	252.1
Annual Average	3.78	5.48	2.55	3.34	3.76	3.76	2.97
Gross Investment per Capita:							
Total Period	63.0	95.5	14.0	45.9	429.6	225.0	66.3
Annual Average	2.47	3.41	0.66	1.66	2.03	1.89	1.19
Gross Investment per Worker:							
Total Period	48.3	70.5	20.4	45.0	341.6	197.7	74.7
Annual Average	1.99	2.70	0.93	1.63	1.80	1.75	1.30

2. Technological advances frequently necessitating modernization and re-equipping of existing industries and the establishment of completely new industries (see Section 9).

3. Changes in the industrial structure of the economy, partly in response to domestic and foreign market forces, partly as a result of the discovery of new resources and increased domestic processing of indigenous resources (see Sections 7 and 9).

Some appreciation of the impact of technological developments can be obtained from a glance at the expansion of some public utilities, the greatest capital-using industries.

The first sixteen miles of railway lines were laid in 1835. By 1867, 2,278 miles had been laid, concentrated in the eastern parts of Canada. By 1900 railway mileage in operation was up to nearly 18,000, with a network linking the Atlantic and the

TABLE 32

Railway Mileage in Operation, Hydro-Electric Power Installed, and Telephones in Use, Canada, Selected Years, 1836–1953

Year[a]	Railway Mileage in Operation Miles	Hydro-Electric Power Installed 000 h.p.	Telephones Installed 000
1836	16	—	—
1850	66	—	—
1860	2,065	—	—
1870	2,617	—	—
1880	7,194	—	—
1883	9,577	—	4
1890	13,151	—	—
1891	13,838	71	—
1898	16,870	—	44
1900	17,657	173	—
1901	18,140	239	63
1910	24,731	977	—
1911	25,400	1,363	303
1920	38,805	2,516	856
1930	42,047	6,125	1,403
1940	42,565	8,584	1,461
1950	42,979	12,563	2,917
1953	43,163	14,929	3,606

[a] Railway mileage figures are for 1st June for years up to and including 1911, and 31st December for later years.

Data on installed hydro-electric power are for 31st March for 1891 and 31st December for all other years.

Data on telephones installed are for 30th June for years up to and including 1911, and 31st December for later years.

Pacific. In the twentieth century the rate of expansion slowed down somewhat. Still, by 1953 some 43,000 miles of railway track had been laid, providing a comprehensive railway system throughout the country (Table 32). The cost of laying one mile of railway track in the early 1950's (including embankments and bridges, etc.) varied from $75,000 to $250,000 and the purchase of a modern diesel locomotive from one-quarter to one-half a million dollars. One can appreciate, therefore, the investment that the building of a 43,000-mile network and the acquisition of the necessary railway facilities and equipment involved.

The development of two other utilities that had their origin in the late nineteenth century but became important only in the twentieth century: hydro-electric power and telephones – is also revealing.

Hydro-electric power installed rose from 173,000 horse-power in 1900 to 14.9 million horse-power in 1953, making Canada one of the leading nations in electrification.[1] The cost

TABLE 33

Percentage Distribution of Gross Investment in Durable Physical Assets, Canada, Selected Years, 1870–1953

Year	Current Dollars			Constant Dollars[a]		
	New Construction	New Machinery and Equipment	Total Investment	New Construction	New Machinery and Equipment	Total Investment
1870	61.1	38.9	100.0	80.0	20.0	100.0
1890	65.5	34.5	100.0	77.1	22.9	100.0
1900	62.7	37.3	100.0	73.6	26.4	100.0
1910	62.0	38.0	100.0	62.8	37.2	100.0
1920	56.3	43.7	100.0	61.8	38.2	100.0
1929	55.1	44.9	100.0	53.2	46.8	100.0
1930	55.5	44.5	100.0	53.3	46.7	100.0
1933	64.9	35.1	100.0	65.6	34.4	100.0
1939	58.0	42.0	100.0	58.2	41.8	100.0
1945	53.1	46.9	100.0	50.1	49.9	100.0
1950	56.8	43.2	100.0	53.3	46.7	100.0
1951	53.6	46.4	100.0	50.2	49.8	100.0
1952	55.0	45.0	100.0	50.4	49.6	100.0
1953	57.2	42.8	100.0	51.7	48.3	100.0

[a] 1935–39 dollars.

[1] Installed hydro-electric capacity per capita was 0.99 horse-power in Canada and 0.20 horse-power in the United States at the end of 1953.

of installing 1,000 horse-power of hydro-electric power together with the necessary transformer and other capital facilities for transmission at high voltage varied in 1953 from $150,000 to $250,000.

Telephones installed numbered some 60,000 in 1900; they numbered over 3.6 million at the end of 1953. The cost of installing a telephone including the necessary transmission lines, communication equipment, and other capital facilities averaged over $500 in the early 1950's.

Evidence of the expansion in the stock of capital in agriculture and manufacturing will be found in Section 9. But we mention here one other field in which substantial capital expenditures have been made – housing. The number of dwellings rose from some 550,000 in 1867 to over 3.7 million at the end of 1953 (see also Section 4). The cost of the average dwelling built in 1953 was over $10,000, implying a tremendous capital outlay.

CHANGING COMPOSITION OF INVESTMENT

We look briefly now at the changing composition of investment. In 1953 about 43 per cent of capital outlay was for the purchase of machinery and equipment. The proportion has been fairly steady since the beginning of the century – except in the depressed 'thirties when it fell off because of the vulnerability of the business sector, which is the principal user of machinery and equipment. The pattern is somewhat more erratic if the relationship is considered on a constant dollar basis (see Table 33).

In 1870 and in 1890 the proportion of capital invested in new machinery and equipment was somewhat smaller, 39½ per cent and 35 per cent, respectively. Two factors that might have contributed to these lower ratios are: (*a*) the expenditures on plant facilities before equipment could be installed and the comparatively simple type of equipment necessary at the time; (*b*) the large capital expenditures for shelter (and related community facilities) for the rapidly growing urban population. By 1910 the ratio had practically regained its 1870 level, in current dollar terms, and by 1930 it had increased considerably, primarily, because of the predominantly industrial nature of the capital facilities then being established. Incidentally, housing expenditures appear to have been a steadying influence on the total volume of new construction, for while they have risen at a

slower rate than expenditures on other types of construction they have not fluctuated as much.[1]

INVESTMENT BY TYPE OF USER

Information on investment in durable physical assets by type of user is available only from 1926 on. The comparison of 1929, the high point of the 'twenties, with 1950 – when the rearmament programme following the outbreak of the war in Korea had not yet had much effect on the pattern of capital spending – reveals marked changes in the composition of investment (Table 34). Investment in manufacturing industries was 13.1 per cent of total private and public investment in 1950 as against 24.6 per cent in 1929. In 1929 manufacturing investment was reaching a high point of expansion; whereas the post-war programme of conversion, expansion, and modernization had been largely completed by 1950.

The proportion for agriculture and fishing rose from 8.6 per cent in 1929 to 12.4 per cent in 1950; for mining and forestry, from 3.4 per cent to 4 per cent. Farmers were particularly prosperous in the post-war period and spent large sums on farm machinery and equipment, since there was not only a shortage of agricultural labour but also a persistent demand (up to about 1953) for increasing output of agricultural commodities, both at home and abroad. After the war, large new deposits of minerals and fuels were discovered, necessitating substantial exploration and development expenditures. These resources ranged all the way from oil and natural gas in Alberta, uranium in Saskat-

[1] 'While residential construction fluctuated substantially over the last 25 years, other types of construction underwent even more drastic changes during this period. . . . Between 1926 and 1929 the value of new house building, including major improvements and alterations, rose 17 per cent. In the same period other new building construction increased by 105 per cent, mainly because of the erection of large plants and other business and government buildings. Engineering construction in this period was also stepped up by close to the same proportion, chiefly as a result of large railway and highway construction projects.

'When the break came, late in 1929, construction of all types was drastically reduced. Between 1929 and 1933 residential and engineering construction declined by two-thirds, while building construction other than housing dropped by four-fifths. The latter decline was particularly heavy because, as a result of business failures and retrenchment, considerable factory and commercial space was vacated. . . . The reason why housing, substantial though the decline was, did not drop as much as other types of building construction is that continuing population increase and family formation set practical limits to the number of families that could be accommodated by existing facilities, thus setting a minimum for housing more on physical than on economic grounds. Declining house building costs and increased incidence of owner building involving reduced financial commitments were additional factors.' (*Private and Public Investment in Canada, 1926–1951*, pp. 90–91.)

TABLE 34

Investment in Durable Physical Assets by Type of User, Canada, Selected Years, 1929–1953

Type of User	1929		1950		1951		1952		1953	
	Amount $ mill.	Per Cent of Total	Amount $ mill.	Per Cent of Total	Amount $ mill.	Per Cent of Total	Amount $ mill.	Per Cent of Total	Amount $ mill.	Per Cent of Total
Primary Industries:										
Agriculture and Fishing	130	8.6	473	12.4	515	11.2	555	10.5	546	9.3
Mining	46	3.0	119	3.1	181	4.0	211	4.0	257	4.4
Forest Operations	7	0.4	34	0.9	58	1.3	39	0.7	34	0.6
Sub-total	183	12.0	626	16.4	754	16.5	805	15.2	837	14.3
Secondary Industries:										
Manufacturing	374	24.6	502	13.1	793	17.3	973	18.4	969	16.6
Construction	33	2.2	71	1.9	66	1.4	73	1.4	91	1.5
Sub-total	407	26.8	573	15.0	859	18.7	1,046	19.8	1,060	18.1
Tertiary Industries:										
Public Utilities	344	22.7	720	18.9	900	19.7	1,159	21.9	1,209	20.7
Government Departments	152	10.0	446	11.7	595	13.0	827	15.7	824	14.1
Others[a]	185	12.2	605	15.9	648	14.2	622	11.8	827	14.2
Sub-total	681	44.9	1,771	46.5	2,143	46.9	2,608	49.4	2,860	49.0
Housebuilding	247	16.3	845	22.1	821	17.9	826	15.6	1,084	18.6
TOTAL	1,518	100.0	3,815	100.0	4,577	100.0	5,285	100.0	5,841	100.0
Investment in Plant, Equipment, and Housing as per National Accounts	1,330	87.6	3,216	84.3	3,810	83.2	4,256	80.5	4,840	82.9
Investment by Governments[b]	188	12.4	599	15.7	767	16.8	1,029	19.5	1,001	17.1
TOTAL PRIVATE AND PUBLIC INVESTMENT	1,518	100.0	3,815	100.0	4,577	100.0	5,285	100.0	5,841	100.0

[a] Includes investment by the commercial, financial, and institutional sectors.
[b] Covers investment by government departments and certain types of government housing, e.g. housing for married service personnel.

chewan and Ontario, and nickel in Manitoba, to iron ore in Quebec and Labrador as well as in Ontario, and zinc and lead in New Brunswick. In fact, important mineral discoveries were made throughout Canada in the post-war years as world demand for metals and fuels continued to rise.

The importance of house building as a field of investment also rose from 16.3 per cent in 1929 to 22.1 per cent in 1950 as the nation attempted to catch up with a backlog built up over two decades. Investment in tertiary industries showed little change over this period.

CAPITAL CONSUMPTION AND NET CAPITAL FORMATION

No up-to-date estimate of the stock of capital exists. But some partial data in conjunction with the more comprehensive data on total capital expenditures each year suggest that Canada, like most other young countries undergoing rapid industrialization and mechanization, has built up in a comparatively short period a tremendous quantity of capital equipment. This capital expansion was achieved in the earlier period to a significant extent by borrowing abroad, but in recent periods it has been financed almost entirely from domestic savings (see Section 7).

But as the stock of capital equipment grows larger, the quantity of capital equipment that needs replacement because of deterioration, destruction, damage, or obsolescence also grows larger. This growing need to replace worn-out capital equipment is reflected in the estimates of capital consumption, despite the qualifications made above about their meaning and quality. Capital consumption in the recent years of prosperity and high levels of gross investment is about one-half of new capital expenditures (see Table 35). The proportion was higher in 1929 and lower in 1920. It was higher also in 1910 and 1930, and the rough estimates for 1870 and 1890 suggest that it was three-fifths in those years. Quite apart from the approximate character of the data, the fact that a smaller proportion of resources was devoted to new investment in this earlier period meant that capital stock was increasing at a slower rate than in the prosperous 'twenties and the buoyant post-World War II years. As Table 35 indicates, net capital formation (gross investment minus capital consumption) was about 8 per cent of net national product in 1910 and 1930 and about 10 per cent between 1950 and 1953, compared with 4 per cent in 1870 and 6 per cent in

1890. On the other hand, in the worst depression years, actual disinvestment took place; for example, in 1933 capital consumption was more than double new investment. Disinvestment in that year was about 10 per cent of net national product.

INVESTMENT IN INVENTORIES

Besides investment in durable physical assets, gross domestic investment as defined in the National Accounts also includes investment in inventories. The latter, according to the official terminology of the Dominion Bureau of Statistics, covers the 'net change during the year of business holdings of inventories', or 'that portion of previous years' production which is included in sales of the current year (negative change in inventories). These changes represent net investment or disinvestment by business in inventories. With the exception of farm inventories and stocks of grain in commercial channels, all inventory changes are taken at book value.'[1]

Enterprises whose inventory change is covered include both private and government business enterprises. Among the latter are such undertakings as the Canadian National Railways (which is publicly owned and operated by the Federal Government) and the Ontario Hydro (which is publicly owned and operated by the Ontario Government). The estimates for the earlier years are conceptually comparable with those in the official National Accounts from 1926 on. However, since relevant data were scanty, particularly for 1870, 1890, and 1910, some 'heroic' assumptions were necessary (see Section 11). The estimates for these years are, therefore, only an impression of the kind of inventory changes that might have taken place. No great reliance should be placed on them, their main use being to round out the estimates of gross national expenditure.

For certain purposes estimates of the current value of the change in inventories are preferable to a series which includes changes in the book value of inventories. Preliminary estimates of the former type for a number of key years, originally published in the *Report of the Royal Commission on Prices*[2] are shown in Table 36. They are reproduced here to show that, in relation to the gross national product, the difference between them and the series included in the National Accounts is not

[1] *National Accounts, Income and Expenditure, 1926–1950*, p. 110.
[2] *Report of the Royal Commission on Prices*, Ottawa, 1949, Vol. II, p. 124.

TABLE 35

Gross Investment in Durable Physical Assets, Capital Consumption and Net Capital Formation in Current and Constant (1935–1939) Dollars, Canada, Selected Years, 1870–1953

Year	Current Dollars					Constant Dollars			
	Gross Investment $ mill.	Capital Consumption $ mill.	Net Capital Formation $ mill.	Capital Consumption as Per Cent of Gross Investment	Net Capital Formation as Per Cent of Net National Product	Gross Investment $ mill.	Capital Consumption $ mill.	Net Capital Formation $ mill.	Net Capital Formation as Per Cent of Net National Product
1870	54	36	18	66.7	4.3	100	67	33	4.7
1890	113	70	43	61.9	5.8	210	130	80	6.3
1900	126	96	30	76.2	3.2	227	173	54	3.2
1910	389	222	167	57.1	8.7	610	348	262	9.5
1920	1,008	409	599	40.6	11.7	651	264	387	10.9
1929	1,330	709	621	53.3	11.4	1,228	655	573	12.1
1930	1,054	684	370	64.9	7.6	1,009	655	354	8.1
1933	239	547	−308[a]	−228.9[a]	−10.2[a]	259	593	−334[a]	−10.4[a]
1939	605	610	−5[a]	−100.8[a]	−0.1[a]	591	596	−5[a]	−0.1[a]
1945	986	928	58	94.1	0.5	750	706	44	0.5
1950	3,216	1,636	1,580	50.9	9.5	1,678	853	825	8.6
1951	3,810	1,910	1,900	50.1	9.7	1,786	895	891	8.7
1952	4,256	2,115	2,141	49.7	10.2	1,952	970	982	9.3
1953	4,840	2,364	2,476	48.8	11.2	2,148	1,049	1,099	10.0

[a] Disinvestment.

great enough to invalidate any general observations about long term trends based on data which are in part changes in the volume and in part changes in the book value of inventories. As Table 36 indicates, in three years, 1933, 1939, and 1945, the differences are minor; in 1929, the difference is notable.[1] But since either figure of inventory change is such a small proportion of total national output even a major difference between the two estimates is of minor significance when they are expressed as a ratio of the aggregate. Of course, for a specific study of inventory behaviour and the effect of rapid inventory accumulation or decumulation on short-term changes in economic activity, the difference between the two estimating techniques assumes major significance, but such an inquiry is beyond the scope of this study.

In 1953 the total change in inventories (as per National Accounts) was $605 million, or about 2½ per cent of gross national expenditure. The largest proportion of output absorbed by investment in inventories was for 1951 when it was about 7½ per cent, the smallest was for 1929, one per cent.

Two points deserve special mention from the point of view of long-term changes in investment in inventories and their composition.

First, investment or disinvestment in inventories does not seem to have been more important in the later years than in the earlier years. On a priori grounds one could produce reasons for either an increase or a decrease in the ratio of inventory change to gross national expenditure over the 86 years since Confederation. On the one hand, it might be expected that as the economy became more industrialized and more complex, the size of the supply pipeline needed to keep it functioning would have had to increase faster than the output. On the other hand, one might think that the improvement of transportation and communication services would make it possible for producers and distributors to keep smaller stocks on hand relative to their turnover. Quick means of transportation and communication have made it possible for businessmen to reduce inventory holdings at certain levels. But what has happened in many cases is that where a distributor was able to operate with a reduced volume of in-

[1] If comparable data were available for 1920 and 1951 the difference would be even greater because in these two years prices rose rapidly, inflating the book value of inventories.

TABLE 36

Change in Inventories, Canada, Selected Years, 1870–1953

(Value figures in millions of dollars)

Year	Agricultural Products			All Other Inventories				Total Change in Inventories	Current Value of Physical Change in Inventories[a]	Per Cent of Gross National Expenditure	
	Farm Inventories	Grain in Commercial Channels	Total	Manufacturing	Trade	Other	Total			Total Change in Inventories[b]	Current Value of Physical Change in Inventories
1870	—	—	—	—	—	—	—	14	—	3.1[c]	—
1890	—	—	—	—	—	—	—	13	—	1.6	—
1900	—	—	—	—	—	—	—	13	—	1.3	—
1910	—	—	—	—	—	—	—	176	—	8.2	—
1920	36	19	55	138	76	11	225	280	—	5.1	—
1929	−129	34	−95	42	84	30	156	61	15	1.0	0.2
1930	46	−48	−2	−30	−88	−34	−152	−154	—	−2.8	—
1933	−33	10	−23	−24	−30	−5	−59	−82	−92	−2.3	−2.6
1939	60	127	187	46	80	18	144	331	381	5.8	6.7
1945	−231	−220	−451	123	38	30	191	−260	−324	−2.2	−2.7
1950	131	60	191	329	381	59	769	960	—	5.3	—
1951	354	−1	353	723	357	187	1,267	1,620	—	7.5	—
1952	237	92	329	−31	−37	9	−59	270	—	1.2	—
1953	51	145	196	211	279	−81	409	605	—	2.5	—

[a] As per Royal Commission on Prices.
[b] As defined in the National Accounts.
[c] See notes in Section 11.

ventories he transferred the burden of inventories to the manufacturer.

Second, aggregate changes in inventories are frequently the result of disinvestment in one sector and accumulation in another. For example, in 1952 a bumper crop was responsible for a significant increase in farm inventories while business inventories in the industrial and commercial sectors declined, reflecting in part the cautious attitude of businessmen to some slackening of demand in certain fields, e.g. textiles and consumer durables, in the earlier part of that year. On the other hand, in 1945 when Canada had a fair crop and shipments of agricultural products to war-devastated European and other countries were substantial, farm inventories declined significantly. Manufacturing and trade inventories, however, rose notably as industry was converting to peacetime and the pipeline of civilian goods began to fill (see Table 36).

Agricultural inventories are one of the most uncertain elements in the inventory picture. To a large extent they are determined by two factors over which Canadians have no influence – the weather which affects the size of the crop, and the demand-supply-price situation prevailing abroad. On the other hand, changes in inventory holdings in the manufacturing and trade sectors are largely determined by the judgment of businessmen as to the short run strength of the domestic market. This judgment is, however, influenced to some extent by the course of economic events in the United States (see Section 7). Changes in inventory holdings are, therefore, a barometer not only of the way Canadians feel about the outlook for business, but also of the way in which changes in the supply-demand-price situation of Canada's principal customers and suppliers affect the Canadian market. (See also the discussion of foreign influences on the level of prices in Section 8.)

SAVINGS AND INVESTMENT

The national savings and investment account available back to 1926 throws light on some of the major sources of funds for investment. The term 'investment' is used here in its broadest sense: it comprises gross domestic investment (including change in inventories) and net foreign investment. The three main sources of funds are: personal savings, gross business savings including undistributed corporation profits, depreciation allow-

ances, and similar business costs, and government surplus (or deficit). The two major uses of funds are: gross domestic investment and net foreign investment, the latter being positive when Canada has a surplus on current account and negative when it has a deficit (see also Section 7).

In 1929 personal savings contributed 18 per cent to the financing of total investment and undistributed corporation profits and depreciation allowances (including similar business costs) 84 per cent.[1] In 1950 personal savings contributed only 17 per cent – consumers had embarked on a buying spree in anticipation of higher prices and possible scarcities and their savings slumped accordingly – and undistributed corporation profits and depreciation allowances (including similar business costs) contributed 64 per cent. A substantial government surplus in that year accounting for 17 per cent largely closed the gap between supply of and demand for funds for investment. By 1953 the share of personal savings had risen to 28 per cent; that of undistributed corporation profits and depreciation was 57 per cent; and the share of the government surplus had declined to 4 per cent.

Perhaps the outstanding feature in this savings-investment pattern is the high proportion of new investment financed through the accumulated savings of corporations in the form of undistributed profits or depreciation allowances.[2] In 1953, for example, depreciation allowances were $2,364 million, or about half of total capital expenditures on new construction and machinery and equipment, $4,840 million. The proportion for 1929 or 1950 was roughly the same. Of course, in years of depressed economic conditions the situation was different. In 1933, for example, depreciation allowances were more than twice the investment in new construction and equipment, and the stock of capital equipment reduced.

One other point should be mentioned here: the relationship of net foreign investment to gross domestic investment. The former

[1] These two items add up to more than 100 per cent because net foreign investment and change in inventories are negative.

[2] The data on depreciation allowances and similar business costs include depreciation allowances on property owned by individuals and institutions but the bulk of the allowances are made by corporations. In 1953, for example, something like three-fifths were depreciation allowances made by corporations. To assure comparability the comparison above is between total depreciation allowances and similar business costs and total gross investment in durable physical assets as per national accounts.

TABLE 37

National Savings and Investment Account, Canada, Selected Years, 1929–1953

Item	1929	1930	1933	1939	1945	1950	1951	1952	1953
				SAVINGS ($ million)					
Personal Savings	196	88	−113	304	1,619	645	1,390	1,462	1,539
Gross Business Savings:									
Undistributed Corporation Profits	211	—	−77	272	349	844	721	624	733
Depreciation Allowances and Similar Business Costs	709	684	547	610	928	1,636	1,910	2,115	2,364
Other[a]	−21	39	−60	−68	47	76	−64	−22	10
Total Business Savings	899	723	410	814	1,324	2,556	2,567	2,717	3,107
Government Surplus (+) or Deficit (−)	+9	−222	−174	−41	−1,687	+648	+1,053	+282	+227
Residual Error of Estimate	−13	−14	16	−9	79	−1	−52	119	66
TOTAL	1,091	575	139	1,068	1,335	3,848	4,958	4,580	4,939
				INVESTMENT ($ million)					
Gross Domestic Investment:									
New Residential Construction	247	204	76	185	272	801	781	786	1,061
New Non-Residential Construction	486	381	79	166	252	1,026	1,260	1,554	1,706
New Machinery and Equipment	597	469	84	254	462	1,389	1,769	1,916	2,073
Change in Inventories	61	−154	−82	331	−260	960	1,620	270	605
TOTAL	1,391	900	157	936	726	4,176	5,430	4,526	5,445
Net Foreign Investment:									
U.S.A.	−437	−346	−115	−115	9	−384	−928	−810	−891
U.K. and Other Commonwealth	124	7	113	176	408	−1	193	492	219
Other Countries				62	270	55	211	491	232
TOTAL	−313	−339	−2	123	687	−330	−524	173	−440
Residual Error of Estimate	13	14	−16	9	−78	2	52	−119	−66
TOTAL	1,091	575	139	1,068	1,335	3,848	4,958	4,580	4,939

[a] Covers net bad debt losses of corporations and adjustments on grain transactions and inventory valuation (n.e.i.).

is at times as important as the latter. For example, in 1945 when Canada was financing a large export surplus from her domestic savings – to speed up the ending of the military conflict and to assist in the recovery of war-devastated countries – net foreign investment was almost equal to gross domestic investment.

In 1950, 1951, and 1953 net foreign investment was negative and less than 10 per cent of gross domestic investment. In 1952 exports of goods and services exceeded imports by $173 million, or about 3½ per cent of gross domestic investment (see also Section 7).

Section 6

GOVERNMENT EXPENDITURES

This section deals with the changing role of governments in Canadian economic development as reflected in their expenditures on goods and services. Some supplementary evidence of total budgetary expenditures which include both outlay on goods and services and transfer and other payments is also examined, even though such information on a complete and comparable basis is available only for the recent decades.

The definition of government expenditures on goods and services is that employed in the official National Accounts, namely, 'outlays of federal, provincial and municipal governments (including municipal school corporations) for currently produced goods and services. . . . Government expenditure on goods and services includes both current expenditures, e.g. wages, salaries, and other administrative expenses, and so-called capital or "public investment" expenditures such as outlay for new buildings and highways. No distinction is made, as in the private sector, where such investment outlays would be shown under gross domestic investment. Interest on government debt incurred to finance existing real assets is also included in government expenditure on goods and services; only the "transfer" portion of this debt is excluded. . . . Government expenditure on goods and services thus consists of purchases from Canadian business and non-residents; foreign aid; wages and salaries of government employees; military pay and allowances, including that paid abroad; other military expenditures abroad; and interest on debt incurred to finance existing real assets.'[1]

[1] *National Accounts, Income and Expenditure*, 1926–1950, pp. 108 and 109.

THE SPHERE OF THE FEDERAL GOVERNMENT

Canada is a federal state with the responsibilities of government divided either by constitution or by tradition and practice between the Federal Government and provincial governments, the latter having under their jurisdiction units of local administration, municipalities, counties, etc.

The Federal Government's responsibilities cover mainly matters affecting international relations and the interests of the nation as a whole, including negotiation of international treaties and foreign representation, defence, criminal law, trade and commerce, banking, currency and coinage, citizenship, and taxation. In the field of national development the Federal Government has broad responsibilities in such areas as transportation and communication, e.g. railways, telegraphs, shipping, and civil aviation, and in the field of resources and industrial development particularly as it affects two or more provinces[1] or concerns the relations of Canada with other countries.[2] Other resources development projects directly administered by the Federal Government outside provincial jurisdiction are the development and settlement of the Yukon and Northwest Territories and such responsibilities as national parks.

THE SPHERE OF PROVINCIAL AND MUNICIPAL GOVERNMENTS

Provincial governments have jurisdiction in their own regions over the administration of justice, municipal institutions, the establishment and maintenance of prisons, hospitals, asylums, and charitable institutions, and control of the public lands of the province. The provinces also have control over local works and undertakings, and education. They also have the power of direct taxation and are concerned with matters affecting 'property and civil rights in the province' and 'generally all matters of a merely local or private nature in the province'. As to economic development, the provinces have jurisdiction over

[1] Examples are the Prairie Farm Rehabilitation Act of 1935, the Maritime Marshland Rehabilitation Act of 1948, the Canada Forestry Act of 1949, the 1930 Act providing for coal subventions, and the Emergency Gold Mining Assistance Act of 1948.

[2] Mainly involving projects affecting Canada and the United States, e.g. international bridges across the St. Lawrence River, navigation facilities on the Great Lakes, power projects at the Lake of the Woods, preservation and development works at Niagara Falls, and the Fishway Project on the Fraser River.

the natural resources located in their territory[1] and other industrial development and utility expansion in the sense that they come under the specific responsibilities of the provinces, or under the more general provision of matters relating to 'property and civil rights'. Other matters affecting economic development are of joint concern to the Federal Government and the provinces, e.g. agriculture and immigration.

CHANGING ROLE OF GOVERNMENT

Two aspects of the contributions of government expenditures to economic activity and national development are particularly noteworthy: (*a*) the changing role of governments as a whole in economic affairs over the last eighty-six years; (*b*) the changing role of different levels of government and their varying contribution to economic and industrial growth.

In the period immediately preceding Confederation the philosophy of laissez-faire was at the height of its influence upon public policy throughout the world and an individualistic outlook on life prevailed in Canada's pioneering society. There was pretty general agreement that the task of governments would be accomplished if they 'provided for adequate defence, the enforcement of the general law through the equal administration of justice and the maintenance of a few essential public works. Within this framework of order provided by public authority, individuals were expected to work out their own destiny unrestrained and unassisted by governments.'[2] Over the last eighty-six years several things have happened to alter this attitude toward the role of governments.

Federal Government; 1867–1920. The need to unify the country, to provide a broad system of transportation and communication, to encourage agricultural settlement, resources and industrial development, and to discourage large-scale emigration all led to the adoption by the Federal Government of a 'National Policy', involving large direct capital outlay for economic development and financial and other assistance to private

[1] Provincial expenditures on natural resources development, protection, and conservation are made in such fields as forests, water systems, lands, minerals, and natural gas. Related capital undertakings include expenditures on the development of tourist trade and on surveys, research, and experimentation, which contribute to greater knowledge of the existence and use of natural resources.

[2] *Canada:* 1867–1939, p. 37.

ventures in the national interest. Even though the emphasis changed after the turn of the century, governments continued to play an important part in economic development. The problem then was no longer how to prevent mass emigration but how to facilitate the absorption of the large number of immigrants. In the first half century after Confederation the Federal Government as part of its national development programme leaned toward greater direct participation in economic affairs, encouraging and supplementing private initiative where possible.[1]

Provincial and Municipal Governments; 1867–1920. The situation was somewhat different as far as provincial governments were concerned. Until about 1900 because of the limited financial resources of provincial governments[2] and the slow growth of a system of municipal administration[3] these two levels of government played a lesser role than the Federal Government in economic development.

The situation changed somewhat after the turn of the century. The growing prosperity boosted provincial revenues, reducing the dependence of these governments on federal subsidies[4] and

[1] In the direct field the most important developmental projects were concerned with transportation. Railway tracks were laid linking the Pacific with the Atlantic Ocean and supplementary feeder lines were constructed. Harbour facilities were expanded, particularly in Eastern Canada, to encourage overseas trade. Canals were built, principally in the Great Lakes-St. Lawrence region, to help provide low cost inland transportation. The guiding principle behind these Federal investment projects was to raise the efficiency of the national economy. But assistance was also given to private ventures. It took the form of loans, guarantees, tax concessions, and land grants to those engaged in the building of railway facilities and the colonization of new land, particularly in the West. As agriculture in the Prairie Provinces became a major factor in export trade, private interests built substantial storage and related facilities, particularly grain elevators, and the Federal Government aided the transhipment of grains by adapting railway and harbour facilities to the needs of transporting large quantities of bulk commodities.

[2] 'Provincial governments confined by their narrow revenue systems did not increase their expenditures greatly. Between 1874 and 1896, the total per capita outlay of all the provinces rose only from $1.69 to $2.20. . . . While the provinces were not greatly burdened during this period by their responsibilities for public welfare, there were other significant developments which began to place a strain on their revenue structures. The most important of these was the growth of debt charges' (*Canada: 1867–1939*, pp. 62 and 63).

[3] Slow growth of a system of municipal administration meant that provincial governments had to perform many functions normally considered the responsibility of the municipalities. 'Municipal development lagged . . . except in Ontario. The Maritimes were slow to introduce a system to which they were not accustomed. Some progress was made in Quebec and Manitoba but very little in British Columbia' (*ibid.*, p. 62).

[4] 'By the end of this period, federal subsidies had become a relatively minor part of total provincial revenues, namely, 28 per cent, compared with 43 per cent in 1896 and 58 per cent in 1874' (*ibid.*, p. 86).

enabling them to expand public facilties and services.[1]

The rapid increase in population and large-scale settlement after 1900 speeded up the creation of municipal bodies which by taxing real estate – which was rising rapidly in value, particularly in the larger urban centres – were able to obtain substantial income of their own. Thus, municipalities were able to accept an increasing share of the burden of local development and administration previously carried by provincial governments.

Federal Government; 1920–1953. World War I brought a basic change in the role that the Federal Government played in economic activity and national development. The Federal Government made a direct contribution in periods of emergency like World Wars I and II, but reduced this somewhat in the inter-war and post-World War II periods. In these years of peace greater emphasis was placed on encouragement and assistance to investment projects undertaken by other governments and by private individuals and enterprises. During the two world wars the Federal Government curtailed civilian investment projects and made large expenditures on military and related installations required for training and defence purposes, and on industrial facilities needed for an extensive munitions and military equipment production programme. Substantial expenditures were also made in creating and maintaining large military forces, both overseas and at home.[2]

Among the reasons for the Federal Government's partial withdrawal from direct participation in economic development

[1] 'The provinces were encouraging the construction of railways and facilitating settlement on their own frontiers' (*ibid.*, p. 83). In 1913, 80 per cent of the total provincial debts and 40 per cent of the current expenditures were incurred for development.

[2] 'During the six years ending 31st March 1920, the Dominion expended about $2,200 million in excess of the revenues received from taxation. The war had cost $1,700 million, $350 million were spent on railways and public works, and about $150 million net was lent to the British and foreign governments. Only about $200 million of this money was secured from abroad, and the whole of the remaining $2,000 million was obtained at home' (J. J. Deutsch, 'War Finance and the Canadian Economy, 1914–1920', *Canadian Journal of Economics and Political Science*, November 1940, p. 532). Federal Government expenditures directly associated with the military efforts of World War II, including military equipment, guns, and ammunition made available to Canada's allies under Mutual Aid and other arrangements, amounted to about $16 billion between 1939 and 1945 (see *National Accounts, Income and Expenditure, 1938–1946*, Ottawa, 1947, p. 5). Of this, close to $11 billion represented expenditures involved in creating the military installation and war industry and outlay on the purchase of military equipment and supplies (J. de N. Kennedy, *History of the Department of Munitions and Supply*, Ottawa, 1950, Vol. I, p. 9). Canada became a heavy net exporter during World War II, paying for the export surpluses out of current production.

after World War I were: the near completion of two major tasks undertaken since Confederation, i.e. the creation of a national rail and water transportation system and the opening up and settlement of the West; the growing willingness and ability of provincial and municipal governments to create the facilities required to keep up with the rapidly growing industrialization and urbanization; financial considerations, particularly the heavy debts incurred in World Wars I and II, and the need to meet railway guarantees and deficits, as well as a trend toward assuming greater social security commitments on the part of the Federal Government.

Offsetting this gradual and partial withdrawal from direct development activity was the increased financial assistance by the Federal Government to investment projects undertaken by other governments and by private entrepreneurs.[1]

But as these federal Government expenditures were declining, two other types were assuming increasing importance: armament expenditures, as the costs of maintaining freedom and security rose; and transfer payments, as interest payments on the national debt, which had risen rapidly as a result of two world wars, increased notably and as social security programmes were expanded. As will be seen below, government transfer payments have become a much greater factor influencing the levels of economic activity and the pattern of individual behaviour than ever before.

PROVINCIAL AND MUNICIPAL GOVERNMENTS: 1920–53

Provincial and Municipal Governments; 1920–1953. Provincial and municipal governments have assumed increasing impor-

[1] Federal Government encouragement to private investment in the inter-war period included long-term loans to farmers under the Canadian Farm Loan Act, 1927, to home builders under the Dominion Housing Act, 1935, and the National Housing Act, 1938, guarantees for home improvement loans under the Home Improvement Loans Guarantee Act, 1937, and various tax concessions designed to encourage industrial expansion and greater use of resources. Other examples of government assistance to privately-initiated industrial and economic development in the post-World War II period include: loans for the establishment of new industries which could not obtain credits from commercial sources, provided under the Industrial Development Bank Act of 1944; loans to home owners and builders of rental housing under the National Housing Act, 1944; guarantees to banks for short- and intermediate-term loans to farmers under the Farm Improvement Loans Act, 1944; sale or lease to private industry of Crown-owned plants erected during World War II for munitions and related production; and a variety of tax concessions, such as special depreciation provisions and a number of tax exemptions designed to encourage resources development, research, expansion of capital facilities, and the establishment of small business.

tance in economic affairs, particularly since World War I. Prosperous economic conditions in the 'twenties increased their revenues[1] and made it easier for them to meet the growing demands for better regional and local transportation, public utility and community facilities,[2] education, and health and welfare services.[3]

While it was not too difficult to satisfy public demands for greater facilities and services in the prosperous 'twenties, the provinces and municipalities faced a severe test in the decade that followed. Relief and welfare payments were overwhelming in the depressed 'thirties, representing an outlay far beyond the financial resources of most provinces.[4] Thus, the financial situation of many provincial and municipal governments deteriorated rapidly. The situation changed materially with the outbreak of World War II. Rising levels of income and increasing economic activity boosted the revenues of provinces and municipalities. Rapid contraction in unemployment reduced the need for relief and other welfare payments. Further, because of the necessity to conserve men and materials most provinces

[1] 'Greatly increased revenues were necessary to meet some $173 million increase in annual expenditures of 1930 over 1921. Municipalities provided for their added costs by increased returns from existing sources of revenue, while the provinces relied partly on the increased yield of old sources and partly on new sources which they discovered', including liquor and gasoline taxes and licensing fees from motor vehicles (*Canada: 1867–1939*, p. 129).

[2] Three reasons contributed to the importance of provincial governments in particular in regional economic development after World War I. First, the development of motor transportation and, associated with it, the growth of inter-community trade and tourist traffic called for a well laid out network of provincial highways and roads. Secondly, the growing process of urbanization and industrialization called for large public utility facilities, e.g. electric power, telephones, etc., the establishment of which was frequently beyond the means of individual municipalities. A large part of the public utility development was carried out by private groups, but some was undertaken by provincial governments, the notable examples being the Ontario Hydro-Electric Power Commission and the provincially-operated telephone systems in the Prairie Region. Thirdly, after the first half-century of Confederation most of the easily accessible land had been settled and further development of the country, particularly the north, required heavy capital outlay in the form of roads, colonization efforts, etc. At the same time, in response to public demand, provincial governments began to place greater emphasis on the development and conservation of those natural resources within provincial boundaries which would complement the industrial and commercial expansion accelerated by the events of World War I.

[3] 'Between 1921 and 1930 current public welfare expenditures of all governments rose 130 per cent. The Dominion share of this increase was confined almost entirely to the financial support given to provincial old-age pensions schemes and relief grants which reappeared again in 1930. Three-fourths of the added outlays were borne by the provinces and municipalities' (*ibid.*, p. 128).

[4] For a summary of Federal, provincial, and municipal government policies relating to unemployment relief works in the 'twenties and 'thirties, see 'Unemployment Relief Works and Related Projects', *Private and Public Investment in Canada, 1926–1951*, pp. 241–45.

and municipalities confined their capital expenditures to essentials and kept other expenditures to a minimum. A substantial proportion of receipts were, therefore, devoted to repaying debts, and the credit standing of most provinces and municipalities had improved greatly by the end of World War II.

The prosperity and rapid natural resources development after World War II contributed to a further improvement in the financial position of provincial governments, enabling them to proceed with many of the regional development schemes that had been postponed during the depressed 'thirties and the war years – from extensive road building programmes to greater financial assistance to municipalities to extend water, sewage disposal, school, and other public facilities. These expenditures were quite important since many municipalities, despite the improvement in financial position and credit standing, could not keep up with the demands being made upon them. Taxation of real estate is a major source of the revenue of municipalities, and since real estate values, particularly of older properties, had not risen much while rents were controlled, such revenues were also curtailed. Notwithstanding the difficulties which municipalities experienced in raising sufficient revenues, expenditures by both provincial and municipal governments rose fairly steadily in the post-World War II period.

By the end of 1953 provincial and municipal governments had assumed, just as the Federal Government had, an important role in the creation of an economic climate where industry and commerce could grow freely and individual initiative be encouraged.[1] Governments were providing the facilities and services needed for private enterprise to thrive, as far as possible, unhampered by direct government interference.

IS THERE A TREND TOWARD INCREASING DIRECT PARTICIPATION OF GOVERNMENTS IN ECONOMIC AFFAIRS?

In examining the quantitative evidence below, an attempt is made to deal with two questions which have been frequently raised in the post-war period: (*a*) Is there a trend toward increasing direct participation of governments in economic affairs? If so, it should be reflected in a growing proportion of governmental expenditures in gross national expenditures. (*b*)

[1] In 1953, provincial and municipal expenditures on goods and services, $1,836 million, were almost three times the Federal Government outlay for civilian purposes, $619 million.

Is there a trend toward centralization? If so, the proportion of Federal Government expenditures in the total expenditures by all governments should be growing.

Since the evidence can be used to support different points of view, it is of particular importance that the definitions used to illustrate each view point are clearly kept in mind.

First, in 1953 government expenditures on goods and services were about 18 per cent of total gross national expenditure, compared with about 4½ per cent in 1870. Obviously, then, government through direct spending affects economic activity to a much greater extent than at the time of Confederation. In the 'twenties, for the years shown in Table 38, the proportion was about 11 per cent, and for the 'thirties it varied from 13 to 15 per cent. However, if military expenditures by the Federal Government are excluded, expenditures by all governments for civilian purposes in 1953 amounted only to some 9 per cent of gross national product and similar proportions are indicated for 1950, 1951, and 1952. Since military expenditures in the 'twenties and 'thirties were negligible – except after the outbreak of World War II in September, 1939 – it may be said that direct government expenditures for non-military purposes currently absorb a smaller proportion of the nation's resources than before the war.

Secondly, in the post-World War II period interest payments on the national debt, which had increased substantially as a result of the war were heavy.[1] Moreover, social security and welfare payments by both Federal and provincial governments have expanded materially.[2] Budgetary expenditures have risen more rapidly in relation to gross national expenditures than government expenditures on non-military goods and services.

Total government expenditures, which include expenditures on goods and services, transfer payments to the private sector, subsidies, and Federal Government transfer payments to provincial and municipal governments, were 28 per cent of the gross national expenditure in 1953. Government expenditures, excluding military expenditures of the Federal Government, were 20

[1] The gross national debt rose from $3.7 billion on 31st March 1939 to $19 billion on 31st March 1946.

[2] Notwithstanding the rapid increase in national social security coverage in Canada – unemployment insurance introduced in 1940, family allowances in 1945, and old-age pensions in 1952 – the proportion of social security expenditures to gross national expenditure has not changed: from 4 per cent in 1939 to 5 per cent in 1951 and 6 per cent in 1952 and 1953.

TABLE 38

Government Expenditures on Goods and Services, in Current and Constant (1935–1939) *Dollars, Canada, Selected Years*, 1870–1953

Year	Federal Government $ million		Provincial and Municipal Governments $ million		All Governments $ million		Federal Government Expenditures as Per Cent of All Government Expenditure	All Governments' Expenditures as Per Cent of Gross National Expenditure	
	Current Dollars	Constant Dollars	Current Dollars	Constant Dollars	Current Dollars	Constant Dollars		Current Dollars	Constant Dollars
1870 . .	11	17	10	15	21	32	52.4	4.6	4.2
1890 . .	20	33	34	56	54	89	37.0	6.6	6.4
1900 . .	29	50	48	84	77	134	37.7	7.5	7.3
1910 . .	59	82	114	159	173	241	34.1	8.1	7.8
1920 . .	176	121	378	259	554	380	31.8	10.0	9.9
1929 . .	173	160	509	469	682	629	25.4	11.1	11.8
1930 . .	186	173	581	540	767	713	24.3	13.8	13.9
1933 . .	130	131	396	398	526	529	24.7	14.8	14.0
1939 . .	222	224	513	518	735	742	30.2	12.9	13.1
1945 . .	3,110	2,363	594	451	3,704	2,814	84.0	31.3	30.2
1950 . .	980	579	1,346	796	2,326	1,375	42.1[a]	12.8[b]	13.3
1951 . .	1,694	895	1,549	818	3,243	1,713	52.2[a]	15.1[b]	15.7
1952 . .	2,470	1,254	1,789	908	4,259	2,162	58.0[a]	18.4[b]	18.6
1953 . .	2,526	1,239	1,836	901	4,362	2,140	57.9[a]	17.9[b]	17.7

[a] The proportion of Federal Government non-military expenditures to non-military expenditures by all governments were: 26 per cent, 26 per cent, 27 per cent, and 25 per cent, respectively.

[b] The proportions of non-military expenditures by all governments to gross national expenditure were about 10 per cent in each year.

per cent, and the proportion was the same in 1950 and 1952 and a little lower in 1951, when it was 18 per cent. These compare with 15 per cent in 1929, 27 per cent in 1933, and 21 per cent in 1939 (Table 39).

DO EXPENDITURE DATA SUGGEST A TREND TOWARD CENTRALIZATION?

Thirdly, the proportion of expenditures on goods and services by the Federal Government in total government expenditures, in Canada, war emergencies or periods of rearmament excepted, has declined. In 1953 this proportion was about 58 per cent; and if military expenditures are excluded, it was 25 per cent. In 1870 expenditures by the Federal Government were about 52 per cent of total government expenditures on goods and services. The proportion declined steadily to 38 per cent in 1900, 32 per cent in 1920, and 25 per cent in both 1929 and 1933. The latter part of the 'thirties saw a reversal in the trend with the ratio rising to 30 per cent in 1939. The 1953 ratio of federal non-military expenditures to total government non-military expenditures is therefore lower than the ratios indicated for 1920 and 1939 and equal to those indicated for 1929 and 1933. The data on government expenditures on goods and services provide little evidence of centralization. In fact, there is some evidence that the trend is in the opposite direction though it may be reversed in war periods and other emergencies.

Fourthly, the situation is different if the comparison is on the basis of *total* expenditures, i.e. including transfer payments. That Federal Government expenditures other than on goods and services have increased more rapidly than similar expenditures by provincial and municipal governments is due to: (*a*) considerable increase in interest payments on the national debt, post-war as compared with pre-war, (*b*) assumption by the Federal Government of increasing responsibilities for social security and welfare programmes, and (*c*) a new type of Federal Government payments to provincial governments under the Federal-provincial tax rental agreements (payments are made under taxation agreements expiring in 1957 to nine out of the ten provinces in lieu of corporation and personal income taxes which, in the participating provinces, are collected by the Federal Government only).

In 1953 total Federal Government expenditures were 66 per cent of total expenditures by all governments if military outlay

TABLE 39

Total Expenditures by Federal, Provincial and Municipal Governments, by Type, Canada, Selected Years, 1870–1953

(In millions of dollars)

Year	Federal Government				Provincial and Municipal Governments				All Governments				Total of All Government Expenditure as a Per Cent of Gross National Expenditure
	Goods and Services	Transfer Payments	Other[a]	Total[b]	Goods and Services	Transfer Payments	Other[a]	Total	Goods and Services	Transfer Payments	Other[a]	Total	
1870	11	10		21	10	—	—	—	21	—	—	—	—
1890	20	21		41	34	—	—	—	54	—	—	—	—
1900	29	29		58	48	—	—	—	77	—	—	—	—
1910	59	84		143	114	—	—	—	173	—	—	—	—
1920	176	352		528	378	—	—	—	554	—	—	—	—
1929	173	145	22	340	509	91	—	600	682	236	22	940	15.2
1930	186	150	31	367	581	107	1	689	767	257	32	1,056	19.0
1933	130	165	64	359	396	190	—	586	526	355	64	945	26.6
1939	222	174	61	457	513	227	1	741	735	401	62	1,198	21.0
1945	3,110	737	414	4,261	594	211	5	810	3,704	948	419	5,071	42.8
1950	980	1,020	311	2,311	1,346	455	3	1,804	2,326	1,475	314	4,115	22.6[c]
1951	1,694	984	383	3,061	1,549	498	4	2,051	3,243	1,482	387	5,112	23.8[c]
1952	2,470	1,400	464	4,334	1,789	425	4	2,218	4,259	1,825	468	6,552	28.2[c]
1953	2,526	1,487	518	4,531	1,836	466	3	2,305	4,362	1,953	521	6,836	28.0[c]

[a] Subsidies and federal transfer payments to provincial and municipal governments.

[b] Total budgetary Federal Government expenditures for 1870–1920 and for 1929–53 are not comparable. The former are from the Public Accounts and the latter from the National Accounts after adjustment (see *Government Transactions Related to the National Accounts 1926–1951*, Dominion Bureau of Statistics Reference Paper, Ottawa, 1952, pp. 32 and 33).

[c] The proportions of non-military expenditures by all governments to total gross national expenditure were 20 per cent, 18 per cent, 20 per cent, and 20 per cent, respectively.

TABLE 40

Percentage Distribution of Total Expenditures by Federal, Provincial and Municipal Governments, by Type, Canada, Selected Years, 1870–1953

Year	Federal Government				Provincial and Municipal Governments				All Governments			
	Goods and Services	Transfer Payments	Other[a]	Total	Goods and Services	Transfer Payments	Other[a]	Total	Goods and Services	Transfer Payments	Other[a]	Total
1870	52.4	47.6		100.0	—	—	—	—	—	—	—	—
1890	48.8	51.2		100.0	—	—	—	—	—	—	—	—
1900	50.0	50.0		100.0	—	—	—	—	—	—	—	—
1910	41.3	58.7		100.0	—	—	—	—	—	—	—	—
1920	33.3	66.7		100.0	—	—	—	—	—	—	—	—
1929	50.9	42.6	6.5	100.0	84.8	15.2	—	100.0	72.6	25.1	2.3	100.0
1930	50.7	40.9	8.4	100.0	84.3	15.6	0.1	100.0	72.6	24.4	3.0	100.0
1933	36.2	46.0	17.8	100.0	67.6	32.4	—	100.0	55.6	37.6	6.8	100.0
1939	48.6	38.1	13.3	100.0	69.2	30.6	0.2	100.0	61.3	33.5	5.2	100.0
1945	73.0	17.3	9.7	100.0	73.3	26.1	0.6	100.0	73.0	18.7	8.3	100.0
1950	42.4	44.1	13.5	100.0	74.6	25.2	0.2	100.0	56.5	35.9	7.6	100.0
1951	55.3	32.2	12.5	100.0	75.5	24.3	0.2	100.0	63.4	29.0	7.6	100.0
1952	57.0	32.3	10.7	100.0	80.7	19.2	0.1	100.0	65.0	27.9	7.1	100.0
1953	55.8	32.8	11.4	100.0	79.7	20.2	0.1	100.0	63.8	28.6	7.6	100.0

[a] Subsidies and federal transfer payments to provincial and municipal governments.

is included and 53 per cent if it is excluded. In the pre-war period total Federal Government expenditures were a smaller proportion: 36 per cent in 1929, 35 per cent in 1930, and 38 per cent in 1933 and 1939.

THE INDIRECT EFFECTS OF GOVERNMENT ECONOMIC POLICIES

However, direct expenditures by governments do not wholly reflect the influence that present-day government exercises in economic affairs. The decisions of private individuals and economic activity in general are influenced by government economic policies in the fiscal, monetary, trade, and related fields. Such policies are often not reflected in payments made by the government, and when they are, such payments are usually out of all proportion to the effect of the policy on levels of employment and income. For example, the influence of the bank on the availability and terms of credit does not necessarily involve any outlay of funds, but its effects are widely felt when the necessity for action arises. Another example is the recent anti-inflationary credit measures taken by the government after the outbreak of war in Korea.[1] Still another example is the provision for joint loans (that is, with lending institutions) for housing purposes under the National Housing Act, 1944 and predecessor legislation.[2] From 1935 to 1953 a total of $1.2 billion of joint loans were made available and the Federal Government's share was some $300 million. Actual losses incurred during this period were infinitesimal – about $240 thousand, or one-fifth of one per cent of the total loans approved.

LONG-TERM TRENDS IN GOVERNMENT EXPENDITURES ON GOODS AND SERVICES

Government expenditures on goods and services per capita, in current prices, were $290 in 1953; or in real terms, about sixteen times what they were in 1870 (Table 41). Gross national product per capita in real terms in 1953 was four times what it had been in 1870.

[1] For a summary, see Budget Address by the Minister of Finance, *House of Commons Debates*, 10th April 1951, pp. 1798 ff.

[2] Under a new housing act passed in 1954 the joint-loan system was replaced by a government-guarantee system of loans for new house-building by approved lending institutions (see *National Housing Act, 1954*, Chapter 23, Statutes of Canada, 1953–54).

TABLE 41

Per Capita Government Expenditures on Goods and Services, in Current and Constant (1935–1939) *Dollars, Canada, Selected Years*, 1870–1953

Year	Federal Government		Provincial and Municipal Governments		All Governments	
	Current Dollars	Constant Dollars	Current Dollars	Constant Dollars	Current Dollars	Constant Dollars
1870	3	5	3	4	6	9
1890	4	7	7	12	11	19
1900	5	9	9	16	14	25
1910	8	12	16	22	24	34
1920	20	14	44	30	64	44
1929	17	16	50	46	67	62
1930	18	17	56	52	74	69
1933	12	12	37	37	49	49
1939	20	20	45	46	65	66
1945	255	194	49	37	304	231
1950	71	42	97	57	168	99
1951	119	63	108	57	227	120
1952	169	86	122	62	291	148
1953	168	82	122	60	290	142

The rate of increase of government expenditures on goods and services varied in the three sub-periods from an annual rate in constant dollar terms of 4.89 per cent for 1870 to 1900 to 5.35 per cent for 1900 to 1920 and to 5.38 per cent for 1920 to 1953 (see Table 42). The comparatively high rate for the first period reflects the active part played by the Federal Government in establishing the framework for settlement and industrial development and the creation of the appropriate provincial and municipal institutions. Although in the second period the Federal Government participated directly in economic development at a slower rate of increase, the special needs of World War I and its aftermath resulted in a greater over-all rate of increase. Provincial and municipal expenditures increased at a slower rate in this period than in the first. In the third period, although the Federal Government had withdrawn from some of its traditional functions, the exigencies of the depressed 'thirties, World War II, and the more recent necessity to rearm were major factors causing a higher rate of increase.

TABLE 42

Percentage Changes in Government Expenditures on Goods and Services in Constant (1935–1939) *Dollars, Canada, Selected Periods*, 1870–1953

Item	Period				
	1870–1900	1900–1920	1920–1953	1870–1953	1900–1953
Total Expenditures:					
Federal Government:					
Total Period	194.1	142.0	923.9	7,188.2	2,378.0
Annual Average	3.66	4.52	7.32	5.30	6.24
Provincial and Municipal Governments:					
Total Period	460.0	208.3	247.9	5,906.7	972.6
Annual Average	5.91	5.79	3.85	5.06	4.58
All Governments:					
Total Period	318.7	183.6	463.2	6,587.5	1,497.0
Annual Average	4,89	5.35	5.38	5.19	5.37
Per Capita Expenditures:					
Federal Government:					
Total Period	80.0	55.6	485.7	1,540.0	811.1
Annual Average	1.98	2.23	5.50	3.43	4.26
Provincial and Municipal Governments:					
Total Period	300.0	87.5	100.0	1,400.0	275.0
Annual Average	4.73	3.19	2.12	3.32	2.53
All Governments:					
Total Period	177.8	76.0	222.7	1,477.8	468.0
Annual Average	3.46	2.87	3.61	3.38	3.33

PUBLIC INVESTMENT AND OTHER GOVERNMENT EXPENDITURES

A separation for the recent period of government expenditures on goods and services into capital expenditures or 'public investment', as it is generally referred to, and government expenditures on ordinary services is shown in Table 43. The data reveal the declining importance which the national government has attached to public investment and the increasing significance given to public investment by provincial and municipal governments. In 1929, 17 per cent of Federal Government expenditures went into public investment, compared with 9 per cent in 1953. For the provinces and municipalities the proportion was 22 per cent in 1929, and after declining to 11 per cent in the depressed 'thirties increased to 24 per cent in 1950 and to 26 per cent in 1953.

For all governments taken together public investment played a comparatively minor part in government expenditures on goods and services, the average for 1950–53 being about 15 per cent, about one-fourth below the 20 per cent ratio in 1929. These data should be a warning to those who expect great miracles from an expanding public investment programme in a period of declining levels of employment and income. Only a small part of government expenditures on goods and services has in this generation been devoted to public investment undertakings and a substantial change in the proportion would necessitate not only a departure from traditional policies, but also the establishment of an extensive administrative apparatus specifically concerned with the implementation of a large-scale public investment programme.

THE MEANING OF TOTAL GOVERNMENT EXPENDITURES

Total government expenditures, as defined in this study, are those contained in the National Accounts, which are adapted from the data shown in the Public Accounts. One of the major adjustments is to a calendar year basis since the Public Accounts data are for fiscal years, which for most governments end on 31st March. Other important adjustments arise out of the necessity to show total expenditures (and revenues) on the basis of the accounting concepts which are used in the National Accounts.[1]

[1] For a detailed explanation of the definition and methods used to adjust the budgetary expenditures and revenues in the *Public Accounts* to the National Accounts concept, see *Government Transactions Related to the National Accounts, 1926–1951*, Dominion Bureau of Statistics Reference Paper, December 1952.

TABLE 43

Public Investment and Other Government Expenditures on Goods and Services, Canada, Selected Years, 1870–1953

Year	Federal Government				Provincial and Municipal Governments				All Governments			
	Public Investment $ mill.	Other Goods and Services $ mill.	Total Expenditures $ mill.	Public Investment as a Per Cent of Total Expenditures	Public Investment $ mill.	Other Goods and Services $ mill.	Total Expenditures $ mill.	Public Investment as a Per Cent of Total Expenditures	Public Investment $ mill.	Other Goods and Services $ mill.	Total Expenditures $ mill.	Public Investment as a Per Cent of Total Expenditures
1870[a]	—	—	11	—	—	—	10	—	—	—	21	—
1890[a]	—	—	20	—	—	—	34	—	—	—	54	—
1900[a]	—	—	29	—	—	—	48	—	—	—	77	—
1910[a]	—	—	59	—	—	—	114	—	—	—	173	—
1920[a]	—	—	176	—	—	—	378	—	—	—	554	—
1929	58	282	340	17.1	130	470	600	21.7	188	752	940	20.0
1930	79	288	367	21.5	154	535	689	22.4	233	823	1,056	22.1
1933	26	333	359	7.2	62	524	586	10.6	88	857	945	9.3
1939	45	412	457	9.8	115	626	741	15.5	160	1,038	1,198	13.4
1945	182[b]	4,079	4,261	4.3	116	694	810	14.3	298	4,773	5,071	5.9
1950	173[b]	2,138	2,311	7.5	426	1,378	1,804	23.6	599	3,516	4,115	14.6
1951	273[b]	2,788	3,061	8.9	494	1,557	2,051	24.1	767	4,345	5,112	15.0
1952	433[b]	3,901	4,334	10.0	596	1,622	2,218	26.9	1,029	5,523	6,552	15.7
1953	408[b]	4,123	4,531	9.0	593	1,712	2,305	25.7	1,001	5,835	6,836	14.6

[a] Breakdown not available.
[b] Excludes military equipment.

Total government expenditures as presented in the National Accounts are divided into:

(*a*) Expenditures on goods and services which consist of 'outlays of Federal, provincial and municipal governments (including municipal school corporations) for currently produced goods and services. The figure is essentially a residual one, derived by eliminating from government budgetary expenditures all outlays which are not made directly to purchase new goods and services – i.e. subsidies, transfer payments to individuals and private non-commercial institutions, transfers to other governments, losses of government-owned enterprises, provisions for debt retirement, reserves, write-downs and other book-keeping adjustments, and purchases of land and used capital assets. . . . The expenditure of the Post Office Department is also eliminated, since this agency is treated in the National Accounts as a government business enterprise.'

(*b*) Transfer payments which are defined as 'unilateral payments for which no service is rendered in return. Since they do not represent utilization of economic resources they are not included in the consolidated accounting of total output represented by the Gross National Product and Expenditure. They constitute a transfer from one sector to another of income arising in production. In the main, transfer payments are payments made by governments to persons in the form of various social security benefits, and as interest. In this context, persons are defined to include private non-commercial institutions such as universities, hospitals, and charitable organizations, the benefits of whose expenditures out of government grants accrue to individuals.'

(*c*) Subsidies which are 'defined as contributions by government towards the current production costs of business. The greater part of the subsidy figure consists of federal production and consumption subsidies which are made with a view to price stabilization. Such payments are primarily made in order that the consumer may benefit from lower prices, or to protect the producer against a decline in the price of his product.'

(*d*) Transfer payments to other governments, which cover 'federal payments to the provincial and municipal governments for which no productive service is rendered in return. The economic effects of these payments must be measured in terms

of the final disposition of the funds, i.e. whether at the provincial and municipal levels they are spent for goods and services, paid out as transfers to persons, or paid to business as a subsidy.'[1] (In Tables 39 and 40 subsidies and transfer payments to other governments are combined, but greater detail is available back to 1926 in the official National Accounts.)

LONG-TERM TRENDS IN TOTAL GOVERNMENT EXPENDITURES

Total federal expenditures for 1870–1920 are not comparable with the data for later years because they are unadjusted Public Accounts data (Tables 39 and 40). But even the unadjusted data for the Federal Government indicate that the trend toward greater emphasis on transfer payments had its beginning before 1926. The unadjusted data suggest a decline in goods and services from about one-half of total federal expenditures in 1870 to about one-third in 1920 (in that year veterans' benefits that were part of the demobilization programme may have resulted in an abnormally large proportion for transfer payments).

In 1929 on the basis of the new series from the National Accounts goods and services were about one-half of total federal expenditures. In 1933 the proportion dropped to a little over one-third as the Federal Government made large relief payments and provided increasing financial assistance to provincial and municipal governments. The war saw a significant increase in the proportion, and even in 1945, it was about three-quarters of total federal expenditures. By 1950 the ratio was down to about two-fifths, but rearmament drove it up again to about three-fifths in 1952 and this level was maintained in 1953 (Tables 39 and 40).

For provincial and municipal governments the trend appears to be toward a moderate decline in the proportion of expenditures on goods and services and a corresponding rise in that of transfer payments, mainly a result of the increasing emphasis on welfare expenditures. Transfer payments in 1953 were 20 per cent of total provincial and municipal expenditures as against 15 per cent in 1929. In the 'thirties, however, because of the financial stringency of the provincial and municipal governments and the necessity to make welfare payments, the proportion of

[1] *Government Transactions Related to the National Accounts, 1926–1951*, pp. 25–27.

transfer payments to total budgetary expenditures rose to over 30 per cent, higher than in either the 'twenties or the 'fifties.

Total Federal Government expenditures per capita in current dollar terms was about $300 in 1953, or about five times per capita that of 1929. The corresponding rise in Federal Government expenditures on goods and services per capita in real terms was also about the same. The increase in *total* Federal Government expenditures per capita in constant dollars from 1870 to 1920 was also about five times (Table 44).

TABLE 44

Total and Per Capita Expenditures in Constant (1935–1939) *Dollars, Canada, Selected Years, 1870–1953*

Year	Federal Government		Provincial and Municipal Governments		All Governments		Federal Government Expenditure as Per Cent of All Governments Expenditures
	Total $ mill.	Per Capita $	Total $ mill.	Per Capita $	Total $ mill.	Per Capita $	
1870	32	9	—	—	—	—	—
1890	68	14	—	—	—	—	—
1900	101	19	—	—	—	—	—
1910	199	28	—	—	—	—	—
1920	362	42	—	—	—	—	—
1929	314	31	553	55	867	86	36.2
1930	341	33	640	62	981	95	34.8
1933	361	34	590	55	951	89	38.0
1939	461	41	748	66	1,209	107	38.1
1945	3,238	265	615	50	3,853	316	84.0
1950	1,366	98	1,066	77	2,432	175	56.2
1951	1,617	113	1,083	76	2,700	189	59.9
1952	2,200	150	1,126	77	3,326	227	66.1
1953	2,223	148	1,131	75	3,354	223	66.3

For provincial and municipal governments the increase from 1929 to 1953 in constant dollars per capita was about one-half. Total provincial and municipal expenditures per capita in current dollars amounted to $153 in 1953, about one-half the Federal Government expenditures per capita. But exclusive of military expenditures, total Federal Government expenditures per capita of $175 is not much higher than that for total provincial and municipal government expenditures.

GOVERNMENT PURCHASES FROM BUSINESS

In considering the role of government spending on economic activity, one other point needs to be mentioned here. Not all the services a government provides and not all the facilities it creates are the result of the efforts of people it employs. In fact, the three levels of government taken together have spent more money on goods and services purchased from business than on employing civil servants, as the following data illustrate:

	1950		1953	
	Amount $ mill.	Per Cent	Amount $ mill.	Per Cent
Purchases from Business	1,150	49.4	2,544	58.3
Civilian Wages and Salaries of Persons Directly Employed by Governments	933	40.1	1,388	31.8
Military Pay and Allowances	137	5.9	309	7.1
Interest Payments on Debt Incurred for Public Capital Projects	106	4.6	121	2.8
Total Expenditures on Goods and Services	2,326	100.0	4,362	100.0

INCOME ORIGINATING IN GOVERNMENT

One other way of illustrating that the government sector plays a small part in economic affairs as a direct employer of labour and as a source of income is to treat government as an industry. National income originating in government was between 8 and 9½ per cent of total national income between 1950 and 1953,

TABLE 45

Income Originating in Government and Total National Income, Canada, Selected Years, 1929–1953

Year	Income Originating in Government	Total National Income	Income Originating in Government as Per Cent of Total National Income
1929	384	4,789	8.0
1930	412	4,283	9.6
1933	370	2,452	15.1
1939	460	4,373	10.5
1945	1,776	9,840	18.0
1950	1,176	14,550	8.1
1951	1,397	17,138	8.2
1952	1,644	18,254	9.0
1953	1,821	19,086	9.5

about the same proportion as in 1929 and a smaller proportion than in either 1933 (15 per cent) or 1939 (11 per cent) (Table 45). It will be recalled that government expenditures on goods and services were 18 per cent of gross national expenditure in 1953 and total expenditures of Federal, provincial and municipal governments were 28 per cent of gross national expenditure.

SECTION 7

FOREIGN TRADE AND THE BALANCE OF PAYMENTS

The importance, character, and development of Canada's external trade have been governed since the earliest times by one paramount factor. Because of her natural resources and geography, Canada cannot prosper unless she carries on a large volume of trade. The point was made in Section 1 that many of Canada's resources are in the interior or in the northern regions and costs of exploration and development tend to be high. Though this disadvantage can be offset by large-scale operations, the latter can only be undertaken if markets are found abroad. Hence it can be said that over the last century the development of the interior has actually intensified the external orientation of Canada. Each step inward has meant another step outward to develop further the network of commercial relations with other nations. This is in marked contrast to the experience of the United States where the pushing back of the frontier meant the creation of a greatly diversified economy, with a high degree of self-sufficiency.

Another important reason why Canada is an exporting nation is the proximity of her settled areas to the markets of the United States and the low cost of shipping her products across the Atlantic to the heavily populated and highly industrialized areas of Europe. Indeed, the main regions of Canada have in some respects easier access to the United States than to other sections of Canada – a factor that has sometimes made it more profitable to export from one part of Canada items which have to be imported into other parts, e.g. coal.

Apart from the obvious but sometimes neglected fact that over the long run a country must accept imports in payment for its exports, by importing Canada has been able to obtain many items that are not available within the country or that

could be produced only at a considerably higher cost. Canada is not unique in this respect, but the proportion of her needs that can be obtained more cheaply abroad tends to be larger than in most other countries. Because of her location Canada must import such items as raw cotton and oranges which are grown in warmer climates. She must also obtain raw materials which are not available at all or in the desired grade or quantity, e.g. anthracite coal and tin. Finally, although the Canadian market has grown greatly over the last eighty-six years, it is still too small to sustain the economical production of manufactured items, especially capital goods. Canada's interests as an exporter and an importer are closely interrelated: to remain competitive in foreign markets, she must buy the raw materials and capital equipment needed by her export industries in the cheapest place.

Somewhat similar considerations govern Canada's attitude toward the international movement of capital. Until fairly recent times the country was a large and consistent net importer of capital. If Canada had not been able to draw upon foreign funds, her economic growth would have been seriously retarded because the rate of domestic capital accumulation was slow. In recent times, however, Canada has become an exporter as well as an importer of capital. Some Canadian funds have gone abroad to develop foreign resources because they were associated with specialized managerial skills and technical knowledge for which greater rewards seemed possible in business ventures abroad. For similar reasons foreign capital and enterprise have been used for specialized tasks which domestic capital and enterprise were not prepared to assume, e.g. in certain fields of mineral resources development.

While a healthy foreign trade has always been one of the pillars upon which Canadian prosperity has been based, the role played by exports and imports has varied considerably. Over the period as a whole, a moderate upward trend is discernible in the ratio of exports to output. As Table 47 indicates, exports of goods and services were about 22 per cent of the gross national expenditure in 1953, compared with 17 per cent in 1870. There have, however, been indications in the last quarter century of a levelling off and possible reversal of this trend. In 1950–53 exports averaged 23 per cent of gross national expenditure, compared with 29 per cent in 1926–29.

Imports of goods and services increased less than exports

over the period as a whole. This is not surprising since in the early years Canada was importing capital for the development of her transportation system, her resources and her industries. By the middle of the twentieth century she was in some years a net exporter, in other years a net importer. The ratio of imports of goods and services to gross national expenditure was almost the same in 1953 as in 1870, approximately 24 per cent.

While imports increased more slowly than exports in current dollar terms, the position is reversed after allowance is made for price changes. Imports of goods and services in constant dollars were thirty times larger in 1953 than in 1870, whereas gross national expenditure was sixteen times larger and exports were twenty-five times larger (Table 46). Indeed, by 1953, Canada

TABLE 46

Exports and Imports of Goods and Services [a], *and the Net Foreign Balance, Canada, Selected Years*, 1870–1953

(In millions of dollars)

Year[b]	Current Dollars			Constant (1935–1939) Dollars		
	Exports of Goods and Services[c]	Imports of Goods and Services	Net Foreign Balance	Exports of Goods and Services	Imports of Goods and Services	Net Foreign Balance
1870[d]	79	114	− 35	98	86	+ 12
1890	110	166	− 56	122	166	− 44
1900	203	245	− 42	228	253	− 25
1910	349	626	−277	325	589	−264
1920	1,619	1,889	−270	695	788	− 93
1929	1,632	1,945	−313	1,314	1,578	−264
1930	1,286	1,625	−339	1,157	1,448	−291
1933	826	828	− 2	982	911	+ 71
1939	1,451	1,328	+123	1,494	1,330	+164
1945	3,597[e]	2,910	+687	2,548	2,004	+544
1950	4,183[e]	4,513	−330	2,027	2,095	− 68
1951	5,089[e]	5,613	−524	2,215	2,342	−127
1952	5,573[e]	5,400	+173	2,443	2,426	+ 17
1953	5,420[e]	5,860	−440	2,445	2,644	−199

[a] Adjusted to National Accounts concept.

[b] Fiscal year beginning 1st July for 1870 and 1890, and calendar year for subsequent years.

[c] Includes gold in 1900–20 and gold available for export as per the National Accounts for later years.

[d] Estimates for all Canada.

[e] Excludes goods and services provided to other countries under Mutual Aid and similar arrangements in 1945 and under Mutual Aid to NATO countries in 1950–53.

was able to obtain abroad one and three-quarters the volume of goods with the same quantity of exports as in 1870. One major reason for this improvement has been the growing dependence of the world on industrial materials, both in raw and processed form, which this country was able to supply in high quality and at competitive prices. Because, particularly in the post-World War II period, demand frequently exceeded supply for some key industrial materials, their prices rose more rapidly than the prices of the manufactured articles that form the bulk of Canada's imports.

Net Foreign Balance. Variations in the trends of imports and exports in response to short-term fluctuations have given the

TABLE 47

Exports and Imports of Goods and Services [a], *and the Net Foreign Balance, as Percentages of Gross National Expenditure, Canada, Selected Years*, 1870–1953

Year[b]	Current Dollars			Constant (1935–1939) Dollars		
	Exports of Goods and Services[c]	Imports of Goods and Services	Net Foreign Balance	Exports of Goods and Services	Imports of Goods and Services	Net Foreign Balance
1870[d]	17.2	24.8	— 7.6	12.9	11.3	+1.6
1890	13.4	20.3	— 6.9	8.8	12.0	−3.2
1900	19.6	23.7	— 4.1	12.4	13.8	−1.4
1910	16.3	29.3	−13.0	10.5	19.1	−8.6
1920	29.2	34.1	— 4.9	18.1	20.5	−2.4
1929	26.4	31.5	— 5.1	24.6	29.5	−4.9
1930	23.2	29.3	— 6.1	22.5	28.2	−5.7
1933	23.3	23.3	—	26.0	24.1	+1.9
1939	25.4	23.2	+ 2.2	26.4	23.5	+2.9
1945	30.4[e]	24.6	+ 5.8	27.3	21.5	+5.8
1950	23.0[e]	24.8	— 1.8	19.6	20.3	−0.7
1951	23.7[e]	26.1	— 2.4	20.2	21.4	−1.2
1952	24.0[e]	23.3	+ 0.7	20.9	20.8	+0.1
1953	22.2[e]	24.0	— 1.8	20.2	21.8	−1.6

[a] Adjusted to National Accounts concept.
[b] Fiscal year beginning 1st July for 1870 and 1890, and calendar year for subsequent years.
[c] Includes gold in 1900–20 and gold available for export as per the National Accounts for later years.
[d] Estimates for all Canada.
[e] Excludes goods and services provided to other countries under Mutual Aid and similar arrangements in 1945 and under Mutual Aid to NATO countries in 1950–53.

Canadian net foreign balance one of its major characteristics – the tendency to be unfavourable in good times and favourable in less satisfactory years or in war years. This pattern is superimposed on the long-term trend referred to above.

In 11 of the 14 years in Table 46, the net foreign balance was adverse, with the deficit on current account ranging from $2 million in 1933 to $524 million in 1951. The surplus varied from $123 million in 1939 to $687 million in 1945. After allowances for price changes, the swing is narrowed somewhat but the net foreign balance remains negative in 9 years.

The unfavourable net foreign balance has varied between less than one-half of one per cent of gross national expenditure (in 1933) and 13 per cent (in 1910) and the favourable one has ranged between 2 and 6 per cent. After adjustment for price changes the fluctuations in the net foreign balance expressed as proportions of real gross national expenditure are reduced to between seven-tenths of one per cent and 8.6 per cent on the adverse side, and to between one-tenth of one per cent and 5.8 per cent on the favourable side.

The unfavourable balance usually incurred on the annual exchange of goods and services with the rest of the world has been met in the past by heavy imports of capital. In the early period the United Kingdom supplied the bulk of this capital but since the beginning of World War I the United States has become the major external source of investment funds. Table 48 shows the total foreign capital and the amounts and proportions of the total held by investors in the United Kingdom, the United States, and other countries. At the end of 1953 foreign investments totalled some $11.4 billion, of which about 77½ per cent was owned by residents of the United States and 17½ per cent by those of the United Kingdom. In 1900, 85 per cent of the $1.2 billion of foreign capital was British and only about 13½ per cent American. Canadian capital invested abroad has also expanded significantly over the 1900–53 period, from less than $100 million in 1900 to $4.1 billion in 1953. From the end of 1945 to the end of 1953, the amount of Canadian capital invested abroad has doubled – a more impressive gain than the three-fifths increase for this period in foreign capital invested in Canada. While Canada is still on balance a debtor nation, she has been making a fair measure of progress toward a change in this position. To illustrate Canadian capital invested abroad

TABLE 48

Foreign Capital Invested in Canada and Canadian Capital Invested in Other Countries, Selected Years, 1900–1953 [a]

(Value figures in millions of dollars)

Year	Foreign Capital Invested in Canada								Canadian Capital Invested Abroad		Net Balance of Indebtedness Abroad
	United Kingdom		United States		Other Countries		Total		Amount	As Percentage of Foreign Capital Invested in Canada	
	Amount	Per Cent	Amount	Per Cent	Amount	Per Cent	Amount	Per Cent			
1900	1,050	85.2	168	13.6	14	1.2	1,232	100.0	97	7.9	1,135
1910	1,958	77.4	487	19.3	84	3.3	2,529	100.0	215	8.5	2,314
1920	2,577	52.9	2,128	43.7	165	3.4	4,870	100.0	894	18.4	3,976
1930	2,766	36.3	4,660	61.2	188	2.5	7,614	100.0	1,263	16.6	6,351
1939	2,476	35.8	4,151	60.1	286	4.1	6,913	100.0	1,421	20.6	5,492
1945	1,750	24.7	4,990	70.3	352	5.0	7,092	100.0	2,048	28.9	5,044
1950	1,748	20.2	6,548	75.6	365	4.2	8,661	100.0	3,600	41.6	5,061
1951	1,776	18.8	7,259	76.6	436	4.6	9,471	100.0	3,697	39.0	5,774
1952	1,884	18.1	8,002	77.1	498	4.8	10,384	100.0	3,967	38.2	6,417
1953	2,005	17.5	8,840	77.4	579	5.1	11,424	100.0	4,127	36.1	7,297

[a] All figures are as of 31st December. Data for 1900, 1910, and 1920 are not fully comparable with those for later years.

was about 8 per cent of foreign capital invested in Canada in 1900, and 36 per cent in 1953.

Terms of Trade. Over the long run, the terms of trade have moved greatly in Canada's favour, mainly because the world has needed increasing quantities of the basic foodstuffs and industrial raw materials which Canada could sell at world competitive prices and because prices of many manufactured products which Canada herself was buying were not rising as rapidly as food and raw material prices. One reason for this price differential was the tremendous increase in productivity achieved by Canada's suppliers of manufactured goods in the early period, chiefly the United Kingdom and later the United States. In 1870 the export price index was 61 per cent of the import price index; in 1953 it was 109 per cent. The variations in the change in the terms of trade among the sub-periods are discussed in the Section that follows.

Character of Foreign Trade. An examination of the goods and services traded in 1870 and in 1953 reveals great changes. The exports of 1953 bear little resemblance in type and form to those of 1870. These changes in goods exported reflect the changes in the needs of Canada's customers, advances in technology, and the opening up of the interior, which made possible the development of new resources primarily for export. Imports have not experienced such a transformation because they include of necessity items which cannot be produced in Canada at all, or can only be turned out at higher costs than they can be purchased abroad. Such changes as have occurred in the type of goods and services imported have been in response to the increased industrialization of Canada, the maturing of the economy, and alterations in the pattern of domestic consumption.

Changes in the character of Canada's export and import trade are discussed below for the four sub-periods.

PERIOD: *1870–90*

Exports of Goods and Services. From the time of Confederation to 1890, the export trade was less important than in any subsequent period. The first five years after Confederation were prosperous ones but the next twenty years were marked by a severe economic slump from 1874 to 1880 and by a full scale depression commencing in the mid-eighties. During this period population and national output grew at a more modest rate

than in subsequent twenty-year periods. On the other hand, these years should not be regarded as a period of extended economic stagnation since considerable progress was made in industrialization and in urbanization. The proportion of exports of goods and services as Table 47 shows, in national output declined from 17 per cent in 1870 to about 13 per cent in 1890 (Table 47). However, the foreign markets developed during this time did have an impact on the growth of several Canadian industries and certain trends did appear in the composition and direction of the export trade that had important effects in subsequent periods.

As may be seen from Table 49, the exports of services were of little relative importance in sales abroad in both 1870 and 1890. However, service exports did increase 75 per cent over this period whereas commodity exports increased only 35 per cent. The increase in spending of foreign tourists and travellers and in interest and dividend payments to Canadians by foreign countries accounted for most of this gain.[1] As a result, the exports of services were 13 per cent of total exports in 1890, compared with 10 per cent in 1870.

Imports of Goods and Services. The imports of goods and services were also less important in 1890 than in 1870, declining from one-quarter of gross national expenditure to about one-fifth. Service imports increased much more rapidly than commodity imports, rising to about three times their 1870 level while commodity imports increased only about one-fifth. As a result, services in 1890 were 30 per cent of the import total, compared with 14 per cent in 1870. Much of the increase in the imports of services stemmed from the rise in interest and dividend paid abroad on the heavy inflow of capital. Even as early as 1890 *net* interest and dividend payments constituted a sizeable debit item in the balance of payments, the deficit on this score amounting to $30 million.

During this period most of the capital needed to fill the gap between current payments and receipts came from Britain and the United States, with the former supplying the major part.[2]

[1] See *Balance of Payments, 1868*, by Penelope Hartland.

[2] See Frank A. Knox, 'Excursus on Canadian Capital Movements and Canadian Balance of International Payments, 1900–1934', in Herbert Marshall, Frank A. Southard, and Kenneth W. Taylor, *Canadian-American Industry*, New Haven, 1936.

TABLE 49

Exports and Imports of Goods and Services [a], *Canada, Selected Years*, 1870–1953

Year[b]	Exports of Goods and Services						Imports of Goods and Services					
	Millions of Dollars			Percentage Distribution			Millions of Dollars			Percentage Distribution		
	Goods[c]	Services	Goods and Services	Goods	Services	Goods and Services	Goods	Services	Goods and Services	Goods	Services	Goods and Services
1870[d] . .	71	8	79	89.9	10.1	100.0	98	16	114	86.0	14.0	100.0
1890 . .	96	14	110	87.3	12.7	100.0	116	50	166	69.9	30.1	100.0
1900 . .	185	18	203	91.1	8.9	100.0	189	56	245	77.1	22.9	100.0
1910 . .	297	52	349	85.1	14.9	100.0	450	176	626	71.9	28.1	100.0
1920 . .	1,340	279	1,619	82.8	17.2	100.0	1,412	477	1,889	74.7	25.3	100.0
1929 . .	1,215	417	1,632	74.4	25.6	100.0	1,272	673	1,945	65.4	34.6	100.0
1930 . .	919	367	1,286	71.5	28.5	100.0	973	652	1,625	59.9	40.1	100.0
1933 . .	614	212	826	74.3	25.7	100.0	368	460	828	44.4	55.6	100.0
1939 . .	1,090	361	1,451	75.1	24.9	100.0	713	615	1,328	53.7	46.3	100.0
1945 . .	2,712[e]	885	3,597	75.4[e]	24.6	100.0	1,442	1,468	2,910	49.6	50.4	100.0
1950 . .	3,302[e]	881	4,183	78.9[e]	21.1	100.0	3,129	1,384	4,513	69.3	30.7	100.0
1951 . .	4,100[e]	989	5,089	80.6[e]	19.4	100.0	4,097	1,516	5,613	73.0	27.0	100.0
1952 . .	4,489[e]	1,084	5,573	80.5[e]	19.5	100.0	3,850	1,550	5,400	71.3	28.7	100.0
1953 . .	4,296[e]	1,124	5,420	79.3[e]	20.7	100.0	4,209	1,651	5,860	71.8	28.2	100.0

[a] Adjusted to National Accounts concept.
[b] Fiscal year beginning 1st July for 1870 and 1890, and calendar year for subsequent years
[c] Includes gold in 1900–20 and gold available for export as per the National Accounts for the later years.
[d] Estimates for all Canada.
[e] Excludes goods and services provided to other countries under Mutual Aid and similar arrangements in 1945 and under Mutual Aid to NATO countries in 1950–53.

There was a distinct difference in the use to which the capital funds obtained from Britain and the United States were put. The United Kingdom was the source of most of the capital used for railway construction and for the construction of canals, roads and other public works by the governments of Canada. On the other hand, the major part of American capital was in the form of direct investment. Between 1870 and 1887 eighty-two American controlled or affiliated plants are known to have been set up, forty-eight of which were owned outright or controlled by American interests.[1] More than half of these plants were established between 1879 and 1883 following increases in 1879 in the Canadian tariffs on manufactured goods. United States interests also invested directly in hotels, life insurance, and hop farming.

Terms of Trade. Two aspects of the over-all merchandise trade stand out in these two years. First, while import prices declined 24 per cent export prices increased 11 per cent. This decidedly favourable movement of the terms of trade operated throughout this period, even during the later 1870's, when economic conditions worsened, and helped to cushion the effects of the recession. It was also an important element in the improvement in the standard of living.

The other point is that only in the fiscal year beginning 1st July 1879 did commodity exports (either of Canadian produce or total exports) exceed imports for consumption. This was in line with the stage of economic development, since Canada had to import capital for her communications, industries, and resources. The emphasis on economic development, in turn, meant: 'The Canadian experience has been that the size of the unfavourable balance of trade over these years has varied quite closely with the prosperity of the nation.'[2]

PERIOD: 1890–1910

The first decade of the twentieth century was a period of very rapid economic development and foreign trade played an important role. In 1910 exports of goods and services were 16 per cent of the gross national expenditure, and imports 29 per cent, compared with 13 and 20 per cent, respectively, in 1890. The substantial increase in the ratio of imports reflects the rise in

[1] *Idem*, p. 12.

[2] Cf. K. W. Taylor, 'Statistics of Foreign Trade', *Statistical Contributions to Canadian Economic History*, Toronto, 1931.

demand not only for capital and consumer commodities, but also for a wide variety of services.

Exports of Goods and Services. Exports of goods and services in 1910 were about $350 million, or more than three times the 1890 total. They more than tripled but the somewhat larger gain in service exports, 270 per cent as against 209 per cent for commodities, raised the services share of the export total from 13 per cent in 1890 to 15 per cent in 1910.

As in the previous period, the largest increases in the service component were for the 'tourist and travel expenditure' and 'interest and dividends received' items. Spending by foreign travellers rose from $5 million in 1890 to $25 million in 1910 and interest and dividends received by Canadians on their foreign investments increased from $2 million to $10 million.

Imports of Goods and Services. Imports of goods and services rose even more than exports, increasing from $166 million to $626 million. Despite very substantial increases in two com-

TABLE 50

Exports and Imports of Goods and Services (Shipping, Travel, Remittances, etc.), Canada, Selected Years [a], *1870–1953*

(In millions of dollars)

	1870[b]	1890	1910	1930	1950	1953
Current Credits:						
Commodity Exports[c]	71	96	297	919	3,302	4,296
Freight and Shipping	5	5	6	39	284	337
Tourist and Travel	2	5	25	180	275	302
Interest and Dividends	1	2	10	70	91	164
Other Current Receipts	—	2	11	78	231	321
TOTAL	79	110	349	1,286	4,183	5,420
Current Debits:						
Commodity Imports[d]	98	116	450	973	3,129	4,209
Freight and Shipping	8	8	19	103	301	382
Tourist and Travel	2	4	25	92	226	365
Interest and Dividends	5	32	92	348	475	410
Other Current Payments	1	6	40	109	382	494
TOTAL	114	166	626	1,625	4,513	5,860
Net Foreign Balance	−35	−56	−277	−339	−330	−440

[a] Fiscal year beginning 1st July for 1870 and 1890 and calendar year for subsequent years.
[b] Estimates for all Canada.
[c] Includes all gold exports in 1910 and 'gold available for export' as per the National Accounts for later years.
[d] Includes all gold imports in 1910.

ponents, 'interest and dividends paid abroad' and 'other current payments', imports of services did not keep pace with the rise in the purchase of foreign commodities. The increase in interests and dividends paid abroad reflected the substantial growth in foreign capital invested in this country. Between 1900 and 1910 alone, the foreign stake in Canada more than doubled with Britain providing the bulk of these funds.[1] The substantial increase in 'other current payments' stemmed largely from the non-commercial remittances sent out of the country as many recently-arrived immigrants transferred money earned in this country to their homelands (Table 50).

Terms of Trade. The terms of commodity trade continued to move in Canada's favour, but at a considerably lower rate than in the previous period. Between 1890 and 1910 export prices rose 19 per cent and import prices 6 per cent.

In 1890 Canada had a moderate adverse balance on commodity trade. By the mid-nineties Canada was showing modest credits on the exchange of goods and continued to do so until 1902–03 when commodity exports and imports were in balance. However, for the remainder of the period successive and, for the most part, growing deficits were incurred and the adverse balance in 1910 was about $160 million (Table 51).

PERIOD: 1910–1930

This twenty-year period comprised two quite dissimilar periods of economic activity. The first decade was very prosperous with rapid population and economic growth up to the start of World War I, only moderately affected by recessionary influences developing in 1913 but arrested by the outbreak of the war, and tremendous industrial expansion during the war years. Commodity exports rose from less than $300 million in 1910 to a peak of $1½ billion in 1917–18, while commodity imports increased from less than half a billion dollars to about 1⅓ billion in 1920. The exchange of services also increased sharply, with imports quadrupling and exports increasing six-fold between 1910 and 1930. It is in this period that Canada emerged as a great trading nation and she retained this position despite the set-back during the early twenties.

[1] Cf. Herbert Marshall, Frank A. Southard and Kenneth W. Taylor, *op. cit.*, p. 299. Frank A. Knox estimates the total foreign capital invested in Canada at the end of 1910 as $2.5 billion compared to $1.2 billion at 31st December 1900, and the British share at some $2 billion compared to $1.1 billion.

TABLE 51

Commodity Exports and Imports [a] *in Current and Constant* (1935–1939) *Dollars, Canada, Selected Years*, 1867–1953

(Value figures in millions of dollars)

Year[b]	Exports				Imports for Consumption			Balance of Commodity Traded[d] Current Dollars	Per Cent of Gross National Expenditure		Terms of Trade[e]
	Domestic Produce			Total[c]							
	Current Dollars	Constant Dollars	Price Index (1935–1939 =100)	Current Dollars	Current Dollars	Constant Dollars	Price Index (1935–1939 =100)		Total Exports	Imports for Consumption	
1867[f]	49	59	82.4	53	67	51	132.7	— 14	12.7	16.1	62.1
1870[f]	58	72	81.1	67	84	64	132.0	— 17	14.6	18.3	61.4
1880	84	99	84.7	97	90	83	109.0	+ 7	16.0	14.8	77.7
1890	89	99	90.3	97	112	112	100.2	— 15	11.9	13.7	90.1
1900	177	199	89.0	195	178	183	97.2	+ 17	18.9	17.2	91.6
1910	274	255	107.4	290	453	426	106.3	— 163	13.6	21.2	101.0
1920	1,268	544	233.1	1,298	1,337	558	239.6	— 39	23.4	24.1	97.3
1929	1,152	846	136.1	1,178	1,299	1,004	129.4	— 121	19.1	21.1	105.2
1930	864	750	115.2	883	1,008	862	116.9	— 125	15.9	18.2	98.5
1933	529	621	85.2	535	401	434	92.3	+ 134	15.1	11.3	92.3
1939	925	957	96.7	936	751	757	99.2	+ 185	16.4	13.2	97.5
1945	3,218	1,911	168.4	3,267	1,586	1,013	156.6	+1,681	27.6	13.4	107.5
1950	3,118	1,342	232.3	3,157	3,174	1,347	235.7	— 17	17.3	17.4	98.6
1951	3,914	1,484	263.8	3,963	4,085	1,515	269.7	— 122	18.5	19.0	97.8
1952	4,301	1,646	261.3	4,356	4,030	1,708	235.9	+ 326	18.8	17.4	110.8
1953	4,117	1,622	253.8	4,173	4,383	1,875	233.8	— 210	17.1	18.0	108.6

[a] Not adjusted to National Accounts concept.
[b] Fiscal years beginning 1st July for 1870–1900, 1st April for 1910, and calendar years for 1920 and subsequent years.
[c] Exports of Canadian and foreign produce.
[d] Total exports minus imports for consumption.
[e] Export prices as per cent of import prices.
[f] Four provinces only; but in text where comparison is made with subsequent years, estimates for 1867 and 1870 relating to all Canada have been used.

Exports of Goods and Services. Exports of goods and services totalled about $1.3 billion in 1930, compared with about $350 million in 1910. Exports of services increased more than those of commodities, with the result that the service portion rose from 15 per cent of the commodities and services total in 1910 to 28½ per cent in 1930. The increased importance of the service sector resulted largely from the much higher receipts shown for the 'tourist and travel' and 'interest and dividends' components. Expenditures of foreigners travelling in Canada rose from $25 million in 1910 to $180 million in 1930, and exceeded the expenditures of Canadian tourists and travellers abroad by $88 million. This is by far the largest favourable balance on this score shown in any year reviewed in this study. The substantial increase in receipts of interest and dividends from abroad reflects the great expansion of investment abroad – from $200 million in 1910 to some $1¼ billion in 1930.

Imports of Goods and Services. Imports of services also rose more rapidly than did those of commodities, increasing about 3¾ times while commodity imports only about doubled. As a result, the proportion of services to total imports rose from 28 per cent in 1910 to 40 per cent in 1930. All the major service items were much larger in 1930. The largest absolute gain, about a quarter billion dollars, was in the 'interest and dividends' paid abroad category, as foreign investments in Canada rose from $2½ billion in 1910 to some $7½ billion in 1930. Another notable increase was in the spending of Canadian travellers abroad, which increased from $25 million to $92 million.

Terms of Trade. The terms of trade tended to move against Canada with import prices rising more than export prices, 10 per cent compared with 7 per cent, between 1910 and 1930. Because of the larger relative increase in commodity exports the deficit on the exchange of goods was somewhat smaller at the end of the period than at the beginning. The large adverse balance incurred in the service sector, however, boosted the unfavourable net foreign balance from $277 million to $339 million.

PERIOD: 1930–1953

This period was also one of uneven economic growth. The depression following the boom in 1930 lasted until the mid-thirties and economic recovery proceeded slowly and hesitantly until the beginning of World War II. The outbreak of war

brought prosperity and the high level of economic activity continued through 1953. As was pointed out elsewhere, national output and the standard of living rose substantially, manufacturing industries made great advances, and the economy became increasingly diversified. All these factors left their marks upon foreign trade.

Exports of Goods and Services. In 1953 exports of goods and services were $5.4 billion, in current prices, and more than double those of 1930 in volume terms. Exports of goods increased more than those of services so that the service proportion of the total in 1953 was 21 per cent, compared with 28½ per cent in 1930. All the major service components increased substantially. Freight and shipping receipts rose from $39 million in 1930 to $337 million in 1953, interest and dividends rose from $70 million to $164 million, and the expenditures of foreign tourists and travellers increased from $180 million to $302 million.

Imports of Goods and Services. Imports of services also rose rapidly between 1930 and 1953 but, as in the case of exports, did not keep pace with the increase in commodities. Hence, the service proportion of total imports declined, 40 per cent in 1930 to 28 per cent in 1953.

All the major service items showed substantial increases, the most notable being that in tourist and traveller expenditures which in 1953 were larger than receipts from these sources. Interest and dividends paid abroad increased from $348 million to $410 million, whereas foreign capital invested in Canada at the end of 1953 was about $11½ billion compared with about $7½ billion in 1930. Apparently, a much larger portion of the earnings on foreign capital were left in Canada for re-investment in 1953 than in 1930.

Terms of Trade. The terms of commodity trade in 1953 were much more favourable than they had been in 1930. Between these two years export prices rose 120 per cent while import prices only doubled. However, between 1930 and 1933 the prices of exports declined 26 per cent while those of imports dropped only 21 per cent.

In only five years between 1930 and 1953 did Canada have an adverse balance on *merchandise* trade. *Total* imports of goods and services exceeded *total* exports in eight years.

TRENDS AND STRUCTURE OF CANADA'S FOREIGN COMMODITY TRADE

A more detailed examination of commodity export and import trade discloses that many changes have taken place in its composition and structure since 1870. Changes in world demand affected not only the type and form of goods sold abroad, but also their destinations. At the same time changes in Canada's own economy altered the domestic consumption pattern, the type of merchandise imported and the sources from which it was obtained. Tables 52 to 58 present some of the highlights of the trends and the changes in structure of foreign trade in commodities since 1870. The more important changes in the character, composition, and destination or origin of exports and imports that took place in the four sub-periods, are discussed in detail.

PERIOD: 1870–1890

Exports. There was a shift in the degree of manufacture of exports, with the proportions of raw materials and fully manufactured commodities somewhat higher in the later year (Table 52). However, during this period manufactures that were simple, e.g. cheese, flour, meals, dried fruits, preserved and canned fish, etc. accounted for the bulk of the fully manufactured commodity exports.

The composition of the export commodity trade changed between 1870 and 1890 with the decline in relative importance of square timber and lumber, staple exports in earlier days, and the rapid rise in foreign sales of cheese, fish, and grain and grain products. The slow growth in exports of the wood, wood products, and paper group was mainly due to the increased (and possibly lower-priced) competition of Baltic producers for the British market and the failure of Canadian exporters to find substitute markets. The opening up of the American Lake States timber lands in the latter part of the period limited sales to the United States.

The large increase in foreign sales of cheese and fish was mainly due to changes in the consumption habits in the United Kingdom. Declining prices coupled with an increased or maintained wage level in Britain brought about a substantial improvement in the standard of living. This rise in real wages was followed by increased consumption of higher-priced foodstuffs, e.g. cheese and canned salmon. Between 1870 and 1890

TABLE 52

Percentage Distribution of Commodity Exports and Imports, by Degree of Manufacture, Canada, Selected Years [a], 1870–1953

Year	Exports of Domestic Produce				Imports for Home Consumption			
	Raw Materials	Partly Manufactured	Fully or Chiefly Manufactured	Total	Raw Materials	Partly Manufactured	Fully or Chiefly Manufactured	Total
1870	32.9	38.5	28.6	100.0	17.6	7.5	74.9	100.0
1890	41.4	26.4	32.2	100.0	21.7	8.8	69.5	100.0
1900	41.5	17.7	40.8	100.0	24.9	10.6	64.5	100.0
1910	51.2	16.1	32.7	100.0	24.6	10.1	65.3	100.0
1920	44.1	16.3	39.6	100.0	25.0	12.2	62.8	100.0
1929	36.4	19.6	44.0	100.0	23.1	7.7	69.2	100.0
1930	37.8	17.2	45.0	100.0	23.9	7.6	68.5	100.0
1933	36.2	21.5	42.3	100.0	30.1	8.9	61.0	100.0
1939	29.6	26.7	43.7	100.0	26.7	8.8	64.5	100.0
1945	26.7	16.6	56.7	100.0	27.0	5.9	67.1	100.0
1950	28.0	31.3	40.7	100.0	26.8	7.9	65.3	100.0
1951	29.6	32.2	38.2	100.0	24.6	7.5	67.9	100.0
1952	32.5	28.9	38.6	100.0	21.2	5.8	73.0	100.0
1953	32.2	28.9	38.9	100.0	18.5	5.0	76.5	100.0

[a] Percentages cover data relating to the fiscal years beginning 1st July, 1870 and 1890, and 1st April, 1920, 1929, 1930 and 1933, and to calendar years from 1939 onward. The proportions shown for 1900 and 1910 are those for the fiscal year beginning 1st July, 1899 and 1st April, 1909. All percentages are based on current dollar figures.

bread consumption per capita in the United Kingdom remained almost unchanged but the per capita consumption of dairy products (and meats) increased about one-fifth. Technological progress placed the growing British market almost at the door of Canadian foodstuffs producers, with better marine engines and cheaper steel making for larger and faster ships, and the rapid increase in the number of refrigerated ships after 1880 ensuring the safe arrival of perishable products.

Despite these changes in composition, it can scarcely be said that commodity exports were much more diversified in 1890 than in 1870. As Table 55 shows, the five leading export items accounted for 44 per cent of the export total in 1890 compared with 45 per cent in 1870.

During this period the destination of exports changed, with the United Kingdom replacing the United States as Canada's best customer. In 1890 these two markets absorbed about nine-tenths of total exports, with sales to other countries having declined from 12 per cent in 1870 to 9 per cent in 1890 (Table 58).

Imports. The industrial progress made in the twenty years is also evident from the data in Table 52 which show that raw materials increased from 18 to 22 per cent of total commodity imports while fully manufactured goods declined from 75 to 70 per cent.

The major changes in composition of imports are the decline in relative importance of the agricultural and vegetable products group and the sharp increase in the non-metallic minerals and non-ferrous metals groups (Table 54). By 1890 imports of the fibres and textile group of products had surpassed those of the agricultural and vegetable products group, the most important group relatively, in 1870. The decline in the portion of total imports accounted for by agricultural and vegetable products reflects largely the drop in imports of grain products starting in the late seventies when domestic grain production began to increase and internal communications improved. On the other hand, imports of items in this group needed to achieve a higher standard of living, e.g. fruits and nuts, sugar, tobacco, etc., increased substantially.

The increased importance of the non-metallic minerals group in 1890 was largely due to the great increase in imports of coal, the second ranking import in that year. The larger coal imports,

TABLE 53

Commodity Exports, Nine Groups, Canada, Selected Years [a], 1870–1953

(Value figures in millions of dollars)

Group	1870		1890		1910		1930		1953	
	Amount	Per Cent	Amount	Per Cent	Amount	Per Cent	Amount	Per Cent	Amount	Per Cent
Agricultural and Vegetable Products	10	18.5	14	16.7	84	31.2	316	37.4	1,097	27.4
Animals and their Products	16	29.6	36	42.8	70	26.0	91	10.8	251	6.3
Fibres and Textiles	1	1.9	1	1.2	2	0.8	7	0.8	24	0.6
Wood, Wood Products, and Paper	23	42.6	25	29.8	56	20.8	250	29.6	1,295	32.4
Iron and its Products	1	1.9	1	1.2	10	3.7	48	5.7	359	9.0
Non-Ferrous Metals[b]	1	1.8	2	2.4	34	12.7	94	11.1	682	17.1
Non-Metallic Minerals (except Chemicals)	2	3.7	4	4.8	10	3.7	23	2.7	147	3.7
Chemicals and Allied Products	—	—	1	1.1	3	1.1	16	1.9	138	3.5
Total Eight Groups	54	100.0	84	100.0	269	100.0	845	100.0	3,993	100.0
Miscellaneous	13	—	5	—	5	—	19	—	124	—
GRAND TOTAL	67	—	89	—	274	—	864	—	4,117	—

[a] Fiscal years beginning 1st July for 1870 and 1890 and 1st April for 1910, and calendar years for 1930 and 1953.
[b] Excludes gold in 1930 and 1953.

TABLE 54

Commodity Imports, Nine Groups, Canada, Selected Years [a], 1870–1953

(Value figures in millions of dollars)

Group	1870		1890		1910		1930		1953	
	Amount	Per Cent	Amount	Per Cent	Amount	Per Cent	Amount	Per Cent	Amount	Per Cent
Agricultural and Vegetable Products	22	35.5	24	23.3	79	19.2	192	20.3	488	12.5
Animals and their Products	6	9.7	8	7.8	31	7.5	59	6.3	88	2.3
Fibres and Textiles	17	27.4	29	28.2	88	21.4	149	15.8	387	9.9
Wood, Wood Products, and Paper	—	—	5	4.9	27	6.6	50	5.3	161	4.1
Iron and its Products	10	16.1	15	14.6	92	22.4	225	23.8	1,532	39.2
Non-Ferrous Metals	1	1.6	4	3.8	28	6.8	67	7.1	365	9.4
Non-Metallic Minerals (except Chemicals)	4	6.5	14	13.6	53	12.9	165	17.5	658	16.9
Chemicals and Allied Products	2	3.2	4	3.8	13	3.2	37	3.9	222	5.7
Total Eight Groups	62	100.0	103	100.0	411	100.0	944	100.0	3,901	100.0
Miscellaneous	22	—	9	—	42	—	64	—	482	—
GRAND TOTAL	84	—	112	—	453	—	1,008	—	4,383	—

[a] Fiscal years beginning 1st July for 1870 and 1890 and 1st April for 1910, and calendar years for 1930 and 1953.

TABLE 55

Five Leading Commodity Exports and Imports, Canada, Selected Years [a], 1870–1953

(Value figures in millions of dollars)

Year and Item	Exports		Year and Item	Imports	
	Amt.	Per Cent		Amt.	Per Cent
1870			*1870*		
Planks and Boards	13	22.5	Woollens	11	13.0
Timber, Square	6	10.3	Cottons	9	10.7
Butter	3	5.2	Wheat	4	4.8
Codfish	2	3.4	Sugar	3	3.6
Cattle	2	3.4	Tea	3	3.6
Total, Five Items	26	44.8	Total, Five Items	30	35.7
1890			*1890*		
Planks and Boards	14	15.7	Wool and Manufactures	11	9.8
Cheese	10	11.2	Coal	10	8.9
Cattle	9	10.1	Cotton and Manufactures	8	7.1
Codfish	3	3.4	Sugar	6	5.4
Timber, Square	3	3.4	Rolling Mill Products	6	5.4
Total, Five Items	39	43.8	Total, Five Items	41	36.6
1910			*1910*		
Wheat	46	16.8	Cotton and Manufactures	33	7.3
Planks and Boards	22	8.0	Coal	32	7.1
Cheese	21	7.7	Wool and Manufactures	26	5.7
Wheat Flour	14	5.1	Rolling Mill Products	23	5.0
Cattle	9	3.3	Sugar	17	3.8
Total, Five Items	112	40.9	Total, Five Items	131	28.9
1930			*1930*		
Wheat	189	21.9	Coal	57	5.6
Newsprint Paper	133	15.4	Machinery (except Agricultural	50	5.0
Wheat Flour	43	5.0	Rolling Mill Products	47	4.6
Wood Pulp	39	4.5	Petroleum, Crude	38	3.8
Planks and Boards	37	4.2	Electrical Apparatus, n.o.p.	30	3.0
Total, Five Items	441	51.0	Total, Five Items	222	22.0
1953			*1953*		
Newsprint Paper	619	15.0	Automobile Parts	222	5.1
Wheat	568	13.8	Petroleum, Crude	213	4.8
Planks and Boards	282	6.9	Machinery (Non-Farm) and Parts	119	2.7
Wood Pulp	249	6.1	Engines and Parts	117	2.7
Aluminium and Manufactures	178	4.3	Aircraft and Parts (excluding Engines and Parts)	112	2.6
Total, Five Items	1,896	46.1	Total, Five Items	783	17.9

[a] Fiscal years beginning 1st July for 1870 and 1890, 1st April for 1910, and calendar years for 1930 and 1953.

in turn, were the results of the growing substitution of coal for wood for domestic heating and of the rising energy demands of domestic industry.

The changes in the economy during this period are reflected to some extent in the import data in Table 55. In both 1870 and 1890 wool and its products were the largest import item and cotton and its products and sugar were among the first five items. However, by 1890 coal had replaced the cotton item in second place and rolling mill products had displaced tea from fifth place.

The change in the sources of imports from 1870 to 1890 is different from that noted for the destination of exports. The proportion of goods brought in from the United Kingdom declined from 57 to 38 per cent of total imports, while the share of commodities supplied by the United States rose from 32 to 46 per cent (Table 58). Canada's industrial expansion with its increased self-sufficiency had seriously affected imports from Britain, largely fully manufactured items, and had encouraged increased purchases in the United States of goods in all three stages of manufacture. The increase in the proportion of imports supplied by other countries, from 11 per cent of the total in 1870 to 16 per cent in 1890, was probably largely due to the increased competitiveness of manufacturing industries in other European countries which were also making rapid industrial progress.

PERIOD: 1890–1910

Exports. Probably the most important development in export trade over the period 1890–1910 was the large increase in foreign sales of wheat. By 1900 most of the wheat-growing areas of the United States had been settled and the margin of cultivation was beginning to move across the Canadian West. The rapid settlement of the Canadian Prairies brought about a phenomenal growth in wheat production and over 40 million bushels were exported in 1910, a considerable increase over the two million bushels sold abroad in 1890.

Chiefly because of the increased importance of wheat and other agricultural products in export trade, raw materials accounted for a larger proportion of total exports in 1910 than in 1890. This increase was made almost entirely at the expense of partly manufactured items which declined from 26 per cent of the total in 1890 to 16 per cent in 1910 (Table 52).

The increase in foreign sales of wheat is also one of the main factors in the rise of the exports of agricultural and vegetable products from 17 per cent of the total in 1890 to 31 per cent in 1910 (Table 53). Despite a substantial increase in sales of dairy products and meats, mostly to the United Kingdom where standards of living continued to rise, the relative importance of the animals and products group declined from 43 to 26 per cent. Substantial increases in the exports of silver, copper, lead, gold, etc., increased the share of total exports accounted for by non-ferrous metals and their products from about 2½ per cent in 1890 to 13 per cent in 1910.

The five leading export items in 1910 in order of importance were wheat, planks and boards, cheese, wheat flour, and cattle, the wheat items displacing codfish and square timber both of which appear in both the 1870 and 1890 lists (Table 55).

The United Kingdom continued to be Canada's best customer, absorbing 48 per cent of total exports in 1910, the same proportion as in 1890. The proportion going to the United States declined from 43 to 38 per cent, and sales to other countries increased accordingly (Table 58).

Imports. Notwithstanding the great increase in imports of consumer goods (many of them 'finished' products) and capital equipment, raw materials and partly manufactured goods were each a somewhat higher proportion of total imports in 1910 than in 1890 (Table 52).

In 1910 iron and its products was the most important group of imports. The wood, wood products, and paper and the non-ferrous metals groups had also increased in relative importance. Each of the other groups was a smaller proportion of the total in 1910 than in 1890 (Table 54).

The rise in the relative importance of iron and its products reflects the expanding needs of Canadian industries for mill products and parts used in the production of consumer goods, and for capital equipment.

Cotton and its manufactures was the leading important item in 1910, replacing wool and its manufactures. Coal remained in second place. Rolling mill products ranked fourth in 1910 and sugar fifth, reversing their order in the 1890 listing (Table 55). While the five leading items are identical in 1890 and 1910 and the order is changed the proportion they accounted for in total imports declined from 37 to 29 per cent.

The change in the sources of imports apparent at the end of the previous period continued, with the United States increasing its share of the Canadian market almost entirely at the expense of Britain. Imports by branch plants of United States firms, in their early stages at least, of component parts and materials as well as essential capital items from the States contributed to the increased importance of that country as a supplier (Table 58).

Canada's tariff policy also had some effect on the source of imports during this period although toward the end the underlying economic forces described above tended to assert themselves. In 1898 a policy was introduced of granting a 25 per cent remission of the normal duties to most British countries. In 1900 this differential was raised to 33⅓ per cent and in 1904 especially low rates were established for almost all items from British countries. These concessions appear to have temporarily arrested the long-term trend; in 1907, for example, imports from Britain were 27 per cent of the total compared with 24 per cent in 1900. However, thereafter the United Kingdom share resumed its decline and at the end of 1910 was about the same proportion as in 1900.

PERIOD: 1910–1930

Exports. The decline in the proportion of raw materials in total exports between 1910 and 1930 reflects the industrialization that took place in Canada. Raw materials dropped from 51 per cent of total exports in 1910 to 38 per cent of the very much higher total in 1930. The share of fully manufactured goods rose from 33 per cent to 45 per cent and thus absorbed almost all the reduction in the raw materials share (Table 52).

In 1930 the exports of products in the agricultural and vegetable group ranked first, followed by the wood, wood products, and paper, and the non-ferrous metals and products groups. The great increase in foreign sales of grain and its products, especially wheat and wheat flour, was mainly responsible for the rise in the relative importance of the top group. The newsprint industry was beginning to develop during this period and the sales of its products in the world's markets were an important factor in raising the wood, wood products, and paper group to second place. The gains in the rankings of the non-ferrous metals and the iron and its products groups were made largely

at the expense of the animals and products group which fell from second place in 1910 to fourth in 1930 (Table 53).

Exports of wheat and wheat flour were first and fourth respectively among the leading exports in 1910 and 1930. However, in 1930 newsprint paper and wood pulp were second and fourth, relegating planks and boards to the fifth position and completely displacing cheese. The further concentration of Canada's export trade is evident from the fact that in 1930 the five leading items were over one-half of total commodity exports – the highest proportion for any of the years reviewed (Table 55).

The direction of Canada's export trade also changed considerably. The share of the United States market rose from 38 to 43 per cent and was back at the 1890 level. The proportion going to the United Kingdom declined from 48 to 27 per cent. The increased importance of Canada as a world trader is reflected in the rise in the proportion of exports going to countries other than the United States and the United Kingdom, from 14 per cent in 1910 to 30 per cent in 1930. This increase represents a seven-fold increase in value terms, from $38 million in 1910 to $256 million in 1930 (Table 58).

The effects of World War I on Canada's economy and particularly on her export trade were marked. Just before the outbreak of war, the gap between imports and exports was widening with exports amounting to about half of imports. After 1914 exports rose much faster than imports, and Canada had several substantial annual favourable balances on commodity trade. This was partly a consequence of special conditions associated with the war. As a result of the disruption of Britain's trade connections with continental Europe, Canada became an increasingly important supplier of many essential items. For example, exports of bacon and eggs, which had been lagging, increased sharply. Furthermore, the new industrial capacity developed during the war years made possible a significant contribution to the supplies and equipment required by the Allied Forces. This rapid rise in exports was facilitated by the heavy investment in transportation facilities, productive equipment, and housing that had been made during the previous decade or so.

Imports. Little change took place between 1910 and 1930 in the degree of manufacture of imported commodities. The

proportion of fully manufactured goods to the total was slightly higher in 1930 with the gain largely at the expense of the partly manufactured commodities (Table 52).

In 1930 as in 1910 imports of iron and its products exceeded all others. The agricultural and vegetable group of products came second in 1930, replacing fibres and textiles. The only other major change was the gain in relative importance of the non-metallic minerals group, due mainly to rising imports of coal and petroleum and its products, which together accounted for almost one-eighth of the value of all imports (Table 54).

The leading import item after coal in 1930 was machinery (excluding agricultural); rolling mill products shifted from fourth to third place, and petroleum was fourth. Cotton and its products which had been the leading import item in 1910, was not among the five leading imports in 1930.

The shift in sources of imports as apparent in the previous period continued with the United States share of the market increasing from 61 to 65 per cent and that of the United Kingdom falling from 24 to 16 per cent. Imports from other countries accounted for 19 per cent of the total in 1930, compared with 15 per cent in 1910 (Table 58).

The growing dependence upon the United States as a source of supply was due in part to the growing need of capital equipment and raw materials and fuel which could be purchased more cheaply and more speedily in the United States than elsewhere. Another factor tending to increase imports from the States was the growth in expenditures on consumers durable goods. American consumer durable goods were generally more popular with Canadians than those produced in the Old World. Many United States periodicals were distributed in Canada, and their advertisements exposed Canadians to American styles and standards. In addition to the imports of finished consumer goods, there were increasing imports of component parts and other materials by Canadian consumer durable industries, particularly the branch plants of United States firms.

PERIOD: 1930–1953

Exports. The substantial growth in processing and secondary industries resulted in a further decline in the proportion of raw materials in total exports from 38 per cent in 1930 to 32 per cent in 1953. The share of partly manufactured goods rose from 17

to 29 per cent – reflecting the increased domestic processing of natural products, and the fully manufactured group dropped from 45 per cent to 39 per cent (Table 52).

The composition of exports changed markedly. Although wheat exports tripled in value they were relatively less important in 1953 than in 1930, and the resultant decline in the importance of grain and its products helped put the wood, wood products, and paper group in first place in 1953. The value of newsprint, wood pulp and planks and boards sold abroad also increased notably. In 1953, as in most recent years (except 1952 when Canada harvested a bumper wheat crop and world demand was particularly strong), newsprint has been Canada's most important export commodity (Tables 53 and 55).

The drop in the animals and products group from 11 per cent to 6 per cent of the total reflects the continuation of the long-term decline in sales of bacon and cheese to the United Kingdom that, except during World War II, had been going on since 1930.

The rise in the relative importance of the non-ferrous metals and products group, from 11 to 17 per cent, was the result of developments on a broad front. Among Canadian exports in 1953 aluminium and its products ranked fifth in value, nickel sixth, copper and its products seventh, and zinc and its products twelfth. An important by-product of the expansion of non-ferrous metals mining and refining was the growth of an associated fertilizer industry capable of competing in world markets. This new development has been a contributing factor to the rise in the relative importance of chemicals and their products.

The shifts in the destination of exports observed in the previous period continued. The proportion going to the United Kingdom fell to 16 per cent in 1953 while the portion sold in the United States increased to 59 per cent (Table 58). Both the United Kingdom and the United States bought non-ferrous metals, newsprint, and wood pulp, but the latter had a much greater absorptive capacity for Canada's surpluses of these commodities. Moreover, the United Kingdom could fill a substantial portion of its needs from sources closer at hand and from soft-currency areas. And, of course, in 1953 currency restrictions, quotas, and other artificial devices arising out of exchange difficulties were still affecting world trade.

Imports. The substantial growth in manufacturing has had

TABLE 56

Production, Exports, Imports, and Domestic Supply of Manufactured Goods, Canada, 1939 and 1950

(Value figures in millions of dollars)

Item	1939						1950					
	Domestic Productn. Amt.	Imports Amt.	Exports Amt.	Domestic Supply Amt.	Imports as a Per Cent of Supply	Exports as a Per Cent of Domestic Productn.	Domestic Productn. Amt.	Imports Amt.	Exports Amt.	Domestic Supply Amt.	Imports as a Per Cent of Supply	Exports as a Per Cent of Domestic Productn.
Foods and Beverages	876	69	141	804	9	16	3,029	169	403	2,795	6	13
Rubber, Leather, Tobacco	221	11	24	208	5	11	638	36	20	654	6	3
Primary Textiles	183	56	7	232	24	4	741	186	22	905	21	3
Clothing	230	9	3	236	4	1	734	23	6	751	3	1
Wood and its Products	188	8	66	130	6	35	986	15	348	653	2	35
Pulp and Paper	270	9	155	124	7	57	1,251	28	712	567	5	57
Printing, Publishing, etc.	120	15	1	134	11	1	413	44	2	455	10	—
Iron and Steel and Products	321	130	37	414	31	12	1,524	669	182	2,011	33	12
Transportation Equipment	236	52	27	261	20	11	1,240	310	84	1,466	21	7
Non-Ferrous Metals and Products	416	37	153	300	12	37	1,541	188	346	1,383	14	22
Non-Metallic Minerals and Products	208	45	9	244	18	4	903	197	69	1,031	19	8
Chemicals and Products	164	54	25	193	28	15	647	191	107	731	26	17
Miscellaneous	42	16	6	52	31	14	169	33	7	195	17	4
All Manufacturing Industries	3,475	511	654	3,332	15	19	13,816	2,089	2,308	13,597	15	17

moderate repercussions on the composition of imports in the post-World War II years. The expansion in 1953, when a large capital expenditure programme was successfully implemented by the manufacturing and other industries, involved heavy imports of capital equipment, and the high operating level of existing plants meant heavy imports of component parts and of industrial raw materials, including fuels. The high level of income in Canada also meant a large market for consumer goods, many of which are imported in finished form.

The growth of manufactured goods imports has kept pace with the rise in domestic production since the beginning of World War II (Table 56). In food and beverages, clothing, wood and its products, pulp and paper, printing and publishing, and chemicals and their products, dependence on external sources of supply has certainly diminished. The need for imports in some other fields has also been lessened by the increased diversification of the products turned out by Canadian industry, e.g. automobile parts, industrial chemicals, electric apparatus, etc.

TABLE 57

Commodity Exports and Imports, by Country of Destination or Origin, Canada, Selected Years [a], 1870–1953

(Millions of dollars)

Year	Exports of Domestic Produce				Imports for Home Consumption			
	United States	United Kingdom	Other Countries	Total	United States	United Kingdom	Other Countries	Total
1870	29	22	7	58	27	48	9	84
1890	38	43	8	89	52	42	18	112
1900	68	93	16	177	107	43	28	178
1910	104	132	38	274	276	110	67	453
1920	555	341	372	1,268	921	231	185	1,337
1929	493	290	369	1,152	894	195	210	1,299
1930	373	235	256	864	654	163	191	1,008
1933	168	211	150	529	217	98	86	401
1939	380	328	217	925	497	114	140	751
1945	1,197	963	1,058	3,218	1,202	141	243	1,586
1950	2,021	470	627	3,118	2,130	404	640	3,174
1951	2,298	631	985	3,914	2,813	421	851	4,085
1952	2,307	746	1,248	4,301	2,977	360	693	4,030
1953	2,419	665	1,033	4,117	3,221	453	709	4,383

[a] Fiscal years beginning 1st July for 1870, 1890, and 1900 and 1st April for 1910, and calendar years for 1920 and subsequent years.

The growing use of synthetic and other substitute materials has also affected the type of commodities imported, e.g. silk and natural rubber. The development of natural resources has reduced the need for imports of copper and brass. The variety of domestic farm products has also increased during this period. The effects of these changes are shown in the decline in relative importance of imports of fibres and textiles, agricultural and vegetable products, and animals and their products groups (Table 54).

The rise in imports of iron and its products from 24 per cent of the total to 39 per cent reflects the continuing increase in the imports of machinery (including farm), automobile parts, and consumer durable goods. Similarly, the rise in imports of non-ferrous metals and their products is due largely to the increased demand for capital and consumer goods. For example, imports of electrical apparatus increased seven-fold from 1930 to 1953 and in 1953 were about 55 per cent of total imports of non-ferrous metals and their products.

TABLE 58

Percentage Distribution of Commodity Exports and Imports, by Country of Destination or Origin, Canada, Selected Years [a], 1870–1953

Year	Exports of Domestic Produce				Imports for Home Consumption			
	United States	United Kingdom	Other Countries	Total	United States	United Kingdom	Other Countries	Total
1870	50.0	37.9	12.1	100.0	32.2	57.1	10.7	100.0
1890	42.7	48.3	9.0	100.0	46.4	37.5	16.1	100.0
1900	38.4	52.6	9.0	100.0	60.1	24.2	15.7	100.0
1910	38.0	48.1	13.9	100.0	60.9	24.3	14.8	100.0
1920	43.8	26.9	29.3	100.0	68.9	17.3	13.8	100.0
1929	42.8	25.2	32.0	100.0	68.8	15.0	16.2	100.0
1930	43.2	27.2	29.6	100.0	64.9	16.1	19.0	100.0
1933	31.8	39.8	28.4	100.0	54.2	24.4	21.4	100.0
1939	41.1	35.5	23.4	100.0	66.2	15.2	18.6	100.0
1945	37.2	29.9	32.9	100.0	75.8	8.9	15.3	100.0
1950	64.8	15.1	20.1	100.0	67.1	12.7	20.2	100.0
1951	58.7	16.1	25.2	100.0	68.9	10.3	20.8	100.0
1952	53.6	17.3	29.1	100.0	73.9	8.9	17.2	100.0
1953	58.7	16.2	25.1	100.0	73.5	10.3	16.2	100.0

[a] Fiscal years beginning 1st July for 1870, 1890, and 1900 and 1st April for 1910, and calendar years for 1920 and subsequent years.

While little change occurred in the relative share of the non-metallic minerals group from 1930 to 1953, some significant shifts did take place within the group. Coal imports increased relatively slowly while imports of petroleum and its products rose six-fold notwithstanding the rapid growth of domestic production in the post-war period. This shift reflects the growing substitution of oil for coal for domestic heating and the increase in the number of motor cars. Another reason for the diminishing importance of coal imports is the added emphasis on the use of hydro power as a source of energy for industrial use.

The increase in imports of chemicals and their products from 4 to 6 per cent of the total is due to the growing use of chemicals in production, rising health standards, and the development of plastics, synthetic fibres, and other new materials.

The long-term decline in the proportion of imports coming from the United Kingdom continued, falling from 16 to 10 per cent of the total between 1930 and 1953. The United States share, on the other hand, rose from 65 to 74 per cent, absorbing not only the loss of British exporters but also the loss in the share of imports from other countries, which fell from 19 to 16 per cent (Table 58).

SECTION 8

INCOMES AND PRICES

It is the purpose of this section to look specifically at the long-term change in incomes and at variations in the price level as it affects incomes, covering changes in the over-all price level and the prices of the principal categories of goods and services.

LONG-TERM RATE OF GROWTH IN REAL NATIONAL INCOME

National income at factor cost (henceforth referred to as national income) amounted to $19.1 billion in 1953, national income per capita was $1,269 compared with $110 in 1870. After allowance for price changes per capita income in 1953 was about three and a half times that in 1870 (Table 59). However, the improvement in terms of personal disposable income is less, possibly about three times, because direct taxes now being paid were unknown at the time of Confederation. There are some offsetting items since transfer payments are now larger than ever before (particularly social security payments,

TABLE 59

Net National Income at Factor Cost in Current and Constant (1935–1939) *Dollars, Canada, Selected Years*, 1870–1953

Year	Total $ million		Per Capita $		Net National Incomes as Per Cent of Gross National Product
	Current Dollars	Constant Dollars	Current Dollars	Constant Dollars	
1870	405	674	110	184	88.4
1890	715	1,216	148	252	87.7
1900	898	1,595	168	298	87.0
1910	1,829	2,639	257	371	85.5
1920	4,866	3,374	560	388	87.8
1929	4,789	4,154	473	410	77.7
1930	4,283	3,828	416	371	77.2
1933	2,452	2,617	229	245	69.0
1939	4,373	4,373	386	386	76.6
1945	9,840	7,748	807	635	83.0
1950	14,550	8,464	1,048	610	79.9
1951	17,138	8,959	1,202	628	79.8
1952	18,254	9,122	1,246	623	78.7
1953	19,086	9,486	1,269	631	78.2

TABLE 60

Percentage Changes in Net National Income and Gross National Product, in Constant (1935–1939) *Dollars, Canada, Selected Periods*, 1870–1953

Item	1870–1890	1890–1910	1910–1930	1930–1953	1870–1953	1890–1953	1910–1953
Net National Income at Factor Cost:							
Whole Period	80.4	117.0	45.1	147.8	1,307.4	680.1	259.5
Annual Average	2.99	3.95	1.88	4.02	3.24	3.31	3.02
Net National Income at Factor Cost per Capita:							
Whole Period	37.0	47.2	Nil	70.1	242.9	150.4	70.1
Annual Average Rate	1.59	1.95	Nil	2.33	1.50	1.47	1.24
Gross National Product per Capita:							
Whole Period	39.1	50.7	14.5	62.0	288.9	179.5	85.5
Annual Average Rate	1.67	2.07	0.68	2.12	1.65	1.65	1.45

which represent a distinct departure in political, economic, and social thinking since Confederation). But these in turn are offset by the savings retained by business corporations which now play a dominant part in Canadian economic life but which were quite unimportant at the time of Confederation (for more details see Table 62).

Over the long term, national income has increased less than gross national product, the annual rate in real terms per capita being 1.50 per cent while that of gross national product was 1.65 per cent (Table 60). However, examination of the rates of increase in the four sub-periods shows that national income increased more rapidly than gross national product in the last and at about the same rate in the first. Apparently, then, it is the more rapid relative rise of provision for depreciation (as the stock of capital grew rapidly) and of 'indirect taxes less subsidies in the two middle periods' that has determined this long-term trend. While increasing emphasis has been placed on direct taxes – income taxes on corporations and individuals were first introduced on a national scale in 1916 and 1917 – the substantial rise in government expenditures has made greater indirect taxes necessary also. Although government subsidies rose, the increase was much smaller than that in revenues from indirect taxes; hence there was a notable increase in the ratio of 'indirect taxes less subsidies' to gross national product, from about 4 per cent of gross national product in 1870 to 12 per cent in 1953 (see Section 3).

INTERMEDIATE-TERM RATES OF GROWTH OF REAL NATIONAL INCOME

National income per capita in real terms rose most rapidly in the 1930–53 period, at an annual rate of 2.33 per cent. This compares with an annual rate of increases of 1.59 per cent for 1870–90 and 1.95 per cent for 1890–1910. There was no change in income per capita, in constant prices, from 1910 to 1930. This pattern of increase in real national income per capita corresponds fairly closely to that in real gross national product per capita. The reasons mentioned in Sections 3 and 4 for variations in the rates of growth in gross national product and improvements in the standard of living apply also to the variations in the rate of increase of real incomes. Larger real output per capita means larger real incomes per capita which usually means larger expenditures on consumer goods and services per

capita. The only major point of difference in the patterns of these three rates of increase is that real expenditures on consumer goods show a slightly larger increase in the first period than in the second, while the opposite is indicated for the other two. The thesis developed in the preceding sections and further elaborated in Section 9 is simply this: When a nation undergoes an industrial revolution the first generation may make more startling progress in terms of the level of real incomes and standard of living than subsequent generations because real incomes and the standard of living of a predominantly agricultural society are usually quite low. Thus, the industrial revolution which took place in Canada in the late nineteenth century and the early twentieth century contributed much to raising the real income and standard of living of the people.

In the twentieth century, two factors combined to slow down the immediate impact of the industrial revolution on the levels of real income and real consumption of the second generation of Canadians: first, the time required to absorb the rapid population increase mainly through large numbers of immigrants until World War I, and secondly, the need to consolidate the gains made up to that time. The efforts of the first two decades of the twentieth century were to pay great dividends in the higher incomes earned by the third generation. For with the industrial revolution completed and consolidated and the framework for expansion created, the third generation could devote most of their energies to the further improvement of living standards. The high average annual rate of increase in national income per capita in real terms from 1930 to 1953 was the result.

THE EFFECT OF DECLINING NUMBERS OF HOURS WORKED

Over the long term the number of hours worked per week and per year has been reduced materially. How much greater, then, is the rise in earnings on an hourly basis than on an annual basis? Unfortunately there is little information on hours worked per week for the earlier period for the country as a whole and even for recent years for some industries.

The most reliable data available are average wage rates in manufacturing per man-hour and these go back only to 1900. Between 1900 and 1953 the worker in manufacturing could increase his real income at an annual rate of 1.29 per cent. But since the number of hours he worked per week was about one-

quarter less in 1953 than in 1900, his hourly remuneration rose 1.88 per cent per year in real terms. This figure is based on the assumption of a 52-week year, but the gradual acceptance of paid holidays and the increase in the number of statutory holidays has reduced the work year to about 50 weeks. As a result the rate of growth in the hourly real wage in manufacturing would be about 1.96 per cent. This is very close to the rate of increase in real output per wage-earner per hour, 2.03 per cent per year. The estimates support the general principle, endorsed by business management and receiving growing recognition by labour, that an improvement in real income and the standard of living depends on increasing output at every level; in an individual enterprise, in an entire industry, and in the nation as a whole.

THE EFFECT ON INCOME OF A SHIFT TO HIGH PRODUCTIVITY INDUSTRIES

A comparison of the long-term average annual increase in per capita real national income since 1900 (1.43 per cent) with that in the average earnings of wage earners in manufacturing (1.29 per cent) points up the effect of the change in industrial structure on the level of real earnings of the nation.

Does a more rapid rate of increase in per capita national income than in income per wage earner in manufacturing mean that productivity is rising less rapidly in manufacturing than in other industries? Productivity increases have been more rapid in some other sectors than in manufacturing, e.g. some public utilities, but in other sectors they have been less rapid, e.g. the personal service sector (see Section 10). But a major dynamic influence making for a rapid rise in real national income per capita has been the shift from sectors with comparatively small output per capita to sectors with higher output per capita: for example, the shift of workers from the farm to the factory and from domestic service to retail trade (see Section 9).

PERSONAL DISPOSABLE INCOME AND PERSONAL SAVINGS

Personal disposable income is a much better concept than national income for the purpose of studying the changes in income retained by individuals. It is the total of all current

[1] There are several statistical reasons for the difference involved: one is a per capita figure, the other a wage earner figure; the labour force has been rising more rapidly than population.

TABLE 61

Personal Disposable Income and Personal Savings, in Current and Constant (1935–1939) *Dollars, Canada, Selected Years,* 1929–1953

Year	Personal Disposable Income $ million		Personal Disposable Income per Capita $		Personal Savings $ million		Personal Savings per Capita $		Personal Savings as a Per Cent of Personal Disposable Income	
	Current Dollars	Constant Dollars	Current Dollars	Constant Dollars	Current Dollars	Constant Dollars	Current Dollars	Constant Dollars	Total	Total Excluding Change in Farm Inventories
1929	4,589	3,850	453	380	196	164	19	16	4.3	7.1
1930	4,292	3,631	416	352	88	74	9	7	2.1	1.0
1933	2,774	2,935	259	274	−113	−120	−11	−11	−4.1	−2.9
1939	4,208	4,117	371	363	304	297	27	26	7.2	5.8
1945	8,430	6,771	691	555	1,619	1,300	133	107	19.2	21.9
1950	12,674	7,399	913	533	645	377	46	27	5.1	4.1
1951	14,663	7,709	1,029	541	1,390	731	98	51	9.5	7.1
1952	15,825	8,132	1,080	555	1,462	751	100	51	9.2	7.7
1953	16,654	8,562	1,108	569	1,539	791	102	53	9.2	8.9

receipts of income, in cash and in kind, minus personal direct taxes. It differs from national income in that it excludes current incomes not paid to persons, e.g. undistributed profits and personal direct taxes, and includes receipts earned in the course of current production, i.e. transfer payments such as family allowances and unemployment insurance.[1] Unfortunately, estimates

TABLE 62

Net National Income at Factor Cost, Personal Income, Personal Disposable Income, and Personal Savings, Canada, 1929 and 1953

(Millions of dollars)

Item	1929	1953
Net National Income at Factor Cost	4,789	19,086
Add: Transfer Payments (excluding Interest on Transfer Portion of the Public Debt and Charitable Contributions from Corporations)[a]	111	1,489
Add: Transfer Portion of Interest on the Public Debt	143	490
Deduct: Earnings Not Paid Out to Persons[b]	−386	−2,980
Equals: Personal Income	4,657	18,085
Deduct: Personal Taxes	−68	−1,431
Equals: Personal Disposable Income	4,589	16,654
Deduct: Personal Expenditures on Consumer Goods and Services	−4,393	−15,115
Equals: Personal Savings	196	1,539
Change in Farm Inventories (Value of Physical Change)	−129	51
Personal Savings Excluding Change in Farm Inventories	325	1,488
Per Cent Increase in per Capita in Constant Dollars, 1929–53:		
Net National Income at Factor Cost:		
Whole Period	53.9	
Annual Average	1.81	
Personal Disposable Income:		
Whole Period	49.7	
Annual Average	1.69	

[a] Since national income excludes transfer payments and personal income includes them, transfer payments are added back here. However, charitable contributions from corporations are not added since they are included in national income.

[b] This item includes: undistributed corporation profits, corporation profit taxes, withholding taxes, government investment income, adjustment on grain transactions, and employer and employee contributions to social insurance and government pension funds.

[1] *National Accounts, Income and Expenditure, 1926–1950*, p. 117.

are available only from 1926 on and are shown for selected years starting with 1929 in Table 61. A comparison of personal disposable income and national income per capita in constant dollars for the years 1929 and 1953 suggests that the former has been rising more slowly (at an annual rate of 1.69 per cent) than the latter (at an annual rate of 1.81 per cent) (Table 62). The marked increases in personal income taxes, which reached a peacetime high in 1953 (because of the government's policy of financing rearmament on a pay-as-you-go basis), and in undistributed earnings (e.g. undistributed corporation profits) were responsible for the somewhat slower rate of growth in personal disposable income.

If consumer expenditures are subtracted from personal disposable income, the remainder is personal savings (as per National Accounts), and includes the net change in farm inventories.

Personal savings (as per National Accounts) amounted to $1.5 billion in 1953, or $102 per capita. After allowance for price changes, personal disposable income per capita in 1953 was about one and a half times what it had been in 1929 while personal savings per capita were about three and one-third times the 1929 level. Personal savings were 4.3 per cent in 1929 and 9.2 per cent of total disposable income in 1953. But if the change in farm inventories is eliminated the ratio to personal disposable income is 7.1 per cent in 1929 and 8.9 per cent in 1953. The data illustrate the influence of changes in farm inventories on the level and composition of personal savings in a country where agriculture is an important source of income, e.g. 10 per cent in 1953.

PRICES

Reference was made in the preceding discussion to the effect of the price levels on the various measures of national output. Price trends of various major economic aggregates are discussed below and some of the basic factors behind long-term changes are examined (Table 63).

The constant dollar figures presented in this study do not in themselves give the whole picture. Only by examining the price levels of the various components of gross national expenditure in relation to one another can a proper perspective be obtained. Changes in the relative prices of the components of gross

TABLE 63

Price Indices of Consumer Goods and Services, Capital Goods, Government Expenditures on Goods and Services, Commodity Exports, Commodity Imports, Gross National Product, and General Wholesale Prices, Canada, Selected Years, 1867–1953

(1935–1939=100)

Year	Consumer Goods and Services	Capital Goods	Government Expenditures on Goods and Services	Commodity Exports	Commodity Imports	Implicit Indices for Gross National Product	General Wholesale Price Indices
1867	67.6	55.2	65.1	82.4	132.7	60.3	80.2
1870	67.3	54.0	64.6	81.1	132.0	60.1	79.8
1880	64.1	54.9	62.3	84.7	109.0	59.2	71.8
1890	62.1	53.8	60.4	90.3	100.2	58.8	67.1
1900	58.1	55.6	57.6	89.0	97.2	56.3	62.4
1910	73.7	63.8	71.7	107.4	106.3	69.3	78.5
1920	143.5	154.8	145.8	233.1	239.6	144.2	203.2
1929	119.2	108.3	108.4	136.1	129.4	115.3	124.6
1930	118.2	104.5	107.6	115.2	116.9	111.9	112.9
1933	94.5	92.3	99.4	85.2	92.3	93.7	87.4
1939	102.2	102.4	99.1	96.7	99.2	100.0	99.2
1945	124.5	131.5	131.6	168.4	156.6	127.0	132.1
1950	171.3	191.7	169.2	232.3	235.7	171.9	211.2
1951	190.2	213.3	189.3	263.8	269.7	191.3	240.2
1952	194.6	218.0	197.0	261.3	235.9	200.1	226.0
1953	194.5	225.3	203.8	253.8	233.8	201.2	220.7

national expenditure must be taken into account in considering the changes in the relationship of these components in constant dollar terms to one another and to the total. For example, the constant dollar values of imports and exports given in Section 7 do not by themselves disclose that the long-term improvement in the terms of trade – the bettering of export prices in relation to import prices – has been an important factor in bringing these totals into better balance.

FACTORS INFLUENCING THE GENERAL PRICE LEVEL IN CANADA

Except during World War II, when a comprehensive system of price control was in operation, prices have been largely determined in the market place. However, the heavy dependence on foreign trade has made price determination a rather complex operation. For domestic prices have been affected to an important extent by supply and demand conditions prevailing abroad

and by changes in world prices of many basic commodities and manufactured articles.

As emphasized in Section 7, Canada is a heavy importer of a variety of goods and services, with purchases abroad amounting to 24 per cent of gross national product in 1953. But in many sectors the import content appeared to be much higher. It was about 30 per cent for consumer expenditures and an even higher proportion for capital goods.[1] Increases in prices abroad of raw materials, component parts, or manufactured articles are almost immediately reflected in rising domestic prices. This is true even for foodstuffs since Canadians are not self-sufficient. They buy citrus and other non-native fruits all year around and many vegetables and fresh fruits in the off seasons, as well as many speciality items, e.g. Swiss cheese and Norwegian sardines.

CHANGES IN PRICES AND INCOME

Over the 1870 to 1953 period the largest price increase is indicated for capital goods, 1.73 per cent per year, followed by government expenditures, 1.40 per cent per annum, commodity exports, 1.38 per cent and consumer goods and services, 1.29 per cent (just slightly more than the rate of increase in general wholesale prices, 1.23 per cent). The lowest rate of increase, 0.69 per cent annually, is shown for commodity imports (see Table 64).

Changes over the intermediate periods suggest a wave-like pattern: for example, the price index implicit in gross national expenditure shows a small decline, about one-tenth of one per cent per year, for the 1870–90 period, a modest annual increase, 0.83 per cent, over the next period, 1890–1910, and substantial gains in the next two periods, 2.43 per cent and 2.58 per cent per year, respectively. In the 1930–53 period, however, there was marked fluctuation. As a result of the decline in prices after 1920, which continued until the mid-'thirties, and the slow recovery in the late 'thirties the price level in 1939 was 31 per cent below the 1920 level. And in comparison with the immediate pre-war situation, prices in 1953 were substantially higher. The increase between 1939 and 1953 in the implicit price index was about 100 per cent, which represents an annual increase of 5.12 per cent.

[1] *Report of the Royal Commission on Prices*, Ottawa, 1949, Vol. II, p. 100.

TABLE 64

Percentage Changes in Price Indices of Consumer Goods and Services, Capital Goods, Government Expenditures on Goods and Services, Commodity Exports, Commodity Imports, Gross National Product, and General Wholesale Prices, Canada, Selected Periods, 1870–1953

	1870–1890	1890–1910	1910–1930	1930–1953	1870–1953	1890–1953	1910–1953
Consumer Goods and Services:							
Whole Period	− 7.7	18.7	60.4	64.6	189.0	213.2	163.9
Annual Average Rate	− 0.39	0.86	2.39	2.19	1.29	1.83	2.28
Capital Goods:							
Whole Period	− 0.4	18.6	63.8	115.6	317.2	318.8	253.1
Annual Average Rate	− 0.02	0.86	2.50	3.40	1.73	2.30	2.98
Government Expenditure on Goods and Services:							
Whole Period	− 6.5	18.7	50.0	89.4	215.5	237.4	184.2
Annual Average Rate	− 0.33	0.86	2.05	2.82	1.40	1.95	2.46
Commodity Exports:							
Whole Period	11.3	18.9	7.3	120.3	212.9	181.1	136.3
Annual Average Rate	0.54	0.87	0.35	3.49	1.38	1.65	2.02
Commodity Imports:							
Whole Period	−24.1	6.1	10.0	100.0	77.1	133.3	119.9
Annual Average Rate	− 1.37	0.30	0.48	3.06	0.69	1.35	1.85
Price Index Implicit in G.N.P.:							
Whole Period	− 2.2	17.9	61.5	79.8	234.8	242.2	190.3
Annual Average Rate	− 0.11	0.83	2.43	2.58	1.47	1.97	2.51
General Wholesale Prices:							
Whole Period	−15.9	17.0	43.8	95.5	176.6	228.9	181.1
Annual Average Rate	− 0.86	0.79	1.83	2.95	1.23	1.91	2.43

In relative terms, the price trends of the seven economic components and aggregates have some common traits, all except consumer goods and services record the largest increase in the 1930 to 1953 period, all except commodity exports show the second largest gain in the 1910 to 1930 period, etc. (Table 64).

	Annual Percentage Rates of Change in:		
	Price Index Implicit in Gross National Expenditure	National Income per Capita in Current Dollars	Net National Product per Capita in Constant (1935–39) Dollars
1870–90 . .	−0.11	1.49	1.61
1890–1910 .	0.83	2.80	1.98
1910–30 . .	2.43	2.44	0.41
1930–53 . .	2.58	4.97	2.40
1870–1953 .	1.47	2.99	1.63
1890–1953 .	1.97	3.47	1.63
1910–53 . .	2.51	3.78	1.47

Increases in earnings have far outstripped the long-term rise in prices as the accompanying tabulation shows. In fact, national income per capita has grown over the entire period more than twice as fast as the price level. Real earnings here therefore increased substantially. While the rate of improvement has varied, the trend has been steadily upward. Only occasionally has this trend been interrupted, e.g. in 1947, when prices were running ahead of income, and in 1933 and 1938 when income was declining more rapidly than prices.

SECTION 9

CHANGES IN THE INDUSTRIAL STRUCTURE

Economic development over the last eighty-six years has been greatly influenced by changes in the industrial structure of the economy, just as the latter, in turn, has been shaped and moulded by changes in technology, human tastes, and the terms and composition of international trade. Other factors that have affected the industrial structure are the accumulation of capital, the development of scientific research and its application to economic objectives, the experience and skills of management and labour as well as their changing attitudes toward their

responsibilities in a dynamic economy with freedom of choice and freedom of enterprise.

Changes in Canada's industrial structure were largely achieved as a result of individual initiative and in response to market forces, domestic and foreign. In this development government economic policies played their part. They encouraged the opening up of the country, the economic use of natural resources, and the growth of industry, and facilitated the transfer of human resources from one economic pursuit to another with a minimum of hardship and dislocation. In simple terms, the main objective of government economic policies, as it relates to the changing industrial pattern, was to ease the growing pains of a country that was expanding rapidly but whose growth faced many hazards, notably those arising from heavy dependence on foreign demand.

Two questions arise: What changes have taken place in the industrial structure of the economy? What effect have these changes had on the nation's output, employment, income, and standard of living?

MAIN CHARACTERISTICS OF CHANGING INDUSTRIAL STRUCTURE

Canada is now an industrialized society, its major source of income and employment in manufacturing operations. The preeminence of manufacturing is recent. If the criterion of industrialization is the proportion of national income derived from manufacturing then Canada became more industrial than agricultural during World War I. If the definition is extended to cover employment, then Canada's industrial coming-of-age is very recent dating back only to the early years of World War II.

Whatever definition is used, the fact remains that many Canadian industries became competitive with those of other countries both in quality and price long before World War II. One of the earliest examples is the farm implements industry; another is the pulp and paper industry, which competed successfully in important foreign markets in the 'twenties and has retained its place ever since.

Canada's growing economic development is also reflected in the growth of service industries (public utilities, trade, financial, institutional and personal service, and government service). In fact, some evidence suggests that the service sector has grown more rapidly than manufacturing (Tables 65 and 67).

It is frequently said that a nation undergoing rapid secondary industrial expansion and enjoying the increased benefits that come from the provision of services, will allocate fewer energies, comparatively speaking, to the expansion of primary industries. This has not been the Canadian experience. Agriculture, a major primary industry, has declined substantially in relative importance, but two others, forestry operations and fishing, have maintained the role they played at Confederation as a factor in employment and income. On the other hand, mining has become a much more significant factor than it was in the early days. The large resources development programme is chiefly responsible for the added stature of the mining industry.

The development of the construction industry has been interesting. As far as persons working in construction are concerned, their relative decline has been substantial. But the contribution of the construction industry to national output and national income has been more than holding its own (see Tables 65 and 67). Two factors explain what on the surface appears to be inconsistent evidence. First, the increasing use of modern equipment, particularly in heavy engineering construction, has raised efficiency considerably over the long term and reduced labour requirements. Second, expansion in contract construction and the extension of the construction season in recent years have given new permanency of employment to skilled construction workers which, in turn, has contributed to the increase in productivity in this field.

IMPACT OF CHANGING INDUSTRIAL STRUCTURE ON ECONOMIC DEVELOPMENT

The repercussions of the changing industrial structure on economic development include the following:

1. The transfer of part of the labour force from low to high productivity industries has contributed significantly to the rapid rate of increase in real income. Higher productivity has also made possible a higher standard of living and greater leisure (as indicated in Section 4).

2. The manufacturing sector and certain parts of the service sector, particularly utilities, are heavy users of capital equipment. The increasing importance of these industries has had a major effect on the extent and the pattern of investment in Canada.

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TABLE 65

Persons Working [a], *By Industry, Canada, Selected Years*, 1871–1953

(In thousands)

Year	Primary Industries					Secondary Industries			Tertiary Industries			
	Agriculture	Fishing and Trapping	Mining	Forest Operations	Total	Manufacturing	Construction	Total	Public Utilities	Other Service Industries	Total	Total
1871	566	—	—	—	—	148	—	—	—	—	192	1,130
1881	662	29	7	8	706	190	215	405	—	—	267	1,378
1891	735	30	16	13	794	260	163	423	—	—	389	1,606
1901	717	27	29	17	790	309	188	497	—	—	496	1,783
1911	934	35	63	43	1,075	541	198	739	—	—	910	2,724
1921	1,042	29	51	40	1,162	556	284	840	—	—	1,171	3,173
1931	1,132	48	58	44	1,282	443	203	646	—	—	1,999	3,927
1945	1,056	28	74	80	1,238	1,149	186	1,335	361	1,408	1,769	4,342
1950	1,066	50	75	60	1,251	1,321	341	1,662	421	1,722	2,143	5,056
1951	991	38	85	88	1,202	1,356	353	1,709	440	1,804	2,244	5,155
1952	927	41	97	77	1,142	1,352	356	1,708	477	1,902	2,379	5,229
1953	910	39	90	70	1,109	1,397	377	1,774	493	1,980	2,473	5,356

[a] Covers gainfully-occupied reported in the census for 1871–1931 inclusive, and persons with jobs reported in the labour force surveys for 1945–53 (military personnel excluded). The data relate to the beginning of April for 1871–1901, and to the beginning of June for 1911, 1921 and 1931. For 1945, the figure is as of the middle of November, and for subsequent years as of June. Special adjustments were made for manufacturing and construction for 1871–1911 to assure comparability with net and gross value of production and related data.

TABLE 66

Percentage Distribution of Persons Working [a], *By Industry, Canada, Selected Years*, 1871–1953

Year	Primary Industries					Secondary Industries			Tertiary Industries			
	Agriculture	Fishing and Trapping	Mining	Forest Operations	Total	Manufacturing	Construction	Total	Public Utilities	Other Service Industries	Total	Total
1871	50.0	—	—	—	—	13.1	—	—	—	—	17.0	100.0
1881	48.0	2.1	0.5	0.6	51.2	13.8	15.6	29.4	—	—	19.4	100.0
1891	45.8	1.9	1.0	0.8	49.5	16.2	10.1	26.3	—	—	24.2	100.0
1901	40.2	1.5	1.6	1.0	44.3	17.3	10.6	27.9	—	—	27.8	100.0
1911	34.3	1.3	2.3	1.6	39.5	19.9	7.2	27.1	—	—	33.4	100.0
1921	32.8	0.9	1.6	1.3	36.6	17.5	9.0	26.5	—	—	36.9	100.0
1931	28.8	1.2	1.5	1.1	32.6	11.3	5.2	16.5	—	—	50.9	100.0
1945	24.4	0.6	1.7	1.8	28.5	26.5	4.3	30.8	8.3	32.4	40.7	100.0
1950	21.1	1.0	1.5	1.2	24.8	26.1	6.7	32.8	8.3	34.1	42.4	100.0
1951	19.2	0.7	1.7	1.7	23.3	26.3	6.9	33.2	8.5	35.0	43.5	100.0
1952	17.7	0.8	1.9	1.5	21.9	25.9	6.8	32.7	9.1	36.3	45.4	100.0
1953	17.0	0.7	1.7	1.3	20.7	26.1	7.0	33.1	9.2	37.0	46.2	100.0

[a] Covers gainfully-occupied reported in the census for 1871–1931 inclusive, and persons with jobs reported in the labour force surveys for 1945–53 (with military personnel excluded). The data relate to the beginning of April for 1871–1901, and to the beginning of June for 1911, 1921 and 1931. For 1945, the figure is as of the middle of November, and for subsequent years as of June. Special adjustments were made for manufacturing and construction for 1871–1911 to assure comparability with net and gross value of production and related data.

3. The fact that primary industries, other than agriculture, have maintained their importance is indicative of the integrated development with resources and industrial development and the growth of the service sector proceeding apace.

4. Since the manufacturing and service sectors cater largely to the domestic market, their growing importance has reduced somewhat Canada's vulnerability to fluctuations in foreign demand and world prices. Further, a good deal of the resources development is in response to long-term foreign demand for raw materials that can be produced in this country at low cost and sold at competitive prices on world markets. Notwithstanding this trend, Canada's dependence on foreign trade is so great compared with that of most countries[1] that levels of employment, income, and prices continue to be affected significantly by fluctuations abroad (see also Section 7).

In general the re-orientation of the economy over the long term has been a healthy one, in keeping with the changing pattern of world demand and in line with new developments in technology and modern methods of management. It has been achieved for the most part without great economic dislocations[2] and without widespread and direct intervention by government (two world wars excepted).

EMPLOYMENT AND INCOME BY INDUSTRIES

The evidence summarized in Tables 65 to 68 shows in absolute and relative terms employment and value added to gross national product (national income originating in industry for more recent years) for selected years between 1870 and 1953. It should be noted that the data are not fully comparable over the period as a whole.

As for employment, comparable data of gainfully occupied persons are available up to 1931. For 1945 and 1950 to 1953 the data relate to persons with jobs. Gainfully occupied persons include both employed and unemployed persons, the latter distributed among the industries in which they are usually working (census definition). 'Persons with jobs' includes only

[1] For example, exports of goods and services in 1953 were 22 per cent of gross national product. The corresponding ratio for the United States was 6 per cent.

[2] The economic dislocations caused by the depression of the 1930's were serious indeed but they were more the result of world-wide economic disturbances than the consequence of a major switch-over of resources in Canada from one field of employment to another.

persons actually employed. The minimum age covered is ten years in the 'gainfully occupied' data shown up to 1921 and fourteen years in the 'persons with jobs' data for more recent years.

The data on persons working in Table 65 differ from those in Tables 70 and 76 for agriculture and manufacturing. The major difference in agriculture is in the figure for 1950, which in Table 65 relates to persons with jobs and in Table 70 to the number gainfully occupied recorded in the 1951 census. The former figure includes and the latter excludes women doing part time work in agriculture. The major differences in manufacturing data are in those relating to 1920–21, 1930–31, 1945, and 1950. Data for 1921 and 1931 in Table 65 relate to 1st June, as reported in the decennial censuses; data for 1920 and 1930 represent the *average* number of persons working *during* the year, as reported in the annual manufacturing reports. Data for 1945–53 in Table 65 are persons with jobs as of a specific date (17 November for 1945 and 3rd June for 1950), while in Table 76 they represent the *average* number of persons working during the year, as reported in the manufacturing census. The main reason for using different estimates in these tables for agriculture and manufacturing was to achieve greater comparability with value and related economic data.

The series of 'value added by industry' estimates for 1870 to 1920 inclusive in Table 67 is not fully comparable with the series of 'net national income originating in industry' for all years after 1926. Value added by industry is a measure of *new* production stemming from an industry while national income originating represents the earnings of all factors of production, netted to eliminate duplications. Theoretically the two are equal, but in practice the value added figure is the larger because it is a residual, and information available is insufficient to remove *all* expenses of production.

Value added by industry for 1870 to 1920 is compared with gross national product. Net income originating in each industry for 1929 to 1953 is a measure of its contribution to total net national income at factor cost.

Notwithstanding these limitations, some broad trends are discernible and these have been summarized earlier in this section. To supplement the general summary, here are a few key facts about the long-term trend since 1870.

TABLE 67

Value Added and National Income Originating [a], *by Industry, Canada, Selected Years*, 1800–1953

(In millions of dollars)

Year	Primary Industries					Secondary Industries			Tertiary Industries				Total	Adjustment[b]	Grand Total[c]
	Agriculture	Fishing and Trapping	Mining	Forest Operations	Total	Manufacturing	Construction	Total	Public Utilities etc.	Government	Other Service Industries	Total			
1870	153	5	4	44	206	87	14	101	—	—	—	96	403	56	459
1880	186	11	6	50	253	110	22	132	—	—	—	130	515	66	581
1890	217	13	11	53	294	189	37	226	—	—	—	214	734	69	803
1900	282	17	35	52	386	223	41	264	—	—	—	311	961	96	1,057
1910	509	21	59	86	675	508	113	621	—	—	—	752	2,048	187	2,235
1920	1,073	47	140	212	1,472	1,335	306	1,641	—	—	—	1,953	5,066	463	5,529
1929	581	27	189	79	876	1,175	290	1,465	611	384	1,714	2,709	5,050	−261	4,789
1930	483	19	151	61	714	968	241	1,209	542	412	1,695	2,649	4,572	−289	4,283
1933	187	7	116	31	341	559	69	628	347	370	992	1,709	2,678	−226	2,452
1939	512	12	299	71	894	1,164	148	1,312	508	460	1,448	2,416	4,622	−249	4,373
1945	1,161	61	274	162	1,658	2,707	340	3,047	1,081	1,776	2,449	5,306	10,011	−171	9,840
1950	1,709	78	570	257	2,614	4,471	809	5,280	1,489	1,176	4,375	7,040	14,934	−384	14,550
1951	2,296	92	690	378	3,456	5,158	856	6,014	1,743	1,397	4,863	8,003	17,473	−335	17,138
1952	2,087	67	659	360	3,173	5,375	1,021	6,396	1,947	1,638	5,368	8,953	18,522	−268	18,254
1953	1,881	60	617	327	2,885	5,667	1,212	6,879	2,057	1,815	5,689	9,561	19,325	−239	19,086

[a] For 1870 to 1920 inclusive, the figures represent value added by each industry. For 1929 to 1953 the data pertain to income originating in industry as given in the National Accounts published by the Dominion Bureau of Statistics.

[b] Adjustment item comprises rent, indirect taxes less subsidies, plus net investment income for 1870 to 1920 inclusive, and national income of non-residents for 1929 to 1953.

[c] Covers gross national product for 1870 to 1920 inclusive, and net national income at factor cost for 1929 to 1953.

TABLE 68

Percentage Distribution of Value Added and National Income Originating [a], by Industry, Canada, Selected Years, 1870–1953

Year	Primary Industries					Secondary Industries			Tertiary Industries				Total	Adjustment[b]	Grand Total[c]
	Agriculture	Fishing and Trapping	Mining	Forest Operations	Total	Manufacturing	Construction	Total	Public Utilities etc.	Government	Other Service Industries	Total			
1870	33.3	1.1	0.9	9.6	44.9	19.0	3.0	22.0	—	—	—	20.9	87.8	12.2	100.0
1880	32.0	1.9	1.0	8.6	43.5	18.9	3.8	22.7	—	—	—	22.4	88.6	11.4	100.0
1890	27.0	1.6	1.4	6.6	36.6	23.5	4.6	28.1	—	—	—	26.7	91.4	8.6	100.0
1900	26.7	1.6	3.3	4.9	36.5	20.8	4.2	25.0	—	—	—	29.4	90.9	9.1	100.0
1910	22.8	0.9	2.6	3.9	30.2	22.7	5.1	27.8	—	—	—	33.6	91.6	8.4	100.0
1920	19.4	0.9	2.5	3.8	26.6	24.2	5.5	29.7	—	—	—	35.3	91.6	8.4	100.0
1929	12.1	0.6	3.9	1.7	18.3	24.5	6.1	30.6	12.8	8.0	35.8	56.6	105.5	−5.5	100.0
1930	11.3	0.4	3.5	1.4	16.6	22.6	5.6	28.2	12.7	9.6	39.6	61.9	106.7	−6.7	100.0
1933	7.6	0.3	4.7	1.3	13.9	22.8	2.8	25.6	14.1	15.1	40.5	69.7	109.2	−9.2	100.0
1939	11.7	0.3	6.8	1.6	20.4	26.6	3.4	30.0	11.6	10.5	33.1	55.2	105.6	−5.6	100.0
1945	11.8	0.6	2.8	1.6	16.8	27.5	3.5	31.0	11.0	18.0	24.9	53.9	101.7	−1.7	100.0
1950	11.7	0.5	3.9	1.8	17.9	30.7	5.6	36.3	10.2	8.1	30.1	48.4	102.6	−2.6	100.0
1951	13.4	0.5	4.0	2.2	20.1	30.1	5.0	35.1	10.2	8.2	28.4	46.8	102.0	−2.0	100.0
1952	11.4	0.4	3.6	2.0	17.4	29.4	5.6	35.0	10.7	9.0	29.4	49.1	101.5	−1.5	100.0
1953	9.9	0.3	3.2	1.7	15.1	29.7	6.4	36.1	10.8	9.5	29.8	50.1	101.3	−1.3	100.0

[a] For 1870 to 1920 inclusive, the figures represent value added by each industry. For 1929 to 1953, the data pertain to income originating in industry as given in the National Accounts.

[b] Adjustment item comprises rent, indirect taxes, less subsidies, plus net investment income for 1870 to 1920 inclusive, and national income of non-residents for 1929 to 1953.

[c] Covers gross national product for 1870 to 1920 inclusive, and net national income at factor cost for 1929 to 1953.

In the period immediately following Confederation, one-half of the labour force drew their livelihood from farming, the mine, the forest, or from fishing (Tables 65 and 66). Primary industries produced more than four out of every ten dollars of total output (Tables 67 and 68). By 1953 about one out of five worked in primary industries and $1½ out of every $10 earned originated in these industries.

As for manufacturing, its proportion in total employment has risen from one out of eight persons working in the early post-Confederation days to one out of four at present. In the earlier period, manufacturing contributed about $2 of every $10 of output produced and at present it contributes about $3 out of $10 of national income.

The service industries provide jobs nowadays for about one-half of the working force, and contribute a similar proportion to the national income. They are now about twice as important as they were in the first or second decade after Confederation.

The changes in industrial structure have taken place at different rates and the long-term trend has been temporarily reversed from time to time. In agriculture, for example, the trend has been fairly consistently downward. But when economic conditions were depressed, e.g. in the 'thirties, there was a return-to-the-farm movement. In manufacturing the trend was on the whole upward with some interruptions. For example, around the turn of the century when mass immigration made great demands on the service industries to transport and look after the needs of millions of immigrants, and ship the greatly increased production of grain, the service sector expanded rapidly and manufacturing became relatively less important. Again, in the 'thirties a significant drop in domestic demand and heavy inventory accumulation resulted in a severe cut-back in manufacturing operations. If complete and comparable annual data were available for the two world wars, they would probably indicate a decline in manufacturing after the peak efforts of munition production had been reached – mainly the result of the time lag between complete liquidation of war production programmes and expansion of industries catering to civilian needs.

Space limitations make it impossible to appraise in detail on an industry basis the significance of changes in the industrial structure in the long-term economic development. The analysis

is, therefore, confined to two sectors whose development epitomizes the transformation of a society from its pioneering phase to its industrial coming of age: agriculture and manufacturing.

THE CHANGING ROLE OF AGRICULTURE

Agriculture was Canada's major source of employment *and income for about the first half-century after Confederation.* World War I gave a strong impetus to manufacturing industries and they then surpassed agriculture in net value of production.[1] But not until the major transformation of manufacturing operations brought about by World War II was employment larger in manufacturing than in agriculture.[2]

Two sets of data illustrate the long-term changes in the position of agriculture *vis-à-vis* manufacturing. In 1881, 48 per cent of total persons employed were working on farms and 14 per cent were in what were then considered manufacturing operations.[3] By 1921 the proportion employed in agriculture had declined to 33 per cent and the proportion in manufacturing had risen to 17½ per cent. Agriculture was still the leading industry by numbers employed. During World War II manufacturing took the lead in employment. By the war's end about 24½ per cent of the civilian labour force was working in agriculture and about 26½ per cent in manufacturing. By mid-1953 the pre-eminence of manufacturing as a field of employment was firmly established; employment was 26 per cent of the total compared with 17 per cent for agriculture *(see also Table 66).*

The relative importance of the contribution of agriculture and

[1] In 1919 manufacturing contributed 44 per cent to the net value of production in nine major sectors of the economy and agriculture contributed 32 per cent. The nine major sectors covered are: agriculture, forestry, fisheries, trapping, mining, electric power, manufacturing, construction, and custom and repair. By 1943 the manufacturing proportion had risen to 57 per cent, declining to 50 per cent by 1950. The contribution of agriculture in these two years was 18 and 17 per cent, respectively (see *Private and Public Investment in Canada, 1926–1951*, p. 36).

[2] See D. J. Daly, 'Aspects of the Decline in Employment in Canadian Agriculture', *Canadian Journal of Agricultural Economics*, Vol. III, No. 2, 1955, for a fuller discussion of the decline in agricultural employment in Canada.

[3] In the 1881 Census manufacturing was broadly defined to include such operations as plumbing and tinsmithing, carpentering, blacksmithing, lock- and gun-smithing, cleaning and dyeing, etc. If the current definition of manufacturing is used, the proportion of manufacturing in total employment in 1881 was closer to 12 per cent. Employment data for the years before 1911 relate to approximately 1st April and since then are for June.

manufacturing to the nation's output is indicated by data on the value added to gross national product. (For a summary of the data on agriculture see Table 73 and for manufacturing see Table 80.) The data in these two tables are comparable for the periods 1870 to 1920, and 1930 to 1953. Despite some differences in the concept of the estimates available for these two periods, the progressive industrialization and its contribution to national economic activity is obvious.

	Ratio to Gross National Product at Market Prices of Value Added through:	
	Agriculture	Manufacturing
1870	33.3	19.0
1880	32.0	18.9
1890	27.0	23.5
1900	26.7	20.8
1910	22.8	22.7
1920	19.4	24.2

	Ratio to Net National Income at Factor Cost of Net Income Originating in:	
	Agriculture	Manufacturing
1930	11.3	22.6
1940	11.9	27.6
1950	11.7	30.7
1951	13.4	30.1
1952	11.4	29.4
1953	9.9	29.7

Notwithstanding this decline in farming operations relative to total economic activity, agriculture has contributed much to Canada's growing prosperity and national development. To appreciate the major transformation in agriculture it is necessary to recall the conditions under which farming was carried on at the time of Confederation.

Agriculture at the time of Confederation

Agricultural production in the 1860's was mainly for domestic consumption (only about 11 per cent of output was exported in 1870); farm operations were on a comparatively small scale; the use of agricultural machinery and equipment was on the

TABLE 69

Gross Value of Agricultural Production and Value of Farm Machinery and Equipment, in Current and Constant (1935–1939) *Dollars, Canada, Selected Years*, 1870–1950

(In millions of dollars)

Year	Gross Value of Production		Value of Farm Machinery and Equipment[b]	
	Current Dollars	Constant Dollars	Current Dollars	Constant Dollars
1870[a]	206	244	—	—
1880	265	329	—	—
1890	306	408	—	—
1900	404	571	109	207
1910	726	779	257	520
1920	1,502	875	665	597
1930	937	1,145	651	686
1940	1,071	1,124	596	546
1950	3,080	1,323	1,933	1,035

[a] Covers four provinces only, but estimates for all Canada have been used in comparisons in the text.
[b] At date of decennial census.

TABLE 70

Number and Acreage of Occupied Farms and the Number of Gainfully-Occupied in Agriculture, Canada, Selected Years, 1870–1950

Year[a]	Number of Occupied Farms 000	Acreage of Occupied Farms 000	Gainfully Occupied in Agriculture 000	Number of Acres per Occupied Farm	Gainfully-Occupied Persons per	
					Occupied Farm	1,000 Acres Occupied Farmland
1870[b]	368	36,046	535	98.0	1.45	14.84
1880	464	45,358	662	97.8	1.43	14.59
1890	542	57,927	735	106.9	1.36	12.69
1900	511	63,422	717	124.1	1.40	11.31
1910	682	108,969	934	159.8	1.37	8.57
1920	711	140,888	1,042	198.2	1.47	7.40
1930	729	163,114	1,132	223.8	1.55	6.94
1940	733	173,563	1,084	236.8	1.48	6.25
1950	677	174,047	830	257.1	1.23	4.77

[a] The data are for census dates, that is: 2nd April 1871, 4th April 1881, 5th April 1891, 1st April 1901, 1st June 1911, 1921, and 1931, 21st June 1941, and 1st June 1951.
[b] Covers four provinces only; but estimates for all Canada have been used in comparisons in the text.

increase[1] but the available equipment was animal- or man-operated. The harnessing of electric, steam, or gasoline power for farm operations was still a thing of the future.

Ontario and Quebec were the major agricultural regions. Manitoba was just beginning to come into its own as a grain growing region,[2] and in British Columbia fruit growing and dairying were beginning to meet local consumer needs. Saskatchewan and Alberta had yet to become provinces, and at the time were undeveloped virgin lands. Wheat growing in the Prairie Region, on a large scale, with a substantial degree of mechanization and for export,[3] was still some three decades away. As for the Maritime Provinces, one of the earliest settled regions, Prince Edward Island had developed agriculture including the growing of grain, grass for haying, potatoes, and

[1] The use of farm implements grew rapidly after 1847, the year the first foundry and machine shop was set up to produce farm implements (beginning of the Massey-Harris Company). The company first produced threshing machines, and then in 1852 the Ketchum Mower and the Burrell Reaper. A combined reaper and mower followed in 1856, and a further improved model in the form of the Wood's Mower came off the production line in 1862. By 1863 Canada was producing for the first time a heavy rake reaper. The 1870's saw the arrival of two-wheel sulkeys and gang ploughs, hay forks, slings and carriers, and mechanical hay loaders. By 1871 the four provinces which made up Canada at that time had quite a significant accumulation of farm capital in terms of farm implements and equipment, as the following data indicate: 574,000 ploughs, harrows, and cultivators, 44,000 reapers and mowers, 63,000 horse rakes, 31,000 threshing mills, and 168,000 fanning mills. In addition farmers had at their disposal 843,000 heavy transport vehicles and 514,000 light carriages. Since the number of occupied farms in these four provinces numbered 368,000, this meant an average of almost four vehicles per farm. There were also three ploughs, harrows, and cultivators for every two farms, one fanning mill for every two farms, one horse rake for every six farms, one reaper or mower for every eight farms, and one threshing mill for every twelve farms. (Data from the 1871 Census.)

[2] After initial hardship in raising wheat and other grains, the situation improved notably after 1875. The establishment of trade routes, the introduction of hardier varieties of wheat and improvement in the flour milling process opened a new era for Manitoba and later for the other Prairie Provinces. The extension of railway service to Manitoba increased opportunities for shipping grains and other products outside the province: to the south in 1879 (through the opening of the St. Paul-St. Boniface route) and to the east in 1883 (through the Canadian Pacific Railway link between Winnipeg and Port Arthur) and to the west in 1885 (with the completion of the Canadian Pacific Railway route to British Columbia). (See Leonard D. Nesbitt, *The Story of Wheat*, Alberta Wheat Pool, Calgary, Alberta, March 1953, p. 19.)

[3] A modest beginning was made in 1876 when the first shipment of wheat to be used as seed was made from the West to Ontario. 'It brought a price of 85 cents a bushel and the freight to Toronto was 35 cents a bushel. The first shipment of wheat from Western Canada direct to Great Britain was made on 17th October 1877. The grain was floated down the Red River to St. Paul, Minnesota, and then sent by rail to the Atlantic seaboard. The first wheat to be shipped overseas by an all-Canadian route went out in 1884. It was freighted to Port Arthur by rail and thence by water and rail to the seaboard. There it was placed on an ocean steamer and taken to Glasgow, Scotland' (*ibid.*).

fruit; the raising of livestock, particularly cattle and sheep; and dairying. Agriculture in Nova Scotia and New Brunswick lagged behind, since lumbering and mining operations offered better economic opportunities in the early years after Confederation.

Long-term changes; 1867–1950

The following are a few indications of the long-term growth: number of occupied farms in Canada in 1951, 677,000, about twice the number in 1871; acreage of occupied farms, 174 million in 1951, or five times the acreage in 1871; persons gainfully occupied in agriculture, 830,000, an increase of about one-half (see Table 70). The gross value of production of agriculture was $3 billion in 1950, and after adjustment for price changes, five times the volume in 1870. Exports were $852 million in 1950, or about thirty-five times the volume in 1870. Data on the value of farm machinery and equipment are available back only to 1901. Between 1901 and 1951 farm machinery and equipment rose five times in volume terms, and investment in current dollar terms approximated $2 billion at mid-1951 (see Table 69).

The development of agriculture varied greatly during the eighty-six-year period. Here are some of the special factors which influenced the pattern of agriculture in the four sub-periods.

Intermediate changes
1870–1890

The political union in 1867 stimulated agricultural production, partly through a more active policy of transportation development and land settlement, partly through increasing technical assistance and guidance to farmers. One of the first Federal Government departments to be established was the Department of Agriculture, which supplemented and, in many instances, extended the work of the Provincial Departments of Agriculture already in existence. Further, the protracted agricultural depression that extended throughout the 1880's led to the creation of the experimental farm system in 1886, and the work of this agency contributed to a general improvement in agricultural methods. The completion of the Canadian Pacific Railway paved the way for the settlement of the Prairie Provinces, which event was destined to have a significant effect on agriculture in the subsequent periods. Between Confederation and 1890 the importance of the export market increased somewhat, with

TABLE 71

Gross Value of Production and Value of Farm Machinery in Constant (1935–1939) *Dollars Per Occupied Farm, Per Thousand Acres of Farmland Per Gainfully-Occupied Person, and Per* $1,000 *Output, in Constant* (1935–1939) *Dollars, Canada, Selected Years,* 1870–1950

Year[a]	Gross Value of Production in Constant Dollars per			Value of Farm Machinery in Constant Dollars per			
	Occupied Farm	1,000 Acres of Farmland	Gainfully-Occupied Person	Occupied Farm	1,000 Acres of Farmland	Gainfully-Occupied Person	$1,000 Output in Constant Dollars
	$	$	$	$	$	$	$
1870[b] . . .	663	6,769	456	—	—	—	—
1880 . . .	709	7,253	497	—	—	—	—
1890 . . .	753	7,043	555	—	—	—	—
1900 . . .	1,117	9,003	796	405	3,264	289	363
1910 . . .	1,142	7,149	834	762	4,772	557	668
1920 . . .	1,231	6,211	840	840	4,237	573	682
1930 . . .	1,571	7,020	1,011	941	4,206	606	599
1940 . . .	1,533	6,476	1,037	745	3,146	504	486
1950 . . .	1,954	7,601	1,594	1,529	5,947	1,247	782

[a] The data on gross value of production relate to the census period, that is from about 1st April to the end of March for 1870–1900, and to the calendar year for 1910–50. The other items are as of the census date as indicated in footnote a of Table 69.

[b] Covers four provinces only, but estimates relating to all Canada have been used in comparisons in the text.

about 16 per cent of the 1890 gross value of agricultural production sold outside the country, mainly to the United States, compared with about 11 per cent in 1870.

The number of occupied farms rose about 40 per cent and the number of persons gainfully occupied about 30 per cent. The average farm was about 9 per cent larger in 1891 than in 1871 and the gainfully occupied per thousand acres of occupied farmland decreased about 14 per cent.

1890–1910

At the very beginning of this period agriculture received a serious blow – the adoption of the McKinley Tariff by the United States in 1890 had the effect of excluding many Canadian agricultural products that had formerly found their export market there. The rapid settlement of the West brought about the mass production of wheat, and this development dealt a blow to Eastern grain growers who could not compete. By 1900 most of the grain exported was Prairie grown, and the farmers in Eastern Canada were concentrating on dairy products for the domestic and United Kingdom markets. This specialization as a market economy developed resulted in larger purchases by farmers of food and clothing.

The opening of the West brought a significant rise in the size of the average farm, 49 per cent between 1891 and 1911. The use of machinery on the farm more than doubled from 1901 to 1911. At the beginning of the twentieth century, some self-propelled steam engines, designed primarily for belt-power operations but especially adapted for breaking land, made their appearance, and these were followed by gas engines. The latter were of two types, stationary units for grinding grain, etc, and portable units which were hauled by horses about a farm or from farm to farm. This increasing mechanization is reflected in the 32 per cent decline in the number of gainfully-occupied agricultural workers per thousand acres of farmland.

The factors mentioned above were among those responsible for a significant increase in the value of agricultural production, involving almost a doubling in volume and an annual rise in the output per gainfully occupied of 2.06 per cent. The value added by agriculture in constant dollar terms also about doubled.

1910–1930

One of the most notable events in agriculture during the

TABLE 72

Gross Value of Agriculture Production by Major Types of Commodities, and Exports of Agricultural Products, in Current Dollars, Canada, Selected Years, 1870–1950

Year	Value of Production, $ million					Exports of Agricultural Products[a], $ million	Per Cent of Gross Value of Production					
							Value of Production					Exports of Agricultural Products[a]
	Wheat	Oats	Livestock Slaughtered or Sold for Export or Slaughter	Dairy Products	Total Four Items		Wheat	Oats	Livestock Slaughtered or Sold for Export or Slaughter	Dairy Products	Total Four Items	
1870	18.0	16.9	59.3	23.6	117.8	24.2	8.3	7.7	27.2	10.8	54.0	11.1
1880	38.8	24.0	52.2	34.2	149.2	54.8	14.6	9.1	19.7	12.9	56.3	20.7
1890	31.7	31.7	57.1	34.5	155.0	48.2	10.3	10.3	18.7	11.3	50.6	15.8
1900	36.1	51.5	75.7	62.6	225.9	98.8	8.9	12.8	18.7	15.5	55.9	24.5
1910	104.8	86.8	177.6	103.4	472.6	134.6	14.4	12.0	24.5	14.2	65.1	18.5
1920	374.2	181.0	214.1	222.8	992.1	610.6	24.9	12.1	14.3	14.8	66.1	40.7
1930	149.6	75.6	152.5	160.7	538.4	309.5	16.0	8.1	16.3	17.1	57.5	33.0
1940	249.9	88.3	203.6	167.8	709.6	323.2	23.3	8.2	19.0	15.7	66.2	30.2
1950	600.0	238.9	963.2	411.4	2,213.5	851.7	19.5	7.8	31.3	13.3	71.9	27.7

[a] Includes the value of prepared and canned fruits, vegetables and meats, flour, cereals, etc. The export data therefore include some value added through processing not covered in the gross value of production estimates. Export data pertain to the fiscal year beginning 1st July for 1870–1900 and 1st April for 1910–30. Figures for 1940–50 are for the calendar year.

period was the emergence of wheat as the main cash crop. The development of Marquis wheat strain,[1] by Dr. C. E. Saunders of the Central Experimental Farm in Ottawa, in 1903, greatly reduced the frost and rust hazards and made it possible to adapt wheat growing to Canada's climatic and soil conditions. Marquis wheat was not distributed to Western farmers until 1909, but by the end of World War I it was the dominant spring wheat in Canada (and in the United States as well).

TABLE 73

Value Added in Agriculture, in Current and Constant (1935–1939) *Dollars, and Gross National Product, Canada, Selected Years,* 1870–1950

Year	Value Added in Agriculture[a] $ million		Value Added in Agriculture in *Constant Dollars* per			Value Added as Per Cent of Gross National Product[b]
	Current Dollars	Constant Dollars	Occupied Farm	1,000 Acres of Farmland	Gainfully-Occupied Person	
1870[c]	145	172	467	4,772	321	31.6
1880	186	231	498	5,093	349	32.0
1890	217	290	535	5,006	395	27.0
1900	282	399	781	6,291	556	26.7
1910	509	547	802	5,020	586	22.8
1920	1,073	625	879	4,436	600	19.4
1930	483	590	809	3,617	521	11.3
1940	628	659	899	3,797	608	11.9
1950	1,709	734	1,084	4,217	884	11.7

[a] Covers value added for 1870–1920 and net national income originating in agriculture for 1930–50.
[b] Covers gross national product for 1870–1920 and net national income at factor cost for 1930–50.
[c] Covers four provinces only; but the estimates relating to all Canada have been used for comparison in the text.

Despite the decline in immigration after 1913, substantial overseas demand for food and particularly favourable prices for wheat resulted in a significant agricultural expansion during the war and immediate post-war period. In 1920, because of a fairly large crop and high prices, wheat contributed 25 per cent to

[1] Marquis wheat is hard red spring wheat of high milling and baking quality. The main reasons for its general and rapid acceptance were a higher yield and an earlier ripening than the Red Fife wheat which had previously been the most popular variety in use. (A. H. Reginald Buller, *The Story of Wheat*, New York, 1919, p. 257.)

gross value of agricultural products. The 567 million bushels of wheat produced in 1928 were more than five times the 1910 crop and this peak was not surpassed until 1952.

The size of the average farm again increased significantly, from about 160 to 224 acres. By 1930 farmers had $651 million invested in farm machinery and equipment, or about one-third more in real terms than in 1910. The number of gasoline tractors alone increased from 47 thousand in 1921 to 105 thousand in 1931.

This period also witnessed the greatest fluctuations in the price of agricultural products in Canada's history. The wholesale price index of farm products (1913 base) rose from 96.5 in 1910 to 258.8 in 1920 and had fallen back to 127.7 by the end of this period. The price of wheat fluctuated even more: the average annual price of Northern No. 1, Fort William-Port Arthur basis, was 96.7 cents per bushel in 1910, $2.24 in 1920, and 64.2 cents in 1930.

The number of gainfully-occupied persons in agriculture increased about one-fifth, but the number per thousand acres of occupied farmland decreased by about the same proportion. Output per person working in agriculture rose 21 per cent in real terms, representing an annual rate of increase of 0.97 per cent.

1930–1950

The application of scientific discoveries and improvements in agricultural technology materially reduced the hazards of farming and increased its yield. The adoption of Thatcher wheat – originally developed in the United States – and other rust-resistant varieties in the late 'thirties greatly strengthened the position of agriculture in Canada. Since 1935 there has been scarcely any loss to the wheat crop from stem rust, a scourge which oftentimes before had reduced crops by tens of millions of bushels.[1] Other developments include the increasing use of fertilizers, scientific husbandry, irrigation, the reclamation of farmland, and the many benefits from the work carried out at experimental farms.

The first decade of this period covered the depression of the 'thirties, which hit the farmer especially hard, making adequate

[1] Right Honourable C. D. Howe, 'Western Grain and the Canadian Economy', an address to the Junior Investment Dealers' Association of Canada, Toronto, 28th October 1952, p. 3.

replacement of equipment impossible. Hence, a decline occurred in both value and volume terms in farm machinery and equipment. The situation improved in the second decade, and at its end farmers had about $2 billion worth of machinery and equipment at their disposal – in volume terms about half again as much as at the beginning of the period and almost double the 1940 figure.[1]

The size of the average farm increased but at a considerably slower pace than in the previous two periods. The remarkable feature of the last twenty years is the degree to which increased mechanization made it possible to operate larger acreage with fewer workers and produce a larger output. Between 1931 and 1951 the number of gainfully-occupied persons in agriculture declined about one-quarter while the gross value of production in real terms increased about one-sixth. Output per gainfully-occupied person amounted to about $3,700 in 1950, or 58 per cent more in real terms than in 1930.

The relative importance of major agricultural commodities in the over-all production pattern changed significantly. For example, wheat increased from 16 per cent of the 1930 total to 20 per cent of the 1950, while both oats and dairy products declined somewhat in relative importance. The value of livestock slaughtered, or sold for slaughter or export, rose from 16 per cent in 1930 to 31 per cent in 1950 (see Table 72).

Accompanying this changing production and demand pattern was a reversal of the trend toward specialization noted for the earlier periods. The growing urbanization has been responsible for the increasing diversification of Prairie agriculture. For example, vegetable growing and dairying have assumed some importance in Southern Alberta, and the irrigation of land, particularly in Alberta, has made possible the growing of large quantities of sugar beets and soya beans.

The increasing productivity of agriculture and favourable prices have helped to maintain agriculture's place in the economy despite the relative decline in the proportion of total employment accounted for by this industry. There was very little change in the ratio of income originating in agriculture to total national income during this period, the 1930 portion being 11.3 per cent and that of 1950 11.7 per cent (see Table 67).

[1] Between 1941 and 1951 the number of tractors on farms rose from 160,000 to 400,000, the number of grain combines from 19,000 to over 90,000, and the number of motor trucks from 77,000 to 196,000.

THE CHANGING ROLE OF MANUFACTURING

Canada's industrial revolution is of more recent vintage than that of most other industrialized nations. It began in the 1860's and ended in the major re-orientation of the Canadian economy brought about by World War I. By 1918, the foundation for a modern industrialized society had been laid and progress since then in terms of further diversification, integration, and expansion, has on the whole been rapid. Even the depressed 'thirties only slowed down long-term industrial progress.

The major factors contributing to the industrial revolution came in the first half-century after Confederation and included: first, the introduction of the factory system in the 1860's and 1870's; second, the Federal Government's 'National Policy',

TABLE 74

Number of Establishments, Gross Value of Production, and Value of Fixed Capital, Manufacturing Industries, Canada, Selected Years, 1870–1953

Year	Number of Establishments[d] 000	Gross Value of Production[a] $ million		Value of Fixed Capital[b] $ million	
		Current Dollars	Constant (1935–39) Dollars	Current Dollars	Constant (1935–39) Dollars
1870[c]	41	222	278	38	62
1880	50	310	432	81	129
1890	76	470	700	173	289
1900	15	584	936	254	422
1910	19	1,264	1,610	710	1,106
1920	23	3,744	1,843	1,420	898
1929	22	3,883	3,116	2,357	2,221
1930	23	3,280	2,905	2,479	2,430
1933	24	1,954	2,236	2,151	2,298
1939	25	3,475	3,503	2,169	2,120
1945	29	8,250	6,245	3,189	2,561
1950	36	13,818	6,543	4,395	2,444
1951	37	16,392	6,824	4,761	2,359
1952	38	16,983	7,515	5,253	2,550
1953	38	17,785	8,058	5,648	2,676

[a] Manufacturing as defined in the decennial censuses includes construction, hand trades, custom work, repair, and central electric stations up to and including 1910.

[b] Covers the value of plant, equipment, and land used for industrial purposes.

[c] Covers four provinces only, but estimates for 1870 relating to all Canada have been used in comparisons in the text.

[d] Covers only establishments with five or more employees in 1900 and 1910. In 1890 these numbered 14,000.

TABLE 75

Percentage Changes of Selected Items Reflecting Growth of Manufacturing Industries, Canada, Selected Periods, 1870–1950

Item	1870–1890		1890–1910		1910–1930		1930–1950	
	Total Period	Average Annual	Total Period	Average Annual	Total Period	Average Annual	Total Period	Average Annual
Gross Value of Production, in Constant Dollars	138.1	4.43	130.0	4.25	80.4	2.99	125.2	4.14
Value of Fixed Capital, in Constant Dollars	366.1	8.00	282.7	6.94	119.7	4.01	0.6	0.03
Number of Persons Working	75.7	2.86	108.1	3.73	13.7	0.64	92.4	3.33
Gross Value of Production in Constant Dollars per Person Working	35.5	1.53	10.5	0.50	58.7	2.34	17.1	0.79
Value of Fixed Capital in Constant Dollars:								
Per Person Working	151.0	4.71	83.8	3.09	93.3	3.35	−47.7	−3.19
Per $1,000 Output	85.2	3.13	66.3	2.57	21.7	0.99	−55.3	−3.94
Number of Hours Worked per Week by Wage-Earners	−7.8	−0.41	−9.7	−0.51	−7.5	−0.39	−14.2	−0.76

introduced in 1879, which, as far as industrial development was concerned, had two major influences: (*a*) substantial increases in tariff protection, and (*b*) creation of a national transportation system. The latter facilitated inter-regional exchange of raw materials and domestically-produced manufactured articles. A third factor was the trend toward integration with the growing use of limited liability corporations after 1900 as a framework for business operations. Fourth, there was the impact of technology and the establishment of full fabrication facilities in a number of fields, particularly during World War I. Finally, there was the growth of the domestic market to the point where it became profitable to engage in mass production operations in certain fields.

In the three decades that followed, the pattern of growth of manufacturing industries was greatly influenced by further rapid advances in technology, another world war, the peculiar consequences of rapid rearmament after 1950, and the expansion of civilian production and development of resources in response to rising world demand.

Manufacturing at the time of Confederation

At the time of Confederation manufacturing operations were on a small scale, catering mainly to local needs, and their total income and employment were still a minor factor in economic activity. Value added by manufacturing in 1870 was 19 per cent of gross national product, compared with 34 per cent for agriculture. In terms of the number of jobs, manufacturing was even less important, 13 per cent of the total, compared with 50 per cent for agriculture.

Nevertheless, even before Confederation, manufacturing industries were undergoing intensive transformation and appeared destined to progress rapidly. Contributing factors were: increasing protection of domestic manufacturing industries in the 1850's, notably the tariff increase introduced in 1859 which affected British manufacturers; increasing demand at home and the natural shelter associated with an inadequate transportation system.[1] The rise of manufacturing industries after the middle of

[1] Canada experienced a high degree of prosperity in the 1860's, when Canadian exports to the United States rose greatly, in part the result of a reciprocity agreement covering natural products between the two countries in operation from 1855 to 1866, in part because of greater opportunities to sell in the American market at rising prices during the Civil War.

the nineteenth century and its composition and structure at the time of Confederation has been aptly summarized:

> Most of the manufacturing industry was scattered in small units through the towns and villages of the agricultural settlements. Generally, it was of a kind which required little capital and little highly specialized skill. As the railways spread, there was a tendency toward increase in size of unit and concentration in strategic centres. There had long been a large flour-milling industry in Montreal, catering to the export trade, and industries began to concentrate in Hamilton and Toronto. In general, however, manufacturing enterprise remained small, simple and decentralized. Almost every town produced agricultural implements and the other tools used by a pioneer community. Machinery and tools requiring a high degree of skill for their production were almost entirely imported. Woollen mills, boot and shoe factories, furniture factories, breweries and distilleries thrived on local raw materials and the incidental protection of a revenue tariff. But in such commodities as cotton and linen textiles, dependent on foreign raw materials, no progress was made toward local production.
>
> In spite of the rapid development, the total industrial factory production was small. This was by no means entirely due to the economic advantage of buying cheap foreign manufactures with exports of raw materials. To a degree which we now find hard to realize, individual households were self-sufficient. There was also a large group of craftsmen who lived largely by barter. The blacksmith, carpenter, shoemaker, tailor and dressmaker produced a variety of the basic necessaries, often in return for produce or a share of the raw materials used. In the census of 1871, this group of craftsmen reported an output equal to one-fifth of the total of all manufacturing establishments, excluding saw mills and flour mills.
>
> Cheap and improved transportation had already begun to draw industry from the farm and the village to the city. But the huge concentration of industry into large units in the relatively few great industrial centres of today had to await further developments in transportation, the improvement of old and the invention of new techniques, the extension of markets and the perfection of the joint stock company as an instrument for collecting large pools of capital. At the time of Confederation, small enterprise still ruled the field. In 1870, the average capital invested per establishment was $1,900 compared with $217,000 for 1930. In 1870, the three leading urban centres contributed about one-quarter of the total net value of manufactures while today they contribute nearly

one-half. In 1867, there were not more than 50,000 labourers employed in all the cities of the four provinces.[1]

INTERMEDIATE CHANGES

1867–1890

Rising prosperity until 1873 brought continuing expansion of manufacturing capacity, particularly in such fields as flour and grist mill products, leather boots and shoes, and log products (lumber, lath, and shingles). Even though the depressed economic conditions during the latter part of the 'seventies and the 'eighties slowed down industrial growth, a number of manufacturing industries continued to make rapid progress. And the total for manufacturing industries increased from 1870 to 1890, as the data in Tables 74 and 75 show. A major influence was the change in tariff policy. After Confederation, tariffs had been reduced as a concession to the Maritime Provinces, whose interests were more commercial than industrial in character. But, particularly in the 1880's, farming was suffering because of generally lower price levels, and manufacturing, though expanding, was unable to absorb the large number of people leaving the farms. Many of the rural population, rather than remain unemployed in urban centres or lead a subsistence existence on the farm, left Canada, most of them emigrating to the United States (see Section 2). The national policy, with its substantial increases in tariff protection,[2] was designed to stimulate the expansion of manufacturing and to reduce the flow of emigrants by providing increased opportunities at home.

From 1870 to 1890 Canadian employment in manufacturing rose by 76 per cent and output in constant dollar terms 138 per

[1] *Report of the Royal Commission on Dominion-Provincial Relations, Canada: 1867–1939*, pp. 26 and 27.

[2] 'On the lines of cotton goods likely to be manufactured in Canada, duties were raised from 17½ per cent to rates, specific and ad valorem, equivalent on the importations of 1881 to 30 per cent. The duties on woollens, which were all in the 17½ per cent schedule in 1878, were practically doubled. On some of the 36 iron and steel articles enumerated in the schedule the duties were specific, on some compound, but on the whole, there was an average duty of 16-17 per cent. Pig iron, previously free, was made to pay $2 a ton. The duty on iron billets, bars and rods was increased from 5 per cent to 10 per cent and 17½ per cent, while manufactured iron and steel products and machinery were given 25 per cent to 35 per cent protection. On coal, both bituminous and anthracite, a duty of 50 cents a ton was imposed. The average ad valorem rate of duty on the dutiable imports in 1880 was 26.1 per cent, as compared with 21.4 per cent in 1878. The maximum percentage was reached in 1889, when the rate was 31.9 per cent. By 1896 there was a slight drop in the rate to 30 per cent' (*The Canada Year Book*, 1924, Ottawa, 1925, p. 383).

TABLE 76

Number of Persons Working, Number of Hours Worked Per Week by Wage Earners, and Total Wages, in Current and Constant (1935–1939) *Dollars, Manufacturing Industries* [a], *Canada, Selected Years,* 1870–1953

Year	Number of Persons Working in Manufacturing			Average Number of Hours Worked per Week by Wage Earners	Total Wages		Average Wages per Wage Earner[b]			
							Per Year		Per Hour	
	Wage Earners 000	Salaried Employees and Owners 000	Total 000		Current Dollars $ million	Constant Dollars $ million	Current Dollars	Constant Dollars	Current Dollars	Constant Dollars
1870[c]	—	—	140	64.0	41	61	293	436	0.09	0.13
1880	—	—	190	—	59	97	311	511	—	—
1890	—	—	260	59.0	100	161	385	619	0.13	0.20
1900	259	50	309	56.7	109	188	421	726	0.14	0.25
1910	469	72	541	53.3	214	290	456	618	0.16	0.22
1920	523	79	602	—	578	403	1,105	771	—	—
1929	578	89	667	—	602	505	1,042	874	—	—
1930	530	85	615	49.3	528	447	996	843	0.39	0.33
1933	382	87	469	—	297	314	777	822	—	—
1939	533	125	658	—	520	509	976	955	—	—
1945	928	191	1,119	44.3	1,428	1,147	1,539	1,236	0.67	0.54
1950	952	231	1,183	42.3	2,079	1,214	2,184	1,275	0.99	0.58
1951	1,011	247	1,258	41.8	2,460	1,293	2,433	1,279	1.12	0.59
1952	1,025	263	1,288	41.5	2,714	1,395	2,648	1,361	1.25	0.63
1953	1,053	274	1,327	41.3	2,940	1,512	2,792	1,435	1.30	0.67

[a] Manufacturing as defined in the earlier decennial censuses includes certain construction and hand trades, repair and custom work up to and including 1910. Central electric stations are included up to 1910 also.

[b] For the years 1870, 1880 and 1890 data covers average earnings of all persons working in manufacturing, while for all other years data relate only to wage earners.

[c] Covers four provinces only, but estimates for 1870 relating to all Canada have been used in comparisons in the text.

cent. The actual improvement was probably somewhat greater since a high degree of prosperity prevailed in 1870 while economic conditions in 1890 were somewhat less favourable.

But economic factors also contributed to the continuing expansion of manufacturing operations. The high quality of natural resources and the fact that they could be developed at low cost, partly because of their growing accessibility as the railway network expanded, partly because cheap ocean transport became available, encouraged the growth of new industries. The establishment of the pulp industry is a case in point. This industry grew very rapidly in the 1880's when economic conditions were at their worst. The following report dated 1899 indicates the tremendous possibilities that appeared to be opening up for businessmen with enterprise:

> In 1886, during the Colonial and Indian Exhibition, a Canadian took some samples of pulp made in Quebec, and submitted them to English paper manufacturers, with the suggestion that a trial should be made of Canadian pulp. Some of them smiled pityingly at the idea that Canada could compete with Norway, Sweden or Germany in the pulp trade, but he predicted that within ten years Canada would be regularly shipping pulp to Great Britain. The prediction has been fully realized, however, and today it is recognized amongst wood-pulp users throughout the world that the Canadian article surpasses that of any other pulp-producing country.[1]

The pulp milling industry grew rapidly in the second decade: in 1881, five pulp mills were reported to be in operation, employing less than one hundred workers and turning out products with a total value of $63,000. One decade later, there were twenty-four mills in operation providing employment for about a thousand persons and having an annual output of over $1 million.

1890–1910

After 1896 and particularly following the turn of the century, manufacturing made particularly notable progress, as the following summary indicates:

> Manufacturing expanded in most of the important categories: the provision of capital equipment, consumers' goods of general

[1] *Canada: An Encyclopaedia of the Country*, edited by J. Castell Hopkins, Toronto, 1899, p. 497.

TABLE 77

Gross Value of Production and Value of Fixed Capital Per Establishment, Per Person Working Per Year, Per Wage Earner Per Hour, and Per $1,000 *Output, Manufacturing Industries, Canada, Selected Years,* 1870–1953

Year	Gross Value of Production						Value of Fixed Capital					
	Per Establishment		Per Person Working per Year		Per Wage Earner per Hour		Per Establishment		Per Person Working		Per $1,000 Output	
	Current Dollars 000	Constant[a] Dollars 000	Current Dollars	Constant[a] Dollars	Current Dollars	Constant[a] Dollars	Current Dollars	Constant[a] Dollars	Current Dollars	Constant[a] Dollars	Current Dollars	Constant[a] Dollars
1870	5	7	1,586	1,986	0.48	0.60	1	2	271	443	171	223
1880	6	8	1,632	2,274	—	—	2	3	426	679	261	299
1890	6	9	1,808	2,692	0.59	0.88	2	4	665	1,112	368	413
1900	—[b]	—[b]	1,890	3,029	0.76	1.23	—[b]	—[b]	822	1,365	435	451
1910	—[b]	—[b]	2,336	2,976	0.97	1.24	—[b]	—[b]	1,312	2,044	562	687
1920	163	80	6,219	3,061	—	—	62	39	2,359	1,492	379	487
1929	177	142	5,822	4,672	—	—	107	101	3,534	3,330	607	713
1930	143	127	5,333	4,724	2.41	2.13	108	106	4,031	3,951	756	836
1933	81	93	4,166	4,768	—	—	90	96	4,586	4,900	1,101	1,028
1939	139	140	5,281	5,324	—	—	87	85	3,296	3,222	624	605
1945	284	215	7,373	5,581	3.86	2.92	110	88	2,850	2,289	387	410
1950	384	182	11,680	5,531	6.60	3.12	122	68	3,715	2,066	318	374
1951	443	184	13,030	5,424	7.46	3.11	129	64	3,785	1,875	290	346
1952	447	198	13,186	5,835	7.68	3.40	138	67	4,078	1,980	309	339
1953	468	212	13,402	6,072	7.86	3.56	149	70	4,256	2,017	318	332

[a] 1935–39 dollars.

[b] The number of establishments, and the gross value of production and the value of fixed capital for 1900 and 1910 are not comparable because the former cover only establishments with five employees or over, while the latter figures have been adjusted to allow for output and fixed investment of companies with less than five employees.

consumption and the processing of natural products for export. The program of railway construction, the growth of cities and towns, the equipping of Western farms and the extension of community facilities in both East and West gave a great impetus to the production of capital goods. The iron and steel industry particularly made rapid progress. Although imports were large, the tariff and the bounties diverted a substantial portion of the growing demand to the Canadian producer. Between 1896 and 1913, the Dominion paid nearly $17 million in bounties. Although, during the same interval, Canadian consumption of pig iron increased tenfold, Canadian manufacturers managed to increase their share of the domestic market from 67 to 80 per cent.

The duty on steel rails ($7 per ton), which reserved the market mainly to the domestic producer, was the principal basis of two large steel enterprises, one in Nova Scotia and the other at Sault Ste. Marie. Under the tariff of 30 per cent on cars and 35 per cent on locomotives, the production of railway rolling stock became a major secondary industry. The new demand for the equipment of Western farms brought a 250 per cent increase in the output of agricultural implements. The boom in construction generated a great expansion in the production of machinery, structural steel, wire and nails.

The rapid increase in the population and the addition of large specialized agricultural groups in Western Canada greatly broadened the market for consumers' goods. The rise in the demand for such items as boots and shoes, clothing, cotton textiles, rubber goods, furniture and tobacco, was, by means of the tariff, directed very largely to Canadian sources. . . .

The improvements in transportation, new discoveries, increased foreign demand, and technological developments opened new opportunities for the exploitation of Canada's natural resources and in turn encouraged the growth of processing industries, particularly non-ferrous smelting.[1]

The 1911 census of manufactures leaves little doubt that much of this progress took place in the 1890–1910 period. The number of persons working in manufacturing doubled, real output rose 130 per cent, and the value of fixed capital employed increased $2\frac{3}{4}$ times in real terms (Tables 74 and 75). Real output per person working increased about 11 per cent, representing an annual rise of one-half of one per cent.

[1] *Report of the Royal Commission on Dominion-Provincial Relations*, op. cit., pp. 73 and 74.

1910–1930

The advent of World War I brought a notable acceleration of industrial diversification. For example, military exigencies were responsible for the establishment of new refining capacity for non-ferrous metals, e.g. copper, zinc, and magnesium. Previously, concentrates of zinc and copper matte had been processed in the United States. The development of a shell industry and heavy demand for steel products including rods, billets, bars, and other semi-fabricated or fabricated products and components were responsible for a substantial expansion of domestic steel capacity, from an estimated one million to one and one-quarter million ingot tons in 1914 and to two and one-quarter million ingot tons in 1919. In fact, the level reached after World War I was so high that little further change occurred in steel capacity until the outbreak of World War II.

Other manufacturing industries newly created or greatly expanded during World War I were the aircraft and shipbuilding industries. From a very modest beginning in 1917 the aircraft industry in the course of two years turned out some 3,000 training planes for British and Canadian forces. Shipyards were greatly expanded and produced close to one hundred ships, half the number steel and the other half wood, the total tonnage being about 350,000 dead weight tons. Plant facilities and equipment were expanded and managerial and technical knowledge acquired which enabled most industries in the post-World War I period to undertake more diversified, integrated, and efficient operations than they had previously been able to perform.

The end of World War I initiated a difficult period for manufacturing industries, for during the years of military conflict production had been more important than costs and prices. Europe's production of manufactured civilian commodities, which had declined substantially, expanded rapidly, and international competition became keen. Canadian industries underwent some adjustment, particularly in the recession of 1921, only to resume their path of expansion, which led to further diversification and an increase in competitiveness, particularly in the latter part of the 'twenties. Growth was rapid in the pulp and paper industries, the transportation equipment industry (especially in the automotive field), the non-metallic mineral products field (largely associated with the building boom of the late 'twenties), and the chemicals and allied products industries.

Indeed, in volume terms manufacturing investment reached a peak in 1929 which was not matched until 1950.[1]

The expansion in manufacturing is also apparent from the data on employment, production, and fixed capital employed. In 1930 about one-seventh more persons worked in manufacturing than in 1910, the real gross value of production was double, and more than twice as much capital in real terms was invested in plant and equipment. Output per person working in manufacturing was about three-fifths higher in real terms, indicating an annual gain in productivity of 2.34 per cent. The export market was somewhat more important in 1930, when about 15 per cent of the gross value of production was sold abroad.

1930–1950

Economic conditions at the beginning of the 'thirties retarded the growth of manufacturing industries. But even with the reduced demand from both domestic and foreign sources, some branches expanded their capacity and improved their production processes notably. One example of development in the 'thirties was the primary textile industry, where new materials and techniques brought further growth and diversification.

When World War II broke out, manufacturing was unprepared for the avalanche of military orders. However, conversion to war production was accomplished in the short space of two years. Expansion of productive capacity was particularly striking in tool making, electrical apparatus, chemicals and aluminium. New factories were built, shipyards constructed, and armament assembly lines installed. Entire new industries were created, making, for example, roller bearings, magnesium, and artificial rubber. Many existing industries underwent marked expansion. Some industries with relatively small employment before the war attained such a large wartime employment that the process amounted to the creation of a new industry rather than the expansion of an old one, e.g. aircraft production and shipbuilding. Advances were made in the production of finished goods and equipment, some of which had previously been imported, e.g. optical glass, high octane

[1] In 1951, 1952 and 1953, the expansion of industries engendered by rearmament and associated recources development programmes also topped 1929 in volume terms.

TABLE 78

Gross Value of Production of Six Groups of Industries, Canada, Selected Years, 1870–1953

Year	Gross Value of Production $ million							Proportion of Gross Value of Production of All Manufacturing Industries Per Cent						
	Food and Beverages	Textiles Including Clothing	Wood Products	Pulp and Paper and Products	Iron and its Products	Chemicals and Allied Products	Total Six Industries	Food and Beverages	Textiles Including Clothing	Wood Products	Pulp and Paper and Products	Iron and its Products	Chemicals and Allied Products	Total Six Industries
1870[a]	63	25	41	1	14	6	150	28.4	11.3	18.5	0.4	6.3	2.7	67.6
1880	82	41	55	3	17	8	206	26.5	13.2	17.7	1.0	5.5	2.6	66.5
1890	118	68	86	4	30	9	315	25.1	14.5	18.3	0.8	6.4	1.9	67.0
1900	173	81	92	21	36	13	416	29.6	13.9	15.8	3.6	6.2	2.2	71.3
1910	312	148	196	47	115	29	847	24.7	11.7	15.5	3.7	9.1	2.3	67.0
1920	1,027	430	403	236	789	128	3,013	27.4	11.5	10.8	6.3	21.1	3.4	80.5
1929	948	403	293	288	791	139	2,862	24.4	10.4	7.5	7.4	20.4	3.6	73.7
1930	707	379	233	259	330	109	2,017	21.6	11.6	7.1	7.9	10.1	3.3	61.6
1933	535	279	92	156	217	93	1,372	27.4	14.3	4.7	8.0	11.1	4.7	70.2
1939	876	393	189	270	553	160	2,441	25.2	11.3	5.4	7.8	15.9	4.6	70.2
1945	1,922	868	454	537	1,987	499	6,267	23.3	10.5	5.5	6.5	24.1	6.0	75.9
1950	3,030	1,475	986	1,251	2,764	647	10,153	21.9	10.7	7.1	9.1	20.0	4.7	73.5
1951	3,450	1,626	1,153	1,590	3,447	776	12,042	21.0	9.9	7.0	9.8	21.0	4.7	73.4
1952	3,473	1,597	1,168	1,510	3,939	797	12,484	20.4	9.4	6.9	8.9	23.2	4.7	73.5
1953	3,492	1,579	1,242	1,568	4,188	882	12,951	19.6	8.9	7.0	8.8	23.5	5.0	72.8

[a] Covers four provinces only, but estimates relating to all Canada have been used for comparison in the text.

TABLE 79

Exports of Manufactured Products in Relation to Total Manufacturing Output, Canada, Selected Years, 1870–1953

Year[a]	Exports of Manufactured Products	
	Amount $ million	Per Cent of Gross Value of Production
1870	39	16.7
1890	52	11.1
1900	104	17.8
1910	134	10.6
1920	665	17.8
1929	691	17.8
1930	486	14.8
1933	368	18.8
1939	651	18.7
1945	2,360	28.6
1950	2,246	16.3
1951	2,757	16.8
1952	2,902	17.1
1953	2,790	15.7

[a] Export data for 1870 to 1900 inclusive relate to the fiscal year beginning 1st July, and for 1910 to 1933 to the fiscal year beginning 1st April. For 1939 to 1953 the data refer to the calendar year.

gasoline, penicillin, and sulfa drugs.[1] At the height of the war effort in 1943, about three out of every five persons employed in manufacturing worked on war orders.[2]

Adaptation of manufacturing to military demands during World War II required still greater diversification and increased skill and technical knowledge, more complex machinery, and more closely integrated processes than had previously been known. Thus, simple figures of expansion in terms of capacity and output do not tell the full story of the change effected during this six-year period. But even in statistical terms the growth was remarkable. Between 1939 and the war peak, reached between 1942 and 1944, output of steel increased approximately 120 per cent and that of aluminium about 500 per cent. Notable increases were also recorded by other non-ferrous metals with zinc, lead, and nickel up 55, 32, and 27 per cent respectively.

[1] *Encouragement to Industrial Expansion in Canada, Operation of Special Depreciation Provisions, November 10, 1944–March 31, 1949,* Department of Reconstruction and Supply, Ottawa, 1948, p. 13.

[2] Estimates from records of Department of Munitions and Supply.

Entirely new developments included the production of synthetic rubber, which began with an annual output of 3,000 tons in 1943 and rose to 45,000 tons in 1945.

Fully fabricated war equipment and munitions were also turned out in large volume. From 1939 to 1945 some 816,000 mechanized transport vehicles were produced in addition to over 50,000 armoured fighting vehicles.[1] Shipyards in the same period built over 4,000 naval ships and approximately 400 ocean-going merchant vessels,[2] the latter amounting to some 3.7 million dead weight tons, and also did substantial conversion and repair work. The aircraft industry produced in the same period over 16,000 military planes. The chemical industry turned out some 3 billion pounds of chemicals and one billion pounds of explosives, which made possible ammunition of the following order: about 40 million rounds of gun ammunition, 21 million projectiles, 34 million cartridges, 12 million grenades, 11 million mortar bombs, 7 million depth charges, smoke generators, projectile war heads, and anti-tank mines, and over 4 billion rounds of small arms ammunition. Only part of this tremendous output of munitions and war equipment, valued at about $10 billion, was used by Canadian forces, the larger proportion, about 70 per cent, being made available to allied forces.

About two-thirds of the industrial war structure created during World War II was adapted to peacetime uses.[3] Although peacetime reconversion, modernization, and expansion necessitated large capital outlays and although supply shortages slowed down the implementation of the programme, most of the work was completed by the end of 1947.[4] Manufacturing industries were then geared to turn out an expanding volume of civilian capital and consumer goods. While the process of reconversion came to an end in 1947, further expansion and modernization continued.[5]

Two developments gave a further spurt to manufacturing expansion in Canada from 1950 onward. First, the intensive search for new supplies of minerals and other natural resources

[1] The above war production figures come from the records of the Department of Munitions and Supply. Most of the data have been published in summary form in J. de N. Kennedy, *History of the Department of Munitions and Supply*, Ottawa, 1950, Vo. II, pp. 499 ff.

[2] In addition more than 4,200 small craft were built.

[3] *Encouragement to Industrial Expansion in Canada*, p. 15.

[4] *Ibid.*, p. 3.

[5] See *Private and Public Investment in Canada, 1926–1951*, pp. 36 and 37.

after the end of World War II brought a number of important discoveries, and rapid development followed in crude oil, natural gas, iron ore, non-ferrous metals, and a number of minor metals. New resources development and the resulting need for equipment for exploration and development gave great impetus to capital goods producing industries. Further, the greater quantity and variety of indigenous raw materials led to the creation of more processing capacity and new raw material and power using industries. Foremost among them was the chemical industry, which became increasingly diversified. Major discoveries of oil and natural gas in Alberta made the establishment of such industries in this region feasible despite the distance to the principal markets. Another factor, of course, was the rapid economic expansion of the West, creating new demand for manufactured products including those being produced for the first time. Thus, gradually, the handicap of great distance from markets and materials which industries in the Prairie Region had hitherto experienced diminished in importance.

Secondly, the outbreak of the war in Korea in mid-1950 led to the establishment of a three-year defence programme of $5 billion. Actual expenditures exceeded this target, mainly because of rapid price increases particularly in the initial phase of the rearmament programme. Federal Government expenditures on national defence rose from $493 million in 1950 to $1,909 million in 1953.[1] If military pay and allowances are excluded, defence expenditures on goods and services rose from $356 million in 1950 to $1,600 million in 1953, or 349 per cent in current dollars and 273 per cent in volume. Three industries in particular received great stimulus from the rearmament programme – the aircraft industry, which produced for the first time jet aircraft as well as engines for jet aircraft; the electronics industry, which produced a variety of new items, from radar equipment to one-mile infantry pack radio sets which were supplied in increasing quantities to the United States and other NATO allies; and the shipbuilding industry, which revived after several years of decline following the end of World War II and

[1] These data are from *National Accounts, Income and Expenditure, 1950–1953*, published by the Dominion Bureau of Statistics. They cover expenditures on goods and services including outlays on military pay and allowances and defence procurement for which the Department of National Defence and the Department of Defence Production are responsible. Certain defence expenditures are not covered, e.g. outlay connected with the atomic energy programme and the value of military equipment transferred to NATO from the stock of military equipment.

drew increasingly on equipment-producing industries to fit out, power, and arm the new naval vessels.

Manufacturing industries that had expanded because of the rearmament programme proved adaptable to many civilian uses. The outstanding example is the comparative ease with which a television industry was established. This industry assumed increasing importance toward the end of 1952 as progress was being made toward the establishment of a national television network. Thus, industrial adjustment was less difficult than it had been after the preceding two periods of heavy ammunition and military equipment production, 1914–18 and 1939–45.

Long-term changes; 1867–1950

The growth of manufacturing between 1870 and 1950 is illustrated by the following figures: employment, from 148,000 to 1.2 million;[1] gross value of production, from $235 million to almost $14 billion, or 22 times in *volume* terms. The value of fixed capital was $4.4 billion in 1950, or about 37 times the 1870 level in real terms, indicating the important role this industrial sector has played in shaping capital investment (Tables 74 and 75).

Only the number of establishments, 36,000 in 1950, shows a decline – by about one-sixth from the 1870 total. This drop reflects the transition from the small handicraft type of operation to mass production in large and integrated plants. In 1950 about 500 establishments produced goods valued at $5 million or more, 1,600 had an output of between $1 and $5 million, and another 1,600 turned out products valued at between $\frac{1}{2}$ million and $1 million. Or to put it differently: output per establishment averaged $384,000 in 1950 against $5,000 in 1870, a 26-fold increase in *real* terms (see Table 77).

The trend toward large units is also reflected in the increasing relative importance of salaried personnel and the diminishing importance of owners. The earliest data available are for 1900. In that year there were 50,000 salaried employees and owners, or 16 per cent of the total number of persons working in manufacturing, and somewhat more than one-half were owners, the remainder were salaried staff. In 1950 salaried employees and owners numbered 231,000, or 20 per cent of the 1.2 million

[1] The actual increase is greater because some types of construction and other hand trades were included in 1870.

persons working in manufacturing, and working proprietors were only a small fraction of the total of salaried employees and owners. The fact that 93 per cent of manufacturing output in 1950 was produced by limited liability companies was largely responsible for this trend. Rapid industrialization has meant a marked shift in the managerial group from the status of working proprietors to that of salaried executives.

Notwithstanding the decline in working hours, the income of the average wage earner rose materially, from $293 to $2,184 (see Table 76), an improvement on an annual basis, in real terms, of 1.35 per cent per man-year and 1.89 per cent per man-hour.[1] This real improvement was made possible largely by increases in output per worker, which rose from $1,586 in 1870 to $11,680 in 1950, or 1.29 per cent per year in real terms. Output per wage earner per hour rose from 48 cents in 1870 to $6.60, or an annual average rate of 2.08 per cent in constant dollar terms (Table 77).

The average plant had a fixed capital investment of $149,000 in 1950 compared with about $1,000 in 1870; thus it rose about 35 times in real terms over the period. The average worker used about $3,715 worth of machinery and equipment (including the value of plant and land used for industrial purposes) in 1950, or more than four times as much in real terms as in 1870. The growing mechanization and complexity of manufacturing is indicated by the fact that the amount of capital investment needed to produce $1,000 worth of commodities increased from $171 in 1870 to $318 in 1950 (Table 77), or about three-quarters more in real terms (see also Section 10).

Another major transformation in the manufacturing industry was in its composition. In 1870 the following six industrial groups were responsible for two-thirds of its output: food and beverages, textiles including clothing, wood products, pulp and paper products, iron and its products, chemicals and allied

[1] The improvement indicated is approximate because of the basic inadequacies of the earlier data. The figure for 1870 is the average income of *all* persons working in manufacturing and therefore not strictly comparable with the data for 1950 which relate to wage earners. One compensating feature is the importance of small handicrafts in 1870 with many of the owners not much better off than their workmen. Hence, differences in incomes between wage earners, salaried persons, and owners were much less pronounced than in 1950. The error introduced by using an average income figure for all persons employed in 1870 is probably not very great; its main effects would be to show a somewhat smaller improvement in the real earning position of wage earners than did in fact take place.

products. In 1950 these six industries contributed three-quarters to total output. But this rising trend in the importance of these six industries taken together conceals divergent trends in individual sectors. Three of the industries declined in relative importance: food and beverages, textiles including clothing, and wood products. These three industries accounted for 58.2 per cent of total manufacturing output in 1870, as against 39.7 per cent in 1950. On the other hand, the other three were among the most dynamic manufacturing industries. The pulp and paper products, iron and its products, and chemicals and its products industries contributed 9.4 per cent to total output in 1870, and 33.8 per cent in 1950.

What were the dynamic influences behind this impressive growth of manufacturing? A major economic factor was the growth of the domestic market. A major political factor before World War II was the protection afforded to manufacturing industries to enable them to develop quickly.[1] Reference to some of the political influences has already been made, but what about the dependence on domestic and foreign markets?

As the data in Table 79 show, manufacturing industries have relied heavily in periods of peace on demand at home, with more than four-fifths of their output going to the domestic market. In 1950, 16.3 per cent of the gross value of production was exported, a little lower than the proportion indicated for the 'twenties or the 'thirties. Only in the war years, when Canada supplied large quantities of military equipment and munitions to her allies, did exports of manufactured products exceed one-fifth of output. Even in 1945, only partially a war year, exports of manufactured products were 28.6 per cent of the gross value of output.

In fact, foreign markets absorbed a slightly smaller proportion of manufacturing output in 1950 than in some early years, 1870 and 1900 for example. There was, however, a great difference in the type of manufactures exported. In those years 'simple' manufactures of 'natural' products such as lumber, butter, cheese, preserved fish, meat, etc. comprised the bulk of the

[1] 'When the so-called National Policy was translated into law in 1879 a definite decision was taken for the promotion of industrialization within Canada through the means of protective duties. This decision has been the subject of much controversy and has been frequently attacked. It has, however, never been reversed, nor indeed very seriously modified' (W. A. Mackintosh, *The Economic Background of Dominion-Provincial Relations*, Royal Commission on Dominion-Provincial Relations, Ottawa, 1939, p. 17).

exports. In 1950 highly-finished goods, including both capital and consumer durables, formed an important part of the manufactured products sold abroad.

In the recent post-war years semi- or partly-manufactured goods have been increasing their proportion of manufactures exported – in 1950, 43 per cent of the manufactured commodities sold abroad were partly manufactured, compared with about 33 per cent in the 'thirties. At least part of this swing was due to import restrictions, designed to conserve foreign exchange, imposed by some major pre-war foreign customers.

Value added and gross value data as basis for economic analysis

The question has arisen whether the use of a series on gross value of production leads to a distorted appraisal of the long-term changes that take place in an industry and the varying influence that this industry may have on economic activity and structural change. On *a priori* grounds it cannot be assumed that the items that have to be netted out of gross value of production to arrive at value added or national income originating in an industry remain constant over any lengthy period. The evidence is somewhat conflicting, as the accompanying tabulation shows.

	Annual Percentage Increase in Constant Dollar Values
1870–1920:	
Gross Value of Production . .	3.73
Value Added	3.66
1930–50:	
Gross Value of Production . .	4.14
National Income Originating .	4.63

During 1870–1920, value added grew at rates somewhat lower than those for gross value of manufacturing production; during 1930–50, net income originating grew at higher rates than gross value. But the two sets of rates changed in the same direction, and over the period as a whole were not substantially different from each other. One may reasonably infer that the general conclusions derived above on the basis of estimates of gross value of manufacturing production would be valid also in terms of net value added or of net income originating.

TABLE 80

Value Added in Manufacturing, in Current and Constant (1935–1939) *Dollars, and Gross National Product, Canada, Selected Years,* 1870–1953

Year	Value Added in Manufacturing[a] $ million		Value Added in Manufacturing in Constant Dollars per		Gross National Product[b] Current Dollars $ million	Value[a] Added as Per Cent of Gross National Product[b]
	Current Dollars	Constant Dollars	Establishment $	All Persons Working $		
1870[c]	82	103	2,512	736	434	18.9
1880	110	153	3,060	805	581	18.9
1890	189	282	3,711	1,085	803	23.5
1900	223	357	—	1,155	1,057	21.1
1910	508	647	—	1,196	2,235	22.7
1920	1,335	657	28,565	1,091	5,529	24.1
1930	968	857	37,261	1,393	4,283	22.6
1940	1,454	1,346	51,769	1,766	5,263	27.6
1950	4,471	2,117	58,808	1,790	14,550	30.7
1951	5,158	2,147	58,027	1,707	17,138	30.1
1952	5,375	2,378	62,579	1,846	18,254	29.4
1953	5,667	2,568	67,579	1,935	19,086	29.7

[a] Value added for 1870–1920 and net income originating in manufacturing for 1930–35.

[b] Covers gross national product for 1870–1920 and net national income at factor cost for 1930–53.

[c] Covers four provinces only, but estimates relating to all Canada have been used in comparisons in the text.

SECTION 10

CHANGES IN PRODUCTIVITY AND CAPITAL REQUIREMENTS

THE evidence on long-term changes in productivity is approximate and based on inadequate data particularly for the early period. After considering the methods of estimation employed, described in Section 11, the careful analyst may want to review critically the broad changes indicated but may *not* want to place much reliance on the precise percentage changes that the estimates yield. With this reminder the following data are given below and their meaning is examined in a general way: gross national product in constant dollars per man-year, gross value

of manufacturing output in constant dollars per man-year and per wage earner per hour, and gross value of agricultural production per man-year.

CHANGES OF OUTPUT PER MAN-YEAR – IN AGGREGATE, IN MANUFACTURING, AND IN AGRICULTURE

Changes in gross national product in constant dollars per man-year was discussed in Section 3. Here the comparison is mainly concerned with changes in output per man-year (and per man-hour) in two major sectors: manufacturing and agriculture.[1]

Over the period 1870 to 1950 gross national product in constant dollars per man-year rose to about three times its initial level, gross value of manufacturing in constant dollars per man-year, $2\frac{4}{5}$ times, and gross value of agriculture in constant dollars per man-year a little less than three and a half times (Table 81). On the surface this is rather surprising since rapidly increasing national output is usually identified with extensive industrial development and rises in productivity.

Development in manufacturing has been more rapid than in agriculture, in the sense that many more people were drawn into manufacturing and only a comparatively few more into agriculture over the period. But *output per man-year* in agriculture appears to have risen somewhat more rapidly over the long run than in manufacturing.

REASONS FOR MORE RAPID OUTPUT PER MAN-YEAR INCREASES IN AGRICULTURE AND IN AGGREGATE THAN IN MANUFACTURING

First, increases in the output of agriculture have been phenomenal, with the growing mechanization of the farm and the application of scientific methods to farming, as explained in Section 9.

Second, hours worked per week in manufacturing have declined substantially something like twenty-two hours per week for wage earners, from about sixty-four in 1870 to 42.3 in 1950. Output in constant dollars per wage earner per hour in

[1] To assure comparability over the full period 1870 to 1950, gross value of production in manufacturing and agriculture in constant dollars is used rather than value added – even though the latter is preferable if comparison is made with gross national product. It was necessary in Section 9 to use value added figures in manufacturing and agriculture up to 1920 and net national income originating in industry for more recent years. By using gross value a comparable series for the whole period is available. In any event rates of long-term economic growth as reflected in gross and net series do not differ much (see Section 3).

TABLE 81

Gross National Product per Man-Year, Gross Value of Manufacturing Production per Man-Year and Man-Hour, Gross Value of Agricultural Production per Man-Year, Canada, Selected Years, 1870–1950

Year and Period	Gross National Product Per Man-Year	Gross Value of Manufacturing Production Per		Gross Value of Agricultural Production Per Man-Year All Working Persons
		Man-Year All Working Persons	Man-Hour Per Wage Earner	
	In Current Dollars			
1870 .	409	1,586	0.48	385
1890 .	512	1,808	0.59	416
1910 .	787	2,336	0.97	777
1930 .	1,489	5,333	2.41	828
1950 .	3,567	11,680	6.42	3,711
	In Constant (1935–1939) Dollars			
1870 .	681	1,986	0.60	456
1890 .	871	2,692	0.88	555
1910 .	1,136	2,976	1.24	834
1930 .	1,377	4,724	2.13	1,011
1950 .	2,024	5,531	3.12	1,594
	Percentage Increase in Constant Dollars			
1870–90 .	27.9	35.5	46.7	21.7
1890–1910	30.4	10.5	40.9	50.3
1910–30 .	21.2	58.7	71.8	21.2
1930–50 .	47.0	17.1	46.5	57.7
1870–1950	197.2	178.5	420.0	249.6
	Average Percentage Change Per Year in Constant Dollars			
1870–90 .	1.24	1.53	1.93	0.99
1890–1910	1.33	0.50	1.73	2.06
1910–30 .	0.97	2.34	2.74	0.97
1930–50 .	1.94	0.79	1.93	2.30
1870–1950	1.37	1.29	2.08	1.58

manufacturing has risen to over five times its initial level, indicating that much of the increase in productivity has been in the form of increased leisure rather than greater output and higher real earnings. In fact, the real improvement in working hours per week between 1870 and 1950 may have been greater than the hours worked by wage earners imply. In 1870 there was a good deal of piece work done outside the factory, with those engaged in this pursuit working from dawn to dusk, twelve to fourteen hours rather than less than eleven hours, the work day for wage

earners in factories. Further, manufacturing establishments at that time were largely small concerns catering to a local market, and the handicraft system was more common than the factory system. Owner-workers were therefore, comparatively speaking, a more important element than in present-day manufacturing operations. In turn, the working hours of owner-workers were about as long as those of farm workers and piece goods workers at home. In other words, the work week in manufacturing has declined substantially more than that in agriculture. If allowance is made for these factors, output in constant dollars per man-hour of all persons engaged in manufacturing may have increased somewhat more than five times.[1]

Third, output per man-year in certain parts of the service sector, particularly utilities, has risen more rapidly than in manufacturing or agriculture (see Section 9). Most of the utility industries have come into existence in the period reviewed here, electric power, air and motor transport, and telephone. Even those in existence before Confederation, e.g. the railways and telegraph, experienced such an expansion and made such great strides in technology that their development was tantamount to the creation of new industries.

Fourth, the approximate character of the data and lack of full comparability of the concepts employed may to some extent be responsible for the differences in the rates of increase in real output per working person.

INTERMEDIATE-TERM RATES OF INCREASE

Real output per man-year rose most rapidly in the periods 1930–50 and 1890–1910. The largest annual rates of increases in real output per worker for both G.N.P. and agricultural output are for 1930–50, 1.94 and 2.30 per cent, respectively. The most rapid rate of increase in real output per man-year in manufacturing was from 1910 to 1930. The increases achieved in real G.N.P. per man-year fall between those shown for manufacturing and agriculture for both the entire period and for three of the four sub-periods. The exception is the 1910–30 period when the increases in real output per man-year in

[1] There is one offsetting element. The estimate of the average annual wage in 1870 is probably on the high side because the lack of separate data on wage earners and salary earners (the latter include owners) made it necessary to use the average income per person employed. Data for more recent years suggest that the overstatement is of the order of less than 10 per cent.

agriculture and gross national product are equal, and well below that for manufacturing.

In analysing the estimates in Table 81 two points should be noted: (1) the changes in real manufacturing output per *man-hour* are believed more comparable than those per man-year with the data for agriculture because of the much sharper decline in the length of the work year in manufacturing; and (2) there may be inherent inconsistencies in using gross value of production figures to measure and compare productivity in agriculture, manufacturing, and/or gross national product. The long-term proportion of value added and net income originating, to the gross value of production is more constant in manufacturing than in agriculture.

The relatively large annual increase in real output per man-year, 1.24 per cent for 1870–90, raises a question of perspective. Most students of Canada's economic history look on the period from Confederation to the end of the nineteenth century as one of great trials and tribulations, when domestic demand lagged and prices were declining much of the time; when the frontiers of settlement were pushed back only with great hardship and slight rewards to the enterprising; when the growth of trade was slow and halting because of deficiencies in world demand and national tariff barriers: when in short, economic conditions were unsettled, if not seriously depressed. But it appears that economic progress in the 1870–90 period proceeded at an annual rate only slightly below that for the *1890–1910* period, which has been considered by historians to be by far the most prosperous one between Confederation and the outbreak of World War I.

The period 1867 to 1900 is usually divided into three parts, a period of prosperity from *1867 to 1873*, '*the great depression*' from 1873 to 1896, and the beginning of a period of long-term economic expansion from 1896 onward which continued, despite several short-term interruptions, well into the twentieth century. In its report on economic conditions in this period the Royal *Commission on Dominion-Provincial* Relations commented thus:

> The new Dominion was launched on a rising tide of world prosperity. . . . In Great Britain, economic activity was stimulated by easy money and a booming foreign trade; in the United States, by *tremendous railway expansion and post-war reconstruction.*

Between 1868 and 1874 Canadian exports to Great Britain were doubled and, with growing demand and higher prices, a 30 per cent increase in exports flowed into the United States over the trade barriers which had replaced the Reciprocity Treaty. Larger markets for lumber benefited New Brunswick and the Ottawa Valley. Nova Scotia greatly increased its exports of fish and recovered its markets for coal in the United States. Shipbuilding in the Maritimes approached, in 1874, the high peak attained during the Civil War. Agriculture, the most important industry in Ontario and Quebec, nearly doubled its exports in this period. . . .

At the end of 1873, the boom broke and was followed by world-wide depression. In the United States, it involved a sharp contraction in railway and building construction; in Great Britain, a severe contraction of credit and a steep decline in foreign trade. The fall in prices and international lending brought an abrupt check to economic expansion in new countries. In Canada, the first effect of this general depression was a decline in the demand for lumber. Between 1873 and 1879, exports of forest products fell by one-half. The prices of manufactured goods fell more rapidly than those of agricultural products but by 1876 the country was generally enveloped in depression which grew slowly worse until 1879. In the latter year, both the price level and the physical volume of exports had fallen by 20 per cent from the peak of 1873.

The depression was rapidly translated into falling public revenues while the public debt continued to mount. . . .

The Great Depression, which continued almost unrelieved for over twenty years, had serious consequences for the entire country. . . .

A persistent decline in prices, a sharp shrinkage in international lending and a low level of investment caused general economic stagnation.[1]

There is little doubt that fluctuations in employment, income, and prices in this period were substantial and before the nation had fully recovered from one recession it was in the midst of another. There are some good reasons for describing the period from 1873 to 1896 as 'the great depression' of the nineteenth century. But it is also true that there were some relatively bright periods during the quarter century. There was the brief revival in export trade between 1879 and 1883 which had beneficial effects on levels of employment and income. There was

[1] *Report of the Royal Commission on Dominion-Provincial Relations, Book 1, Canada: 1867-1939*, Ottawa, May 3, 1940, pp. 47-52.

world-wide economic improvement between 1888 and 1890 which brought recovery to some industries. On the other hand, poor crops and unsettled financial conditions in Canada offset some of these benefits.[1] While export prices of some goods declined a good deal over these years, there were periods of recovery and in 1896 the general level of export prices was only slightly below that of 1873.[2] Further, and even more important, prices of many manufactured goods imported fell drastically, resulting in an improvement in the terms of trade.[3] Not all the benefits, however, were enjoyed by the consumer, for increases in domestic tariffs raised the prices of imported commodities. However, this great tariff protection encouraged the expansion of manufacturing, as indicated in Section 9.

The question arises whether preoccupation with declining demand, mainly from abroad, with financial difficulties, and with the declining general price level has not overshadowed some of the basic and healthy long-term economic growth, particularly in the secondary industries and commerce between

[1] *Ibid.*, p. 53.

[2] The export price index (1900=100) rose from 99.1 in 1873 (economic activity began to decline late in that year), after an intermittent drop, to 109.6 in 1888, and then after another decline recovered to 104 in 1891. In this period of 'the great depression', in only 6 years were export prices below the level of the so-called peak year of 1873; in the remaining 17 years export prices were higher than those in 1873. On the other hand, the import price index (1900=100) which stood at 140.1 in 1873 declined fairly steadily to a low point in 1895, 85.3, rising somewhat in 1896 to 87.9. At no time in this period did they come even near the high level of the early 1870's. To illustrate the great improvement in terms of trade, import prices as a per cent of export prices dropped from 139.4 in 1873 to 88.5 in 1895 (the lowest point), rising to 94.4 in 1896 (K. W. Taylor and H. Michell', *Statistical Contributions to Canadian Economic History*, Toronto, 1931, p. 6).

[3] 'In Canada favourable terms of trade contrived to hold off the worst effects of the depression for almost three years after the Vienna crash. The most serious immediate repercussion was a cessation of international investment which compelled the Mackenzie Government itself to commence construction on the Canadian Pacific Railway, private capital being refused. Lumber exports also suffered, falling as much as 50 per cent, and bringing hardship to dependent agricultural districts. Otherwise the country really benefited, as falling costs of manufacturing and transportation brought down import prices more rapidly than prices of the predominantly agricultural exports. . . .

'Between 1873 and 1885 the purchasing power of Canadian exports in terms of imports was steadily rising, since animal and wood products, which constituted important categories in Canadian exports, held a slight upward tendency, while imports were chiefly of manufactured goods, and of iron and steel products, which followed the general falling trend of world prices.

'It was, on the whole, a traders' depression. The business failures, of which there were many, were mainly in commercial rather than industrial circles, and there was a general absence of the panics that prevailed elsewhere' ('Trends and Structure of the Economy', by Benjamin H. Higgins and Arthur Lermer, Chapter X, *Canada*, edited by George W. Brown, Toronto, 1950, pp. 231–3).

1867 and the end of the nineteenth century.[1] To answer this question fully much more research is needed. All we do here is suggest that, notwithstanding setbacks, real output per person working expanded at a rate close to that for the 1890–1910 period and notably above that for the 1910–30 period, and that the same is true of real earnings and the standard of living[2] (see Section 4).

The great strides made in mechanizing agriculture from 1930 on, especially during and immediately after World War II, together with the increased specialization that accompanied it, were responsible for the rapid rise of real output per man-year in this sector in the 1930–50 period. It was increased specialization in the 1890–1910 period that brought about the second highest annual gain, 2.06 per cent. The other two periods, 1870–90 and 1910–30, show much smaller annual increases for reasons discussed in Section 9.

Despite the great growth that took place in manufacturing in the 1930–50 period, the largest annual increase in real output per man-year is indicated for the 1910–30 period. It was then that the gains from the industrial revolution were consolidated and the returns were reaped from the adoption of steam or electric power, the increased utilization of the factory system, the establishment of large-scale industries like basic steel and newsprint, and the adoption of mass production techniques for most fully manufactured items, ranging from automobiles to carpenters' tools.

Some of the factors affecting productivity in agriculture and

[1] For example, Jacob Viner observes 'that the period from 1868 to 1894 was marked by a steady flow of foreign capital into Canada'. Even though exports were declining in the latter part of the 1870's and again in the early 1880's, Viner concluded that 'the period from 1876 to 1890 was marked by a less spectacular but steady growth of business enterprise in Canada' (Jacob Viner, *Canada's Balance of International Indebtedness, 1900–1913*, Cambridge, Harvard University Press, 1924, p. 37).

[2] Even more significant increases in output occurred in the United States in the nineteenth century. In fact, the increase in constant dollars from the average of the decade 1869–78 to the decade 1879–88 was so great that Kuznets has raised the question whether there are any serious biases in the estimates: 'The estimates of product in 1929 prices show an unusually large increase from 1869–78 to 1879–88. The rise in gross and in net national product is close to 40 per cent of the mid-decade base. No comparable rises occur in any other decade in the period.' After examining the evidence he concluded that the error involved in the estimates for 1869–78 is likely to involve an understatement of less than 10 per cent and he, therefore, did not consider it necessary to adjust the estimates, because, as he put it, 'the effect on the *decade* averages was relatively minor' ('Long-term Changes in the National Income of the United States of America Since 1870', *op. cit.*, pp. 36–8).

manufacturing have been referred to above in an endeavour to explain the varying rates of increase between these and the nation's total output. Some other factors closely associated with changes in the industrial structure and the production pattern are discussed in Section 9. But another factor contributing to rising output per man-year and per man-hour requires particular attention because of its dynamic qualities – and that is capital.

GROWING CAPITAL REQUIREMENTS PER WORKER IN MANUFACTURING

To employ one worker in manufacturing in 1950 a total capital investment (book value of plant and equipment including the value of industrial land) of about $3,715 was required.[1] This compares with current dollar figures of about $271 in 1870, $665 in 1890, $1,312 in 1910 and $4,031[2] in 1930. Allowing for changes in prices of capital goods, capital investment per worker in 1950 was about four and a half times that of 1870 (Table 82). Among the reasons for this long-term trend toward greater capital requirements per worker in manufacturing are the increasing technical complexity of production and the changing composition of industrial output as new commodities appeared and improvements were made in the quality and performance of old ones.[3]

The price of capital goods as a whole changed comparatively little between Confederation and 1910, but rose rapidly between 1910 and 1930 and again between 1930 and 1950, and the 1950 price index was about three and a half times that of 1870 (see Section 8). This long-term trend toward rising capital requirements per worker, per unit of equipment, or per square foot of plant space, raises important questions of business policy.

[1] In terms of replacement costs the figure is considerably higher, over $9,000.

[2] The high capital investment per worker (and per $1,000 output) shown for 1930 reflects the fact that full use was not made during that year of the capital facilities, some of which had been created in the 1926–9 period, of Canada's manufacturing industry. For more details see Section 9.

[3] For example, jet aircraft engines now being produced are among the most complicated items ever manufactured in this country. They are made up of over 10,000 items, the production of many of which requires minute accuracy and great engineering and working skill. As far as changes in quality and performance are concerned, one has only to compare an old-fashioned steam engine or wood stove with a modern diesel engine or an electric range.

CAPITAL REQUIREMENTS IN RELATION TO OUTPUT IN MANUFACTURING

Capital requirements in relation to output in manufacturing show a somewhat different pattern of increase than capital requirements per worker. Capital requirements per thousand dollars of output (both in constant dollar terms) have increased by about three-fifths since 1870. This ratio was somewhat higher in 1930, 1910, and 1890 than in 1950 since, as explained in Section 9, capacity was less fully employed in 1930 and the

TABLE 82

Value of Fixed Capital in Manufacturing and in Agriculture, Per Person Working and Per $1,000 *Output, Canada, Selected Years,* 1870–1950

Year and Period	Value of Fixed Capital[a] in Manufacturing Per		Value of Fixed Capital[b] in Agriculture Per	
	Person Working	$1,000 Output	Person Working	$1,000 Output
	Current Dollars			
1870	271	171	—	—
1890	665	368	—	—
1910	1,312	562	275	354
1930	4,031	756	575	695
1950	3,715	318	2,329	628
	Constant (1935–1939) Dollars			
1870	443	223	—	—
1890	1,112	413	—	—
1910	2,044	687	557	668
1930	3,951	836	606	599
1950	2,066	374	1,247	782
	Percentage Change in Constant Dollars			
1870–90	151.0	85.2	—	—
1890–1910	83.8	66.3	—	—
1910–30	93.3	21.7	8.8	−10.3
1930–50	−47.7	−55.3	105.8	30.6
1870–1950	366.4	67.7	—	—
	Annual Average Percentage Change in Constant Dollars			
1870–90	4.71	3.13	—	—
1890–1910	3.09	2.57	—	—
1910–30	3.35	0.99	0.42	−0.54
1930–50	−3.19	−3.94	3.67	1.34
1870–1950	1.94	0.65	—	—

[a] Covers plant and equipment and land used for industrial purposes.
[b] Covers farm machinery and equipment.

capital equipment was less efficient in the other two earlier years. On the other hand, in 1950 the number of hours worked per week was determined by organized labour and overtime work had to be paid for at higher rates, so management tended to restrict it as much as possible. Shift work, which involves the use of plant and equipment for double or triple the number of hours in the work week, operated in only a few industries. The average wage earner worked about one-third fewer hours per week than in 1870. In addition by 1950 a number of statutory holidays were observed and paid summer vacations for wage earners had become a common practice. In many cases plants were shut down during vacation, leaving capital facilities idle. Further, collective bargaining and increasing occurrences of work stoppages have pushed the loss of working days up to levels unknown in the earlier years. All these factors contribute to the decreasing use of plant capacity in terms of both hours per year and output. The latter decline, however, has been offset by increases arising out of the better organization of production, more experienced management, a highly skilled labour force, improved types of equipment, and greater use of inanimate energy. The more complicated nature of many products now manufactured requires technically advanced and costly equipment which tends to maintain a high ratio of capital requirements to output.

GROWING CAPITAL REQUIREMENTS PER WORKER IN AGRICULTURE

Data on capital invested in agriculture are available only back to 1900. A person working in agriculture used about $2,300 worth of farm machinery and equipment in 1950 (in current dollars), or over four times as much in real terms as in 1900 (see Table 71 in Section 9). The comparable figure for machinery and equipment per person working in manufacturing in 1950 is $3,200.[1] The increase in real terms for *manufacturing equipment* only per person working is about three-fifths from 1900 to 1950, a somewhat more rapid rise than in *total* capital invested per worker but still considerably below the rate for equipment per farm worker. The fact that the agricultural worker uses equipment valued at more than half that used by the industrial worker

[1] This figure is smaller than the $3,715 used earlier because the latter includes the value of plant and land used for industrial purposes.

is indicative of the mechanization of agriculture. But there are basic differences: in manufacturing large investment is required to provide plant facilities and substantial outlay on research and development is needed to keep operations technically abreast of new developments.[1]

CAPITAL REQUIREMENTS IN RELATION TO OUTPUT IN AGRICULTURE

To produce $1,000 worth of agricultural products in 1950 required a $628 investment in farm machinery and equipment (in current dollars), or twice as much in real terms as the investment required for the same output in 1900 (see Table 71 in Section 9). The 1950 ratio on a constant dollar basis is higher than that for any census year between 1900 and 1950. As may be seen from Table 69 in Section 9, the real value of farm machinery and equipment in 1940 was considerably below both the 1920 and 1930 figures, mainly because of depressed conditions in agriculture in the 'thirties which compelled farmers to let their equipment deteriorate, and for this reason the real value of farm machinery and equipment to real output was lower in 1940.

[1] Outlay on building of barns, etc., is quite minor in relation to capital expenditures on farm machinery.