ECONOMIC COUNCIL OF CANADA

The Years to 1980



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ECONOMIC COUNCIL OF CANADA

Ninth Annual Review

THE YEARS TO 1980



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Price: \$2.50

Catalogue No. EC21-1/1972

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Information Canada Ottawa, 1972

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"There is no effect without a cause," replied Candide modestly. "All things are necessarily connected and arranged for the best."

Voltaire, CANDIDE

1

Exploration of the Future

AN IS THE only being who exists and at the same time reflects on his existence. He is thus able to see life in perspective, relating the past to the present and looking ahead into what the future holds, both for him and for his society. He has always strained to see what awaited him, and his fascination with the future is understandable. While the past and the present are given, the future is not. In other words, while we are bound by the past, we enjoy some freedom to influence our future. If we can perceive, however dimly, the contours of future events, we can reshape them to some extent. Of course, our influence is proportionate to our perspective. If our time horizon is only six months or a year, our freedom is limited. A time horizon of eight to ten years gives us greater scope, and a still longer perspective increases our options considerably.

Thus, to show what is possible—and, better still, what is probable is to enhance our collective freedom. Many of our prospects are favourable, and we should work at realizing them. Others give us cause for uneasiness, but we may act in time to avoid them. In this *Review*, as in preceding ones, the Council looks into Canada's economic future.

* * * *

One of the main duties assigned to the Economic Council of Canada under its terms of reference is to evaluate the country's potential for economic growth and, at regular intervals, to assess the

prospects of achieving that potential. Accordingly, we have dealt with such assessments in our *Annual Reviews*, specifically in those issued in 1964, 1967, and 1969. The first two explored the economic prospects to 1970, and the third analysed the possibilities for Canadian economic expansion for the period 1967-75. In this *Review*, we extend our horizon to 1980, using new approaches that have recently been developed, based on the experience acquired at the Council and elsewhere.

In the past, the Council's approach to evaluating economic potential was to develop a measure of the supply of goods and services that could be produced under certain assumptions about future developments. This task required, first, a projection of the changes likely to occur in the size of the labour force, as well as in its distribution by age and sex, educational attainment, and the number of hours worked per week. Next, an assessment was made of expected increases in the stock of capital and the resulting contribution to economic growth. Finally, estimates of productivity increase were obtained for the forecast period. Knowing the potential supply of factors of production, allowing for expected productivity increases, and assuming a high level of economic activity at the end of the period examined, the Council was able to obtain a single projection of the resulting total supply of goods and services. Such a projection, starting from a year for which data were already known, was made for a specific terminal year, and the path between the two points was assumed to be perfectly regular.

The projection of potential supply was accompanied by estimates of the main components of potential demand—private consumption, investment, government expenditures, imports, and exports—which were then adjusted to make their sum equal to total supply. Since the demand components were calculated independently of each other, the projected demand structure was only one of several possible patterns that would have been compatible with supply.

With this projection method, demand and supply were highly aggregated and thus did not lead to specific conclusions and recommendations. Therefore, several years ago, the Council undertook to disaggregate results in order to describe the evolution of the various sectors of economic activity. In the 1970 Annual Review we were able to report on trends in output, capital, labour, and productivity for each of the 12 major sectors.

The CANDIDE Model

In this *Review*, forecasts are based on results produced by a recently developed econometric model. With this new tool we have been able to define a number of plausible economic horizons in 1980 and trace different patterns of growth in the intervening years.

Basically, a model is a system of mathematical equations that represents the operation of a part of the economy or the national economy as a whole. The equations express relationships between economic variables that are based on established economic theory and estimated from historical data. Since theory does not cover all relationships, it is necessary to call upon judgment and experience when formulating them.

The number of equations and variables used depends upon the purpose of the model. If the intention is to illustrate the functioning of an entire economy, the model will have to contain a far greater number than if it is to show the operation of a single market at the same level of detail.

The model we are using is called CANDIDE, from the abbreviation of <u>Canadian Disaggregated Interdepartmental Econometric</u> project. Six federal institutions participated in its construction: the Economic Council of Canada; Statistics Canada; the Bank of Canada; and the Departments of Finance; Manpower and Immigration; and Regional Economic Expansion. Since the purpose of CANDIDE is to simulate the operation of the entire Canadian economy in substantial detail, a large model was decided upon. However, no conceivable model could capture the full variety of real economic life, and although computers are used to obtain solutions for the more complex models, we still must exercise judgment and common sense in analysing the forces at work in the economy.

If analysis depends so much on judgment, what then is the advantage of using a complex model instead of simpler analytical methods? The main advantage is the ability to formulate the relationships between the major variables in the economic system, and to specify the way in which all the variables interact, so that they will form a consistent pattern no matter how many there are. When a great number of variables, perhaps hundreds at a time, interact simultaneously, we can be sure of their mutual consistency only by deriving them within a well-defined framework—that is, within a model.

CANDIDE is a medium-term model, based on annual data and designed to describe development several years ahead. For shorter-

term projections—e.g., from one quarter to another—the Bank of Canada's Research Department 'Xperimental' model RDX2 was already in existence, and we had no intention of duplicating efforts. By using annual data—in many cases the only kind sufficiently detailed for disaggregation—we were able to build a far more comprehensive model. With CANDIDE we can trace the development of the economy, not only in its overall dimensions, but also by main categories of activity.

Further, the model has been constructed so as to reflect the high degree of interdependence among economic phenomena. In the model, as in the economy, every change initiates actions and reactions throughout the system that in turn have repercussions on the first. Some reactions are immediate, while others emerge only after a considerable lag in time. Since CANDIDE is a dynamic model, it takes both simultaneous and lagged reactions into account.

These capabilities make CANDIDE a flexible tool that can be used for many purposes. Each of the six participating institutions has different responsibilities and will use the model to elicit different kinds of information. The Economic Council of Canada's main responsibility is to analyse developments over the medium term, and we are using the model to that end. In years to come, CANDIDE will serve as a means to many other ends, both for the Council and for other organizations.

Two outstanding features of the CANDIDE model distinguish it from other models of the Canadian economy. First, it was constructed so as to be "general purpose" and is therefore much larger than other econometric models. Containing some 1,600 equations, it enables substantial disaggregation of demand components. Second, by means of an input-output framework incorporated in the model, demand categories are converted into industry outputs that are used throughout the model in the *simultaneous* determination of such variables as investment, imports, labour requirements, and prices.

Another notable feature of the CANDIDE model is that it considers several categories of government expenditure and revenue as endogenous variables—i.e., variables whose values are estimated within the model, not derived from outside sources.

Similar Models

Intense effort has been devoted to model-building in other countries as well as in Canada, and it is appropriate that we survey the most important work in this field, if only briefly. Exploratory work was

Exploration of the Future

undertaken in the Netherlands by Professor J. Tinbergen as early as the 1930s. In the postwar years, as the director for the Central Planning Bureau of his country, Professor Tinbergen was in an ideal position to recognize the usefulness of large econometric models and, at the same time, their limitations and need of refinement. More recently, several other countries have also constructed national models, most notably France, the United Kingdom, and Japan.

In the United States, development in this field was particularly rapid, with numerous models being constructed by government as well as in universities. One of them, Wharton's Long-Term Annual and Industry Forecasting Model,¹ is of particular interest to us because it provides, among other things, data on the American economy that we need in our model. Since it has similar structural characteristics and the same time horizon as ours, it is ideally suited to our needs.

In Canada, the first study of this type was undertaken by the Department of Trade and Commerce at the end of the 1940s, continuing throughout the 1950s.² The resulting aggregated model was further developed by the Department of Finance in the 1960s. Several provinces also constructed econometric models. Other Canadian initiatives in the 1960s on a national scale include the work of Hiroki Tsurumi of Queen's University and that of a team in the Institute for the Quantitative Analysis of Social and Economic Policy at the University of Toronto.

Up to now, the TRACE—<u>Toronto Annual Canadian Econometric</u> model has been the most highly developed of Canadian medium-term models. It is used for conditional forecasting, with aggregation into four sectors—personal, business, government, and the rest of the world—and into markets for goods and services, money, labour, and foreign exchange.³ Work on the model was started in 1966, and TRACE forecasts have been available to the public since 1969.

Two other models should be mentioned here. The first one is the Quarterly Forecasting Model, also developed by the Institute for Quantitative Analysis of the University of Toronto. It is highly aggregated and designed to produce short-term forecasts. The second is the Bank of Canada's RDX2, already mentioned, which is a large quarterly model used to make short-term forecasts and to simulate

¹Ross S. Preston, The Wharton Annual and Industry Forecasting Model (Philadelphia: Economics Research Unit, University of Pennsylvania, 1972).

² The various steps in the development of this work are described by T. M. Brown, Specifications and Uses of Econometric Models (Toronto: Macmillan, 1970). ⁸ N. K. Choudhry, Y. Kotowitz, J. A. Sawyer and J. W. C. Winder, The TRACE Econometric Model of the Canadian Economy (Toronto: University of Toronto Press, 1972).

alternative fiscal and monetary policy choices open to government. It emphasizes financial and monetary variables. No forecasts have yet been published, but the model is described in recent publications by the Bank of Canada.⁴

All of these models are valuable and suit the purposes for which they were designed. However, their results are highly aggregated. CANDIDE, in contrast, deals in considerable detail with the major components of demand—e.g., consumption, investment, government expenditure, exports, and imports. With such a base, it is possible to determine the impact of changes in policy or the external environment on different sectors of the economy.

* * * * *

In the remainder of this *Review*, we discuss the Council's present use of the CANDIDE model in simulating the results of future changes in domestic economic policies and in the external environment of the Canadian economy.

To indicate how stable the structure of the model is likely to be, in Chapter 2 we compare actual economic trends with the model's simulation of developments over the 1955-70 period.

Chapter 3 sets forth the assumptions we made about the major trends and policies that affect the Canadian economy. Since CANDIDE is a detailed model, we had to make many such assumptions.

In Chapter 4 we report the model's solution of the future that is based on assumptions of growth not unlike our past experience—i.e., favourable development of the world economy and regular increases in government expenditure.

A summary of results of alternative solutions is presented in Chapter 5. By changing the assumptions in Chapter 4 one after another, the outcome of different possible lines of action can be evaluated.

The last chapter deals with conclusions and recommendations. Since over a period of 10 years unforeseeable events are bound to affect our assumptions, the decade of the 1970s could be much different from any of our descriptions. We therefore refrain from favouring one of the projected paths of development as a guide to economic

⁴ See J. F. Helliwell *et al.*, *The Structure of RDX2*, Bank of Canada Staff Research Study No. 7, Parts 1 and 2, Ottawa, 1971; and Ian Stewart, "RDX2-Research Department 'Xperimental' Model, Version 2", Bank of Canada Review. April 1972.

decision-making. Instead, we propose a frame of reference in which the time horizon is less than 10 years, although it is compatible with longer-term prospects. Accordingly, in Chapter 6 we recommend a set of performance indicators for the years 1973 to 1975.

To amplify the results presented in summary form in the following chapters, we are publishing a set of staff papers that contains more complete analysis pertaining to the Council's use of the CANDIDE model for the forecast period.⁵ The model itself is described more fully in a CANDIDE project publication.⁶

⁵ Economic Council of Canada, The Economy to 1980: Staff Papers (Ottawa: Information Canada, 1972).

⁶ M. C. McCracken, An Overview of CANDIDE Model 1.0, CANDIDE Project Paper No. 1, Economic Council of Canada, Ottawa (forthcoming).

2

The Period 1955-70: The Past as Reflected by the Model

HE CANADIAN economy is particularly difficult to model for a number of reasons. First, the labour force is predictable only with a large margin of error because of its irregular growth and changing composition, and the effect of immigration on the growth of population. Second, the economy is "open", subject to fluctuations that characterize the international financial and commodity markets, because Canada exports a large share of its production and imports a high proportion of goods and services consumed. Economic changes in the United States have greatest impact because of the substantial linkages between the two economies in trade, capital, and prices. Additional fluctuations result from booms in the resource industries like those experienced in the 1950s and 1960s. Finally, weather plays a role, not only because of seasonal changeswhich are mainly of concern in short-term forecasting-but in its long-term effects on a number of sectors of the economy such as construction and agriculture. Rigorous winters or a severe drought can obviously affect growth in many instances, in an unpredictable manner.

When building a model, such economic volatility is both an advantage and a disadvantage. The advantage is that considerable variation in the components of economic activity allows the identification of relationships among variables over a wide range of circumstances. That is, if a variable such as investment has exhibited booms and downturns, the equation that tries to represent the behaviour of investors can be expected to capture, to some extent, both of these

phenomena. The disadvantage is that the model-builder must formulate more complete equations that will fit more extreme situations.

Using a model to predict the future presents a further challenge. It is almost impossible to reproduce accurately all the relationships between variables in an economy. Any equation represents only an approximation, a simplified view, of the real world, and its results will generally contain unexplained discrepancies. Moreover, equations are usually based on historical data and thus reflect the structure of the economy over a past period.¹ As projections are made, structural changes that take place in the forecast period may not be represented in the retained variables. Another problem is that, since all the equations are considered simultaneously, imprecision in forecasting one variable can affect other variables in the model; and deviations in any one year can be carried forward because of the use of lagged variables that affect values in later years. Finally, some variables are based on assumptions about future events that cannot be tested. To the extent that these assumptions prove invalid, the projections can also be incorrect.

To obtain an idea of how effectively some of these challenges are met by CANDIDE, we can proceed in two ways. One is to compare its projections with those developed by other forecasting methods, and the other is to assess how closely the model captures reality. Since at present we lack alternative forecasts with which to compare the performance of our model, this chapter consists mainly of a comparison of the model's "calculated forecasts" with the actual evolution of the Canadian economy from 1955 to 1970.

In our assessment, the model was used to generate a "forecast" for the years 1955 through 1970, a period chosen because actual data were available for all the variables and because it was long enough to cover a variety of cyclical circumstances. Use of a historical test period for such a simulation enables us to avoid the discrepancies that could occur through incorrect assumptions concerning exogenous variables—those determined outside the model, such as various magnitudes related to the U.S. economy, Canada's foreign exchange rate, or Canadian tax rates. Also, since the equations are generally based on data from the period 1955-70, they implicitly incorporate, albeit imperfectly, the structure of the economy during this period. The remaining unavoidable errors that can occur stem from unexplained

¹ The equations in the CANDIDE model were generally estimated on the basis of postwar annual data.

The Period 1955-70

residuals, discrepancies inherent in the individual equations, interactions among the equations, and lags used in the model.

ACTUAL AND CALCULATED VALUES, 1955-70

In this section we compare the "forecasts" by the model with actual data for the 1955-70 period. We shall not review all of the results, but only those for certain strategic variables: Gross National Expenditure and its major components—consumption, government expenditure, private investment, and external trade; prices; and labour force and employment. Charts are included to facilitate quick comparison of calculated and actual values—one measure of the model's quality.

Gross National Expenditure

For the period 1955-70, Gross National Expenditure in real terms more than doubled, and growth was not smooth. In 1957-61 it was slow, but in 1962-66 the economy grew at 6.5 per cent per year, slowing down again in 1967-70. The model results tracked events reasonably well over this period, as can be seen from Chart 2-1. The average percentage error was less than 1 per cent,² and in only two years—1959 and 1968—was the difference between the actual and calculated values more than 2 per cent.

Consumption

The major component of Gross National Expenditure is consumer expenditure, which accounts for more than 60 per cent of the total. Over the period 1955-70, this item increased by 95 per cent in real terms. As Chart 2-1 shows, the model predicted consumer expenditure with an average percentage error of 1 per cent, with only 1959 and 1968 exhibiting discrepancies of more than 1.9 per cent, although the 1968 figure was a 14-year "forecast". Percentage errors were higher for certain individual components, as is to be expected with smaller components, but they tended to offset each other in aggregation.

Government Expenditure

Total expenditure of governments (goods and services, and transfer payments) rose from about 27 per cent of Gross National Expenditure

² The percentage error used in this chapter is "the average absolute percentage error" and is calculated by taking the percentage error in each year, adding these up—disregarding the sign of the error—and dividing by the number of years.



CHART 2-1 GROSS NATIONAL EXPENDITURE AND CONSUMER EXPENDITURES (BILLIONS OF 1961 DOLLARS)

Source: Based on data from Statistics Canada and estimates by Zeolound of Canada.

ALL OF THESE ITEMS ARE TRACKED REASONABLY WELL BY THE MODEL, ALTHOUGH GAPS BETWEEN ACTUAL AND CALCULATED VALUES WIDEN FOR INDIVIDUAL COMPONENTS OF CONSUMPTION.

in 1955 to about 36 per cent in 1970. Most activities, except for those relating to national defence, increased; and large new programs in education, health, and other fields were added. The increased role of government in the economy also reflected the shift of a large part of health care services from the private to the public sector. One of the unusual features of CANDIDE is its ability to explain government expenditure on goods and services within the model, and the values the model calculated for government current expenditure on goods and services within an average of 1.3 per cent of their actual values. For the other government component of GNE, government investment, the "forecast" was within an average of 3.9 per cent (Chart 2-2).

Private Investment

Private investment is one of the more volatile components of Gross National Expenditure. During the period 1955-70, year-to-year increases reached 18 per cent, while decreases were as great as 4 per cent in real terms. Its composition also changed markedly. In 1955, the two main categories of business investment—construction, and machinery and equipment—were about equal in dollar value, at 6.5 per cent of Gross National Expenditure. Since 1962, however, investment in machinery and equipment has exceeded that in construction.

For the years through 1970, the model "forecasts" for machinery and equipment were, on average, within 6 per cent of the actual expenditures (Chart 2-3). Although there were discrepancies of more than 11 per cent in 1958 and 1966, in both instances the direction of change was predicted correctly. Investment in non-residential construction was predicted within 4 per cent. Residental construction, another volatile component, was explained with an average percentage error of 6.3 per cent, mainly attributable to a 17 per cent discrepancy in a single year (1967). At this point, the model had "forecast" 13 years.

External Trade

In the mid-1950s, Canada's current account deficit (the difference between exports and imports of goods and services) was extremely large, amounting to more than 4 per cent of GNE in some years. This deficit was financed by heavy capital inflows associated with the resource investment boom. As a result of these capital inflows, the value of the Canadian dollar soon reached high levels, but by 1962



SOURCE: Based on data from Statistics Canada and estimates by Economic Council of Canada.

IN THE GNE FRAMEWORK, GOVERNMENT EXPENDITURES ARE DIVIDED INTO CURRENT SPENDING ON GOODS AND SERVICES AND INVESTMENT. THE MODEL CAPTURES DEVELOP-MENTS IN THE FORMER WITH A HIGHER DEGREE OF PRECISION THAN IN THE LATTER.

CHART 2-3 PRIVATE INVESTMENT (BILLIONS OF 1961 DOLLARS)

MACHINERY AND EQUIPMENT





SOURCE: Based on data from Statistics Canada and estimates by Economic Council of Canada.

PRIVATE INVESTMENT OF ALL TYPES EXHIBITS PRONOUNCED VOLATILITY DURING THE PERIOD REVIEWED. THE MODEL REFLECTS THE PATTERN OF CHANGES REASONABLY WELL.

it had dropped sharply and was pegged at 92.5 cents in relation to the U.S. dollar, where it remained until 1970. This, together with other favourable factors such as the auto agreement, caused exports of goods and services to increase much more rapidly than imports and contributed to the elimination of the current account deficit by the end of the 1960s.

Despite such drastic changes, the model's tracking with the actual deficit can be seen in Chart 2-4 to be reasonably close. Exports of goods and services in constant dollars were predicted with an average error of less than 1.8 per cent, and those for imports of goods and services had an average error of 2.1 per cent over the whole period.

Prices

Following a decade when the implicit price deflator of Gross National Expenditure seldom increased more than 2 per cent a year, price increases averaged nearly 4 per cent, beginning in 1965 (Chart 2-5). The implicit price index of Gross National Expenditure as calculated in the model represents the aggregation of several component prices projected separately. The average percentage error in predicting this variable was 0.9 per cent for 1955-70. The other major deflators—the implicit deflator for consumer expenditure and that for Gross Domestic Product—were "forecast" with an average error of less than 0.9 per cent.

Labour Force and Employment

Stimulated by high levels of immigration in the 1950s, Canada's labour force increased at an average annual rate of 2.7 per cent in the latter half of that decade. With the sharp drop in immigration that took place after 1958, the rate of labour force growth slowed to less than 2 per cent in 1961 and 1962, after which it rose again, averaging 3.2 per cent over the last five years of the decade. This exceptionally high rate of growth was due to two particular circumstances—a rapid increase in the female labour force and a large number of the young reaching working age. The "forecast" took both into account: over the period 1955-70, the model predicted the total labour force with less than a 0.3 per cent average error, or within 20,000 persons out of a total of 8.4 million at the end of the period (Chart 2-5).



SOURCE: Based on data from Statistics Canada and estimates by Economic Council of Canada.

EXPORTS AND IMPORTS OF GOODS AND SERVICES ARE HIGHLY SENSITIVE TO DEVELOP-MENTS OCCURRING BOTH ABROAD AND IN CANADA. A COMPARISON OF THE ACTUAL AND CALCULATED VALUES INDICATES THAT THE MODEL HAS SATISAFCTORILY ASSESSED VARYING CONDITIONS.



CHART 2-5 PRICES, LABOUR FORCE, AND UNEMPLOYMENT

SOURCE: Based on data from Statistics Canada and estimates by Economic Council of Canada.

THE GNE PRICE DEFLATOR PERFORMS WELL BUT TENDS TO BE UNDERESTIMATED IN THE LATTER HALF OF THE SIXTIES. LABOUR FORCE AND EMPLOYMENT HAVE ALSO BEEN CARE-FULLY DEPICTED BY THE MODEL, BUT THE CALCULATED UNEMPLOYMENT RATE, OBTAINED RESIDUALLY, IS LESS ACCURATE.

The Period 1955-70

Employment increased more slowly than the labour force during much of the period up to 1961, with consequent high rates of unemployment. But the rapid growth in the economy in 1961-66 caused the increase in employed Canadians to exceed the growth of the labour force, resulting in a much lower rate of unemployment. The total employment for 1955-70 was projected with an average percentage error of 0.6 per cent, or an average discrepancy of 40,000 persons.

One of the most difficult items to forecast by any method is the difference, or residual, between two very large aggregates. An example of this is the unemployment rate, which is the difference between total labour force and total employment, expressed as a percentage of the total labour force. Although the average error in "forecasting" the number of unemployed was only 30,000 persons over the period 1955-70, it meant a 10 per cent average discrepancy in the unemployment rate. Expressed in absolute terms, however, the model on average predicted an unemployment rate that deviated from the actual values by 0.5 of a percentage point; e.g., if the actual unemployment rate were 5 per cent, then the model would predict a value of 4.5 or 5.5 per cent. In fact, only in 1965 and 1966 did the unemployment rate calculated by the model deviate by more than one percentage point from the actual level.

SUMMARY

It is impossible to say at present how accurately we can forecast the future. However, the performance of the CANDIDE model during the period 1955-70 gives us some confidence that there will be no substantial error build-up within the model when medium-term forecasts are made. The fact that simultaneous solution of all the equations beginning in 1955 did not cause excessive deviations from the actual data by 1970 demonstrates the model's dynamic stability over time—an important criterion of its usefulness.

As was illustrated above, the model tracked well when used for "forecasts" of 3, 5, 10, and even 16 years. But it should be emphasized that, in the experiment we carried out, we knew the actual values of the exogenous variables. Therefore, our percentage errors were relatively low because we were able to avoid two major problems that occur in forecasting the future: unanticipated changes in the structure of the economy, and imprecision in assigning values to the exogenous variables. In estimating these variables for the

future, we can rely only on educated judgment. Thus, in our forecasts to 1980, we have made a number of assumptions about the development of various government programs, the external environment, and many other factors that can affect the economy. We have also had to make judgments about structural changes that are not currently incorporated in the model but that might occur in the 1970s. This, the subject matter of Chapter 3, is a much more formidable task than forecasting the period 1955-70 after the fact.

* * * * *

During the summer of 1972, Statistics Canada released a revision of its National Accounts data that has not been taken into account in this *Review*. We will be reviewing our calculations to ensure that our work is kept consistent with the National Accounts and will publish our updated results as soon as possible.

3

Critical Assumptions to 1980

N ADDITION to the 1,600 endogenous variables—those for which values are determined within the model—about 340 belong in the exogenous category and have to be assumed independently of the model for each of the years of the forecast period. By changing our assumptions, we can postulate different sets of circumstances and obtain alternative patterns of development. Thus we are able to examine not only one possible future, as described in Chapter 4, but several variations on it, as reported in Chapter 5.

To provide an adequate basis for evaluating econometric studies such as ours, it is necessary to present not only the assumptions but also the facts and judgments on which they are based. Accordingly, this chapter describes the derivation of the main set of exogenous variables more or less common to all the solutions, dividing them for convenience into three broad groups—demographic factors; international developments; and government fiscal action. Some adjustments that were necessary for private investment are noted in a separate section, and specific assumptions that underlie the different solutions are set forth where relevant in Chapter 5.

DEMOGRAPHIC FACTORS

The assessment of longer-term economic trends is traditionally begun by analysing the known patterns of change in the population. The demographic assumptions derived from such an analysis enter the model in the form of annual estimates of the numbers in each age-

sex group of the population over the forecast period. In forecasting to 1980, we used projections of Statistics Canada that showed continuing low fertility rates (around 2.3 births per woman of childbearing age). We also assumed net immigration of 100,000 persons per year (160,000 immigrants, 60,000 emigrants). Table 3-1 shows the population growth that is implied by these assumptions.

Year	Number of Persons	Annual Growth Rate, on the Basis of a Five-Year Period*
	(Thousands)	(Per cent)
1960	17,870	
1965	19,644	1.9
1970	21,376	1.7
1975	23,077	1.5
1980	25,001	1.6
	Year 1960 1965 1970 1975 1980	Number of Persons Year Persons (Thousands) 1960 1965 19,644 1970 21,376 1975 23,077 1980 25,001

TABLE 3-1-PROJECTIONS OF TOTAL POPULATION TO 1980

*Throughout this *Review*, figures in the tables may not add due either to rounding or to method of calculation; i.e., average annual rates of change are calculated on a basis that takes into account individual, not terminal, years. Over the period reported as 1960-65, for instance, rates of change in each of the years 1961, 1962, 1963, 1964, and 1965 would be measured from the respective preceding years. Thus the results always cover six years of observation for five years of annual rate change. Additional information on this point is contained in Economic Council of Canada, *The Economy to 1980: Staff Papers*, Paper No. 1 (Ottawa: Information Canada, 1972).

SOURCE: Based on data from Dominion Bureau of Statistics, The Population Projection for Canada, 1969-1984, Analytical Technical Memorandum No. 4 (Ottawa: DBS, April 1970).

As can be seen, the implied rate of growth of the total population is about 1.6 per cent per year, somewhat lower than in the 1960s. Nevertheless, mainly because of Canada's relatively high immigration, this is the highest rate of growth projected for industrialized countries. It compares with rates such as 1.3 per cent in the United States; 1.1 per cent in France; 0.4 per cent in Germany; 0.5 in Italy, Sweden, and the United Kingdom; and 1.1 per cent in Japan.

Other assumptions were necessary for such factors as marriage rates and school enrolment ratios before we could derive the number of families and households, the working-age population, and school enrolment. All this information was needed in the model for the computation of the labour force, housing starts, the consumption of consumer durables, and many other items.

Critical Assumptions to 1980

The changes in the age structure of the population (Table 3-2) implied by these demographic assumptions can be expected to have at least four important economic effects in the period to 1980: a boost in the supply of persons in the working-age groups; continuing high rates of postsecondary school enrolment; increases in family and household formation; and a declining dependency ratio—i.e., a decline in the proportion of the population that is supported by the labour force. This last trend, which set in during the mid-1960s, means that GNP per person, or per family, will grow at a faster rate than the GNP per person employed. The result will be rising living standards, which in turn will lead to shifts in spending patterns of consumption and investment and to changes in the financing requirements of the major sectors, including governments. These important phenomena are taken into account by the model.

TABLE 3–2—CHANGES IN AGE DISTRIBUTION OF THE CANADIAN POPULATION

	0-14	15-64	65+
	(Percer	ntage of total popu	lation)
1950	29.7	62.6	7.7
1960	33.7	58.7	7.6
1970	30.3	61.9	7.8
1980	25.3	66.2	8.5

SOURCE: Based on data from Dominion Bureau of Statistics, The Population Projection for Canada, 1969-1984, Analytical Technical Memorandum No. 4 (Ottawa: DBS, April 1970).

As illustrated in Table 3-3, the growth of the total working-age population diminishes over the 1970s, reflecting the slowdown in the inflow of persons in the age groups under 25. This inflow will be even more reduced after 1980 and is likely to change the labour market situation considerably. However, for the 1970s we project an acceleration in the growth of the group of males aged 25-54. Within this group, growth will be concentrated mainly in the 25-34 age bracket as a consequence of the existing age pattern and known aging process of the population and the concentration of immigration in this age category.

	Act	tual	Proje	ected
	<u>1960–65</u>	1965–70	1970-75	1975– <mark>80</mark>
-	(Ave	erage annual p	ercentage cha	inge)
Men 25-54 Men 14-24 and 55 and over	$\begin{array}{c} 0.7\\ 3.5\end{array}$	2.0 3.6	$\begin{array}{c} 2.5\\ 2.3\end{array}$	$\begin{array}{c} 2.6 \\ 1.4 \end{array}$
Women under 35 Women 35 and over	$\begin{array}{c} 2.2 \\ 2.2 \end{array}$	$3.6 \\ 2.0$	$3.4 \\ 1.7$	2.1 2.0
All groups	2.1	2.7	2.4	2.0

TABLE 3-3-GROWTH OF WORKING-AGE POPULATION*

*Civilian noninstitutional population 14 years of age and over.

SOURCE: Based on data from Statistics Canada and estimates by Economic Council of Canada.

The exogenous assumptions regarding marriage and divorce rates, net migration of families, and nonfamily household formation, imply the overall changes provided in Table 3-4. Generally, the increases to 1980 continue to be high, but the growth rates indicate some slowdown from the pace of the 1965-70 period.

	Ac	tual	Proj	ected
	1960-65	1965-70	1970-75	1975-80
		(Average and	nual number)	
Marriages	134,000	168,000	205,000	234,000
Net family formation	73,000	110,000	118,000	133,000
	(Av	erage annual j	percentage cha	ange)
Total number of families	1.7	2.4	2.2	2.3
Total number of households	2.5	3.2	3.0	2.8

TABLE 3-4-MARRIAGES, FAMILIES, AND HOUSEHOLDS

SOURCE: Based on data from Statistics Canada and estimates by Economic Council of Canada.

EXTERNAL ECONOMIC CONDITIONS

Because the Canadian economy is an open one, projections must take into account economic developments in other countries. Foreign influence varies—developments in the United States are the most significant; those in Western Europe and Japan, while less important, have great impact; those in the rest of the world have relatively modest effects on Canada.

To project the probable course of the U.S. economy during the 1972-80 period, we are using a projection of the Wharton Long-Term Annual and Industry Forecasting Model mentioned previously. Among the different possible solutions of this model we have chosen the one indicating a growth rate for the U.S. economy that appears high, yet is not out of line with historical experience.

In this particular solution, the growth path for the total U.S. economy rises relatively fast up to 1973, moderates somewhat around 1975, and accelerates again thereafter. The average growth rate of real GNP over the decade is projected at 4.5 per cent; of the production of durable goods, at 5.6 per cent; and of nondurable goods, at 4.3 per cent. The unemployment rate decreases fairly rapidly after 1971, reaching about 4 per cent by 1974 and remaining at about that level thereafter. And the average increase of the implicit GNP deflator resulting from this solution would be around 3.5 per cent per year. Such trends in the United States must always be kept in mind when forecasting for Canada. For example, we assume that the projected moderation in U.S. economic growth in the mid-1970s will cause pressures in the Canadian economy to ease around that time.

For the other countries that have an important influence on the Canadian economy—namely, those of Western Europe and Japan we base our projections on data published by the Organisation for Economic Co-operation and Development.¹ During the 1970s, the average annual growth rate of their industrial production should reach 7.3 per cent. Since the economic growth of these countries also depends upon the growth of the U.S. economy, such a rate presupposes a vigorously growing American economy.

Some of our assumptions regarding the external economic environment are expressed in the model in terms of Canadian exports by product category. Certain exports, such as grain, are projected outside the model because of the irregular influences that determine them. In

¹Organisation for Economic Co-operation and Development, The Growth of Output 1960-1980: Retrospect, Prospect, and Problems of Policy (Paris: OECD, December 1970).

these cases, export prospects have been established on the basis of consultation with market specialists and with reference to special studies prepared either by the staff of the Economic Council or by other organizations.

		Projected	1 1970-80
	Actual		Less
	1960-70	Favourable ¹	Favourable ¹
	(Average	annual percent	age change)
Japan and Western Europe			
Industrial production	6.8	7.3	5.6
United Kingdom			
Real GNP.	2.8	3.4	2.9
United States			
Real GNP	4.4	4.5	4.2
Industry output	1.1	1.0	1.4
Durable goods.	5.5	5.6	5.2
Nondurable goods	4.5	4.3	4.1
Utilities	5.7	4.2	4.0
Newsprint consumption	3.2	3.6	2.8
GNE deflator	2.7	3.4	2.9
Manufacturing and mining			
Sector deflator	1.2	2.4	2.1
Wage rate	4.9	5.7	5.1
Canadian exports (constant dollars)			
Cereal grains ²	1.3	-1.0	-2.5
Iron ore	7.3	7.8	6.4
Coal ³	18.4	15.4	12.8
Petroleum, natural gas, and sulphur ³	15.7	8.5	6.8
Uranium	-18.8	13.0	8.2

TABLE 3-5—SELECTED ASSUMPTIONS RELATING TO THE EXTERNAL ENVIRONMENT

"'Favourable'' in this context means relatively stronger economic growth, together with somewhat higher price increases; "less favourable" is the opposite.

²The grain export figures have been so volatile from year to year that data on rates of change can be misleading. In fact, for the favourable alternative, the average projected level of grain exports for the 1970s is about 30 per cent above the average annual level of the 1960s.

³These items showed unsustainably high growth rates during the sixties because of their very low starting bases at the beginning of the decade. For discussion and amplification, see Economic Council of Canada, *The Economy to 1980: Staff Papers*, Paper No. 4 (Ottawa: Information Canada, 1972).

SOURCE: For the historical period, calculations are based on data from the Organisation for Economic Co-operation and Development; United Kingdom; United States; and Statistics Canada publications.

Critical Assumptions to 1980

The basic assumption selected for international economic conditions is that of moderate optimism-trends are not expected to be greatly different from the 1960s. However, if the different countries do not achieve the high levels of performance they are aiming at, their demand for Canadian goods and services will of course be reduced, with a negative impact on the Canadian economy. To provide a basis for policies that would compensate for such adverse effects, we have also analysed the implications of an external environment less favourable than that initially assumed. Table 3-5, which provides a summary of favourable and less favourable international economic conditions, aids in comparing the main differences between the two sets of assumptions, and between the assumptions and actual historical experience. The favourable set of assumptions is used in the solution described in Chapter 4 and in four of the five solutions discussed in Chapter 5; the less favourable set of assumptions is used in the fifth solution.

GOVERNMENT FISCAL ACTION

The third main group of exogenous assumptions relates to the position of government in the economy—i.e., the levels of government revenue and expenditure relative to the private sector share of GNP. While these levels are strongly influenced by the country's economic activity, they are of course greatly affected by policy decisions, as we discuss here.

Government Revenues

Since we cannot guess government policy in advance, we have, as far as possible, supposed that tax rates will remain unchanged. Indirect tax rates have been assumed to remain at their 1970 level, as have corporate income tax rates (Table 3-6). The same applies to personal income taxes, in both the old and the new tax systems. However, here the distinction must be made between nominal rates, which remain constant, and effective rates, which become progressively higher as incomes rise. Progressivity has two facets: first, the effective tax rate increases with the growth of taxable income; second, taxable income grows in proportion to assessed income because exemptions are fixed.

	Ac	tual Valu	ies	Assumed	l Values
-	1960	1965	1970	1975	1980
			(Per cent)		
Personal income tax					
Taxable income as proportion of					
assessed income ²	52.0	58.0	68.0	70.0	75.0
Effective weighted average rate on					
taxable income ²	17.7	18.7	23.5	24.5	27.0
Weighted average corporate income					
tax rate	45.6	45.9	45.9	46.0	46.0
Federal sales tax rate					
Goods	11.0	11.0	12.0	12.0	12.0
Building materials	0	11.0	11.0	11.0	11.0
Provincial retail sales tax rate	1.4	3.8	5.6	5.5	5.5

TABLE 3-6—ASSUMPTIONS CONCERNING GOVERNMENT REVENUES: TAX RATES¹

¹These assumptions are not incompatible with the implications of the tax reform that came into effect in January 1972. However, they do not explicitly take into account either the reform or the budgetary measures of May 1972.

²Alternative assumptions are introduced in one of the solutions discussed in Chapter 5. SOURCE: For the historical period, calculations are based on data from Statistics Canada.

As to the other sources of income of the three levels of government, we assume a steady growth but at rates that are somewhat lower than those that prevailed in the 1960s. During that period, considerable extension of programs, particularly those involving social funds and "other" transfers, necessitated rapid growth in the contributions required to finance them. For the 1970s, we assume no additional major changes in programs.

Government Expenditures

Current expenditures on goods and services are estimated within the model, as are investment expenditures. Transfer payments have to be projected outside the model, and our explicit assumptions concerning these payments are set forth in Chapters 4 and 5 for each of the solutions. The expenditures common to all the solutions are set out in Table 3-8. TABLE 3-7-ADDITIONAL ASSUMPTIONS CONCERNING GOVERNMENT REVENUES (In millions of current dollars or average annual percentage change)

The revenue from these taxes is projected as increasing at a rate close to that of the 1960s, a decade during which mill rates rose rapidly. While assessments may rise rapidly in the 1970s, it is quite possible that, with unchanged mill rates, this source of revenue will grow less rapidly during the Percentage Average Change 1970-80 Annual 8.0 6.2 8.3 9.6 11.6 12.9 10.7 8,675 4,507 880 6,213 1,943 127 885 Assumed Value 1980 1,452 2,632 4,410 5,469 1975 86 551 522 Percentage Average Change 1960-70 Annual 10.3 20.2 14.7 15.7 7.6 9.4 n.a. 1,0493,484 57 1,451 198 350 2,677 1970 Actual Value 2,0281,078 3 256 371 621 47 1965 ,369 409 0 146 815 27 234 1960 governments Contributions to social funds²..... (hospital and health insurance premiums, vehicle Provincial and local property taxes¹..... Interest income of governments.... Investment income of hospitals and Canada Pension Provincial mining and logging taxes... "Other" transfers from persons to licences, etc.).... Royalties paid to governments. n.a.-not applicable. Plan....

decade than we have projected here.

Troluding memployment insurance; workmen's compensation; Canada, Quebec, and other public service pension plans. SOURCE: For the historical period, calculations are based on data from Statistics Canada.

Critical Assumptions to 1980

	A	ctual Value		Average Annual Percentage Change	Assumed	l Value	Average Annual Percentage Change
	1960	1965	0261	1960-70	1975	1980	1970-80
Canada and Quebec Pension Plan benefits	0	0	104	n.a.	945	2,355	23.8
Public service pension plan benefits	22	148	257	12.7	491	016	13.2
'Other" transfer payments ² (unemployment in-							
surante, grants to institutions, veterans allow- ances)	$1,422^{3}$	1,767	3,964	12.1	6,747	10,865	10.1
Military pay and allowances	559	229	906	5.0	1,056	1,363	4.6
Interest on the public debt	1,093	1,642	3,030	11.1	4,535	6,664	8.1
Subsidies and capital assistance	331	549	848	9.6	1,180	1,455	5.3

¹All other government expenditures are calculated by the model. ²Family allowances and old age pensions are determined by the model. The figures in the table refer to the solution used in Chapter 4. Alternative assumptions are introduced in Chapter 5.

³Excludes grants to hospitals not included in this category after 1960. SOURCE: For the historical period, calculations are based on data from Statistics Canada.

The Years to 1980

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TABLE 3-8-ASSUMPTIONS CONCERNING SELECTED GOVERNMENT EXPENDITURES
Critical Assumptions to 1980

The most important change from the experience of the past decade is in the benefits from public pension plans. Since such plans have only recently been established, benefit payments start in the 1970s and will of course grow very rapidly. On the other hand, subsidies and capital assistance, which increased rapidly during the 1960s due to the implementation of new programs, could tend to slow down over the present decade.

PRIVATE INVESTMENT

Private investment is calculated within the model. However, we have increased the amounts over those originally estimated by the model for several categories of business fixed investment to reflect some expected changes in the trends. A number of programs and measures will be in effect in the 1970s that could result in a substantially higher level of investment in manufacturing than would otherwise have been projected. In addition, there are indications of major investments related to resource development, including oil and gas transportation. In total, the special additions that have been made to allow for these developments amount to approximately 7 per cent of business fixed investment outlays projected for the 1970s, with about 60 per cent of the additional funds going to construction and 40 per cent to machinery and equipment. These allowances could well prove conservative.

* * * * *

In this chapter, we have presented the general assumptions that underlie all the model's solutions. Since the different solutions reflect alternative sets of circumstances, they also incorporate a few specific assumptions about such items as transfer payments and personal tax rates. As indicated where relevant, these specific assumptions are usually added to the more general assumptions but may replace them in some instances.

4

A Setting of Strong External and Government Growth

N THIS CHAPTER we set out some of the dimensions of Canadian economic growth in the 1970s based on two underlying sets of assumptions: (1) a favourable external environment; and (2) a continued increase in government expenditures, with resulting expansion of the role of government in the economy. The basis of the first assumption is the same as that discussed in Chapter 3. However, for this particular solution of the model, the second is made more specific by additional assumptions about government revenues and expenditures, and we review these briefly in the next section before presenting the projections.

SPECIFIC ASSUMPTIONS AFFECTING GOVERNMENT REVENUES AND EXPENDITURES

At current rates of taxation, government revenues are projected to increase strongly in the Canadian economy as it moves to a high employment level. If spending were to be determined solely by the requirements of existing programs, revenues would soon considerably exceed expenditures, creating undesirable fiscal drag,¹ and it would not be possible to sustain high rates of growth in output and employment. In fact, under such conditions, the model shows that we would

¹For example, growth in annual revenues corresponds to "potential" growth of GNP and, allowing for current rates of price increase, is estimated at close to \$3 billion. In the results presented here, we do not separate the revenues and expenditures of the federal, provincial, and municipal governments.

experience an average rate of unemployment of about 6 per cent over the last half of the decade. Prices could be expected to rise by less than 2 per cent per year.

It is obvious that such performance over a period of several years would not be tolerated. To obtain a more credible view of the future, we assume that the government will either reduce taxes or increase its expenditures, and we examine the effects of lower income taxes in one of the solutions in Chapter 5. For this chapter's solution we make the assumption that, while tax rates will be roughly the same as in 1970 (as indicated in Chapter 3),² government expenditures will increase in both transfer payments and fixed capital investment, as follows.

Transfer payments to the personal sector from the various levels of government accounted for 23 per cent of government expenditures in 1970. (Such payments include old age pensions, veterans' pensions and allowances, family and youth allowances, unemployment insurance benefits, workmen's compensation benefits, adult occupational training payments, assistance payments, grants to benevolent associations, scholarships and research grants, and grants to universities.) Working solely from our 1955-70 base, we would have estimated a rate of increase in total payments on the order of 8.5 per cent per annum over the decade of the 1970s just to maintain existing programs. However, to offset projected growth in government revenue, transfer payments would, we assume here, be increased somewhat more rapidly, allowing some margin for the introduction of new programs or the expansion of present ones. On this basis, we have projected an increase of 9.6 per cent per year in transfer payments over the course of the decade, to nearly \$18 billion (current dollars), compared with \$6.8 billion in 1970.

Government investment expenditures are also assumed to accelerate rapidly in the 1970s, with a growth rate of about 12 per cent per year, calculated in current dollars, compared with about 8 per cent in the 1960s (Table 4-9). Greater emphasis would no doubt be given to public involvement in projects such as urban renewal, environmental improvement, airport facilities, and power development. In addition, substantial government investments could be associated with support of natural resource development, especially in the North, including transportation, harbour, and communications facilities. Since a broad range of these construction-type investments is presently being con-

 $^{^{\}circ}$ No allowance has been made in these estimates for the tax changes announced in the Budget of May 8, 1972.

sidered, it appeared reasonable to include a major allowance for them as an element in the pattern of overall development of the economy presented in this chapter.

THE RESULTING PATTERN OF DEVELOPMENT

To provide a background for the analysis of the growth path traced in this first solution of the model, the results are presented in basic grouping, as follows:

- -Main Aggregates
- -Labour Force Growth
- -Consumer Expenditures

-The Government Sector

- ---Investment Demand
- -Exports, Imports, and the Balance of Payments

-Industrial Structure.

Main Aggregates

The estimates obtained for this first solution indicate a rapid rate of growth in output and employment over the decade to 1980. For output, an average annual rate of growth of 5.6 per cent is projected for the economy as a whole, compared with 5.4 per cent in the 1960s, and reflects a small improvement in the rate of growth of output per person employed because of an unchanged employment growth rate.

TABLE 4-1-GROWTH IN OUTPUT, EMPLOYMENT, CAPITAL STOCK, AND REAL DISPOSABLE INCOME (Calculated in 1961 dollars)*

	Actual	Projected
-	1960-70	1970-80
(Average annual	percentage change)
Real Gross National Product	5.4	5.6
Employment	3.1	3.1
Output per person employed	2.3	2.4
Stock of business capital	5.0	5.8
Business capital stock per employed person	1.8	2.7
Real disposable income.	5.4	5.7
Real disposable income per capita	3.5	4.1

*Except for employment, which was calculated on the basis of number of persons employed.

SOURCE: Based on data from Statistics Canada and estimates by Economic Council of Canada.

As Table 4-1 indicates, this in turn is associated with a significant increase in the rate of growth of the stock of business capital, and therefore of the capital stock per employed person.³ In line with the somewhat faster rate of growth of output (and the assumption of unchanged tax rates), total real disposable income would also rise a little faster in the 1970s than in the 1960s. With some slowing in the growth of the population, this would mean a more substantial rise in the growth of real disposable income per capita.

For employment, the rate of growth would average 3.1 per cent annually in the 1970s, or about the same as in the 1960s. With the labour force increasing slightly less rapidly than in the preceding decade—at 2.8 per cent per year compared with 2.9 per cent—the unemployment rate would decline to less than 4 per cent of the labour force in the latter part of the decade (Table 4-2).

		Actual			Projected	
	1960-65	1965-70	1960-70	1970-75	1975-80	1970-80
Labour force Employment*	$2.2 \\ 2.9$	$3.2 \\ 2.8$	$\begin{array}{c} 2.9\\ 3.1 \end{array}$	2.6 2.9	2.8 3.0	$\begin{array}{c} 2.8\\ 3.1 \end{array}$
	1961-65	1966-70	1961-70	1971-75	1976-80	1971-80
Unemployment as percentage of labour force	5.4	4.6	5.0	5.2	4.0	4.6

TABLE	4-2-AVERAGE	ANNUAL	PERCENTAC	E CHANGE	IN
	LABOUR FOR	RCE AND	EMPLOYME:	NT, AND	
	AVERAC	E UNEMI	PLOYMENT I	RATES	

*As indicated previously, the average rates of increase are calculated so as to take into account individual years rather than just terminal years. In this instance, the acceleration in rates of increase around the middle of each decade results in averages for the full decade being higher than for either of the five-year periods.

SOURCE: Based on data from Statistics Canada and estimates by Economic Council of Canada.

The average rate of increase in the price component of GNP over the decade is 2.7 per cent. The considerable drop from the 3.2 per cent average growth rate of the 1960s reflects a variety of assumptions, including more stable growth in the pattern of investment demand

⁸This set of figures implies an increasing capital/output ratio in the 1970s. For a discussion of this point, see The Economy to 1980: Staff Papers, op. cit.

in the 1970s relative to the 1960s; a somewhat slower rise in export prices; and no change in indirect tax rates, which were a significant factor in the price increases of the 1960s.

Rates of growth in the major demand components, given in Table 4-3 in constant dollar terms, indicate more rapid growth for consumer expenditures, business non-residential construction outlays, and government investment spending. However, government current expenditures for goods and services and outlays for new housing would increase a little more slowly than in the preceding decade. Moreover, growth would be markedly slower for both exports and imports of goods and services, reflecting the fact that some special factors that were operating in the 1960s will not be present in the 1970s.

TABLE 4-3—GROWTH OF MAJOR DEMAND COMPONENTS OF GROSS NATIONAL EXPENDITURE

	Actual	Projected
	1960-70	1970-80
	(Average annual p	ercentage change)
Gross National Expenditure	5.4	5.6
Consumer expenditure	4.9	5.5
Government current expenditure on		
goods and services	5.1	4.8
Government fixed investment	4.9	8.9
Business fixed investment		
Residential construction	4.3	4.0
Non-residential construction	5.2	7.9
Machinery and equipment	8.2	7.7
Exports of goods and services	9.8	5.7
Imports of goods and services	8.5	6.1

(Calculated in 1961 dollars)

SOURCE: Based on data from Statistics Canada and estimates by Economic Council of Canada.

What these projections imply, if an allowance is also made for estimated price changes in the 1970s, is a Gross National Product in current dollar terms that would amount to about \$190 billion in 1980. This compares with an actual GNP in 1970 of \$84 billion, and in 1971 of \$92 billion. To show how the pattern of the nation's spending

would look in 1980 in relation to the 1960s, Table 4-4 sets out the major demand components as percentage shares of Gross National Product.

TABLE 4-4-DEMAND COMPONENTS AS A PERCENTAGE OF GROSS NATIONAL EXPENDITURE

(Calculated in current dollars)

		Actual		Pro	jected
-	1960	1965	1970	1975	1980
			(Per cent	.)	
Consumer expenditure	65.4	60.4	58.0	56.6	54.8
Government expenditure on goods					
and services	18.1	19.6	22.6	24.2	25.9
Current expenditure	14.0	15.1	18.7	19.1	20.4
Gross fixed investment	4.1	4.5	3.9	5.1	5.5
Business fixed investment	18.3	19.7	17.4	18.5	18.6
Residential construction	4.7	4.8	4.2	4.4	4.3
Business plant and equipment	13.6	14.9	13.2	14.1	14.3
(Non-residential construction).	(6.9)	(7.0)	(6.2)	(7.1)	(7.5)
(Machinery and equipment)	(6.7)	(7.9)	(7.0)	(7.0)	(6.8)
Value of physical change in inven-					
tories	1.1	2.1	0.1	0.7	0.6
Exports of goods and services	18.5	20.4	24.8	23.6	23.3
Imports of goods and services	-21.4	-22.5	-23.5	-24.6	-23.8
Residual error of estimate		0.3	0.5	1.0	0.7
Gross National Expenditure	100.0	100.0	100.0	100.0	100.0
		(Billion	s of currer	at dollars)	
Gross National Expenditure	37.8	54.9	84.5	127.2	189.2

SOURCE: Based on data from Statistics Canada and estimates by Economic Council of Canada.

Between 1970 and 1980, the share of current-dollar GNP accounted for by consumer spending continues to decline, while government expenditure on goods and services, both current and capital, would increase by about the same proportion. Business investment spending for fixed capital and inventories is projected to rise from the depressed levels of the year 1970.

For the final main aggregate—balance of payments—there is a pronounced shift in the position, from a substantial surplus in 1970 (1.3 per cent of GNP) to a modest deficit in 1980 (0.5 per cent of GNP).

Labour Force Growth

The increase in the work force depends on two elements: the workingage population, and the rate of this group's participation in the labour market. In Chapter 3, the size of the working-age population was seen to be a function of demographic factors and net immigration. Participation rates, however, are not necessarily predetermined, for they may be affected by economic and other conditions. In the model, we assume, on the basis of past trends, that only the participation rates of males aged 25-54 are constant, at 96 per cent. Rates for the rest of the working-age population—i.e., the younger and older groups of males and all female groups—appear to fluctuate in accordance with economic conditions, such as the change in wages and the availability of jobs. The model equations take account of these relationships, and the estimates of labour force growth that result are illustrated in Table 4-5.

	Act	tual	Projected
	196065	1965-70	1970-80
	(Average a	annual percen	tage change)
Males	(1	
25-54	0.7	1.8	2.5
14-24 and 55 and over	2.5	3.3	1.8
Females			
Under 35	3.4	6.4	4.0
35 and over	5.7	4.0	3.6
Total labour force	2.2	3.2	2.8

TABLE 4-5-CANADIAN LABOUR FORCE GROWTH

SOURCE: Based on data from Statistics Canada and estimates by Economic Council of Canada.

The most significant feature of this anticipated labour force growth is the acceleration in the rate of increase of the male group 25-54 years of age. Most of the increase is concentrated in the younger

ages (25-34) as a consequence of the echo effect of the earlier baby boom. Virtually everyone in this group enters the labour market.

The rates of growth of all the other labour force groups are slowing down significantly, mainly due to deceleration in the growth of female participation rates and, of course, to the reduced rate of increase in the 14-24 age category. The net effect on the total labour force growth is a slowdown to about 2.8 per cent for the decade of the 1970s compared with 3.2 per cent during the last half of the 1960s. Nevertheless, Canada's rate of increase in the labour force is still higher than that of any other industrialized country.

Consumer Expenditures

The share of the national product devoted to personal consumption declined in constant dollars during the 1960s. The single most important cause of the drop was a shift out of private into public consumption as governments took over the provision of a major part of health care services. Assuming that the various levels of government do not move further into areas previously classified as consumer expenditures, and given that real consumption will grow about as fast as total output in the 1970s (Table 4-3), no significant reduction in the share of *real* expenditures by the consumer sector is anticipated in the 1970s.

By 1980, consumer expenditure per person (in constant dollars) would be approximately twice as large as the level reached two decades earlier and about 50 per cent higher than in 1970. This means an annual growth rate of 3.8 per cent over the decade, considerably faster than in the 1960s, reflecting the slowing of population growth combined with a larger proportion of the population in the labour force.

Table 4-6 shows the growth of major aggregates of real consumer expenditure per capita, broken down by main category, and a pictorial view is given in Chart 4-1 for easier reference.⁴

Among the major aggregates of consumer expenditure, durable goods spending would be the fastest-growing component during the decade of the 1970s, surpassing the growth achieved in the previous decade and increasing its share of total consumer spending (Table 4-6). This rapid expansion, led by sharp gains in spending on personal

⁴A comparison between growth rates for single categories and the rate for total consumer expenditures tells us whether a particular category increased or decreased its share of the total. The share would be the same on either a total or per capita basis.

	Ac	tual	Projected	Actual	Projected
I	1960	1970	1980	1960-70	1970-80
		(Dollars)		(Average annual]	percentage change)
Durable goods	163	239	416	4.4	4.7
Personal transportation equipment.	92	128	234	4.2	5.1
Recreational durables	22	34	59	4.8	4.8
Household appliances.	18	25	42	3.5	4.1
Furniture and carpets.	28	34	50	2.4	3.4
Sales tax	3	18	30	13.9	4.6
Semidurable goods	158	190	249	2.1	2.4
Clothing and footwear	134	145	185	1.0	2.1
All other semidurables	21	34	49	5.2	3.6
Sales tax.	3	12	15	11.7	2.4
Nondurable goods.	533	739	1,058	3.5	3.7
Food and nonalcoholic beverages	270	302	347	1.1	1.6
Alcoholic beverages and tobacco.	06	107	142	1.6	2.8
All other nondurables.	168	313	542	6.8	5.6
Sales tax	4	17	27	11.8	4.9
Services	539	638	935	2.4	4.0
(Services, by 1960 definition)	(539)	(722)	(1,073)	(3.1)	(4.0)
Housing	189	289	417	4.5	3.8
Health ^I	74	24	22	-5.1	1.7
(Health, by 1960 definition)	(74)	(108)	(160)	(3.6)	(4.0)
Education ²	12	33	50	10.0	3.9
All other services.	265	292	447	1.1	4.3
Total consumer expenditures	1,391	1,806	2,658	3.1	3.8
(Total consumer expenditures,					
by 1960 definition)	(1, 391)	(1, 890)	(2, 796)	(3.3)	(3.9)

TABLE 4-6--REAL CONSUMER EXPENDITURES PER CAPITA, BY MAJOR AGGREGATE AND MAIN CATEGORY

consumers.

²⁴This group contains all *current* expenditures of universities (including the contributions of governments), plus consumer expenditures on private schools and courses. It does not contain the expenditures of the public school system and the community colleges (which form a part of government expenditures) and the *capital* expenditures of the universities (which are included in private fixed investment). SOURCE: Based on data from Statistics Canada and estimates by Economic Council of Canada.

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REAL PER CAPITA CONSUMER EXPENDITURES ON SELECTED ITEMS

CHART 4-1

*All health care services including government medical care and hospital schemes not presently classified as consumer spending.

NorE: All charts on this page are drawn to the same ratio scale, so that equal slopes mean equal growth rates. Since the results were obtained through the use of a medium-term model, all charts show projections for the years 1973–80 to indicate the general time paths but omit 1971 and 1972 to avoid attention being focused on individual years.

SOURCE: Based on data from Statistics Canada and estimates by Economic Council of Canada.

TOTAL REAL CONSUMER EXPENDITURES PER PERSON BY 1980 WOULD BE TWICE AS LARGE AS IN 1980. AMONG THE ITEMS INCLUDED IN THIS CHART, THE FASTEST-GROWING WOULD BE PERSONAL TRANSPORTATION EQUIPMENT AND RECREATIONAL DURABLES, WHILE FOOD AND NONALCOHOLIC BEVERAGES, AND CLOTHING, FOOTWEAR, ETC., WOULD HISE THE SLOWEST.

transportation equipment and recreational durables, reflects changing consumer habits and tastes as well as relatively low prices. Under conditions of rising income, a continuing decline in relative prices, and steadily rising replacement demand, household appliances would also show good growth in the 1970s—faster than that of the 1960s, but not as high as total durable goods. However, the slow rise projected for single-dwelling units would have a dampening effect on the growth of this item. (Appliances purchased by owners of rented dwellings do not enter consumption but appear as investment in residential construction.) Furniture and carpets would show a somewhat slower growth rate than other durable goods, but still a distinctly faster growth than during the 1960s.

The share of semidurable goods in total consumer spending declined steadily during the last decade, and this trend is expected to continue in the 1970s. Outlays in this category, however, are projected to increase somewhat more rapidly than in the 1960s owing to accelerated per capita consumption of clothing, footwear, and other accessories, while all other semidurable goods would register slower growth.

During the first half of the 1960s, the share of nondurable outlays, the largest category of consumer spending, declined as the economy moved progressively towards higher rates of growth, but resumed an upward trend in the second half of the decade as the tempo of the Canadian economy moderated. In the 1970s, spending in this category is projected to rise at a slightly faster rate, although not fast enough to prevent a decline in its share of total real consumer expenditures. Faster rates of increase in spending for food, alcoholic beverages, and tobacco in the 1970s would be partially offset by slower growth in other nondurable goods. It should be noted that outlays for alcoholic beverages and tobacco would well be overstated in these estimates because of our assumption that indirect tax rates will not increase. If these rates do in fact rise, consumption of alcohol and tobacco could be lower than indicated in our projection.

Services increase about in line with the rise in total consumer spending in the 1970s. Within this aggregate, consumer spending for housing,⁵ which grew at a strong pace in the 1960s, would moderate somewhat during the 1970s. The somewhat slower rise is associated with the change in the age composition of Canada's population and the resultant check to the rate of increase in marriages. The increase

⁵ Includes gross rents paid, the rental value of owner-occupied housing, lodging paid, and house maintenance and repair costs.

in expenditures on education is assumed to slacken considerably during the decade of the 1970s as the growth rate in student enrolment eases and the increase in real expenditure per student reaches a plateau. And the decline in health services purchased by the personal sector is projected to come almost to a halt in the 1970s because no further substitution between the government and the private sector in this area is assumed.

According to these projections, expenditures on services give the impression of growing much faster during the 1970s than in the 1960s i.e., at 4 vs. 2.4 per cent (Table 4-6). However, this stronger growth is partly illusory, reflecting the shift of some health care services from the private to the public sector during the 1960s. If such outlays had been counted as consumer expenditures throughout the 1960s, the difference between the growth rates of the two decades would have been reduced by half.

During the sixties, there was a rapid growth in sales tax payments, due partly to the increase in consumer expenditures in general, but much more to the increase in sales tax rates. Our assumption of no further increase in sales tax rates over the next decade leads to a substantial moderation in the growth of sales tax payments (Table 4-6).

TABLE 4-7—PERCENTAGE COMPOSITION OF TOTAL CONSUMER SPENDING

(Calculated in current dollars)

		Actual		Projected
	1950	1960	1970	1980
		(Pe	r cent)	
Durable goods	$11.5 \\ 14.5 \\ 41.9 \\ 32.0 \\ (32.0)$	$ 11.9 \\ 11.3 \\ 38.4 \\ 38.4 \\ (38.4) $	$11.4 \\ 10.4 \\ 39.6 \\ 38.5 \\ (41.7)$	$ 11.9 \\ 9.6 \\ 37.1 \\ 41.4 \\ (45.8) $
Total consumer spending	100.0	100.0	100.0	100.0

*This line shows the share of consumer spending on services as it would be if there had not been a shift of medical and health care services from the personal sector to the government sector.

SOURCE: Based on data from Statistics Canada and estimates by Economic Council of Canada.

Table 4-7 shows the distribution of the main categories of total consumer expenditure in current dollars since 1950. As can be seen,

there has been a long-term trend towards a higher share of spending for consumer services, and this trend is expected to continue to 1980. At the same time, there has been an almost steady decline in the share of spending on semidurable and nondurable goods, which is also carried forward through the 1970s. The share of total spending allocated to durable goods consumption has remained remarkably stable over the postwar period, and it is projected that, in 1980, the durable goods share will not greatly differ from that of two decades earlier.

The Government Sector⁶

Under the conditions outlined at the beginning of this chapter, government expenditures on goods and services in real terms, including both current and capital outlays, would rise in the 1970s at a rate a little above that of the increase in real Gross National Product

GOVERNMENT REVENUES AND EXPENDITURES NET OF INTERGOVERNMENTAL TRANSFERS

(Percentage of total)

	Expend	litures	Revo	enues
	1960	1970	1960	1970
Federal government	50.5	39.7	62.5	50.1
Provincial government	24.8	27.3	21.3	32.6
Municipalities and school commissions	24.7	25.4	16.1	13.2
Hospitals	_	7.3		-
Canada Pension Plan		0.3		3.2
Quebec Pension Plan		0.1	—	0.9
Total	100.0	100.0	100.0	100.0

SOURCE: Based on data from Statistics Canada.

⁶ In the material presented here, the activities of the three levels of government are treated on a combined basis. It may be noted, however, that during the 1960s there was a marked shift in the proportion of both revenues and expenditures accounted for by the various levels of government, with the federal share declining and the provincial-municipal share showing a corresponding rise. Thus, in 1960, provincial-municipal revenues (on a National Income Accounts basis and net of intergovernmental transfers) accounted for about 37 per cent of net government revenues, but by 1970 their share had risen to about 46 per cent. Conversely, the share of federal revenues declined, from 63 per cent in 1960 to 50 per cent in 1970. These shifts in favour of the provincial-municipal levels of government reflected both an increase in tax rates and changes in tax-sharing arrangements. As a proportion of total government spending, federal expenditures declined from about 51 per cent of the total in 1960 to 40 per cent in 1970, while provincial-municipal spending rose from 50 per cent to 60 per cent. Since these figures lend themselves to different interpretations, we show here a complete breakdown of this division.

(Table 4-8). In other words, by 1980, governments would be utilizing a somewhat higher share of the total real resources of the economy than in 1970, directing additional expenditure mainly towards investment.

TABLE 4-8--GROWTH OF GOVERNMENT EXPENDITURE ON GOODS AND SERVICES

	Actual	Projected
	1960-70	1970-80
	(Average annual	percentage change)
Total government expenditure on goods and services	. 5.1	5.8
Current expenditure on goods and services	5.1	4.8
Total investment	. 5.1	9.0
Real Gross National Product	. 5.4	5.6

(Calculated in 1961 dollars)

SOURCE: Based on data from Statistics Canada and estimates by Economic Council of Canada.

But government expenditure for goods and services, which represents direct claims on resources, constitutes only a part of total government spending. A broader and more balanced view of the size and role of the government sector in the economy involves looking at total expenditures, thus including transfer payments to persons, debt interest, subsidies, capital assistance, and other forms of spending, in relation to total revenues. In the remainder of this section, we consider this broader view in current dollar terms.

Total government spending at all levels and for all purposes increased from 30.1 per cent of GNP in 1960 to 35.5 per cent in 1970, reflecting not only the growth of existing government activities, but also the shift of certain activities from the private to the public sector—notably those in the health services field. The projections set out here indicate a further increase in spending, to 39.8 per cent of GNP by 1980, in spite of our restrictive assumptions about taxes. In other words, by 1980 close to 40 per cent of the nation's total income

and output would be passing through the government sector—either as a direct claim on the resources of the economy (government expenditure on goods and services), or as a redistribution of income in the form of transfer payments. The rise in public sector spending as a percentage of Gross National Product over the past two decades, and as projected to 1980, is shown in Chart 4-2. By 1980, government expenditure on goods and services, including government capital investment expenditures, would amount to about 26 per cent of GNP. Redistribution of income in the form of transfer payments, debt interest, and other outlays would account for the additional 14 per cent.



*"All other" includes subsidies, capital assistance, and current transfers to non-residents.
**Up to and including 1960, grants to hospitals are included in transfer payments to persons. In later years, hospital expenditures are included in government current expenditure on goods and services.

SOURCE: Based on data from Statistics Canada and estimates by Economic Council of Canada.

THE SHARE OF GOVERNMENT IN THE ECONOMY INCREASED THROUGHOUT THE PERIOD 1950-71, ALTHOUGH MINOR SHORT-TERM FLUCTUATIONS WERE EVIDENT. THIS TREND WOULD CONTINUE IN THE 1970S AT A SOMEWHAT SLOWER RATE.

Table 4-9 shows government expenditures in current dollars. In line with the assumptions previously outlined, government investment would be growing significantly faster in the 1970s than in the preceding decade. However, total expenditures in the 1970s would grow a little more slowly than in the 1960s, and by 1980 combined government expenditures would be in the neighbourhood of \$75 billion.

Even with unchanged tax rates, in a strongly growing economy the flow of revenues to the government sector is very large. Our calculations suggest that total government revenues in the 1970s will be increasing in current dollars at an average annual rate of 9.4 per cent, compared with an average rate of increase in current-dollar GNP of 8.5 per cent. The implied elasticity of tax revenues in relation to the growth of GNP is just a little over 1.1, assuming no change in tax rates.

Table 4-10 sets out our revenue estimates to 1980, with comparative growth rates for the two decades. Under our assumptions of unchanged tax rates, total government revenues would grow more slowly in the 1970s. All types of tax revenues would show a slower rate of increase, with the exception of corporate taxes.⁷

Nevertheless, by 1980, 39.2 per cent of the Gross National Product would be accounted for by government revenues, compared with 24.7 per cent in 1950, 27.1 per cent in 1960, and 35.6 per cent in 1970. Chart 4-3 shows the key components of government revenue expressed as a percentage of GNP: direct personal taxes would account for about 16 per cent; corporate taxes, 4 per cent; indirect taxes, 14 per cent; and other revenues, about 5 per cent. By 1980—in fact, as early as 1975—personal direct taxes would replace indirect taxes as the largest single source of government revenues.

The net result of these various revenue and expenditure calculations is a moderate surplus position on a National Accounts basis throughout the decade (Table 4-10). In 1980, the surplus would be in the neighbourhood of \$1.5 billion. We believe it is appropriate for the government sector as a whole to be in a moderate surplus position whenever the economy is at or near its potential level of output. It should be noted, however, that a complete accounting of the impact on the economy of the government sector position should also include extrabudgetary lending and borrowing transactions that are not recorded in the National Income Accounts framework.

 $^{^{7}}$ No allowance has been made in these estimates for the tax changes announced in the Budget of May 8, 1972.

	Ac	tual	Projected	Actual	Projected
	1960	1970	1980	1960-70	1970-80
		(\$ Billion)		(Average annual	percentage change)
otal expenditure on goods and services	6.8	19.0	49.0	10.6	10.2
Current expenditure on goods and services.	6.3	15.8	38.6	11.5	9.8
Government fixed investment	1.5	8. 85	10.3	7.8	11.8
ransfer payments to personal sector.	3.1	6.8	17.7	11.2	9.6
nterest on the public debt and all other expenditures*	1.5	4.1	8.5	11.1	7.5
Total government expenditure	11.4	30.0	75.2	10.8	9.7

TABLE 4-9-GOVERNMENT EXPENDITURE

Setting of Strong Growth

	Ac	tual	Projected	Actual	Projected
	1960	1970	1980	1960-70	1970-80
		(\$ Billion)		(Average annual	percentage change)
ersonal taxes ²	2.8	11.5	30.9	18.0	11.0
orporate taxes	1.6	2.9	2.9	6.9	8.1
adirect taxes ³	4.9	12.0	25.8	9.8	8.0
Other" revenue ⁴	1.0	3.8	9.5	15.9	9.8
otal government revenue	10.2	30.1	74.2	12.5	9.4
plus Capital consumption allowances	0.5	1.2	2.6	9.5	8.4
minus Government expenditure	11.4	30.0	75.2	10.8	9.7
equals Surplus (+) or Deficit (-)	-0.7	+1.3	+1.5	n.a.	n.a.

TABLE 4-10-GOVERNMENT REVENITE AND COVERNMENT STIPPITTS OF DEDICITY

n.a.—not applicable. 10n National Accounts basis.

²Includes personal moome taxes plus contributions to social funds. ³Includes personal moome taxes, customs duties, and provincial and local property taxes. ⁴Includes investment income, direct taxes on non-residents, and other current transfers from persons. SOURCE: Based on data from Statistics Canada and estimates by Economic Council of Canada.

The Years to 1980

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"All other revenues" include investment income, direct taxes on non-residents, and other current transfers from persons. Capital consumption allowances have not been included. SOURCE: Based on data from Statistics Canada and estimates by Economic Council of Canada.

GOVERNMENT REVENUES WOULD RISE TO OVER 39 PER CENT OF GNP BY 1980, BY WHICH TIME PERSONAL DIRECT TAXES WOULD HAVE BECOME THE LARGEST SINGLE SOURCE OF GOVERNMENT REVENUES.

Investment Demand

In previous periods of growth, total investment (private and public) rose to a peak of around 27 or 28 per cent of GNP for one or two years and then declined. In this solution, total investment demand rises to about 25 per cent of GNP in the latter part of the decade and remains close to this level up to 1980. Chart 4-4 shows the level and composition of investment demand in relation to GNP for the postwar period and as projected to 1980 in this solution.

For business plant and equipment, outlays would be running around 14 per cent of GNP by 1980 (Table 4-13). The estimates allow for substantially higher investments related to resource development than were made in the 1960s. Over the full decade the cumulative capital requirements needed to finance total business plant and equipment expenditures would be around \$190 billion (current dollars), compared with about \$80 billion in the 1960s.

The distribution of business plant and equipment investment between construction and machinery and equipment is likely to change in the 1970s. While in the previous decade machinery and equipment investment as a percentage of GNP rose above investment in construction, by 1980 both categories will represent roughly equal shares, measured in current dollars (Table 4-11).

TABLE 4-11—BUSINESS PLANT AND EQUIPMENT OUTLAYS AS A PERCENTAGE OF GROSS NATIONAL EXPENDITURE

(Calculated	in	current	dol	lars)
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	Machinery and Equipment	Non- residential Construction	
	(Per	cent)	
Actual			
Average 1960-65	6.7	6.5	
Average 1965–70	7.6	6.6	
Projected			
Average 1970-75	6.7	6.5	
Average 1975-80.	7.2	7.3	

SOURCE: Based on data from Statistics Canada and estimates by Economic Council of Canada.

The picture is the same if growth is considered in constant dollars. Average rates of increase in investment for machinery and equipment are estimated at 7.7 per cent per year in real terms, and for nonresidential construction at 7.9 per cent per year (Table 4-3). The resulting total stock of business capital in the 1970s is estimated to grow at 5.8 per cent per year, compared with 5 per cent in the 1960s.

In the housing sector, the rate of increase is projected at 4 per cent per year in the 1970s (measured in constant dollars) compared with 4.3 per cent in the 1960s (Table 4-12). The volume of residential construction is determined basically by the number of dwellings constructed and by the distribution between single and multiple dwellings. The total number of housing starts had already reached a high level in 1971, and the rate of increase in starts from this high base is projected at only 1.8 per cent per year in the 1970s, compared with an average annual increase of 5.4 per cent in the 1960s—a period that showed an unusually depressed level of starts in the early years.

TABLE 4–12—AVERAGE ANNUAL CHANGE IN VARIOUS HOUSING INDICATORS

	Actual	Projected	
	1960-70	1970-80	
	(Per cent)		
Investment in housing (calculated in 1961 dollars)	4.3	4.0	
Stock of housing (units)	2.7	3.1	
Total dwelling starts (units)	5.4	1.8	
Single	0.2	-2.4	
Multiple	10.2	3.6	
Number of households (units)	2.9	2.9	

SOURCE: Based on data from Statistics Canada and estimates by Economic Council of Canada.

Multiple dwellings accounted for 41 per cent of total housing starts in 1960. This proportion had increased to 63 per cent by 1970, and a further increase to 76 per cent is projected to 1980. In part, this development reflects a growing proportion of nonfamily households in the population, as well as the higher cost of purchasing or renting a single-family dwelling.

As a result of the continued high level of total housing starts through the 1970s, the total stock of houses is projected to grow somewhat more rapidly than in the 1960s—at an average annual rate of 3.1 per cent, compared with 2.7 per cent.

The total number of households would be expected to increase at an average annual rate of 2.9 per cent over the 1970s, about in line with the rate of increase in the 1960s. However, during the 1960s, the housing stock grew more slowly than the number of households,

and there was a decline in the vacancy rate to a level of 1.5 per cent in 1970. Such a low level of vacancies not only tended to put strong upward pressures on shelter costs, but also worked to inhibit the mobility of workers seeking to relocate to new jobs in other parts of the country. During the 1970s, the rate of growth in the housing stock is somewhat higher than the growth of households, and the vacancy rate rises to a more desirable level of 3 per cent by the end of 1980.

In total, private and public fixed investment in real terms is projected to increase at an average annual rate of 7.4 per cent in the 1970s, compared with an average rate of increase of 6 per cent in the 1960s. While investment as a share of GNP was very close to a postwar low in 1970, our projections for this decade postulate a more stable growth path for investment, with its share of GNP holding at a high level through to 1980 (Chart 4-4).



*Includes government and private inventory investments. SOURCE: Based on data from Statistics Canada and estimates by Economic Council of Canada.

THE VARIOUS COMPONENTS OF TOTAL INVESTMENT HAVE SHOWN PRONOUNCED VOLATILITY IN THE PAST. A MUCH SMOOTHER PATH TO 1980 IS ENVISAGED IN THIS ALTERNATIVE.

By definition, the volume of investment corresponds to the overall requirements for the generation of savings in the economy. In general, the saving and investment projected are well within the ranges of historical experience, as is indicated by the figures in Table 4-13. The single exception is government fixed investment, which is projected to account for a slightly higher share of GNP in the 1970s than has been typical of the past.

TABLE 4-13—INVESTMENT AND SAVING AS PERCENTAGES OF GROSS NATIONAL PRODUCT

	Actual		Projected		
	1960	1965	1970	1975	1980
			(Per cent	.)	
Investment					
Residential construction	4.7	4.8	4.2	4.4	4.3
Business plant and equipment	13.6	14.9	13.2	14.1	14.3
Non-residential construction	6.9	7.0	6.2	7.1	7.5
Machinery and equipment	6.7	7.9	7.0	7.0	6.8
Government gross fixed invest-					
ment	4.1	4.5	3.9	5.1	5.5
Value of physical change in					
inventories	1.1	2.1	0.1	0.7	0.6
Total	23.5	26.3	21.4	24.2	24.6
Saving					
Government saving	2.2	5.0	5.3	6.0	6.3
Investment	4.1	4.5	3.9	5.1	5.5
Surplus	-1.8	0.6	1.5	0.9	0.8
Non-resident saving	3.0	2.1	-1.3	1.0	0.6
Private saving	18.2	19.8	18.4	19.3	19.3
Personal	2.4	4.1	4.7	4.9	4.6
Business	15.8	15.7	13.7	14.4	14.7
Measured sources of saving	23.4	26.9	22.5	26.3	26.2
Statistical discrepancy	0.1	-0.6	-1.1	-2.0	-1.5
Total	23.5	26.3	21.4	24.2	24.6

(Calculated in current dollars)

SOURCE: Based on data from Statistics Canada and estimates by Economic Council of Canada.

By 1980, our projections indicate that demand for saving, as shown by investment demand, would be running in the neighbourhood of 25 per cent of Gross National Product. This is a little below that in previous periods in which the economy was at or near potential output as in 1956 and 1966 (Chart 4-4). The demand for saving would in part be met by foreign funds, since the sizable surplus in the current account of the balance of payments in 1970 would give way to a modest deficit during the 1970s as the economy expanded. We would also anticipate a small surplus in the position of the government sector of the economy in 1980, to supplement increases in saving. Finally, private sector saving (business and personal) would amount to about 19 per cent of GNP in 1980, about in line with the average relationship to GNP that has prevailed over the past two decades.

Exports, Imports, and the Balance of Payments

Assuming strong demand from external sources, exports of goods and services in constant-dollar terms are projected in our estimates to increase at an average annual rate of 5.7 per cent over the decade 1970-80. Imports would also increase, by 6.1 per cent per year. These rates of increase are considerably below those of the preceding decade (Table 4-2), reflecting the fact that in the 1960s a number of special factors were operating to give a major boost to Canada's trade performance. Such factors included the decline in the value of the Canadian dollar, which gave a competitive lift to exports in the 1960s, and the automotive agreement, which raised both exports and imports of automotive products to extraordinarily high levels in the course of the decade. No parallel developments of this kind are assumed for the 1970s.

Actual and estimated rates of growth for particular groups of merchandise exports and imports over the two decades are set out in Table 4-14 in real terms. In each case, the rates of growth are below those of the 1960s, but the slackening is particularly pronounced for the groups that include trade in automotive products.

During the 1960s, significant changes occurred in the relative importance of trade in the primary, processed, and manufactured groups of products. Trade in agricultural products declined markedly in current dollars, and there was a corresponding rise in the proportion of trade in the more highly manufactured products group. The changes in the structure of trade by industry are set out in Table 4-15.

	Actual	Projected	
	1960-70	1970-80	
	(Average annual	percentage change)	
Exports*			
Agricultural products	3.5	1.2	
Industrial materials			
Primary	9.9	8.4	
Processed	5.0	5.1	
Automobiles and other advanced manufactured products	25.6	6.6	
Total	11.0	5.9	
Imports*			
Agricultural products	4.9	4.1	
Industrial materials	6.6	4.7	
Automobiles and other advanced manufactured products	12.4	7.2	
Total	9.5	6.3	

TABLE 4-14-GROWTH OF CANADA'S MERCHANDISE TRADE (Calculated in 1961 dollars)

*Totals include special transactions, which are not shown separately. Export total includes re-exports.

SOURCE: Based on data from Statistics Canada and estimates by Economic Council of Canada.

The surplus on the merchandise account has been increasing since the mid-1960s, but this surplus has been accompanied by a steadily widening deficit on service transactions. In most years, the net result has been a deficit on the current account (Chart 4-5). The year 1970 was an exception; a large surplus was caused by slow domestic growth and resulting low imports, and export demand from overseas countries increased more than usual. Under the conditions of the relatively high growth that is projected in this solution, a current account deficit is anticipated that could run as high as 1.2 per cent of GNP in the years of most rapid growth but decline to 0.4 per cent of GNP by the end of the decade. Thus the deficit tends to increase significantly as the economy moves closer to potential and to narrow thereafter as the growth rate moderates.



SOURCE: Based on data from Statistics Canada and estimates by Economic Council of Canada.

THE CURRENT ACCOUNT DEFICIT WOULD WIDEN AS THE ECONOMY PICKED UP AND NARROW THEREAFTER AS THE OVERALL RATE OF EXPANSION MODERATED, AS IN THE 1960s, THE OVERALL DEFICIT WOULD RESULT FROM A DEFICIT ON THE INVISIBLES BALANCE GREATER THAN THE SURPLUS ON MERCHANDISE TRADE.

TABLE 4-15—PERCENTAGE DISTRIBUTION OF CANADA'S MERCHANDISE TRADE, BY MAJOR CATEGORY¹

	Actual		Projected	
	1960	1970	1980	
		(Per cent))	
Exports ²				
Agricultural products	20.6	11.8	8.1	
Industrial Materials				
Primary	16.9	15.8	20.4	
Processed	45.0	29.3	26.7	
Automobiles and other advanced manufac- tured products	14.8	40.2	41.9	
Total	100.0	100.0	100.0	
		(\$ Billion))	
Value of Exports	5.4	16.8	35.3	
Torio and a		(Per cent))	
Imports ²	10 .			
Agricultural products	13.5	9.4	6.6	
Industrial materials	35.2	27.9	24.9	
Automobiles and other advanced manufac- tured products	49.6	61.5	67.2	
Total	100.0	100.0	100.0	
		(\$ Billion))	
Value of Imports	5.5	13.9	30.6	

(Calculated in current dollars)

¹Trade of Canada basis.

²Totals include special transactions, which are not shown separately. Export total includes re-exports.

SOURCE: Based on data from Statistics Canada and estimates by Economic Council of Canada.

Our estimates indicate that, by 1980, receipts from sales of goods and services abroad would more than double, from a level of \$21.7 billion in 1970 to \$45 billion. Payments for imports would also more than double, exceeding \$45 billion by 1980 and producing an

overall current account deficit that fluctuates in a range of about 0.5 to 1.5 per cent of GNP during the decade. The estimates are set out in Table 4-16.

TABLE 4–16—CURRENT ACCOUNT OF THE BALANCE OF PAYMENTS¹

	1960	1970	1977 ²	1980
	(\$ Billion)			
Exports of goods	5.4	16.8	28.6	35.3
Receipts from services and transfers.	1.7	5.0	7.8	9.7
All exports	7.1	21.7	36.4	45.0
Imports of goods	5.5	13.8	26.1	30.6
Payments for services and transfers	2.8	6.7	12.1	15.1
All imports	8.4	20.5	38.2	45.7
Current account balance	-1.2	1.1	-1.8	-0.7
		(Percenta	ge of GNP)	
Total exports of goods and services	18.9	25.7	24.1	23.8
Total imports of goods and services	22.2	24.3	25.3	24.1
Current account balance	-3.3	1.3	-1.2	-0.4

(Calculated in current dollars)

¹Balance-of-payments basis, as distinct from the National Accounts presentation in Table 4-4.

²Figures are shown for 1977 because the current account deficit reaches its peak in that year. SOURCE: Based on data from Statistics Canada and estimates by Economic Council

SOURCE: Based on data from Statistics Canada and estimates by Economic Council of Canada.

Industrial Structure

Given the set of developments outlined in the preceding sections of this chapter, what are the implications for industry? As mentioned below, the growth of total industry output, as measured by Real Domestic Product, is projected to increase by 5.5 per cent in the 1970s, slightly above the rate of increase of 5.4 per cent per annum in the preceding decade. There would, however, be significant differences among major industry groups, as indicated in Chart 4-6 and Table 4-17. The higher rate of increase projected for the construction industry in the 1970s is, to a large extent, attributable to the additional private and public construction investments that have been assumed.

CHART 4-6 MEASUREMENTS OF PERFORMANCE BY INDUSTRIAL SECTOR

(AVERAGE ANNUAL PERCENTAGE CHANGE)



*The numbers are too small to form the basis for reliable projections.

**Includes the value of imputed rent on owner-occupied dwellings not shown separately. SOURCE: Based on data from Statistics Canada and estimates by Economic Council of Canada.

THE GROWTH OF OUTPUT BY INDUSTRY, WITH MINOR EXCEPTIONS, WOULD BE COMPARABLE TO THAT REGISTERED IN THE 1960S. UNDERLYING THIS DISTRIBUTION OF OUTPUT WOULD BE DIFFERENT CHANGES IN EMPLOYMENT, CAPITAL STOCK, AND PRODUCTIVITY GROWTH FOR THE VARIOUS SECTORS

- 2 0.8 1.5 6.3 0.8 16.5 6.5 1980 17.1 4.1 7.1 4.9 34.1 Total Employment TABLE 4-17-OUTPUT AND EMPLOYMENT CHANGES AND DISTRIBUTION OF EMPLOYMENT, (Per cent) Share of 6.5 1970 0.9 0.3 6.0 2.2 16.8 1.6 22.7 25.7 1.1 4.6 6.2 23.8 6.5 1960 11.4 1.6 0.3 1.6 1.2 8.4 3.0 18.6 5.0 17.1 1970-80 - -2 0.2 2.1 -0.8 2.0 -2.1 1.2 3.7 3.0 4.3 6.1 3.4 Employment (Average annual percentage change) 1960-70 4.9 2.5 2.7 3.0 2.2 2.9 6.4 -3.1 -1.65.0 3.0 1.1 BY INDUSTRY GROUP Domestic Product' 1970-80 2.3 5.0 6.3 5.6 6.5 5.7 5.3 5.5 6.2 2.7 1.9 6.4 Real 1960-70 1.2 3.9 5.8 5.0 7.6 6.3 5.5 6.6 2.8 1.9 6.1 5.1 Construction Electric, water, and gas utilities..... Transportation, storage, and communication Community, business, and personal services. Finance, insurance, and real estate.... Manufacturing..... Forestry..... Mining, oil, and gas.... Public administration.... Wholesale and retail trade.... Agriculture.... Fishing....

¹Calculated in 1961 dollars.

²The numbers here are too low to form a basis for reliable projections. ³Includes the value of imputed rent on owner-occupied dwellings, not shown separately. Sources: Based on data from Statistics Canada and estimates by Economic Council of Canada.

100.01

100.0

100.0

3.1

3.1

5.5

5.4

Total economy³.....

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The Years to 1980

Agricultural and forestry output increases are also projected as being greater than in the 1960s, when these primary industries experienced slow increases in output because of reduced export demand during the last few years. The output of the mining, oil, and gas industry, which increased rapidly during the 1960s, is expected to grow at an even faster rate in the 1970s. The finance and insurance industry is also projected to grow more rapidly than in the 1960s.

However, growth in output would be slower for several industry groups. Manufacturing output, for example, grew rapidly in the 1960s, supported by strongly rising exports and sustained domestic demand, because of such favourable factors as the auto pact and the decline in the value of the Canadian dollar. In the 1970s, however, it is projected to increase at 5.6 per cent per annum vs. 6.1 per cent in the preceding decade, with significant implications for the economy. Other groups of industries for which slower growth of output is projected include: electric, gas, and water utilities which, because of rapid urbanization, have been expanding very rapidly throughout most of the postwar period; transportation, storage, and communication; and community, business, and personal services.

The growth and distribution of employment by industry are also undergoing important changes to 1980. Table 4-17 illustrates the broad pattern of shifts in the distribution of employment. The employment estimates by industry are derived within the model from the projections of output and capital stock and from estimates of productivity growth. The most significant features in the employment structure to 1980 are the continuing declines in the share of agricultural and manufacturing employment. Agricultural employment declines in absolute terms, while manufacturing employment increases but at a very low rate.

As has been the case for some time, manufacturing is not likely to provide the bulk of the new jobs required to absorb the rapidly growing labour force because, as is implicit in Table 4-17, the increase in manufacturing productivity is nearly sufficient in itself to provide for all the additional production forecast for the rest of the decade. It is true that in this particular projection the increase in productivity may have been overestimated, because it is strongly influenced by data for 1961-68—a period in which the manufacturing sector was characterized by exceptional technological change and capital investment. Should such a trend not continue throughout the 1970s, then we may have underestimated the increase in employment in this sector.

However, within any realistic limits, adjustments made to alter the productivity assumptions would not make a significant difference in our employment results. In any case, if there were a marked departure from past productivity trends, we would be confronted with another series of difficulties. Indeed, if the rate of productivity growth were lower, and the same production increases were realized from a larger number of jobs, much stronger pressures could be expected from higher production costs and prices. Over the longer term, higher product prices would have a negative effect on sales.

Thus it seems that, to increase manufacturing employment beyond that indicated by our projections, it will be necessary to increase production. To this end, new policies are required.⁸ Since the manufacturing sector cannot be considered in isolation from the rest of the economy, we shall discuss this problem in the more general context of Chapter 6.

If not in manufacturing, where then can we expect to find the bulk of new jobs in the years ahead? A tentative answer may be found in the projected shifts in the distribution of employment among sectors to 1980, in comparison with 1960-70 (Table 4-17). Proportionately, employment continues to increase in finance and insurance; community, business, and personal services; and public administration. It will decline in agriculture; manufacturing; utilities; and transportation, storage, and communications.

⁸The fiscal measures announced on May 8, 1972, concerning the manufacturing sector may be considered an important step in this direction.

5

Some Alternative Patterns of Development

N CHAPTER 4 we traced one possible pattern of Canadian economic development, which was based on assumptions of continuing growth of government and a favourable external environment. If these assumptions prove to be a close match with actual events, the result will likely be a high rate of economic growth and a distinctive structure. However, so many uncertainties cloud the future that some of our assumptions may turn out to be invalid. To take into account a range of possibilities, we have therefore derived alternatives to the original growth path by making changes in our assumptions that enable us to simulate the effects of different policies or events.

In this chapter we describe the main features of those alternatives that are the most likely variations on the Chapter 4 scenario, presenting the results in similar tables and charts to enable easy comparison with the first solution. To highlight the differences, the commentary will focus on the effects of each main change in our assumptions. Examination of the alternatives is not intended to cover in any complete fashion the vast array of forces that can influence Canadian development. The intention is rather to show the implications of alternative courses of action.

For the first alternative, we assume a less favourable external environment than in Chapter 4 and analyse possible government action aimed at counteracting the consequent reduction in export demand. In the second, we assume the same favourable external environment as in Chapter 4 but a more irregular increase in private business investment. The third set of alternatives highlights the

implications of different government fiscal policies, again under favourable external conditions. Here, we first examine the effects of a slower-growing government sector and then compare the implications of directing increased government expenditure to either one of two categories—government investment, and government transfer payments to the personal sector.

A LESS FAVOURABLE EXTERNAL ENVIRONMENT

To quantify our assumption about the "less favourable" external environment, we assumed slower growth rates in those countries that affect our economy the most. Specifically, we projected the rate of growth of the combined industrial production of Western Europe and Japan at 5.6 per cent per annum as against 7.3 per cent for the favourable environment,¹ and for the GNP of the United Kingdom at 2.9 per cent as compared with 3.4 per cent. The GNP of the United States was projected to grow at an average of 4.2 per cent per annum, compared with the "favourable" rate of 4.5 per cent, and this change, in turn, affected a number of variables entering the CANDIDE model directly, as indicated in Table 3-5. (The table also summarizes the resulting slower-growth-rate projections for Canadian exports of uranium, coal, oil, iron ore, and cereal grains.) While we have not chosen the lowest estimates available, these assumptions are sufficient to show the extent to which other economies can affect our own.

Such slower rates of growth in other countries, which imply reductions in the growth of Canadian exports and in export and import prices, would have a substantial impact on the Canadian economy. Real incomes and consumer expenditures would increase more slowly, and the rate of growth in output would slow to an average rate of 4.6 per cent over the decade instead of 5.6 per cent as projected in the Chapter 4 solution. In addition, employment would increase more slowly, with the result that the unemployment rate would increase steadily—to over 6 per cent by 1975 and 8 per cent by 1980.

To counteract these adverse effects, we assume that governments would increase transfer payments to the personal sector. These payments include such items as unemployment insurance, assistance payments, government pension plan payments, and family and youth allowances. In this simulation, total transfer payments were projected to increase at an annual rate of 11.2 per cent, as against the

¹This is less than the growth of industrial production in these countries in the 1960s, when it averaged 6.8 per cent.

9.6 per cent assumed in Chapter 4. The amount paid out annually in current dollars would reach \$20 billion in 1980 vs. \$17.7 billion in the Chapter 4 solution.

The impact of this policy on personal income would boost domestic demand. Supported by higher transfer payments, real disposable income would increase at the same rate as in the Chapter 4 projection, and consumer expenditures would therefore be maintained. Housing investment would increase more rapidly, stimulated by lower domestic costs as well as lower interest rates resulting from slower U.S. growth.

TABLE 5-1—GROWTH OF MAJOR DEMAND COMPONENTS OF GROSS NATIONAL EXPENDITURE: LESS FAVOURABLE EXTERNAL ENVIRONMENT

	Actual 1960–70	Projected 1970-80		
		- Chapter 4	Slower Exports, Higher Transfer Payments	
	(Average a	nnual percent	age change)	
Gross National Expenditure	5.4	5.6	5.5	
Consumer expenditures Durables Semidurables Nondurables Services*	$ \begin{array}{r} 4.9\\ 6.1\\ 4.0\\ 5.4\\ 4.3 \end{array} $	5.5 6.3 4.0 5.4 5.7	5.5 6.2 4.0 5.5 5.7	
Government current expenditures on goods and services	5.1	4.8	4.7	
Government fixed investment	4.9	8.9	8.9	
Business fixed investment Residential construction Non-residential construction Machinery and equipment	$4.3 \\ 5.2 \\ 8.2$	4.0 7.9 7.7	4.5 7.7 7.6	
Exports of goods and services	9.8	5.7	4.9	
Imports of goods and services	8.5	6.1	5.9	

(Calculated in 1961 dollars)

*For the decade 1960-70, this rather low rate of increase excludes the medical care services which are now a part of government expenditure. If they are included, the rate of increase in consumer expenditures on services over that decade is 5 per cent.

SOURCE: Based on data from Statistics Canada and estimates by Economic Council of Canada.
Despite the increase in domestic consumption, however, the overall rate of growth of the economy would be a little slower than that projected in Chapter 4. Business investment would grow more slowly, and the rate of price increase would be somewhat less, averaging 2.5 per cent, as compared with 2.7 per cent. Growth in employment would also be slower, at a rate averaging 2.9 per cent over the decade, as compared with 3.1 per cent. Consequently, the rate of unemployment would range between 4 and 5 per cent instead of declining to under 4 per cent in the latter part of the decade. These and other comparisons are set out in Tables 5-1 and 5-2.

			Projected	1970-80	
	Actual			Slower E	xports,
	1960-70	- Cha	pter 4	Paym	ransfer ents
		(Average	annual percen	tage change	e)
Real disposable income per capita*	3.5		4.1	4.	1
Output per employed per- son*	2.3		2.4	2.	4
Employment	3.1		3.1	2.	9
GNE implicit price deflator.	3.2	2.7 2.5		5	
			Annual Averages		
		1971-75	1976-80	1971-75	1976-80
			(Thousa	nds)	
Number of dwelling starts		244	255	245	260
			(Per c	ent)	
Unemployment rate		5.2	4.0	5.3	4.3
		(Billions of cur	rent dollars	3)
Current account balance		-0.5	-1.4	-0.8	-3.2
Government surplus or defici	it	+1.6	+1.6	+1.2	-0.9

TABLE 5-2—SELECTED GROWTH INDICATORS: LESS FAVOURABLE EXTERNAL ENVIRONMENT

*Calculated in 1961 dollars.

SOURCE: Based on data from Statistics Canada and estimates by Economic Council of Canada.

Alternative Patterns

The country's trade balance would, of course, be directly affected by the less favourable external environment defined above. The reduction in the average rate of increase in exports of goods and services is considerable, dropping from 5.7 to 4.9 per cent, with less export growth experienced in all of the major categories. Some of the groups are particularly affected by the export assumptions mentioned in Chapter 3. Others, including the more highly manufactured goods, reflect the general assumption of slower growth of other economies. With slightly slower growth in the Canadian economy, imports also increase less, although not to a marked degree. The rates of change in exports and imports of goods are shown in Table 5-3.

TABLE 5-3—GROWTH OF CANADA'S MERCHANDISE TRADE: LESS FAVOURABLE EXTERNAL ENVIRONMENT

		Projected	1 1970-80
	Actual	Actual	Slower Exports, Higher Transfer
	1960-70	Chapter 4	Payments
	(Average an	nnual percent	age change)
Exports*			
Agricultural products	3.5	1.2	0.4
Industrial materials			
Primary	9.9	8.4	6.8
Processed	5.0	5.1	4.2
Automobiles and other advanced			
manufactured products	25.6	6.6	6.1
Total	11.0	5.9	5.1
Imports*			
Agricultural products	4.9	4.1	4.1
Industrial materials	6.6	4.7	4.5
Automobiles and other advanced		-	
manufactured products	12.4	7.2	7.1
Total	9.5	6.3	6.2

(Calculated in 1961 dollars)

*Totals include special transactions, which are not shown separately.

SOURCE: Based on data from Statistics Canada and estimates by Economic Council of Canada.

With exports of goods and services showing much slower growth than imports, the current account deficit would exceed 2 per cent of GNP in several years, averaging \$3.2 billion per year over the period 1976-80. As Chart 5-1 shows, the deficits produced in both solutions would decline in the latter years of the decade, reflecting the slower rate of growth of the Canadian economy as a whole and the resulting slower rate of growth of imports.



SOURCE: Estimates by Economic Council of Canada.

THE CURRENT ACCOUNT DEFICIT WOULD BE MUCH LARGER IN THE EVENT OF SLOWER EXTERNAL GROWTH COMPENSATED BY HIGHER DOMESTIC TRANSFER PAYMENTS, BUT THE GENERAL PATH FOR THE PERIOD CONSIDERED WOULD BE THE SAME AS IN CHAPTER 4.

Even the moderate changes in the composition of the growth of final demand outlined in Table 5-1 would have a marked impact on the growth of particular industries. The reduction in the rate of growth in total Real Domestic Product would be concentrated, however, in the goods-exporting industries, including particularly mining, oil,

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Alternative Patterns

and gas, but also agriculture, forestry, fishing, and manufacturing (see Table 5-4). However, most of the industries producing goods or services mainly for the domestic market would maintain their rates of increase of output.

TABLE 5-4—CHANGES IN INDUSTRY OUTPUTS: LESS FAVOURABLE EXTERNAL ENVIRONMENT

		Projected	l 1970–80	
	Actual 1960–70 Chapter		Slower Exports, Higher Transfer Payments	
	(Average a)	nnual percent	tage change)	
	(***********	induit per cont		
Agriculture	1.2	2.3	2.0	
Forestry	3.9	5.0	4.5	
Fishing	1.9	1.9	1.6	
Mining, oil, and gas	5.8	6.3	4.8	
Manufacturing	6.1	5.6	5.3	
Construction	5.0	6.5	6.5	
Electric, water, and gas utilities	7.6	6.4	6.3	
Transportation, storage, and communication	6.3	5.7	5.5	
Wholesale and retail trade	5.5	5.3	5.3	
Finance, insurance, and real estate	5.1	5.5	5.4	
Community, business, and personal services	6.6	6.2	6.2	
Public administration	2.8	2.7	2.7	
Real Domestic Product*	5.4	5.5	5.3	

(Calculated in 1961 dollars)

*Includes the value of imputed rent on owner-occupied dwellings.

SOURCE: Based on data from Statistics Canada and estimates by Economic Council of Canada.

The policy of compensating for reduced export demand by increasing government transfer payments would also have a significant impact on the financial position of governments. Total government expenditures are projected at about the same levels as in Chapter 4, because the higher expenditure on transfer payments would offset the slower rate of increase in government expenditures on goods and services caused by lower price rises (Table 5-5). But with revenues

increasing less rapidly as a result of the slower growth of the Canadian economy (Table 5-6), governments would run considerable deficits over most of the decade. When extrabudgetary needs of Treasury are taken into account, substantial cash requirements are indicated.

TABLE 5-5-GOVERNMENT EXPENDITURE: LESS FAVOURABLE EXTERNAL ENVIRONMENT

		Projected	H 1970-80	
	Actual		Slower Exports, Higher	
-	1960-70	Chapter 4	Payments	
	(Average annual percentage chang			
Total expenditure on goods and services	10.6	10.2	9.7	
services	11.5	9.8	9.3	
Government fixed investment	7.8	11.8	11.3	
Transfer payments to personal sector	11.2	9.6	11.2	
Interest on the public debt and all other expenditures*	11.1	7.5	7.5	
Total government expenditure	10.8	9.7	9.8	

(Calculated in current dollars)

""All other expenditures" include subsidies, capital assistance, and current transfers to non-residents.

SOURCE: Based on data from Statistics Canada and estimates by Economic Council of Canada.

Since the economy would be growing more slowly while government expenditure growth remained the same, the government share of GNP would be greater than that projected in Chapter 4. By 1980, total government expenditure would increase to 41.7 per cent of GNP from 35.5 per cent in 1970. If it had been assumed that the stimulus to domestic demand would come from reduced rates of taxation rather than from increased transfer payments, government expenditure as a percentage of GNP would have risen less, although budgetary deficits would have been as high, if not higher.

		Projecte	od 1980		Projected	1970-80
	Actual		Slower Exports, Higher	Actual		Slower Exports, Higher
	1970	Chapter 4	L ransier Payments	1960-70	Chapter 4	Lransier
		(\$ Billion)		(Average an	nual percentag	(e change)
Personal taxes ²	11.5	30.9	29.8	18.0	11.0	10.5
Corporate taxes	2.9	7.9	7.6	6.9	8.1	7.7
Indirect taxes ³	12.0	25.8	25.4	9.8	8.0	7.8
"Other" revenue ⁴	3.8	9.5	9.4	15.9	9.8	9.7
Total government revenue.	30.1	74.2	72.2	12.5	9.4	9.1
plus Capital consumption allowances	1.2	2.6	2.5	9.5	8.4	7.9
minus Government expenditure	30.0	75.2	75.6	10.8	9.7	9.8
equals Surplus (+) or Deficit (-)	+1.3	+1.5	-0.9	n.a.	n.a.	n.a.

TABLE 5-6--GOVERNMENT REVENUE AND GOVERNMENT SURPLUS OR DEFICIT.¹ LESS FAVOURABLE EXTERNAL ENVIRONMENT

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In the present stage of development of the CANDIDE model, however, we cannot specify all the implications of an alternative of this type, which involves large current account deficits coupled with large government deficits. If Canada did incur a current account deficit of the magnitude implied in this solution, large capital inflows would be required to cover it, and such flows would be closely related to monetary conditions then prevailing in both Canada and the United States. Alternatively, the government could decide on an exchange depreciation. However, we have not yet modeled the money, interest rate, capital flow, mechanisms of the exchange reserve and the exchange rate, or the international trading environment with the precision necessary to explore the range of policy options that could be exercised. Nor have we examined in detail the implications of continuing large government deficits.

Thus, at this juncture, we have to leave a number of important questions unanswered. It is quite possible that the effects of the less favourable external environment and the associated fiscal compensation that we have outlined here would lead to balance-of-payments positions and government deficits that could not be sustained. However, the examination of the scenario of a less favourable external environment has been useful in illustrating what could happen to our markets for goods and services and what the resulting impact on labour and capital would be.

A DIFFERENT TIME PATH FOR PRIVATE INVESTMENT

In the pattern of development considered in Chapter 4, total investment as a percentage of Gross National Product increased gradually, reaching a peak of 25.5 per cent in 1978 (Chart 4-4). In this alternative, private investment builds up faster, peaking at \$23.3 billion (Chart 5-2), or 26.1 per cent of GNP, in 1976. To simulate this more rapid build-up of private investment, which is mainly related to natural resource development, we assumed that it was concentrated in the period 1974-76 instead of being spread over the whole decade. As in the Chapter 4 alternative, the additions amount to about 7 per cent of total private investment. Dollar amounts are shown in Table 5-7.



SOURCE: Estimates by Economic Council of Canada.

IN THE EVENT OF A NATURAL RESOURCE DEVELOPMENT BOOM IN THE PERIOD 1974-76, INVESTMENT WOULD, CORRESPONDINGLY, BE MORE CONCENTRATED IN THE FIRST HALF THAN IN THE SECOND HALF OF THE SEVENTIES.

TABLE	5-7-ADDITIONS	TO	PRIVATE	RESOURCE-RELATED
	IN	IVE	STMENTS	

	Chapter 4	Bunched Private Investment
	(Billions of	1961 dollars)
1972	0.1	0.1
1973	0.2	0.2
1974	0.3	1.7
1975	0.5	1.7
.976	0.6	1.7
.977	0.7	
1978	1.0	
1979	1.0	
<mark>1980</mark>	1.0	
Fotal	5.4	5.4

Since we are causing fluctuations in the growth path for the decade 1970-80, a comparison of this alternative with that of Chapter 4 in terms of 10-year averages is not appropriate. Therefore, separate results are presented for the first and second halves of the decade, as shown in Tables 5-8 and 5-9.

TABLE 5-8-GROWTH OF MAJOR DEMAND COMPONENTS OF GROSS NATIONAL EXPENDITURE: BUNCHED PRIVATE INVESTMENT

	Projected 1970-75		Projecte	ed 1975-80
	Chapter 4	Bunched Private Investment	Chapter 4	Bunched Private Investment
	(Ave	erage annual p	ercentage c	hange)
Gross National Expenditure	6.0	6.6	5.2	4.6
Consumer expenditures	5.9	6.3	5.2	4.9
Durables	8.0	9.0	5.2	4.5
Semidurables	4.4	5.1	3.7	3.1
Nondurables	5.4	5.6	5.4	5.2
Services	6.0	6.4	5.4	5.2
Government current expenditures on goods and services	4.8	5.0	4.6	4.3
Government fixed investment	10.7	10.8	6.2	6.1
Business fixed investment				
Residential construction	5.3	5.4	4.1	3.6
Non-residential construction	10.3	16.1	5.9	-0.9
Machinery and equipment	7.9	10.2	5.6	2.9
Exports of goods and services	6.1	6.1	5.7	5.7
Imports of goods and services	7.3	8.1	5.1	4.3

(Calculated in 1961 dollars)

SOURCE: Based on estimates by Economic Council of Canada.

With the assumption of a more rapid build-up of investment, the overall growth in output of the economy would be more concentrated in the first half of the 1970s than it was in the Chapter 4 solution. In

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addition to private investment, both consumer and government current expenditures would contribute to this faster rate of growth. Moreover, imports would grow rapidly, and the current account deficit would increase to about 1.7 per cent of GNP in 1976. Per capita disposable income and employment would increase sharply, and the rate of unemployment would drop to 3.6 per cent in 1976. In the last half, employment would grow more slowly and the rate of unemployment would rise to between 4.2 and 4.3 per cent towards the end of the decade. Even with the more rapid early growth in this solution, the rate of price increase projected is only slightly higher than in Chapter 4. One reason is that the period in which the investment increases are concentrated—1974-76—is one when the rate of U.S. growth is assumed to slow down, following rapid growth in the years 1972 and 1973.

	Projecte	ed 1970–75	Projected	1975-80
	Chapter 4	Bunched Private Investment	Chapter 4	Bunched Private Investment
	(Ave	erage annual p	ercentage ch	ange)
Real disposable income per capita*.	4.8	5.3	3.6	2.9
Output per employed person*	2.9	3.1	2.1	1.9
Labour force	2.6	2.7	2.8	2.7
Employment	2.9	3.2	3.0	2.5
GNE implicit price deflator	2.6	2.7	2.9	2.9
		Annual A	Averages	
	Projecte	ed 1971–75	Projected	1 1976-80
		(Thous	sands)	
Number of dwelling starts	244	244	255	252
		(Per	cent)	
Unemployment rate	5.2	4.9	4.0	4.0

TABLE 5-9—SELECTED GROWTH INDICATORS: BUNCHED PRIVATE INVESTMENT

*Calculated in 1961 dollars.

SOURCE: Based on estimates by Economic Council of Canada.

It is conceivable that an investment build-up of this magnitude could occur without leading to excessive pressures in the economy or to serious disturbances in the capital market. In certain sectors, however, growth in output and employment might become irregular. For example, employment in the construction industry would have to increase quite rapidly to 1976 but would level off thereafter (Chart 5-3).





Over the decade of the 1970s many factors, taken alone or together, could affect the rhythm of growth of the Canadian economy. We have examined only one—an alternative time path for private investment. In doing so we have not attempted to analyse the extremes of variation that might occur and the pressures that might be created in individual years. Our focus is more appropriately on a medium-term horizon.

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SOME FISCAL POLICY CHOICES

In this set of alternatives, we examine the effects of government policies that alter public revenue and expenditure, while holding to the same assumptions as in Chapter 4 regarding the external environment and additions to private investment. In the first alternative, we assume slower growth in government revenues. In the second, we contrast two situations: higher transfer payments, and greater government investment. These packages of assumptions are characterized in Table 5-10.

	Chapter 4	Slower- Growing Government	High Transfer Payments	High Government Investment
Rates of increase in:				
Transfer payments	Moderate	Low	High*	Low
Government investment	Moderate	Low	Low	High
Taxes	Moderate	Low	Moderate	Moderate

TABLE 5-10—ALTERNATIVE FISCAL PACKAGES

*Same rate as for the less-favourable-external-environment alternative.

Slower Growth of the Government Sector²

During the 1960s the government sector grew rapidly in relation to the private sector. As reviewed in Chapter 4, if tax rates are assumed unchanged, government would continue to increase its position, with revenues and expenditures growing from a 1970 level of about 36 per cent of GNP to about 40 per cent in 1980. In this section we consider the implications of slower rates of increase in government revenues and expenditures.

Because of the progressivity of the income tax system, government revenue increases faster than total income in a growing economy, even though scheduled rates of taxation remain unchanged. Up to now, we have included the effects of progressivity by increasing the effective tax rate to 27 per cent and the proportion of taxable income to 75 per cent in 1980 (Table 3-6). In this alternative, we offset

² The activities of the three levels of government are treated on a combined basis.

progressivity by assuming the effective rate to remain unchanged at 23.5 per cent for the remainder of the decade, roughly the same as at present. The proportion of income that is taxable is also assumed to remain constant throughout most of the period at 65 per cent, a proportion that is somewhat lower than at the beginning of the decade. With all other assumptions held constant, this treatment of taxes would imply future reductions in effective rates by one means or another. The other elements in this fiscal package are lower rates of increase in government investment and in government transfer payments to the personal sector.

TABLE 5-11-GROWTH OF MAJOR DEMAND COMPONENTS OF GROSS NATIONAL EXPENDITURE: SLOWER-GROWING GOVERNMENT

		Projecte	d 1970–80
	Actual		Slower-
	1960-70	Chapter 4	Growing Government
	(Average al	nnual percen	tage change)
Gross National Expenditure	5.4	5.6	5.7
Consumer expenditures	4.9	5.5	5.9
Durables	6.1	6.3	7.0
Semidurables	4.0	4.0	4.6
Nondurables	5.4	5.4	5.6
Services*	4.3	5.7	6.1
Government current expenditures on			
goods and services	5,1	4.8	4.8
Government fixed investment	4.9	8.9	4.5
Business fixed investment			
Residential construction	4.3	4.0	4.3
Non-residential construction	5.2	7.9	7.9
Machinery and equipment	8.2	7.7	7.8
Exports of goods and services	9.8	5.7	5.7
Imports of goods and services	8.5	6.1	6.3

(Calculated in 1961 dollars)

*For the decade 1960-70, this rather low rate of increase excludes the medical care services which are now a part of government expenditure. If they are not excluded, the rate of increase in consumer expenditures on services over that decade is 5 per cent.

SOURCE: Based on data from Statistics Canada and estimates by Economic Council of Canada.

Alternative Patterns

The results of this simulation are presented in Tables 5-11 and 5-12. To summarize, rates of increase in output, employment, and prices are just about the same as in Chapter 4.³ The reduced rate of increase in government activity is offset by increased demand in the private sector. Personal disposable income per capita increases more rapidly because of the reduction in personal income tax rates and a growth in GNP similar to that in Chapter 4. The direct result is higher rates of increase in consumer expenditures (particularly for durables and semidurables) and in residential construction. With the slower growth in government investment, total investment would rise to about 24 per cent of GNP, rather than to nearly 25 per cent.

		Projected	1 1970-80	
Actual			Slower-	Growing
1960–70	Chap	oter 4	Gover	nment
(Av	verage annu	al percenta	ge change)	
3.5	4	.1	4	
$\frac{2.3}{3.1}$	23	.4	3	.0
0.4		A	A	
		Annual	Averages	
	1971-75	1976-80	1971-75	1976-80
		(Thou	isands)	
	244	255	244	257
		(Per	cent)	
	5.2	4.0	5.2	3.9
	Actual 1960–70 (Av 3.5 2.3 3.1 3.2	Actual 1960–70 Chap (Average annu 3.5 4 2.3 2 3.1 3 3.2 2 1971–75 	Actual Projected 1960–70 Chapter 4 (Average annual percenta 3.5 4.1 2.3 2.4 3.1 3.1 3.2 2.7 Annual 1971–75 1976–80 (Thou	Actual Slower-I 1960–70 Chapter 4 Gover (Average annual percentage change) 3.5 4.1 4 2.3 2.4 2 3.1 3 3.2 2.7 2 2 1971–75 1976–80 1971–75 1976–80 1971–75 1971–75 244 255 244 244 255 244

TABLE 5-12—SELECTED GROWTH INDICATORS: SLOWER-GROWING GOVERNMENT

*Calculated in 1961 dollars.

SOURCE: Based on data from Statistics Canada and estimates by Economic Council of Canada.

³ The differences between rates of increase in employment, Gross National Expenditure, and output per employed person shown in the two solutions are minor.

With slower growing government revenues and expenditures, the government sector would, as at present, continue to account for about 36 to 37 per cent of GNP instead of increasing to 40 per cent by 1980. Expenditures and revenues from personal taxes are about equivalent, leaving the government budget balance about the same as in the Chapter 4 solution (Tables 5-13 and 5-14).

TABLE 5-13—GOVERNMENT EXPENDITURE: SLOWER-GROWING GOVERNMENT

		Projecte	d 1970–80
	Actual		Slower-
	1960-70	Chapter 4	Growing Government
	(Average a	nnual percent	tage change)
Total expenditure on goods and services	10.6	10.2	9.4
Current expenditure on goods and services	11.5	9.8	9.9
Government fixed investment	7.8	11.8	7.4
Transfer payments to personal sector	11.2	9.6	8.5
Interest on the public debt and all other expenditures*	11.1	7.5	7.5
Total government expenditure	10.8	9.7	9.0

(Calculated in current dollars)

*"All other expenditures" include subsidies, capital assistance, and current transfers to non-residents.

SOURCE: Based on data from Statistics Canada and estimates by Economic Council of Canada.

To summarize the comparison of this solution with that of Chapter 4, the results show striking similarities in growth of output, employment, productivity, and other aggregates, illustrating the fact that satisfactory performance could be achieved even if the importance of the public sector were reduced. The most significant differences in this solution would be more rapid increases in personal disposable income and in consumer expenditures.

		Project	ted 1980		Projecte	1970-80
	Actual		Slower-	Actual		Slower-
	1970	Chapter 4	Government	1960-70	Chapter 4	Governme
		(\$_Billion)		(Average a	nnual percent	age change)
Personal taxes ²	11.5	30.9	25.4	18.0	11.0	8.5
Corporate taxes.	2.9	7.9	8.3	6.9	8.1	8.2
Indirect taxes ³	12.0	25.8	26.4	9.8	8.0	8.2
"Other" revenue"	3.8	9.5	9.5	15.9	9.8	9.8
Total government revenue	30.1	74.2	69.7	12.5	9.4	8.6
plus Capital consumption allowances	1.2	2.6	2.6	9.5	8.4	8.5
minus Government expenditure	30.0	75.2	70.8	10.8	9.7	9.0
equals Surplus (+) or Deficit (-)	+1.3	+1.5	+1.5	n.a.	n.a.	n.a.

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TABLE 5-14--GOVERNMENT REVENUE AND GOVERNMENT SURPLUS OR DEFICIT.⁴ SLOWER-GROWING GOVERNMENT Alternative Patterns

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Includes investment income, direct taxes on non-residents, and other current transfers from persons. SOURCE: Based on data from Statistics Canada and estimates by Economic Council of Canada.

Includes sales and excise taxes, customs duties, and provincial and local property taxes.

²Includes personal income taxes plus contributions to social funds.

A Contrast between High-Transfer-Payment and High-Government-Investment Alternatives

In arriving at the solution presented in Chapter 4, it was assumed that, over the period to 1980, tax rates would be roughly what they were at the beginning of the decade. To offset the fiscal drag of the increased government revenue, we assumed increased public expenditures which would be split between transfer payments and government investment. We now examine what the effects would be of directing

TABLE 5-15—GROWTH OF MAJOR DEMAND COMPONENTS OF GROSS NATIONAL EXPENDITURE: HIGH GOVERNMENT INVESTMENT VS. HIGH TRANSFER PAYMENTS

		Projected	1970-80
	Actual	High	High Transfer
	Actual 1960-70 (Average as 5.4 4.9 6.1 4.0 5.4 4.3 5.1 4.9 4.3 5.1 4.9 4.3 5.2 8.2 9.8	Investment	Payments
	(Average a	nnual percent	age change)
Gross National Expenditure	5.4	5.6	5.7
Consumer expenditures	4.9	5.3	5.8
Durables	6.1	6.0	6.7
Semidurables	4.0	3.8	4.4
Nondurables	5.4	5.3	5.7
Services*	4.3	5.6	6.0
Government current expenditure on			
goods and services.	5.1	4.8	4.8
Government fixed investment	4.9	10.1	4.6
Business fixed investment			
Residential construction	4.3	3.9	4.1
Non-residential construction	5.2	7.9	7.8
Machinery and equipment	8.2	7.7	7.8
Exports of goods and services	9.8	5.7	5.7
Imports of goods and services	8.5	6.0	6.2

(Calculated in 1961 dollars)

^{*}For the decade 1960-70, this rather low rate of increase excludes the medical care services which are now a part of government expenditure. If they are not excluded, the rate of increase in consumer expenditures on services over that decade is 5 per cent.

SOURCE: Based on data from Statistics Canada and estimates by Economic Council of Canada.

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the increase entirely to one or the other form of expenditure. For the high-transfer-payment alternative, we assume an annual rate of increase of 11.2 per cent as against the 9.6 per cent rate used for the Chapter 4 solution. For the high-government-investment alternative, we assume equivalent additions, spread over various types of construction. The results are presented in Tables 5-15 and 5-16.

While GNP growth is about the same, in the high-transfer-payment alternative the final demand is directed more towards consumer expenditures because of the much higher rate of increase in real disposable income per capita. In fact, this solution is very similar in final demand patterns to the slower-growing-government alternative discussed earlier. The lower rate of increase in personal tax revenues has essentially the same results as the higher transfer payments, because in the model no account is taken of the different spending patterns of individuals with different incomes.

TABLE 5-16—SELECTED GROWTH INDICATORS: HIGH GOVERNMENT INVESTMENT VS. HIGH TRANSFER PAYMENTS

			Projecte	ed 1970–80	
	Actual	E	ligh		
	1960-70	Inve	stment	Payn	nents
	(Average a	nnual perce	entage change	e)
Real disposable income per					
capita*	3.5		3.9	4	.5
Output per employed person*	2.3		2.4	2	.4
Employment	3.1		3.1	3	.1
GNE implicit price deflator.	3.2	2.8		2.8	
			Annual .	Averages	
		1971-75	1976-80	1971-75	1976-80
			(Tho	usands)	
Number of dwelling starts		243	254	244	255
			(Pe	r cent)	
Unemployment rate	· · · · · · · · · · ·	5.2	3.9	5.2	3.8

*Calculated in 1961 dollars.

SOURCE: Based on data from Statistics Canada and estimates by Economic Council of Canada.

Some differences do show up in the patterns of industry growth between the high-transfer-payment and high-government-investment alternatives. High government investment would have a substantial impact on the growth of the construction industry and lesser effects on some parts of the mining industry. The respective effects of the two solutions on the various industry groups are shown in Chart 5-4.



PROJECTED INCREASES IN REAL DOMESTIC PRODUCT, BY INDUSTRY, 1970 TO 1980

CHART 5-4

SOURCE: Estimates by Economic Council of Canada.

THE PROJECTED INCREASES IN REAL DOMESTIC PRODUCT BY INDUSTRY DURING THE PERIOD 1970 TO 1980 WOULD DIFFER ACCORDING TO WHETHER GOVERNMENTS INCREASE TRANSFER PAYMENTS OR CAPITAL OUTLAYS. HIGHER GOVERNMENT INVESTMENTS WOULD FAVOUR THE GROWTH OF CONSTRUCTION AND MINING INDUSTRIES, WHILE THE EFFECTS OF HIGHER TRANSFER PAYMENTS WOULD BE MORE DIFFUSE.

In summary, governments are engaged in a wide variety of programs, some of which entail expenditures on current goods and services and others that entail fixed investment. Still others involve the transfer of funds to the personal sector. Each of these directions

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of expenditure affects the economy in different ways. As would be expected, heavy government investments have the most impact on construction. In contrast, transfer payments contribute to demand by raising the level of personal disposable income, thus having a strong influence on consumer expenditures and a more diffuse effect on industry.

In this chapter we have treated a number of alternatives to the solution which we considered more fully in Chapter 4, examining several of the implications of a less favourable external environment, the effects of a faster growth in private investments, and some fiscal policy choices. Since we assume that governments will be striving for good economic performance over the decade, we have focused on how they are likely to act under various circumstances.

It is highly significant that it is indeed possible to obtain similar aggregate results under very different circumstances when appropriate fiscal response is postulated. This is one of the main lessons that can be learned from the general equilibrium approach represented by the CANDIDE model.

6

General Conclusions And Prospects

BECAUSE WE OPERATE in an era of rapid change, we cannot ensure that economic policies we formulate today will be optimal for conditions throughout the decade. Therefore, the projections of growth in this *Annual Review* do not lend themselves to specific policy recommendations for the second half of the 1970s. They do, however, provide us with a profile of the future against which to measure, in a consistent way, progress towards our long-term goals.

In this chapter, we first compare the long-term goals proposed by the Council in the past with our projections of the economy to 1980. We then submit recommendations for immediate action to set up a framework for systematic reviews of the performance of the economy in relation to shorter-term targets. In the final section, we discuss two important issues: the cyclical instability of investment, and the increasing role of government in the economy.

LONG-TERM GOALS

In our First Annual Review of 1964, we formulated five general goals for the Canadian economy: (1) a relatively high and stable rate of growth; (2) a viable balance of payments; (3) an equitable distribution of rising incomes; (4) a high level of employment, defined as a situation with a maximum of 3 per cent unemployment; and (5) reasonable price stability, defined as a maximum increase of 2 per cent per year in the Gross National Expenditure price deflator. These goals did not reflect the historical experience of the Canadian economy.

Rather, they were intended as ambitious but attainable targets that would provide direction to policy-makers over the long term. Their achievement remains highly desirable to this day.

The work done for the 1972 Annual Review has given us a better appreciation of the implications of these objectives and the circumstances under which they would be attainable. A short discussion of the relevant portions of the CANDIDE model solutions illustrates this point.

Our first goal, a relatively high and regular growth of the economy, was one of the features common to all the solutions. Indeed, the purpose of the assumptions made concerning public and private actions was the attainment of such growth, provided it did not generate excessive pressures that would deflect us from other goals.

A viable balance of payments is also a common characteristic of all the solutions (except, perhaps, the one based on the assumption of less favourable external economic conditions). We will not discuss here the meaning of "viable" in this context, since that would be a matter of judgment, but will merely summarize the results obtained by the model. The current account balance will continue to show deficits during the 1970s, but these are projected to be smaller, in relative terms, than in the past. Deficits projected under the Chapter 4 solution reach a maximum of 1.2 per cent of GNP (2 per cent under the assumption of less favourable external economic conditions). These figures compare with a maximum deficit of 4.4 per cent of GNP during the 1950s and a maximum of about 2 per cent during the 1960s, when foreign economic conditions were favourable.

We cannot, at the present time, use CANDIDE to determine the prospects of reaching our third goal—an equitable distribution of income—because the model does not yet contain much useful information on this matter. It does, however, provide one key indicator—the distribution of national income between labour and capital. Our forecasts suggest that the shares going to these major factors in the 1970s will remain about the same as in the 1960s—about 79 per cent and 21 per cent of national income respectively. As for the other aspects of distribution, such as personal incomes according to region or income class, the model will have to be further developed before it can provide such information, and this task will be long and difficult.

The last two goals, which relate to unemployment and inflation, will be discussed together because of the generally accepted concept of a trade-off between them.

Conclusions and Prospects

Experience indicates that the Council's goals concerning employment and price stability are indeed very ambitious. Not once during the last 15 years has the Canadian economy even approached both goals simultaneously. During the 1960-70 period the average unemployment rate was 5.2 per cent, and the average rate of price increase was 3.2 per cent per year. In those particular years when we approached the unemployment goal, we shifted away from the price goal; when we drew close to the price goal, our unemployment rate tended to be unacceptably high. A comparison of performance data in the years 1961 and 1966 is particularly illustrative. In 1961, prices increased by only 0.6 per cent, but unemployment reached 7.1 per cent of the labour supply. In 1966, unemployment was reduced to 3.6 per cent, but prices climbed at a rate of 4.6 per cent.

This recent experience suggests that some form of trade-off probably exists, but our work strongly indicates that the thesis of a simple, aggregate trade-off that remains constant from year to year is not tenable. Rather, we believe that the links between unemployment and price changes are complex and indirect. This view is supported by doubts that have been raised independently in Canada and elsewhere as to the existence of the simple trade-off.¹

Therefore, we incorporated a more complete view of the relationship between prices and unemployment in the CANDIDE model. Instead of estimating a single trade-off for the economy as a whole, we treated each major sector of the economy separately. Moreover, in each set of price equations such factors as indirect taxes, import prices, and production costs were taken into account. We also established more complex linkages between variables; e.g., in the equations for wage formation over a given period, unemployment and prices of previous periods enter as explanatory variables. Since the impact of the additional price variables and the effects of the lags differ from one sector to another, any change in the industrial structure affects the trade-off for the economy as a whole.

Canadian prices, of course, are not only affected by domestic developments. If inflationary pressures in other countries were to diminish, Canadian price increases would moderate and, conversely, if inflation increased elsewhere, Canadian price increases would accelerate. In other words, the relationship between the rate of

¹This is also the basic conclusion emerging from recent work done independently by S. F. Kaliski, *The Trade-off between Inflation and Unemployment: Some Explorations of the Recent Evidence for Canada*, Economic Council of Canada Special Study No. 22 (Ottawa: Information Canada, forthcoming).

unemployment and the rate of price increase is not independent of external economic conditions.

Prices are also influenced by exchange rate movements. Since we have no solid basis for projecting short-term changes in the exchange rate, we have assumed a stable rate of about parity with the U.S. dollar from now through 1980. A depreciation of the Canadian dollar would bring about an increase in prices in Canada (through the influence of Canadian imports and exports), while an appreciation of the Canadian dollar would have the opposite effect.

Assuming stable exchange and indirect tax rates, and a 3.5 per cent price increase per annum in the United States as projected by the Wharton model, our simulations yield average annual price increases of 2.5 to 3 per cent in Canada for the period 1972-80. The accompanying average unemployment rate would be in the order of 3.8 to 4 per cent towards the end of the projection period. In other words, the model does not yield results that would confirm the original goals of the Economic Council.

However, our projections should certainly not be regarded as new price and employment goals for the Canadian economy. Nor should the figures be considered the basis of another two-dimensional trade-off which, as we have indicated, is not a viable concept. Although a revision of our objectives is highly desirable, our work is not sufficiently advanced to enable us to undertake such a task at this time.

PROGRAM OF ACTION

As we noted earlier, it is possible to reach high standards of economic performance. We must now determine how to move towards them. We know that future developments will not be entirely in accordance with the projections we have made. It would therefore be naive to formulate a set of immutable objectives, based on one or the other of the solutions, and expect them to apply to a future as far ahead as the end of the 1970s. Instead, our various profiles of growth should be considered only as outlines of possible longer-term developments. For decision-making purposes, we therefore suggest a nearer time horizon—namely, the years 1973-75. We also suggest the adoption of a set of performance indicators that would be used both as temporary objectives and as criteria for assessing progress.

These indicators, which we define below, are a consistent series of reference points that represent *satisfactory* and *attainable* economic

Conclusions and Prospects

performance in the near term, while ensuring the avoidance of strains and imbalances that might later deflect us from our long-term objectives. Although we have had to rely heavily on experienced judgment in the formulation of the indicators, we naturally used the CANDIDE model to ensure their internal consistency and feasibility. A word of caution is in order, however. The indicators should not be used singly, but as a group, because consistent overall results will not be obtained if we attempt to work towards some of them while neglecting others. Taken one by one, they are merely numbers; but in combination, they represent genuine targets for action. We are therefore proposing them as objectives.

Since we are living in an economic system in which the decisionmaking process is largely decentralized, the indicators are directed to both the private and the public sectors. In the government sector, where responsibility for overall economic performance lies, such an analytical framework for the medium term should be of particular relevance, most importantly as a guide for general economic stabilization policies. In the private sector, the indicators should be a valuable input to the decision-making process, since they describe the main dimensions that the economy can assume three years ahead while moving towards longer-term objectives. If our recommendations are implemented, the indicators should assume an increasingly important role in economic planning on both fronts.

The performance indicators can be divided into two groups, as quantified in Table 6-1. The first comprises the growth rate of Gross National Expenditure and some of its various components: consumer expenditures, investment, exports and imports, and government expenditures, all measured in real terms. The second group of indicators includes other key dimensions of economic activity.

These dimensions of economic growth are consistent with our present knowledge of internal and external economic forces and would result in the achievement of lower rates of unemployment than during recent years. Furthermore, the pattern of growth implied appears to be achievable without causing strain in the economy, barring surprise occurrences.

To expand upon the figures in the table, during the years 1973-75 we should be able to realize an overall growth rate on the order of 6 per cent annually. Assuming favourable external economic conditions during the period, a 6 per cent annual growth in the volume of exports of goods and services is a reasonable expectation. In addition, the relatively rapid growth of the Canadian economy would

(Calculated in 1961 dollars)	
	Proposed Average
	Percentage

TABLE 6-1—PERFORMANCE INDICATORS FOR THE PERIOD 1973 to 1975

PART 1

Change

Gross National Expenditure	6.0
Consumer expenditures	5.5
Total investment	9.0
Investment in machinery and equipment, and non-residential	
construction	10.0
Housing construction	5.0
Government current expenditures.	5.0
Exports of goods and services.	6.0
Imports of goods and services	6.5

PART 2

4.7
2.8
5.0
3.1
3.0
Yearly Averages
245
4.5

call for a slightly higher rate of increase in the volume of our imports of goods and services of 6.5 per cent annually. However, this rate should not create undue stress on the balance of payments. An increase in consumer expenditures of 5.5 per cent per year is a rate consistent with the other magnitudes indicated.

At first glance, a growth rate of only 5 per cent in capital expenditures on housing seems modest, but this rate applies to a level of investment in housing construction that has been particularly high in 1971 and 1972. In actual numbers, it would mean an annual average of 245,000 new dwelling starts over the period 1973-75, a result in line with projected demand for the same period.

Conclusions and Prospects

The overall rapid growth of the economy that we envisage would require a high level of private and public investment, with the growth rate of such investment averaging 10 per cent per year in real terms.

To be consistent with this overall pattern, current government expenditures in goods and services should not increase in real terms more than 5 per cent per year. (Increases in transfer payments to persons would average, in current dollars, close to 10 per cent per annum over the years 1973 to 1975. This relatively high growth rate would allow not only maintenance but also a significant extension of social programs.)

The economic growth that we are suggesting would generate an increase in employment of 3.1 per cent per year, with total output per person employed increasing at a rate of 2.8 per cent. Since the growth in employment would be higher than the expected increase in the labour force (2.7 per cent), the average unemployment rate should be on the order of 4.5 per cent in 1975,² and the rate of price increase should be about 3 per cent over the 1973-75 period.

The formulation of performance indicators for the manufacturing sector has been particularly difficult. As we mentioned in Chapter 4. we are concerned about the employment prospects that our solutions imply for this sector, because we believe they represent a less than satisfactory economic situation. After careful examination of our projection methods and the general characteristics of the 1973-75 period, and after consideration of the very strict consistency requirements prescribed by our model and our set of indicators, we suggest a growth rate of output per worker in manufacturing of 5 per cent per year for the period 1973-75. Since our work in this area requires further refinement, we will add no other indicator for manufacturing at this time. We should note, however, that we anticipate an increase of 6.5 per cent per year in the volume of output of manufactured goods, which would result in an increase in employment of 1.5 per cent per year. Even these magnitudes are the results of very preliminary calculations; as our studies progress, we will be developing more complete performance indicators.

The task that lies ahead is ambitious, but at this time there is no reason to believe that it is too demanding. Of course, unexpected future developments could endanger the attainment of the interim targets. Nevertheless, we believe that the framework we propose here

² If the rates of change in employment and the labour force are given, the unemployment rate that may be obtained for 1973-75 depends on the existing rate in 1972. In our calculations, the 1972 rate does not exceed 5.6 per cent.

will be a powerful aid to decision-making, no matter what direction the economy eventually takes.

It is suggested that the performance indicators play a dual role. Their first function, which has been emphasized up to now, would be to serve as interim targets and thus provide guides to action in both the public and the private sectors. Their second function would be to serve as criteria for periodic assessments of progress towards the achievement of our long-term objectives.

The application of such criteria would not be purely mechanical. In assessing a situation, the Council would not merely identify gaps between actual and target performance and then act upon each divergence as if it automatically indicated critical shortcomings. Rather, we would undertake extensive analyses first of the origin of a divergence and then of the possibility of its continuance, so as to weigh the implications for the achievement of longer-term goals.

We intend to carry out such assessments at regular intervals, comparing yearly progress with the set of previously defined targets, analysing any divergences, interpreting their meaning for the future, and updating the indicators for subsequent years. While we shall be steering towards the objectives the economy is trying to attain by the end of the decade, progress will have to be the object of continuous appraisal. Defining interim targets should therefore be a continuous process, undertaken each year for a new three-year period.

Recommendation No. 1

We recommend the utilization of a system of interim medium-term performance indicators. Taken together, these indicators would be used both as targets for public and private action and as a specific framework for assessing progress on a regular and continuing basis.

* * * * *

The set of interim targets that we recommend for the years 1973 to 1975 obviously applies to the public sector. Under present circumstances, the share of government will keep increasing in years to come because of the progressive nature of our income tax system. During the next three years the growth of public investments and current expenditures on goods and services should average 10 and 5 per cent per year respectively, in real terms.

Conclusions and Prospects

Anyone aware of the functioning of the Canadian system with its three levels of government and hundreds of autonomous decisionmakers knows how difficult it is to arrive at a set of decisions consistent with national growth objectives. Yet major gaps cannot be allowed to emerge between the effects of these decisions and the overall behaviour we have attributed to governments, or the realization of the objectives we have set forth will be jeopardized. To ensure compatibility of aims, governments must break down the overall objectives into specific targets for each level of government and set up a process for systematic co-ordination of actions.

Federal-provincial meetings are often held, and they cover a wide range of subjects. One of them, at the level of premiers or finance ministers, should be devoted to the intergovernmental co-ordination necessary to achieve the interim targets we have suggested. This proposal is analogous to the one made by the Prime Minister of Ontario in the Fall of 1971. However, it is much more modest in that it refers only to the discussion of performance indicators and their implications for government action.

Recommendation No. 2

We recommend that each year one of the federal-provincial meetings of prime ministers or of ministers of finance be devoted to the medium-term performance indicators developed by the Economic Council of Canada and to an examination of their implications for the federal and provincial governments.

* * * * *

Since Canada's economic development is substantially affected by decisions made within the private sector, our performance indicators are also intended for businessmen, union leaders, and decision-makers in other private organizations. However, an examination of the indicators by each decision-maker in isolation would not serve a useful purpose. On the contrary, it seems highly desirable to us that representatives of all major economic groups meet together annually to discuss and, if necessary, to amend the performance indicators.

The main object of such meetings would be to evaluate the mediumterm prospects in the light of our set of indicators. The meetings would also provide a setting for a more specific focus on the major sectors of

economic activity, although we would definitely not wish to prescribe the adoption of any particular indicators by participants. Emphasis would instead be on establishing an effective mechanism for more systematic discussion than has been possible to date, and on creating an increasingly strong and enlightened awareness of medium-term economic prospects and their numerous ramifications.

Recommendation No. 3

We recommend that a national economic conference be convened each year under appropriate auspices to bring together representatives of the various sectors of economic activity, both public and private, for assessing the medium-term economic prospects in the framework of performance indicators that will be published annually by the Economic Council of Canada.

The Economic Council will begin immediately to explore with the federal government and other interested parties the ways and means of providing the best institutional setting for such conferences. The Council itself may undertake the organization of these conferences.

SOME AREAS OF CONCERN

The Economic Council has suggested long-term goals in the past. This year, we suggest the adoption of interim medium-term targets. The main purpose of this recommendation is to provide a path that eventually leads to the attainment of long-term objectives, without creating major fluctuations in the meantime. Indeed, our economy has suffered from great instability in the past. In some cases, instability originates from abroad and we are therefore somewhat hampered in our response. In others, its sources are domestic, and more positive action is possible. Although the proposed performance indicators may help in the task of attaining stability while at the same time working to achieve the longer-term objectives, we wish nevertheless to express our present concern about the impact of investment decisions and the increasing role of government in the economy.

Private and Public Investment

Investment plays a dual role in the growth process, providing the productive capacity needed to satisfy growing final demand and sometimes contributing to the emergence of excessive overall demand because, through the revenue it creates, investment is itself a demand

Conclusions and Prospects

component. In the past, private and public investment have shown considerable instability, exhibiting striking increases over short periods followed by substantial downturns in succeeding years. Since aggregate investment is a major component of Gross National Product ranging between 21 and 28 per cent of GNP over the period 1955-70 it obviously has important effects on the economy. We believe that volatility is attributable at least in part to erroneous perceptions of the future or to misleading forecasts about the environment in which businesses and governments operate. Whatever the cause, it finds expression in the emergence of severe bottlenecks at some times and serious unemployment conditions at others.

Investment has two components — construction and equipment and each has a different impact on the economy. Construction is essentially a domestic activity, while investment in equipment is heavily dependent on imports. Therefore, instability of investment in structures exerts considerable domestic pressure, while instability in expenditures for equipment can be alleviated by a variation in the volume of imports.

It would be unrealistic to expect complete stabilization of investment. However, we believe that progressive improvement is possible through better planning of investment projects, so as to avoid excess productive capacity that is followed by periods of inadequate productive capacity. Better planning is in turn dependent on more systematic information on the growth of demand over the medium term. Thus the real issue here is the need to develop and disseminate more detailed medium-term forecasts and to achieve better coordination within each sector of activity.

Co-ordination of private with public investments is no less important. There is no valid reason for their peaks or troughs to coincide, as has often happened. One of the criteria used to determine the volume of investment that may be undertaken without generating inflationary pressures should be the productive capacity of the construction industry. Better estimates of the level of total demand and of the situation in capital markets are also essential. Finally, since aggregate data at the national level are insufficient, hard regional data and a genuine interest in regional development are required. A realistic schedule of major investment projects, private and public, by region and sector, for three years would be a useful first step.

An appropriate phasing of investment projects is obviously a difficult and complex task. However, we remain convinced that a start in this direction is now called for. Our own modest contribution at

this time is to suggest performance indicators on the growth of investment. This year, our indicators apply only to the Canadian economy as a whole, but it is hoped that regional indicators will be developed in the near future.

The performance indicators relating to investment would have the same two major uses that we described for the indicators as a whole. First, we would expect them to provide a useful guide to governments by relating the volume of investment projects to general economic performance. In the event that the unfolding pattern of economic activity revealed a tendency for investment demand to exceed or undershoot the indicated growth rates for the following three years by significant amounts, a careful evaluation of the aggregate demand situation would be called for in order to assess the need to stimulate or dampen total demand.

Second, we would hope the indicators would alert suppliers of equipment and construction goods to the real implications of steady expansion of the sort we have projected. It is especially important that the supply of inputs — particularly manpower, materials, and finance — to the construction industry be better adapted to the demands on that industry than in some past periods when its productive capacity has been inadequate and inflationary pressures have ensued. It is therefore imperative that this industry respond to the demand indicators we have suggested by improving the scheduling of its activity during the 1970s.³

The Economic Role of Governments

Due to citizens' changing aspirations, the economic role of governments is subject to continuous change. The more numerous the services requested by the public from government, the greater the part played by the government in the economy. In Canada, the share of all levels of government as a percentage of the Gross National Product increased from 26 to 36 per cent from 1955 to 1970 — from 27 to 36 per cent over the last 10 years.⁴ Despite the restrictive assumptions that we have made in Chapter 4 (especially the constant nominal taxation rates), the share of governments is expected to increase during the 1970s to 39.2 per cent by 1980. The economic and social impact of

³At the request of the federal government, the Council has undertaken an extensive study of cyclical instability in the construction industry. Upon completion of this study, additional recommendations may be made in this important area.

⁴ These percentages apply to the revenues of all the governments taken together. Measured by public expenditures, the increasing role is similar but somewhat more gradual between 1955 and 1970 (see Chapter 4).

Conclusions and Prospects

such structural change will certainly take on considerable importance, although we are not in a position to precisely define its nature and extent.

Another source of concern is the belief that an increasing role of government may result in an inflationary bias in the economy. In our opinion, this danger originates in the adjustments in nominal incomes induced by tax increases. Traditionally, this adjustment has been largely neglected by economists, so that a tax increase has often not been explored beyond the first, obvious result — a reduction in expenditures and prices. Such a conclusion, however, is subject to the condition that nominal incomes remain unchanged following the tax increase.

Experience throughout the world seems to show that this condition is not fulfilled but that, on the contrary, desired incomes are adjusted in terms of levels of compensation that are considered adequate. This is evidenced by the criteria used to support claims for income increases. For example, price increases are now generally accepted as justification for higher wages. Hence, compensation is in fact requested for the indirect tax increases, which are themselves a component of price. Another criterion is net disposable income ("take-home pay"), which is of course reduced by increases in income tax and contributions to social security plans. When compensation is granted to sustain disposable incomes, the level of income tax becomes a factor in the formation of nominal incomes. In short, people want to obtain increases in nominal incomes that will be sufficient to compensate them for both increases in price and increases in taxes, and so protect their real disposable incomes. To the extent that this behavioural assumption is true, the process of income formation is tilted in the direction of inflation.

With these considerations in mind, the question may be raised whether it is always desirable for governments to widen their scope. We do not intend to explore this issue in depth, but we do believe that present conditions call for a slower and more regular rate of increase in the government share of GNP. Abrupt changes that follow transfers of important responsibilities such as health care may release a long series of little understood adaptations of incomes, which could result in upward pressure on prices. In our opinion, a reasonable stance over the next few years would be to keep direct and indirect taxation rates at their present levels, if not to reduce them. Since the progressive nature of income taxes will cause tax revenues to continue to grow at a faster rate than GNP, such an approach would by no means

prevent governments from introducing new programs of expenditures or improving the present ones. Besides, as we have seen in Chapter 5, a relatively more modest role of governments is by no means inconsistent with satisfactory performance with respect to employment and economic growth.

Of course, governments remain free to choose. Our task is merely to indicate the implications of the choices to the extent that it is possible for us to perceive them.

* * * * *

"That is well said," answered Candide, "but now we must go and cultivate our garden."

Voltaire, CANDIDE

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