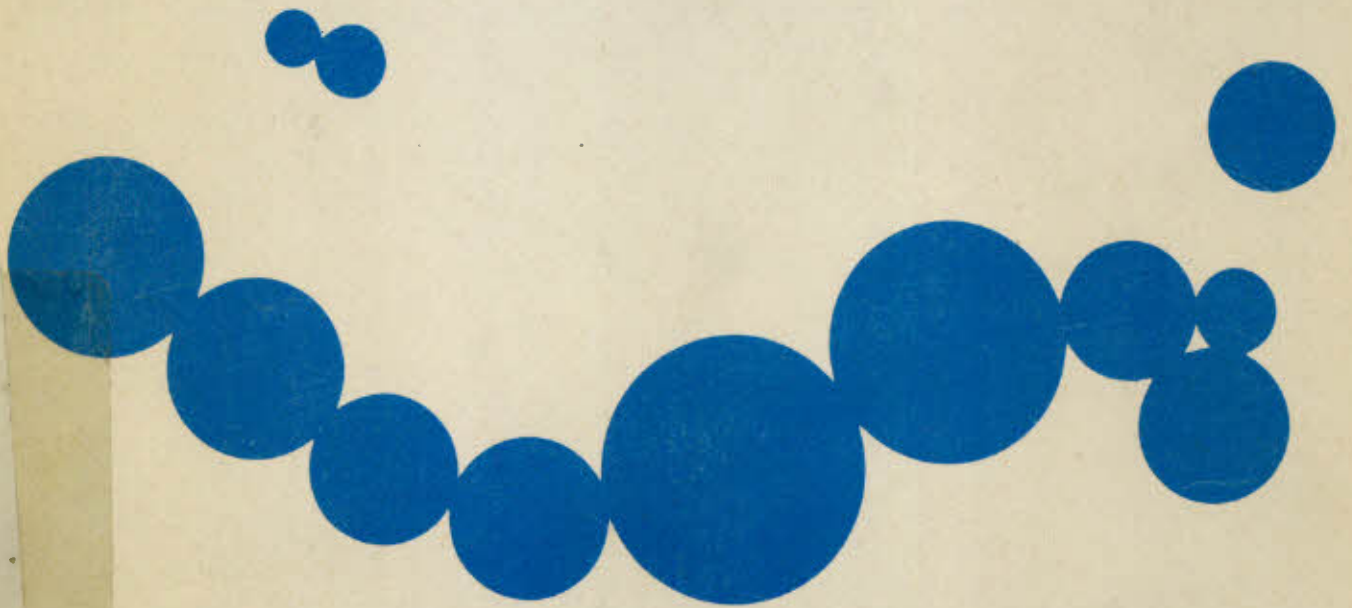
Living Together

A Study of Regional Disparities

Economic Council of Canada
1977



ECONOMIC COUNCIL OF CANADA

Living Together

A Study of Regional Disparities

1977

Available by mail from

Printing and Publishing
Supply and Services Canada
Ottawa, Canada K1A 0S9

or through your bookseller.

Catalogue No. EC22-54/1977
ISBN 0-660-00915-3

Canada: $5.50
Other countries: $6.60

Price subject to change without notice.

CONTENTS

This report has been approved by the members of the Economic Council with the exception of Messrs. McCambly, Morris, and Taylor, who withdrew from active participation in the Council during 1976.

Members of the Economic Council

George Post	Vice-Chairman and Director
Ian Andrew Barclay	Chairman and Chief Executive Officer British Columbia Forest Products Ltd. Vancouver, British Columbia
Marcel Bélanger, C.A.	Bélanger, Dallaire, Gagnon and Associates Quebec City, Quebec
S. Robert Blair	President and Chief Executive Officer The Alberta Gas Trunk Line Company Limited Calgary, Alberta
J. A. Brown	Dean of Agriculture University of Saskatchewan Saskatoon, Saskatchewan
Ms. Pat Carney	President Gemini North Ltd. Vancouver, British Columbia
Charles J. Connaghan	Vice-President Administrative Services University of British Columbia Vancouver, British Columbia
Gérard Dion	Professor Department of Industrial Relations Université Laval Quebec, Quebec
Roy Fraser Elliott, Q.C.	Partner Stikeman, Elliott, Tamaki, Mercier and Robb Montreal, Quebec
John Kostuik	President Denison Mines Limited Toronto, Ontario
Gilles Lamontagne	Mayor of Quebec City Quebec City, Quebec
Ms. Yolande Laviolette	La Fédération de Québec des Caisses Populaires Desjardins Lévis, Quebec

Robert M. MacIntosh	Executive Vice-President The Bank of Nova Scotia Toronto, Ontario
James A. McCambly	Executive Secretary Building and Construction Trades Department Ottawa, Ontario
Joseph Morris	President Canadian Labour Congress Ottawa, Ontario
Helen K. Mussallem	Executive Director Canadian Nurses' Association Ottawa, Ontario
Hon. H. A. Olson, P.C.	Rancher, Former Minister of Agriculture Iddesleigh, Alberta
Charles Perrault	President Perconsult Ltée Montreal, Quebec
Raymond Primeau	Past Vice-President and General Manager The Provincial Bank of Canada Montreal, Quebec
Steve Rankin	Head of Sales Nova Scotia Forest Industries Port Hawkesbury, Nova Scotia
A. M. Runciman	President United Grain Growers Ltd. Winnipeg, Manitoba
Donald H. Taylor	Assistant to the National Director for Canada United Steelworkers of America Toronto, Ontario
Ray D. Wolfe	Chairman and Chief Executive Officer The Oshawa Group Limited Toronto, Ontario

William E. Haviland, Secretary

We wish to express our deep appreciation to Dr. John Dawson, Director of the Council until October 1976, for his contribution to the preparation of this report.

INTRODUCTION

"Ever since Confederation," the Economic Council pointed out in its *First Annual Review* of 1964, "the notion of 'balanced regional development' has been an implicit, if not explicit, objective of national policy."

Over the past decade and a half, the pursuit of this goal has become considerably more precise — and more pressing. Under the Act of Parliament by which it was established, the Council itself was directed, as part of its mandate, "to study how national economic policies can best foster the balanced development of all areas of Canada." In the intervening years, a number of policies and programs have been initiated or expanded by governments at all levels in an effort to achieve this objective.

Some discernible progress has been made, even though it has been uneven. Particularly in the Atlantic provinces, income disparities have been reduced. In more recent years, there has been a slight reduction in relative unemployment levels and some slowing or reversal of the outflow of migrants to greener pastures, which had posed a threat to the economic, political, social, and cultural viability of the regions they left behind. A somewhat greater measure of equality of opportunity has also been created in all regions. In relation to the vast amount of time, money, and effort that has been devoted to the task, however, success in achieving a better regional balance has been disappointing.

An awareness of this led the Council, in 1974, to intensify its research into the causes of regional problems, with a view to widening its understanding of them sufficiently to suggest some new directions in policy-making. A project group was set up within the Council to undertake this task, and this Report documents the findings of the last three years, with their implications for policy. In a nutshell, we find that much more can be done than is presently being done, at very little extra cost, and that there is considerable scope for action by provincial governments and the private sector.

The first four chapters examine the rationale for regional policy. In Chapter 1 the question is raised as to whether the pattern of disparities in Canada is a consequence of geographical and historical forces whose influence cannot be countered. This question is primary, as a positive answer to it would mean that no regional policy was feasible; we do answer it in the negative. In Chapter 2 we maintain that the goals of regional policy-making should be to reduce three fundamental types of disparity — disparity in

unemployment rates, in income levels, and in population growth rates. The priorities that should be assigned to reducing each of these disparities, relative to one another and to other goals of social policy, are also discussed. Chapter 3 outlines the economic theory that we have found helpful in our analytical work, and Chapter 4 describes in detail the extent of the disparities.

The following three chapters examine the causes of the three different kinds of disparities. Our analytical approach puts the emphasis primarily on explaining regional differences in income and unemployment, treating population growth, to the extent that it is determined by migration rather than by natural increase, mainly as a consequence of these differences. Income disparities can arise either because more resources go unused in some regions than in others — as a result of higher-than-average unemployment of labour and capital, and lower-than-average participation in the work force — or because the resources that are employed are less productive in some regions than in others. In examining productivity differences, in Chapter 5, we measure the influence of physical and human capital and of industrial structure, and we consider in a less precise, but still quantitative, way the importance of technology and management. In Chapter 7 the influence of urban structure on productivity is explored, with special attention given to the link between industrial and urban structure. An exhaustive explanation of regional unemployment differences is not attempted. But the very important part of them that can be attributed to regional differences in demand pressures is examined in Chapter 6, with the connection between unemployment and urban structure being explored in Chapter 7. In making recommendations concerning unemployment, we draw not only upon material in these two chapters, but also upon the insight given by general economic theory into the interaction between wage levels and unemployment.

Chapters 8 and 9 describe existing policy aimed at alleviating disparities. We begin in Chapter 8 with a look at the Department of Regional Economic Expansion and at other programs of government assistance to private business, and we continue in Chapter 9 with a brief sketch of other ways in which disparities are influenced, including equalization payments, existing policies towards migration, the transportation rate structure, and the geographical pattern of federal expenditures. Chapter 10 summarizes the most important results of our research concerning disparities and contains our recommendations.

1

THE LEGACY OF HISTORY

When I became a man,
I put away childish things.

St. Paul, *I Corinthians* 13:11

Canada's beginnings are an important element in understanding Canada's present. After the union of Upper and Lower Canada in 1867, the country grew to become the world's second largest, with five relatively distinct geographical regions. Although the land offered great possibilities for exploiting its forests and its mineral and agricultural wealth, these resources were not distributed equally across the regions. It is not surprising, therefore, that the growth of economic activity has been uneven, with surges of expansion, based on the export of particular staples, occurring as the occupation and settlement of particular regions took place.

The eastern and western parts of Canada are separated by the great Canadian Shield, a vast expanse of pre-Cambrian rock that makes up one-half of the total area of Canada, extending from the delta of the Mackenzie River to the coast of Labrador. Although there are mineral resources on the Shield, there is no oil, gas, or coal. Forest resources are abundant, but growth is slow and tree sizes are limited. While these resources were of little economic value until well into this century, the very existence of the Shield in the centre of the Canadian land mass had an enormous impact on the settlement of the country. The presence of the rock and the muskeg created a major problem in the construction of the first transcontinental rail line — the Canadian Pacific Railway, completed in 1885. Since then, because of the limited population and economic activity on the Shield, there has been little intermediate or local traffic, and through traffic to the West Coast has had to bear the full burden of transportation costs.

At the eastern extremity of Canada, Newfoundland is separated from the rest of the country by the Gulf of St. Lawrence; the other Atlantic provinces, by the Appalachian Mountains and Maine. Historically, it is not surprising that these provinces have had strong links with the New England states and with overseas markets. European fishermen have fished off the banks of Newfoundland and the shores of the Gulf since the fifteenth century — pioneers who ushered in one of the major industries of the territories that were to become Canadian provinces.

Southeast of the Shield and west of the Appalachians lies the valley of the St. Lawrence. Shipping was long an important activity there, and the river leading to the heart of the continent played a dominant role in the settlement and commercial

development of Canada. This region, which comprises southern Quebec and southern Ontario, contains a number of agricultural areas devoted especially to vegetables and fruits.

Southwest of the Shield lie two subregions: the prairie, situated south of a line running from Winnipeg to Edmonton, and the wooded area further north. This region, sometimes called the granary of Canada because of its large grain crops, also contains important deposits of petroleum and natural gas. Beyond this is the cordillera, which consists of the Rockies and other mountain ranges, washed by the Pacific Ocean on its western coast.

Across this stretch of more than 3,000 miles is spread a country divided by great natural barriers, situated entirely within the temperate, subarctic, and arctic zones. The climate, often very severe, limits the range of agricultural products that can be grown and adds to the production costs of many other goods.

Thus it is not surprising that much of the history of the growth of the Canadian economy has been linked to these realities of geography and climate. This country's economic development has often been spurred by the exploitation of natural resources in its frontier areas and has been marked by surges of activity associated with the production and export of a succession of staples.[1]

Following Confederation, the central government purchased from the Hudson's Bay Company all the land between the Great Lakes and the Rockies and gained control over the Northwest Territories. The building of the first transcontinental railway — the Canadian Pacific — permitted the development and exploitation, beginning in 1885, of the resources of this newly acquired territory. And so, Prairie wheat emerged as Canada's great export staple; by 1913, some 60 per cent of Canada's exports were made up of agricultural products, and wheat was the most important component.

Climate, geography, and the railway lines were major determinants of the location of cities and economic activity in Canada in the first part of this century. Halifax, with its ice-free port, had earlier established its strategic importance but did not obtain the gains in trade that had been hoped for with the construction of the railway link to central Canada. Montreal continued to flourish, thanks to its enviable position at the confluence of the St. Lawrence and Ottawa Rivers, and served as a connecting point between the newly extended railways and ocean-going ships. Toronto developed relatively slowly because of poor transport facilities, but it was aided by the completion of the St. Lawrence canal system in the mid-1800s and later by railway extensions into the Ontario hinterland. This facilitated the servicing of the agricultural settlers and set the stage for the subsequent extraction of mineral resources on the Canadian Shield. Winnipeg, situated on both transcontinental railway lines, became a major trading centre for western Canada. Located at tidewater, Vancouver was selected as the

1 This interpretation has been challenged somewhat over the last ten years. For example, Chambers and Gordon estimate that the wheat boom that occurred between 1901 and 1911 accounted for no more than 8.4 per cent of the total increase in Canada's per capita income during that period. See E. J. Chambers and D. F. Gordon, "Primary Products and Economic Growth: An Empirical Measurement," *Journal of Political Economy* (August 1966).

western terminus of the two transcontinental railways and was thus in a strategic location for later growth.

To the timber trade, already flourishing long before Confederation, was added the production of pulp and paper, which brought a new dimension to the forest-based industries. By the early 1920s, the cut of pulpwood had doubled from its prewar level, and it continued to increase steadily until the Depression, after which it resumed growth. These industries spawned the location of many cities and towns, such as Corner Brook, Edmundston, Dryden, and a number of centres in British Columbia, often far removed from major concentrations of population, and they were significant in the development of many others, including those in the Lac St. Jean, Trois-Rivières, and Abitibi areas of Quebec.

The growing industrialization of North America also created a market for the vast storehouse of minerals and energy resources available in Canada. In the early stages of industrialization, coal was a major source of energy. It became the basis of economic activity on Cape Breton Island well before Confederation, thanks to large export markets in the New England states. Western coal, mainly from Alberta and Saskatchewan, was used by railway locomotives. This use declined rapidly in the 1950s with the advent of diesel power but, in the 1960s, a new surge of activity in coal mining in Alberta and British Columbia took place, based on exports to Japan.

With the advent of hydro-electricity as an important source of energy, major investments occurred; Niagara power was tapped in the first decade of this century, and successive developments reached farther and farther into the hinterland. Once constructed, these installations required little manpower to keep them running; thus they did not spur any population increases in these regions. Sometimes, however, they were developed in conjunction with an energy-using industry such as aluminum production. This led to the establishment of completely new communities such as Arvida in the late 1920s and Kitimat in the early 1950s.

More recently, with heavier dependence on oil and gas as a source of energy and with the discovery of significant amounts of both in Alberta during the 1940s, a whole new dimension was added to the economy of western Canada. Indeed, the effects extend much further. In the 1950s, oil and gas pipelines were stretched across the country; petrochemical complexes were built; and natural gas became a major source of energy for industry. The exploitation of the Athabaska tar sands, whose existence had long been known, began recently. Oil and gas exploration has extended into the Arctic Ocean and off the east coast of Nova Scotia, and new pipeline construction projects are contemplated.

In addition to the growth and shifts in energy use, the process of industrialization has led to the rapid growth of Canada's mining industries. For many years, gold was, in value terms, the leading mineral produced, and it led to the establishment of many centres of activity in remote locations. However, gold production reached its peak more than thirty years ago, and many of these centres were abandoned after the gold rush. In northern Ontario and northern Quebec, where other minerals were mined in conjunction with gold, the presence of these activities resulted in permanent communities such as Kirkland Lake, Timmins, Rouyn-Noranda, and Val-d'Or. In

other instances, ore deposits were extensive and led to the establishment of communities with a considerable potential for growth. The Sudbury nickel deposits, for example, were discovered in preparing the roadbed for the Canadian Pacific Railway. These extremely rich deposits led to the establishment of nickel-refining facilities, to the provision of materials and services to mining industries generally, and to the development of a community that is still growing.

The mining and the oil and gas industries have been developed to such an extent that the output of these industries has increased at the same pace as the overall output of the economy. Mining production represented approximately 3.5 per cent of total national output in the late 1920s and averaged 4.0 per cent in the first half of the 1970s.

Thus we see that the exploitation of Canada's natural resources, coupled with geographical and climatic considerations, has been extremely important in shaping the Canadian economic system and thereby the well-being of individual Canadians. Whether a man had a job, where he lived, how much he earned — all have been critically affected by them. Transportation has always played a major role in determining centres of economic activity; in this century, the influence of airports, highways, and pipelines has been added to that of rail and water transport facilities. The Atlantic and western provinces are located far from the markets of central Canada and, even within Ontario and Quebec, the northern parts are frequently faced with relatively higher transportation costs than the southern parts. Locational advantages are also influenced by major developments, such as the construction of the St. Lawrence Seaway in the 1950s, and by other changes that affect transport costs, including government transportation policies.

Yet, while geography, transportation, and natural resources continue to have a major influence on Canadian economic development, other factors have had a growing significance over the past fifty years. The maturing Canadian economy has reached the point where resources and transportation are no longer, as in the past, the only important determinants of regional variations in the well-being of Canadians, and we now have productive processes that are more complex and utilize natural resources somewhat differently.

First, the overall growth of employment is no longer tied closely to the opening up of new areas for agriculture, forestry, or mining, although from time to time there may be surges of activity in particular areas associated with the tapping of natural resources. Even when these surges take place, however, they have a less sustained impact on employment, because methods of production today are more capital-intensive than they were in earlier years and because often they do not entail the establishment of complementary services, these having been provided earlier during expansion of the frontier.

Over the past thirty years, agricultural employment has been steadily declining, and employment increases in forestry and mining have been small. Note that only 4 per cent of the immigrants who arrived in Canada between 1968 and 1973 came to work in the primary industries. Although manufacturing industries — including those based on natural resources — account for about one-fifth of total employment, the rates of increase have been moderate. Today, most of the employment growth takes place in

other activities, many of which have little relationship with natural resources. It is in the service industries, mainly in the larger urban centres, that most growth occurs, especially in activities such as education, health and business services, public administration, and finance.

As a result of these changes, employment growth has been centred in urban areas, where three-quarters of the population now lives. Employment growth has been even more rapid in larger centres, partly because they offer employment opportunities for other members of the family besides the principal breadwinner. This higher labour force participation is itself a factor in raising the incomes of families and attracting workers to centres where the labour market offers a wide scope for people with differing employment capabilities. In addition, there has been a shift to activities requiring more formal education and training; investment in human capital has thus become a more significant factor in the overall growth of the economy.

Second. unemployment levels — an important determinant of well-being, or the lack of it, in many parts of Canada — are no longer closely related to employment growth. Contrary to what might be expected, regional differences in unemployment appear to be only loosely linked with regional differences in employment growth. Thus, for example, rapid employment growth co-exists with persistently high unemployment in British Columbia; very slow employment growth, with persistently low unemployment in Saskatchewan and Manitoba.

If unemployment is viewed as a failure of the system to match labour supply with demand, the looseness of the link with employment growth becomes more understandable, and it becomes clear that the situation today must be very different than it was in the past. On the supply side, the importance of the natural labour force increase relative to immigration in accounting for swings in labour supply is much greater than it used to be; so is the participation of women in the labour force. On the demand side, while the traditional resource exports and resource-associated investment continue to be important, government expenditures on goods and services are now equally important. Moreover, because overall demand can be controlled through automatic stabilizers and through fiscal and monetary policy, unemployment today has become a social responsibility instead of, as in the past, an unfortunate but uncontrollable side effect of a private-enterprise economy.

Third, the relative resource endowment of the various regions and the greater access to markets that transportation brings explain only part of the regional variations in today's standard of living. In the service sector, for example, which now constitutes well over half the economy, productivity is only remotely linked with these factors, but it does affect the relative prosperity of regions. In addition, while resources make certain regions very productive, they do not necessarily improve the well-being of their inhabitants; the ownership of resources may reside elsewhere in Canada or even outside the country. The relentless march of technology and the level of accumulated knowledge stored in the nation's work force, which were not so important in the past, are today key determinants of living standards. Finally, the advantages accruing from a concentration of population in urban centres are far greater than they used to be, because Canada has a greater degree of urbanization.

In Milton's words, "The childhood shows the man / As morning shows the day" (*Paradise Regained*), but a man must also "put away childish things," as St. Paul wrote in his letter to the Corinthians. Similarly, the future of Canada is partly based on its past and present, and its economic potential still rests to some degree on its natural resources. But Canada can, to a large extent, put aside its past, especially when it comes to resolving regional problems, and that is what we wish to show in this report: the legacy of history is important, but it is not destiny.

2

THE GOALS OF REGIONAL POLICY

In the *Eleventh Annual Review*, the Council stressed well-being for individuals and equity among them as basic goals for society:

> Each individual has certain needs, and these range from the most fundamental, such as survival, to the more complex psychological ones, such as self-realization. These needs are really the *basic goals* of individuals. From the point of view of society, these can be restated in terms of two basic goals — *well-being* and *equity*. All subsidiary objectives contribute to the attainment of these basic goals.
>
> The degree of well-being is determined by the extent to which the material, socio-cultural, psychological, and other needs of society are met. Equity, on the other hand, is an appropriate distribution of well-being among members of society. There are several views about what constitutes equity and how it might best be achieved. Among these, *equality of opportunity* has probably been, in principle, the most widely accepted approach to equity. This approach attempts to provide everyone with the same opportunity of access to well-being. Another view of equity, *equality of results*, has also come to receive a certain amount of attention.
>
> These two goals are too general to provide specific guidelines for the formulation of policies. For this, more detailed divisions of the social system and their objectives must be defined. Nonetheless, these basic goals do provide the skeletal outlines of a broader framework for reviewing the ultimate ends of society's activities.[1]

In the present report, we widen our examination of the achievement of well-being and equity in Canada by concentrating on the regional aspects of this question. In summary, our thesis is that, in order to achieve equity among people, it is necessary to adopt measures that apply to provinces and regions. To this end, regional policy goals are required. As always, however, all goals are not simultaneously attainable in their entirety. We therefore discuss conflicts among regional policy goals and between regional and national goals, and we offer our own views on the appropriate resolution of these conflicts.

1 Economic Council of Canada, *Eleventh Annual Review: Economic Targets and Social Indicators* (Ottawa: Information Canada, 1974), pp. 8-9.

Economic Equity

While an individual's opportunities may be changed in later life by a move to another area, the circumstances under which he grows up may profoundly affect his or her future. For example, statistics show that the average child in New Brunswick belongs to a larger family than those in most other provinces, lives in more crowded housing, has poorer medical and dental services, and is taught by less well-trained teachers. Not one of these differences is conclusive in itself, since it is debatable whether any one of them represents a serious environmental disadvantage. (For example, recent research casts doubt on the value of the number of inhabitants per doctor as an indicator of the effectiveness of health care.) Yet, taken together, they are symptomatic of a general situation that is likely to handicap the individual in later life.

Underlying these differences are long-standing income and employment disparities that are both cause and consequence of the poorer social and economic equipment in some parts of the country. To what extent does society have an obligation to reduce these disparities and to try and achieve what might be called "locational equity"? And to what extent does the individual have a personal responsibility to solve his own economic problems by relocating?

Unemployment

Unemployment in some areas of Canada continues to be a national disgrace. For more than thirty years, the federal government has committed itself to reaching and maintaining full employment.[2] Despite the efforts of governments at all levels, there remain marked differences among the provinces with regard to the possibility of finding and keeping a job, the risk of losing a job, and the duration of unemployment. According to some, the federal obligation can be fulfilled by assuring full employment at the national level and by giving assistance to those who are willing to relocate. Such a policy would leave a very considerable role for individual initiative in finding a job and for personal responsibility for economic betterment.

However, this policy would perhaps be too extreme, for three reasons. First, whether it is agreed that people should or should not move to find work, in practice not everyone would do so, for many reasons that may or may not be justified: the high cost of moving, insufficient information on its benefits, uncertainty about the degree of cultural shock involved in a move, and sometimes just sheer inertia. Hence very substantial regional differences in unemployment would persist. Second, there would remain regional differences in the degree to which people are obliged to exercise personal initiative. Third, the amount of over-full employment required in some regions in order to motivate movement of workers and to ensure job availability for in-migrants might lead to labour market inefficiencies, such as high job turnover.

2 Minister of Reconstruction, *Employment and Income, with Special Reference to the Initial Period of Reconstruction* (Ottawa: King's Printer, 1945).

We believe that jobs ought to be available, not just anywhere, but within a prospective worker's accustomed socio-economic milieu. To accomplish this, it would be necessary to bring about a better match between job vacancies and unemployed persons in each province and to continue to provide relocation assistance, if necessary, for moves within a province or between provinces. That would not necessarily mean that there should be equal numbers of vacancies and unemployed workers in each province, but it certainly would mean a considerable narrowing of the very large gaps that now exist in the Atlantic provinces, Quebec, and, to some extent, British Columbia.

There should be no obligation on the part of the federal government to provide jobs equally among areas within individual provinces, however, since it does not seem too much to expect people to move about within a province to find work. And, if provincial governments wish to achieve a certain distribution of employment within their provinces rather than rely upon voluntary individual migration, they should employ their own funds for the purpose. Although we believe that a greater degree of equality in provincial unemployment rates, on average through time, should be a goal of the federal government, we hasten to add that the provincial governments, with their extensive powers, can, and should, make an important contribution towards achieving this goal.

Published unemployment figures may not always be an adequate indicator of the desire for work.[3] Indeed, a low participation rate could be explained simply by the fact that many people would like to work but fail to seek a job because they believe that none are available. These people might not be counted in the labour force and so not be considered unemployed. Statistics Canada claims to include such "hidden" unemployed persons in its unemployment figures but, if it succeeds only partially, as is possible, any differences in participation rates among provinces will partially reflect differences in the perceived ability to find work. On the other hand, some of those officially counted as unemployed — such as those in seasonal industries — may not be seeking work at all, and others may be seeking it in such a desultory fashion that it is doubtful whether they should be included among the unemployed. Moreover, low participation rates may not mean hidden unemployment in areas where families are larger and where the cultural milieu is different. It is also likely that the number of vacancies considerably exceeds that recorded in the statistics. Whatever the truth of these matters, we believe that jobs in the high-unemployment provinces should be much more readily available than they are now, whether or not all persons wanting work are officially counted as unemployed.

Social Services

Government services such as health, education, and welfare are at present much closer to nationally uniform standards than they would be if they were left entirely to

3 Reasons why the measured unemployment rate may have changed its meaning in recent years are examined more fully in Economic Council of Canada, *People and Jobs* (Ottawa: Information Canada, 1976).

provincial resources, even if they happen to be provincially administered. The justification in the case of education is obvious; a person should not be deprived of economic opportunities in later life simply because there was not much money available for schooling in the place where he grew up.

The justification for federally determined standards of health and welfare is less clear-cut. If the federal dollars currently allocated for health and welfare under shared-cost agreements were given directly to provincial governments as unconditional grants or directly to provincial residents in the form of tax cuts, it is unlikely that the money would be spent on building up public health and welfare schemes to the present level of service. If it were otherwise, cost-sharing agreements would be unnecessary, and equalization payments could simply be increased. The use of cost-sharing amounts to a decision by Canadians in general, through their federal representatives, that local decision-making on health and welfare would provide undesirably low levels of service. For example, the generosity of social welfare in New Brunswick rose sharply after the introduction of cost-sharing under the Canada Assistance Plan. It therefore seems likely that, if New Brunswick had received its assistance in the form of greater equalization payments, it would have chosen a less generous set of social welfare programs. Thus Canadians in general, as well as Canadians in New Brunswick, decide upon the level of generosity of New Brunswick welfare programs. The same is true for health care expenditures and unemployment insurance; the latter is federally determined but, because the level of benefits is linked with the level of wages, the average benefit varies from one region to another.

The basis for a federally determined level of health and welfare appears to be a simple humanitarian conviction that individual Canadians are entitled to certain minimum standards of health and social welfare, wherever they live. The Council agrees with this point of view and believes that present efforts to ensure greater equality of social services should continiue. The goal of this regional policy could in principle be achieved directly by transfer payments, such as conditional grants, or indirectly by equalization payments and by improving the capacity of provinces to provide these services themselves through increased productivity and income levels within the provinces. The need to standardize social services may then imply some national effort to reduce productivity differences among regions.

Standards of Living

The standard of living in a region depends on the income levels of its people, on their actual living costs, and on its noneconomic benefits as they perceive them. This last factor is very difficult to quantify; advantages such as moose hunting and a quiet life may be valuable assets, but how does one measure them? Job for job, more often than not, people earn less in the Atlantic provinces than in British Columbia and less in Quebec than in Ontario, and the differences in earnings do not seem to be offset by

differences in living costs or environmental advantages. But should governments — particularly the federal government — be obligated to do something about these regional income differences? After all, income differences among people are already compensated for by taxes and transfers, presumably to the full extent that is considered socially desirable. Why should they go further and try to reduce differences among regions?

One reason for trying has been mentioned already: a lessening of income differences would bring a lessening of the need to provide federal assistance with social services. Raising the earned income of Atlantic residents, for example, would lower the tax burden on British Columbia residents. More important, people in the Atlantic region have often indicated that they would prefer to earn enough to enable them to bear a greater share of the costs. Another reason might be that income differences among regions are as shocking to the sensibilities as are those among nations. In our opinion, however, the analogy is a weak one; the difference between India and Canada is of a different order of magnitude altogether from the one between Newfoundland and Ontario. Finally, despite the best efforts of social service agencies, a young person's start in life is heavily influenced by how well off his family is, and people in some regions are not as well off as those in other regions.

In our opinion, these reasons for reducing income disparities are valid but far from conclusive. Even taking into account the relevance of income levels to cultural survival, we believe that there should be quite strict limits on the amount of taxes levied for expenditures designed to equalize the income levels of people in various regions.

Cultural Survival

In several regions of Canada, many people are conscious of having a unique and valuable lifestyle and culture, which they wish to preserve. The proportion who feel this way is especially significant in Quebec and among the native peoples. While cultural survival is not connected directly with economic performance, it may be indirectly, through a possible link between population size and economic success. A particular culture may have difficulty in surviving in a region if its relative population size declines too much. In order for a culture to survive, its population may need to grow as fast as population elsewhere, and that can happen only if the growth of jobs keeps pace. Employment growth can thus become a condition necessary for cultural survival. Moreover, a region's economic attractiveness partly determines its net in-migration or out-migration. And migration depends not only on the growth of available jobs, but also on the variety of jobs, the income that can be expected, and the unemployment rate. While in-migrants do not always contribute to the preservation of the indigenous culture — as in the North, for example — a region's weight in national decision-making and, as a corollary, its chances for cultural survival are enhanced by greater numbers of people, whether it acquires them through migration or through natural increase. Decision-makers who perceive a threat to the cultural survival of a region may be induced to make their region economically more attractive by raising its

income level, by lowering its unemployment rate, and by increasing the diversity of its job opportunities and industrial structure.

The amount of federal expenditure that should be used to achieve the goal of cultural survival depends on the importance attached by the country in general to the future of threatened cultural regions, as well as on the validity of the argument linking cultural survival to economic prosperity. The same reasoning applies for any provincial government that wishes to preserve regional cultures within its province.

Among the provinces, Quebec has the most different culture. It is therefore not surprising to find the Quebec government arguing forcibly for cultural and economic identity in its general development agreement with the Department of Regional Economic Expansion (DREE):

> In spite of the real progress in economic development made in Quebec since the beginning of the fifties, there are still, as we have observed earlier, great disparities between the level and the rate of development in Quebec and that of several provinces in Canada; of Ontario in particular. Furthermore, considering the special cultural character of Quebec and the importance of its contribution to Canada's own personality, it appears essential that its development be satisfactory in relation to that of the other regions of this country, so that Quebec may be able to continue to provide this original contribution.[4]

Quebec is far from alone; officials in many other provinces believe that their provinces offer a unique way of life and that its preservation is in part a federal responsibility. It is clear, moreover, that all federal political parties are committed to the preservation of at least cultural duality, and this would appear to imply a commitment to the necessary economic underpinnings.

Going beyond this latter point, we also believe that the decision-makers at all levels of government have a certain obligation to ensure sound economic foundations for regions with distinct cultures. This perhaps implies that federal policy-makers must strive for greater equality in income and productivity levels, unemployment rates, and employment growth among the provinces. But it seems to us that the preservation of different cultures within a province should be primarily the prerogative and responsibility of provincial and local governments.

The Cost of Regional Policies

Canada's present efforts to achieve greater locational equity are not costless. People in richer regions are taxed for the benefit of those in poorer regions. Moreover, the full costs may not always be explicit in government accounts; some may be implicit, such as those arising from policies that divert economic activities towards locations that are not the most efficient. It seems important to us that the cost burden be openly

4 Department of Regional Economic Expansion, *General Development Agreement: Canada/Quebec* (Ottawa: Information Canada, 1974).

acknowledged and that expenditures not be significantly increased until their value has been demonstrated.

Briefly, the Council believes that equity among people rather than equity among regions should be the prime concern of policy-makers. But equity among people requires policy actions that are related to provinces or regions. In particular, the level of the unemployment rate in relation to the job vacancy rate should not differ among provinces as much as it does today, and the responsibility for ensuring that it does not rests with both the federal and provincial governments. The level of social services should be in part decided by federal authorities. Whose obligation it is to take policy action to reduce differences in standards of living and in rates of employment growth among major socio-cultural regions is not quite so clear-cut.

Unattainable and Conflicting Goals

> *Alice laughed. "There's no use trying," she said: "one can't believe impossible things."*
>
> *"I daresay you haven't had much practice," said the Queen. "When I was your age, I always did it for half an hour a day. Why, sometimes I've believed as many as six impossible things before breakfast."*
>
> Lewis Carroll, *Through the Looking Glass*

In our view, there are some direct conflicts among the various goals of regional policy and between those and certain goals of national policy. It is impossible to achieve all the desirable objectives at once. Greater diversification of industry within each region — often advocated as a means of reducing differences in income levels and employment growth — may lower national output. A reduction in unemployment differences may require an increase in income differences.

Attempts by individuals to improve their income through relocation may conflict with the goals of population growth and cultural survival in the poorer regions. The emerging government goal of slowing down the concentration of population in the major metropolises may be harmful from the point of view of locational equity among individuals. And the accidents of the geographic location of resources and markets may prevent some regions from ever achieving significantly improved relative productivity levels.

National Output and Regional Industrialization

In its report on Canadian commercial policy, the Council expressed the opinion that Canada should aim at reducing barriers to external trade with a view to increasing

efficiency and the level of national output.[5] The arguments presented in it can logically apply to the situation in Canada. Even though there are not tariffs within Canada — and in this sense there is a Canadian "common market" — a number of policies act differentially among the regions, much like nontariff barriers among nations, and influence their industrial structure. Policies designed to move firms or industries to places where they would not normally locate or designed to prevent them from going where they would normally locate, can be costly if they result in the loss of comparative advantages or scale economies. Two small steel plants in two provinces may be less efficient than one big plant in one province.

There is a tendency in some regions to see "poor" industrial structure — notably where the proportion of output in manufacturing and processing is significantly below the national average — as a regional problem in itself. This is to confuse means with ends. The ultimate goal is surely to improve income and employment opportunities, and any change in industrial structure should only be a means to that end; it is not desirable in itself, and not desirable at all unless it improves opportunities. The analysis in our *Twelfth Annual Review* suggests that, for some poorer regions at least, changing the industrial structure is not in fact a particularly good means of achieving higher productivity levels.[6]

Of course, the relocation of a firm or industry in a disadvantaged region has beneficial results if it creates jobs for persons who would otherwise be unemployed. And government promotion and development of opportunities that would have been self-sustaining if private business had found them can have favourable effects on industry location from the point of view of efficiency. It seems to us, however, that federal or provincial policies designed to promote industrialization in regions where it does not normally occur will sometimes have negative repercussions on national output. These measures may well promote regional equity by reducing income disparities, standardizing rates of employment growth between provinces, and diminishing the dispersion of unemployment rates, but they will sometimes carry a cost, and this conflict between national efficiency and regional equity should be explicitly recognized.

Unemployment and Income Levels

The greater part of the income differences among Canadian regions is made up of differences in the absolute levels of wages, salaries, and profits. While these disparities are unfortunate, paradoxically they may not be large enough. Although wages, salaries, and profits in certain regions may be low, they may nevertheless, because of poor productivity, lead to prices that are too high to permit an adequate degree of

5 Economic Council of Canada, *Looking Outward: A New Trade Strategy for Canada* (Ottawa: Information Canada, 1975).

6 Economic Council of Canada, *Twelfth Annual Review: Options for Growth* (Ottawa: Information Canada, 1975), pp. 36-37.

competitiveness in national and international markets. This lack of competitiveness, by restricting the potential volume of sales, can limit output, reduce the number of jobs available, and generate high unemployment rates.

Some would deny that there is a trade-off between high incomes and low unemployment rates. If they were right, it would make choices in regional development policies much easier. We believe, however, that the possibility that they may be wrong should be acknowledged. This is not to say that it is impossible to devise policies that would simultaneously reduce income and unemployment disparities. Indeed, programs that bring about improvements in educational levels or that provide assistance with migration within a region are examples of such policies. Any action of this kind should be vigorously pursued — subject, of course, to the proper consideration of other goals. Once this is done, there remains, in the opinion of many economists, the possibility that unemployment in a region can be reduced if the people who live there accept a lower income level or, conversely, that income levels can be raised if the region's residents accept an increase in unemployment. Our own view is that, if policy-makers should be faced with the uncomfortable choice of reducing either unemployment differences or income differences, they should opt for the former. This is simply a value judgment on our part, although we note that various levels of government are already committed to reducing unemployment. The social obligation to raise income levels is less clear.

Population Growth and Individual Relocation

Many provincial officials are disturbed by out-migration; yet it can be very good for the individuals concerned. Migrants who do not return — and there must be many of them if concern about out-migration exists — are presumably better off than if they had not moved. They have higher incomes or steadier employment, or both, which can compensate for any cultural shock caused by the move.

No provincial government would dream of directly preventing out-migration, but provincial authorities naturally try to prevent it indirectly by actively promoting the immigration of new companies and industries. Their aim is to provide good jobs and thereby make out-migration unnecessary as a way for an individual to better himself. However, if the social goal is to reduce those inequities among individuals that are the result of regional disparities, it may not be enough to simply encourage people to stay. People may become better off more quickly if they are made aware of the possibilities of improving their lot by out-migration. Moreover, we are generally in favour of putting more emphasis on the obligation of an individual to move in order to better his own economic lot, especially if it does not require him to leave his accustomed socio-economic milieu, which is usually the province in which he lives.

There is direct conflict between the goal of cultural survival — which is ill-served by out-migration — and the goal of reducing the differences in income and unemployment that are determined by where a person grows up — which is well-served

by out-migration. At a deeper level, the conflict is between the well-being of those who move and the well-being of those who remain. Cultural survival is more important for the stayers.

In addition to cultural considerations, the tax burden on stayers may be increased by out-migration because young adults are disproportionately represented among movers. When they leave, they no longer pay local taxes, and they take with them the fruits of the education paid for by the province in which they grew up. A disproportionate number of those left behind receive government assistance in one form or another — medical care for the aged, housing assistance, welfare payments, and so on. However, if one of the priorities of government is to provide more nearly equal social services among the provinces, the differences between stayers and movers cease to be a serious problem from a tax point of view.

Population Dispersion and Locational Inequities

Government policy-makers are expressing increased concern about the growing urbanization of Canada. They worry about the steady increase in population in the larger centres — especially Montreal, Toronto, and Vancouver — and about the pattern of urban structure that will emerge if natural forces are allowed to take their course. Some of them would prefer a more dispersed population pattern achieved through co-ordinated planning.

Concern about the heavy population concentration in Canada's three largest cities is based on a number of factors. Such concentration in the major centres may increase the unit costs of providing services in the smaller centres. More public facilities, such as roads and sewers, will be required in the growing centres, while existing facilities elsewhere will fall into decay. This is but one example where the social costs imposed by the movement of people into major agglomerations may exceed the private costs to the movers themselves; the municipalities they leave may thus see their fiscal returns fall faster than their spending responsibilities, requiring major and difficult changes in their political structure. In addition, more prime agricultural land may be turned over to residential and commercial uses than would be the case if population remained more dispersed. Congestion and pollution may affect more and more people, and Canada may face more of the difficulties faced by the United States in maintaining law and order and in fighting inner-city decay. Finally, many people are aesthetically revolted at the prospect of a country that may eventually consist of three big cities.

However, big cities may simply be very good places to put industry and people, from the point of view not only of sheer economic efficiency, but also of the desirability of all the amenities that a big city offers. Most people who move from small centres or rural areas to large centres do so because they hope to generally improve their living standards and employment experience. However, no one knows whether the gains made by the movers outweigh the social costs. It is not clear whether the experience of the United States is relevant, given the much greater size of some U.S. cities and the

problems of urban decay and racial conflict that they face. It is certainly possible that the benefits to be gained from further growth of Canadian cities could outweigh the costs, just as it is possible that they might not.

From the point of view of regional disparities, it is clear that people move to big cities because they gain and that this gain serves the goal of reducing locational inequities, in that they move from places where their income and employment experience is poor to places where it is better. This goal therefore conflicts with that of relieving the concentration of population in the large cities.

Some will argue that this difficulty can be avoided by adopting measures that provide greater income and employment opportunities in the smaller centres. Such measures would simultaneously maintain population dispersion and reduce locational inequities. It may be contended that a policy of population dispersion is the equivalent of a policy of reduction of regional disparities, but the Council disagrees with that view. Our disagreement is best explained by considering a policy whereby subsidies, temporary or permanent, are given in order to induce plants to locate in small towns. If the social argument for subsidies is that people should be given the option of remaining in small towns, then subsidies make sense only if plants will otherwise be established in larger towns and if people will then move there. If plants will locate in small towns without subsidies, then subsidies are unnecessary; and if people will not move even if plants are located in larger towns, then subsidies are irrelevant. In short, to justify subsidies, it must be shown that, without them, people would leave the smaller towns. If this is the case, however, the goal of locational equity will be achieved without the use of subsidies. It follows that subsidies needed specifically to avoid population concentration are not needed to achieve locational equity.

Productivity, Resources, and Markets

A regional development policy should not be undertaken when there is no hope for its success. For example, it is likely that income per capita is very low in Keewatin, one of the districts within the Northwest Territories. Yet, no one, to our knowledge, has proposed designating it as a "special area" or thought of searching for unexploited development opportunities there or suggested going to any effort to overcome this "regional development problem." In a case like Keewatin's, a regional policy would surely fail because the known resource base is not worth developing, given the present market conditions, especially the present transport technology. Moreover, the vast distance from any reasonably sized market precludes specialization and scale economies in other areas of production. Productivity therefore remains very low. The fact that people live there and are poor does not justify undertaking development.

While we do not know how many "Keewatins" there are in Canada, we are sure that many subprovincial regions in Canada are incapable of providing their inhabitants with a standard of living that is even close to the national average, barring fortuitous events such as the discovery of oil. If some of these areas have been able to do so in the

past, it may be that proximity to nearby large markets was not as important then as it is now. Perhaps other factors also played a role. Or it may have been that some of these regions have never provided much of a living but that we are more aware of this today.

Equity demands that something should be done for the people living in such areas, but common sense demands that, whatever is done, no long-term commitments should be made unless the area concerned is a complete province, because endless subsidization lies down that road. Taking this common-sense route will not be easy, but we urge that the possibility of it being necessary from time to time be openly debated.

In our view, regional policy action must be justified by more than just the greater relative poverty of the people living in a certain area or the poorer job prospects available there. It must be based on a rational assessment of the area's ability to provide a standard of living close to the Canadian average. If any area within a province cannot do this, it should be left to its fate. In any case, it is difficult to support the idea that areas with inefficient productivity relative to neighbouring areas within a province have any right to other than transitional federal assistance. Any permanent assistance should come from the provincial government.

We do believe that any province, however small, has a right to federal assistance in its effort to survive. But some smaller provinces may never be able to attain productivity levels that, relative to the Canadian average, would be significantly higher than they are now or even to preserve their present relative importance and power without costly long-term subsidization from the rest of the country. It is easy to underestimate the amount of fiscal revenues needed to reduce regional disparities. If permanent federal assistance is needed to keep jobs and industries in a province or if permanent provincial aid is needed for a subregion, it should be openly recognized as social assistance and not as a guarantee that the province or subregion will someday achieve economic success.

3

ECONOMIC THEORIES OF REGIONAL DISPARITIES

No single economic theory can explain regional disparities because no clear consensus exists among economists concerning the proper theoretical approach to this question. But there are a number of alternative approaches that differ in their central themes, although several of the concepts are common to more than one approach. Some theories take a pessimistic view of the possibilities for reducing disparities appreciably, while others are inclined to be more optimistic.

The Staples Approach

The economic prosperity of a region is enhanced if it has an abundance of marketable resources. The varying economic fortunes of different areas of Canada are therefore explained, according to the staples approach, by the varying availability and marketability of natural resources. In the Atlantic region, such resources as fish, lumber, and coal, which once brought about prosperity, no longer do so, for several reasons. Sometimes their relative prices have fallen so low that producers can no longer bear the cost of transporting them to markets; sometimes they have lost out to competition from alternative supply sources; sometimes better substitute products have been developed elsewhere; and sometimes cost increases caused by depletion have destroyed their marketability.

What are the consequences from a staples viewpoint? When a region experiences a decline in the marketability of its products, this brings about a decline in its overall production or rate of growth. This, in turn, causes a fall in labour demand or in its growth rate. Wages then become relatively lower there than elsewhere, and employment prospects are dimmed, resulting in both high unemployment and low participation. Finally, the poor income and job situations force those who can to migrate out of the region. The whole process may persist for several decades.

Staple theorists note that the prosperity of some regions can be attributed to a progressive discovery of newly marketable resources, such as lumber in British Columbia or oil in Alberta, and that the consequent growth and inflow of firms and capital bring high incomes and fast-growing labour demand. The result is lower unemployment, higher participation, and more employment growth through immigration from other regions or countries.

If these views are correct and if it is not acceptable for a declining region to lose its population, then the only remedy is to subsidize the production of other goods or services that are readily marketable outside the region or that can be substituted for something previously imported. Manufacturing — especially of the type involving further processing of the remaining domestic resources — is the favourite choice. Bringing in capital and firms can compensate for erosion of the resource-dependent export base. Since marketability also depends directly on the transport costs to markets, the subsidization of transportation rates is also a feasible policy. If some kind of subsidy is needed in a region, it is a sign that private enterprise considers it to be an inefficient place to locate a plant. Subsidies may be acceptable from a social point of view, however, because of the greater inefficiency in having to support people who are unemployed during the long transition period that is needed for out-migration to solve the region's problems or because of the intolerable social and political costs of accepting out-migration as a remedy.

All in all, the staples theory is a gloomy one; but, while the above tells part of the story in some regions of Canada, it is difficult to accept it as a full explanation of the nation's regional problems. It supposes that the declining marketability of a region's staples generates a combination of low incomes, high unemployment, and high out-migration, the latter being the result of the other two. The Prairies do not fit into this picture as well as the Atlantic provinces. Agriculture in the Prairies and elsewhere has certainly been, on average over the last quarter of a century or more, a declining source of employment, and yet the Prairies have long had the lowest unemployment rates in the nation. In British Columbia, there has been an unambiguous growth in the availability of marketable resources, and yet unemployment is persistently high. In short, the staples theory cannot directly explain one of the major aspects of regional disparities — the substantial regional differences in unemployment rates.

The theory's strength lies in its ability to account for different rates of employment growth. Even here, however, there are difficulties. A good theory is one that is generally helpful, not one that is designed specifically for one set of data — in this case, a Canadian set. But no one would think of basing the main explanation of large international differences in employment growth on differences in the availability of marketable natural resources. Natural population increase is automatically assumed to play the dominant role. Even when migration is important, as it certainly is in Canada, it may result from unemployment and income differences between the sending and receiving regions — which are not themselves well explained by the staples theory — or from differences in locational attractiveness, such as climate and availability of city amenities.

The availability of certain resources, such as good agricultural land, and the marketability of other natural resources may explain part of the regional differences in incomes — the third most important type of regional disparity. Resources, however, are only one of many factors determining the productivity of a region or nation, and evidence suggests that they are of minor significance in comparison with the combined effects of factors such as physical and human capital, the level of technology, scale economies, and so on. Thus the absence of resources in Switzerland does not prevent

economic success, and their presence in Argentina does not guarantee it. Moreover, the extra output attributable to the availability of marketable resources in a region, whether they are sold outside the region or used in production locally, will generate income locally only to the extent that the resources are owned locally.

The Development Approach

A great deal of effort has gone into trying to explain why some countries are poor or underdeveloped, and this work can help to clarify regional differences within Canada. Although the analogy has a certain usefulness, it should not be overdrawn, because Newfoundland and Prince Edward Island — the poorest Canadian provinces — are developed and rich beyond the wildest dreams of most nations in Africa and Southeast Asia. As a rule, development literature has not been concerned with promoting employment or population growth — quite the contrary — nor with reducing unemployment rates, except as a secondary issue, although they have been disastrously high in many underdeveloped countries. Its applicability to regional problems is therefore confined to the help it may provide in explaining income differences.

While the key elements in the staples theory have not been ignored by development economists, attention has also been directed to many other factors, including capital accumulation, infrastructure, education and human capital, the level of technology, agricultural modernization, social structure, and attitudes, all of which help to determine productivity and to explain levels of production and income per person. Obviously, a number of these factors are just as important to the Canadian scene, and the development theory can be used to explain some of the income differences in Canada as well.

An increase in the rate of capital accumulation was once thought to be the major cause of the industrial revolution. Changes in the availability of physical capital per worker were viewed as the major source of increases in production, and differences among nations in the availability of capital per worker were thought to be the source of geographical differences in productivity. Empirical analysis has not been overly kind to these views, but nevertheless capital does play some role. Moreover, a lack of social capital — sometimes called infrastructure, which includes transport facilities such as roads, railways, and harbours, as well as sewers, hospitals, and schools — has been frequently cited as both symptom and cause of economic backwardness. Finally, the stock of human capital — the knowledge and accumulated skills of the work force — has received increasing attention in recent years. It is argued that there is a relationship between the amount of education and human capital, on the one hand, and the amount of human capital and the level of productivity, on the other.

Much practical work has been done to try and find the quantitative importance of a number of different factors that account for productivity growth. This work has led to a de-emphasis of the role of physical capital. By the same token, the role of technological advance in the development of a nation's productivity and, by extension,

the role of technological gaps in productivity differences among nations have received greater emphasis.

In developing countries, agriculture is the dominant activity, accounting for 65 to 95 per cent of total output. Improving agricultural output per worker is therefore a key element in any development strategy. No direct analogy with the Canadian situation exists here, because agriculture plays a much smaller role in all regions of Canada than in the developing countries. Much the same can be said for social structure and attitudes; they are sometimes mentioned in the Canadian context, but the differences within Canada surely pale to insiginficance in comparison with the differences observable on the international scene.

The Neoclassical Approach

The neoclassical approach does not offer a theory of regional development as such; rather it maintains that several standard methods of economic analysis can be used to advantage in discussing regional problems. It emphasizes the importance of flexibility in prices and wages, the mobility of labour and capital, and the capacity of market forces to solve regional problems when they are allowed to work unhindered. The immediate cause of regional problems is commonly diagnosed as market failure, brought on sometimes by circumstances and sometimes by the actions of policy-makers. The advocated cure is to create a situation in which markets can work better or to leave well enough alone and let market forces bring about a solution. The differences between this approach and the two already discussed can best be grasped by examining unemployment, incomes, and employment growth.

Unemployment is seen as a failure to equate labour supply with demand. The main remedy is the same as for any other market commodity whose supply exceeds demand: reduce the excess supply by lowering the price so that buyers will take more and sellers will offer less. The "price" of labour is the wage; hence, if a region has excessive unemployment, it means that its wages are too high compared with those in other regions.

Further analysis attempts to determine whether the wage choice made by workers is essentially a voluntary one — either directly or indirectly through unions and political pressure — or whether it is an involuntary choice forced upon workers by institutional mechanisms that can be altered. Alternatively, it should be noted that, in certain markets such as housing, there is always a stock of items as yet unsold and a queue of buyers as yet unsatisfied. Similarly, the labour market contains both vacant jobs and unemployed workers. Reducing unemployment then becomes a matter of finding ways to improve the speed and efficiency with which unemployed workers and available jobs can be matched.

The neoclassical explanation of low income in a particular region has much in common with the development approach. It has more to say, however, concerning the consequences of a region's inability to assure an income per person as high as that

elsewhere in the country. Part of its population will gradually migrate to the more prosperous regions, and their departure will simultaneously raise income in the sending region and lower it in the receiving region, as a result of the changes in the relative availability of capital and resources per person in each region. This process will help to equalize the very income disparities that caused it. If poor regions also have high unemployment, the migration process may help to ease that problem as well.[1] Beyond that, if wage incomes are low because capital is scarce, there may be an inflow of capital, which is also an equalizing force.

The great strength of the neoclassical view lies in its roots in general economic theory, supported by two centuries or more of thought and practical work on the functioning of economic systems. Thus its statements concerning the key roles of relative wages and other cost determinants, relative prices, the mobility of labour and capital, and market forces carry a certain authority. They contribute to an awareness of sometimes uncomfortable economic realities by stressing how much the market system achieves in a powerful but unseen manner, by pointing out possible efficiency losses caused by obstacles to market mechanisms, and by generating ideas about improving market performance.

Certain weaknesses in neoclassical views prevent them from providing a fully satisfactory framework for tackling regional problems. At the purely theoretical level, the influence of distance and geographical dispersion on economic activity is not explained well. The writing on international trade offers but limited help, and the work on pure location theory has remained highly formal and largely barren of policy implications. Another difficulty is the level of explanation offered; while it is useful to know that properly functioning relative prices and free mobility of factors may be helpful in curing a region's problems, it is more useful to know why some regions' problems persist so long, despite equilibrating market forces. On this question, other schools of thought, such as the staple or development theories, are more helpful. Finally, the neoclassical approach is hampered by its failure to recognize that interregional migration is not only an important part of the market mechanisms that even out disparities but also, in the opinion of many who live in regions experiencing it, a regional problem in itself.

The Keynesian Approach

Like the neoclassical approach, the approach associated with the name of Keynes[2] draws upon a large body of well-established economic knowledge. Most economists of the last few decades accept the Keynesian view that the market system does not guarantee full employment or that it does so only with unacceptably long lags. The

1 However, if high unemployment is caused by high wages, migration may be inhibited and the cure of income disparities delayed.

2 John Maynard Keynes, *The General Theory of Employment, Interest and Money* (London: Macmillan, 1936).

experience of the Great Depression indicates that the lags can be longer than a decade. It is also rather generally accepted that government intervention in the management of aggregate demand, rather than unmodified market forces, is better able to bring a nation closer to full employment. Despite this consensus, only rarely has consideration been given to the geographical extent of the area over which demand should be managed. It is implicitly assumed to be the same as the nation state. While this assumption is generally a good one, it is not always so.

The Keynesian approach to regional problems recognizes this and argues that difficulties can arise because the geographical dispersion of demand is not always appropriate to that of the labour force. As a result, unemployment rates can differ regionally. Some Keynesians go a step further and argue that persistent unemployment in a region generates out-migration and inhibits firms from entering a region that appears to be chronically depressed. Failure feeds on failure.

By virtually ignoring productivity and incomes, the Keynesian approach is as incomplete as the development approach, which ignores unemployment. Moreover, there are a number of objections that can be raised to the Keynesian view when it is applied to a region within a country. Even apart from the ability of a nation to devalue its currency — an option not open to a region — there is the problem of how large or isolated a region must be for aggregate demand measures to be effective. They are obviously effective for the United States, but not for Peoria, Illinois. Where on the size spectrum does the break come? Despite these difficulties, the approach does seem to be useful in analysing Canadian disparities.

The Regional Science Approach

Regional science is easily the most comprehensive approach to regional problems, as might be expected from a discipline dedicated to the elucidation of regional economic differences. The approach differs from all others dealt with so far, in its strong emphasis on the importance of space in economic analysis. While it draws upon many economic theories, it is not itself a theory. One of the chief characteristics of regional science is its attempt to explain in detail the locational choice of individual firms. It goes beyond the work of the pure location theorists to a more realistic assessment of what makes firms settle in one place rather than another. This leads to a strong and useful stress on the details of transportation cost and geographical variations in labour and material costs.

Regional science emphasizes the importance of the way in which population is distributed in space. From a static point of view, one distribution of population within a region may be better than another, because it allows more output for a given endowment of labour, capital, and other resources. The reasons for this may be categorized as economies of scale, of localization, and of urbanization. From a dynamic point of view also, the pattern of settlement is important. Perroux points out that growth does not occur evenly in space but tends to be concentrated at particular

points or growth poles.[3] Others have since enlarged on his original idea to include the richer and deeper notion of development poles that are self-sustaining and permanent, as growth poles need not be. Development poles are innovative in themselves; they also adopt successful methods of production found elsewhere, adapt them to the region, and radiate their success to the rest of the region.

Also, regional science devotes far more attention to the industrial structure of a region than does conventional economic analysis. Structure can have only transitory importance to the neoclassical economist; a region may have declining industries, such as coal or textiles, or growing ones, such as computer services; but in general he believes that it can be proved that no artificial restructuring of the market allocation of workers among industries can increase average regional productivity. Regional scientists have a different perspective. Sometimes the argument is rather simplistic. It is pointed out that some industries pay higher wages, as does the automobile compared with the textile industry, or grow faster, as does the electronics compared with the furniture industry; and it is deduced, wrongly in the opinion of many neoclassical economists, that this makes them good assets for a region to have. Sometimes the argument is more subtle and draws upon such notions as complementarities among industries within an industrial complex, interrelationships between the industrial and urban structures of a region, and the stimuli to creativity generated by particular industries that are in the forefront of technological change.

Regional science stresses the importance of exports to a region — a feature also found in the staples approach but more fully developed here. It considers other elements of demand, especially through the use of interregional input/output matrices and econometric models, but only exports are given first-rank importance. It is implicit that a region must export in order to import but that market mechanisms cannot be relied upon to create an adequate volume of exports in the disadvantaged regions in the way they seem to do in the prosperous ones. Both approaches share the curiously archaic viewpoint that manufacturing is superior to the service sector. Manufactured goods can be exported, but only rarely can services be exported.

Although the regional science approach is a rich and complex one, some important elements are missing, which precludes its use as the single analytical framework for dealing with regional economies. The part played in the economic system by relative prices and wages and by market forces is acknowledged, but it receives insufficient emphasis; the neoclassical approach is therefore a valuable corrective. The insights into productivity given by the analysis of urban industrial structure are useful, but the emphasis of the development approach on physical and human capital and on the level and diffusion of technology is an indispensable addition to it. Moreover, the regional science analysis of unemployment differences is inadequate, because other components of demand should be analysed as profoundly as exports. Also, contrary to the neoclassical approach, regional science does not examine the roles of labour supply and wage-setting mechanisms in the determination of unemployment rates.

3 F. Perroux, "Note sur la notion de pôle de croissance," *Revue d'économie appliquée* (1953):306-20.

The Influence of Theory and the Position of the Economic Council

Although Canadian policy-making has not relied exclusively on any one of the five approaches described above, some have been stressed much more than others. Subsidies to firms — the best-known policy of the Department of Regional Economic Expansion and its predecessors — are intended to stimulate manufacturing in order to develop the export and employment base — an idea that flows from the staples and regional science approaches to economic development. Other programs undertaken by DREE are intended to induce development in disadvantaged regions by improving infrastructure — an idea borrowed from both the regional science and the development approaches — and by raising productivity in the rural sector. Migration policy has been used rather sparingly but, to the extent that it has been, it reflects the neoclassical approach. The minor attempts made to stimulate regional demand are concessions to Keynesian ideas. The fact that equalization payments comprise by far the largest program can be viewed either as a desire to use the market system to solve regional problems, subject only to correction of its more obvious inequities — a neoclassical approach — or, more likely, as a desire to achieve economic justice among the provinces without implying a commitment to a particular view of the causes of regional problems.

We have not attempted to cover these five approaches completely. Instead, we focus on those features that are very promising from the standpoint of theoretical explanation and practical policy-making but receive relatively scant attention from researchers and policy-makers in Canada. In so doing, we hope to encourage a widening of the policy framework.

Our analytical approach emphasizes the explanation of income and unemployment disparities, and it treats population growth rates — to the extent to which they are determined by migration rather than by natural increase — mainly as consequences of those disparities. Income disparities can arise either because more resources remain unused in some regions than others — because unemployment is above average and the participation rate is below average — or because the resources that are employed are less productive.

In examining productivity differences, we call upon several of the approaches outlined above. Thus, when we study the quantitative influence of physical and human capital, industrial structure, and technology, we draw mainly upon the neoclassical and the development approaches. We examine the influence of urban structure on productivity along the lines of regional science, and we give special attention to the link between industrial and urban structure. Incidentally, we do not try to provide an exhaustive explanation of all regional unemployment differences, but we do examine those attributable to regional differences in demand or to demand-sensitive seasonal unemployment. We also examine the connection between unemployment and urban structure. In making recommendations in these latter areas, we draw not only upon the results of our own research but also upon the insights given by the neoclassical approach into the interaction between wage levels and unemployment rates and into the importance, for reducing frictional unemployment, of efficient mechanisms for matching workers and jobs.

4

THE ANATOMY OF THE PROBLEM

Do Regional Disparities Exist?

There is no universally accepted criterion for judging whether life is really better in some parts of Canada than in others, but a wide variety of facts suggest that individual well-being does indeed differ from one region to another. After more than 350 years of settlement, people have certainly not distributed themselves uniformly, either among or within the provinces. On the contrary, with the exception of centres where the local industry is based on natural resources, there is something of an inverse relationship between the density of population, on the one hand, and the harshness of the climate and the relative distance from major markets in the United States, on the other. Presumably, people and businesses have to be compensated in some way if they are to be encouraged to locate in the colder, more isolated regions and pay the higher transportation costs to markets that these regions face. The compensation and job opportunities offered in these regions in the past have obviously not been sufficient to attract many people. But, even in the more populated regions, disparities of income and opportunity exist. The probability of being rich or poor and finding a job differs even among these places.

The material well-being of a society depends not only on absolute wealth and purchasing power, but also on their distribution among individuals and families. Because there are returns to scale in family living, the same income per capita goes farther if a society is primarily comprised of families rather than individuals living alone. There will also be less discontent in society if the wealth is not unduly concentrated in the hands of a few or if the income distribution does not change too quickly. These factors differ from region to region. For example, in 1970 the average Newfoundland family had roughly one more child and about one-third less income than its Ontario counterpart and, apart from housing, it faced a higher cost of living; these factors help explain why Newfoundland is an area of net out-migration and Ontario is not.

In a work-oriented society, having a job is an important aspect of social well-being. Not only does it provide income, but it also brings respectability and a sense of self-importance. In addition, it frequently provides the worker with an agreeable social

environment in which to spend a large part of his life. Unfortunately, there are large regional disparities in access to jobs. A worker in New Brunswick faces a higher probability of being unemployed than his Alberta counterpart; moreover, if he is unemployed, he can expect to remain that way for a longer time.

Since there are difficulties in measuring real income, it is also important to consider regional disparities in social areas such as housing, health, environment, and education, which provide some alternative indicators of individual well-being. These may in fact reveal that there are some nonmonetary advantages to living in a region where incomes are lower that may adequately compensate for differences in income. Furthermore, government may wish to intervene directly to provide greater equality between regions in the distribution of health and education services, for example. Finally, these social indicators may provide some useful warnings of the dangerous side effects of economic activity. For example, the high incomes and rapid economic growth observed in Alberta, British Columbia, and the Yukon give the appearance of material happiness. One notes, however, that this economic success has been accompanied by abnormally high rates of suicide and marriage breakdown. Thus there may be serious complications in implementing policies designed to increase incomes and encourage people to move to areas where job opportunities are better; some migration policies may prove better than others.

Demographic Differences

It is useful to examine population figures for various regions because regional demographic differences influence certain economic variables, such as participation rates and per capita incomes, and are in turn determined partly by economic variables to the extent that these exert an influence on interregional migration.

For many years, the southern parts of Ontario and British Columbia have been the destinations preferred by foreign immigrants and Canadian migrants alike. Projections based on demographic trends show that by 1985 these are the only two regions where the working-age population will be increasing. In the other regions, this growth will be almost zero.[1] Therefore, unless there are considerable increases in participation rates or major advances in productivity, these regions will experience very weak economic growth.

In the Atlantic region, Quebec, and the North, family sizes in 1971 exceeded the national average, and the smallest average families were to be found in British Columbia and Ontario (Table 4-1). However, current family size reflects past fertility rates, which have fallen dramatically since 1956. At that time, Canadian mothers could expect to bear an average of 3.9 children in their lifetime, by 1974, that number had dropped to less than 1.9. The most spectacular decline occurred in Quebec. Whereas

1 Economic Council of Canada, *Twelfth Annual Review: Options for Growth* (Ottawa: Information Canada, 1975), p. 51. In the Prairie region, the anticipated growth in Alberta is offset by the anticipated losses in Saskatchewan and Manitoba.

the fertility rate in that province slightly exceeded the Canadian average in 1956, it had fallen to just below 1.7 by 1973.

As a result of past fertility and migration rates, the ratio of children to working-age people is high in Newfoundland, very high in the Northwest Territories, and low in Ontario and British Columbia. In Prince Edward Island, Saskatchewan, and

Table 4-1

Demographic Characteristics, Canada, by Province and Territory, Selected Years, 1961 to 1976

	Newfoundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Yukon	Northwest Territories	Canada
							(Thousands)						
Population													
Estimated total, January 1976	554	120	830	684	6,224	8,290	1,023	929	1,804	2,481	21	38	22,998
							(Per cent)						
Rate of:													
Population change, 1961-71	14.0	6.7	7.0	6.1	14.6	23.5	7.2	0.1	22.2	34.1	41.4*		18.3
Natural increase, 1961-71	23.7	13.1	13.2	14.8	14.2	13.8	13.0	13.7	18.0	11.8	35.8*		14.3
Net migration, 1961-71	−9.7	−6.4	−6.1	−8.7	0.4	9.7	−5.6	−13.6	4.2	22.3	5.6*		4.0
Interprovincial net migration, 1966-71[1]	−3.1	−0.9	−0.9	−2.3	−1.9	0.9	−3.1	−6.5	2.6	7.7	n.a.		n.a.
Interprovincial net migration, 1971-75[1]	−2.2	2.6	−0.2	0.6	−1.2	0.4	−3.6	−6.6	2.0	5.8	n.a.		n.a.
Urban population as a percentage of total population, 1971	57.2	38.3	56.7	56.9	80.6	82.4	69.5	53.0	73.5	75.7	n.a.		76.1
							(Average)						
Family data													
Persons per family, 1971	4.4	4.0	3.8	4.0	3.9	3.6	3.6	3.7	3.7	3.5	4.3*		3.7
Children per family, 1971	2.4	2.0	1.8	2.0	1.9	1.6	1.7	1.8	1.8	1.6	2.4*		1.7
Fertility rate, 1974[2]	n.a.	2.2	2.0	2.1	1.7	1.9	2.2	2.4	2.1	1.8	3.1	3.5	1.9
Dependency ratio													
Youth dependency ratio, 1971[3]	65.9	55.4	50.6	53.9	46.6	45.5	47.3	50.9	51.7	44.5	55.3	78.2	47.5
Old age dependency ratio, 1971[3]	10.9	19.3	15.2	14.5	10.8	13.3	15.8	17.2	11.9	15.0	4.4	3.9	13.0

n.a. – not available.

*Yukon and Northwest Territories combined.

1 Estimates based on migration of children eligible for family allowance.

2 Total fertility rate is the sum of the age-specific fertility rates. The age-specific fertility rate at age "a" is equal to:

$$\frac{\text{number of births among women at age "a"}}{\text{total number of women at age "a"}}$$

3 Youth dependency ratio is 100 times the ratio of the number of people in the 0-14 age group to the number of people in the 15-64 age group. Old age dependency ratio is 100 times the ratio of people in the 65-and-over age group to people in the 15-64 age group.

SOURCE Estimates by the Economic Council of Canada, based on data from Statistics Canada.

Manitoba, the proportion of the provincial population over 64 years of age is higher than the Canadian average, partly because young people have tended to move out, leaving their parents behind. By contrast, the Yukon and Northwest Territories have very few elderly people, partly because a number of whites leave the North when they reach retirement age and partly because native people, who have had a high mortality rate in the past, have a lower average age. Moreover, a number of young people have moved in from the South to work in the gas wells, mines, and defence establishments in the North, thus lowering the average age in the two territories.

Net interprovincial migration, which was substantial between 1961 and 1971, seems to have slowed down between 1971 and 1975, and the trend towards net out-migration seems to have reversed in Prince Edward Island and New Brunswick, which may be a sign that economic conditions in the Atlantic region are improving.[2] Saskatchewan stands out as the province losing the most people; its population has declined steadily from 960,000 in 1968 to 907,000 in 1974 — a loss of 5.5 per cent. Most of that loss occurred in 1970 and 1971, when net farm income suffered badly. Since the province's unemployment rate did not rise precipitously during this period, it may be inferred that, when economic conditions deteriorate in Saskatchewan, the people simply leave to take jobs in the expanding economies of neighbouring Alberta and British Columbia.

Differences in Income

Data on personal income per capita — which have been available on a regional basis for many years — constitute a good starting point in measuring regional differences in income to show how these have changed over time. Note, however, that this indicator overstates regional income disparities because it ignores several important elements. First, progressive income taxes take a larger share of the incomes of wealthy regions, so that regional disparities in disposable income are not as large as differences in personal income. Moreover, personal income data neglect the fact that per capita income goes farther in lower-income regions where the population is generally organized into larger family units, and so disparities in income per family are not as large as income per capita. Finally, this indicator ignores the fact that the cost of living differs from region to region. It is also important to see how this income is distributed within a region — both among people and among geographic subregions.

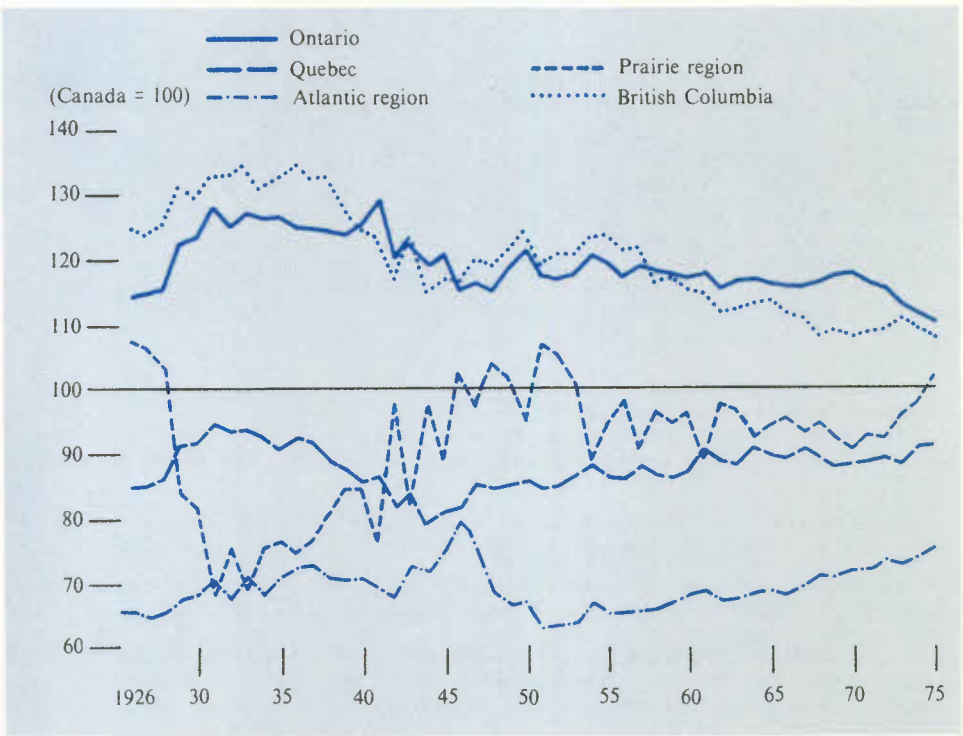
2 A thorough understanding of population movements between 1971 and 1976 must await analysis of the 1976 Census data. The observations noted here are based on a study of data pertaining to the movement of children eligible for family allowances. However, caution is necessary in dealing with these data. Young adults without children are overrepresented among out-migrants, as are young adults with children among return migrants. Since the proportion of the population in these two groups has changed rapidly in recent years, thanks to the repercussions of the postwar baby boom, the comparability of 1961-71 migration data, which are not based on movements of children, with 1971-76 data is fairly questionable. Caution is therefore warranted, and our observations here are only tentative.

Personal Income per Capita

There has been a persistent pattern of regional disparity in per capita incomes over the past half century, although there has been a very slow convergence towards the national average, especially since 1954 (Chart 4-1). Historical events have caused some notable variations in these patterns. Income per capita is highly variable in the Prairie provinces because this region is dominated by competitive agricultural markets, notably wheat for export. The prices of agricultural products are subject to great fluctuations, because variable weather conditions cause crop yields to fluctuate against the price-inelastic world demand for food. The onset of the Great Depression in 1929, which caused a collapse of international grain prices, and the severe drought conditions in the 1930s, which destroyed crops and forced people to abandon certain parts of the Prairies, led to a dramatic drop in per capita income in this region. Relative prosperity returned during the Second World War and reached its peak during the Korean War, when the worldwide boom in commodity prices coincided with very large wheat crops and with rapid growth of the region's young petroleum and natural gas industries.

Chart 4-1

Index of Personal Income per Capita,Canada, by Region, 1926-75



SOURCE Data from Statistics Canada.

Per capita income grew rapidly in the Atlantic region during the Second World War, when Halifax became the point of departure for convoys of troops and supplies headed for Europe, but the end of the war brought relative economic decline. Since the early 1950s, per capita income in this region has grown a little more rapidly than the Canadian average, but extrapolation of current trends shows that it would still take about seventy years for incomes in the Atlantic region to reach the national average.

The components of personal income per capita — wages and salaries, transfer payments, dividends, and interest payments — have varied since 1954 (Table 4-2). It should be noted that total farm income per capita has not grown at all in the Atlantic region or British Columbia; while income per farmer has risen, this increase has been offset by the decline in the number of farmers. Growth of farm income has been sluggish in Quebec and Ontario but fast in the Prairies.[3] Since the end of the Second World War, agriculture has intensified in the Prairies, whereas a substantial amount of farmland in Quebec and the Atlantic provinces is no longer used for agricultural production.

Table 4-2

Growth[1] of Components of Personal Income per Capita, Canada, by Region, 1954-75

	Average annual rate of growth ($ current)					
	Atlantic region	Quebec	Ontario	Prairie region	British Columbia	Canada
	(Per cent)					
Market income	7.1	6.8	6.4	6.9	6.1	6.7
Wages and salaries[2]	7.6	7.1	6.8	7.4	6.5	7.1
Farm income	0.0	1.8	1.8	5.1	-0.5	3.2
Unincorporated nonfarm income	3.8	3.6	3.1	3.5	2.8	3.4
Dividends and interest	9.2	8.7	8.3	10.4	8.5	8.9
Government transfer income	10.2	9.4	8.9	8.2	7.2	8.9
Total income	7.6	7.1	6.6	7.0	6.3	6.9

1 Estimated, using an unrestricted logarithmic regression.
2 Including "other" income, which is mainly military pay and allowances.
SOURCE Estimates by the Economic Council of Canada, based on data from Statistics Canada.

The fastest-growing sources of personal income have been dividends and interest in the Prairies and British Columbia and government transfers[4] in the Atlantic region, Quebec, and Ontario. It is interesting to note that both these sources of personal income in all regions have grown much faster than unincorporated income and farm

3 The data in Table 4-2 are expressed in current dollars; the rates of growth therefore include the effects of inflation. In real terms, farm income per capita — that is, farm income per member of the entire population rather than per farmer — has fallen in Quebec and Ontario.

4 Government transfers include family and youth allowances, unemployment insurance benefits, pensions to veterans and government employees, Canada and Quebec Pension Plan payments, adult retraining payments, and provincial and municipal welfare payments.

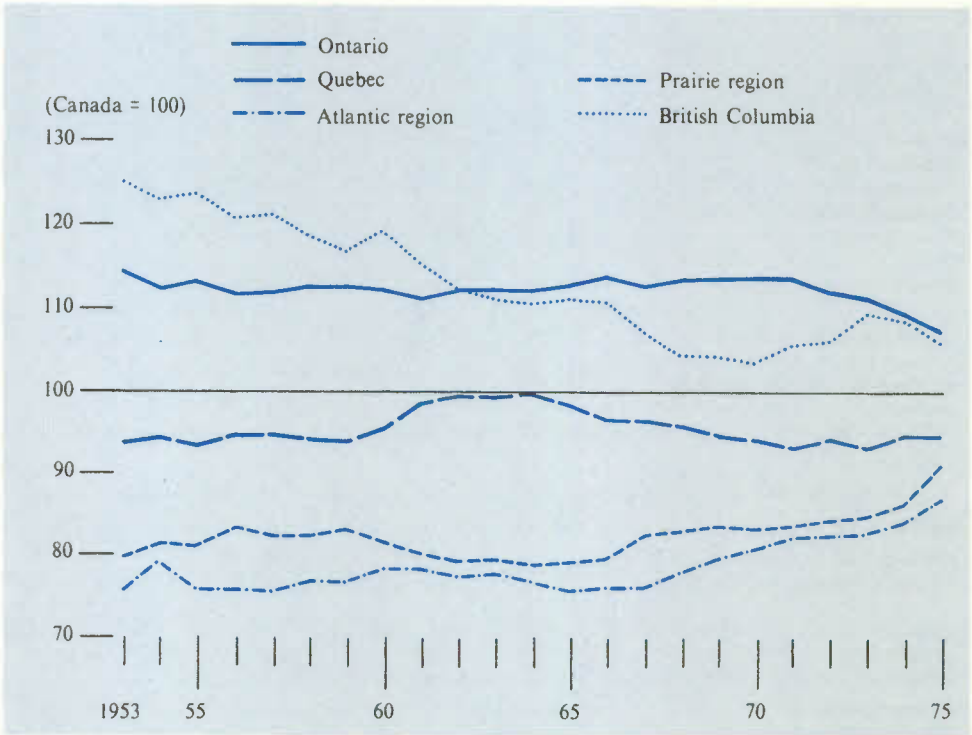
income. Everywhere, the corporate and government sectors have become more and more important, while the relative importance of individual proprietorship has declined.

The level of wages and salaries per capita is affected by factors such as rates of pay, migration, the proportion of the population that is of working age, and the proportion of the working-age population that is employed. Wages and salaries per capita have grown more slowly in regions where wage rates, as well as in-migration, are already high. Moreover, the relative rates of pay — wages and salaries per employed person in each province expressed as a percentage of those for Canada — have declined noticeably since 1954 in British Columbia and have risen somewhat in the Atlantic region (Chart 4-2). This convergence of incomes nationally has accelerated since 1971, partly because of the 1974-75 slackening in the automobile industry in Ontario — a province where wages and salaries are above the national average — and partly because of the buoyant wheat market and the energy-related investments in Alberta.

If the labour force were fairly homogeneous, so that all workers were interchangeable, one would expect that, other things being equal, the pattern of migration would reduce the labour supply in the Atlantic region and increase it in British Columbia, causing the price of labour to rise in the Atlantic region and to fall in British Columbia.

Chart 4-2

Index of Wages and Salaries per Employed Person, Canada, by Region, 1953-75



SOURCE Data from Statistics Canada.

However, other things are not equal. It is possible that workers who are younger, more highly skilled, and better paid than the average have a positive effect on the productivity of the rest of the labour force. In that case, if they leave their region, they will lower the productivity and wages of the workers they leave behind and may even raise the productivity and wages of those they join. Hence the ultimate effect of migration on rates of pay is not clear a priori. We can only acknowledge that until 1971 the large in-migration to British Columbia was accompanied by a decline in wages and salaries per worker in that province, whereas the moderate in-migration to Ontario was not.

The proportion of population of working age grew most rapidly in Quebec and the Atlantic provinces from 1954 to 1975 (Table 4-3). However, these demographic results

Table 4-3

Employment and Population Ratios, Canada, by Region, 1954-56 and 1973-75

	Proportion of:		
	Population that is of working age	Working-age population employed	Total population employed
	(Per cent)		
Atlantic region			
1954-56	63.5	43.3	27.5
1973-75	70.5	46.1	32.5
Percentage change	11.0	6.5	18.2
Quebec			
1954-56	65.9	50.4	33.2
1973-75	75.4	52.2	39.3
Percentage change	14.4	3.6	18.4
Ontario			
1954-56	70.2	54.4	38.2
1973-75	74.8	57.7	43.1
Percentage change	6.6	6.1	12.8
Prairie region			
1954-56	67.1	50.3	33.7
1973-75	71.4	57.0	40.7
Percentage change	6.4	13.3	20.8
British Columbia			
1954-56	70.2	49.0	34.4
1973-75	74.8	55.2	41.3
Percentage change	6.6	12.7	20.1
Canada			
1954-56	67.6	50.9	34.4
1973-75	73.8	54.7	40.4
Percentage change	9.2	7.5	17.4

SOURCE **Based on data from Statistics Canada.**

Table 4-4

Wages and Salaries, Unemployment, and Participation Rates, Canada, by Region, 1975

	Atlantic region	Quebec	Ontario	Prairie region	British Columbia	Canada
Index of wages and salaries:						
Per employed person	87	95	107	91	106	100
Per worker in the labour force	83	93	109	95	105	100
			(Per cent)			
Unemployment rate	11.6	8.8	6.0	3.4	8.3	7.1
	(9.9)	(8.1)	(6.3)	(3.9)	(8.5)	(6.9)
Participation rate of population aged 14 and over	51.9	57.2	61.3	59.3	60.2	58.8
	(53.5)	(58.5)	(64.2)	(62.8)	(61.3)	(61.1)

SOURCE Department of Finance, *Economic Review* (April 1976). The unemployment and participation rates in parentheses are based on Statistics Canada's Revised Labour Force Survey.

were partly offset by the fact that the proportion of employed persons rose more rapidly in other regions. The fact that the Atlantic region had the lowest proportion of working-age people in its total population and the lowest proportion of employed people in its working-age population helps to explain why its personal income per capita was so far below the Canadian average.

Except for the effects of migration, the low proportion of working-age people in the Atlantic region is largely a matter of demography — its fertility rate and family size are above average — whereas the low participation rates in that region and in Quebec may well be of economic origin. Working-age people may be less willing to work if their chances of finding a job or if the wages offered them are lower than average. Wages and salaries per employed person may be a measure of the inducement to keep a job, but wages and salaries per worker, including those who are unemployed, is a more accurate measure of the inducement to enter the work force, because it measures the income that a person can expect to receive, taking into account the probability that he may not find a job or that he may lose it once he does. Thus the wage incentive for holding a job in the Atlantic region is only 87 per cent as high as the Canadian average, while it is 107 per cent in Ontario (Table 4-4). Perhaps even more important, the wage incentive for seeking a job in the Atlantic region is only 83 per cent as high as the national average, while it is 109 per cent in Ontario.[5] It is also interesting to note that high unemployment in Quebec and low unemployment in the Prairies have the effect of reducing the relative reward for seeking a job in Quebec and increasing it in the Prairies.

For Canada as a whole, government transfers to persons have grown noticeably since 1966, accounting for some 12.7 per cent of personal income in 1975.[6] This rise in

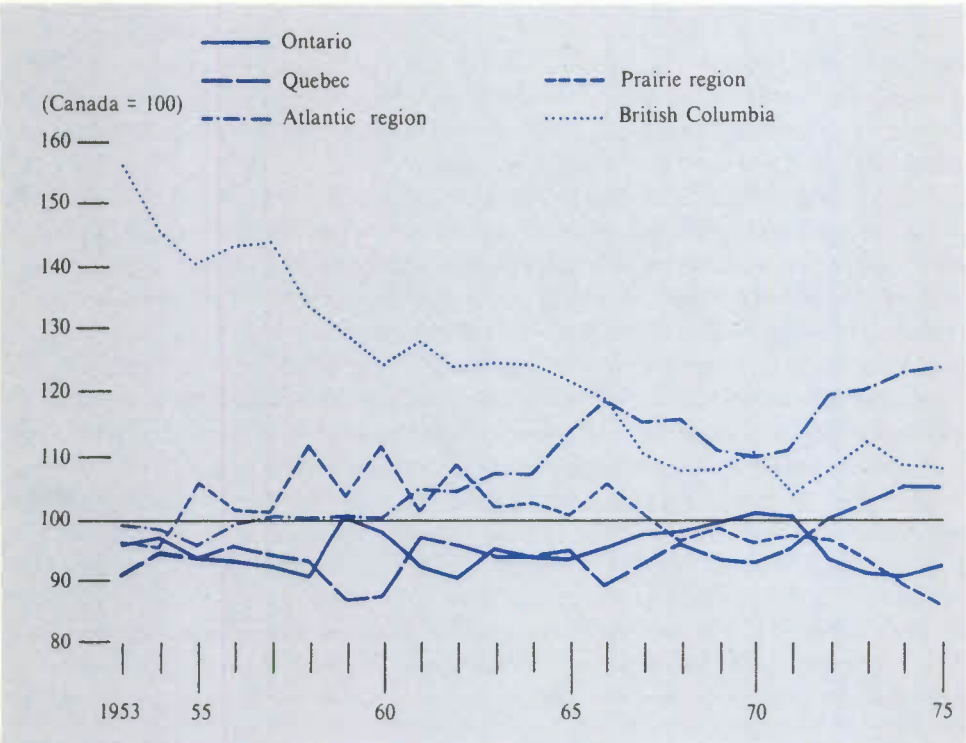
5 These disparities were even larger in 1974 prior to the surge in Ontario unemployment caused by 1975 layoffs in the automotive industry.

6 In particular, growth in unemployment insurance benefits has been very large in recent years, rising from $300 million in 1966 to approximately $3.1 billion in 1975 and $3.3 billion in 1976.

transfers has been financed by an even greater rise in the percentage of personal income used to pay taxes — from 11.7 per cent in 1965 to almost 19.0 per cent in 1975. The regional changes in government transfers per capita since 1953 have brought personal income per capita in British Columbia and in the Atlantic region closer to the national level (Chart 4-3). A large proportion of government transfers has gone to British Columbia in the past, partly because its share of old age pensioners was larger than its share of total population, although this situation may now be changing. Transfers have particularly favoured the Atlantic region, because a relatively larger proportion of its population qualifies for family allowances, old age pensions, and unemployment insurance. The recent surge in per capita income transfers going to the Atlantic region and Quebec coincide with the revision of the Unemployment Insurance Act in July 1971.

Chart 4-3

Index of Government Transfers per Capita, Canada, by Region, 1953-75



SOURCE Data from Statistics Canada.

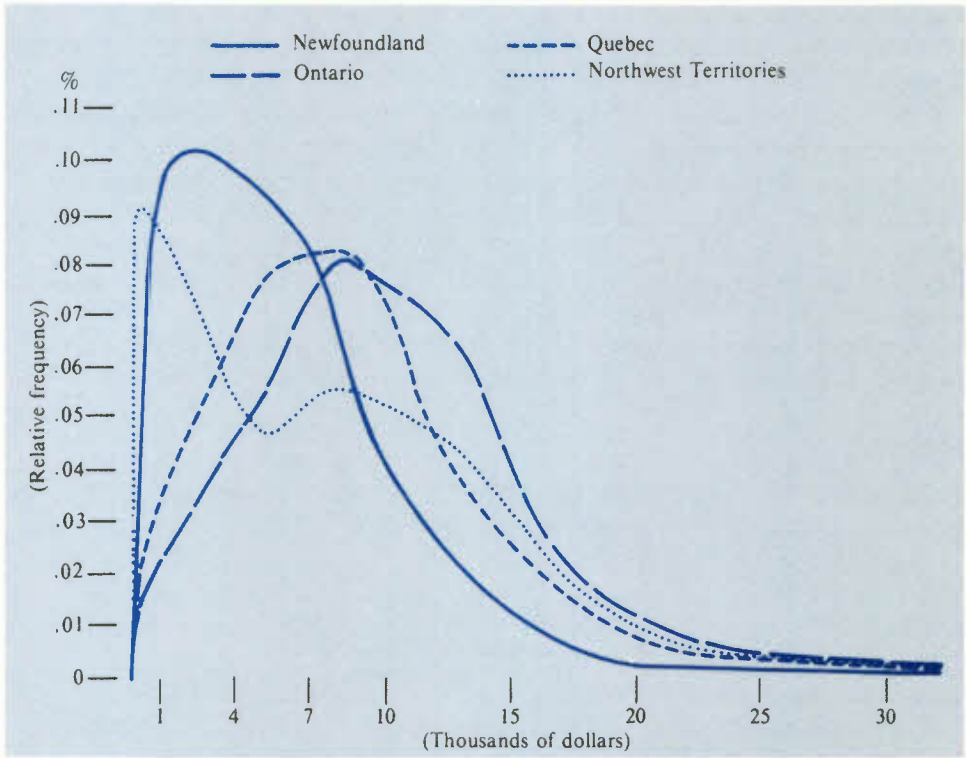
Regional Income Distributions

Ontario is doubly blessed compared with the Atlantic region; not only does it have higher income levels, but these are more evenly distributed within the population of the

province (Chart 4-4). In Ontario, as well as in Alberta, British Columbia, and the Yukon, the modal group — that is, the one with the greatest number of families — in 1970 comprised families receiving between $10,000 and $14,999 a year. The income distribution in this group of regions is fairly symmetrical and has a high mean and mode. It is interesting to note that the regions where mean income is highest and where the income distribution is most symmetrical are also those where net in-migration is greatest.

Chart 4-4

Regional Income Distributions, Selected Areas, 1970



NOTE The family income distribution for Alberta, British Columbia, and the Yukon resembles that of Ontario. Prince Edward Island, New Brunswick, Nova Scotia, and Saskatchewan have skewed distribution, which varies between that of Newfoundland and Quebec. Manitoba is similar to Quebec.

SOURCE Data from Statistics Canada.

In 1970, the modal income group in Newfoundland — the province with the most net out-migration — consisted of families receiving between $1,000 and $3,999 a year. The patterns of income distribution in Prince Edward Island, New Brunswick, and Nova Scotia were similar to that of Newfoundland, but they were somewhat more symmetrical. The modal group for these three provinces in 1970 consisted of families receiving between $4,000 and $6,999 a year. In Quebec, the modal income range

(between $7,000 and $9,999) was lower than in Ontario. Quebec's net in-migration during the 1961-71 period was almost zero. The income distribution that most closely resembles Quebec's is that of Manitoba, where net out-migration during this period was close to zero.

Saskatchewan's income distribution is probably the most variable of all Canadian provinces. In some years, it is very asymmetrical; for example, many of its farmers sustained losses in 1970, so that the income distribution in Saskatchewan resembled more that of Newfoundland than those of the other Prairie provinces. The most distressing income distribution is that of the Northwest Territories, which is bimodal. The population of the Northwest Territories is composed of a large number of Indians and Inuit, whose incomes are at the bottom of the income scale, and a smaller number of whites, whose earnings in 1970 predominantly ranged between $10,000 and $14,999 a year.

If poverty is defined as the situation where at least 70 per cent of family income is spent on such basic necessities as food, shelter, and clothing, then about 34 per cent of the families in Newfoundland and Prince Edward Island are poor, compared with 11 and 12 per cent in Ontario and British Columbia, respectively (Table 4-5). Although poverty is more prevalent in the Atlantic and Prairie regions than in Quebec and Ontario, these two provinces comprise more than half of Canada's population and also have more than half the country's poor families.

Because of the obvious correlation between the degree of asymmetry in a region's income distribution and its net out-migration, it is tempting to hypothesize that

Table 4-5

Regional Net Migration, Poverty, and Mean Family Income, Canada, by Province and Territories, Selected Years

	Newfoundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Yukon and Northwest Territories	Canada
						(Per cent)						
Net migration rate, 1961-71	−9.7	−6.4	−6.1	−8.7	0.4	9.7	−5.6	−13.6	4.2	22.3	5.6	4.0
Low-income families as a percentage of all families, 1971	33.7	34.0	23.0	24.1	17.7	11.2	19.4	27.9	17.9	12.0	n.a.	15.9
Regional distribution of low-income families, 1971	4.3	1.0	5.0	4.1	29.9	26.1	5.7	7.4	8.5	8.0	n.a.	100
						(Dollars)						
Mean family income, 1970	6,680	6,989	7,858	7,479	9,260	10,661	8,646	7,328	9,475	10,019	11,194 (Yukon) 8,449 (N.W.T.)	9,600

n.a. — not available.
SOURCE Data from Statistics Canada.

migration is the cause of the uneven income distribution in the Atlantic region and Saskatchewan. It could be suggested that the exodus of highly productive labour from a region raises the relative wages of the increasingly scarce skilled workers remaining behind and that it lowers the productivity of its unskilled labour, which then becomes relatively more abundant than before. Without denying the possible validity of this hypothesis, it is important to realize that the current asymmetrical patterns of regional income distributions did not take shape overnight; the Census data reveal that the patterns of 1961 were very similar to those of 1970.

Variations within Regions

It is important to realize that while a region may be poor on average, it may still have some pockets of economic activity where incomes are very high, generally related to special circumstances such as isolation, very rapid local growth, or a poorly functioning labour market. These points can be illustrated by turning to data on weekly earnings, by industry and by urban area. Whereas, among the provinces, Ontario has the highest average annual wages and salaries per employed peerson, it is British Columbia that has the highest weekly earnings.[7]

Data for all industries combined show that, although the unemployment rate is highest in Newfoundland, the rate of remuneration in that province is higher than in five other provinces (Table 4-6). The industrial mix, of course, differs from province to province, but weekly earnings in Newfoundland are higher in several industries. In particular, weekly earnings in metal mining and in pulp and paper are higher in that province than in Ontario or Quebec (Table 4-7). Newfoundland's labour market does not function well because many of its unemployed workers are fishermen scattered among the outports along the island coast, where it is not easy to recruit skilled labour for the commencement of large projects. The extent of unemployment and of labour force participation differs markedly within Newfoundland. In the very depressed North Shore region, participation rates are apparently well below 50 per cent and, of those relatively few persons seeking employment, perhaps one in five may be without a job.

Apart from Newfoundland's rather special circumstances, average weekly earnings are noticeably lower in the Atlantic region than in the other major regions. Within Quebec, average weekly earnings are noticeably higher in more remote areas such as Baie Comeau and Sept-Îles, but lower in older established areas such as Chicoutimi and Rouyn-Noranda. In Ontario, average earnings are higher in cities containing automobile assembly plants (Oshawa), or petrochemical plants (Sarnia), and in cities near a large U.S. industrial centre (St. Catharines). In the Prairies, wages are

7 The difference arises from the fact that these data are the result of different surveys by Statistics Canada. See *The Labour Force*, Cat. No. 71-001, for estimates of employed persons obtained from a survey of 30,000 households; *Estimates of Labour Income*, Cat. No. 72-005, for estimates of wages and salaries on a National Accounts basis; and *Employment, Earnings and Hours*, Cat. No. 72-002, for estimates of weekly earnings obtained through a mail survey of large business establishments.

Table 4-6

Unemployment and Average Weekly Earnings, Canada, by Region and Major Urban Area, June 1976

	Unemployment rate (seasonally adjusted)	Weekly earnings[1]
	(Per cent)	(Dollars)
Atlantic region	11.3	202
Newfoundland	12.4	224
St. John's		204
Corner Brook		238
Prince Edward Island	12.4	162
Charlottetown		178
Nova Scotia	10.5	194
Halifax		193
Sydney		215
Truro		164
New Brunswick	11.5	202
Saint John		219
Edmundston		210
Quebec	7.8	224
Sept Îles		326
Baie Comeau		286
Chicoutimi		248
Rouyn-Noranda		257
Montreal		226
Ontario	6.3	231
Sudbury		256
Cornwall		225
Oshawa		278
Toronto		230
Hamilton		237
St. Catharines		261
Sarnia		291
Prairie region	4.2	224
Manitoba	4.5	207
Winnipeg		196
Saskatchewan	5.0	215
Regina		212
Alberta	3.8	238
Calgary		231
British Columbia	8.8	262
Vancouver		255
Prince George		271
Kamloops		238
Victoria		226
Yukon Territory	n.a.	316
Northwest Territories	n.a.	268
Canada	7.0	229

1 Industrial composite – annual average of larger firms.
SOURCE Data from Statistics Canada.

Table 4-7
Average Weekly Earnings in Selected Industries, by Province, June 1976

	Average weekly earnings
	(Dollars)
Forestry	
Newfoundland	286
New Brunswick	169
Quebec	247
Ontario	308
British Columbia	342
Metal mining	
Newfoundland	347
Quebec	342
Ontario	297
Manitoba	275
British Columbia	340
Durable manufacturing	
Nova Scotia	219
New Brunswick	205
Quebec	238
Ontario	266
Manitoba	219
Saskatchewan	244
Alberta	254
British Columbia	294
Food and beverages	
Newfoundland	164
Nova Scotia	171
New Brunswick	159
Quebec	225
Ontario	237
Manitoba	225
Alberta	234
Saskatchewan	240
British Columbia	246
Pulp and paper	
Newfoundland	337
New Brunswick	306
Quebec	309
Ontario	319
British Columbia	335
Smelting and refining	
Quebec	306
Ontario	288
Chemicals	
Quebec	252
Ontario	267
Alberta	300
British Columbia	263

SOURCE Data from Statistics Canada.

Table 4-8

Alternative Measures of Regional Income Disparities, by Province and Territories, 1970[1]

	Newfoundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Yukon and Northwest Territories
						(Canada = 100)					
Regional indexes:											
Market income per capita[2]	55 (56)	60 (57)	75 (75)	68 (68)	88 (89)	120 (114)	92 (96)	70 (96)	100 (104)	109 (110)	101 (101)
Personal income per capita	63	67	77	72	89	118	93	72	99	109	95
Personal disposable income per capita	68	72	79	75	90	116	94	75	100	109	93
Average family income	70	73	82	78	96	111	90	76	99	104	99
			(77)		(94)	(109)		(100)		(105)	(n.a.)
Average family disposable income[3]	74	79	84	81	98	109	91	79	99	104	97
Family disposable purchasing power											
Excluding housing cost differential[4]	70	76	82	78	98	110	94	80	101	101	69
Including housing cost differential	75	77	83	87	102	106	97	85	101	97	70

n.a. – not available.

1 All figures in parentheses are for 1974.

2 Personal income minus transfers to persons, divided by population as of June 1, 1970.

3 Family income adjusted by the ratio of disposable income to personal income in each region.

4 Family disposable income deflated by inter-city partial consumer price index: Winnipeg = 100, May 1971. The price index for the Yukon and Northwest Territories was assumed to exceed that of Edmonton by 48 per cent.

SOURCE Estimates by the Economic Council of Canada, based on data from Statistics Canada; and Gemini North Limited, *Social and Economic Impact of Proposed Arctic Gas Pipeline in Northern Canada,* Book 1, May 1974, p. 506.

noticeably higher in Alberta than in Saskatchewan or Manitoba. In British Columbia, average earnings are higher in Vancouver and in northern interior cities such as Prince George than elsewhere. Average earnings are even higher in the Yukon and Northwest Territories because workers are reluctant to locate in the North and so must be offered higher wages as an attraction.

Alternative Measures of Regional Income Disparities

Regional income disparities appear largest if data on market income per capita are used (Table 4-8). This measure is interesting in that it shows the disparities in earning power.[8] As might be expected, Ontario leads the nation while, at the other end of the spectrum, the earning power of the average Newfoundlander in 1970 was only 55 per cent of the national average and substantially less than half that of the average Ontarian. Market income data for both 1970 and 1974 illustrate how extremes in

8 To the extent that lower participation in the labour force is voluntary, lower market income may partly reflect disparities in the willingness to earn such income rather than disparities in the power to earn it.

business conditions can affect regional earning power per capita. In particular, 1970 was the poorest year for farm income in the Prairies since the 1961 recession, whereas 1974 was the peak of the boom in grain exports generated by the recent worldwide food shortage and was the year in which the sharp decline in automobile exports led Ontario into one of its worst recessions. While fluctuations in farm income have a substantial effect on the market incomes of all three Prairie provinces, the most extreme variations occur in Saskatchewan, where aggregate net farm income rose from $185 million in 1970 to $1,094 million in 1974. In a depressed year, earning power in Saskatchewan is similar to that in some of the Atlantic provinces. Even in 1974, its earning power per capita did not reach the Canadian average.

It is important to consider how much of the regional income disparities remain if regional differences in income transfers, personal taxation, and living costs are taken into account and if income per family is used rather than income per capita.

Transfers, which constitute the essential difference between market income and personal income, generally have the effect of reducing interregional income differences. In 1970, they narrowed the income gap between Newfoundland and Ontario residents from 65 percentage points for market income to 55 points for personal income (Table 4-8). Per capita transfers in 1970 ranged from a high of $433 in Newfoundland, where they constituted over 40 per cent of personal income, to $333 in Ontario, $306 in Quebec, and only about $140 in the Yukon and Northwest Territories. While government transfers narrowed the disparities between the Atlantic region, Manitoba, Saskatchewan, and Ontario, they made little difference to the relative positions of personal incomes in Quebec, Alberta, or British Columbia.

Since per capita transfers to persons in the North in 1970 were well below half the Canadian average, the transfer programs had the effect of pulling personal income per capita in this region down to below the Canadian average. Northern government and company employees, most of whom live in the Yukon, receive subsidies, whereas the Inuit and Indians, most of whom live in the Northwest Territories, receive very little subsidy unless they are on welfare. Hence transfers increase income disparities among people within this region. The situation is changing, however; although transfer income per capita is still lower in the North than in any other region, transfers to persons quadrupled in the Yukon and Northwest Territories between 1970 and 1974, partly as a result of expanding the unemployment insurance program.

A comparison of disposable income per capita with personal income per capita shows that the progressive income tax system generally works to reduce regional income disparities. In 1970, more than 86 per cent of personal income in Newfoundland and Prince Edward Island was disposable, whereas only 79.3 per cent in Ontario and 80.9 per cent in British Columbia was disposable. Hence, even before interprovincial equalization payments are made, it appears that high-income provinces are bearing the largest burden of personal income tax. Taxation apparently hits the Yukon and Northwest Territories fairly hard. Only 79.7 per cent of their personal income was disposable, which put the North second only to Ontario in the share it paid in taxes in 1970. This proportion was about 78 per cent during the years 1971-75. This happens partly because the highly paid mining and government

employees in the North receive a very large share of those regions' incomes, and the progressive income tax system cuts deeply into their earnings.

The number of persons per family and the ratio of children to working-age people are higher in the low-income regions. Since there are some returns to scale in family living, and since children need less income than adults, the situation in these regions is not truly as bad as the figures on disposable income per capita would suggest. The range of income disparities between Newfoundland and Ontario residents, in comparison with the average for all Canadians, falls from 55 percentage points for personal income per capita to only 41 points for income per family (Table 4-8). If the proportion of family income that is disposable is the same as that of personal income generally, then the maximum range in average disposable family incomes between provinces is only 35 percentage points.

A dollar of disposable income in 1971 had greater purchasing power in cities like Winnipeg,[9] where the cost of living was low, than in cities like Toronto or Vancouver, where the cost of housing, for example, was some 40 to 50 per cent above Prairie levels.[10] Except for housing, the cost of living in Montreal and in the capital cities from Ottawa to Edmonton differed by no more than 3 percentage points. However, the nonhousing costs of living in the capitals of the Atlantic region exceeded those of Winnipeg by 6 to 9 points whereas in Vancouver they exceeded them by about 7 points. Since these nonhousing cost differentials probably extend to the areas surrounding these cities, it is reasonable to surmise that, in the Atlantic region and in British Columbia, the cost of living, excluding housing, is 6 to 8 points higher than in the rest of the country. In the Atlantic region and in the interior of British Columbia, there are substantial transportation costs, which cause retail prices to be higher than in the more central regions. If regional family disposable income is deflated by the relevant city's nonhousing price index, the differential between Newfoundland and Ontario families widens to roughly 40 percentage points, and the average purchasing power of families in British Columbia becomes comparable to that of families in Alberta and closer to that of Quebec families. If costs of living in the North exceed those of southern regions by some 48 per cent,[11] then average purchasing power per family is lower in the North than in Newfoundland.

Housing costs are much more difficult to assess regionally because they differ dramatically from one urban centre to another and from one period to another. Our estimates show that, in 1971, housing costs in Toronto and Ottawa exceeded those in Winnipeg by 46 and 19 per cent, respectively, but that they were not nearly as high in the rest of Ontario as they were in Toronto. In Regina and Saskatoon, housing was inexpensive during the depressed year 1970-71 but, by 1976, improved economic

9 In the discussion of regional differences in the cost of living, Winnipeg was chosen as the base point. See Statistics Canada, "Canadian Inter-City Retail Price Comparisons: A Study of Place-to-Place Relationships between Selected Urban Centres as of May 1971," *Prices and Price Indexes*, Cat. No. 62-002, 1972.

10 However, by 1976, the burst of petrochemical-related investment in Alberta had driven house prices in Calgary and Edmonton up to levels comparable to those in Toronto.

11 See Gemini North Ltd., *Social and Economic Impact of the Proposed Arctic Gas Pipeline in Canada*, Book 1, May 1974, p. 506.

conditions had increased those housing prices relative to those in Ontario, although the increase was less than in Alberta. The fact that housing costs were much lower in Saint John than in Halifax suggests that the average purchasing power of New Brunswick families was closer to that of Nova Scotia families than indicated by per capita data. Given the fact that the proportion of disposable income is lower, and the cost of living higher, in British Columbia than in Quebec and that the average Quebec family is larger, it is possible to argue that the purchasing power of the average family in British Columbia is lower than that of the average Quebec family.

Differences in Employment Opportunities

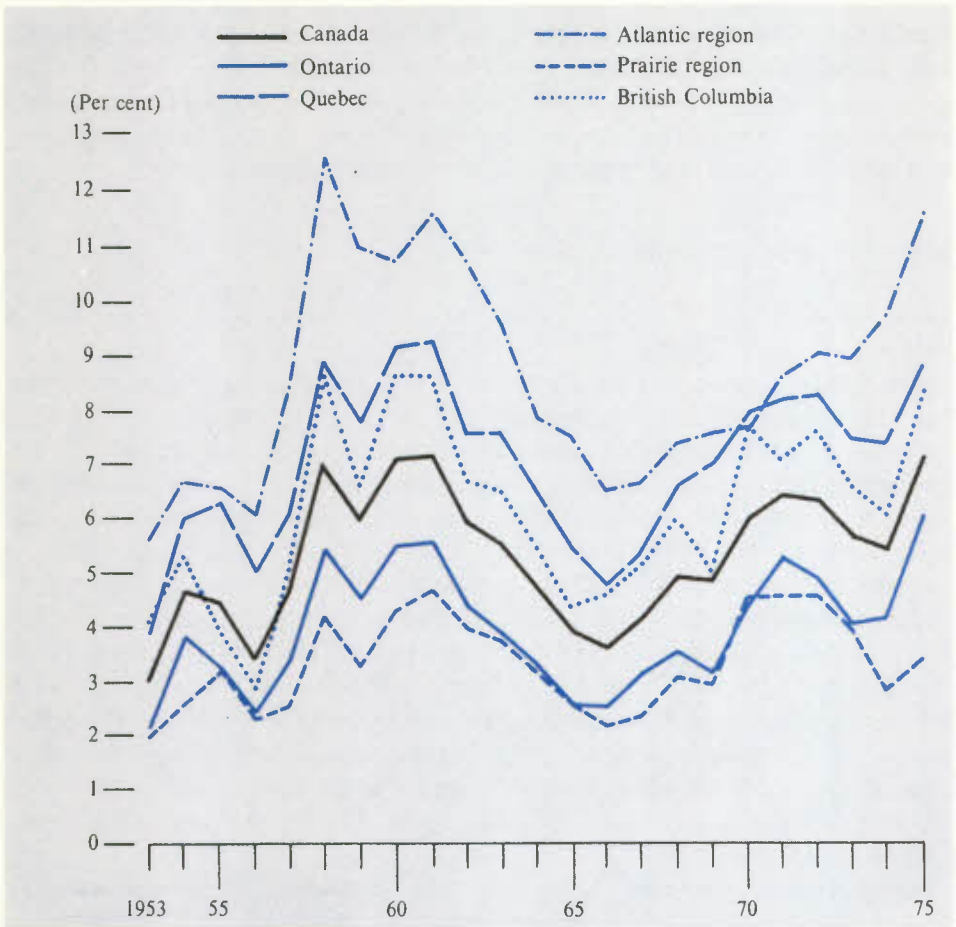
Unemployment

Giving a man a job solves a lot of problems. Unfortunately, the unemployment rates show that the success with which people find and hold jobs differs markedly from region to region (Chart 4-5). The pattern of regional disparities in unemployment is as persistent as that of differences in income per capita, and it favours the same regions, with only one exception; whereas income per capita is higher in British Columbia than in the Prairies, the reverse is true for unemployment. From 1953 to 1975, the unemployment rate in British Columbia averaged 6.0 per cent, nearly twice the rate of 3.3 per cent recorded in the Prairies. The unemployment rate in the Atlantic region was the worst, at 8.6 per cent, while the second worst rate was in Quebec, at 7.0 per cent. A point that is less obvious is that, when unemployment across Canada increases, it increases most in the regions where it is already the highest. Past experience shows that an increase of 2 percentage points in the Canadian unemployment rate is typically accompanied by an increase of roughly 3.7 points in the Atlantic region, 2.6 points in Quebec, 1.3 points in Ontario, 1.7 points in the Prairie region, and 1.9 points in British Columbia (Table 6-1).

The unemployment rate reflects two factors: the number of workers who experience some unemployment at any given time during the year, and the duration of the unemployment period experienced by individual workers. Precise and accurate data on duration, by province, are unavailable. However, data from Unemployment Insurance Commission records give a reasonable indication, though they pertain only to the duration of unemployment up to the time the monthly survey is taken by Statistics Canada rather than the duration of completed spells. Among the people receiving unemployment insurance benefits, the likely duration of unemployment differs markedly from one region to another (Chart 4-6). Unemployment insurance benefits since mid-1971 have been payable for a greater number of weeks in regions like Newfoundland, where unemployment is higher than the Canadian average. The unemployment rates and the time distribution of unemployment indicate that the probability of finding a job is much lower in the Atlantic region than in Ontario or Alberta. However, recent evidence leaves room for hope, because the relationship between the level of unemployment in the Atlantic region and in the rest of Canada seems to have shifted downward since 1969. The actual levels of unemployment

Chart 4-5

Unemployment Rate, Canada, by Region, 1953-75



SOURCE Data from Statistics Canada.

experienced in the Atlantic region from 1970 to 1975 are a little lower than would have been predicted by the relationships that existed from 1953 to 1969.[12]

The Importance of Seasonal Unemployment

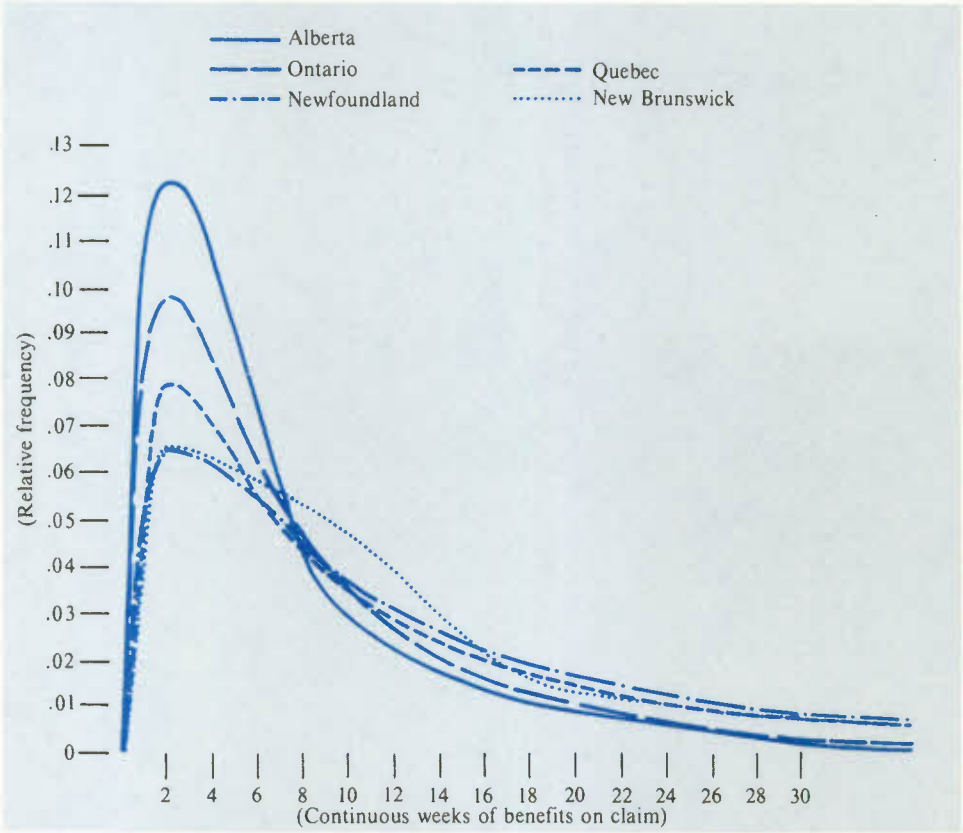
Differences in the scope of seasonal variations constitute one of the major causes of regional disparities in unemployment. Between one-quarter and one-third of Canadian unemployment is seasonal, as is at least one-third of Atlantic and Prairie unemployment. The problem arises not so much because one region's climate is more

12 This change is analysed further in Chapter 8.

severe than that of another, but because a larger proportion of the economy of some regions — particularly the Atlantic and Prairie regions — consists of industries that are especially vulnerable to seasonal changes, notably fishing, farming, and forestry.

Chart 4-6

Distribution of Unemployment Insurance Claimants, by Duration of Benefits, Selected Provinces End of December 1974

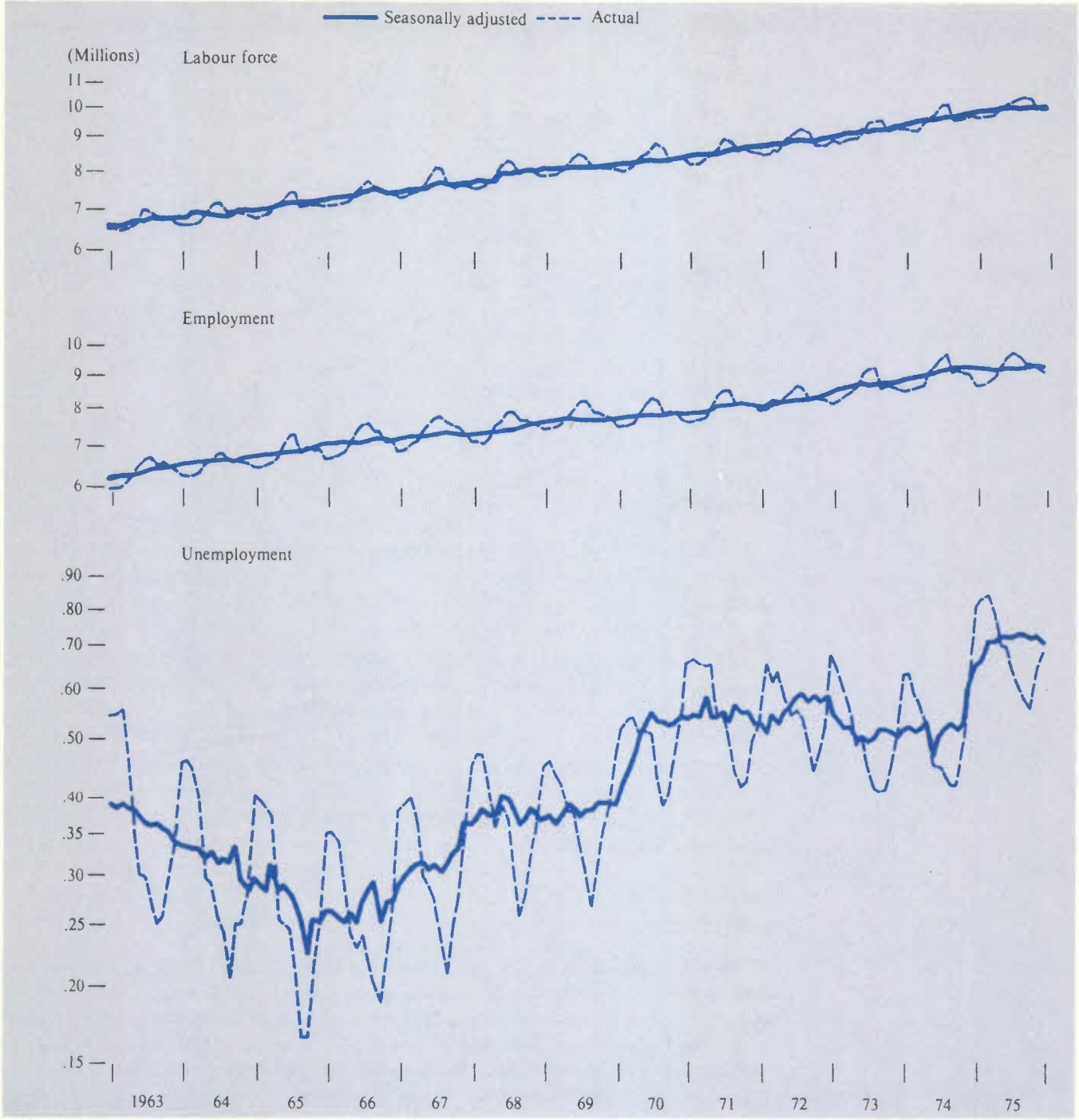


SOURCE Data from Statistics Canada.

An examination of actual and seasonally adjusted time series of employment, unemployment, and labour force data gives a good illustration of this problem (Chart 4-7). For Canada as a whole, there are very regular fluctuations in employment, which reach their peak in July and August and their trough in January and February. The growth path of the labour force shows that the supply of labour also moves seasonally to accommodate some of the fluctuations in employment. However, while the size of the labour force swells easily during July and August, when students are

Chart 4-7

Labour Force, Employed and Unemployed, Canada, 1963-75



SOURCE Data from Statistics Canada.

released from schools and universities, it does not decline as readily during January and February, because many breadwinners are still seeking work during those months, even though inclement weather forces the shut-down of certain economic activities. As a result, the level of unemployment rises to a peak each January and February from a trough at the end of the previous summer, especially during the boom years of 1965-66, when seasonal fluctuations in unemployment accounted for a very large share of total unemployment. Hence a large part of Canadian unemployment cannot be eliminated without first overcoming the seasonality problem.

The seasonality of unemployment differs markedly from province to province (Chart 4-8). It is particularly severe in Prince Edward Island, whose economy is dominated by potato farming, tourism, and fishing — activities that are closely tied to the seasons. The situation is not much better in Newfoundland. Ontario has the least seasonal fluctuation in employment.

It is apparent that, except for the Prairies, the percentage of seasonal unemployment is largest in those regions with the highest total unemployment (Table 4-9). In other words, it is partly the greater prevalence of seasonal unemployment in the Atlantic region, Quebec, and British Columbia that makes unemployment rates higher in those regions than in Ontario. However, the relative importance of seasonal unemployment has fallen slightly since 1966. Nevertheless, substantial nonseasonal unemployment disparities persist, and their regional ranking is exactly the same as for total unemployment.

Table 4-9

Ratio of Seasonal to Total Unemployment, Canada, by Region, 1953-75 and 1966-75

	1953-75			1966-75
	Total unemployment	Seasonal unemployment	Percentage of total unemployment that was seasonal	Percentage of total unemployment that was seasonal
	(Per cent)			
Atlantic region	8.6	3.4	40	33
Quebec	7.0	2.1	30	23
Ontario	3.9	1.0	26	21
Prairie region	3.3	1.6	48	33
British Columbia	6.0	1.6	27	21
Canada	5.3	1.6	30	24

SOURCE Richard Beaudry, "Le chômage saisonnier et l'explication des disparités interrégionales de chômage au Canada," Economic Council of Canada Discussion Paper 84, 1977.

Chart 4-8

Index of Employment, by Region and by Province, 1971-75

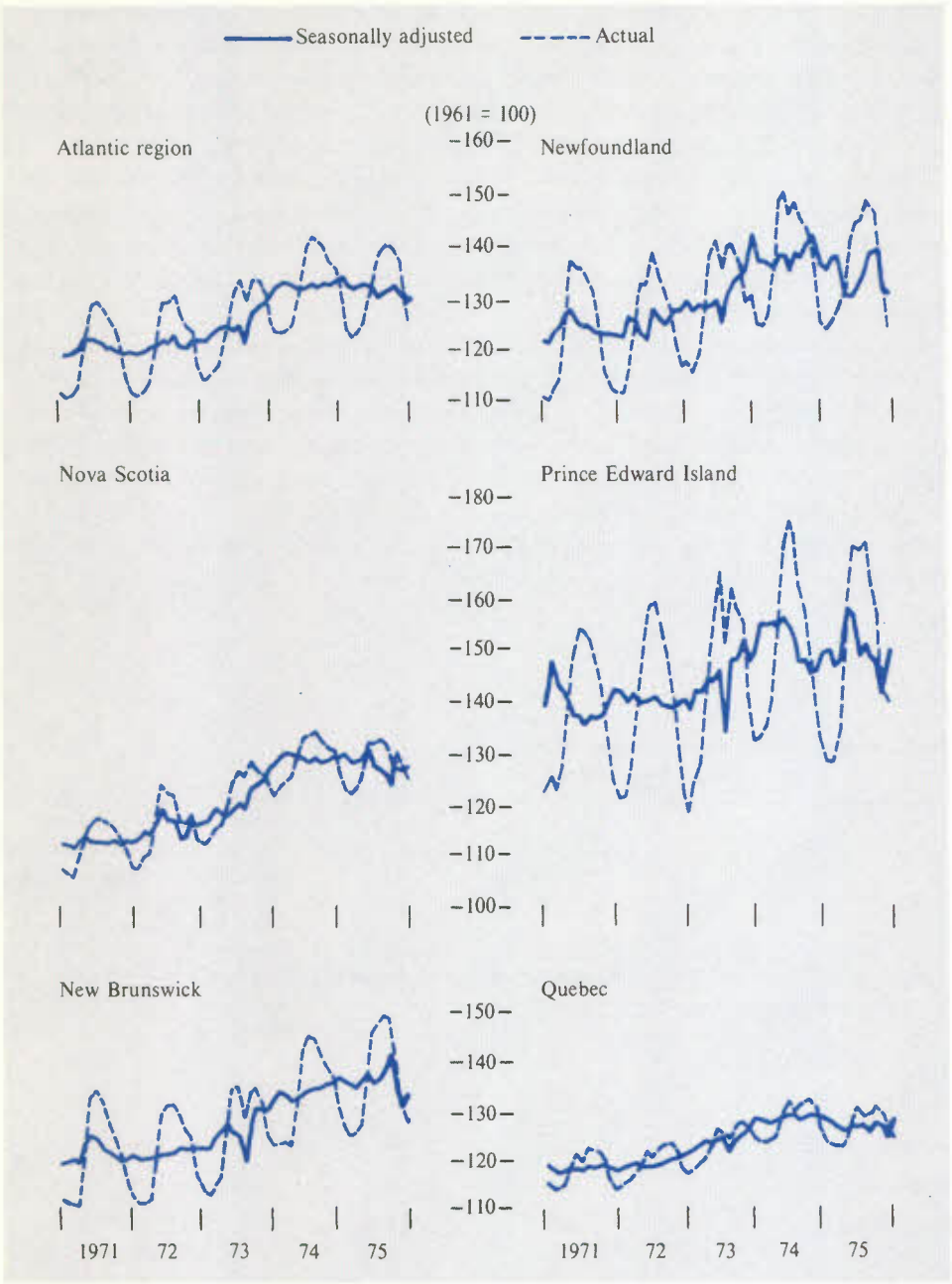
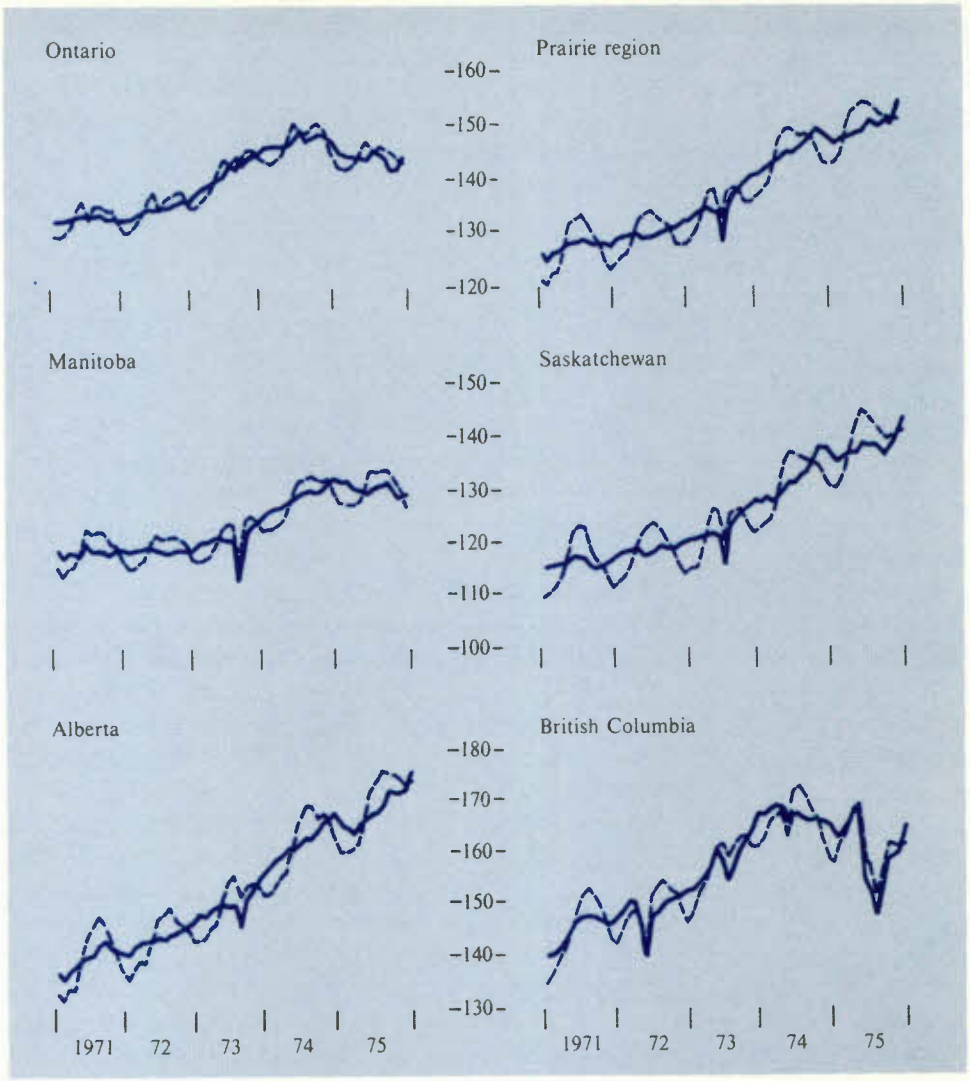


Chart 4-8 (concl'd.)



SOURCE Data from Statistics Canada.

A breakdown by industry of the sources of seasonal unemployment in each region during the 1966-75 period shows that the primary industries other than agriculture — fishing and forestry, for example — and construction are together responsible for most of the seasonal unemployment (Table 4-10). The introduction of technology to extend the construction and logging seasons could make a useful contribution towards reducing seasonal unemployment, and technical advances may already account for some of the reduction in seasonality apparent over the past decade.

Table 4-10

Breakdown of the Source of Seasonal Unemployment, by Industry, Canada, by Region, 1966-75

	Atlantic region	Quebec	Ontario	Prairie region	British Columbia	Canada
			(Per cent)			
Agriculture	4.5	4.3	6.2	6.3	6.7	5.3
Other primary industries	22.8	15.3	3.1	6.3	13.3	12.2
Manufacturing	18.2	23.9	31.2	12.5	20.0	22.9
Construction	27.3	28.2	34.4	31.2	26.7	29.8
Transportation, communication, and utilities	13.6	10.9	6.3	12.5	6.7	9.9
Trade	4.5	6.5	9.4	12.5	13.3	8.4
Services	9.1	10.9	9.4	18.7	13.3	11.5
Total	100.0	100.0	100.0	100.0	100.0	100.0

SOURCE Richard Beaudry, "Le chômage saisonnier et l'explication des disparités interrégionales de chômage au Canada," Economic Council of Canada Discussion Paper 84, 1977.

Social Indicators and Other Social Measures

Economic and demographic variables do not tell the whole story about regional differences in the welfare of individuals. The analysis of certain social phenomena will, in effect, verify whether the conclusions drawn from the economic data are valid (Table 4-11). Social indicators — such as the crowding index in housing, infant mortality, and life expectancy — are direct measures of some aspects of human welfare. Other social measures, such as the number of telephones per 100 inhabitants or physicians per 100,000 inhabitants, suggest that there are regional differences in access to household gadgetry and medical services. These measures are not accepted as social indicators, however, because it has not yet been demonstrated that human welfare is closely related to them. In particular, there is doubt as to whether a person's state of health is directly related to the number of doctors, and it has been demonstrated that teachers' training and access to good physical facilities are not as important as the students' peer group and socio-economic background in determining the effectiveness of education.[13] These social measures may nevertheless serve as warnings that some factors do differ regionally, although the implications of these differences are not clear.

The extent of crowding in housing and the distribution of telephones show that, while housing is more expensive in Ontario, British Columbia, and Alberta than in Quebec and the Atlantic region, it is also better, on average.

As for health standards, Ontario and the Prairies seem to be the most favoured regions. Infant mortality is lowest in Ontario, and life expectancy is greatest in

13 See, for example, Ivan Illich, *Medical Nemesis* (Toronto: McClelland and Stewart, 1975); and Vernon Henderson, Peter Mieszkowski, and Yvon Sauvageau, *Peer Group Effects and Educational Production Functions* (Ottawa: Economic Council of Canada, 1976).

the Prairies. Although British Columbia has a high infant mortality rate, life expectancy there is above average for persons beyond infancy. After the Northwest Territories, Newfoundland and Saskatchewan appear to have the poorest record on infant mortality. Note that, between 1971 and 1973, great progress was achieved in reducing the infant mortality rate, most notably in the North, the Atlantic region (except New Brunswick), and Alberta. Quebec and Nova Scotia have the lowest life expectancy at birth, although Quebecers and Nova Scotians spend an above-average share of their personal income on physicians' services. Newfoundland, Prince Edward Island, and New Brunswick have attracted (or retained) relatively fewer doctors than the more wealthy, urbanized provinces. Medical services appear to be far more scarce in Newfoundland than in other provinces.

With regard to education, Ontario has the largest proportion of young people in school at age 16, whereas Alberta has the largest proportion enrolled in postsecondary education.[14] Quebec had only 29 per cent of its 17-year-old boys and 14 per cent of its 17-year-old girls in school in 1961 — a much smaller proportion than in any other province. Following the changes in its education system during the 1960s, Quebec had the fourth largest percentage of 18-to-24-years-olds in postsecondary and university education by 1971-72, following Alberta, Ontario, and Nova Scotia.

Alberta and British Columbia are the provinces where teachers have the highest incomes and where the highest percentage of them have university degrees; Ontario's university professors were paid the most. Among the Atlantic provinces, Nova Scotia appears to have the teachers with the highest salaries as well as the largest percentage of students taking higher education. Whereas per capita expenditures on education, rates of enrolment, and teachers' salaries and training seemed to be below the national average in the Atlantic region, these provinces all had above-average financial aid per student enrolled in postsecondary institutions and universities. Quebec had relatively low per capita expenditures and rates of enrolment in 1960, but these have now increased. Hence measures have been taken to reduce regional disparities in education. Those born during the postwar baby boom, however, who will be dominating the labour force for the rest of this century, have now finished their studies, and it seems likely that those raised in Quebec and the Atlantic region have been disadvantaged to some extent by the regional disparities in education that existed in the two decades following the Second World War.

These measures of housing, health, and education standards reinforce the findings on regional disparities in income and show that the standard of living is higher in Ontario and western Canada than in Quebec and the Atlantic region. Quebec may have been particularly disadvantaged in education in the past, but the situation has considerably improved over the last decade.

There is, however, a set of social measures that serves as a warning that rapid economic growth and large in-migration may involve some high social costs to be borne by a few unfortunate individuals. While the Atlantic region is a low-income area, from which people are migrating, it seems to enjoy the lowest rate of social disruption

14 Secondary education ends at grade 11 in Newfoundland and Quebec, at grade 13 in Ontario, and at grade 12 in other provinces.

Table 4-11

Social Measures, Canada, by Province and Territories, Selected Years, 1966 to 1976

	Newfoundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Yukon	Northwest Territories	Canada
Housing and telephones							(Persons per room)						
Crowding index, 1976	.74	.60	.59	.62	.62	.55	.60	.58	.57	.55			.58
							(Number per 100 inhabitants)						
Telephones, 1975	36.1	41.0	47.5	46.9	55.0	61.4	55.9	51.3	62.4	59.9	50.4	45.0	57.2
Health							(Number of deaths)[1]						
Infant mortality rate, 1972-74	19.3	17.7	15.6	15.9	16.5	14.2	17.0	19.3	15.6	16.5	22.7	42.8	15.9
Average life expectancy, 1971							(Years)						
Males at birth	69.3	69.3	68.7	69.1	68.3	69.6	70.2	71.1	70.4	69.9			69.3
Males at age 20	51.9	52.0	51.0	51.6	50.7	51.6	52.7	53.8	52.9	52.3			51.7
Females at birth	75.7	77.4	76.0	76.4	75.3	76.8	76.9	77.3	77.3	76.7			76.4
Females at age 20	57.9	59.4	57.8	58.4	57.2	58.4	58.9	59.6	59.2	58.5			58.2
Active free-practice physicians, 1971	44.3	81.3	93.0	67.2	95.4	107.4	(Number per 100,000 inhabitants) 89.7	88.3	101.8	125.8			100.4
Index of physicians' fees ("price"), 1973	88	91	97	87	92	100	(Ontario = 100) 100	94	116	123			
Expenditures on physicians as a percentage of personal income, 1971	1.51	1.86	1.75	1.48	1.71	1.66	(Per cent) 1.78	1.58	1.82	1.67			1.68
Education													
Percentage of population aged 16 attending elementary and secondary schools, 1974-75													
Male	74.9	62.1	76.9	75.9	81.5	88.7	84.4	82.6	85.3	86.5	74.5	63.8	84.3
Female	74.0	79.2	83.3	80.8	81.9	88.5	86.2	87.2	89.6	88.9	69.5	85.3	85.7
Percentage of 18-24 age group enrolled full-time in post-secondary institutions, 1971-72	13.0	17.6	19.4	16.3	18.7	19.5	17.3	16.6	20.5	15.9			18.5
Federal and provincial aid per student enrolled in post-secondary institutions, 1971-72	1,099	740	778	712	378	473	(Dollars) 480	502	641	288			475
Per capita expenditure on education, 1973	400	416	373	333	464	449	410	379	440	361			436
Average salary of university teachers, 1972-73	15,158	14,314	16,111	14,932	16,168	18,047	15,737	17,243	18,026	17,919			17,184
"Warning" statistics Divorce rate index, 1974	271	381	868	519	889	775	(Index)[2] 756	489	1,232	1,169	963[2]		855
Offence rate (both sexes)	6,296	8,001	7,520	6,054	5,329	8,882	(Number of offences)[3] 9,372	10,050	12,471	12,732	33,331	31,929	8,459
Standardized suicide rate, 1966-68	2.57	8.30	8.19	4.81	7.13	10.39	(Number per 100,000 inhabitants) 10.82	8.72	10.06	13.25	27.38	10.63	9.31

1 The infant mortality rate is the number of deaths of infants (under one year old) per 100,000 live births.

2 The divorce rate index is $100{,}000 \times \frac{\text{number of divorces}}{\text{half the number of married persons}}$.

Statistics Canada no longer gives separate divorce rates for the Territories; but, in 1971, it reported a divorce rate index of 1,164 for the Yukon (the highest rate of any province or territory in Canada at that time) and only 80 for the Northwest Territories.

3 The offence rate is the number of offences reported per 100,000 population, aged seven and over.

SOURCE Based on data from Statistics Canada; and Robert G. Evans, "Beyond the Medical Marketplace: Expenditure, Utilization and Pricing of Insured Health Care in Canada," in Spyros Andreopoulos, ed., *National Health Insurance: Can We Learn from Canada?* (New York: Wiley, 1975).

and stress, to the extent that statistics on divorce, crime, and suicide, are indicative of such things.[15] The most troubled region, from this point of view, seems to be the Yukon, followed by the Northwest Territories, British Columbia, and Alberta. Since these are the regions with the greatest in-migration, it is possible, then, that migration and rapid economic growth may have higher social costs than is commonly believed. Perhaps the migration process can be improved so that it has a less disruptive effect on society.

Conclusion

While regional differences in family purchasing power are not nearly as large as disparities in earning power per capita, our analysis shows that no amount of legitimate "tinkering" with average income figures will make interregional income disparities disappear. Ontario undeniably has the highest average real income, exceeding levels in the Atlantic region by some 20 to 30 per cent. Economic expansion and population growth have been very rapid in British Columbia, Alberta, and Ontario; as a result, their economic and political power base has been increasing relative to other regions for the last several decades. While incomes per capita are higher than average in these three provinces, Ontario apparently suffers less social disruption than Alberta or British Columbia. Moreover, it is still clearly the leader where purchasing power is concerned. In contrast, British Columbia has higher average weekly earnings in some industries, but this advantage is offset by higher rates of unemployment and living costs than prevail in Ontario. In addition, these three provinces have the most symmetrical income distributions in Canada. Other social indicators — in housing, health, and education — tend to confirm that they enjoy a higher standard of living than other provinces.

The Prairie region is rather heterogeneous. Saskatchewan's farm income is variable and large relative to the rest of its economy. In poor years, its income distribution has more in common with that of Newfoundland than with that of neighbouring Alberta or Manitoba. The centre of population is moving westward, in that Winnipeg, which dominated the Prairies during the expansionary period of the 1920s, has now been eclipsed by the burgeoning Edmonton-Calgary economic axis based on energy and petrochemicals. As a result, Alberta has the highest average real incomes in the Prairie region.

Quebec has a serious unemployment problem, although it is not as bad as that of the Atlantic region. While income per capita is lower in Quebec than in the Prairies and British Columbia, its purchasing power per family is not very much less, and may even be higher, depending on whether housing costs are included in the price index used.

15 As symptoms of stress and social disruption, these statistics must be interpreted with care. They are influenced by many other factors as well. The standards of law enforcement, for example, differ regionally. Also divorce rates in predominantly Roman Catholic areas can be expected to differ from those in Protestant areas. Divorce rates are also influenced by marriage rates. Whereas the Northwest Territories have a low divorce rate, this situation probably reflects more on the prevalence of common-law marriages than on the state of marital bliss.

There were more children per family in 1971 in Quebec than in Ontario and the West, but its reduced birth rate suggests that, in the near future, it will have fewer children per family and a smaller youth dependency ratio. As a result, its income per capita can be expected to converge towards that of the western provinces.

An important matter is Quebec's relatively slow rates of growth in population and employment. Quebec's share of the national population has declined about 2.5 percentage points since 1947 and is now back to what it was in 1921. Population projections indicate a further decline of some 1 to 4 points by the year 2001. Since the francophone population is concentrated in Quebec, these figures have implications for the ability of French-speaking Canadians to make their voices heard in a federation whose population is slowly becoming more anglophone.

Whether one looks at income per capita or purchasing power per family, the Atlantic region has the lowest incomes. Newfoundland and Prince Edward Island are in an unfavourable position relative to Nova Scotia and New Brunswick. This low standard of living is confirmed by social indicators on housing, health, and education. The Atlantic region also has the poorest (least symmetrical) income distributions, apart from that for the dual society in the Northwest Territories. Its wages and salaries per employed worker are the lowest, and its unemployment rates are the highest. In a period of recession, its unemployment rate rises the most, and its unemployed workers stay out of work the longest. Since its workers have a lower incentive than others to enter the labour force, it is not surprising that Atlantic participation rates are so low.

In sum, regional disparities in incomes and job opportunities are indeed substantial and remarkably persistent in spite of the amount of labour migration that has taken place over the years.

5

BEHIND PRODUCTIVITY DIFFERENCES

From international experience it is known that the state of economic development of a country depends largely on the productivity of its industries, on its industrial structure, on capital investment in machinery and equipment as well as plant facilities, on education and the quality of the labour force, on the adoption of new technology, on transport costs, and on access to natural resources. Although it is reasonable to assume that all these factors have a bearing on the state of Canadian regional developments, how important is each one? Do not all of Canada's provinces have access to the same technology? Do any of the low-income regions really suffer from a capital shortage? Do educational standards differ enough among provinces to affect labour productivity in a significant way? Are variations in agricultural productivity and access to natural resources still critical elements in regional economic development? And do the regional characteristics of industrial structure not explain most of the productivity differences?

For many years the federal government has spent part of its tax revenues on programs aimed at balancing economic development among the different regions of the country. Income maintenance programs, equalization payments, and investment-incentive programs have, in part, been aimed directly or indirectly at equalizing regional incomes. Natural forces of interregional migration and changes in regional industrial structures have also been in the direction of greater regional balance. The failure of incomes to converge in spite of all this, however, remains a most perplexing issue and one of the central problems of Canada's regional economic development. Although government programs and natural forces have worked towards a greater balance of incomes, productivity in the low-income regions has failed to improve sufficiently to raise earned income per employed person to the Canadian average.

It is likely that many factors play a role in regional economic development, but it is difficult, if not impossible, to capture them all and to quantify them. Our objective in this chapter is to examine the regional variations in some of the major factors — industrial structure, labour quality, capital, and technology — and, by using proxies, assess their contribution to regional disparities in productivity. If it is assumed, for example, that all factors of production are paid roughly in accordance with their productivity — more precisely, their marginal productivity — it is possible to estimate

their contribution to productivity differences. This is done by comparing the labour productivity of individual provinces with the Canadian average, by identifying the major sources of productivity differences, and by comparing provincial values with those of the nation.

The results of the comparison differ depending on whether it relates to the whole provincial economy, to the goods-producing industries, or to the manufacturing sector only. For each aggregate the differences between regional and national labour productivity are broken down into two main factors: industrial structure and output per worker. The differences in labour productivity attributed to industry structure come from regional variations in employment among industries, while those attributed to output per worker come from productivity differences within each of the industries leading up to the three industry aggregates. The share of labour productivity differences attributed to output per worker is further broken down into differences attributable to labour quality, capital stock per worker, and all other factors, including technology.

Industrial Structure and Output per Worker

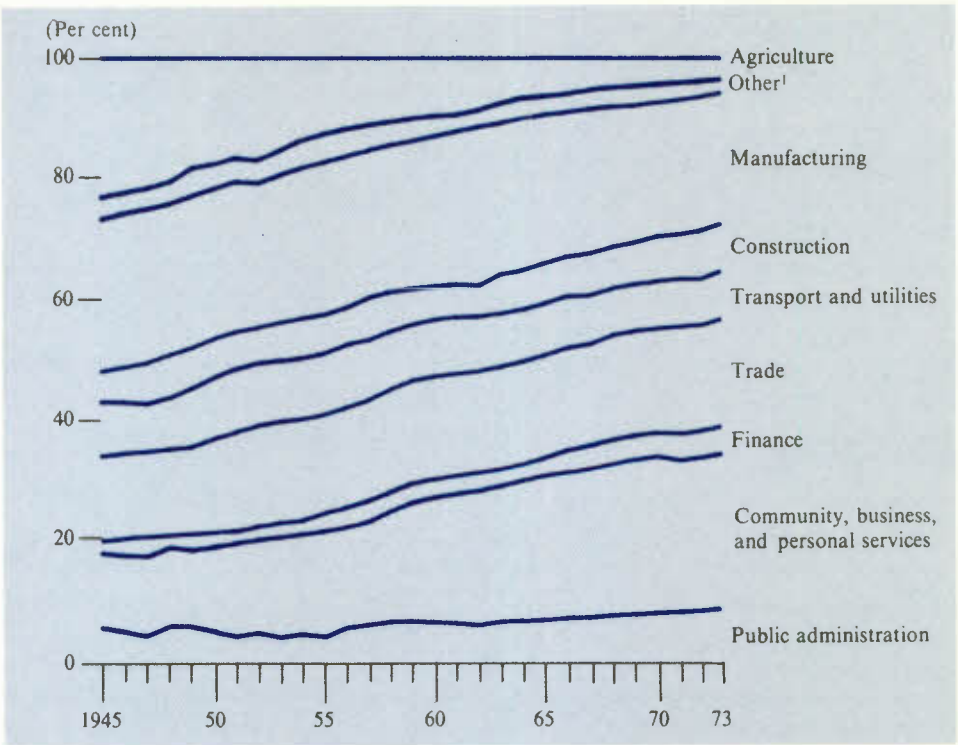
The most important change in the Canadian industrial structure over the past century has been the shift from agriculture to manufacturing and other secondary and tertiary industries. Only one hundred years ago, over three-quarters of Canada's working force was engaged in farming. Today, Canada's population is predominantly urban, and 95 per cent of all employment is in nonfarm activities. Since 1950, the major service sectors — trade; finance; community, business, and personal services; and public administration — increased their share of total employment from one-third to more than one-half (Chart 5-1).

In this restructuring of Canadian industry, labour and capital have not changed at the same pace. Farmers who have remained on their farms have invested heavily in machinery and equipment; and a major share of new capital investment has gone into mining, oil and gas development, hydro-electric utilities, pipelines, and air and seaway transport. The highest gains in real output per worker have been in agriculture, mining, transport, and utilities, probably because of the greater capital inputs in these areas. The lowest gains have been in community, business, and personal services. The service industries, which constitute the tertiary sector, have provided more attractive employment opportunities for women and have therefore had better access than the primary and secondary sectors to lower-priced female labour. An excess supply of this lower-priced labour may have delayed mechanization and automation in some of the service industries, since it made the substitution of capital for labour less profitable.[1]

1 The apparent slowness of productivity growth in the service industries may be partly attributable to problems with data. Our estimates are based on real domestic product data. As it is difficult to measure the output of certain service industries, their productivity growth may not have been accurately measured. To estimate the output of service industries, it was assumed that labour and capital were paid according to current wage and interest rates; that investments in machinery, equipment, and buildings were depreciated according to service lives; and that the total costs were equal to the total value of output. This could result in an underestimation or an overestimation of real productivity.

Chart 5-1

Share of Employment by Major Industries, Canada, 1945-73



1 "Other" primary industries are mining, including oil and gas, as well as logging, fishing, and trapping.

SOURCE CANDIDE 1.2 databank, and estimates by the Economic Council of Canada.

All provinces have witnessed a shift in employment from the primary to the secondary sectors, but some regional variations in industrial structure have persisted (Table 5-1). Data for 1970-73 indicate that employment in the primary sector was much greater in Prince Edward Island and Saskatchewan than in the other provinces, and this had the effect of keeping provincial incomes low. In Ontario and Quebec, the secondary sector predominated because manufacturing was stronger; this probably helped to improve incomes in these two provinces. In most provinces, the service sector employed more than half of the workers.

In spite of fairly uniform trends in regional adjustment, the traditional geographical pattern of industrial output is still evident today. About half of Canada's agricultural output — measured in terms of value added in current dollars — is produced in the Prairie region; half of its lumber is cut in British Columbia; 90 per cent of the fishing industry's output comes from the Atlantic region and British Columbia; approximately 80 per cent of manufacturing output originates in Ontario and Quebec; and a little over half of the construction activity is in the latter two provinces (Table 5-2). Except for the construction industry, this regional pattern of industrial output differs

Table 5-1

Share of Employment in Major Sectors of the Economy, Canada, by Province, 1970-73[1]

	Primary sector	Secondary sector	Tertiary sector	Total
		(Per cent)		
Newfoundland	16	33	51	100
Prince Edward Island	25	25	50	100
Nova Scotia	10	31	59	100
New Brunswick	9	35	56	100
Quebec	7	41	52	100
Ontario	6	41	53	100
Manitoba	14	33	53	100
Saskatchewan	31	21	48	100
Alberta	18	28	54	100
British Columbia	8	37	55	100
Canada	9	38	53	100

1 The primary sector includes agriculture, forestry, fishing, and mining; the secondary sector, manufacturing, construction, transport and utilities; and the tertiary sector, community, business, and personal services, finance, trade, and government administration.
SOURCE Estimates by the Economic Council of Canada, based on data from Statistics Canada.

very much from that of population and employment, and it reveals important aspects of regional specialization.

Income and productivity disparities might be a consequence of this phenomenon of regional specialization. It is known that in some industries, such as agriculture and textiles, productivity and income levels are lower than average. If a province were specialized in such industries, it would lower its average productivity performance. Much public discussion and policy-making is premised on the assumption that some provinces do have poorer industrial structures than others and that this is a major cause of regional income disparities.[2] It is clearly important to test whether this is so. An alternative view of the major cause of productivity disparities is that output per worker in each industry is typically much lower in some regions than in others. Giving a province the national average industry structure under these circumstances will not significantly improve its productivity performance.

2 The theoretical underpinnings of the arguments underlying public discussion are often faulty, because the best industrial structure — the one that maximizes regional output — requires that the value of the *marginal* product be equal in each industry; and this equality has no necessary connection, in equilibrium, with the presence of industries in which *average* productivity is high or in which average wages of the employees are high. But we shall assume for the sake of argument that the needed connection exists and make our tests accordingly. Of course, in a situation of disequilibrium, a region can have a poor industrial structure, composed of declining industries such as coal mining, but this more subtle rationale for the importance of structure does not seem to be the one underlying public discussion.

Table 5-2

Share of Value Added in the Goods-Producing Industries, Canada, by Province, 1970-73[1]

	Agri-culture	Forestry	Fishing	Mining	Manu-facturing	Construc-tion
			(Per cent)			
Newfoundland	–	3	16	4	1	3
Prince Edward Island	1	–	5	–	–	–
Nova Scotia	1	2	27	1	2	3
New Brunswick	1	5	8	1	1	2
Atlantic region	*3*	*10*	*56*	*6*	*4*	*8*
Quebec	13	20	5	11	27	22
Ontario	26	14	3	20	54	36
Manitoba	10	1	1	5	2	4
Saskatchewan	24	1	1	8	1	3
Alberta	20	2	–	40	3	12
Prairie region	*54*	*4*	*2*	*53*	*6*	*19*
British Columbia	4	52	34	10	9	14
Canada	100	100	100	100	100	100

1 These estimates of industry output are based on current-dollar figures. They exclude all material inputs purchased from other industries.
SOURCE Estimates by the Economic Council of Canada, based on data from Statistics Canada.

Using data for the years 1970-73, the contribution of industrial structure and output per worker to the productivity differences between Canada and each of the provinces was estimated (Table 5-3). The results indicate that industrial structure is of minor importance in explaining regional productivity differences. For the economy as a whole, there are only two significant exceptions to this. Poor structure contributed substantially to low productivity in Prince Edward Island, because much of its employment was concentrated in agriculture and fishing — both low-productivity industries — and there was little employment in manufacturing and none in mining. Industrial structure also had a negative effect on labour productivity in the Prairies — in Saskatchewan, especially — where, again, employment was heavily concentrated in agriculture.

It is also evident that the impact of industrial structure within manufacturing is not of great significance for regional disparities in manufacturing productivity. There are two exceptions: Manitoba and Quebec. In Manitoba, a good part of manufacturing was still involved in processing primary resources, such as lumbering, flour milling, and meat packing; in Quebec, it was quite heavily concentrated in the food and fibre industries, especially the textile industry, where productivity was relatively low.

Variations in output per worker within each industry contributed substantially more to higher or lower labour productivity levels in each province than did industrial

Table 5-3

Contribution of Industry Structure and Output per Worker to Difference between Provincial and National Labour Productivity, Canada, by Province, 1970-73

	Difference in labour productivity	Contribution to difference in labour productivity	
		Industry structure	Output per worker
	(Per cent)		
Total economy[1]			
Newfoundland	- 9	6	-15
Prince Edward Island	-40	-16	-24
Nova Scotia	-23	- 1	-22
New Brunswick	-18	1	-19
Quebec	- 7	1	- 8
Ontario	4	1	3
Manitoba	-11	- 3	- 8
Saskatchewan	- 1	-12	11
Alberta	14	- 4	18
British Columbia	10	1	9
Canada	0	0	0
Goods-producing industries[2]			
Newfoundland	-19	- 2	-17
Prince Edward Island	-54	-35	-19
Nova Scotia	-30	- 1	-29
New Brunswick	-27	- 1	-26
Quebec	-14	2	-16
Ontario	7	3	4
Manitoba	-18	- 7	-11
Saskatchewan	- 9	-27	18
Alberta	30	- 7	37
British Columbia	15	3	12
Canada	0	0	0
Manufacturing[3]			
Newfoundland	-22	2	-24
Prince Edward Island	-33	2	-35
Nova Scotia	-26	1	-27
New Brunswick	-21	- 1	-20
Quebec	-13	- 6	- 7
Ontario	9	3	6

Table 5-3 (concl'd.)

	Difference in labour productivity	Contribution to difference in labour productivity	
		Industry structure	Output per worker
		(Per cent)	
Manufacturing[3] (concl'd.)			
Manitoba	-19	- 8	-11
Saskatchewan	8	2	6
Alberta	6	2	4
British Columbia	9	0	9
Canada	0	0	0

1 Estimates for the total economy relate to eleven major industries: agriculture; forestry; fishing; mining; manufacturing; construction; transport and utilities; trade; finance, insurance, and real estate; community, business, and personal services; and public administration. In the case of Newfoundland and Prince Edward Island, data were not available for finance and services. This affected the estimates of the total economy of these provinces but not those of the goods-producing industries or manufacturing.

2 Goods-producing industries include agriculture, forestry, fishing, mining, manufacturing, and construction.

3 Based on analysis of twenty manufacturing industries, of the two-digit Standard Industrial Classification.

SOURCE Estimates by the Economic Council of Canada, based on data from Statistics Canada.

structure. Output per worker accounted for more than 80 per cent of all variations in labour productivity between the provincial economies and the national average — a little less in the case of goods-producing industries and a little more in the case of manufacturing.[3] In the Atlantic provinces, Quebec, and Manitoba, below-average performance in output per worker in most of the industries lowered the provincial levels of labour productivity; in Ontario, Alberta, and British Columbia above-average performance in output per worker raised them (Table 5-4).

Among the major industries, three goods-producing industries — agriculture, mining, and manufacturing — played a crucial role. Low output per worker in the agricultural industry of Prince Edward Island, in the mining industries of the other three Atlantic provinces, and in manufacturing of all four provinces contributed to the poor productivity performance in the Atlantic region. In Quebec and Manitoba, output per worker in manufacturing was below average; in Ontario, it was above average. In Alberta, above-average productivity resulted primarily from the high output per worker in the mining, oil, and gas industries; in British Columbia, it came from manufacturing and several other industries. Saskatchewan's case was unusual; output per worker was higher than average in agriculture, mining, and manufacturing, but it was not high enough to overcome the effects of an unfavourable industrial structure. Had it been possible to eliminate all the effects of industrial structure, four

3 This particular estimate is based on the simple average of the ten provinces and is not weighted by the size of the provincial economies.

Table 5-4

Differences in Labour Productivity Attributable to Industry Differences in Output per Worker, Canada, by Province, 1970-73[1]

	Total economy	Goods-producing industries	Manufacturing industries
		(Per cent)	
Newfoundland	85	83	76
Prince Edward Island	76	81	65
Nova Scotia	78	71	73
New Brunswick	81	74	80
Quebec	92	84	93
Ontario	103	104	106
Manitoba	92	89	89
Saskatchewan	111	118	106
Alberta	118	137	104
British Columbia	109	112	109
Canada	100	100	100

1 The estimates in this table are standardized for industry structure. They are derived from the third column of Table 5-3; for example, the 85 per cent estimate for the total economy of Newfoundland corresponds to the −15 per cent estimate in Table 5-3.
SOURCE Estimates by the Economic Council of Canada, based on data from Statistics Canada.

provinces — Ontario, Saskatchewan, Alberta, and British Columbia — would have achieved better-than-average labour productivity, because output per worker would have been higher in the total economy, in the goods-producing industries, and in manufacturing (Table 5-4).

Low output per worker shows up not only in average measures, but also for individual products. In Quebec, for example, annual milk production amounted to about 7,000 pounds per dairy cow; in British Columbia, it was around 12,000 pounds. In forestry, the annual output per worker ranged from less than 500 cunits[4] in Newfoundland to more than 1,000 cunits in the Prairie provinces and British Columbia. Among the food and beverage industries, soft drink manufacturers in Ontario and the breweries in Quebec and Ontario produced far more gallons per worker than those in the other provinces (Table 5-5). No doubt, rationalization for each of these productivity differences could be found, but they surely cannot be labeled as "industrial structure," in the normal meaning of that phrase. Output of steel per worker in Ontario and Quebec further illustrates the point (Table 5-6). Ontario is far ahead of Quebec for many reasons, only some of which are related to the industrial structure of the two provinces.

The success of the Ontario steel industry can be attributed to a variety of factors: the easy access to U.S. iron ore and coke; its proximity to Canadian and U.S. markets; and

4 A cunit is equal to 100 cubic feet of solid wood.

Table 5-5

Selected Indicators of Productivity, Three Industries, Canada, by Province, 1970-73

	Agriculture		Forestry	Manufacturing	
	Improved acres per farm operator, 1971	Annual milk production per dairy cow, 1973	Annual logging output per worker, 1973	Soft drink manufacturers	Breweries
				(Average annual shipment, 1970-73)	
	(Acres)	(Pounds)	(Cunits)[1]	(1,000 gallons per employee)	
Newfoundland	19	–	480	–	–
Prince Edward Island	109	7,400	–	–	–
Nova Scotia	64	8,300	900	29	–
New Brunswick	89	7,300	790	34	–
Atlantic region	–	–	–	–	*50*
Quebec	105	6,900	820	47	82
Ontario	115	9,000	850	56	83
Manitoba	366	7,900	1,380	50	46
Saskatchewan	605	7,200	1,680	35	54
Alberta	455	8,300	1,800	45	67
British Columbia	96	12,300	1,270	46	66
Canada	296	8,000	1,020	48	72

1 One cunit equals 100 cubic feet of solid wood.
SOURCE Estimates by the Economic Council of Canada, based on data from Statistics Canada.

the continuous improvement in its productivity performance. The very fact that Quebec was able to move from 31 per cent to 56 per cent of Ontario's output per worker in three years implies that industrial structure, which changes but slowly, cannot be of major significance. For the future, it seems clear that, as steel-making requires considerable energy resources, the abundance of hydro-electric power in Quebec will strengthen its competitiveness.

Table 5-6

Annual Output per Worker in the Steel Industry, Ontario and Quebec, 1970-73[1]

	Annual output		
	Ontario	Quebec	Canada
	(Net tons per worker)		
1970	339	106	320
1971	337	130	318
1972	359	185	340
1973	379	215	356
1970-73 (average)	353	159	333

1 Corresponding data are not available for the other provinces.
SOURCE Data from Statistics Canada.

Factors Underlying Differences in Output per Worker

Given the essential role of output per worker in the industrial productivity of the provinces, it is important to analyse the contribution of factors that determine the level of that output: labour quality, capital, technology, and related elements.

Labour Quality

The lifetime performance of a worker depends very much on motivation, physical health and energy, mental ability, education, family background, past experience, and sometimes simply good luck. It depends also on working conditions, the adoption of new technology, labour-management relations, and many other factors. These characteristics of labour and economic environment are difficult to quantify; no precise measures exist for assessing their individual importance.

Proxies for measuring labour quality, however, are available. In a market system like Canada's, certain wage differentials may serve as first indicators of labour quality variations. Three characteristics — age, sex, and education — are known to be very important determinants of labour earnings.[5] Although age is not a precise index for work experience, it certainly affects labour income. A person who works for forty to fifty years of his life in a variety of occupations will receive most of the income gains for additional work experience during the first twenty years in the labour force — that is, beween ages 20 and 40; thereafter, the labour market pays very little for extra years of experience (Chart 5-2).

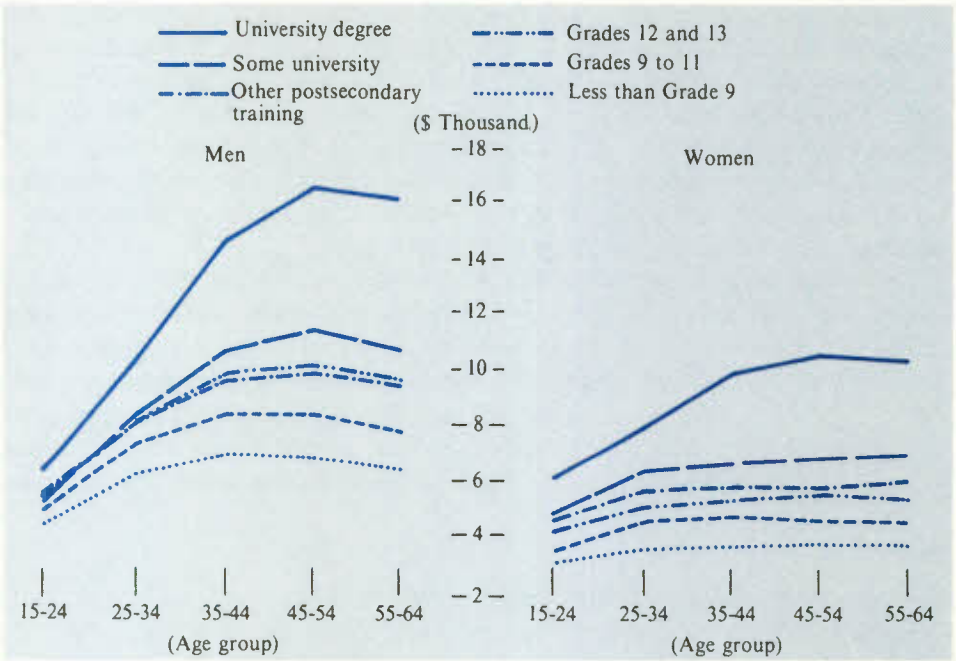
On average, women in 1970 earned just under half as much as men. Part of this difference can be attributed to the high proportion of women working part-time. Women who worked full-time earned 40 per cent less. After taking account of occupational and educational differences, the differential was 30 per cent. Female university graduates under 25 years of age earned only 5 per cent less than men with the same characteristics. Beyond 25 years of age, the wage differential between the sexes widened. It was most unfavourable for older women with limited education. This widening difference can be attributed, in part, to women having fewer years of work experience because of their tendency to leave the labour force shortly after marriage and to return to it only after ten or fifteen years. This prevents them from acquiring the work experience that yields high returns in wages and salaries to men.[6]

5 For more information on the subject, see J. R. Podoluk, *Earnings and Education,* Dominion Bureau of Statistics, Cat. No. 91-510 (Ottawa: Queen's Printer, 1965); Economic Council of Canada, *Second Annual Review: Towards Sustained and Balanced Economic Growth* (Ottawa: Queen's Printer, 1965), Chapter 4.

6 In 1972, for example, women had approximately half as many years of experience in the labour force as men, but the number varied with age and education. Women who had not finished secondary school had exactly half as many years of experience as men in the same category. Women with higher education had 63 per cent as much experience as men. At 24 years of age, the difference was very small, but it widened with age; at 45 years of age and over, the average number of years of experience of men in the labour force was 34 years, compared with only 18 for women. See Statistics Canada, *Earnings and Work Histories of the 1972 Canadian Labour Force,* Cat. No. 13-557 (Ottawa, October 1976).

Chart 5-2

Annual Wages and Salaries of Workers[1], by Age and Educational Attainment, Canada, 1970



1 Relates to wage-earners who worked full-time for 40 to 52 weeks and reported labour income.
SOURCE Based on data from Statistics Canada.

Education improved the incomes of men and women, young and old. University graduates earned the highest incomes; workers with only elementary schooling earned the lowest. Among men under 35 years of age, university graduates earned about 50 per cent more than those with elementary education; above that age, the income differential gradually widened to a maximum of 150 per cent. For women, wage differentials were even greater; upon joining the work force, university graduates earned at least 100 per cent more than those with only elementary schooling and, as they grew older, the differential reached 180 per cent (Chart 5-2).

The measurement of labour quality in each province is done using a standard technique. The provincial labour force is divided into groups, one for each age, educational level, and sex. For each group, the *Canadian average* wage[7] is taken as a measure of the quality of labour provided by each person in the group, irrespective of whether, in the particular province concerned, the actual wage received is higher or lower than this. Averaging these quality measures over all groups in the province then gives a measure of provincial labour quality. It is, in fact, the average wage that would have been received in the province had workers been paid at national wage rates strictly

7 A set of sixty wage rates was used, according to age, sex, and level of educational attainment. They are depicted graphically in Chart 5-2 of the text.

in accordance with their age, sex, and education characteristics. This method of constructing the labour quality index ensures, for example, that a province whose labour force is highly educated will rate very highly, even if educated persons in that province do not actually receive high wages. Actual wages vary for many reasons other than labour quality, including variations in capital per worker, the level of technology, management skills, natural resource endowments, industrial structure, and returns to scale. The quality measure assumes that age, sex, and education are the sole determinants of labour quality and that the national wage rates provide a proper measure of variations in labour quality arising from differences in work experience and in educational background. Although by no means an ideal measure,[8] it serves here as the base for all provincial comparisons of labour quality.

Labour quality, measured in this manner, varied by as much as 10 per cent among provinces in 1970; British Columbia ranked highest and Newfoundland ranked lowest (Table 5-7). Nova Scotia and Saskatchewan matched the national average exactly. If, at first glance, the range of differences in regional labour quality appears to be quite small, it should be borne in mind that regional differences of 3 to 5 per cent in the labour quality index correspond roughly, in total labour income lost, to regional differences in unemployment rates of 3 to 5 per cent. In other words, if workers in a

Table 5-7

Index of Labour Quality in All Industries, by Province, 1970

	Labour quality index[1]		
	Men	Women	Average
	(Canada = 100)		
Newfoundland	93	94	95
Prince Edward Island	97	102	97
Nova Scotia	98	102	100
New Brunswick	96	100	97
Quebec	97	96	97
Ontario	102	101	101
Manitoba	100	99	99
Saskatchewan	100	103	100
Alberta	103	105	103
British Columbia	103	105	105

1 Estimates are based on national wage rates paid to full-time employees, male and female, in five age groups and at six levels of educational attainment. If, by assumption, male and female workers had been paid at exactly the same wage rates, the estimates would change somewhat, but the relationships would remain essentially the same.

SOURCE Estimates by the Economic Council of Canada, based on data from Statistics Canada.

8 An ideal measure of labour quality should include other factors such as degree of motivation, work effort, aptitudes, and attitudes, which may or may not have some bearing on provincial variations in labour quality. To some extent, however, these factors may be reflected in levels of education and labour for participation rates.

province are paid according to the labour quality index for that province — 97 or 95 per cent, for example — the provincial differences in labour income will be about the same as those arising from an additional 3 or 5 per cent of unemployment. The regional income differences attributable to labour quality are likely to be even greater, because unemployed workers receive unemployment insurance benefits whereas no compensation is paid to employed workers with less education or experience.

Among the major industries, labour quality was low for wage-earners in agriculture, fishing, forestry, and construction; but it was high in finance, public administration, and in community, business, and personal services (Table 5-8). The maximum range among all industries reached 27 percentage points for men and 19 percentage points for women. Actual wage rates varied far more; the maximum difference was 63 points for men and 48 points for women. Among male wage-earners, for example, the pay for farm workers was "poor" in relation to labour quality, whereas it was "good" for workers in mining, construction, and finance. Similarly, the pay for women was poor in agriculture and trade but good in transport, utilities, and public administration.

Industry variations in labour quality and pay carried over to the regions. In all provinces, labour quality and pay for men were below average in agriculture and above average in finance, insurance, and real estate. Labour quality and pay for women were relatively "poor" in trade and "good" in public administration. In some industries, however, the characteristics observed at the national level were not reflected in all regions. In mining, workers were generally paid above their labour quality ratings, except in some of the Atlantic provinces. In Nova Scotia, miners were paid only 79 per cent of the national wage rate, although their labour quality index was 92 per cent. This

Table 5-8

Indexes of Labour Quality and Annual Wage Rates, by Industry, Canada, 1970[1]

	Men		Women	
	Quality index	Wage rate index	Quality index	Wage rate index
	(All industries = 100)			
Agriculture	87	57	91	70
Forestry	91	92	96	99
Fishing and trapping	89	68	100	100
Mining	97	110	103	112
Manufacturing	97	100	89	91
Construction	93	102	99	106
Transport and utilities	98	102	98	112
Trade	96	93	94	85
Finance, insurance, and real estate	108	120	97	95
Community, business, and personal services	114	102	108	108
Public administration	106	107	106	118

1 Labour-quality and wage-rate indexes are based on characteristics of age and education. None of the wage rates are adjusted for regional variations in the consumer price index.
SOURCE Estimates by the Economic Council of Canada, based on data from Statistics Canada.

can be partly explained by the fact that energy demand has shifted against coal in Nova Scotia and in favour of oil, gas, and minerals in the western provinces.[9]

Among the manufacturing industries, labour quality and wage rates in "traditional" manufacturing activities were lower than in activities of more "advanced" technology (Table 5-9). Food and beverage industries, knitting mills, and textile and clothing industries, which have emerged from the traditional cottage industries of earlier times, employed labour of below-average quality. By contrast, the electrical products industries, as well as the chemical, petroleum, and coal products industries, which are based on more recent technological developments, employed labour of above-average quality. At the lower end of the wage scale, workers were paid as much as 10 percentage points below their quality ratings; at the upper end, they were paid as much as 20 percentage points above.

This ranking of wage rates according to labour quality suggests that "new-technology" industries employ labour of higher quality and are prepared to pay a

Table 5-9

Indexes of Labour Quality and Annual Wage Rates in Manufacturing, by Industry, Canada, 1970

	Men		Women	
	Quality index	Wage rate index	Quality index	Wage rate index
	(All manufacturing industries = 100)			
Leather	91	80	93	80
Wood	92	85	102	105
Furniture and fixtures	93	81	99	95
Textiles	95	83	96	93
Knitting mills	95	88	94	80
Clothing	95	96	93	81
Food and beverages	96	91	100	98
Rubber	98	97	99	96
Nonmetallic products	98	98	103	112
Metal fabricating	99	99	103	106
Primary metals	99	105	107	124
Transportation equipment	100	103	105	121
Paper and allied products	100	106	103	109
Tobacco products	100	106	98	131
Machinery, excl. electrical	104	107	107	117
Printing and publishing	104	110	107	108
Electrical products	107	105	101	107
Chemicals	111	113	106	113
Petroleum and coal products	114	128	111	132

SOURCE Estimates by the Economic Council of Canada, based on data from Statistics Canada.

9 Over a period of fifteen years, the revenue of the mining industry grew at an annual rate of over 10 per cent in Alberta and British Columbia but only 2 per cent in Nova Scotia, and mining output actually declined.

premium for it. It suggests that their success hinges not only on the market demand for their product, but also on the quality of the local labour force.

Provincial manufacturing data yield a similar finding (Table 5-10). A difference of 10 percentage points between provincial and national labour quality corresponds roughly to a difference of 20 or 30 points in wage rates. This suggests that regional variations in labour quality may have a very significant impact on industrial productivity in the provinces and, consequently, on wage and salary levels.

Table 5-10

Indexes of Labour Quality and Annual Wage Rates in Manufacturing, Canada, by Province, 1970

	Men		Women	
	Quality index	Wage rate index	Quality index	Wage rate index
	(Canada = 100)			
Newfoundland	91	81	93	73
Prince Edward Island	93	71	100	76
Nova Scotia	97	80	101	75
New Brunswick	94	80	100	78
Quebec	98	94	95	94
Ontario	102	106	102	106
Manitoba	98	91	99	88
Saskatchewan	97	91	104	98
Alberta	102	100	105	102
British Columbia	102	106	107	112

SOURCE Estimates by the Economic Council of Canada, based on data from Statistics Canada.

Of the three characteristics of labour quality, education is the most important element of regional variations. In 1970, in the 25-34 age group, about one of every ten wage-earners in Canada had a university degree; one of every four had graduated from high school and had taken some additional training; one of every two had at least some high school; and almost one of every five had never gone beyond elementary school (Table 5-11). Educational attainment was generally higher in the West, where a larger proportion of the 25-to-34-year-olds had a university degree or had received some postsecondary training. Among all the provinces, Alberta had the highest proportion of university graduates; British Columbia had the highest proportion of high school graduates with or without postsecondary education. Despite the significant progress made during the 1960s, Newfoundland still had the smallest share of university graduates, and Quebec still had the largest share of wage-earners who had never gone beyond elementary school.

Table 5-11

Educational Attainment of Wage-Earners in the 25-34 Age Group, Canada, by Province, 1970[1]

	Education				
	University degree	Post-secondary	High school	Elementary school	Total
			(Per cent)		
Newfoundland	7	26	51	16	100
Prince Edward Island	10	28	46	16	100
Nova Scotia	9	26	48	17	100
New Brunswick	9	25	46	20	100
Quebec	10	27	39	24	100
Ontario	11	25	49	15	100
Manitoba	11	27	48	14	100
Saskatchewan	12	28	47	13	100
Alberta	13	30	47	10	100
British Columbia	12	31	55	2	100
Canada	11	27	46	16	100

1 In this table, postsecondary education includes some university education. High school education refers to grades 9 to 13; elementary school refers to less than nine years of education. Data cover wage-earners who worked full-time for 40 to 52 weeks in 1970 and reported wage and salary income.

SOURCE Data from Statistics Canada.

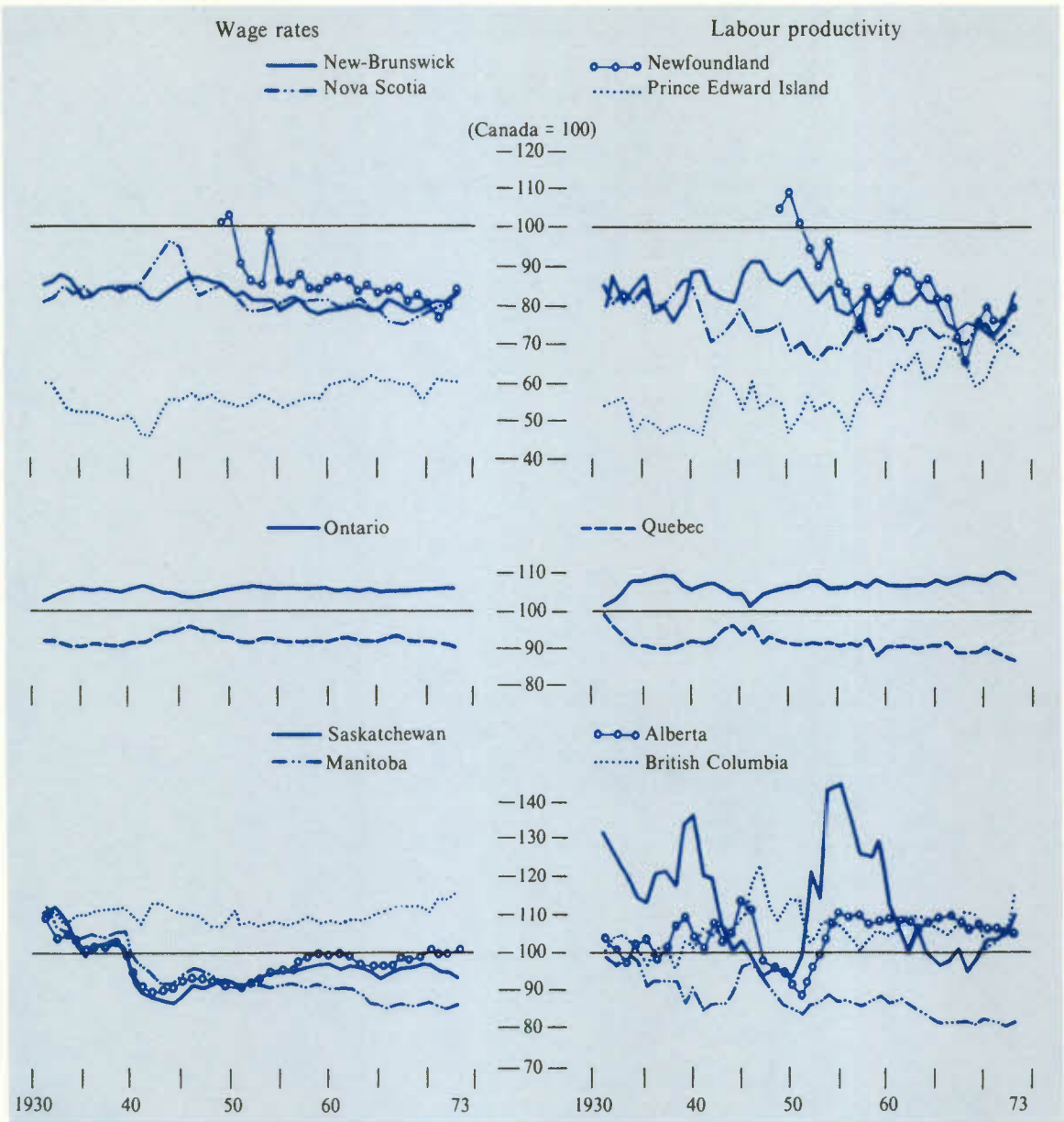
Regional variations in labour quality contributed significantly to those in productivity, and they accounted for about 20 per cent of all the provincial differences in output per worker (Table 5-12). Governments can influence and, if deemed necessary, change the rate of investment in education. It is of interest, therefore, to examine if, and to what extent, provincial variations in educational attainment contributed to provincial variations in labour productivity.

Further analysis[10] shows that education has a far greater impact than regional variations in age structure or the proportion of women in the labour force. Had it

10 The analysis was based on estimates obtained by the regression of wage rates on age, years of education, and the proportion of male workers in the labour force. The data have been standardized for regional differences caused by industrial structure and other variables. Each set of provincial estimates was based on sixty categories combining education levels, age, and sex in six goods-producing industries. The results of this kind of statistical analysis are, to some extent, dependent on the underlying assumptions. Here the traditional approach is followed. It is assumed that wage rates can be used to measure the effects of education and skills since, in a perfectly competitive labour market, each worker would be paid according to his productivity. The validity of this approach has been questioned; a model that does not satisfy the assumptions of perfect competition, for example, is one in which education is simply used as a preliminary screening device. In such a market, workers would be paid more in accordance with their high school or university qualifications than their innate abilities. Although there is some empirical evidence of this in certain professions, it is not known at present how widespread the practice is or to what extent productivity and incomes would be altered if it did not exist.

Chart 5-3

Indexes of Annual Wage Rates and Labour Productivity in Manufacturing,[1]
Canada, by Province, 1931-73



1 In current dollars.
SOURCE Data from Statistics Canada.

Table 5-12

Contribution of Capital, Labour Quality, and Other Factors to Difference between Provincial and National Output per Worker, Canada, by Province, 1970-73[1]

	Difference in output per worker	Contribution to difference in output per worker		
		Labour quality	Capital stock per worker	Management, technology, and other factors[2]
	(Per cent)			
Total economy[3]				
Newfoundland	-15	-6	0	- 9
Prince Edward Island	-24	-4	-14	- 6
Nova Scotia	-22	-2	- 5	-15
New Brunswick	-19	-4	- 3	-12
Quebec	- 8	-3	- 6	1
Ontario	3	1	- 3	5
Manitoba	- 8	-2	- 2	- 4
Saskatchewan	11	-1	13	- 1
Alberta	18	3	16	- 1
British Columbia	9	6	9	- 6
Canada	0	0	0	0
Goods-producing industries[4]				
Newfoundland	-17	-3	- 2	-12
Prince Edward Island	-19	-3	-14	- 2
Nova Scotia	-29	-1	- 6	-22
New Brunswick	-26	-3	- 3	-20
Quebec	-16	-4	-12	0
Ontario	4	1	- 5	8
Manitoba	-11	-2	- 6	- 3
Saskatchewan	18	-2	15	5
Alberta	37	4	31	2
British Columbia	12	7	18	-13
Canada	0	0	0	0
Manufacturing[5]				
Newfoundland	-24	-3	69	-90
Prince Edward Island	-35	-6	-24	- 5
Nova Scotia	-27	4	28	-59
New Brunswick	-20	-4	70	-86
Quebec	- 7	-1	- 7	1

Table 5-12 (concl'd.)

	Difference in output per worker	Contribution to difference in output per worker		
		Labour quality	Capital stock per worker	Management, technology, and other factors[2]
	(Per cent)			
Manufacturing[5] (concl'd.)				
Ontario	6	0	1	5
Manitoba	-11	-1	8	-18
Saskatchewan	6	-2	28	-20
Alberta	4	4	7	- 7
British Columbia	9	6	6	- 3
Canada	0	0	0	0

1 All estimates are standardized for industrial structure.
2 Other factors that might contribute to the differences between provincial and national output per worker are a more or less favourable city environment for manufacturing activities; regional variations in work effort of labour; the size of local markets; export markets; natural resource endowments; returns to scale; length of production runs; and transport costs.
3 Estimates for the total economy relate to eleven major industries: agriculture; forestry; fishing; mining; manufacturing; construction; transport and utilities; trade; finance, insurance, and real estate; community, business, and personal services; and public administration. In the case of Newfoundland and Prince Edward Island, data were not available for finance and services. This affected the estimates of the total economy of these provinces but not those of the goods-producing industries or manufacturing.
4 Goods-producing industries include agriculture, forestry, fishing, mining, manufacturing and construction.
5 Based on analysis of twenty manufacturing industries, of the two-digit Standard Industrial Classification.
SOURCE Estimates by the Economic Council of Canada, based on data from Statistics Canada.

not been for some compensating variations in age and in lower participation rates of women in some provinces of the Atlantic region, the provincial variations in labour quality would have been even more pronounced in the manufacturing sector (Table 5-13). This implies that provincial variations in educational attainment contribute significantly to variations in output per worker and, in some cases, substantially more than the variations in measured labour quality would suggest.

Regional variations in the quality and competence of the labour force can contribute to better or poorer productivity performance, but they are not the only important elements in provincial labour markets. From the point of view of firms, sometimes low-quality labour that is suitably priced can be more attractive than high-quality labour that is overpriced. Some indication of the price of labour in relation to provincial labour productivity can be derived from data of the manufacturing industries.

Table 5-13

Educational Attainment, Age, and Sex of Full-Time Employees in Manufacturing, Canada, by Province, 1970-73

	Educational attainment	Age	Proportion of women
	(Years)		(Per cent)
Newfoundland	8.9	38	10
Prince Edward Island	9.8	37	21
Nova Scotia	9.7	40	15
New Brunswick	9.6	38	14
Quebec	9.6	38	23
Ontario	10.8	39	21
Manitoba	10.3	40	22
Saskatchewan	10.5	38	14
Alberta	11.2	38	16
British Columbia	11.2	39	12
Canada (average)	10.4	39	20

SOURCE Estimates by the Economic Council of Canada, based on data from Statistics Canada.

Historical records of the provincial manufacturing industries show that there exists a long-term correspondence between wage rates and output per worker. In Ontario and Quebec, which account for 80 per cent of Canadian manufacturing output, the correspondence is strikingly close. Over the past forty-five years, the annual wage rates in Ontario have been about 5 to 10 per cent higher than the Canadian average; those in Quebec have been 5 to 10 per cent lower. These figures approximate the percentage differences in labour productivity between the two provinces. In the Atlantic region, wages and labour productivity have been about 70 to 85 per cent of the national average. In the West, wage rates have been generally below the national average, except for British Columbia, where they have been above average for many years (Chart 5-3).

Although provincial wage rates and labour productivity followed essentially the same patterns, their levels were not always identical. In Newfoundland, for example, the wage rate was higher than labour productivity; the opposite was true in Prince Edward Island. In Ontario, the level of labour productivity was somewhat higher than the level of the wage rate; in Quebec, it was lower. Except for Manitoba, the level of labour productivity in the western provinces was generally higher than the level of the wage rate. These disparities between wage rates and labour productivity made some of the provincial labour markets lower-priced than others. On the basis of further analysis, it could be concluded that the demand potential for labour would be stronger

in Prince Edward Island, Ontario, Saskatchewan, and Alberta than in most other provinces.[11]

Capital Stock per Worker

It is a widely held view that labour productivity depends not so much on work effort and skill as on capital input per worker. Obviously, workers employed in modern plants equipped with labour-saving machinery can produce more per man-hour than workers in older plants equipped with less-efficient machinery. It seems plausible, therefore, that productivity problems in the low-income regions could be solved by investing more there. If it were true, the policy implications for Canada's less-developed regions would be clear: simply direct investment to the regions that lag behind so they can build more-efficient plants and can pay higher wages and salaries. The empirical analysis of this section will show that sufficient capital is essential for a good productivity performance but that it takes more than capital to achieve such a performance. It will be shown that more capital investment in the less-developed regions will not assure greater labour productivity; indeed, it could lead to misallocation of capital.

Capital input per worker[12] varies widely among the provinces. In 1973, for example, capital stock per worker ranged from approximately $30,000 in Prince Edward Island to over $50,000 in Alberta (Table 5-14). In these two cases, there was a positive relationship between capital stock and wages and salaries per worker; in others, the reverse was true. In Ontario, for example, capital stock per worker was low, the second lowest of all provinces; yet wages and salaries were above the national average. In Newfoundland, capital stock per worker was high; yet wages and salaries were low. It appears, therefore, that the relationship between capital stock per worker, output per worker, and income per worker is not all that close and that there are other important factors that contribute to regional productivity and income differences as well.

To some extent, provincial variations in capital per worker are related to the development of natural resources. Canada is rich in mineral resources, and their exploitation is capital-intensive. Engineering construction for mining and drilling for oil and gas are costly and often require additional capital inputs for transportation and energy development. As mineral resources are unevenly distributed across Canada's

11 These results are based on comparisons of production-function estimates of marginal-value productivities of labour and observed wage rates. Somewhat similar conclusions could be drawn from comparisons of average wage rates and labour productivity estimates (Chart 5-3). Differences between actual and potential labour demand might be explained by some other factors — e.g., the problems associated with the island isolation of Prince Edward Island, the strong demand for resource development of the West, and the preference of migrants for the favourable climate and environment of British Columbia.

12 Capital inputs, in this context, refer only to man-made capital stocks, such as buildings, engineering structures, and machinery and equipment, and not to land and natural resources. Although statistics on land values for agriculture are available, no comparable statistics are published on land values for forestry, mining, and other industries.

Table 5-14

Capital Stock per Worker, Canada, by Province, 1973[1]

	Capital stock per worker	
	($ current)	(Per cent)
Newfoundland	47,928	124
Prince Edward Island	31,132	80
Nova Scotia	36,240	94
New Brunswick	39,341	102
Quebec	34,589	89
Ontario	34,120	88
Manitoba	42,204	109
Saskatchewan	55,963	144
Alberta	55,022	142
British Columbia	46,180	119
Canada	38,742	100

1 These data pertain to eleven major industries. Contrary to Table 5-12, the estimates in this table are not corrected for provincial differences in industry structure. They refer to man-made capital only – buildings, engineering structures, and machinery and equipment – and exclude the value of land and natural resources. They are simple averages of end-of-year values of gross capital stock, and they represent the volume of fixed capital investment accumulated over the years, with an allowance for discards based on the assumption of a fixed average productive lifetime, evaluated in current dollars. For the limitations of such capital stock measures, see Economic Council of Canada, *Eleventh Annual Review: Economic Targets and Social Indicators* (Ottawa: Information Canada, 1974), p. 181.

SOURCE Estimates by the Economic Council of Canada, based on data from Statistics Canada.

provinces and as capital requirements vary for different kinds of mining, capital inputs per worker in the mining industry also differ greatly among provinces. Drilling for oil and gas in Alberta and the mining of potash in Saskatchewan are not only more profitable, but they also require considerably more capital than does coal mining in Nova Scotia — over $400,000 of capital stock per worker was required in Alberta and Saskatchewan compared with $56,000 in Nova Scotia. On average, capital stock per worker in mining was over six times as high as capital stock per worker in manufacturing — $182,000 compared with $28,000 (Table 5-15).

Since there are such enormous variations in capital stock per worker, it is of interest to determine how much they are contributing to the provincial differences in output per worker. The estimates in Table 5-12 above convey the impression that perhaps one-half of them came from provincial variations in capital stock per worker. Certainly, in the case of Saskatchewan, Alberta, and British Columbia, the estimated contribution is very large. There, more than any other factor, capital stock per worker accounts for better-than-average performance in output per worker in all three provinces, whether in the economy as a whole, in the goods-producing industries, or in the manufacturing industries.

For all the other provinces, the estimated contributions of capital are mostly negative but far less consistent. Compared with the national average, it appears that a

Table 5-15

Gross Capital Stock per Worker, by Industry, Canada, by Province, 1970-73[1]

	Agri-culture	Forestry	Fishing and trapping	Mining	Manu-factur-ing	Con-struc-tion	Transport and utilities	Trade	Finance, insurance, and real estate	Com-munity, business, and personal services	Govern-ment admin-istra-tion	All sectors
						(Thousands of current dollars)						
Newfoundland	–	21	8	165	48	5	116	10	23	17	75	40
Prince Edward Island	21	–	6	–	13	4	40	11	41	15	95	28
Nova Scotia	33	21	11	56	43	3	74	10	27	17	63	32
New Brunswick	38	16	7	83	44	3	95	11	31	17	66	36
Quebec	29	25	6	91	22	4	102	9	29	17	69	30
Ontario	37	24	6	97	27	5	111	11	28	16	57	31
Manitoba	40	25	5	105	27	4	105	11	26	16	84	37
Saskatchewan	37	32	2	456	41	7	171	15	23	20	93	50
Alberta	38	31	2	453	39	7	117	10	34	20	83	48
British Columbia	29	44	15	282	42	6	123	11	25	15	84	41
Canada	35	31	9	182	28	5	110	10	28	17	67	34

1 These estimates are averaged over the years 1970-73. They include all capital stock in buildings, engineering structures, and machinery and equipment. In the case of government administration, they exclude the capital stock of Crown corporations, universities, schools, and hospitals, which form part of the other industries; but they include all building and engineering structures—e.g., office buildings, highways, roads, and bridges—as well as machinery and equipment of federal, provincial, and local governments. Airports, electric-power facilities, seaports, and the Seaway form part of the capital stock of the transport and utility industry; universities, schools, and hospitals are part of community, business, and personal services; rented government buildings are part of finance, insurance, and real estate; and national defence buildings are included under government administration, but all defence equipment—e.g., tanks, airplanes, and computers—are excluded.

SOURCE Estimates by the Economic Council of Canada, based on data from Statistics Canada.

"shortage" of capital weakened the productivity performance of Manitoba and all the eastern provinces. By and large, this was true for the provincial economies as a whole and for the goods-producing industries. The estimated impact of this shortfall, however, varied greatly. Only in the case of Quebec and Prince Edward Island did a lower capital stock per worker account for a large part of the poorer productivity performance; in the other provinces it contributed only marginally to lower output per worker.

In manufacturing the lack of correspondence between capital and output per worker was even more pronounced. Above-average capital stock per worker helped raised productivity levels above average in three of the four western provinces, but it failed to do so in three of the four Atlantic provinces. In Quebec and Prince Edward Island, a shortfall of capital contributed significantly to below-average productivity performance; in Ontario, however, capital contributed little to the above-average productivity performance. Because of this uncertain response to higher or lower capital stock per worker, it should not be expected that more capital investment

directed into manufacturing would automatically improve the productivity performance of the low-income provinces. The results of this analysis suggest that, at times, other factors are far more important (Table 5-12).

The ratio of capital per unit of output — or the capital/output ratio — is another interesting indicator of capital use and performance. This ratio measures how many dollars of capital stock are required to produce one dollar's worth of output. A study of capital/output ratios in manufacturing in the United States shows that, after having doubled between 1880 and about 1920, they declined for thirty years, reaching a low in 1950.[13] In Canada, the capital/output ratios bottomed out at about the same time and remained there until recently, in the private sector at least.[14] During the years when the ratios were rising, it took more and more capital to produce an additional unit of output; during the period of decline, less was needed. The rise in capital/output ratios has been attributed to capital investments that saved labour and other inputs; the decline in ratios, to capital innovations that helped increase output, improve labour productivity, and raise the efficiency of capital inputs.

Canadian capital requirements are high. To produce one unit of output in Canada requires roughly twice as much capital as in the United States. There are some obvious reasons for this: Canada's climate is less favourable, and buildings therefore cost more; Canada is less densely populated, which increases the overhead costs of transportation; the exploration and development of its mining resources are capital-intensive; and the construction of large-scale energy projects is costly. Empirical estimates show that the capital/output ratios were high in transportation and utilities, mining, and government administration — the same industries that had very high capital stock requirements per worker. The ratio in agriculture, however, was also very high; one unit of output required a capital stock of almost five dollars, compared with less than two dollars in manufacturing. To the extent that agriculture and mining dominated the industrial structure of some provinces — the Prairie provinces, for example — their overall capital requirements were high; by contrast, those of Ontario and Quebec were low (Table 5-16).

Other factors also contribute to higher capital costs in Canada. Manufacturing production runs in Canada are typically shorter than those in the United States; periods of "down time" to adjust machinery and equipment for different product runs are more frequent; capacity utilization is lower; and capital/output ratios are higher. There is also evidence that the average manufacturing plant in Canada is significantly smaller than that in some of the other industrially advanced countries. Operating below world-competitive levels of scale, however, raises the capital costs per unit of output. Given the current levels of Canadian tariff protection, these higher costs

13 D. Creamer, S. P. Dobrovolsky, and I. Borenstein, *Capital in Manufacturing and Mining: Its Formation and Financing*, National Bureau of Economic Research (Princeton, N.J.: Princeton University Press, 1960), pp. 38ff.

14 See Economic Council of Canada, *First Annual Review: Economic Goals for Canada to 1970* (Ottawa: Queen's Printer, 1964), p. 72, and *Eleventh Annual Review: Economic Targets and Social Indicators* (Ottawa: Information Canada, 1974), p. 182, Table 8-2.

Table 5-16

Capital/Output Ratio, Canada, by Province, 1970-73

	Capital/output ratio[1]
Newfoundland	4.69
Prince Edward Island	4.67
Nova Scotia	3.69
New Brunswick	3.94
Quebec	2.94
Ontario	2.64
Manitoba	3.72
Saskatchewan	4.63
Alberta	3.80
British Columbia	3.43
Canada	3.09

1 These estimates are based on the ratio of gross capital stock to value-added output. They relate to eleven major industries.
SOURCE Estimates by the Economic Council of Canada, based on data from Statistics Canada.

translate into higher output prices; the latter, in turn, increase the purchase price of manufacturing inputs, including the price of machinery and equipment.[15]

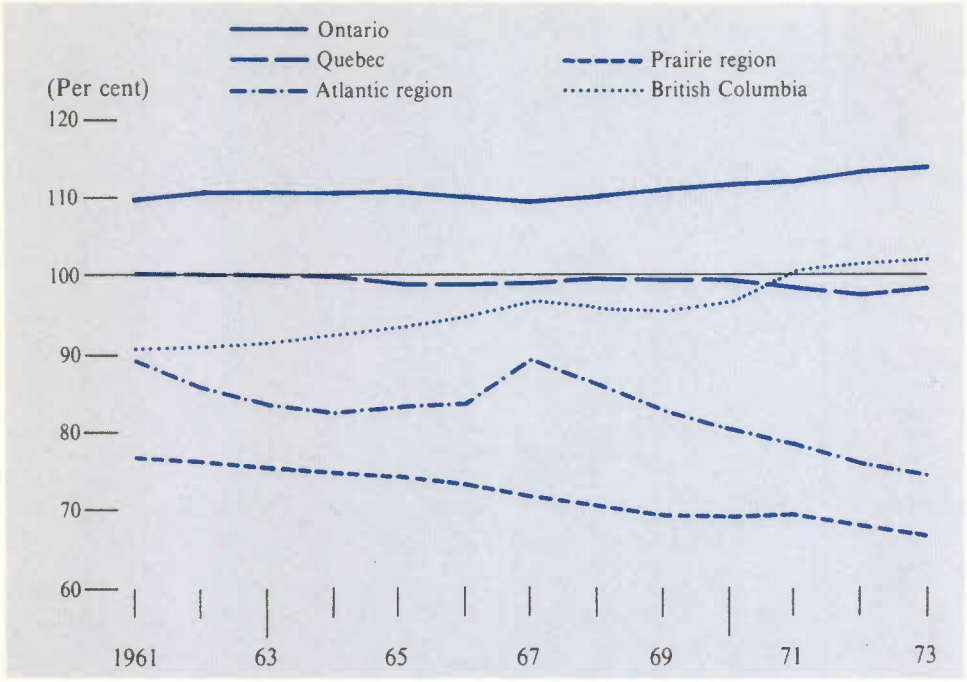
Today, about three of every ten dollars in Canada are invested in machinery and equipment; in manufacturing, the ratio is twice as high. The machinery and equipment component of capital stock contributes significantly to labour productivity in the manufacturing industries and in some of the major goods-producing industries. As shown by the ratio of capital stock in machinery and equipment to capital stock in structure, investment in machinery and equipment varies among regions. In Ontario the manufacturing industries have above-average investments in machinery and equipment relative to structures; the opposite is true in the Atlantic and Prairie regions (Chart 5-4). This raises the level of labour productivity in Ontario but lowers it in some of the other provinces.

In a market economy, prices and the productivity of resource inputs tend to serve as relevant indicators for efficient resource allocation. One would expect, therefore, that capital expenditures should primarily depend on the economic incentive provided by the return on such expenditures. An exploratory analysis of the economic incentive for capital investment in manufacturing took into account a variety of factors: the amount of capital per worker already invested, the relative shares of investment in plant and machinery, labour quality, wage rates, returns to scale, costs of fuel and electricity, costs of materials and supplies, and the market price of manufactured goods. Results

15 Economic Council of Canada, *Looking Outward: A New Trade Strategy for Canada* (Ottawa: Information Canada, 1975), Chapter 3.

Chart 5-4

Regional Ratios of Capital Stock in Machinery and Equipment to Structures, as a Percentage of National Ratio,[1] Manufacturing, by Region, 1961-73



1 Estimates of end-of-year gross capital stock in current dollars.
SOURCE Estimates by the Economic Council of Canada, based on data from Statistics Canada.

of this analysis suggest that the economic incentive for capital investment was relatively strong in Prince Edward Island and Ontario; average in the West; and weak in three of the four Atlantic provinces.

The analysis suggests too that, between 1971 and 1973, significant differences existed between a desirable and the actual level of capital stock per worker.[16] Capital investment might have been expected to be high in provinces where its potential advantage was strong and low where economic incentive was weak. This was not always so, but some other factors may explain the discrepancy between the estimated and actual levels. The small size and seasonal character of the local market in Prince Edward Island might explain why investment there was below the estimated level. Oil, resource, and energy developments probably raised the levels of investment in the West

16 The analysis was based on production-function estimates of marginal-value productivities of capital and rates of return to capital. The economic incentive for investment was considered to be weak when productivity and rate of return were below the Canadian average and strong when they were above the average.

to well above the average levels. Government aid to manufacturers in some Atlantic provinces may have contributed to capital investments there that surpassed the level of market incentive. In Quebec, however, actual investment per worker was well below the estimated level. This discrepancy could not be explained readily by market size, resource and energy developments, or lack of government aid to manufacturers; it suggests that perhaps other factors had an unfavourable effect on capital investment in Quebec.

Technology, Management, and Other Factors

Besides industrial structure, output per worker, labour quality, and capital stock, a great variety of factors influence the productivity performance of an industry. They include the adoption of new technology, the efforts dedicated to research and development, managerial ability, aggressiveness in seeking markets, worker attitudes, natural resource endowment, the size of a city in which a firm is located, the economic environment of the manufacturing and service industries, returns to scale, local and export market demand, and the cost of transportation.

The contributions of these factors to regional differences in output per worker are estimated residually under management, technology, and other factors in Table 5-12 above. Together they account for about one-third of the regional variations in output per worker of the provincial economies and the goods-producing industries and for a much larger share in the manufacturing sector. Much more significantly, where low income is a really serious problem — in the Atlantic region — these residual factors are very much more important. In Newfoundland, Nova Scotia, and New Brunswick, they never account for less than 60 per cent of the difference from the national average. It would be difficult to rank the residual factors in order of importance, but it is generally thought that technology and managerial ability play a crucial role.

The Adoption of New Technology

The most important single reason why Canada produces twice as much per capita as it did a generation ago is that it uses far more advanced technology today. More capital per head, a better-educated work force, a greater degree of specialization and scale, resource development, and other factors, all play a role; but none is individually as important as technology.

Canada's five regions are far enough apart and weakly enough linked that differences in their average levels of technology may well exist and persist among them. The Atlantic region, for example, may be ahead of Ontario in a few technological areas but, on average, its level of technology could be lower; this, in turn, could account for a part — perhaps an important part — of the gap in productivity per worker between the two regions. It should not be concluded, however, that regions where technology is less advanced have failed to adopt any technical innovations, but simply that, in general, new methods of production are adopted later in low-productivity regions. They are adopted eventually but, in the meantime, other new techniques are being adopted in

the high-productivity regions, and the low-productivity regions continue to lag behind. In the technology race, each region runs at about the same speed; but there are persisting leaders and laggards.

The analogy of the race is useful, for it can be used to make two important points. First, there are many races, not one. There was presumably one race to introduce the telephone when it was a new technique of communication. There was another race to introduce compacting garbage trucks when they were new. It is, therefore, the average performance in all races that counts. Second, not all regions compete in every race. A recent innovation is the containerization of marine cargo. It is clear why land-locked Saskatchewan is not an entrant in the race to adopt this innovation. At the same time, the use of electric furnaces in steel production is advancing rapidly in the western provinces, but not at all in Ontario; not because Ontario is a slow adopter of new technology, but because Ontario's market is large enough to use the totally different basic oxygen and open-hearth steel-making technologies, which are more efficient for large volume than the electric furnace.

The major problem in testing to see if certain regions lag in terms of technology is that a proper examination of even one innovation and its regional spread requires many man-months of work. We therefore only report on three innovations: computers, newsprint paper-making, and shopping centres.

Computers — There were only four computers in Canada in 1956, but there were 5,000 in 1973. Although more than 75 per cent of all computers were manufactured by only three companies — IBM, Honeywell, and Univac — a great variety were marketed, and today more than 300 types of computers with 50 different trademarks are in use. Primarily applied to management functions and to production and marketing controls, computers are concentrated in the manufacturing, transportation, utilities, and government sectors.

The first computers were installed in Ontario and Quebec in 1956. Other provinces acquired them one to four years later. The initial share of Ontario and Quebec gradually diminished from 76 per cent of the computers in 1963 to 71 per cent in 1973, while each of the other regions gained ground. Today roughly half of all computers are located in Ontario; less than one-quarter are in Quebec; and the others are divided almost evenly between the Prairie region and the rest of Canada. Ontario leads the other provinces in the number of computers per million workers.[17] For each million workers employed in 1973, Ontario used about 800 computers — a ratio that was about 20 per cent above the Canadian average. The Prairie region, Quebec, and British Columbia followed next. The Atlantic region trailed all the others (Table 5-17).

Newsprint paper — In the newsprint paper industry, a plant is usually organized around one or several large newsprint machines. It is usually impossible to label them "old" or "new", because newsprint machines are continually being modified and modernized. It is not unusual to find, in Quebec or Ontario, machines in operation

17 The number of computers per million workers is by no means an ideal measure of the degree of computer utilization. Dollars spent on computer use per man-hour would be a much better index but, unfortunately, such information is not available.

Table 5-17

Number of Computers per Million Workers, Canada, by Region, 1963-73

	Computers per million workers			
	1963		1973	
	Number	Percentage of Canadian average	Number	Percentage of Canadian average
Atlantic region	19	28	475	75
Quebec	66	96	540	86
Ontario[1]	94	136	771	122
Prairie region	54	78	584	93
British Columbia	65	94	533	84
Canada	69	100	630	100

1 Excluding computers used by the federal government in Ottawa.
SOURCE Richard Beaudry, "Les aspects régionaux de la diffusion de la technologie au Canada, le cas des ordinateurs," Economic Council of Canada Discussion Paper 50, 1976, p. 44; and CANSIM data on regional employment.

that were originally installed in the early 1900s but no longer contain any of the original parts, since each time a machine requires major repair, management seizes the opportunity to modernize it.

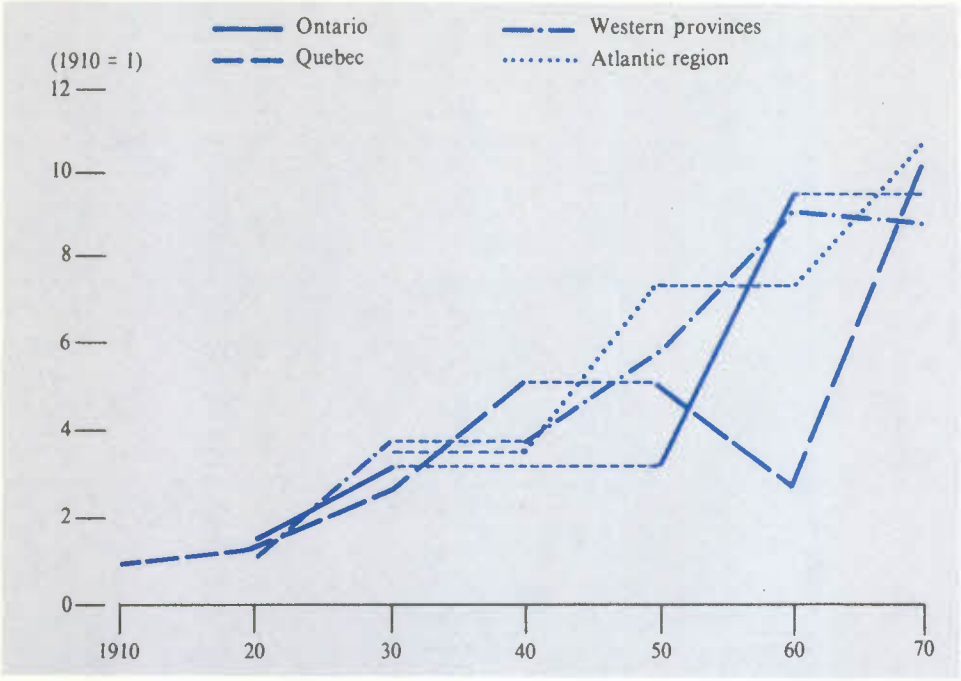
From time to time, new plants are built, equipped with completely new machines. The speed of a newsprint machine installed at the turn of the century was 500 feet per minute; that of new machines installed in the early 1920s was 1,000 feet per minute; and that of machines built in the mid-1960s was 3,000 feet per minute. The first machines had a width of about 150 inches, compared with the latest models, which have a width of close to 400 inches. The capacity of newsprint machines has thus been greatly increased, and today it is ten to fifteen times as large as it was at the turn of the century (Chart 5-5). This trend towards faster and wider machines was common to all regions of Canada, and it seems that new machines, wherever installed, embodied the latest technology.

The newsprint paper industry first developed in central Canada. After the Second World War, it expanded to other regions. As the newer regions adopted the latest in production technology, Ontario and Quebec gradually fell behind and, by the mid-1960s, they had the largest proportion of old machines. By 1964, the most modern newsprint mills were located in New Brunswick and Nova Scotia. In 1968, however, newsprint mills in Quebec and Ontario started to modernize and to replace their earlier machines with the latest twin-wire machines.

The adoption of new technology in the newsprint industry does not seem to have been consistently more rapid in one region than another. In this industry the age of existing machines appears to have been the single most important factor in

Chart 5-5

Index of Average Capacity of Newsprint Installations, by Region, 1910-70[1]



1 This chart does not account for all the machines installed in Canada, especially prior to 1940; but it probably gives a good indication of the state of technology "embodied" in new machines at various dates.

SOURCE M. F. DAVY and K. M. THOMPSON, *Newsprint Machines, Historical Trends and Projections for Speed, Width and Production Capacity*, Pulp and Paper Reports, PPR 111(Pointe Claire, Quebec: Pulp and Paper Research Institute of Canada, August 1974).

determining the rate of adoption of new technology, particularly in Quebec. Elsewhere, other factors may have played a role — for example, the quality of resources, market growth, and possibly pollution controls, which have been applied more rigorously in Ontario than in most other regions. As the newsprint industry is dominated by large firms, they have all had equal access to new technology.

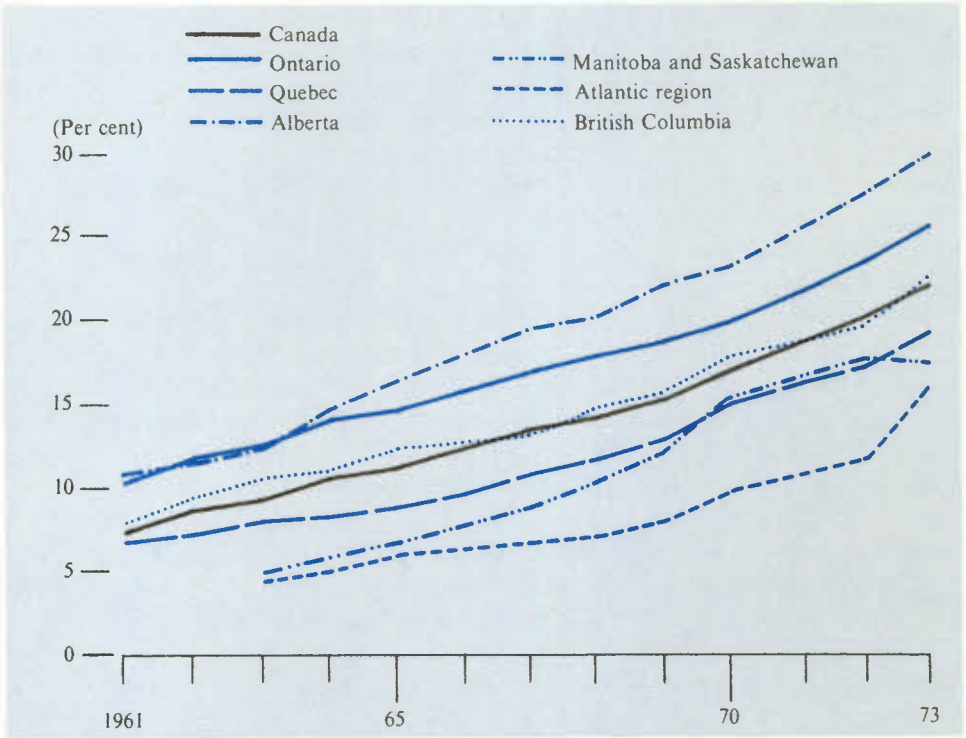
Shopping centres — Like the supermarkets of earlier years, the shopping centres of today represent an important organizational change in retail trade. They yield some economies of scale, which are generally not available to individual free-standing outlets. Their architectural design lowers the overhead costs of retail outlets, including the per-store cost of parking facilities, covered sidewalks, escalators, and moving ramps. It facilitates more efficient building maintenance; it reduces the cost of advertising through shopping centre campaigns, and it attracts customers from anchor stores — usually chain stores and supermarkets — to smaller independent retailers. At the same time, consumers gain certain advantages; they can make their weekly purchases at one location without having to cross streets or to drive from one store to the next and hunt for a parking space at each stop.

The density of shopping centres varies significantly among Canada's regions. With approximately six shopping centres per city, Alberta leads all the other regions by a considerable margin, followed by British Columbia and Ontario. Quebec, Manitoba, and Saskatchewan fall below average, while the Atlantic region, with one shopping centre per urban centre, trails all the others. Essentially the same pattern holds true for the proportion of retail sales in these shopping centres (Chart 5-6). While there was an upward trend in all regions, Alberta, Ontario and British Columbia were the leaders; the Atlantic region lagged behind.

The uneven distribution of shopping centres among regions is closely related to urban population growth. Alberta's lead in the adoption of shopping centres roughly matched that in its urban population growth — 37 per cent from 1961 to 1971. Ontario and British Columbia also had above-average urban population growth; in the latter province, however, it was not quite as strong as nonurban growth, which may explain why its proportion of retail sales in shopping centres lagged behind that of Ontario. The other regions had below-average rates of urban growth and lower per capita

Chart 5-6

Retail Sales of Shopping Centres as a Percentage of Regional Sales, Canada, by Region, 1961-73



SOURCE Estimates by the Economic Council of Canada, based on data from Statistics Canada.

incomes; that is probably why they lagged behind in the number and sales volume of shopping centres.

It can be seen that, in two of the examples, the high-productivity regions are some years in advance of the low-productivity regions in adopting new technology. In the other example, they are not. The most important of the three is computer technology — and the indications are that its introduction was earliest and fastest in the high-productivity regions, and there was some years' lag elsewhere. The existence of lags in two out of three cases studied clearly suggests that other lags will exist and that an effort to shorten them could contribute significantly to closing the regional productivity gaps.

Management

Variations in managerial ability may be related to the pace of adopting new technology, nationally as well as regionally. Managers of nonuser firms may not be familiar with the new production technology; maintenance services may be unreliable; and firms may not be able to finance the required investment. More important, perhaps, tardiness in the adoption of new technology may reflect a weakness in decision-making ability — a weakness that might well be overcome by better education and better training in business management.

Recent estimates indicate that on a per capita basis, U.S. universities are turning out about three to four times as many graduates in business administration and commerce as Canadian universities. At the Master's and Ph.d. levels, the ratios are even more unfavourable for Canada. Canada's business faculties have grown, however. Over the past ten years, their full-time enrolment has tripled, and their faculty has increased fourfold. It seems, therefore, that the value of management training is becoming more recognized. Still, Canadian business schools are short on funds, compared with other faculties. In 1974-75, for example, their student-teacher ratio was 31 compared with 14 for all disciplines.

Canadian managers are paid more than professionals, and a premium is paid for management in all provinces. If management is broken down into government, general, financial, sales, and production categories, it is found that the most educated managers in all the provinces are employed in government administration; the least educated are in production (Table 5-18). On average, Canadian production managers have only half as many years of education as managers in government administration. One can only speculate at this point about whether this distribution of managerial talent is appropriate for optimal economic growth.

Of the five different management categories, "general" managers probably have the most pervasive influence in the private sector of the economy. On average, 32 per cent of Canadian "general" managers held university degrees in 1970; this proportion varied considerably, however, from one province to the next — from 18 per cent in Newfoundland to 37 per cent in Alberta (Table 5-19). If past performance is any indication, these regional statistics imply that the educational standards of managers in some provinces lag years behind those of others. This is not surprising when Canada as a whole has a relative shortage of highly trained management. According to the 1971

Table 5-18

Educational Attainment in Five Management Categories, Canada, by Province, 1970

	Management category[1]				
	Government	General	Financial	Sales	Production
	(Years of education)				
Newfoundland	17	17	14	11	9
Prince Edward Island	17	17	14	9	10
Nova Scotia	18	17	14	12	10
New Brunswick	18	16	14	12	10
Quebec	18	17	14	12	9
Ontario	18	17	15	12	10
Manitoba	18	17	14	11	9
Saskatchewan	17	17	14	12	9
Alberta	18	17	15	12	9
British Columbia	18	17	15	12	10
Canada	18	17	15	12	9

1 The five categories listed do not comprise all management occupations, and the data pertain to men only.
SOURCE Data from Statistics Canada.

Census of Canada, for example, 30 per cent of all managers in Canada held university degrees; this level of managerial training had been surpassed in the United States more than a decade earlier.

It is difficult to measure the regional endowment of entrepreneurial ability. Positions in management and research, however, tend to be concentrated at or near head offices. Hence it is interesting to note that the head offices of manufacturing, construction, and service companies are heavily concentrated around Toronto, Montreal, and Vancouver, giving these cities considerable importance in managerial talent, whereas Edmonton and Calgary have relatively little influence, except in the case of oil and natural gas companies (Table 5-20).

Research and Development

While the potential benefits of new production techniques, if not adopted more rapidly, may remain largely unexploited, policies designed to foster a more rapid adoption of existing technology are not enough. Indigenous development of new production techniques and products is also required. By international standards, Canada ranks low in research and development expenditures. France, Japan, and Sweden devote about 1.5 per cent of their gross national expenditure to these activities; West Germany, the United Kingdom, and the United States spend 2 per cent or more;

Table 5-19

Educational Attainment of General Managers, Canada, by Province, 1970[1]

	Acquired:			
	University degree	High school and post-secondary education	Did not complete high school	Total
	(Per cent)			
Newfoundland	18	58	24	100
Prince Edward Island	25	50	25	100
Nova Scotia	31	47	22	100
New Brunswick	27	45	28	100
Quebec	31	47	22	100
Ontario	32	49	19	100
Manitoba	29	50	21	100
Saskatchewan	26	52	22	100
Alberta	37	47	16	100
British Columbia	31	48	21	100
Canada	32	48	20	100

1 Refers to a specific (i.e., male) management category responsible for senior levels of managerial and administrative work in the area of planning, organizing, directing, and controlling – on owners' or own behalf – an industrial, commercial, or other enterprise, establishment, or organization.
SOURCE Data from Statistics Canada.

Canada's share has declined steadily since 1969 and is now little more than 1 per cent.[18] Regionally about one-half of all intramural expenditures on research and development are spent in Ontario; one-quarter, in Quebec; and the remainder, in the other provinces (Chart 5-7).

Research and development (R&D) expenditures are funded by industry and government. Canadian R&D expenditures are low, primarily because Canadian private industry performs less R&D in proportion to gross domestic production than other industrial nations. In 1973, for example, this R&D proportion of Canadian industry was less than half that of France, the Netherlands, and Sweden, and only one-third that of the United States, West Germany, and Japan.[19] Research and development expenditures are also low because Canadian government assistance for research — through grants, contracts, and loans — is low. In 1973, the federal government supported 15 per cent of all industrial research, which does not compensate for the lack of funding by

18 Statistics Canada, *Research and Development Expenditures*, Cat. No. 13-403 (Ottawa, June 1976), and *Industrial Research and Development Expenditures in Canada*, Cat. No. 13-203 (Ottawa, September 1976).

19 Based on data from Statistics Canada, *Industrial Research and Development Expenditures in Canada*, Cat. No. 13-203 (Ottawa, Septebmer 1976). According to Statistics Canada, the six countries chosen for comparison have GDP per capita proportions that are fairly close to that for Canada.

Table 5-20

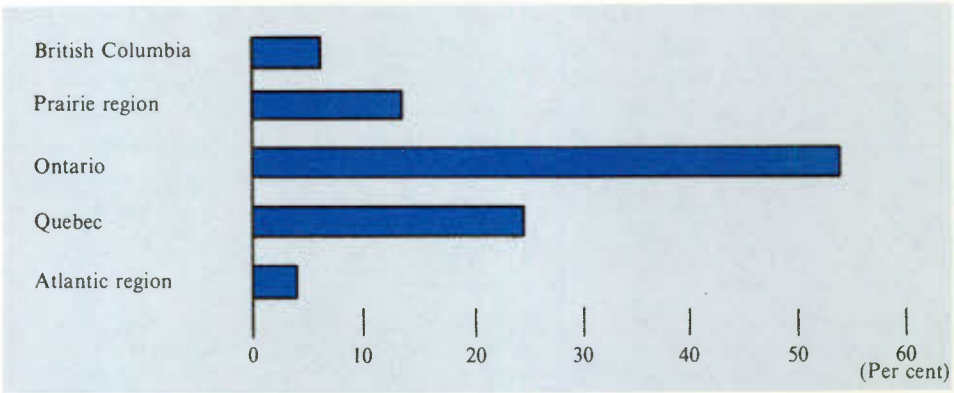
Distribution of Head Offices of Public Companies, Canada, by Major Urban System,[1] 1975

	Population in urban system	Head offices	
		Manufacturing and construction	Sales and service
		(Per cent)	
St. John's	1.1	0.2	1.0
Halifax	3.0	2.2	2.8
Saint John	2.0	2.9	0.9
Chicoutimi-Jonquière	1.6	0	0.1
Quebec	4.4	1.7	0.7
Montreal	23.5	27.2	17.9
Ottawa-Hull	4.7	1.7	1.9
Toronto	32.9	44.4	43.0
Sudbury	2.4	1.0	0.9
Winnipeg	4.3	2.0	3.9
Regina-Saskatoon	2.7	0.2	0.4
Edmonton-Calgary	7.1	4.9	8.8
Vancouver	10.2	11.5	17.5
Total	100.0	100.0	100.0

1 An urban system is defined as a group of cities close to each other with a more or less intense and frequent exchange of goods, people, or ideas.
SOURCE Based on data from *Financial Post Survey of Industrials.*

Chart 5-7

Regional Distribution of Current Intramural Research and Development Expenditures, by region, 1973[1]



1 The funds shown for each region are not spent exclusively in that region; thus these estimates can only be rough approximations of regional research and development expenditures.
SOURCE Data from Statistics Canada.

private industry. Aside from funding industrial research, federal and provincial governments also provide support to related scientific activities, such as research in universities or in atomic energy, communication, agriculture, and national defence.

The National Research Council helps firms with problems of a technical nature. Contacts are made through industry meetings in different parts of Canada each year, through publications describing research activities in various divisions, through newsletters, and through direct requests from companies for technical assistance. Most of the contacts of private industry come from Ontario and Quebec. In 1975, for example, these two provinces alone accounted for over 80 per cent of all contacts. British Columbia ranked third; the Prairie provinces, fourth; and the Atlantic provinces, last (Table 5-21).[20]

This might suggest that management in some regions of Canada may not be fully aware of the need for such activities, but it could also be that at times the National Research Council is not able to provide the needed research assistance. According to a recent report of the National Research Council, staff in the Division of Mechanical Engineering was reduced from 380 in 1967 to 324 in 1975. During the same period, operating funds were reduced by 20 per cent, while costs for equipment and supplies rose sharply. As a result, there is now a definite lack of expertise in certain fields — e.g., in numerical analysis — to undertake projects requested by private industry. Some projects are now being sent out to foreign countries, and Canada is paying for the development of expertise and knowledge there.[21]

Summary

The major findings from our analysis of regional productivity differences are that:

Most of the differences in labour productivity between the provinces and the Canadian average were not attributable to industrial structure but rather to the lower or higher levels of output per worker in each industry.

With minor exceptions, the same holds true for manufacturing, for the goods-producing industries, and for provincial aggregates. Only in Prince Edward Island and Saskatchewan did an unfavourable industrial structure contribute in a major way to below-average productivity performance in the goods-producing industries, and only in Quebec and Manitoba did an unfavourable structure contribute to below-average performance in the manufacturing industries.

20 It is interesting to note also that, to the extent that the presence of American companies makes for access to this technical assistance and to other new techniques, Ontario has a considerable advantage over the other regions; Saskatchewan, Manitoba, and the Atlantic provinces are the least favoured in this regard.

21 Based on "Material Concerning Questions from the Senate Special Committee on Science Policy," National Research Council, Division of Mechanical Engineering, March 1976.

Table 5-21

Research and Development Contacts of Private Companies with the National Research Council of Canada, 1975[1]

	Area of technology				
	Transport	Manufacturing	Standards	Computers	Total
	(Number of contacts)				
Newfoundland	0	0	0	0	0
Prince Edward Island	0	0	0	0	0
Nova Scotia	1	0	0	1	2
New Brunswick	0	0	0	0	0
Quebec	7	18	1	6	32
Ontario[2]	16	24	3	7	50
Manitoba	2	0	0	0	2
Saskatchewan	0	0	0	0	0
Alberta	2	1	0	0	3
British Columbia	2	6	0	0	8
Canada	30	49	4	14	97

1 Excluding all contacts by head offices of large Canada-wide corporations.
2 Excluding contacts by companies located in Ottawa.
SOURCE Data from the National Research Council.

Generally, output per worker was lower in the East than in the West, and it was substantially lower in the Atlantic provinces. Among the western provinces, only Manitoba's output per worker was below the national norm.

In some provinces, a strong productivity performance in one or two major industries helped to raise the overall output per worker. In Ontario, for example, the manufacturing sector was strong; in Saskatchewan, agriculture; in Alberta, the oil and gas industry; and in British Columbia, the forest industry.

Labour quality, especially higher educational attainment, helped to improve productivity performance in British Columbia, Alberta, and Ontario. Highly significant, in our view, was the fact that the provinces where labour productivity in the goods-producing industries was under par were also those where labour quality was below average, primarily because the level of education of their employed labour force was below the national standard. After allowance for provincial variations in labour quality, favourable productivity/wage ratios made some provinces more attractive than others for economic development.

Capital stock per worker ranged widely among provinces. In Saskatchewan, Alberta, and British Columbia it accounted for better-than-average performance in all sectors of the economy; in Quebec and Prince Edward Island it contributed to below-average productivity performance. In general, the variations in capital stock per worker were not nearly as closely related to variations in labour productivity as were variations in labour quality.

There were indications that new technology is adopted later in the Atlantic region than elsewhere. There is also evidence that management training varies among provinces and other information that would suggest regional variations in managerial quality.

All together, numerous elements contribute to the regional variation in productivity performance. A summary of such factors suggests that provinces with strong productivity performance — such as British Columbia, Alberta, and Ontario — do better than other provinces over a wide range of economic activities. It implies that "catching up" will be difficult and will require strong and determined efforts in many areas of the economy.

6

TOWARDS REGIONALLY DIFFERENTIATED STABILIZATION POLICY

Canada has a national commitment to full employment. The moderately successful record in meeting this commitment at the national level (Chart 4-5) conceals a much gloomier picture in certain regions. The average level of unemployment varies greatly from region to region; moreover, when the unemployment rate increases nationally, it rises by a different amount in each region (Table 6-1). Recession strikes the Atlantic region and Quebec much more severely than Ontario, with British Columbia and the Prairies occupying a middle position. For every ten people put out of work by recession in Ontario, there are twenty-nine in the Atlantic region and twenty in Quebec.

Table 6-1

Increase in Regional Unemployment Rate Resulting from a 2 Percentage Point Increase in the National Rate, Average Experience, 1953-75

	Increase in unemployment rate	Index
	(Percentage points)	(Ontario = 100)
Atlantic region	3.7	285
Quebec	2.6	200
Ontario	1.3	100
Prairie region	1.7	131
British Columbia	1.9	146

SOURCE Data from Statistics Canada.

These figures are averages experienced over different periods of recession, with all the drawbacks that averages entail. For instance, the 1974-75 recession did not strike the Atlantic region and Quebec as severely, or Ontario as mildly, as recessions had

done historically. In addition, there are substantial variations within the subregions of large provinces such as Ontario. Nevertheless, it is fair to say that recessions are generally characterized by substantial regional differences in the extent of recession-induced unemployment.

Part of the reason why unemployment has been reasonably low in Canada as a whole is that governments have deliberately used fiscal and monetary policies to stimulate demand when it was deficient or in imminent danger of becoming so.[1] In this context, the question naturally arises as to why this policy approach has been significantly more successful nationally than in Quebec and the Atlantic region. In our view, the obvious answer is the right one: for stabilization policy to succeed regionally, it must be applied regionally. The differential application of stabilization policy by region could be achieved in either or both of two ways. At times when it is necessary to reduce aggregate demand because of inflationary pressures or for other reasons, attempts could be made to reduce it less in the high-unemployment regions, notably the Atlantic region and Quebec. When demand is being deliberately stimulated because national unemployment is high, one could try to stimulate it more in the high-unemployment regions.

The federal government has already made attempts at applying fiscal policy regionally. In the budget of June 1963, the new manufacturing and processing enterprises located in designated areas of slower growth were granted exemption from income tax for three years from their inception, and they were permitted to write off new machinery and equipment in as little as two years. The June 1969 budget deferred depreciation allowances for the first two years on commercial buildings established in the major urban centres of Ontario, Alberta, and British Columbia.

It is not necessary, in order to regionally differentiate stabilization policy, to apply the same policy instruments differently in different regions, as these two actions did. The same result could be achieved by varying the mix of instruments, as will be shown later. Nor is there any reason, in principle, why Quebec and possibly a group of the Atlantic provinces should not do their part in deliberately using fiscal levers to stimulate demand.

We shall not consider the use of monetary policy to achieve regional differentiation in aggregate demand. One reason is that under a fixed or quasi-fixed exchange rate regime, the freedom to use monetary policy for any objective other than to balance foreign payments is quite sharply circumscribed.[2] More fundamentally, many economists believe that the ready mobility of monetary capital makes it impossible to achieve regional differentiation in interest rates beyond that pertaining to normal risk;

1 In recent years there has been some questioning not so much of the ability of fiscal and monetary demand stimulation to lower unemployment, but of its ability to do this and simultaneously avoid inflation.

2 Even in periods when the rate is officially floating, the authorities buy and sell foreign exchange in substantial quantities. Whether it is because of this or other factors, the Canadian dollar has stayed within 10 per cent of parity with the U.S. dollar. This does not appear to be an accident; thus we speak of a "quasi-fixed" rate.

some maintain, however, that this is not true for mortgage rates. It is also possible that the rationing process known as moral suasion could be applied on a regional basis.

It seems worth pointing out the obvious: any fiscal policy at the federal level cannot avoid being regionally differentiated to some degree. The only real question is whether the past degree of regional differentiation should be altered.

The Regional Effect of Federal Stabilization Policies from 1965 to 1973

Fiscal policy changes are achieved by moving a number of different "levers"; the most common levers have been the levels of capital consumption allowances of various types, the rate of personal federal income tax, the level of personal exemptions, the federal manufacturers' sales tax, and the federal corporation tax. It should be obvious that each of these levers will alter the level of demand somewhat differently in each region, even though they usually apply to individuals or companies in a way that makes no distinction as to where an individual lives or a company is located.

In the 1965-73 period, most fiscal policy measures involved changes either in regulations concerning depreciation or in personal income tax. In the budget of March 1966, for example, the Minister of Finance announced that, in order to encourage the postponement of investment, the rates of depreciation allowances normally applicable to assets — machinery and equipment and buildings — were to be reduced for the first three years on assets purchased between March 30, 1966, and October 1, 1967. The rates were then to revert to their previous levels. For machinery and equipment, this meant that the rate of depreciation was reduced from 20 per cent to 10 per cent (under the declining-balance method); for buildings, the rate was cut from 5.0 to 2.5 per cent. A 3 per cent surtax on "basic"[3] personal income tax in excess of $200 was announced in March 1968, along with a 3 per cent surtax on corporate income. These measures were initially to apply to the 1968 and 1969 taxation years but were subsequently extended to 1971 before being repealed. From December 4, 1970, to March 31, 1972, manufacturing and processing enterprises were permitted to value new investments in machinery and equipment and structures at 115 per cent of their actual cost when claiming depreciation allowances. In October 1971, personal income taxes were reduced by 3 per cent, while corporate income taxes were cut by 7 per cent — both measures to be in force from July 1, 1971, to December 3, 1972.

The above list, while not exhaustive, does indicate the main areas in which federal fiscal policy was concentrated between 1965 and 1973. In attempting to estimate the impact of such fiscal policies, it is necessary therefore to examine their effect on investment in machinery and equipment and in buildings as well as on personal consumption expenditures. The impact on investment can be estimated from the effect

3 "Basic" tax is personal income tax at full graduated rates, after deduction of the dividend tax credit but before abatement for provincial income tax, excluding such additional federal taxes as the old age security tax.

on the profitability of firms;[4] the impact on consumer expenditures, from the changes in personal disposable income. The immediate effect on each region of a change in the setting of fiscal policy levers is by no means the whole story. It is necessary to take into account the multiplier effects as well as the leakages to other regions.[5]

Before discussing the effects of the 1965-73 policies, it is necessary to clear up a potential conceptual difficulty in interpreting them. It is customary and useful to speak of "tight" and "easy" fiscal policy, but it is far from simple to give precise meaning to these terms. Just as one person will say that a swimming pool is too warm, while another finds it too cool, so also the setting of fiscal instruments can be described as "tight" by one person who believes that demand is too low and yet "easy" by another who believes it to be as high as it can safely be set. The problem of objectively defining the "tightness" or "ease" of fiscal policy can be avoided by arbitrarily selecting a year in which fiscal policy is described as being "neutral" or set at zero. We have selected 1970 as such a year. Relative to that year, the middle 1960s and the early 1970s were periods of greater fiscal ease; had the taxes or depreciation allowances that existed in 1970 been imposed in any other year of that period, they would have caused demand to be lower than it actually was. Thus our "zero" point — 1970 — was the tightest year of the period, though we refrain from judging whether, objectively, it was too tight or perhaps even too easy.

Actually, our measure of fiscal ease in years other than 1970 is the amount by which total demand exceeded what it would have been under 1970 fiscal legislation (Table 6-2). To illustrate, Ontario's gross regional product (GRP) in 1966 was $465 million (or 1.9 per cent) higher than it would have been had 1970 fiscal measures been applied in 1966.[6] If the effects of these measures on all regions are examined, it can be seen that, between 1966 and 1970, there was a gradual tightening of fiscal policy, corresponding to 1.9 per cent of GRP in Ontario; in Quebec, this percentage was just over half that of Ontario; it was less than half in British Columbia and the Prairies and lowest in the Atlantic region. By 1973, the easing of fiscal policy initiated in 1971 appears to have had the greatest effect in Ontario, followed closely by Quebec. The Prairies and the Atlantic region were next, with British Columbia being least affected.

4 In order to estimate the effects of fiscal policy on capital expenditures on machinery and equipment and on buildings, it was necessary to make certain assumptions regarding the response of investment decisions by businesses to changes in tax policy. In essence we assumed that corporations only undertake projects that yield a higher rate of return (after discounting for risk) than can be obtained from alternative uses of the funds and that they undertake all projects for which this is known to be true. Since the rate of return depends explicitly on the prevailing rate of depreciation allowed for the asset (be it machinery or a building) as well as on the prevailing rate of corporate income tax, changes in the rate of depreciation and/or in the rate of corporate income tax, induced by fiscal policy, affect the rate of return, the profitability of investment projects, and hence the amount of investment spending undertaken. An assumption was also made regarding the change in investment for a given change in the rate of return as well as an assumption with respect to the length of the time lag involved in completing investment projects.

5 To do this, we make use of an interprovincial input-output table made available to us by the Department of Regional Economic Expansion.

6 Official data on regional GRPs are not available. The percentages in Table 6-2 were obtained, using estimates of the Economic Council of Canada. The estimates are accurate enough to warrant the inferences drawn in the text.

Table 6-2

Estimated Effect of Fiscal Policy on Total Income, by Region, 1965-73

	1965	1966	1967	1968	1969	1970[1]	1971	1972	1973
	(Millions of dollars)								
Atlantic region	22	26	26	17	2	0	15	62	90
Quebec	130	169	147	102	7	-1	42	301	397
Ontario	253	465	299	211	23	2	119	509	735
Prairie region	76	94	87	61	8	1	24	156	229
British Columbia	50	56	57	38	5	0	25	108	143
	(As a percentage of gross regional product)								
Atlantic region	0.6	0.6	0.6	0.4	0.0	0.0	0.2	0.9	1.2
Quebec	0.9	1.1	0.9	0.6	0.0	0.0	0.2	1.2	1.4
Ontario	1.2	1.9	1.1	0.7	0.1	0.0	0.3	1.2	1.6
Prairie region	0.8	0.9	0.8	0.5	0.1	0.0	0.2	0.9	1.2
British Columbia	0.9	0.9	0.7	0.5	0.1	0.0	0.3	0.9	1.0

1 Using 1970 as a base year with a value of zero. Because of the lag structure of the investment process, it was not possible to make all these totals identically zero.
SOURCE Estimates by the Economic Council of Canada.

In summary, the 1965-73 experience suggests that Ontario benefits the most during periods of fiscal ease but is also the most affected by a tightening of fiscal policy. The Atlantic region, however, neither benefits greatly during periods of fiscal ease nor suffers much during periods of fiscal tightness. As for the remaining regions, the results for Quebec and the Prairies fall somewhere between those for Ontario and the Atlantic region; British Columbia exhibits the most erratic behaviour.

Objections to a Regionalized Stabilization Policy

It is obvious that federal stabilization measures have indeed had different effects on the regions. Although this is true, it might be argued that, because the degree of regional differentiation cannot be changed significantly, a regionalized stabilization policy, even if desirable, would not be practical. In our view, however, it is; and we later suggest ways in which it might be done. A number of objections have been made to the very idea of this kind of policy. They are not trivial, but we believe that, on balance, they are ill-founded. There are two types of objections: technical — based on economic theorizing — and political.

Technical Objections

Part of the additional spending induced in a region by a regionally differentiated stabilization policy will flow outside the region, generating income and employment elsewhere. This phenomenon of "leakage" is likely to be more serious, the smaller the

region; and, if leakages are large enough, they can render a policy ineffective. The policy would also be ineffective if no significant part of the unemployment differences between regions was the result of differences in demand. Alternative explanations of regional unemployment differences include regional variations in the ability to match available jobs with the available skills of the unemployed, in the efficiency of institutional arrangements for placing unemployed workers in available jobs, in the amount of seasonal unemployment, and in the willingness of the unemployed to accept available jobs. No one would deny the importance of some of these factors in accounting for an important part of the regional differences in unemployment rates. The crucial question is: Can they account for all the differences, or is there a significant part left to be explained by demand deficiency? Finally, the policy might fail to reduce unemployment if the extra demand for labour that it created were entirely dissipated in reducing out-migration or increasing in-migration.

The simple fact that gaps in unemployment rates among regions widen in recessions is, in our opinion, the most conclusive evidence that differences in demand deficiency play an important role. Perhaps, however, a certain average degree of slack may be needed to keep some regions competitive with others; if some of the slack that occurs in recessions were removed, its absence might require that periods of prosperity be less prosperous, to compensate. On this view, demand stimulation could transfer unemployment from recession periods to boom periods but could never eliminate it. Putting it bluntly, perhaps some regions need bigger recessions to keep costs low enough for them to be competitive over the long term.

As for any effects on out-migration, many would regard them as advantageous. They would, in any case, be common to all the current regional policies aimed at reducing unemployment differences (other than assistance to out-migration), such as DREE expenditures and regionally differentiated unemployment insurance benefits. Evidence on the likelihood of their occurrence is hard to come by, but the recent experience of the Atlantic region, discussed in Chapter 4, suggests that demand stimulation would probably reduce both out-migration and the rate of unemployment. If this were so, there would be no problem. Regionalized stabilization policy would simply need to be applied more vigorously, to achieve any given effect on regional unemployment rates, than if there were no effect on migration. The possibility cannot be ruled out, however, that any employment-generating policy, whether based on demand stimulation, on subsidizing the location of firms through grants or loans, or on some other technique, will be entirely dissipated in reducing migrant outflows, leaving unemployment rates unchanged eventually, even if they may have fallen temporarily. If so, regional unemployment will be a far more intractable problem than has so far been acknowledged. We now turn to the other technical objections.

Leakages

A substantial amount of evidence now exists on the degree to which expenditures made by the residents of any one province in Canada generate output and income within the province and on the degree to which they leak outside the province, either to the rest of Canada or abroad. For example, when income in Quebec is stimulated by

Table 6-3

Effect of a Tax Reduction on Provincial Income Relative to National Income, Canada, by Province

	Province where tax is reduced									
	Newfoundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia
	(Per cent)									
Effect on income in:										
Newfoundland	55	–	–	–	–	–	–	–	–	–
Prince Edward Island	1	58	1	–	–	–	–	–	–	–
Nova Scotia	3	4	61	2	–	–	–	–	–	–
New Brunswick	2	4	2	62	–	–	–	–	–	–
Quebec	15	14	12	13	79	9	8	8	8	8
Ontario	23	19	21	20	17	86	16	16	16	15
Manitoba	1	1	1	1	1	1	67	3	2	1
Saskatchewan	1	1	1	1	1	1	4	65	1	1
Alberta	1	1	1	1	2	2	3	6	70	5
British Columbia	1	1	1	–	1	1	2	3	4	70
Canada[1]	100	100	100	100	100	100	100	100	100	100

1 Figures may not add up to 100 because of rounding.
SOURCE Department of Regional Economic Expansion, "An Interprovincial Input-Output Model, Version III," May 1976.

means of a tax cut, every province benefits, but 79 per cent of the increase occurs in Quebec itself (Table 6-3). The results are not much different for other provinces. As might be expected, the leakages are generally larger, the smaller the province. While Ontario would retain 86 per cent of the total stimulus it could provide to the Canadian economy by cutting its own taxes, Newfoundland would retain only 55 per cent. It would be clearly unreasonable to argue, if one accepts these figures, that increases in consumption expenditures within a single province, engineered by regionalized fiscal policy (whether federal or provincial), would be ineffective because of high leakages. Conceivably they could be inadvisable for other reasons; but that is another matter.

The same is true of increases in expenditure on construction by a particular province (Table 6-4). For example, when construction expenditure in Nova Scotia is increased, income and output in Canada, as a whole, increase, but 61 per cent of the increase is in Nova Scotia itself; most of the balance is in Ontario and Quebec. A glance at the other provinces shows the same result — the major part of the stimulative effect of construction expenditures in a province is felt within the province itself. We have chosen construction as an example, because it is the kind of activity that is quite likely to be affected by regionalized fiscal policy; however, analysis shows that the results for other types of expenditure are not very different.

Table 6-4

Effect of an Increase in Construction Expenditures on Provincial Income Relative to National Income, Canada, by Province

	Province where increased construction takes place									
	Newfoundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia
	(Per cent)									
Effect on income in:										
Newfoundland	60	–	–	–	–	–	–	–	–	–
Prince Edward Island	1	53	–	–	–	–	–	–	–	–
Nova Scotia	3	8	64	2	1	–	–	–	1	–
New Brunswick	1	4	2	65	–	–	–	–	–	–
Quebec	13	12	11	12	81	7	7	7	6	5
Ontario	19	19	19	18	15	88	19	18	17	14
Manitoba	1	1	1	1	1	1	64	4	2	1
Saskatchewan	1	1	1	1	1	1	3	59	1	1
Alberta	1	1	1	1	1	1	3	6	68	3
British Columbia	1	2	1	1	1	1	4	5	5	75
Canada[1]	100	100	100	100	100	100	100	100	100	100

1 Figures may not add up to 100 because of rounding.
SOURCE Department of Regional Economic Expansion, "An Interprovincial Input-Output Model, Version III," May 1976.

We have no doubt that these data will surprise many. Why is so much of the effect felt in the region where the stimulus is applied? The major reason is that more than half of the output produced in Canada is in the service sector, and the vast majority of services must, by their nature, be provided locally. The percentage varies regionally but not enough to alter the point being made here. Retail and wholesale trade facilities, financial services, local transportation, and many others are provided locally. Of the remaining goods production, some must also be provided locally. Construction uses mainly local labour and some locally provided materials, because of weight and high transport costs.[7] Electric power and other utilities are, for the most part, local to the province, as is part of agricultural production. Even when items can be imported, there is often local production as well, as in the case of furniture and bottled beverages. Thus the extent of "imports" into a given region from the rest of the nation or the world is much narrower than most people would imagine. A lesser, but still probably significant, reason is that Canadian regions are far apart and faced with high transport costs. Under these conditions it is perhaps surprising that trade within Canada is as important as it is.

7 See Economic Council of Canada, *Toward More Stable Growth in Construction* (Ottawa: Information Canada, 1974), Table 5-12.

We conclude that, for regions as large and far apart as the five in Canada, leakages are not likely to be large enough to vitiate regionalized fiscal policy. This is perhaps not surprising, when one considers that many countries in Europe are as small as, or smaller than, some Canadian regions, in terms of population and gross domestic product, and are closer together; yet they actively pursue their own fiscal policies.[8] What is sauce for European ganders can surely be sauce for Canadian geese!

The leakages could be a problem in a different way. If, say, a fiscal stimulus were applied in Quebec, whatever its origin, the imports by that province could generate an unduly high level of demand in Ontario. If the federal government is the authority controlling the policy, federal fiscal instruments can be used in such a way as to generate the required geographical pattern of fiscal tightness in Ontario. If the provincial government is the authority concerned, there might be some need for co-ordination, at least in the sense of making known publicly what is being done.

The Skills of the Unemployed

If the skills of the unemployed were seriously mismatched with the requirements of available vacancies, the view that demand was deficient would not be tenable. Instead, it would be necessary to retrain the labour force or change the pattern of demand, or both. On the other hand, a reasonable matching would be consistent with the view that demand is deficient. This whole question was exhaustively examined in the 1960s, both here and in the United States, when the high level of unemployment at that time was thought to be caused by a structural mismatching of workers and jobs.[9] The results of the examination were not entirely conclusive, but the balance of the evidence was against structural mismatching as the dominant cause of unemployment in either nation. It is possible that mismatching could be unimportant for national unemployment and yet be important for a particular region; thus the historical evidence is not entirely conclusive. Nevertheless, a moderate degree of scepticism regarding mismatching as a major problem seems quite justified.

Institutional Arrangements for Job Placement

If the institutional arrangements for placing unemployed workers in jobs varied in their efficiency, by region, there should be a tendency for vacancies to last longer in regions of high inefficiency. It would be expected that not only the unemployment rates but also the vacancy rates would be higher than average in regions like Quebec and the Atlantic provinces; in other words, the gap between the unemployment and vacancy rates would not vary by much. Although more people would need jobs, jobs

8 Nor do they, except rarely, achieve this by varying their exchange rates with other currencies — an option that is obviously not available to a region, within a country, that seeks to pursue a fiscal policy different from that of the rest of the nation. Tariff policy, which is also, in principle, usable as a stabilization tool, is rarely so used in practice, either because it is intrinsically clumsy for the purpose or because it is proscribed under international "rules of the game," such as GATT.

9 See, for example, John W. L. Winder, "Structural Unemployment," in *The Canadian Labour Market: Readings in Manpower Economics*, ed., A Kruger and N. M. Meltz, Centre for Industrial Relations (Toronto: University of Toronto Press, 1968); and G. P. Penz, "Structural Unemployment: Theory and Measurement," Department of Manpower and Immigration, Program Development Service, 1969.

would actually be more available.[10] If there was considerable variability in the gap between unemployment and vacancies, however, it would suggest that much of the regional variation in unemployment was the result of deficient demand.

If figures for four three-year periods — two that were prosperous most of the time (1955-57 and 1965-67) and two that were recessionary most of the time (1959-61 and 1971-73) — are compared, it can be seen that, although unemployment rates are always much higher in the Atlantic region, Quebec, and British Columbia than in Ontario and the Prairies, vacancy rates are much more similar (Table 6-5). Only in the Atlantic region was the vacancy rate slightly higher than elsewhere during the first three periods, and the excess was small compared with that of the unemployment rate.

Table 6-5

Unemployment and Vacancy Rates, by Region, Selected Periods, 1955-73

	Atlantic region	Quebec	Ontario	Prairie region	British Columbia
1955-57					
Unemployment rate (u)	7.0	5.7	3.0	2.6	3.9
Vacancy rate (v)	0.9	0.8	0.4	0.6	0.6
Gap (u - v)	6.1	4.9	2.6	2.0	3.3
1959-61					
Unemployment rate (u)	10.9	8.7	5.1	4.0	7.8
Vacancy rate (v)	0.6	0.4	0.3	0.4	0.4
Gap (u - v)	10.3	8.3	4.8	3.6	7.4
1965-67					
Unemployment rate (u)	6.8	5.1	2.7	2.3	4.6
Vacancy rate (v)	1.0	0.8	0.7	0.7	0.5
Gap (u - v)	5.8	4.3	2.0	1.6	4.1
1971-73					
Unemployment rate (u)	8.8	8.0	4.7	4.3	7.0
Vacancy rate (v)	0.7	0.6	0.7	0.7	0.7
Gap (u - v)	8.1	7.4	4.0	3.6	6.3

SOURCE Estimates by the Economic Council of Canada, based on data from Statistics Canada; and Frank T. Denton, Christine H. Feaver, and A. Leslie Robb, "Patterns of Unemployment Behaviour in Canada," Economic Council of Canada Discussion Paper 36, September 1975.

Moreover, the gap between unemployment and vacancies in the high-unemployment regions invariably exceeds the gap in Ontario and the Prairies. This is true in recession or prosperity. The gap is substantially larger in recession periods, suggesting large differences in the degree of demand deficiency at such times; it is much smaller in prosperous times, as expected, though still positive, which suggests that, even in

10 This does not mean that jobs need necessarily be plentifully available in any region. If there was a sizable gap between the unemployment rate and the vacancy rate, resulting in there being a sizable proportion of the labour force for whom no jobs of any kind were available, suitable or otherwise, demand would clearly be deficient. If the gap did not vary regionally, however, it could not be argued that regional differences in unemployment rates resulted from regional differences in demand.

periods of peak activity, demand is not evenly distributed across the nation. We conclude that the unemployment/vacancy data do favour the view that aggregate demand is deficient in certain regions compared with others, especially in recessionary and normal times, though perhaps not at the peak of a boom.[11]

Seasonality

Seasonal unemployment is important in explaining the high unemployment rates in Canada, and it accounts for a substantial portion of the regional differences in unemployment rates (Table 4-9). But, despite the impact of seasonal unemployment, both nationally and regionally, a substantial amount of the differences between regions is not caused by seasonality. This is evident from the second column of Table 6-6 pertaining to nonseasonal unemployment (which is the difference between the first column of this table and seasonal unemployment in Table 4-9). The Atlantic

Table 6-6

Unemployment Rate, Canada, by Region, 1953-75

	Average annual unemployment rate		
	Total	Nonseasonal	Cyclically generated seasonal
		(Per cent)	
Atlantic	8.6	5.2	0.9
Quebec	7.0	4.9	0.7
Ontario	3.9	2.9	0.4
Prairies	3.3	1.7	0.6
British Columbia	6.0	4.4	0.6
Canada	5.3	3.7	0.5

SOURCE Richard Beaudry, "Le chômage saisonnier et l'explication des disparités interrégionales de chômage au Canada," Economic Council of Canada Discussion Paper 84, 1977.

region, with a nonseasonal rate of 5.2, had 80 per cent more nonseasonal unemployment than Ontario; Quebec and British Columbia had 70 per cent and 50 per cent more, respectively. Thus substantial differences exist between regions that cannot be attributed to geographic differences in the importance of seasonality; differences in demand pressure are obviously one possible explanation.

11 It is known that measured vacancies understate true vacancies, but would the use of true vacancy data invalidate these conclusions? We checked on this by repeating the analysis with measured vacancy rates multiplied by a factor high enough to cover any possible degree of understatement (4.0); the conclusions were basically the same. It could be argued that the measurement of vacancies is more imperfect in high-unemployment regions than elsewhere; if so, it could be concluded that demand was not differentially deficient. This seems forced to us because, to reach this conclusion, it would be necessary to underestimate the vacancies in the Atlantic region and Quebec by a factor of about ten, assuming a factor of three or four elsewhere.

There is also good reason to believe that the amount of seasonal unemployment itself is sensitive to the level of aggregate demand. In booms, seasonal unemployment is invariably less than in recessions. This does not appear to be an artifact of the techniques used to measure seasonality, because the difference between booms and recessions exists regardless of the technique used.[12] It can also be shown that, under quite plausible assumptions about cost or demand conditions (or both), it would pay business to have greater seasonal variations in labour employment when business is slack than when it is tight. In other words, the link between seasonality and the business cycle is not a fortuitous one.

Consequently, aggregate demand management could be used, if differentiated regionally, to eliminate part of the differences among regions in the amount of seasonal unemployment. The part of seasonal unemployment involved is small but yet not negligible.

The Willingness to Accept Employment

It is occasionally maintained that unemployment is higher in some regions than others because people are less willing to take the jobs available. This reluctance may occur because jobs are less attractive as a result of poorer wages and working conditions, or idleness may be more attractive because unemployment insurance and welfare appear to be well-paying and easily attainable. In either case, demand stimulation would be an inefficient way to cure unemployment.

There is a general and substantial objection to the view that work attitudes differ, regardless of the reason. The objection is that the unemployment rate rises more during recessions in the high-unemployment regions than it does elsewhere. To account for this, the work-attitudes hypothesis requires that the eagerness of people to work be assumed to vary with the business cycle. There is no obvious reason for such a phenomenon. Wages and working conditions, though improving secularly, show no obvious negative correlation with business cycle movements; the same is true for benefit rates under unemployment insurance and welfare.

If attitudes are the same across regions, and if differences in the attractiveness of work as opposed to welfare are advanced as the explanation for regional unemployment differences, it is hard to explain why. When the generosity of income support programs increased tremendously in the middle and latter parts of the 1960s, the regional differences in unemployment rates did not widen; if anything, they may have narrowed a little since then.[13]

Low participation rates in Quebec and the Atlantic region have also been advanced as evidence of a different attitude towards work in these regions, and perhaps rightly so. In principle, these low rates could be related to the belief that work was unavailable rather than to a lesser desire for work; but evidence does not strongly support

12 In particular, there is no difference between methods assuming additive seasonality and those assuming multiplicative seasonality.

13 We should stress that we are neither accepting nor rejecting the argument that generous income support programs may affect the unemployment rate; we are only concerned with whether they affect it differently in each region.

this view. Even when jobs are equally easy to find, tne proportion of the population that wants them is smaller in Quebec and the Atlantic region than elsewhere. This is partly because more women in these regions prefer family responsibilities to being in the paid labour force.

But a logical connection between a less-than-average desire for work in a region and a higher-than-average unemployment rate is not easily made. Imagine, for example, that attitudes in a region with high participation suddenly change, and participation drops. Those leaving the labour force must previously have been either employed or unemployed. If they were unemployed, their departure would lower the unemployment rate, not raise it. If they were distributed proportionately among the employed and the unemployed, their exit would leave the unemployment rate unchanged. Only if the leavers were disproportionately represented among the employed would the unemployment rate rise, because of a fall in the denominator of the measure, though not nearly in proportion to the fall in participation. In principle, then, less desire to work, which leads to a lower-than-average rate of participation, could result in unemployment rates that were lower or higher than, or exactly the same as, they would have been with a normal desire to work.

Any link between low participation and high unemployment must be more subtle. It might be argued that lower-than-average participation indicates greater-than-average fussiness about the kinds of jobs that are acceptable, that this fussiness is a regional phenomenon and is thus characteristic of the unemployed as well as the non-participants, and that this leads to a longer search time by the unemployed and therefore to a higher-than-average unemployment rate. This line of reasoning is possible, but we have nothing to confirm its validity. On balance, we conclude that the case for explaining regional differences in unemployment rates by regional differences in the willingness to work is not a very strong one.

Unemployment and Cost-Competitiveness

It is possible that raising demand in a region in order to lower its unemployment rate could create wage pressures that would worsen the region's competitiveness. In this interpretation, some regions need a greater average degree of unemployment than others in order to stay competitive. Testing this is very difficult, in the technical econometric sense, and we shall not burden the reader with the details here.[14] Suffice it to say that the results of such tests do not, by and large, favour the view that high unemployment rates in high-unemployment regions help to keep those regions cost-competitive.

Political Objections

The regionalization of aggregate demand policy by the federal government is considered by some to involve a subsidy by the nation to those areas where demand is

14 Details are available in N. Swan and A. Glynn, "The Feasibility of Regionalized Stabilization Policy," Economic Council of Canada, presented at the 1976 Meeting of the Canadian Economic Association.

increased the most. If so, it requires justification in terms of effectiveness per dollar spent. Providing such justification would not be simple; it would require a comparison of the dollar-effectiveness of all present regional programs with that of a more regionalized stabilization policy. We believe that the dollar-effectiveness of programs such as equalization payments, mobility grants, infrastructure-financing through DREE, and so forth, would be extremely difficult to calculate, even in principle. How does one measure, for example, the value to a region's inhabitants of the better educational services that the combination of equalization grants and shared-cost programs makes possible? How does one measure the extent to which a new highway in a region raises average productivity and income levels? The difficulties of principle should not bar attempts to do the measuring, but this task — a mammoth one, by any standards — has hardly been begun. It is necessary, therefore, to fall back on general arguments, essentially nonquantitative, to justify expanding the arsenal of regional development weapons to include regional stabilization policy, even if the total expenditure on the arsenal were not to change.

Two reasons for using regional stabilization policy may be advanced. The first, and most cogent, is the simplest. Fiscal expansion is known to reduce unemployment when the latter is caused by aggregate demand. Thus, if it is accepted that regional unemployment is partly the result of demand deficiency, regional stabilization can reduce it. Such certainty of effect cannot be claimed for any other policy.

The second reason is that no other policy is aimed explicitly at aggregate demand unemployment. At present, DREE expenditures are mainly for infrastructure, for direct assistance to firms, and for general and specific development opportunities. We think it fair to say that the goals of these expenditures include more than the alleviation of unemployment problems; in the case of development opportunities, they even vary from province to province, under mutual agreements between the provinces and DREE. Insofar as they are concerned with unemployment, the focus is on structural, and perhaps frictional, unemployment rather than on that caused by aggregate demand. Equalization payments have a general effect in that they make additional expenditure possible, but they do not ensure that the level of aggregate expenditure at each point in time is expressly tailored to the requirements, especially during recessions when fiscal stimulation is most effective in eliminating unemployment. Good tailoring should be attempted, even if the outcome is seldom complete sartorial elegance.

Provincial governments could make use of fiscal stabilization measures, either parallel with or instead of the federal government. Ontario has sometimes done that. The usual objection to expansionary fiscal policy — apart from that concerning leakages — is that it will increase the level of debt of any province undertaking it. This is not necessarily true, because a tax-financed expenditure increase would reduce unemployment with no debt increase. That type of policy, however, may be unpalatable to many, because it means increasing the relative share of government expenditures in gross provincial product. If a balanced budget expansion were ruled out, an expansionary provincial fiscal policy would require an increase in obligations issued to creditors outside the province. But the amount of financing needed from

outside the region is less than might be expected and should not pose insuperable difficulties.

We are aware that this assertion is controversial, and we therefore think it worthwhile to explain at some length the principles involved. To do so, we shall consider the case of an expansionary fiscal policy engineered through a tax cut, although the same principles would apply to fiscal policy operated through expenditures or transfer income payments, regardless of whether the policy was expansionary or contractionary. It is best to begin by examining what happens when fiscal policy is used at the national level.

When tax rates are cut nationally in a demand-deficient unemployment situation and government spending is not changed, households have more disposable income. As this extra income is spent, it creates jobs, thereby generating more income for those who were previously unemployed, on short time, or outside the labour force. These people now either pay taxes or more taxes than before. The extra tax receipts partially compensate for the initial revenue loss caused by the tax cuts themselves; in addition, the higher level of output and incomes resulting from the tax reduction increases the amount of voluntary savings by the private sector each year. These extra savings can be tapped either directly by the government through issues of new bonds, or indirectly because of less competition from borrowers other than the government.[15] It turns out that most of the extra funds needed annually as a result of the tax cut can actually be acquired through the extra tax receipts and bond issues made possible as a result of the rise in employment and the extra output. It is a curious process whereby a nation with unused resources can lift itself up by its own fiscal bootstraps.

There are five reservations. First, some continuing shortfall of funds will remain — being larger, the more open is the economy to foreign trade — that must be met by borrowing abroad, by lending less abroad, or by running down exchange reserves. To avoid the problems this may cause under a fixed exchange rate regime, a national tax cut may need to be supplemented by action to increase exports, reduce imports, increase the capacity to borrow more from abroad on a continuous basis, or decrease the propensity to lend abroad. This shortfall, however, is much smaller than the apparent loss of revenue from the original tax cut.[16] Second, if there is no unemployment that can be eliminated by a tax-stimulated demand increase, the effect of the whole process is to raise price and money income levels, while the real output of goods and services remains unchanged — a process known all too well as inflation. The tax cut, apart from affecting foreign borrowing as noted, continues to be self-financing even when inflation occurs, but the exercise is then quite pointless in that unemployment is not affected. Circumstances will often be such that some unemployment reduction and some inflation will occur simultaneously. Third, there are problems with the timing of fiscal policy. Some economists argue that it will fail to eliminate

15 If the extra savings go abroad, the government will then be able to borrow abroad and leave the net international debt situation unaffected.

16 It can be shown to be equal to the annual value of the extra imports resulting from the rise in output generated by the tax cut.

unemployment but, instead, exacerbate inflation if it is applied with too much delay as the result of slowness in detecting problems or in the legislative process. The evidence on whether governments have enough skill to avoid this problem is rather mixed. Fourth, some transitional financing is required to get the whole process going — to meet the revenue shortage within the time required to get the economy to the higher level of output at which tax receipts and voluntary savings will be higher. This transitional financing will require a finite amount of extra once-and-for-all bond issues by the government; and, unless the bonds are issued to the central bank, this will exert upward pressure on interest rates. The upward pressures will partially offset the expansionary policy, but the offset in Canada is likely to be very small because interest rates are closely related to U.S. levels. Finally, the increased level of activity engineered by the whole process increases the demand for working capital — in the form of cash balances — relative to the supply; this pushes interest rates up slightly, causing a further, but minor, check in expansion.

Now, in considering an expansionary fiscal policy by a provincial government or a group of provincial governments, the analysis can proceed in exactly the same way as for a national fiscal policy. The conclusion reached for the national level — that tax cuts in a demand-deficient unemployment situation are partly self-financing — applies as well to tax cuts made in any individual region. The same reservations also apply but in a slightly modified way. Funds from "abroad" now mean funds from outside the region. They will be required to the extent that extra "imports" to the region are needed because of the economic expansion. The second reservation, concerning inflation, should not matter in a region with high unemployment, the case being considered here. The third reservation, concerning the timing of policy, applies to a region in the same way as it does to the nation. The fourth and fifth reservations, which amount to saying that there is a once-and-for-all rise in the need for working capital in the economic system, are trivial relative to the first. Thus only the first reservation represents a significant potential problem.

The problem is less serious than it would be for an independent nation that found itself running a balance-of-payments deficit or a reduced surplus. In a province, there are no foreign exchange reserves whose loss must be guarded against for fear of devaluation. Instead, the risk is that the increase needed in the annual rate of issue of new provincial debt will force the interest rate on the debt up to unacceptable levels. For two of the high-unemployment regions — Quebec and British Columbia — we think this is unlikely; for the Atlantic region, the matter is not nearly as certain, but there would likely be less risk for Nova Scotia, Prince Edward Island, and New Brunswick if the three governments acted in unison.

We have several reasons for our optimism. First, in the case of at least one region — Quebec — there is some evidence that there is typically a surplus on current account with the rest of the nation and the world. This would suggest that the financing of interest and principal on the amount of external borrowing required would be less likely to pose problems than if the situation were one of deficit. Data are not available on the current account positions of the other high-unemployment regions.

Second, policies to encourage regional exports and discourage imports can reduce the need to borrow. The DREE regional development programs, if successful, will do both and thereby generate a balance-of-payments surplus. Thus the programs are naturally complementary to measures for stimulating aggregate demand. If federal development programs do not stimulate exports or import substitution sufficiently, there seems no reason why any provincial government that wants to implement its own stabilization policy should not apply a somewhat stronger stimulus to export- and import-competing industries within its boundaries, to avoid problems with payment imbalances.

Third, the high-unemployment provinces in the East would often be stimulating their economies at the same time, because unemployment usually rises simultaneously in all parts of the area. There will be spillover effects increasing exports by each province and reducing the need to borrow.

Fourth, success in reducing a province's unemployment would reduce the burden of unemployment assistance and welfare payments on both the federal government and the provincial government concerned. It would also increase federal taxes collected in the province. The provincial revenues freed would decrease the need to borrow, and it would not be unreasonable to expect the federal government to pass on to the province part of its extra net revenues arising from higher tax collections in the province and the reduced need to support the unemployment insurance and Canada Assistance programs.

Finally, the burden on future generations of the required borrowing is likely to be very modest. In a study done for the Ontario government, Barber went a long way towards elucidating the degree to which provincial governments could finance fiscal policy by means of increasing their annual rate of borrowing.[17] He showed that, at the beginning of the 1960s, both the amount of net new borrowing by provincial governments and the levels of provincial debt were relatively modest compared with regional income levels, by historical and national standards. They are not quite so modest now as they were then, but there is still considerable room to manoeuvre. Let us examine this further.

We distinguish, as is customary, between extra borrowing financed within a province and that financed externally. Increases in the former will affect the internal distribution of income between the local holders of provincial obligations, whose assets and income flows will increase at the expense of taxpayers in general, but there will be no loss on this account to the province as a whole; instead, there will be a gain from putting the unemployed to work. Extra borrowing that must be financed outside the province, however, must be serviced by the province as a whole, and it does decrease the proportion of future provincial gross domestic product retained by residents. This does not necessarily mean lower living standards as a result of the debt; the gain in employment created through the debt means there is a larger GDP from which to meet service payments on the debt. In this sense, the debt has a real

17 Clarence L. Barber, *Theory of Fiscal Policy as Applied to a Province*, a study prepared for the Ontario Committee on Taxation (Toronto: Queen's Printer, 1967).

investment return, much the same as investment in capital equipment by private companies.

Even so, it might be illuminating to suggest how much of the necessary extra borrowing would have to be financed outside the province. This would depend on the size of the annual deficit, or the reduction in surplus, on trade account with the rest of the nation that would be generated by a policy that increased employment. The funds that would have to be supplied annually from outside the province would be precisely that amount. Now a decrease of 1 percentage point in the unemployment rate would represent a major success and, over the long term, it would require the level of gross provincial product (GPP) to be correspondingly raised about 1 percentage point. Such a rise in GPP would change the payments balance with the rest of the nation by whatever fraction of extra output was used to purchase imports. Much of the effect of local stimulus is retained locally. Even more would be retained if high-unemployment regions were stimulating their economies at the same time, as seems likely. Thus the import leakages to be expected may not be large; perhaps one-third would be a fair estimate of imports as a fraction of additional income for a large province or a group of small ones. The out-of-province — i.e., external — borrowing would be less to the extent that other measures, such as subsidies to companies by DREE, were successful in improving the payments balance and to the extent that federal help was forthcoming. It seems quite reasonable, therefore, to argue that the external borrowing requirements would not exceed one-quarter of 1 per cent of GPP per annum. Whether a provincial government would want to see its external debt increase at this rate is an open question. A private individual with a static income of $10,000 a year and going into debt at that rate — an analogy appropriate for external debt only — would take twenty years to accumulate a debt of $500, with annual interest payments averaging about $20 to $25 at recent interest rates. Moreover, the proper analogy would require us to assume that the same individual, by the act of borrowing, would have set forces in train that would actually raise his income from $10,000 to $10,100 a year (a 1 per cent increase). That is an excellent investment by any standards.

Another way of putting the potential indebtedness into perspective would be to compare it with present levels of externally held provincial debt. Unfortunately we have been unable to assemble data on this; but information relating to all debt, whether internal or external, may nevertheless be helpful (Table 6-7).

An annual increase in external debt of one-quarter of a per cent of GPP, or about five-eighths of a per cent of personal income, is quite modest in relation to the data shown in Table 6-7. Moreover, the two largest provinces with high unemployment — Quebec and British Columbia — have modest levels of total debt relative to personal income. In Quebec, annual payments on debt are less than 3 per cent of personal income, and part of this is simply a transfer between Quebecers. In the Maritimes, debt relative to personal income is rather higher; in Newfoundland it is much higher.

We conclude that, in Quebec and British Columbia and perhaps in the Maritime part of the Atlantic provinces, the rate of debt increase implied by the adoption of a provincially administered regional fiscal policy to reduce unemployment need not be insupportable.

Table 6-7

Direct and Guaranteed Debt less the Sinking Fund, as a Proportion of Total Personal Income, Canada, by Province, 1969 and 1974

	1969	1974
	(Per cent)	
Newfoundland	71	76
Prince Edward Island	59	37
Nova Scotia	41	43
New Brunswick	57	47
Quebec	34	32
Ontario	26	27
Manitoba	39	44
Saskatchewan	31	18
Alberta	23	25
British Columbia	32	27
Canada	31	30

SOURCE Data from Statistics Canada.

The Feasibility of Regionalized Stabilization Policy

As we have seen, some degree of differentiation in the regional impact of fiscal tightness or ease occurs in the natural course of events. It is possible to enhance this "natural" degree of regional differentiation simply by making use of the fiscal policy instruments presently employed by the federal government.

Federal Initiatives

Analysing the regional effects of changing two kinds of fiscal levers,[18] it can be seen that a surcharge on income tax (Column 1, Table 6-8) sufficiently high to reduce Canadian demand by 0.5 of a percentage point would reduce demand by considerably more than that in Ontario and considerably less in the Atlantic region, the Prairies, and British Columbia. In Quebec, the reduction in demand is close to the national average. This is partly because high-income provinces pay more income tax and partly because

18 The effects are measured as the percentage reductions in total demand in the region caused by the application of the levers, having allowed for all multiplier effects and leakages to other provinces. The table has each lever "set" so as to reduce national demand by one-half of 1 per cent. The two types of lever consist of a uniform percentage surcharge on the level of personal federal income tax and any policy that would reduce private investment spending equiproportionately. Most capital-consumption-allowance policies will affect all types of investment spending differently, but some combination of these policies would do what is required in Table 6-8.

some of the demand reduction in the peripheral regions spills over into the central regions as well. The reduction in the Atlantic region is expecially noteworthy — only 62 per cent of the national average and only 54 per cent of that in Ontario.

Table 6-8

Differences in Demand Reduction Induced by Various Policies Designed to Increase Fiscal Tightness, Canada, by Region

	Reduction in demand from:		
	Surcharge on individual income tax	Investment disincentive	Combination policy
	(Per cent)		
Atlantic region	.31	.50	.12
Quebec	.52	.42	.62
Ontario	.57	.52	.62
Prairie region	.44	.54	.34
British Columbia	.39	.55	.23
Canada	.50	.50	.50

SOURCE Estimates by the Economic Council of Canada.

The second column shows what happens if a reduction of 0.5 of a percentage point is brought about exclusively through reducing private investment spending equiproportionately. British Columbia and the Prairies are the most affected. In Ontario and the Atlantic region, the impact is close to the national average, while in Quebec the effect is smallest. Compared with the income tax policy of Column 1, this represents a worsening for the Atlantic region, the Prairies, and British Columbia and an improvement for both Ontario and Quebec.

The first two columns of the table show only a small sampling of the regional differentiation that is possible. Consider the results of a policy combination in Column 3. Here, the first policy is applied twofold to reduce demand by a full percentage point, and the second is reversed to increase, rather than reduce, demand by 0.5 of a percentage point. This combination of policies then has the net effect of reducing demand by 0.5 of a percentage point — a reduction identical to that of the two previous policies. However, the regional effects differ from those of either of the policies that make up the combination policy, as simple arithmetic shows; these effects can be shown to be additive to a good approximation. The "combination" policy is more lenient for the Atlantic region, the Prairies, and British Columbia and harsher for Quebec and Ontario than either of those used in Columns 1 and 2. The moral is clear and general: fiscal levers can be used in various combinations to achieve any given national demand effect with rather widely varying effects on each region. Moreover,

there need be no discrimination between any two similar individuals or firms. Our example showed a case where the differentiation achieved was between the central regions, on the one hand, and the peripheral regions, on the other; but it should be feasible to develop combination-type federal fiscal policies that would increase demand differentially in favour of the high-unemployment regions, on average, over the cycle. We do not mean to imply, incidentally, that measures explicitly favouring high-unemployment regions, such as differential capital consumption allowances, should never be used, although we believe there is merit in the method we have suggested in that it is consistent with an even-handed federal approach to individual persons or companies, treating them the same wherever they are located.

It matters little, from a technical point of view, whether the federal government partially exempts high-unemployment regions from fiscal squeezes or whether it stimulates them more in times of fiscal relaxation. Either or both would achieve the desired objective of a secular increase in the level of aggregate demand in high-unemployment regions.

Provincial Initiatives

If a province or a group of provinces has chronically high unemployment caused by deficient demand, two types of fiscal remedy can be used. One is to increase provincial spending, while keeping the budget balanced; but we do not favour this. The other is to alter the level of the full-employment budget surplus or deficit by making unequal changes in taxes and expenditures. If the full-employment budget is in surplus, measures must be taken to reduce the surplus; if it is in deficit, to increase the deficit.

It has generally been found by experience that alterations to the full-employment budget surplus or deficit are most conveniently achieved by varying tax rates. Expenditures are then decided by long-term considerations of the need and desire for government-provided services, and fiscal policy operates over the short term by varying the tax/bond ratio used in financing those expenditures.[19] While one cannot dogmatically rule out countercyclical expenditure variation, we do feel that, in general, the alteration of tax rates is a preferable technique.[20] As part of its provincial fiscal policy, Ontario, for example, has lowered and raised its rate of sales tax; it even temporarily abolished it once on automobiles. There are many other different provincially controlled taxes or levies, and there should be no technical difficulty in reaching whatever full-employment surplus or deficit budget level is desired.

In a province with chronically high unemployment, fiscal policy initiatives of the kind suggested will raise the secular bond/tax ratio of financing. For reasons already given, we do not think there is likely to be an unacceptable or insupportable change in

19 Some national governments also do some short-term financing, intentionally or otherwise, by issuing bonds to their central banks, thereby creating money and imposing a kind of "tax through inflation"; this option, under present institutional arrangements, is not available to provincial governments.

20 It goes without saying that pro-cyclical variations in expenditure should be avoided.

the ratio. Moreover, the enhanced output and employment levels that would result from the provincial stimulation should increase the soundness of the provincial economy substantially in the eyes of the outside world, as well as in those of its residents holding provincial bonds, thereby making provincial debt a more attractive asset. It could be made even more attractive, at very little cost to the federal government — i.e., people elsewhere in the country — by having the federal government act as a guarantor of some appropriately chosen and denominated fraction of the annual issue of new provincial bonds. The "appropriate fraction" would be that portion jointly agreed upon by both governments as needed annually to achieve a target amount of unemployment reduction. The amount of federal-provincial co-ordination needed to do this should not pose any serious difficulties.

Summary and Conclusions

The behaviour of regional unemployment rates through recessions and prosperity strongly suggests that demand is more deficient in some regions than others and thus there is scope for regionally differentiated stabilization policies to reduce the regional differences in unemployment rates. Recently, federal fiscal policy has in any case had regionally different effects; whether tightened or eased, it appears to have had the most effect in Ontario.

The technical objections to using regionally differentiated stabilization policy — that leakages would prevent the policy from working and that unemployment differences are wholly explicable by factors other than demand, such as the mismatching of worker skills with job requirements — turn out not to be conclusive. There is also the objection that regional stabilization, if undertaken by the federal government, would involve a subsidy to any favoured region. In this respect, it is no different than other types of regional policy; yet there is reason to believe that it would be at least as cost-effective. If undertaken by provincial governments, the policy need involve no subsidy, though that would help, but it would require some increase in the ratio of bond-to-tax financing. This increase, however, would not likely be unreasonably large.

Regional stabilization measures could be implemented in practice in either one or both of two ways. The federal government could achieve regionally differentiated effects simply by varying the mix of the policy instruments it already uses. Provincial governments could apply their own fiscal policies in ways that do not differ essentially from those open to an independent nation. In sum, the institution of regionalized stabilization policy to reduce regional differences in unemployment rates would seem to be both desirable and feasible.

7 ECONOMIC DEVELOPMENT AND URBAN STRUCTURE

Several of the questions that relate to socio-economic disparities in the country also touch on the geographic distribution of the population in each region. Can it be said that it is the largest cities that everywhere succeed in growing most rapidly? Can a city of, say, 50,000 people be expected to offer all the services required by its population? Are the chances of finding work better in the metropolitan regions, even if these attract many workers from great distances? If all the cities in any one region are dependent on the growth of the same industrial sectors, is it not likely that they will grow at roughly the same rate?

The urban aspect becomes even more important because of the attention that it receives in debates about appropriate policies for growth. To what extent would the growth and the productivity of the Atlantic region be enhanced by the concentration of investment, both public and private, in a given location — for example, Moncton or Halifax? Is the concentration of Quebec's economic activity in the Montreal metropolitan region as great as Ontario's in Greater Toronto? Should we consider closer interdependence between the major metropolitan centres as a necessary condition for the Prairies to increase the industrial infrastructure of their economy?

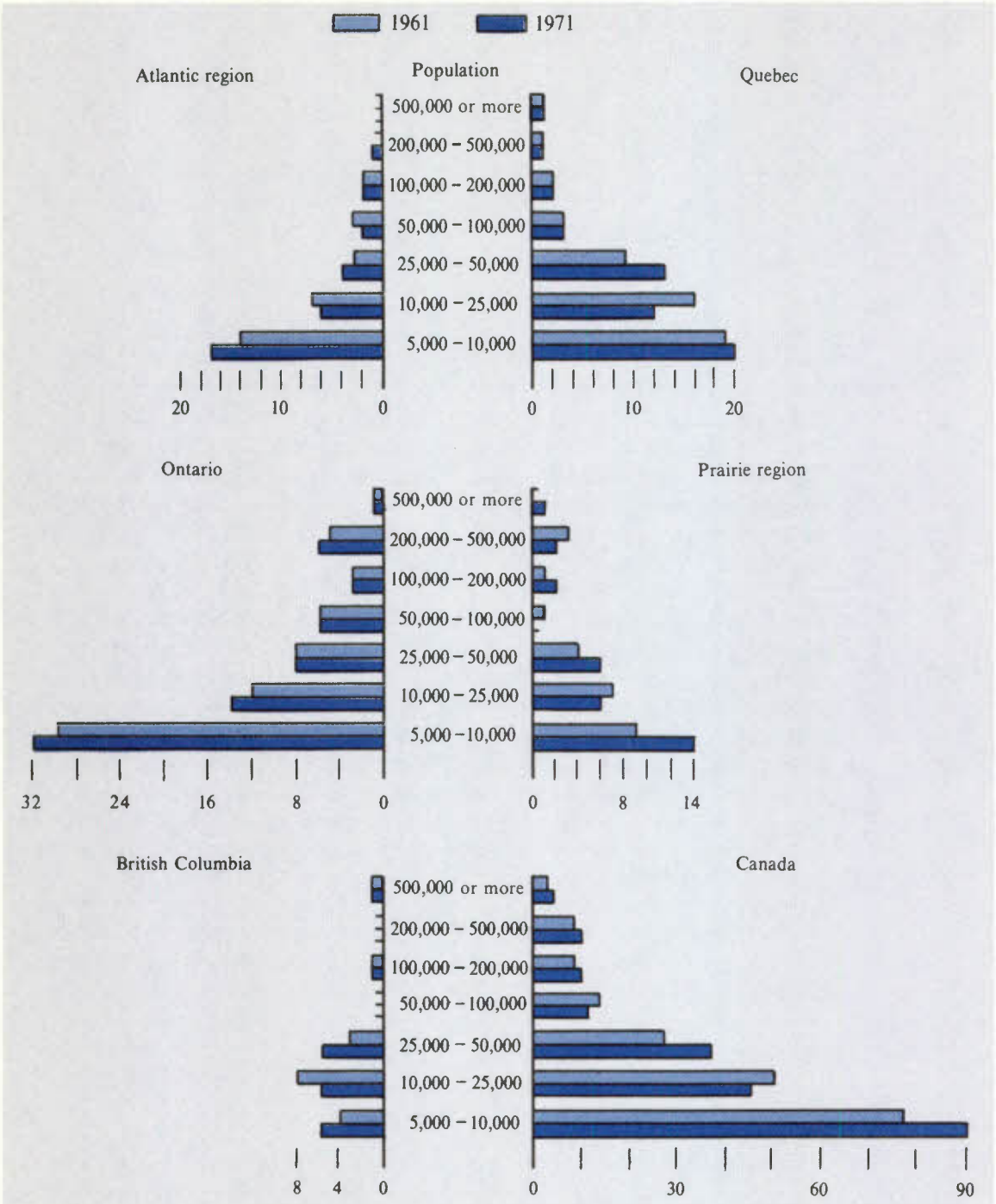
In this chapter, we hope to shed some light on questions like these, but we do not claim to provide definitive answers. We shall first use the urban structure as a means for giving a more detailed view of the problem of disparities in rates of growth, income per capita, and the rate of unemployment. Next, we shall try to find out how, and to what extent, the geographical distribution of population and industry in a given region can explain some of these disparities. We shall then examine the constraints imposed on the urban structure of a region by its industrial structure.

The Role of Urbanization

In the preceding chapters, we have identified many aspects of Canada's heterogeneous character; the degree of urbanization is no exception. In 1961, some 67.3 per

Chart 7-1

Number of Urban Centres, by Size Group and Region, 1961 and 1971



SOURCE Estimates by the Economic Council of Canada, based on data from the 1961 and 1971 Census.

cent of Canadians lived in an urban centre whose population was at least 5,000.[1] Ten years later, this proportion had reached 71.4 per cent. Indeed, the growth of urban centres has continued uninterrupted since the very first census. The map below shows the location of 23 metropolitan agglomerations that had a population of 100,000 or more in 1971, as well as the distribution of the population in each region, according to its level of concentration. This exceeded 70 per cent in Ontario, Quebec, and British Columbia, whereas the Prairie and Atlantic provinces were much less urbanized. The map also shows that, while there was an increase in the urban population in the country as a whole between 1961 and 1971, this growth was not the same in all regions. It was very high in the Prairies (increasing the degree of urbanization from 51.3 to 58.9 per cent); Quebec and Ontario followed the general trend; and, in the Atlantic region and British Columbia, the degree of urbanization remained at about the same level. Less than a quarter of the population in the Atlantic provinces lived in the three metropolitan agglomerations in that region in 1971, while almost 60 per cent of the population lived in the two agglomerations in British Columbia. In order to give a comprehensive view of the geographical distribution of the population, it is also important to take into account the number of urban centres, by size group.

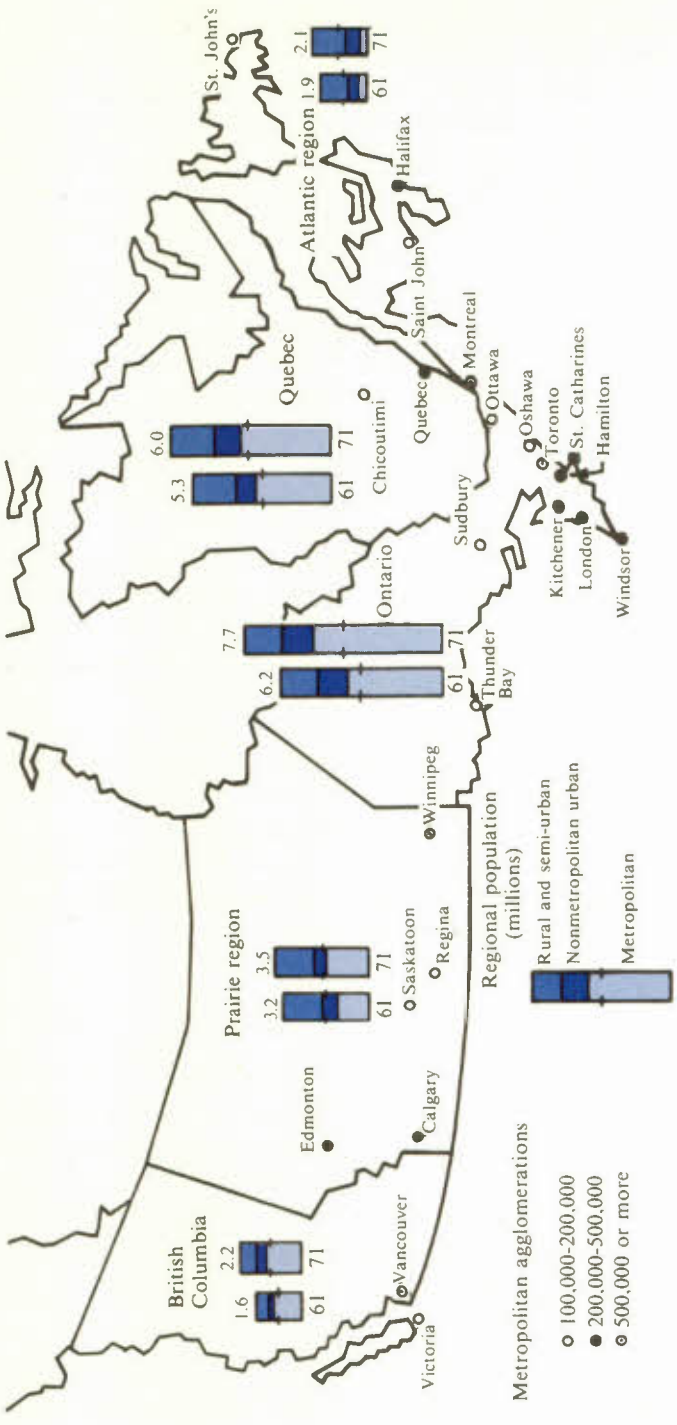
In British Columbia, there is an almost total absence of intermediate-sized urban centres, while, in the Prairies, the distribution of urban centres is very irregular (Chart 7-1). The Atlantic region has centres of every level except the highest, and it displays an urban structure that appears to be a small-scale replica of Ontario's. Finally, the major differences between Quebec and Ontario are in the three largest sizes of urban centres and in the number of semi-urban centres; if we exclude Ottawa-Hull, there were only three centres in Quebec with over 100,000 population in 1971, while Ontario had nine. At the lower end of the scale, Quebec had 163 semi-urban centres, while Ontario had only 122. Changes in the urban structure are difficult to identify over such a short period. Nonetheless, besides the growth in the number of urban centres of between 5,000 and 10,000 population, the increase in the number of centres with 25,000 to 50,000 inhabitants is noteworthy.

Economic Indicators, by Urban Size Group

Urban population growth has far exceeded that in rural or semi-urban locations, except in British Columbia (Table 7-1). Moreover, the most populous urban centres everywhere have had high rates of growth. Their growth rate was more than double that for the total regional population in the Atlantic and Prairie regions, and this was all the more notable because both experienced large net out-migration and relatively weak population growth. It is important to note that there was a strong correlation

1 Since the boundaries of urban agglomerations are revised for each census, we have concentrated on the years 1961 and 1971; we have corrected the 1961 data in order to give a true comparison. In this chapter, we consider municipalities of between 1,000 and 5,000 population as semi-urban and those of under 1,000 population, as well as unincorporated areas, as rural.

Distribution of Population, by Region, 1961 and 1971; Metropolitan Agglomerations, 1971



SOURCE 1961 and 1971 Census of Canada.

Table 7-1

Population Growth Rate, by Size of Urban Centre and by Region, 1961-71[1]

	Size of urban centre (in thousands), 1961									
	Rural	Semi-urban[2]	5-10	10-25	25-50	50-100	100-200	200-500	500 and over	Regional average
	(Per cent)									
Atlantic region	5.9	11.5	11.2	0.3	11.7	5.7	18.3	–	–	8.4
Quebec	0.2	−2.0	9.3	14.2	12.0	7.6	17.6	26.8	23.8	14.6
Ontario	13.5	11.5	9.3	9.6	16.6	21.5	29.0	24.3	37.0	23.5
Prairie region	−9.7	33.9	13.6	14.4	4.3	32.3	23.7	28.7	–	11.4
British Columbia	41.1	30.8	27.9	44.6	39.3	–	26.7	–	31.0	34.1
Canada[3]	4.6	11.5	11.5	16.4	14.9	15.3	23.2	26.4	30.0	18.3

– Not applicable.
1 After corrections required by changes in the boundaries of urban centres to ensure comparability between 1961 and 1971.
2 Estimates based on the set of municipalities whose boundaries remained unchanged.
3 Including the Yukon and Northwest Territories.
SOURCE Estimates by the Economic Council of Canada, based on the 1961 and 1971 Census.

Table 7-2

Income[1] per Capita, by Size of Urban Centre and by Region, 1970

	Rural and semi-urban	Size of urban centre (in thousands)							Regional average
		5-10	10-25	25-50	50-100	100-200	200-500	500 and over	
	(Dollars)								
Atlantic region	1,575	2,096	2,314	2,391	2,199	2,226	2,896	–	1,948
Quebec	1,461	2,063	2,224	2,377	2,409	2,805	2,701	2,970	2,489
Ontario	2,599	2,591	2,934	2,749	3,048	3,002	3,171	3,579	3,097
Prairie region	1,763	2,574	2,661	2,652	–	2,760	3,099	2,961	2,453
British Columbia	2,523	2,845	2,875	2,801	–	3,117	–	3,280	3,000
Canada	1,900	2,391	2,606	2,560	2,709	2,805	3,074	3,244	2,700

– Not applicable.
1 The sum of wages and salaries; interest and dividends; government transfer payments; and farm, business, or professional incomes.
SOURCE Estimates by the Economic Council of Canada, based on the 1971 Census.

between urban size and the growth rate in Ontario and, consequently, in Canada as a whole.[2]

An examination of income per capita, by region and size group, shows again that the urban structure is almost as important as regional divisions (Table 7-2). In general, income per capita increases with urban size, and those regions in which a greater

2 For purposes of comparison, it is interesting to note that, in the United States, total population between 1960 and 1970 grew by 13.3 per cent, whereas metropolitan population grew by 16.6 per cent. It is true, however, that the three largest metropolises showed weaker performance, especially New York City, which had a rate of 7.8 per cent.

Table 7-3

Unemployment Rate, by Size of Urban Centre and by Region, June 1971

	Rural and semi-urban	Size of urban centre (in thousands)							Regional average
		5-10	10-25	25-50	50-100	100-200	200-500	500 and over	
	(Per cent)								
Atlantic region	8.46	8.93	8.36	8.56	9.96	7.84	6.88	–	8.32
Quebec	11.14	11.22	12.23	11.08	12.40	11.00	8.09	9.32	10.06
Ontario	5.52	7.26	7.41	8.25	7.84	7.30	7.04	6.91	6.85
Prairie region	3.94	7.88	6.20	7.71	–	8.14	7.45	7.42	6.16
British Columbia	8.05	8.91	10.02	9.16	–	8.38	–	9.40	8.99
Canada	7.02	8.31	9.20	9.29	9.38	8.40	7.25	8.20	7.89

– Not applicable.
SOURCE Estimates by the Economic Council of Canada, based on the 1971 Census.

proportion of the population lives in metropolitan agglomerations have the highest average income. In looking more closely at the data for Canada, we find that the sharpest income increase occurs in going from rural and semi-urban areas to centres of 5,000 to 10,000 population. Thereafter, gains continue to accrue, but somewhat irregularly and at a slower rate, up to the very largest size of urban centre.

Data on the weighted average unemployment rate in June 1971, by urban size group and by region, show that interregional disparities are very important here, while the urban dimension has little significance[3] (Table 7-3). Except in the Atlantic region and Quebec, the rate of unemployment in metropolitan agglomerations is higher than the regional average. Even though seasonal unemployment, which is certainly stronger in nonurban areas or in small urban centres, cannot be taken into consideration, it seems that unemployment rates are less influenced by urban size than the other two indicators.

Population growth and per capita income levels are positively related to urban size; unemployment rates are not. It is, however, important to carry the analysis a little further to see whether these associations are to be expected, given the interplay of economic forces.

Population Growth and Urban Size

In assessing the links, if any, between urban size or urban structure and population growth it is important to note that the fastest-growing industries are found almost

3 The influence of seasonal unemployment explains in large part why the unemployment rate for Quebec is higher than that for the Atlantic region and British Columbia. According to the labour force study published by Statistics Canada, the seasonally unadjusted unemployment rate in June 1971 was 6.7 per cent in the Atlantic region, 7.8 per cent in Quebec, and 7.1 per cent in British Columbia.

exclusively in the service sector.[4] While the labour force in Canada grew by 33 per cent between 1961 and 1971, the only industry groups other than metal products and machinery that showed a growth rate exceeding this average were in the service sector. It continues to grow in importance, while employment in three of the four industries in the primary sector has dropped, despite an increase in value added.

Within the service sector itself, some services are produced in all urban centres, while others are confined, or mainly confined, to larger centres only. For example, education services are found in every urban centre, but specialized institutions such as universities, which serve a much smaller fraction of the populace and which require a higher minimal level of operation, tend to locate close to the majority of their clientele, thus choosing the large agglomerations. There they can benefit from interaction with such related activities as health services and business management, which are also subject to the same kind of constraints. Thus educational services are found throughout the urban structure, but the range of services offered increases with urban size (Table 7-4). Most other services show the same trend.

Table 7-4

Number of Workers per Thousand Inhabitants in the Median City, Five Hierarchical Levels, Service Industries, 1971

	Hierarchical level				
	1	2	3	4	5
Transportation and warehousing	22.1	16.3	13.6	15.7	13.6
Communications	10.0	6.9	6.4	6.9	5.7
Public utilities	4.2	3.9	4.5	3.8	3.7
Wholesale trade	21.0	15.0	11.9	13.0	10.9
Retail trade	49.5	48.0	48.3	46.4	48.4
Finance, insurance, and real estate	22.0	14.8	13.1	12.1	10.7
Education	29.9	29.3	27.9	24.2	24.7
Health and welfare	27.4	28.7	27.1	27.1	27.8
Personal services	9.0	9.1	8.8	8.6	9.4
Food and lodging	15.5	15.7	17.1	16.8	17.0
Other service industries	26.5	21.0	17.2	16.0	14.7
Public administration	32.5	26.0	22.9	16.8	22.0
Total	269.6	234.7	218.8	207.4	208.6

1 The hierarchical level of a city is determined by its approximate population: Level 1 – 250,000 and over; Level 2 – 80,000-250,000; Level 3 – 35,000-80,000; Level 4 – 15,000-35,000; and Level 5 – 5,000-15,000.

SOURCE Estimates by the Economic Council of Canada, based on 1971 Census data.

In a particular urban centre, the determining factor in the growth of this type of activity is therefore its population increase, within the city itself or in its surrounding market area. New specialized types of services are drawn to it when the population reaches a certain threshold of feasibility. Other factors can also be influential, such as the level of average personal income for financial services and the age structure for

4 The industrial structure is here broken down into 26 industries.

education services. Geographical factors have a significant effect too; proximity to Toronto or Montreal usually decreases the quantity of education services offered locally, but it increases employment in wholesale trade. Conversely, the greater the distance between two agglomerations of intermediate size, the larger the concentration of health and communications facilities in each.

If service industries that increase the fastest prove to be those which, for the sake of efficiency, settle in the large centres, then one would naturally expect the large centres to grow the fastest. That seems to be what happens. The fast-growth service sectors most likely to locate in large centres include, among others, communication; finance, insurance and real estate; and public administration. A more detailed industrial classification would provide other examples.

This phenomenon can explain at least part of the variations in growth between urban centres within each region. More subtly, variation in growth between whole systems of urban centres occurs in part because of the relationship between the size of the largest urban centre in each system or region and the range of services that it can efficiently support. The population of a system or region can grow more rapidly if at least one urban centre within it can become large enough to permit substitution of imported services by production locally. Thus, despite competition from Montreal, Quebec City provides more specialized services to firms than Halifax; and the same goes for personal services available in Winnipeg compared with those in Regina and Saskatoon. But, except for the very largest urban systems, population will always be too small to justify the establishment of certain specialized services locally; for example, in 1971, there was no computer service firm in Chicoutimi or Saint John, and there was no film production or distribution agency in Sudbury or Chicoutimi. It is clear that, among the metropolitan centres, it is Toronto and, to a lesser degree, Montreal that offer the widest range of services and therefore contribute most to rapid growth in their sphere of influence.

These characteristics of an urban system may be even more important as time goes on. It is, in fact, those economic activities that favour a metropolitan location — especially personal services — that expand most rapidly with increases in personal income. Moreover, in the opinion of many regional development experts,[5] a full range of specialized services is a necessary condition, if not sufficient in itself, to make a metropolitan agglomeration a development pole — that is, a location where decisions affecting the development of an entire region can be efficiently reached with the aid of varied expertise that is immediately accessible. Thus a development pole becomes a promoter of innovations. Even though it may not generate completely original innovations itself or play a leadership role in first adopting innovations imported from elsewhere, the development pole must, like a prism, adapt these innovations to the particular physical and social conditions of its area. There then exists complementarity between the metropolis and its periphery.

5 This is one of the basic ideas of the report by B. Higgins, F. Martin, and A. Raynauld, *Les orientations du développement économique régional dans la Province de Québec* (Ottawa: Department of Regional Economic Expansion, February 1970).

Although service industries are responsible for half of all economic activity today, they do not tell the whole story. Each urban centre also has industries that use locally available resources to produce goods, which are then distributed to a market whose geographical limits extend beyond the local area. This distribution can be direct when the goods in question must travel over long distances in order to reach the final customer (consumer or producer), or it can be indirect when the main customer is a producer who uses the goods locally but then gives wide distribution to his own product. The production of newsprint for export to the United States is an example of direct distribution, while the manufacturing of brakes for the automobile industry illustrates the second case.

Certain markets are not strictly local either because certain key resources — such as raw materials, abundant or highly qualified labour, or an international airport — are only available in one or two special locations or because the technical characteristics of the manufacturing process result in a very high minimum scale of operations — for example, steel manufacturing, petroleum refining, and assembly of electrical appliances.

It is not so easy to trace the connections between a region's urban structure and employment growth in industries serving primarily nonlocal markets. In addition, the geographical distribution of production is subject to great inertia, and the existing industrial structure therefore plays a very important role in urban and regional growth. For example, the endowment of Ontario and the Prairies in 1961 with certain industries, whose national growth performance over the following ten years was to be markedly different from the average, proved to be the most important factor in explaining differences in employment growth between these two regions and the rest of Canada.[6] But, in the light of recent Canadian experience, we can state that, for the types of activity oriented towards extraregional markets, the net increase in employment, above or below the potential represented by the existing industrial structure, depends basically on three types of characteristics: the traits of the physical and social environment, the volume of domestic activity, and the type of interaction present in the urban system. In addition, some part of the gap in employment growth between the Atlantic region and British Columbia can be explained by the present endowment of natural resources and by the repercussions of their use on the quality and availability of labour, especially through migration.

Income per Capita

We have seen that income per capita increases with urban size. One might think that this relation could be explained in large part by differences in the cost of living, but this is not the case. According to the data currently available, two tendencies seem to be offsetting; the price of food goes down with city size, whereas the cost of housing goes up. It is therefore necessary to look elsewhere for an explanation.

In a population of given size, the higher the participation rate, the greater the income per capita. Now there is a very clear, positive relationship between the participation

6 Fernand Martin, *Regional Aspects of the Evolution of Canadian Employment*, Economic Council of Canada (Ottawa: Information Canada, 1976).

rate in an urban centre and the size of the population,[7] which is more pronounced for women.[8] But, even after correcting for this phenomenon, the positive relationship between average income and urban size remains significant; according to our estimates, differences in participation rates explain only about one-third of the income gaps between cities of different sizes.[9] Some of the positive relationship between urban size and the participation rate is a consequence of the industrial diversification process that accompanies urban growth — notably the greater importance of the service sector.

Two other explanations are usually proposed for the observed positive correlation between income per worker and urban size : agglomeration economies; and changes in the occupational structure. The first suggests that a plant relocated from a small city to a metropolis would benefit from a reduction in total costs attributable to external economies realized as a result of the move.[10] This reduction would come from decreased transportation charges and better utilization of available manpower;[11] and, in the long run, management itself might gain from access to the market and to technical innovations. The firm would therefore be more profitable, and labour productivity would improve. A reduction could also result from urbanization economies — that is, lower per capita costs for public utilities and municipal services.[12]

There is no generally accepted framework for treating agglomeration economies because of its complexity as a social phenomenon. Even studies devoted to the more restricted question of urbanization economies have been unable to resolve the methodological problems created by the heterogeneous nature of public services. Thus unit costs fall in the delivery of library services up to very large city sizes but may

7 Again, however, interregional disparities are larger than interurban disparities. On the one hand, the annual participation rate was estimated, in 1976, at 53.4 in the Atlantic region, 58.3 in Quebec, 64.0 in Ontario, 63.5 in the Prairie region, and 61.5 in British Columbia. On the other hand, on the basis of all Canadian urban areas, irrespective of the region, we estimated that, in 1971, a city of 10,000 would have a participation rate of 56.2; a city of 100,000 would have a rate of 56.5; and a metropolitan area of one million, 59.2.

8 While, on the basis of 1971 Census data, the difference in participation rates between a city of 5,000 and a city of two million was estimated at 5.6 percentage points for men, it reached 7.1 percentage points for women.

9 Once differences in participation rates are accounted for, the average urban income gap between Ontario and Quebec decreases from $586 to $391 and, between Ontario and the Atlantic region, from $596 to $499.

10 A relocation of this type would not be feasible for certain industries, of course — e.g., industries whose location is dictated by access to raw materials.

11 There should, therefore, be less disguised unemployment and general underemployment in large cities.

12 In a situation of long-term equilibrium, the comparative advantage of larger urban centres as places to produce will tend to drive up site rents to the point where one city is no more profitable a place in which to produce than another. The same applies to labour; wage rates will not differ among cities of different size in a given region in the long run unless labour is perfectly immobile. Thus a necessary condition, for the explanation of income differences by agglomeration economies, is that long-run equilibrium has not yet been established, in the sense that the larger an urban centre, the faster the growth of production and employment. By and large, the evidence presented earlier indicates that this necessary condition is met within each Canadian region.

rise in the delivery of water supply for quite moderate city sizes. It then becomes very difficult to determine whether unit costs rise or fall in total, for all services combined.[13]

Our own analysis has focused on agglomeration economies in the private manufacturing sector. We tried to determine whether an increase in the size of an urban centre leads to an increase in value added per worker. Differences in industrial structure between urban centres were corrected for by the best available means, which was to use estimates of capital per worker in each city as a controlling variable. Indeed, this factor does influence labour productivity to a large extent; moreover, it has only a weak correlation with urban size.[14] Our estimates imply that value added per worker in Canadian manufacturing does increase with city size at first, though at a decreasing rate,[15] but that it actually declines when population rises above 1.4 million. There is a $200 difference in value added per worker between cities of 25,000 and of 100,000 inhabitants; to obtain this same increase, an agglomeration of 500,000 must reach 1 million. Soon thereafter, the gains begin to fall off, and they become negative as the larger city sizes are reached. While the observed value added per worker in manufacturing in 1970 was $ 18,450 in Toronto and $ 16,300 in Montreal, the average value was $ 18,113 in the other seventeen metropolitan centres of our sample; and seven of them had a value larger than that for Toronto. Fuchs, who was able to include in his analysis for the United States more variables than we had information on for Canada, also corroborates the existence of agglomeration economies; he did not, however, examine the possibility of declining productivity among the largest metropolitan centres.[16] On balance, we conclude that the gains from agglomeration economies are not especially large, though they are far from insignificant, and that, until the very largest size of city is reached, an increase in the average size of urban centres is likely to improve their productivity.

The second explanation for the link between income per worker and city size, based on occupational structure, is considerably simpler. It asserts that the highly paid occupations are disproportionately represented in certain industries and that these industries are precisely those which are disproportionately represented in larger urban centres. In addition to this, within each industry there is a tendency for the head office, which contains the most highly paid employees, to be located in a larger centre. And it can be shown that the relative importance of the managerial group in the occupational structure varies most with urban size.

13 These problems of methodology do explain why economic analysis has so far been unable to do better than specify a very wide range for optimal urban size, between 30,000 and 1½ million. See H. W. Richardson, *The Economics of Urban Size* (Lexington, Mass.: Lexington Books, 1973), Chapter 7.

14 It is, therefore, wrong to state that manufacturing in small cities is labour-intensive.

15 Similar results were obtained for American metropolitan agglomerations; see T. Kawashima, "Urban Agglomeration Economies in Manufacturing Industries," *Papers of the Regional Science Association* 34 (1975): 157-78. According to this study, the industries that benefit most from agglomeration economies are, in decreasing order, beverages, meat products, newspaper printing, and electric machinery.

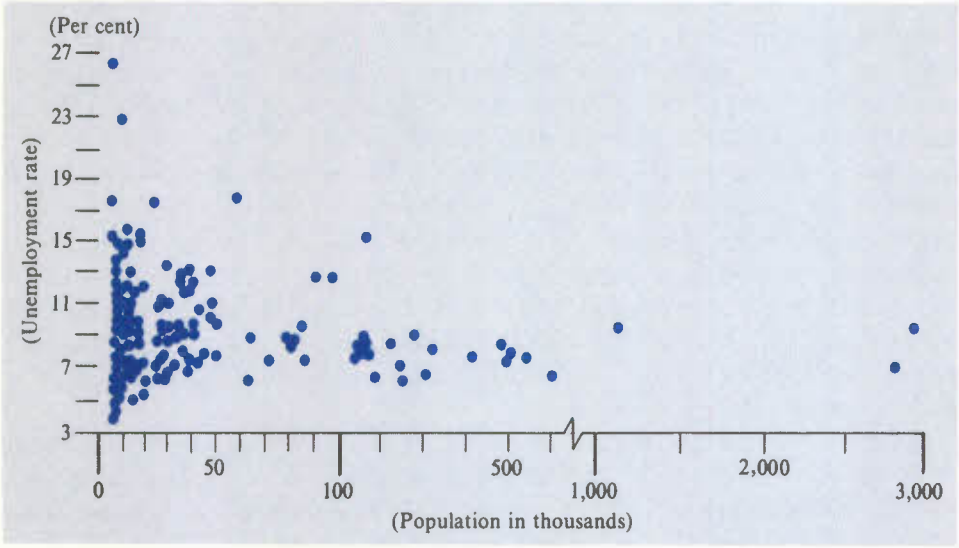
16 He standardizes for variables such as age, sex, education, rate of unionization, and size of firms. See V. R. Fuchs, *Differentials in Hourly Earnings by Region and City Size, 1959*, National Bureau of Economic Research, Occasional Paper No. 101 (New York: NBER, 1967).

Unemployment Rate

The data in Table 7-3 suggested that there was no positive relationship between average unemployment rates and urban size; Chart 7-2 confirms this: Presumably, the numerous forces present in the labour market compensate each other. In a metropolitan agglomeration, for example, the size of the market allows better adjustment between the individual characteristics of a worker and job conditions, perhaps lowering unemployment. On the other hand, a large centre is a powerful magnet for migrants, whose continual inflow may well be responsible for keeping the unemployment rate in the metropolis close to the regional average.

Chart 7-2

Unemployment Rate in Canadian Urban Agglomerations, June 1971



SOURCE Data from the 1971 Census.

A look at each individual economic region does not imply that any particular urban size is optimal in the context of the labour market. Apart from the small cities, each level in the urban hierarchy displays the smallest unemployment rate in one or another of the regions. On the other hand, it is significant that the largest urban centres, while not performing exceptionally well, succeed in avoiding the last rank in their respective regions. According to the 1971 Census, the unemployment rate in St. John's was 8.3 per cent, while that for the entire province of Newfoundland was 9.2 per cent.[17]

On the whole, there seems to be little stability in the relationship between unemployment rates and urban size. A second glance at Chart 7-2, however, shows a

17 Recall that the census data are for June, when unemployment is seasonally low in Newfoundland. Year-round figures would show that its unemployment rate is much higher than that of British Columbia.

decrease in the spread of unemployment rates, as urban size increases. The variation from average performance is much greater for small urban centres than for those with over 100,000 inhabitants. It is likely that, because of their greater industrial specialization, some small centres are seriously affected by a general economic slowdown or by technical innovations that render a specific geographical location less than optimal, while others, developed more recently, are in a better position to attain near-full employment than the large centres. On the other hand, since the census data were gathered during the month of June 1971, they certainly underestimate the average annual unemployment rate for small cities, because seasonal unemployment is lowest in summer and because seasonal jobs are more common in this urban size group.

The Influence of Urban Structure Evaluated

Of the three economic indicators we have examined, only income per capita seems likely to be noticeably affected by the region's urban structure, the latter having only a moderate influence on population growth and hardly any on the unemployment rate. The major explanation of differences in population growth rates among urban centres — that the fastest-growing industries happen to be service industries, whose most efficient location within the region is frequently in large centres — implies that there is not much scope for stimulating regional population growth by encouraging the formation of larger centres. Only a few service industries, mainly in government and in business and financial activities, have a choice about whether to locate in one region or another and thus can be encouraged to settle into a region through the formation of larger centres. It might, however, be argued that this type of industry is important in helping to attract other industry and in promoting a dynamic business climate that stimulates growth.

More optimism is warranted regarding the likely impact of greater urbanization on productivity and income levels. There are solid theoretical grounds for supposing that productivity in non-resource industries is enhanced by the movement of population from rural and semi-urban areas to urban centres of at least moderate size, and good empirical evidence, for the United States, Canada, and elsewhere, that this theoretical expectation is correct. On the Canadian scene, the data suggest greater productivity up to an urban size of about 1½ million. Beyond that, productivity advantages become more doubtful; and social problems, such as congestion and pollution, also take on increasing importance. All this implies that greater urbanization would be advantageous to the Atlantic region from the point of view of productivity in the manufacturing sector without imposing social problems as acute as those found in the large urban centres, since the region has none.[18] This is perhaps also true for the part of Quebec outside the Montreal area and for the Prairie provinces.

18 Using rather different arguments, Burke and Ireland recommend a strategy for encouraging further growth in that part of the region that is already the most heavily urbanized — a central kidney-shaped area that includes Saint John, Moncton, and Halifax. See C. D. Burke and D. J. Ireland, *An Urban/Economic Development Strategy for the Atlantic Region* (Toronto: Macmillan, 1976).

Constraints Imposed by the Industrial Structure

The question that must now be asked is to what extent any region could, in practice, choose to change its geographical population distribution in order to reap advantages in terms of per capita income and perhaps population growth. In other words, what are the obstacles to creating an urban structure dominated by large centres? Among all the factors involved, the most important is definitely the industrial structure.

Identification of Urban Systems

For analysing the constraints imposed by the industrial structure on the urban structure, it is better to work with regions based on urban systems rather than with the five conventional regions or the ten provinces. We have defined an urban system or region as a group of cities close to each other, with a more or less intense and frequent exchange of goods, people, or ideas.

Table 7-5

Demographic Characteristics and Spatial Interaction Index of Urban Systems in Canada, 1961-71

	Population				Population in the regional metropolis as a proportion of:		Spatial interaction index[2]	
	Urban system		Surrounding region[1]					
	1971	Variation, 1961-71	1971	Variation, 1961-71	Surrounding region, 1971	Urban system, 1971	1961	1971
		(Per cent)		(Per cent)	(Per cent)			
St. John's (Nfld.)	159,304	18.0	347,750	10.5	37.9	82.7	8.22	4.84
Halifax	451,432	8.1	900,601	7.0	24.7	49.3	10.24	10.16
Saint John (N.B.)	287,193	12.2	634,557	6.1	16.8	37.2	6.15	5.42
Chicoutimi	231,599	27.9	398,222	12.0	33.6	57.7	7.89	7.65
Quebec	649,058	22.2	1,127,060	9.4	42.6	74.0	11.51	16.60
Montreal	3,459,615	20.8	4,105,125	18.2	66.8	79.3	77.46	90.72
Ottawa	692,294	27.5	930,256	20.4	64.8	87.0	9.25	10.01
Toronto	4,839,856	30.4	5,721,741	27.5	45.9	54.3	113.10	152.23
Sudbury	356,079	17.6	582,379	8.8	26.7	43.6	6.10	6.82
Winnipeg	635,619	12.7	906,125	6.9	59.6	85.0	7.99	8.63
Regina-Saskatoon	401,075	21.4	904,421	0.0	29.5	66.6	5.41	5.76
Edmonton-Calgary	1,042,036	36.7	1,627,874	22.2	55.2	86.3	5.61	4.73
Vancouver	1,494,207	35.3	1,721,612	32.8	62.9	72.4	48.75	61.46
Total	14,699,307	25.6	19,907,723	18.6	50.2	68.0	–	–

1 The continuous region, whose boundaries include only those agglomerations making up the urban system, as estimated from census divisions; the population corresponds to the provincial total in Nova Scotia (including Prince Edward Island), in New Brunswick, in Saskatchewan, and in Alberta.

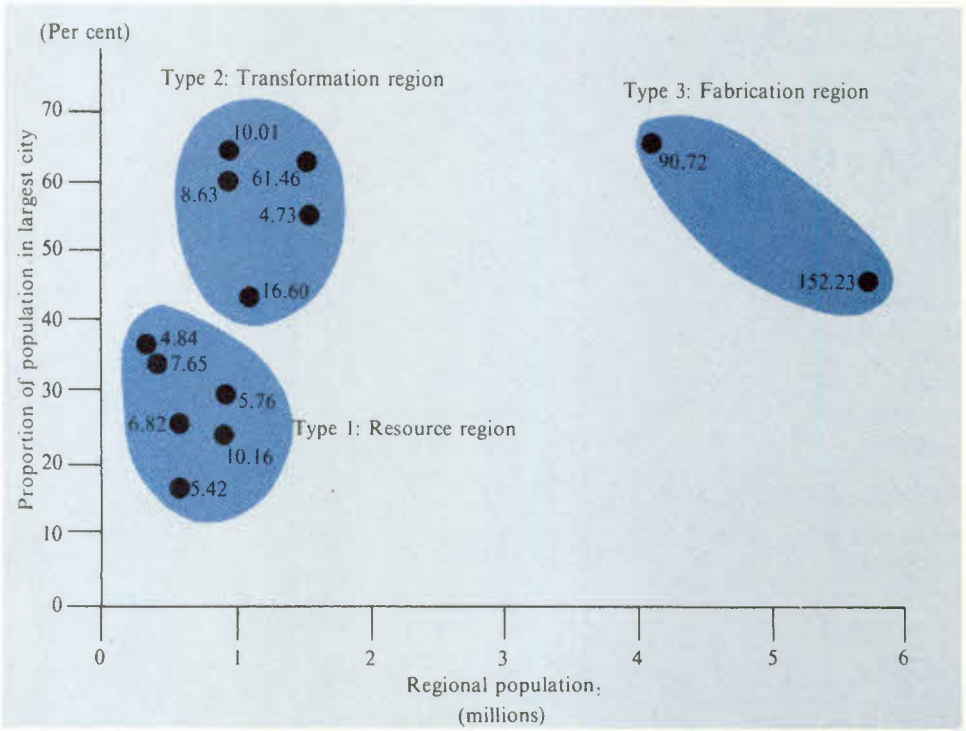
2 Computed from the gravity potential of each urban agglomeration, as determined by population masses and distances between the agglomerations in each urban system. This index increases with the number and the size of urban agglomerations but diminishes with the distance between them.

SOURCE Estimates by the Economic Council of Canada, based on 1961 and 1971 Census data.

We have identified thirteen urban systems in Canada, corresponding roughly to the single most densely populated region in each of seven of the provinces, plus three such regions in each of Quebec and Ontario (Table 7-5 and Appendix A). This partitioning yields more internally homogeneous regions, especially with regard to natural resource endowments — an important aspect of Canadian geographic reality — and it also dramatizes the differences between regions. Demographic size is a good example of this; the St. John's system in 1971 had a population of 159,304, while that of Toronto had 4,839,856. The urban systems can be grouped into three classes (Chart 7-3). The six smallest each have a total population of under 905,000 and contain less than 40 per cent of the population in the system's largest city, the "regional metropolis." The cities within these systems are typically quite far apart, and interchange among them is not great. This latter characteristic can be captured by a measure known as the "interaction index," which has a low average value of only 6.7 for these six systems (Appendix A). Five other systems have a population of between 905,000 and 2 million, of which

Chart 7-3

Indexes of Spatial Concentration and Interaction in 13 Urban Systems, Canada, 1971[1]



1 These indexes are computed from the gravity potential of each urban agglomeration as determined by population masses and distances between the agglomerations in each system. The index increases with the number and size of urban agglomerations but diminishes with the distance between them.

SOURCE Estimates by the Economic Council of Canada, based on data from the 1971 Census.

between 43.8 and 65.8 per cent live in the regional metropolis; their average interaction index is 20.2. Finally, the Toronto and Montreal systems form a class of their own, distinguished not so much by the relative size of their largest city as by their absolute size and by their high degree of spatial interaction.

Influence of the Industrial Structure

According to one tradition of economic analysis, the development of a region usually undergoes three stages: exploitation of natural resources, on-site transformation of these resources, and further fabrication of certain transformed products into manufactured items. Thus goods exported from one region to the rest of the country or abroad differ, depending upon the stage of development. Intraregional flows also differ in intensity and direction; as a result, the urban structure reflects, to a certain extent, the industrial structure of the region. We consider here an urban system as belonging to a resource region when the value added in the primary sector is higher than in the manufacturing sector. This allows us to use provincial data on value added to classify every system except those in Ontario and Quebec (Table 7-6). For the six urban systems in Ontario and Quebec, we use employment data; a region in which employment in the primary sector is nearly equal to employment in the manufacturing

Table 7-6

Value Added in the Goods-Producing Industries and in the Manufacturing Sector, Canada, by Province, 1971

	Goods-producing industries				Manufacturing sector[1]		
	Primary	Manufacturing	Construction and electric power	Total	Transformation[2]	Fabrication[3]	Total
Newfoundland	33.3	17.3	49.4	100	51.8-84.5	15.5-48.2	100
Prince Edward Island	35.1	24.2	40.7	100	76.2-91.8	8.2-23.8	100
Nova Scotia	23.1	41.0	35.9	100	64.5-74.8	25.2-35.5	100
New Brunswick	19.6	45.1	35.3	100	70.2-73.8	26.2-29.8	100
Quebec	10.8	65.6	23.6	100	50.7	49.3	100
Ontario	9.6	70.6	19.8	100	40.3	59.7	100
Manitoba	33.7	39.5	26.8	100	47.6-51.9	48.1-52.4	100
Saskatchewan	69.7	12.4	17.9	100	60.0-78.3	21.7-40.0	100
Alberta	54.0	19.9	26.1	100	61.3-63.3	36.7-38.7	100
British Columbia	21.4	46.4	32.2	100	73.5-75.0	25.0-26.5	100
Canada	20.0	56.1	23.9	100	48.3	51.7	100

1 A range, rather than an exact figure, is given when the exact data for one or more industries are not available for reasons of confidentiality.
2 The transformation sector includes the following industries: food and beverages, tobacco, rubber, leather, textiles, lumber, paper, primary metal, nonmetallic minerals, petroleum, and coal.
3 The fabrication sector includes the following industries: hosiery, clothing, furniture, printing and publishing, metal products, machinery, transportation and equipment, electrical products, chemical products, and other manufacturing industries.
SOURCE Data from Statistics Canada.

sector is considered a resource region. Using these methods, the urban systems of St. John's, Chicoutimi, Sudbury, Regina-Saskatoon, and Calgary-Edmonton are classified as resource regions.

Determining whether the remaining urban systems are transformation regions or fabrication regions depends on the ability to decide which industries are characterized chiefly by the transformation of locally available resources.[19] The distinction between a transformation region and a fabrication region is based quite simply on whether the region's share of Canadian fabrication jobs is greater than its share of the Canadian population. If this proportion is higher than the share of total population, then it is a fabrication region. Only Toronto and Montreal meet this criterion. Even though transformation is also important in these two systems, the concentration of fabrication activities appears sufficient to us to influence not only industrial structure as such, but also the urban structure. Finally, the six remaining urban systems are considered as transformation regions.

Three types of urban systems were identified above from characteristics of the urban structure, and three types of regions have just been established on the basis of the industrial structure.[20] If one treats the Type 1 urban systems (Chart 7-3) as resource regions and Types 2 and 3 as transformation and fabrication regions, respectively, the two classifications can be matched for 10 of the 13 urban systems, so that urban and industrial structure are indeed closely linked. The only exceptions to the matching are Halifax and Saint John, which show a resource-region urban structure but a transformation-region industrial structure, and Calgary-Edmonton, which shows the reverse.

Resource Regions

On the one hand, the exploitation of natural resources frequently requires a vast territory, whether for ecological reasons such as the low density of exploited resources or for economic reasons such as the desire to avoid the increase in extraction costs that comes with deeper mining pits. On the other hand, the minimum scale of operation needed for profitability usually requires a relatively small number of workers, especially in agriculture. Thus, at the outset, there is a large number of production units in a resource region.

Small towns and cities in these areas provide a number of transportation, trade, and personal services. In order to be efficient, rail and water transportation operates from staging points, where raw materials often undergo certain changes, as in iron ore pelletization plants or saw mills, or preliminary processing necessary for transportation, as in freezing of fish and packaging. The trade and service sectors serve the daily needs of

19 The following industries are included in this group: food and beverages, tobacco, rubber, leather, textiles, lumber, paper, primary metal, nonmetallic minerals, petroleum, and coal. The remaining manufacturing industries (hosiery, clothing, furniture, printing and publishing, metal products, machinery, transportation equipment, electrical products, chemical products, and other manufacturing industries) are defined as being in the fabrication sector.

20 A more detailed typology is presented in J.-P. Fines, "*Analyse spatialisée des structures de production industrielle*" (Aix-en-Provence: Université d'Aix-Marseille, 1972).

the population. Since the transformation of raw materials is at a very early stage of development, the growth of each urban centre in a resource region depends essentially on the possibilities offered by the physical characteristics of its environment. One centre may become unusually large because of its role as a primary transformation centre of raw materials (Sudbury or Chicoutimi), as a transportation hub (Saint John or Halifax), or as a provincial capital (St. John's or Regina). The urban structure in a resource region is thus made up of a large number of small urban centres of less than 15,000 and a regional metropolis, whose size, though larger, remains small compared with the metropolises in industrialized regions; there is nearly total absence of intermediate centres. In total, 35 out of 56 urban centres in the six urban systems considered as resource regions have a population of under 15,000. Excluding each system's regional metropolis, only 25 per cent of the total population is in centres of over 15,000; in the rest of Canada, the proportion is 41.3 per cent.

In dynamic terms, the main characteristic of a resource-type urban system is the relative independence of the components — that is, a low level of interaction. Since there is very little transformation of raw materials, shipments outside the region are more important than intraregional flows; therefore, the transportation network is characterized by multiple-exit points and parallel lines. Besides, the primary sector is often a group of juxtaposed activities with very few ties; the North Shore of the St. Lawrence Gulf is a good example of the independence of the mining sector (iron), forestry (newsprint), and energy (hydro development and an aluminum smelter). Sometimes, however, the layout of the transportation network allows the regional metropolis to link together a number of different activities. Nonetheless, because of the small regional population and the relatively small size of the metropolis, the headquarters, as well as consulting services, are usually located outside the region.[21]

Transformation Regions

Several conditions must be met for greater on-site transformation of raw materials, especially in regard to volume and access to markets. In addition, because of the specialization that results from economies of scale in production, the transformation of raw materials requires numerous steps, and the locational requirements are such that these different transformation steps are often carried out in separate establishments and even in separate locations.[22]

In the transformation of forest resources, for example, the raw material is first cut and classified in the forest, then moved either to sawmills or to pulp or paperboard

21 Even though the six urban systems classified as resource regions represent 12.5 per cent of the population of Canada, less than 5 per cent of the 1,078 largest manufacturing, trade, and service firms have their headquarters located in one of these systems. Moreover, only 3.7 per cent of the Canadian employees in management and organization consulting offices located in a metropolitan area are found there, but these areas contain 8.5 per cent of the population of all metropolitan areas.

22 Many studies in this field are under way at the present time, including S. Czamanski, *Study of Clustering of Industries* and *Study of Spatial, Industrial Complexes*, Institute of Public Affairs (Halifax: Dalhousie University, 1974 and 1976, respectively).

mills. In the former case, the product is then used directly by the construction industry or is further transformed into a wide range of products where wood is a minor or major component. In the latter case, pulp is used in the manufacture of paper; however, not only are there several types of paper, but each can be transformed again, as in the case of newsprint, into newspapers, magazines, or printed forms. Each one of these stages of transformation is carried out in a separate location. Thus sawmills are well distributed throughout the forest area and account for an important share of employment in small urban centres, while pulp and paper mills, because of their size and potential industrial linkages, give rise to intermediate-sized cities with a fairly well-developed transportation infrastructure. Finally, miscellaneous paper and paperboard mills often choose to locate in the regional metropolis. Thus, on the basis of the information provided by the 1971 Census, we find that the average proportion of jobs in urban systems that are located in the regional metropolis is 38.6 per cent in forestry, 55.2 per cent in the paper industry, 67.3 per cent in the lumber and furniture industries, and 78.9 per cent in printing and publishing.[23]

Not all raw materials give rise to an urban structure as regular as that originating from forest operations.[24] For instance, the leather, wool, and food processing industries — thanks to their intensive use of unskilled labour and their low potential for economies of scale — can locate in either the regional metropolis or in the smaller urban centres. The petroleum industry, for other technical reasons, displays a similar pattern. Compared with the resource regions, a transformation region generally has more intermediate-sized urban centres, a significantly larger regional metropolis, and a much greater proportion of its total population in this metropolis. These characteristics are found, to varying degrees, in the Quebec, Ottawa, Winnipeg, Calgary-Edmonton, and Vancouver urban centres.

In dynamic terms, the main characteristic of a transformation region is complementarity between the components of the urban system, in that whenever the demand for an export product increases or diminishes, a large part of the region is affected. All the urban centres in the Vancouver system grew at a high rate — more than 24 per cent — during the 1961-71 period, while all the urban centres in the Ottawa system had a growth rate lower than 12 per cent.[25]

Fabrication Regions

Fabrication industries can be distinguished from transformation industries in several ways. They are somewhat more oriented towards the production of finished

23 These statistics may appear to be surprisingly large. This is because they refer only to the labour force living in those urban centres that make up our 13 urban systems. On the basis of the entire Canadian labour force, the proportions are as follows: 7.3 per cent in forestry, 35.1 per cent in the paper industry, 36.5 per cent in the lumber and furniture industries, and 70.9 per cent in printing and publishing.

24 This matter has been discussed elsewhere, particularly by N. H. Lithwick, *Urban Canada: Problems and Prospects* (Ottawa: Central Mortgage and Housing Corporation, 1970), p. 69.

25 Thus, in a regional metropolis, the size effect can at least partially compensate for unfavourable employment conditions in the region.

goods; they require the utilization of a larger variety of inputs, of which only a part comes from local transformation industries; and their market is much more scattered. Furthermore, there is generally less rigidity in the technology used, which allows substitution between the different production factors.

Several consequences flow from the combined effects of all these factors. Fabrication industries tend to locate either in large metropolitan centres or in their immediate periphery, giving preference to an urban site. In Canada in 1971, it was estimated that 67.1 per cent of all jobs in this type of industry were clustered in the Toronto and Montreal urban systems, while the proportion of the total population of Canada living in these two systems was only 38.5 per cent. The size of each regional metropolis is very large and population density for the entire area is much greater than elsewhere, not only in numbers of individuals, but also in numbers of urban centres. There exists, nonetheless, a marked difference between the two Canadian urban systems engaged in fabrication, in terms of the size of the centres that make up the upper level of the urban hierarchy.[26]

Trois-Rivières, with a population of 97,930 in 1971, was the second most important city in the Montreal urban system, whereas the Toronto urban system contained five centres (Hamilton, London, St. Catharines–Niagara Falls, Kitchener, and Oshawa) that had more than 100,000 inhabitants. In general, in fabrication regions, flows between the urban components are more frequent, more important, and in more directions than those in urban systems specializing in transformation activities; the number of roads or the volume and direction of telephone communications can serve as an indicator.[27]

In a dynamic view, an urban system based upon fabrication industries is characterized by competition between the various urban components. Because of the large number of factors playing a role in the choice of a site for a new plant or for the expansion of existing capacity, all urban centres within a reasonable distance of the major metropolis are more or less in competition with each other. Under ideal conditions, we can expect all centres to have similar growth rates and the absolute gap between small and large cities to grow. Growth performance for individual urban centres over the 1961-71 period varied considerably: 90 per cent of urban centres in resource regions experienced rates of growth ranging from –49.1 per cent to 32.3 per cent, while those in transformation regions ranged from –3.7 per cent to 43.0 per cent and those in fabrication regions ranged from –5.8 per cent to 39.9 per cent. Furthermore, 20 per cent of the urban centres in resource regions registered a population

26 The low spatial clustering potential of the labour-intensive nondurable goods industries, which are highly concentrated in the Montreal urban system, compared with the high potential of the capital-intensive durable goods industries, highly concentrated in the Toronto urban system, may explain part of this differential in urban size. Another part is explained by the implications of this on the location of those activities serving a local market— that is, the action of an export-base multiplier. For more details, see Michel Boisvert, "Analyse Économique du Système Urbain Québécois," unpublished M.A. dissertation, Université de Montréal, 1972.

27 J. W. Simmons, "Interaction Among the Cities of Ontario and Quebec," in L. S. Bourne and R. D. MacKinnon, eds., *Urban Systems Development in Central Canada* (Toronto: University of Toronto Press, 1972), pp. 198-219.

drop, compared with 11 per cent and 9 per cent, respectively, in the transformation and fabrication regions.

Factors of Distortion

In treating this correspondence between the industrial and urban structures of a region, several important factors have been deliberately ignored. Some of them are largely independent of any decision-making power and are tied primarily to the conditions of the environment. For example, the role of a transportation node in a resource region is influenced by the number of export gateways in the region. Whenever, as in New Brunswick and Nova Scotia, the gateways are mainly maritime and the entire coast is suitable for port installations, we would expect the regional metropolis to be much less dominant than in a region, such as Saskatchewan, where the railway is the major link with the outside world. Similarly, the density of resources over a territory can influence the type of urban structure, particularly in transformation regions. According to the 1973 National Forest Inventory, the density of wood was estimated at 0.603 in the Atlantic region, 0.638 in Quebec, 1.408 in Ontario, 0.222 in the Prairie region, and 2.053 in British Columbia.[28] Thus the forest industries require a much larger area in the eastern provinces than in British Columbia, and the possibility of clustering for processing operations in the East is smaller. High density of raw materials usually results in a more rapid growth of intermediate-sized cities and, because of inherent agglomeration economies, in a greater regional development potential. This is also the case for the food-processing industry in southwestern Ontario, compared with the region south of Montreal.

Other obstacles to the correspondence between industrial and urban structures arise from the very behaviour of the economic agents. For example, at the time of choosing a location, firms want to be assured of the availability and quality of labour, anticipated improvements in the quality of the transportation network, the characteristics of local public services, and so on. It has been demonstrated that uncertainty in this regard is enough to modify the urban structure in favour of the large metropolis.[29] This is why any hinterland with a low level of local entrepreneurship and a lack of industrial development services is unlikely to initiate a diffusion of industry beyond the metropolitan area proper; perhaps this explains part of the relatively large domination of Montreal in the geographical competition for fabrication industries in the Montreal urban system.

As for the labour force, there is uncertainty because of a lack of information on nonmetropolitan labour markets; thus the assumption is usually made that there is a better chance of finding a job, a higher-paying one, or one better suited to an

28 The volume of mature marketable timber, in millions of cubic feet, divided by the area of unreserved forest land, in thousands of acres. Basic information from Statistics Canada, *Canadian Forestry Statistics*, Cat. No. 25-202.

29 This idea has been developed notably by M. J. Webber, *Impact of Uncertainty on Location* (Cambridge, Mass.: MIT Press, 1972).

individual's capabilities in a diversified metropolitan environment. We know that, at the time of the 1971 Census, 51.9 per cent of all immigrants to Canada between 1966 and 1971 lived in Montreal, Toronto, or Vancouver.[30] The attraction of these areas to Canadian migrants is certainly not as strong, but this factor is certainly of considerable importance in explaining Vancouver's growth, where, during the same period of time, only 24.1 per cent of the total number of in-migrants came from abroad, compared with 31.5 per cent in Montreal and 48.4 per cent in Toronto.[31]

Conclusion

There are substantial differences among Canadian regions in both the degree of urbanization and in the distribution of cities, according to size. The Atlantic region is far and away the least urbanized and has no large cities. British Columbia is heavily urbanized but is almost bereft of cities in the middle-sized range. Quebec has far fewer large urban agglomerations than Ontario.

Based on data for 1961 to 1971, we found that urban areas grew faster than rural ones and that, in general, the biggest urban areas grew faster than the smaller ones, except in British Columbia, where all cities grew very rapidly. This being said, it remains true that variations among regions in the growth rate of cities of comparable size is quite substantial. In urban areas, incomes are higher than in rural areas and progressively more so, the bigger the urban area. Not unexpectedly, the biggest income difference is between the rural or semi-urban settlements and the urban living environment. Contrary to widespread opinion, there is no regular relationship between city size and the level of nonseasonal unemployment in Canada as a whole. It is thus wrong to say that unemployment is substantially higher in small urban areas. There is, however, a positive relationship between participation rates and city size, indicating the availability of a greater diversity of jobs in larger cities, which contributes to increased per capita incomes.

In the case of population growth rates, the rapid growth in demand for services, particularly higher level services, has been very important. Since service production, especially at the higher levels, is most economically located in big cities, it is the big cities that grow fastest. The only exceptions to this rule of any significance on the Canadian scene are the growth of small resource towns in British Columbia and the relative stagnation of similar towns in the Atlantic provinces. This explanation of differences in rates of population growth among cities of different sizes implies that, for a region as a whole, the urban structure exerts only a small, and partly indirect, influence on the region's rate of population growth.

30 See R. W. Crowley, "*Population Distribution: Perspectives and Policies*," Ministry of State for Urban Affairs, Discussion Paper B.74.25, 1974.

31 We believe, in fact, that even though a population increase usually follows an increase in the supply of jobs, the reverse is also true in the case of large metropolitan centres.

The tendency for income levels to grow with city size is partly attributable to a systematic association between the latter and the occupational and industrial structure. Thus, the concentration of population in fewer cities in a low-income region will not change income as much as casual examination of the data might suggest because to do so would require changes in the occupational and industrial structure of the region resulting from such factors as an improvement in labour quality, an increase in capital per worker, and a larger share of regional investment decisions taken locally.

Nevertheless, urban size does have a positive influence on income. Up to a size of about 1½ million inhabitants, the bigger a city is, the more efficient a place it is to produce, and the social costs arising from pollution, congestion, and the like are not apt to be too serious a problem. Although the increase in efficiency is not especially large, according to our estimates, it is far from being insignificant. Regions that manage to entice a higher proportion of their population into larger cities, especially if these do not have about 1½ million inhabitants, should therefore benefit from an increase in regional productivity and income levels. In addition, the presence of a fair-sized city may prevent the loss of some highly educated individuals, many of whom work in the higher-level service occupations, thereby raising average regional income.

It cannot be automatically assumed that it is possible, by deliberate policy, to change the degree of urbanization and the urban structure of a region. We have indicated that the industrial structure of a region is an important determinant of its urban structure. If a region primarily exports raw materials so that the local transformation of natural resources is very limited, urban growth potential will also be limited; trying to replace a large number of small urban centres by a few intermediate-sized cities in order to change the income level, or perhaps the population growth rate in that region, will be an academic pipe dream. And, indeed, theoretical reasoning and some evidence support the view that there are three broad types of regions in any economy — resource regions, transformation regions, and fabrication regions — and that each of these carries with it a somewhat different pattern of urban structure and growth of the cities.

However, it is clear that, although industrial structure is important, it is far from being the only determinant of urban structure. To give two specific examples: it does not seem totally pre-ordained by Quebec's industrial structure that it should have so few cities of over 100,000 inhabitants, and it does not seem essential for the Atlantic region's production pattern that more than half of its population should be in rural or semi-urban areas. In such cases, a limited degree of change in urban structure could be achieved while maintaining a rough correspondence between urban and industrial structure.

We conclude that policies to increase urbanization and modify urban structure could contribute in a moderate way to reducing regional disparities in participation rates, income levels, and perhaps population growth, but it is less certain that they could reduce disparities in unemployment rates.

8 GOVERNMENT ASSISTANCE AND BUSINESS LOCATION

The topic of this chapter is government assistance to private business. To be specific, we examine those types of subsidy which alter the costs of locating business in particular places and therefore influence the distribution of economic activity. The best-known assistance of this type is that channeled through the Department of Regional Economic Expansion. A study of DREE is especially important, even though the department is not a particularly large one, because it alone exists for the sole purpose of reducing regional disparities. We therefore devote much attention to it. Nevertheless, other federal and provincial departments and programs can influence location, even when this is not their intent, and the more important of these are described briefly at the end of the chapter. Several government policies and activities other than assistance to business also affect regional disparities, and perhaps even to a greater degree; these are discussed in Chapter 9.

The Department of Regional Economic Expansion

The Department of Regional Economic Expansion is a very small department with very high visibility. For a program that spends less than one-fifth of what is spent on equalization payments, it gets an enormous amount of attention. Perhaps rightly so, for the issues raised by the very existence of such a department are so fundamental that continued debate on them is necessary and worthwhile. What are some of these issues?

Many taxpayers feel that economic efficiency is penalized by DREE. Money is taken from where it is productive and put where it is unproductive; production is encouraged in the worst places and discouraged in the best; areas that need workers are deprived of them, to the benefit of areas that cannot properly use them. DREE is suspected, in short, of lowering national output at the taxpayer's expense.

Individualists assert that DREE is unnecessary at best, pernicious at worst. North America was built on private initiative, on people getting up and going to where the opportunities were, not on governments handing people a living on a platter. Those who think this spirit is still abroad find DREE unnecessary. Those who think this spirit ought to be preserved if dying and revived if dead find DREE pernicious. It stands accused, in short, of undermining the ethic that created the nation.

Many economists argue that DREE is the wrong answer to the problems. If the federal government decides that people in some regions are badly off, whether because of unemployment or low incomes, it should give those regions more money directly by increasing equalization payments. And, if the people in those regions prefer to have their incomes raised indirectly through attracting industry and jobs to the region rather than directly through using federal money to lower their taxes, let them have the freedom to make this decision for themselves through their provincial representatives. The Department of Regional Economic Expansion is considered, in short, an unnecessary and harmful fifth wheel.

Proponents of DREE can be equally forceful. They note that a century of private initiative has not removed regional problems and that, as far back as one can see, the low-income, high-unemployment provinces have had low incomes and high unemployment. Perhaps one hundred years is trial enough for laissez-faire. On this view, the initiatives by DREE were long overdue; and, if there should happen to be some small cost in terms of national efficiency, there are substantial benefits in the dignity attained by those who prefer jobs to handouts and in the pride achieved by those who prefer independence to dependence. From this perspective, DREE fosters initiative and self-reliance, and it preserves the free enterprise spirit.

Ironically enough, the suspicion is widespread that DREE does not work — ironically, because passionate debate makes little sense if this is the case. The doubt about DREE's effectiveness usually centres on the one-fifth to one-third of its expenditures that go to direct subsidization of firms, under the Regional Development Incentives Act (RDIA). But concern has also been expressed about the value of DREE spending on infrastructure, the construction of which is an indirect way of bringing down the cost of doing business, and about the several other types of regional development activity that DREE promotes.

We cannot hope to settle all these issues here. We have already given our own views on the general merits of individual initiative versus government intervention as an approach to solving regional problems. On other matters, we hope to contribute to the ongoing debate, partly by adding some facts and partly by answering some questions, though not as many as we would like. We shall say something about the effects and the effectiveness of DREE, and we shall suggest in the end that perhaps the controversial RDIA program has been a moderate success. Whether this is true of the DREE program as a whole is less clear.

We shall begin by describing DREE's background, its expenditures during the last few years, and the effects of those expenditures, as seen by DREE itself. Then we shall present some evidence on the effectiveness of DREE in reducing disparities. After that, we shall consider the effect of DREE on the level of national output and on the distribution of income.

The Development of DREE

Growing anxiety concerning the problems associated with regional economic disparities led the federal government, early in the 1960s, to play a more active role in

determining both the level and the direction of economic activity in the lagging regions, which culminated in the formation of the Department of Regional Economic Expansion in 1969.

Prior to DREE, several programs had been introduced, the first being the Agricultural Rehabilitation and Development Act in 1961, which was intended to alleviate the high incidence of low income in rural (agricultural) areas. It emphasized soil and water conservation and land use conversion programs, and its financing was shared equally by the provinces and the federal government. With the introduction of the Agricultural and Rural Development Act (ARDA) in 1965,[1] rural nonagricultural poverty was recognized, and the original program was appropriately expanded, while the land use programs of its predecessor were continued.

In 1966 the Fund for Rural Economic Development (FRED) was introduced to provide assistance to those areas requiring resources beyond those supplied by ARDA. The program covered land management, education, infrastructure investment, and industrial development, especially in the primary sector, although tourism and manufacturing were also assisted. Agreements covered all of Prince Edward Island and parts of New Brunswick, Quebec, and Manitoba.

In 1962 the Atlantic Development Board (ADB) was established as an advisory body on economic problems in the Atlantic region and, beginning in 1963, it administered a development fund that supported large infrastructure investment projects.

The Area Development Agency was set up in 1963 to provide incentives for firms to locate in designated areas of high unemployment and, until 1965, it provided tax concessions and accelerated depreciation allowances to such firms. In 1965 when the Area Development Incentives Act (ADIA) was introduced, the program of tax incentives was modified, and a system of capital grants was introduced.

From this brief inventory,[2] it can be seen that, prior to 1969, the federal government was involved in several regional development programs. It failed, however, to co-ordinate these programs and policies towards any specific goals for any region. At the same time, the individual provinces also instituted regional development policies of their own, with the result that there was a hodgepodge of development efforts that lacked any general overall direction. In the light of these circumstances, after the Council having suggested it,[3] DREE was established in 1969.

The department's goal is to ensure that economic growth is more widely dispersed across Canada and that employment and earning opportunities in the slow-growth regions are brought as close as possible to those in the rest of the country.

1 Although the use of acronyms generally facilitates the author, a discussion such as this may well require a glossary of such terms to facilitate the reader. Such a glossary is presented at the end of this chapter.

2 A number of rather more specialized initiatives have also been taken from time to time, such as the Prairie Farm Rehabilitation Act, the Maritime Marshland Rehabilitation Act, and the formation of the Cape Breton Development Corporation.

3 Economic Council of Canada, *Fifth Annual Review: The Challenge of Growth and Change* (Ottawa: Queen's Printer, 1968), p. 180.

In defining the functions of the Minister of the Department of Regional Economic Expansion to extend to, and include, all matters pertaining to economic expansion and social adjustment (in areas requiring special measures to improve opportunities for productive employment) that were not already assigned to other federal departments, the Government Organization Act, which established DREE, charged the Minister with responsibility for federal regional development efforts. Thus authority for most of the existing regional development programs was transferred to DREE.

The Act also assigned to the Minister the responsibility for Special Areas (SA), in which, by reason of exceptionally inadequate opportunities for productive employment, special measures were needed. Special areas were designated from 1969 to 1972. The locations as of 1972 are shown on the accompanying map; after 1972, DREE adopted a new policy strategy, which suspended the Special Area approach.

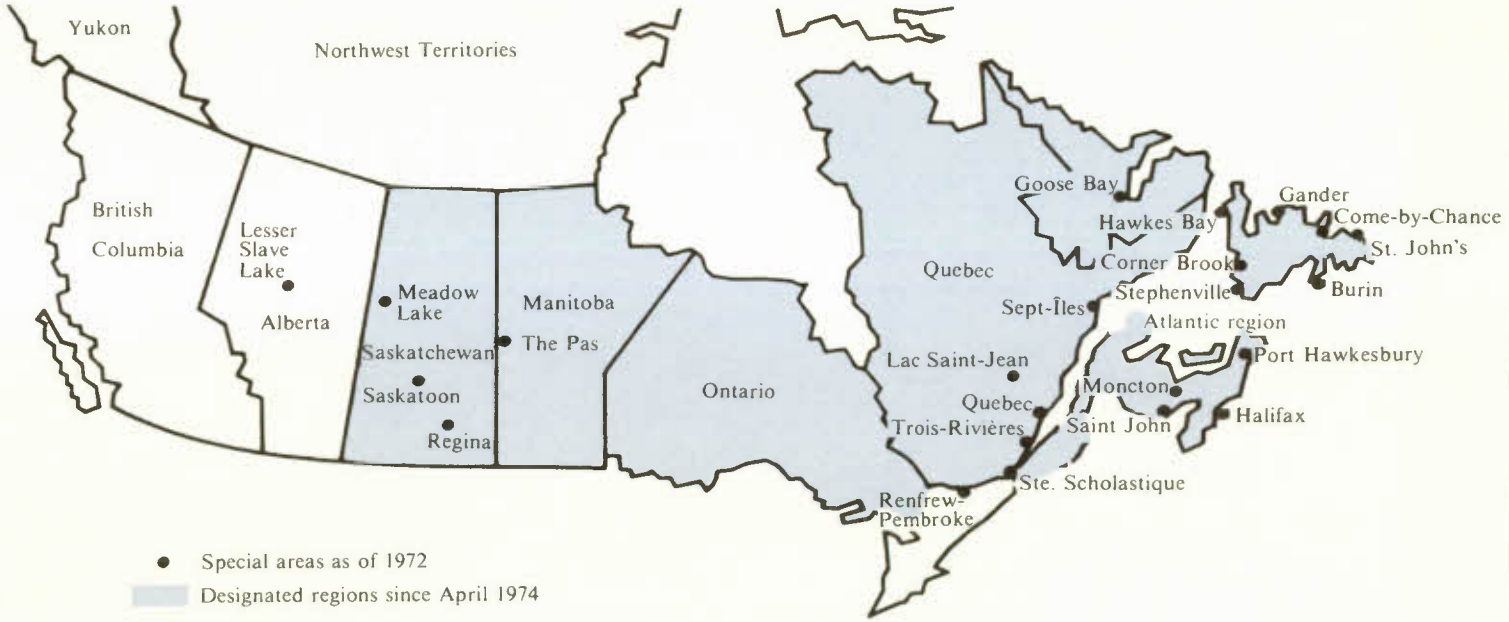
This earlier Special Area legislation was to be implemented by a series of agreements to be signed with the provinces, under which DREE could provide industrial incentives to firms to establish or expand industrial facilities or it could provide assistance to establish or expand the infrastructure required for the economic expansion of the SA. Eighteen of the twenty-three SAs named were designated to receive infrastructure assistance, including all of the areas in the Atlantic provinces. Within this infrastructure assistance program, expenditures were heavily weighted in favour of transportation facilities such as highways and streets, with expenditures for municipal services such as water and sewer systems ranking second in importance.

A second piece of legislation, the Regional Development Incentives Act, adopted in 1969, replaced the ADIA legislation of 1965, although commitments under that Act were to be honoured. The objective of the RDIA program was to stimulate industrial expansion in Designated Regions (DRs) of Canada by providing grants to firms starting a new manufacturing or processing operation or expanding or modernizing an existing one. These industrial incentives were to apply to most industries, with the exception of pulp and newsprint mills and oil refineries.

The incentives have always varied in generosity according to the region concerned and the nature of the project, new facilities in the Atlantic region being the most favoured. In recent years, however, greater emphasis has been placed on the expansion and modernization of existing firms. The basis for calculating the grants has changed from time to time, with the common thread being that the amount available for new facilities or new products has always depended on both the capital investment and the expected employment creation, whereas it has depended on capital only for modernizations or expansions. Table 8-1 shows that capital-linked subsidies are presently between 20 per cent and 25 per cent, and employment-linked subsidies between 15 per cent and 30 per cent, of the cost of wages for one year.

The DRs originally encompassed about 30 per cent of the country's population compared with about 18 per cent under the ADIA. An amendment to the Act added a third DR in 1971, bringing the proportion of the Canadian population covered by DRs to about 50 per cent. Further changes have been made since 1973, which have excluded some areas previously included in Alberta, Ontario, and British Columbia. The DRs are now shown on the accompanying map by diagonal shading.

Special Areas and Designated Regions, Canada, 1972 and 1974



SOURCE Department of Regional Economic Expansion.

Table 8-1

Maximum Incentive Grants Available under RDIA

	Type of project	
	Modernization or expansion	New plant or new product expansion
Designated regions		
Atlantic	20% of eligible capital costs	25% of capital costs plus 30% of wage bill for one year[1]
All other	20% of eligible capital costs	25% of capital costs plus 15% of wage bill for one year[1]

1 Based on average of projected second- and third-year wage bills.
SOURCE Department of Regional Economic Expansion.

Following the policy review undertaken during 1972-73, the department introduced the concept of development opportunities, which, once discovered, were to be exploited through a series of subsidiary agreements under ten-year General Development Agreements (GDAs) signed with each province except Prince Edward Island, beginning in 1974. The RDIA program was retained, while other existing DREE programs were to continue for an interim period, but it was claimed that the development opportunities concept would become the central element of regional development policy. In fact, up to 1975, less than one-fifth of all expenditures were made under the GDA program, and the types of expenditure were quite similar to those made under other programs. There is, however, a considerably enhanced degree of participation by provinces, by federal departments other than DREE, and by the private sector in the subsidiary agreements signed within the GDA program.

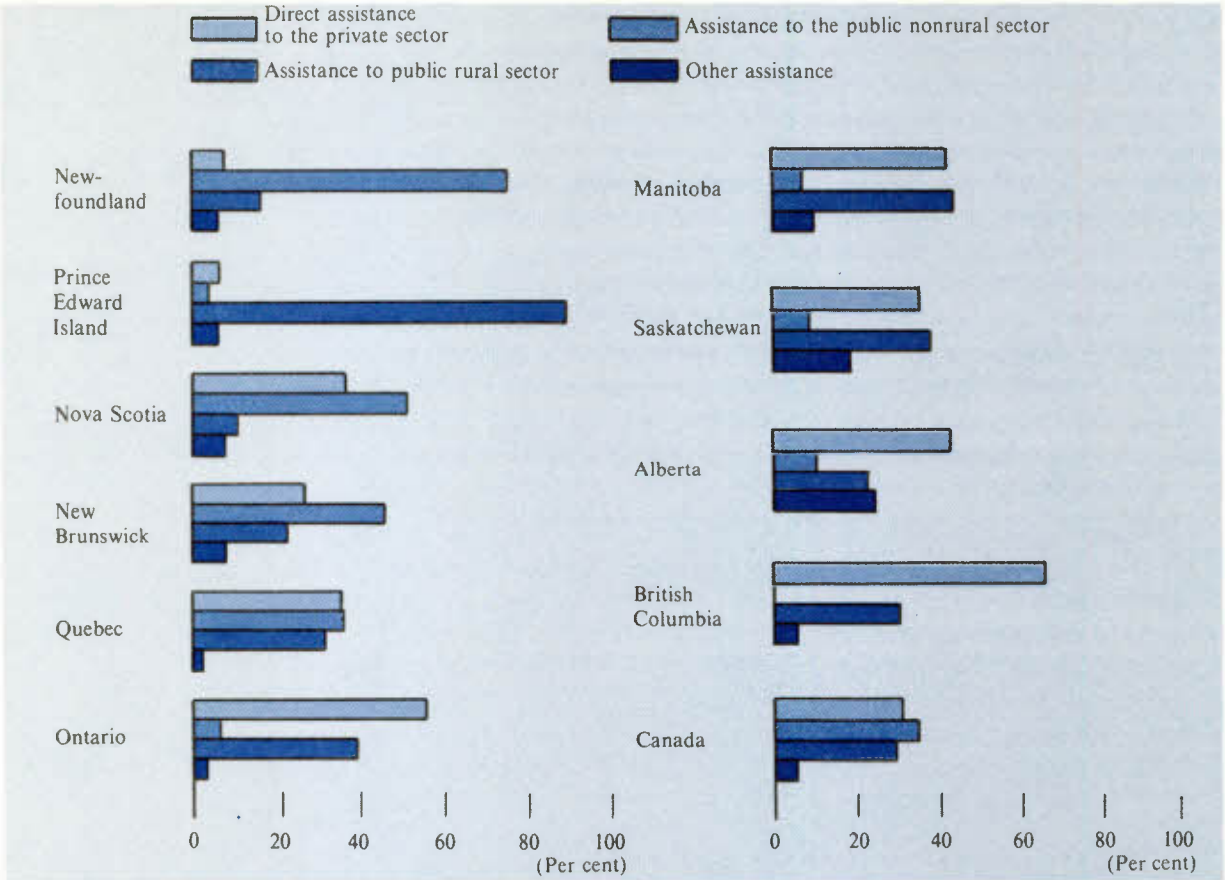
Expenditures by DREE

Under both the old and new approaches, it is possible to classify DREE expenditures on grants and contributions into four main categories.

First, there is direct assistance to the private sector, consisting mainly of industrial incentives provided under the RDIA program but also under the GDA. Second, there is public sector nonrural assistance, which is mainly infrastructure designed to make certain locations more attractive to business. It includes the SA infrastructure assistance programs, the Special Highways Agreement and the ADB infrastructure program in the Atlantic provinces, as well as similar assistance under the GDA. Third, there is public sector rural assistance, provided through FRED, ARDA, and GDA, which was designed to improve infrastructure and methods of production in areas heavily dependent on the primary industries. Finally, there are manpower programs, studies, and research projects.

Expenditures under each of these four categories for Canada as a whole are shown in the bottom right corner of Chart 8-1. It may surprise many that the much publicized assistance to the private sector — the part that *is* DREE to most people — accounted

Chart 8-1
DREE Expenditures on Grants and Contributions, Canada, by Province, 1969-70 through 1974-75



SOURCE W. Irwin Gillespie and Richard Kerr, "The Impact of Federal Regional Economic Expansion Policies on the Distribution of Income in Canada," Economic Council of Canada Discussion Paper 85, 1977; and various subsidiary agreements signed by the provinces and DREE.

for only 30.7 per cent of total spending ($476 million from 1969-70 to 1974-75). Nonrural infrastructure — highways, streets, and water and sewer systems — accounted for 35.4 per cent, while rural assistance accounted for 29.3 per cent. In total, $1,551 million was spent.

A breakdown of total expenditures, by province, may be of some interest. Quebec received just over one-third of the total. Its share was exceeded by the Atlantic region as a whole, which received just over 45 per cent, with New Brunswick getting the largest individual share within the region, followed by Newfoundland, Nova Scotia, and Prince Edward Island in that order. Of the remaining 20 per cent, the Prairies received 12 per cent, Ontario 6 per cent, and British Columbia 2 per cent.

Table 8-2 presents expenditures more meaningfully on a per capita basis. Prince Edward Island benefited most over the six-year period from 1969-70 to 1974-75 ($807). All of the Atlantic provinces received far more per person than Quebec or any

Table 8-2

Total and Per Capita DREE Expenditures on Grants and Contributions, by Province, Fiscal Years 1969-70 through 1974-75

	Newfoundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia
					(Millions of dollars)					
Expenditures	185.9	91.2	182.0	247.3	522.7	97.0	89.9	35.2	65.8	33.5
					(Thousands)					
Population[1]	528.0	113.0	793.0	641.0	6,048.5	7,749.3	991.8	926.0	1,639.0	2,221.7
					(Dollars)					
Expenditures per capita	352	807	230	386	86	13	91	38	40	15

1 Average, 1969-74.
SOURCE W. Irwin Gillespie and Richard Kerr, "The Impact of Federal Regional Economic Expansion Policies on the Distribution of Income in Canada," Economic Council of Canada Discussion Paper 85, 1977; and the CANSIM databank.

of the other provinces. Outside the Atlantic region, expenditures were less than $100 per person in Quebec and Manitoba, and $40 or less in Ontario, Saskatchewan, Alberta, and British Columbia.

Chart 8-1 also shows the relative importance of the different categories of assistance within each province. Infrastructure assistance to the nonrural sector was by far the most important category in Newfoundland, comprising some 75 per cent of total expenditures. In Prince Edward Island assistance to the public rural sector was the only category of note; in both Nova Scotia and New Brunswick, assistance to the private sector and to the public nonrural sector were the major programs.

In Quebec, the three major categories were of about equal importance; but, in Ontario, assistance to business and public rural sectors dominated, with 94 per cent of total expenditures. In both Manitoba and Saskatchewan, private business and the public rural sector had approximately equal shares while, in Alberta, the business share was roughly equal to the combined share of the public rural sector and other assistance. Finally, in British Columbia, the private sector benefited most, with a share more than twice the size of the public rural sector.

The distribution of DREE expenditures among categories changed somewhat after the reorganization of DREE in 1972-73. The share devoted to the private sector declined in importance, dropping from about 33 per cent to about 28 per cent. This pattern is particularly evident in Newfoundland, British Columbia, and New Brunswick, but it also appears in Manitoba and Ontario. The decline is generally due to the increasing importance of the GDA approach, which presently favours public sector assistance. This infrastructure support, however, is oriented more towards industry than were earlier programs, and the Department hopes this will permit the development of industrial project agreements with the private sector in the form of Subsidiary

Development Agreements (SDAs), concluded under the general umbrella of each provincial GDA. It should be noted also that in three provinces — Alberta, Quebec, and Nova Scotia — the private sector category did obtain an increased share after the reorganization.

The Regional Development Incentives Act

Despite its recent slight decline in relative importance, the industrial incentives program has been a critical element of regional development policy ever since the inception of DREE, and it merits further analysis. Its major purpose has always been job creation, and we shall judge it in this light, although, in actual application, the program occasionally, and rightly, stresses job preservation through the modernization of existing firms. Table 8-3 gives the total number of new jobs claimed for the RDIA program for each province during the 1969-75 period. These new jobs are associated with incentive grants accepted[4] for new facilities, for expansions and modernizations, and for new product expansions.

Table 8-3

Employment Assumed to Be Associated with RDIA Incentive Grants, by Province, 1969-75

	1969	1970	1971	1972	1973	1974	1975	1969-75
				(Number of jobs)				
Newfoundland	189	167	625	539	923	478	687	3,608
Prince Edward Island	–	223	232	97	394	146	292	1,384
Nova Scotia	130	582	1,287	2,405	1,936	1,231	886	8,457
New Brunswick	229	1,476	1,837	1,011	1,779	2,865	973	10,170
Quebec	327	4,922	14,779	20,771	15,148	10,654	7,963	74,564
Ontario	25	189	2,276	3,201	1,615	2,249	829	10,384
Manitoba	246	870	1,918	1,853	1,867	1,898	1,649	10,301
Saskatchewan	–	573	730	403	1,482	660	1,001	4,849
Alberta	–	534	430	1,127	319	514	604	3,528
British Columbia	7	123	458	294	360	152	89	1,483
Total	1,153	9,659	24,572	31,701	25,823	20,847	14,973	128,728

SOURCE Department of Regional Economic Expansion, *Report on Regional Development Incentives*, various monthly issues.

The table shows that, for the period as a whole, Quebec appears to have benefited the most, at least in an absolute sense, with 74,564 jobs claimed, almost 58 per cent of the total. The Atlantic region has 18 per cent of the total, with New Brunswick faring the

4 These grants are net of revisions and declines or withdrawals.

best with 8 per cent. Interestingly enough, over the whole period, both Ontario and Manitoba obtained more jobs than any of the individual provinces of the Atlantic region. These comments must, however, be viewed in proper context, and any evaluation of the relative impact or benefit in terms of employment must be made with reference to the average number of unemployed (or employed) in the province over some relevant time period. For example, although Quebec received approximately three times as many new jobs as the Atlantic region, it also had, in absolute terms, about three times the number of unemployed persons as the Atlantic region over the same period.

New jobs can be associated either with new plants or with the expansion and modernization of old ones. New plants are perhaps of special interest in their own right, and data on the number of new manufacturing or processing establishments assisted by DREE are reported in Table 8-4 for each province for the 1969-75 period. The pattern previously observed in Table 8-3 is repeated, with Quebec obtaining by far the largest single share — just over half — and the Atlantic region obtaining about 21 per cent. New Brunswick had the highest number of new plants within the Atlantic region but, as with new jobs, it had fewer than Manitoba.

Table 8-4

Number of RDIA Incentive Grants for New Facilities, by Province, 1969-75

	1969	1970	1971	1972	1973	1974	1975	Total
Newfoundland	–	2	10	7	11	8	14	52
Prince Edward Island	–	5	4	3	4	3	11	30
Nova Scotia	1	8	12	17	14	23	22	97
New Brunswick	3	12	19	19	27	41	24	145
Quebec	5	53	124	177	176	137	121	793
Ontario	–	5	25	20	32	28	23	133
Manitoba	2	12	29	29	19	26	45	162
Saskatchewan	–	9	9	4	10	15	31	78
Alberta	–	8	10	10	9	16	5	58
British Columbia	–	6	2	3	4	1	3	19
Total	11	120	244	289	306	298	299	1,567

SOURCE Department of Regional Economic Expansion, *Report on Regional Development Incentives*, various monthly issues.

Both the ARDA and FRED programs continued, following the policy review of 1972-73. Some of the projects undertaken under ARDA include improvements to the industrial water supply at Port aux Basques in Newfoundland; assistance to the coal wash plant at Stellarton, Nova Scotia; and assistance to the Indians on the Manitou Rapids Reserve in Ontario with the production of wild rice. Under the FRED program, expansion of vocational training opportunities in Prince Edward Island was achieved

through the establishment and development of Holland College, while housing units were provided in Bathurst, New Brunswick. In deriving Chart 8-1, both the ARDA and FRED programs were classified under the public rural sector category.

Some of the projects undertaken under the Special Areas legislation, which were classified under the public nonrural sector category in Chart 8-1, include the construction of a road linking Highway 4 to Port Hawkesbury Industrial Park in Nova Scotia; the Marsh Creek sewage system in Saint John, New Brunswick; and the paving of the Slave Lake Airport in Alberta.

Beginning in 1974, DREE signed ten-year GDAs with the provinces (all except Prince Edward Island, which is covered by a long-term FRED agreement) and, in turn, a series of subsidiary agreements that specified the exploitation of "development opportunities" in each province. The DREE expenditures on these subsidiary agreements for fiscal years 1973-74 to 1974-75 are shown, by category, in Table 8-5. The emphasis on public sector assistance, both nonrural and rural, is evident. The total expenditures to date have been fairly small compared with the $635 million spent by DREE over the two-year period, with only Newfoundland, Quebec, and New Brunswick obtaining any substantial amounts. On the other hand, the agreements almost invariably involve provincial expenditures as well as federal, so they are more important than DREE spending alone would indicate. The provinces also play a substantial role in the planning and implementation of the agreements.

Table 8-5

Expenditures by DREE under GDA, by Province, 1973-74 and 1974-75

	Private sector	Public nonrural sector	Public rural sector	Other	Total
			(Millions of dollars)		
Newfoundland	–	12.5	23.2	–	35.7
Nova Scotia	–	3.1	0.9	0.5	4.5
New Brunswick	–	10.8	14.7	0.9	26.4
Quebec	14.5	12.1	1.8	–	28.4
Ontario	–	4.0	0.6	–	4.6
Manitoba	–	–	7.7	–	7.7
Saskatchewan	0.3	–	0.2	–	0.5
Alberta	–	–	2.9	–	2.9
British Columbia	–	–	2.5	–	2.5
Total	14.8	42.5	54.5	1.5	113.2

SOURCE The various subsidiary agreements signed with the provinces and published by DREE.

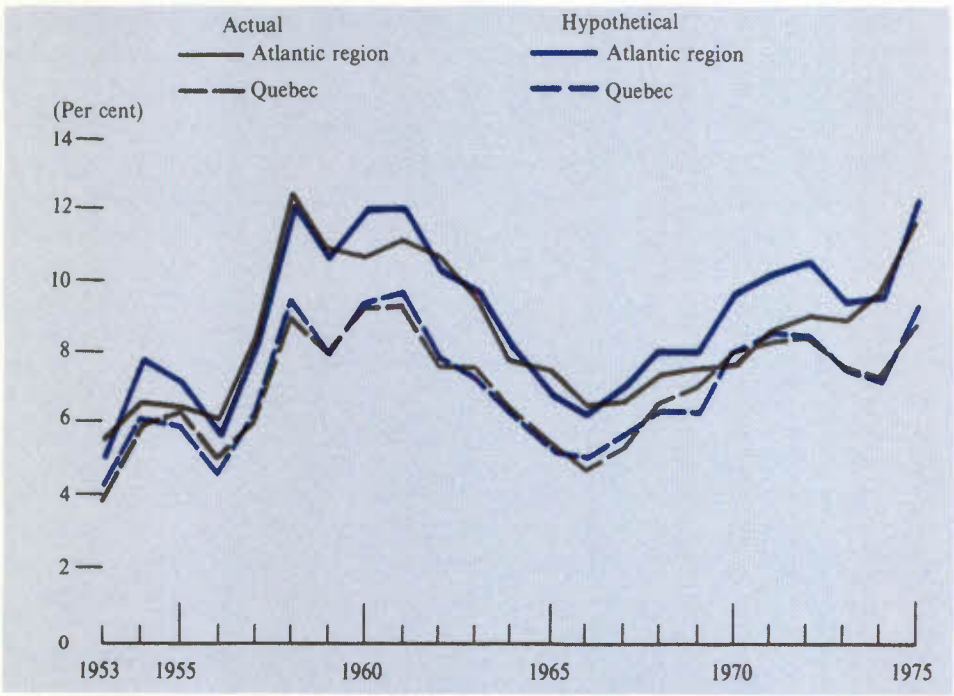
Examples of some of the actual subsidiary agreements that were signed include a forestry agreement in Newfoundland in 1974, which provided for the acquisition of forest land and the construction of access roads as a package deal; a one-year

agreement with Nova Scotia in 1975, which provided for the development of the Halifax-Dartmouth waterfront, including the acquisition of land and the provision of basic facilities; and an agreement with Ontario for the construction of a new sewage line for Thunder Bay and the reconstruction of a portion of Highway 599.

The Effectiveness of DREE

Chart 8-2 shows two measures of the unemployment rate, in Quebec and the Atlantic region. The solid line shows the actual unemployment rate. The broken line shows what the unemployment rate *could have been expected to be on the basis of its historical relationship to the Canadian level.*

Chart 8-2
Actual and Hypothetical[1] Unemployment Rates, Atlantic Region and Quebec, 1953-75



1 The hypothetical rate is that which would have been expected if the unemployment rate in these two regions had remained in line with its traditional relationship with the overall rate for Canada.

SOURCE Estimates by the Economic Council of Canada, based on data from Statistics Canada.

The chart suggests that something may have recently improved the situation in the Atlantic region but that little has changed in Quebec. In the Atlantic region, the actual unemployment rate was lower than might have been expected on the basis of past experience for eight of the nine years from 1967 to 1975. More detailed calculations suggest that the average rate was half a percentage point closer to the national rate than in earlier years — a significant closing of the gap.[5] In Quebec, the actual

5 Also statistically significant at 1 per cent, on a formal test. On the other hand, one could not rule out the hypothesis that by 1973-75 the previous historical relationship had been restored — i.e., that there was temporary improvement only in the years 1970-72.

unemployment shows no systematic tendency to diverge, in either direction, from what might have been expected on the basis of past experience. In British Columbia also, though not shown in the chart, there is no evidence of any improvement in the unemployment rate relative to the nation as a whole.

In terms of earned income levels per person employed, we showed earlier that slow convergence has been occurring since the early 1950s. A very slight acceleration can be detected for the Atlantic region, but not elsewhere, during the years in which DREE and its predecessors have been operational.[6]

Another way in which the effects of DREE might show up is through a change in out-migration. As noted earlier, migration can be good for the leavers, but it may be a mixed blessing for the stayers. However one views it, a decrease in migration is likely to be one consequence of success in either creating jobs or in raising income levels in a given region. Table 8-6 shows net migration rates for the most recent period and compares them with rates in three earlier periods.

Table 8-6

Net Interprovincial Migration Rates, by Province, 1955 to 1975[1]

	Estimated average			
	1955-60	1960-65	1965-70	1970-75
	(Per cent)			
Newfoundland	−0.9	−1.2	−4.0	−1.4
Prince Edward Island	−1.6	−1.1	−4.3	1.7
Nova Scotia	−3.3	−2.4	−2.8	−0.2
New Brunswick	−0.7	−1.7	−3.7	0.7
Quebec	−0.3	0.2	−1.1	−1.0
Ontario	0.8	0.4	1.8	0.3
Manitoba	−2.7	−1.3	−4.5	−2.9
Saskatchewan	−5.3	−3.5	−5.9	−5.3
Alberta	0.5	0.1	0.1	1.6
British Columbia	4.0	3.3	7.8	4.6

1 The only interprovincial migration data available for intercensal periods on a continuous basis pertain to movements of children, based on family allowance records. The migration rates here are for movements of children as a percentage of the number of children at the beginning of each period, and they almost certainly underestimate what the rate would be for the whole population. It is highly unlikely, however, that *changes* in migration rates through time based on data for children would differ much from *changes* based on data for the whole population.

SOURCE Estimates by the Economic Council of Canada, based on data from Statistics Canada.

The figures in the table show the amount of migration over five-year periods, with the gain or loss expressed as a percentage of the population at the start of the period. Thus, in Newfoundland, the number who moved out to other provinces (not abroad) from 1955 to 1960 exceeded the number who moved in from other provinces by an

6 See Chapter 3 of this study; and Economic Council of Canada, *Twelfth Annual Review: Options for Growth* (Ottawa: Information Canada, 1975), Chapter 2.

amount equivalent to 0.9 per cent of the 1955 population. This figure is shown with a negative sign to indicate population loss through migration; when there is a net gain in population, as in British Columbia, the figures are positive.

Among the regions with heavy net out-migration — Atlantic, Saskatchewan, and Manitoba — there is some indication of a recent slowdown in out-migration in all provinces of the Atlantic region except Newfoundland, with Prince Edward Island and New Brunswick actually moving to a situation of net in-migration. No strong indication of this kind of change appears in Saskatchewan or Manitoba.

These developments in unemployment, income, and migration suggest that job opportunities in the Atlantic region have improved over the last few years, although nothing much seems to have changed elsewhere. Can this partial improvement in the Atlantic region be attributed to DREE?

Certainly the timing of the change is about right. In a broad way, one would have expected programs that were instituted mainly in the early and middle 1960s, and which expanded in the late 1960s and early 1970s when they were gathered together under the DREE umbrella, to have begun to make a dent in the problems late in the 1960s and early in the 1970s. Moreover, the only changes that can be detected are in the Atlantic region, and it is only in that region that the DREE expenditures are at all significant on a per capita basis, as Chart 8-3 shows. Where DREE expenditures have been very small in per capita terms, as in Quebec, Saskatchewan, and elsewhere, no detectable changes in disparities occurred.

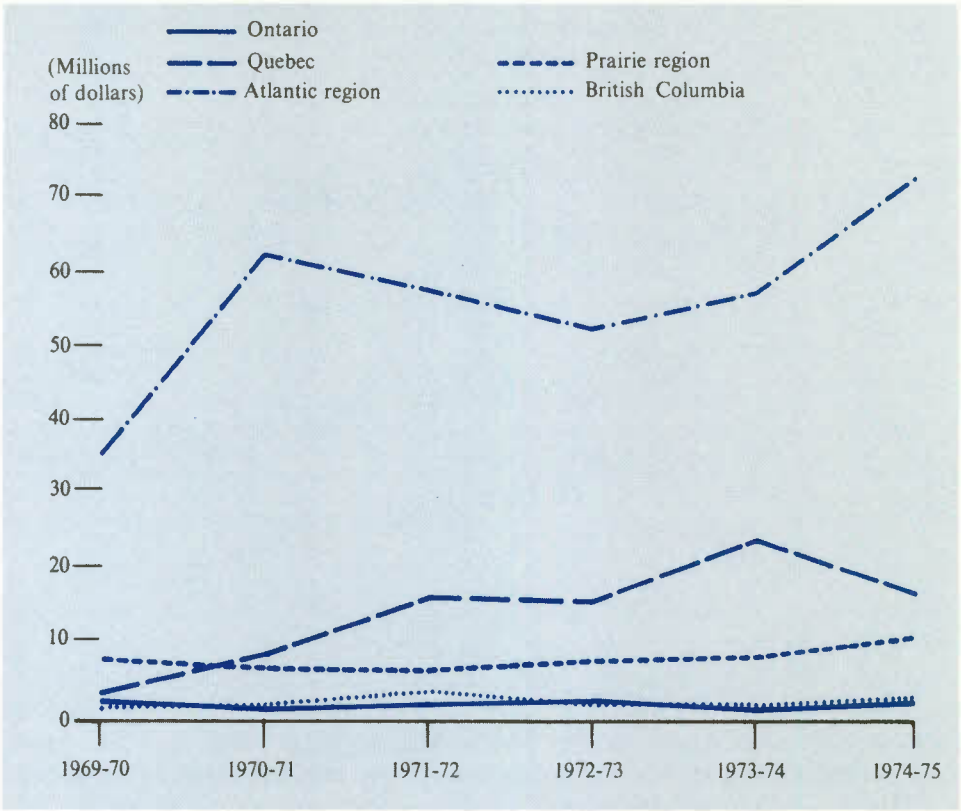
The correspondence between DREE's claims of job creation in the Atlantic region and the combined reduction in unemployment and out-migration is far from exact. But it is of the right order of mignitude, in the sense that much of the actual change in employment opportunities could in principle have been accounted for if DREE did actually create the number of jobs it claims.

Table 8-7 gives some details on this. In the first column are found the estimated number of extra workers needing jobs in the Atlantic region by reason of reduced out-migration between the 1965-70 period and the 1970-75 period. If out-migration had not declined, fewer people would have been in the region and needing work; our estimates indicate job requirements of 45,000 on this account. In addition, to keep the unemployment rate half a percentage point lower than in earlier years meant that extra jobs were needed — 4,000 in the region as a whole. The third column gives the total extra jobs needed to accommodate both reduced out-migration and a lower unemployment rate. Finally, the last column shows the number of jobs that DREE claims to have created. It can be seen that the extra DREE jobs, if all were created as claimed, would have met about half the need in each of the three largest provinces, and in the region as a whole.

All of this evidence is suggestive, but far from conclusive. It is not impossible that the situation improved quite independently of DREE and that the latter's existence made no real difference. We do know, for example, that the rapid expansion of income maintenance programs in the late 1960s led to a massive and continuing net transfer of purchasing power to the Atlantic region — "net" in the sense of after taking account of the taxes levied on Atlantic residents themselves as part of the taxes needed to pay for

Chart 8-3

DREE Expenditures per Capita, by Region, Fiscal Years 1969-70 to 1974-75



SOURCE W. Irwin Gillespie and Richard Kerr, "The Impact of Federal Regional Economic Expansion Policies on the Distribution of Income in Canada," Economic Council of Canada Discussion Paper 85, 1977; and CANSIM data bank.

the programs.[7] Moreover, the size of the transfers would have been sufficient on its own to reduce the unemployment rate by the amount observed, though not to reduce out-migration as well. We also know that transportation subsidies to Atlantic trade have been increased in recent years. Nor is it impossible for the myriad of other influences on a region's economic destiny to have changed recently in the Atlantic region so as to favour it more than hitherto — whether permanently or transiently, no one can tell.

Although we have stressed the effects on broad aggregative measures of regional disparities, such as the unemployment rate and the rate of employment growth in the

7 N. Swan, P. MacRae, and C. Steinberg, *Income Maintenance Programs: Their Effect on Labour Supply and Aggregate Demand in the Maritimes*, A Joint Report by the Council of Maritime Premiers and the Economic Council of Canada (Ottawa: Minister of Supply and Services Canada, 1976).

Table 8-7

Jobs Needed and Claimed to Be Created by DREE, Atlantic Region, 1970-75

	Extra jobs required			
	To accommodate reduced out-migration between 1965-70 and 1970-75[1]	To reduce unemployment rate by half a per cent, 1975	Total extra jobs required, 1970-75	Extra jobs claimed by DREE, 1970-75
Newfoundland	7,374	960	8,334	3,419
Prince Edward Island	4,536	234	4,770	1,384
Nova Scotia	14,208	1,515	15,723	8,327
New Brunswick	18,630	1,300	19,930	9,941
Atlantic region	44,748	4,009	48,757	23,071

1 The number of adults who migrated during each of the above time periods was estimated by assuming equal proportions of adult and child migrants (see footnote 1, Table 8-6). This procedure probably leads to an understatement of the number of adult migrants, but there is no satisfactory way to correct for this.

SOURCE Estimates by the Economic Council of Canada, based on Table 8-6 above and on data from Statistics Canada and the Department of Regional Economic Expansion.

Atlantic region, it is certainly possible that DREE has had beneficial consequences in particular areas of other provinces where the general level of DREE expenditures is so low (because these provinces are generally prosperous) that no detectable effect on aggregate measures could ever be expected. In such cases, success could be ferreted out only by detailed cost-benefit studies. In British Columbia and Alberta, for example, total DREE assistance has been very small; nevertheless, it may have had a high pay-off, per dollar spent, for people in particular areas, such as Kelowna in British Columbia and Medicine Hat in Alberta, either directly or through aid in establishing innovative firms, which others then follow.[8]

Thus more analysis is needed, going beyond a *post hoc ergo propter hoc* level of reasoning that uses simple inspection of changes or their absence in broad aggregate measures, in order to reach valid conclusions on the question of DREE's effectiveness. This analysis can conveniently be centred around the question of whether DREE really does encourage the formation of new enterprises or whether it simply ends up giving money to firms who would have set up plants in the region in any event. In technical jargon, are the DREE jobs "incremental" or not? In presenting this analysis, we confine ourselves to the Atlantic region on the grounds, already mentioned, that DREE's expenditures elsewhere have been small on a per capita basis.

8 The question of where DREE should put its money, whether it should put any into a region as generally prosperous as Alberta, or whether the decision to spread economic activity within a prosperous province should be a provincial rather than a federal financial responsibility, is conceptually separable from the question of whether the money, once spent, achieves its purpose. It is the latter question that we are examining here. On the former question, the amounts of DREE money going to prosperous provinces is, in any case, so small as to make the matter rather academic.

The Question of Incrementality

In theory, DREE gives a firm only as much money as is required to make it locate where DREE wants it to be rather than somewhere else. If a firm would have located where DREE wanted it even if there had been no grant, it is not eligible to receive any money. The same is true of grants for expansion of existing facilities.

In practice, it is not possible to screen grants as carefully as this, and some establishments will be subsidized unnecessarily. In such cases, it is commonly said that the establishments, and the employment associated with them, are not "incremental." Conversely, establishments for which the subsidy was necessary (and the associated employment) are called incremental.[9]

There have been a few empirical investigations into the incrementality question. The major ones have been by the Atlantic Provinces Economic Council, by Springate, by the Atlantic Development Council, and by DREE itself.[10] These studies are reviewed in Appendix B. Their estimates of the proportion of DREE-subsidized investment or employment that is incremental range from a low of 30 per cent (Springate) to a high of 80 per cent (Atlantic Provinces Economic Council).

We have examined this question ourselves, but only for the Atlantic region. Elsewhere, DREE expenditures are so low, relative to the size of the economy, that we doubt that their effects could be detected, given the crudity of available econometric methods and published statistics. Our basic technique is to look at how many establishments were newly formed or "born," on average each year, in a given industry in the Atlantic region, during the period before the federal grants were available. Then we ask whether there has been any increase in the number of "births" in recent years. If there has, is the increase as large as implied by the DREE claims? More details on the method, whose very complexity is testimony to how very difficult it is to judge the effectiveness of an organization like DREE, can be found in Appendix B.

Our method allowed us to crudely classify DREE-supported establishments into three groups: those whose existence seemed improbable without DREE, those (or establishments like them) whose existence seemed probable without DREE, and those for which it was impossible to make any reasonably reliable judgment one way or the other.

9 For those familiar with the literature on these matters, we should stress that we are using "incremental" in the narrow sense that the subsidized establishment really needed the subsidy. The work is also used in the literature in a broader sense, to indicate not only that the establishment really needed the subsidy, but also that no other establishments were competed out of existence by the subsidized one. We call this latter effect, if it exists, the "crowding-out" effect, and it is dealt with later in the chapter.

10 Atlantic Provinces Economic Council, *The Atlantic Economy,* Fifth Annual Review (Halifax: APEC, October 1971); David J. V. Springate, "Regional Development Incentive Grants and Private Investment in Canada: A Case Study of the Effect of Regional Development Incentives on the Investment Decisions of Manufacturing Firms," Ph.D. thesis, Harvard University, Graduate School of Business Administration, 1972; Atlantic Development Council, *Regional Development Incentives Program: Atlantic Region* (St. John's: ADC, 1976); and Department of Regional Economic Expansion, "Assessment of the Regional Development Incentives Program," a staff paper, April 1973.

For the Atlantic region as a whole, we established that about 25 per cent of the DREE-supported establishments were incremental; 41 per cent were not; and no reasonably reliable judgment could be made for 34 per cent. Thus the incrementality ratio for establishments, according to these tests, appears to lie between 25 per cent and 59 per cent. This corresponds to an incrementality ratio for employment of between 39 per cent and 68 per cent.

The Crowding-Out Effect

It would be quite possible for all DREE-subsidized establishments and jobs to be incremental and yet have no net effect on total investment and employment in the region. This would happen if the competition from subsidized firms for scarce types of labour, for particularly favourable production sites, or for other scarce resources needed for production, together, made it sufficiently more difficult for other firms to produce or survive in the area. To take a hypothetical example: if a subsidized company required a number of middle-management personnel and such personnel were in short supply in the region, a plant in some other type of industry might fail to be born; existing plants might be hindered from expanding as rapidly as they otherwise could; or establishments in other industries might fold from their inability to hold key labour or other productive resources. More generally, the influx of subsidized capital could cause a fall in the rate of return to nonsubsidized capital investment in the region. Subsidized firms might "crowd out" unsubsidized firms.

One way to approach the crowding-out effect (if any) in a quantitative way would be to examine births of establishments in manufacturing as a whole, instead of industry by industry, and to look at the total number of firms going out of existence. If there was a significant crowding-out effect, the extra DREE births — the 25 per cent to 59 per cent of DREE claims that we have concluded to be incremental — should have been offset by either an above-normal increase in the number of other nonsubsidized establishments going out of existence, by a decline in births of such establishments, or by some combination of both. Complete crowding-out would mean that the annual net increase in establishments in manufacturing as a whole — newly formed firms, less firms going out of existence — would show no change relative to past experience. No crowding-out would mean that the annual net increase[11] would rise by the number of incremental DREE-subsidized births — i.e., by a total of between 25 and 58 establishments over the 1970-72 period.[12]

From 1962 to 1968, in the Atlantic region as a whole, 671 manufacturing establishments were born[13] and 784 went out of existence, for a net increase of -16 a year. From 1970 to 1972, 344 establishments were born and 283 disappeared, for a net

11 Or decrease, if negative.

12 The longest, recent period when DREE was active, for which complete data are available and during which DREE *claimed* to be responsible for the births of 98 establishments in the Atlantic region.

13 These data were obtained from special computer runs done by Statistics Canada on our behalf, and they exclude bakeries, fish-processing plants, and sawmills. These particular industries were omitted because of their tendency to frequently appear, disappear, and reappear in the collected statistics on births, consequently making them of dubious validity.

increase of +20 a year.[14] The rise in the annual net increase is 36, which is within our range of 25 to 58, towards the lower end. One should be cautious in interpreting these numbers, as data for individual years are very erratic;[15] but they do suggest that, if there is a crowding-out effect, it is not very strong or it occurs through inhibiting expansions in existing establishments.[16] Certainly it would seem safe to suggest that the lower end of our range for incrementality, in terms of establishments — 25 per cent — is a fairly conservative estimate of DREE's success rate. This corresponds to an incrementality ratio for employment of 39 per cent, if all employment in incremental establishments is itself incremental. Most of it probably is, since the unemployment rate in practically all occupational groups is high in the Atlantic region and thus 39 per cent is not likely to be a serious overestimate.

Another way to try and pin down DREE's likely success rate for manufacturing as a whole would be to examine the experience of other countries, many of which have used programs like RDIA. Such evidence appears to be available only for the United Kingdom; but, there, it seems that such programs have been successful in creating employment and investment. The actual success rate, however, is not known, and it could be argued that success is due less to the British government paying firms to locate and develop in particular areas than to the legal prohibitions sometimes imposed on locating outside those areas.

Other DREE Activities

The success or failure of other DREE programs, mainly infrastructure-spending and spending on rural assistance but also RDIA outside the Atlantic region, is hard to assess. No published quantitative work on this question exists, to our knowledge.

The Department of Regional Economic Expansion also plays a role in the co-ordination of spending by federal government departments, with a view to keeping the distribution of federal expenditures as equitably spread among the regions as possible. No information is released on this co-ordinating activity, and it is therefore impossible to judge its value or to know whether shifts in federal expenditures induced in this way make it significantly more costly to deliver federal government services. It may be as costly to relocate federal "establishments" to outlying regions as it is to relocate private

14 We excluded 1969 as being neither before nor after DREE became really active.

15 Data for individual years were as follows:

	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972
Going out of existence	99	142	86	89	92	161	115	133	101	92	90
Births	89	83	146	82	91	69	111	128	125	119	100
Net increase	−10	−59	+60	−7	−1	−92	−4	−5	+24	+27	+10

The change in the net increase from 1962-68 to 1970-72 is "statistically significant" at 10 per cent, but not at 5 per cent.

16 Data on the growth of total employment in manufacturing could, in principle, be used to check this. In practice, they are much more subject to cyclical variations than those on establishments, and this problem prevents their being used for our purposes.

establishments. In the latter case, inefficiency can be measured by the subsidy required; gain, by the value of employment generated. In principle, the extra costs of relocating federal activities could also be calculated and compared with the value of employment gains; but, if this is being done, the facts have not yet been made publicly available.

National Output and Income Distribution

From the point of view of the private businessman, projects undertaken as a result of DREE support would generally be losers without that support. This is true not only for direct support under ADIA and RDIA[17] but also for indirect support through infrastructure partially or wholly financed by DREE funds. We say "generally losers," because there will be cases where the businessman with a grant would have gone ahead without a grant, and there will be cases where the businessman's judgment, before starting out, was that a grant was necessary but in fact, in practice, it was not. To counterbalance the latter, there are also cases where the government grant turns out to be insufficient and an establishment folds.

Since most of the projects would have taken place somewhere in Canada if they had not been influenced to locate in particular areas by DREE, there appears to be a loss of real production to the economy as a whole, roughly equal to the amount of DREE money expended, through grants, infrastructure assistance, and other devices designed to attract firms. This is the loss that results from locating industry in places that are inefficient, from a private point of view.

However, from the point of view of the citizenry as a whole, the DREE projects may be considered efficient if enough of the jobs they create are for people who would otherwise be unemployed. As we have seen, not all the jobs in projects subsidized by DREE are incremental jobs, and so they do not always lessen unemployment. Moreover, those DREE firms that are incremental or those induced by government infrastructure may employ labour that would have been employed anyway in firms now crowded out by government assistance to other firms or in firms that would have been larger but for the subsidized competition. Even if this were not the case, some of the unemployed labour might have migrated to other regions where jobs would have been available. On the other hand, to the extent that jobs are in fact created in firms subsidized by DREE or attracted by DREE-assisted infrastructure, there will be a multiplier effect that creates other jobs and incomes in addition to those created directly.

Now, if jobs are obtained by people who would otherwise have been unemployed, output is higher than it would have been without DREE. From the social point of view, the value of that output is a credit that may offset, or more than offset, the loss of output resulting from industry locating in places that are inefficient from the private point of view.

17 Indeed, a firm cannot legally get help unless it can show that the proposed establishment needs a subsidy; i.e., it has to show that it would be a loser without DREE money.

To put some perspective on this, it would be desirable to compare the DREE budget for grants and infrastructure with the value of output attributable to labour that would otherwise have been unemployed. It is difficult, however, to be dogmatic about what proportion of jobs under the RDIA and ADIA programs is incremental, let alone to add to these jobs those created as a result of increasing the attractiveness of certain locations by infrastructure-spending. What we can do though is compare DREE spending on RDIA grants alone with the present value of output attributable to formerly unemployed labour, under various assumptions about the incrementality of these jobs.[18] Table 8-8 does this, assuming that 40 per cent, 25 per cent, and 10 per cent of the jobs are incremental. Jobs are assumed to last five years and to pay a wage of $5,500 a year.[19] Their present value is calculated using a discount rate of 12 per cent. Assuming a job life of more than five years or a lower discount rate[20] would increase the values of the jobs beyond the figures shown in the table.

Table 8-8

Net Increment to National Output from DREE/RDIA Grants, under Various Assumptions about Incrementality, 1970-72

	Incrementality ratio (%)		
	40	25	10
		(Thousands)	
Jobs created	26.4	16.5	6.6
		($ Million)	
Value added from jobs created[1]	554	346	138
DREE-spending on grants	248	248	248
Net output increase (+) or decrease (−)	+306	+98	−110

1 Some analysts argue that the value of (forced) leisure to workers formerly unemployed should be subtracted from the numbers in this row. This was not done. If, for example, leisure was worth $2,000 a year, no output increase would occur until the incrementality ratio was 28 per cent.

SOURCE Table 8-3; and W. Irwin Gillespie and Richard Kerr, "The Impact of Federal Regional Economic Expansion Policies on the Distribution of Income in Canada, Economic Council of Canada Discussion Paper 85, 1977.

Table 8-8 shows that the RDIA program would be extremely profitable, from a social point of view, if as many as 40 per cent of the jobs associated with DREE grants were in fact incremental. Even if only one job in four were incremental (25 per cent), there would be a gain of $98 million at the conservative job-lifetime and discount rates chosen. If, however, fewer than 18 per cent of the jobs created were truly incremental, the program would be a waste of money, from a social point of view.

18 Assuming no crowding-out (or subsuming crowding-out effects into a lower incrementality ratio), assuming no multiplier effects (or subsuming them also), and assuming that no portion of other DREE expenditures were necessary preconditions for RDIA grants to work.

19 This was a reasonable wage for the 1970-72 period, to which the data in Table 8-8 relate.

20 Normal procedure is to discount at twice the private rate, in order to allow for the 50 per cent corporation tax. We have assumed a private rate of 6 per cent, which may perhaps be a little high.

Our evidence suggests that the incrementality ratio in the Atlantic region is such as to put the program into the profitable range, with at least 25 per cent of establishments and perhaps as much as 39 per cent of employment being incremental. If the same rate of success applies in other regions, it can be concluded that DREE is a success, as far as the proportion of its spending devoted to assisting private industry (approximately one-third) is concerned. As yet, no evidence exists to judge the value of the remaining spending.

The effects of DREE on national output, whatever they be, should be sharply distinguished from its effects on the distribution of national output, whether it be among provinces and regions or among the rich, the poor, and the in-betweens. To illustrate, if tax money spent on DREE does create jobs in the Atlantic region, unemployment insurance and welfare payments will be less there. Since the latter are partially paid for by federal taxes, the total federal taxes needed to finance DREE will be less than total expenditures on DREE. Conceivably total taxes could even be lower with DREE than without it and, even going beyond that, they could be lower for taxpayers outside the Atlantic region if the saving to them of their share in federally financed unemployment insurance payments and welfare outweighed their share in the cost of DREE.

There are other effects from DREE on income distribution. If DREE changes the return to capital invested in certain regions, it will affect the distribution of income between wages and profits, both in the favoured regions and, to the extent that capital is owned by nonresidents of the favoured regions, outside them. Since profit recipients tend to be higher up the income scale than those who have wage income alone, the size distribution of income will be affected. Spending by DREE on rural assistance programs also affects the distribution of income, by size and location, in Canada. For these and other reasons, the full effects of DREE on income distribution are extremely complex.

In a study done for the Economic Council of Canada by the Regional and Urban Policy Analysis Centre at Carleton University, Professor Gillespie has tried to analyse all these effects. His major findings concern the distribution of income among major regions and by size classes within regions. Table 8-9 shows the effects, by region.

The first column of Table 8-9 shows the percentage of DREE expenditures that accrued as benefits to the residents of each region. The second column shows how much of the tax needed for DREE was paid by people in the region. Thus, for every $100 spent by DREE, residents of the Atlantic region eventually got $31 and they paid $6, resulting in a net average gain of $25. The zero at the bottom of the final column indicates no net gain or loss to the nation as a whole — an assumption made by Gillespie in order to isolate the pure distributional effects of DREE. As we have seen, there is probably a net gain nationally, and adding it in would change the final column, making the positive numbers larger and the negative ones less negative.

Gillespie's own conclusions from the table are that:

> The Atlantic and Prairie regions are net gainers whereas Ontario, British Columbia and Quebec are net contributors. The Atlantic region is the big gainer with almost 25 per cent of DREE expenditures showing up as a net gain. Ontario's net contribution is almost 22 [sic] per cent of

DREE expenditures. Given the possible errors in a study of this nature one can reasonably conclude that Quebec, the Prairies and British Columbia are neither net gainers from, nor net contributors to DREE programs.[21]

These conclusions would remain substantially unchanged if the net gain to the nation was regionally distributed, except that Quebec would probably show a small net gain rather than a small net loss.

Table 8-9

Effects of DREE on the Distribution of Income, Canada, by Region, 1969-75

	Proportion of expenditure that benefits region	Share of taxes paid	Net gain or loss
		(Per cent)	
Atlantic region	31	6	25
Quebec	24	25	- 1
Ontario	19	42	-23
Prairie region	17	16	1
British Columbia	9	12	- 2
Canada	100	100	0

SOURCE W. Irwin Gillespie and Richard Kerr, "The Impact of Federal Regional Economic Expansion Policies on the Distribution of Income in Canada," Economic Council of Canada Discussion Paper 85, 1977.

One can similarly analyse the burdens of financing DREE and the distribution of benefits from it, by income size, within each region. This is done in Table 8-10.[22]

21 W. Irwin Gillespie and Richard Kerr, "The Impact of Federal Regional Economic Expansion Policies on the Distribution of Income in Canada," Economic Council of Canada Discussion Paper 85, 1977.

22 To calculate the distributional effects, it was assumed that the money to finance DREE policies comes from all federal taxes in proportion to their importance in total tax collections, whose incidence, by region and family income class, is known. On the expenditure side, each of the major items (capital incentive grants, highways, sewers, etc.) was treated separately. The kind of detailed procedures used may be illustrated by one example — the case of capital grants. The first step in this particular case was to assume that grants were 48 per cent effective, with the remaining 52 per cent being a windfall gain to owners of capital (dividends). Of the 48 per cent, 24 per cent was allocated to dividends, 12 per cent to labour income, and the remaining 12 per cent to consumers of grant-financed output. The 76 per cent allocated to dividends was assumed to be mobile in the sense that benefits accrued to the owners of the capital wherever they resided. Once the regional totals for dividend income were established, they were distributed, by family income class, according to each region's internal distribution of dividend income. The 12 per cent share of grant expenditures allocated to labour income in each region was allocated, by family income class, according to each region's internal distribution of wages and salaries. The 12 per cent share allocated to the consumption of grant-financed output was distributed to each region according to the regional shares of total consumption of grant-financed output and, within each region, by family income class, according to the region's internal distribution of consumption of grant-financed output. In making these calculations for grants and in making similar calculations for other types of DREE expenditures, many of the necessary distributions of income or consumption, by size or type, were available from earlier studies.

Table 8-10

Net Gains (+) or Losses (-) as a Percentage of Total DREE Expenditures, by Family Income Class, Canada, by Region, 1969-75

	Atlantic region	Quebec	Ontario	Prairie region	British Columbia	Canada
Family income class:			(Per cent)			
Under $2,000	1.3	.5	.1	1.0	–	2.9
$2,000 – 2,999	2.0	.4	–	.9	- .1	3.2
$3,000 – 3,999	2.7	.4	- .2	1.0	.1	4.0
$4,000 – 4,999	2.3	.4	- .3	.6	–	2.9
$5,000 – 5,999	2.3	–	- 1.4	–	- .2	.8
$6,000 – 6,999	2.3	–	- 1.3	- .4	- .1	.5
$7,000 – 9,999	5.3	-1.3	- 6.8	-1.4	-2.3	- 6.6
$10,000 – 14,999	4.2	-1.3	- 9.3	-2.0	-2.1	-10.4
$15,000 and over	2.1	–	- 3.4	1.3	2.5	2.6
Total	24.7	- .8	-22.6	.9	-2.2	0.0

(-) Less than 0.1 in absolute value.

SOURCE W. Irwin Gillespie and Richard Kerr, "The Impact of Federal Regional Economic Expansion Policies on the Distribution of Income in Canada", Economic Council of Canada Discussion Paper 85, 1977.

The bottom row of Table 8-10 shows the same information as the final column of Table 8-9 — that the Atlantic region gained, that Ontario lost, and that the net effects elsewhere were negligible. The other rows show some interesting and important details of how this gain or loss was spread among income size classes. Within Ontario, the biggest losers were the two upper/middle family income classes, between $7,000 and $15,000. The top and the lower income groups lost the least. In British Columbia, the top group actually gained, while the next two highest groups lost a little. These statements remain true on a family basis — i.e., even after allowing for the fact that the number of families within each income class is not the same. All groups gained in the Atlantic region — the rich, the poor, and the in-between. Gains and losses elsewhere were all rather small.

Thus, while rich Ontarians were subsidizing poor Atlanticans, poor Ontarians were also subsidizing rich Atlanticans, though the former effect outweighed the latter. These are interesting distributional side effects of a program that tries to redistribute activity rather than simply redistribute income.

Other Government Assistance to the Private Sector

The Department of Regional Economic Expansion is not the only government body with programs that have a direct impact on industrial location. All levels of government are involved to some degree in programs that attempt — through grants and subsidies; tax or capital depreciation incentives; research, development, or other technical aid; public sector lending institutions; or assistance in the procurement and training of the required labour force — to increase the level of productive activity and thereby influence the most profitable location for business enterprise. Needless to say,

a complete analysis of the regional impact of such programs would constitute a monumental task; in fact, a recent listing of industrial assistance programs and regulations alone comprised nearly three hundred pages.[23] While we have been unable to make an evaluation of all such programs, we do offer a few figures to indicate the level of DREE-type government assistance that is undertaken with other economic or social goals in mind. These programs are presently not screened for their regional impact, as they would be in France, for example; it is, however, important that they be looked at from the regional viewpoint in order to gauge the overall regional impact of government policy. This is necessary also in order to judge whether DREE's efforts to redirect economic activity are undertaken in a context of offsetting policy initiatives and whether the magnitude of DREE efforts are significant in the industrial system.

Table 8-11

Federal Transfers to Business,[1] 1974-75

	($ Million)	(Per cent)
Natural resources	1,181	44.7
(of which oil and gas)	(1,162)	(44.0)
Agriculture	485	18.3
Transportation and communications[2]	415	15.7
Canadian Broadcasting Corporation	299	11.3
Trade and industry	183	6.9
Housing	43	1.6
Labour, employment, and immigration	37	1.4
Total	2,644	

1 The categories employed in this table are those used in the source publication and do not exactly conform to the ones on which the regional distribution of assistance discussed in the text are based. Thus, for example, DREE plus IT&C industrial assistance more than exhausts the trade and industry category shown above. The correspondence is close enough, however, to convey the general point being made regarding where transfers to business are going.
2 Mainly Canadian National Railways and Canadian Pacific Railways ($399 million).
SOURCE Data from Statistics Canada.

Federal transfers to business have increased steadily from 2 or 3 per cent of gross federal expenditures in the early fifties to 8.6 per cent or $2.6 billion in 1974-75. We saw earlier that nearly one-third of DREE's expenditures went directly to the private sector in the form of capital assistance and incentive grants. The $69.7 million that DREE transferred to private business in 1974-75 amounted to less than 3 per cent of all subsidies and capital assistance payments from the federal government in that fiscal year. This figure is astonishingly low and would remain so even if oil and gasoline payments — 44 per cent of the total — were removed.[24] An additional 11.3 per cent is accounted for by the Canadian Broadcasting Coporation. The remaining large components of transfers to business are: agriculture, 18.3 per cent; transportation and communications, 15.7 per cent; and trade and industry, 6.9 per cent (Table 8-11).

23 P. E. McQuillan and G. H. R. Goldsmith, *Industrial Assistance Programs in Canada*, Fourth Edition (Ottawa: CCH Canadian Ltd., 1976).

24 The major component of oil and gasoline payments is transfers under the Oil Import Compensation Program. This program is designed to adjust the Canadian oil and gas market to new international conditions and to achieve regional equalization in the final price of oil and gas products.

Table 8-12

Grants, Contributions, and Subsidies to Business, Canada, by Region, 1974-75

	Atlantic region	Quebec	Ontario	Prairie region	British Columbia	Canada	Total assistance
			(Dollars per capita)				($ Million)
IT&C industrial assistance programs	8	6	9	1	11	7	158.7
DREE	8	6	1	3	–	3	69.7
Agriculture	3	19	12	35	3	16	357.1
M&I industry training program	3	2	1	1	2	2	36.9
Total	23	33	23	40	17	28	622.4

SOURCE Estimates by the Economic Council of Canada.

In principle, all of these transfers may affect the location of production and employment by encouraging the expansion of existing firms on site; by making payment directly dependent on location, as in the case of DREE; or by affecting transportation and input costs so that new or expanded production is more likely to be undertaken in one place rather than another. While re-emphasizing the somewhat piecemeal development of industrial policy in Canada and its consequent myriad of programs fashioned as industrial needs have been perceived to emerge, we are able to present data, on a regional basis, not only for DREE expenditures but also for thirteen industrial assistance programs under the Department of Industry, Trade and Commerce (IT&C) for four agriculture programs, and for the Department of Manpower and Immigration's Industry Training Program (Table 8-12).

The figures show, for example, that the Department of Industry, Trade and Commerce, under its various industrial assistance programs, transferred $159 million to the private sector, more than twice as much as did DREE in 1974-75. Moreover, the Industry, Trade and Commerce transfers are highest on a per capita basis in British Columbia and Ontario, precisely those areas which DREE would consider low-priority areas for assistance in economic development.

In agriculture, public subsidy and regulation have become a topic of increasing discussion and controversy. One of the issues in the debate surrounding marketing boards and supply management is the implication that government involvement may influence the profitability and hence investment in, and development of, agricultural resources differently in different regions. Of the $357.1 million paid out in agricultural subsidies in 1974-75,[25] Quebec and Ontario received $116.4 million and $101.0 million, respectively; together they account for more than 60 per cent of the expenditures. The Atlantic region received $7.3 million or just slightly over 2 per cent. The Prairie region

25 We have included here payments under four agencies or programs: Canadian Dairy Commission, Agricultural Stabilization Board, Two-Price Wheat Payments, and Prairie Farm Emergency Fund.

received the largest share, on both an absolute and per capita basis; Quebec also received more than the Canadian per capita average.

Table 8-12 also shows payments to employers for industrial training; here the regional distribution is in line with the severity of unemployment in the various regions.

In addition to federal programs that affect the regional distribution of economic activity in Canada, the provinces and territories have their own industrial and economic development policies. Conceptually, provincial development efforts may be grouped into two categories: those which seek to increase output and incomes by encouraging the use of unemployed resources or improving the efficiency of a combination of resources, and those which seek to influence the location decisions of firms. Policies of the latter type may bring the provinces into competition with each other or with DREE for a given stock of new or mobile enterprise; thus, while one province or region may come out ahead of another, it is not clear that any gain in national output will be achieved or that disadvantaged regions will benefit relative to others.

The provinces offer industrial incentive grants and loans, as well as a variety of special business services such as technical information, research, and management consultation. Three of the Atlantic provinces and Alberta also provide assistance to development corporations for the formation of industrial estates along the lines of the British model where government assembles land and provides infrastructure and basic buildings for secondary industry. In 1973-74, provincial programs involved a transfer to business of $116 million for agriculture, trade and industry, and tourism projects, and an additional $23 million for natural resources and the supervision and development of regions and localities.

On a regional basis, these transfers were highest in the Atlantic region at $11 per capita; Quebec followed at $9; the Prairie region and Ontario spent $8 and $6, respectively; and British Columbia spent $3 per capita.

It is clear that governments in general, and the federal government in particular, are funneling massive amounts of assistance to business. This is true even if one excludes the large oil import compensation program on the grounds that this is more properly considered as assistance to consumers, with private business as the distributing agency, than as assistance to business per se. The regional distribution of total payments under all programs other than oil compensation is not fully known, but the data we have been able to present suggest that it is different from the distribution of DREE expenditures, being much less favourable to the Atlantic region and Quebec. A clear distinction should be drawn, however, between the distribution of the monetary benefits of these programs and the effects of this distribution on the amount of economic activity in each region. The Prairies do well from assistance to agriculture, for example, but it is not likely that the amount of employment there, in agriculture or in total, is as much influenced by this assistance, dollar for dollar, as it is by assistance under DREE. Similarly, IT&C dollars of industrial aid go heavily to Ontario and British Columbia, but that is mainly because firms already in these provinces make more intensive use of IT&C help than firms elsewhere; it is not that firms are attracted to go there by the greater availability of IT&C money.

In short, though DREE expenditures are small in relation to total spending for industrial assistance, their effects on industrial location are proportionately more important. The RDIA part of DREE expenditures does seem to work, in the sense that enough firms are encouraged to relocate by the grants to cause national output to be higher than otherwise, as a result of making use of labour that would otherwise be unemployed. The effect of the remaining DREE expenditures, notably the heavy spending for infrastructure, remains a matter for further research.

Glossary of Acronyms Used in the Chapter

ADB : Atlantic Development Board
ADIA : Area Development Incentives Act
ARDA : Agricultural and Rural Development Act
DREE : Department of Regional Economic Expansion
DR : Designated Region
FRED : Fund for Rural Economic Development
GDA : General Development Agreement
RDIA : Regional Development Incentives Act
SA : Special Area
SDA : Subsidiary Development Agreement

9

OTHER POLICIES RELEVANT TO DISPARITIES

The activities of the Department of Regional Economic Expansion are far from being the only possible policy approach towards alleviating regional disparities. First, a policy of "no intervention" is conceivable and has sometimes been used. Reliance could be put upon individuals responding to market signals indicating that job opportunities and income prospects are better in other locations, upon firms relocating to where labour is cheaply and easily available, and upon these two market forces having an effect on disparities.

Second, the federal government can improve the welfare of individuals in their own regions through the transfer of revenue to provincial governments, which would enable the latter to provide them with an improved standard of public services, or through the direct transfer of money to the individuals themselves. In 1974-75 the federal government transferred more than $8 billion to the provinces and the territories. In the same year, federal government transfers to persons, if we include pensions, unemployment insurance, and other funded accounts, amounted to about $9 billion. Only a fraction of these transfers are "regional" by design, but many may have a regionally differentiated impact because of different demographic characteristics or for other reasons.

Third, transport facilities and costs influence the location of economic activity and the standard of living achievable in different areas. The determination of transportation rates has been an instrument of policy in Canada since Confederation and has often been used explicitly to influence the economic development of different regions. Although the subject has been investigated almost continuously, with nearly a dozen Commissions of Enquiry and the like, further exploration is nevertheless worthwhile.

Fourth, the federal government may be regarded, insofar as its expenditures on goods and services are concerned, as a gigantic agency that first extinguishes purchasing power by levying taxes, issuing bonds, etc., and then restores it by employing civil servants, purchasing needed supplies, and making payments. The process does not usually involve any exact balance between the amount of purchasing power withdrawn and the amount distributed in each region. It would be interesting to enquire further as to the significance of this with regard to regional disparities and to ask whether tinkering with the balance would be a feasible policy approach

that might usefully supplement the kinds of regionalized stabilization policy discussed in Chapter 6.

Finally, it is important to examine the experience of other countries in trying to combat regional disparities, in order to broaden our own perspective on possible ways to attack the problem. With this in mind, we shall examine the policies of France, Italy, and the United Kingdom.

Migration

Migration flows among Canadian provinces have been strong and persistent. Over the past five decades many people have moved out of the Atlantic provinces, Manitoba, and Saskatchewan and have settled elsewhere — primarily in British Columbia and Ontario, but more recently in Alberta. Saskatchewan has by far the highest rate of out-migration; on average, 12 per cent of its population moved out during each decade. The four Atlantic provinces had out-migration rates of 6 to 9 per cent and were followed closely by Manitoba with 5 per cent. The flow of migrants increased the population of two provinces substantially — that of British Columbia at a staggering rate of almost 20 per cent per decade and that of Ontario at a more modest rate of 7 per cent. Alberta gained less; Quebec gained very little (Table 9-1).

Although in five of Canada's ten provinces the direction of migration flows never changed over the decades, there were some notable exceptions among the others. In Nova Scotia, the flow of out-migration was reversed during the 1930s. Quebec gained

Table 9-1

Net Migration Rate, Canada, by Province, 1921-71[1]

	1921-31	1931-41	1941-51	1951-61	1961-71	Average
			(Per cent)			
Newfoundland	–	–	–	- 7	-10	- 8
Prince Edward Island	-10	- 3	-12	-11	0	- 9
Nova Scotia	-12	2	- 6	- 5	- 6	- 6
New Brunswick	- 9	- 2	- 9	- 7	- 9	- 7
Quebec	1	0	0	4	0	1
Ontario	5	2	7	13	10	7
Manitoba	- 2	- 7	- 8	- 1	- 6	- 5
Saskatchewan	1	-17	-23	- 9	-14	-12
Alberta	6	- 6	- 1	11	4	3
British Columbia	20	11	23	17	22	19
Canada	2	- 1	1	7	4	3

1 Includes provincial migration and migration from and to foreign countries. Migration rates are based on population at the beginning of each decade and allow for provincial variations in birth and death rates in the interim.

SOURCE Estimates by the Economic Council of Canada, based on data from Statistics Canada.

population during the 1950s and early 1960s but lost some during the late 1960s. The Prairie provinces had very high rates of out-migration during the Depression years of the 1930s and during the 1940s. The population in Manitoba and Saskatchewan continued to decline in the decades following, but the trend in Alberta sharply reversed, and its population continued to increase. During the past three years the pace of immigration to Alberta has accelerated and the rate of out-migration in the Atlantic provinces has diminished. It is probably too early to say whether these changes signal permanent shifts or merely represent fluctuations around the long-run historical trend.

Different rates of migration were the prime reason for provincial variations in population growth. While Canada's population grew from 14 million in 1951 to over 21 million in 1971, all provinces experienced some population growth. Out-migration from six of the provinces to the other four modified the rate of provincial population growth. While natural increase — i.e., the excess of births over deaths — varied from 32 to 60 per cent among provinces, total population growth, including the effects of net migration, varied much more widely — from a low of 11 per cent in Saskatchewan to a high of 88 per cent in British Columbia, with Quebec being closest to the national average (Table 9-2).

Interprovincial migration is determined by distance and economic advantage. Generally speaking, shorter distance and greater economic advantage make for a stronger migration flow. During the five-year period 1966-71, only one out of every

Table 9-2

Change in Population as a Result of Natural Increase and Net Migration, Canada, by Province, 1951-71

	Population		Percentage change, 1951-71		
	1951	1971	Natural increase	Net migration	Total
	(Thousands)			(Per cent)	
Newfoundland	361	522	60	−16	44
Prince Edward Island	98	112	32	−18	14
Nova Scotia	643	789	35	−12	23
New Brunswick	516	635	40	−17	23
Quebec	4,056	6,028	43	6	49
Ontario	4,598	7,703	40	28	68
Manitoba	776	988	34	− 7	27
Saskatchewan	832	926	36	−25	11
Alberta	939	1,628	53	20	73
British Columbia	1,165	2,185	36	52	88
Canada	14,009	21,568	41	13	54

SOURCE Estimates by the Economic Council of Canada, based on data from Statistics Canada.

four migrants in the Atlantic region settled in one of the Atlantic provinces; the other three left for elsewhere. Migrants from the Atlantic provinces have long favoured Ontario; but British Columbia and, more recently, Alberta have become increasingly attractive. The lure of Ontario and the West are apparently sufficient to offset the high cost of long-distance moving. In the central region, while Ontario is the favoured destination of Quebec migrants and vice versa, Ontario absorbs the larger share. Migrants from the western provinces usually remain west of Quebec; they prefer to settle in neighbouring provinces but sometimes move east to Ontario and, more often, further west.

Income Gains from Migration

The income gains from migration do not accrue to a representative cross-section of the population. Rather, migrants are a special group, with characteristics related to the fact that they are more mobile than the rest of the population. Most of them are young — 25 to 34 years old — and married. They are at the stage of family formation and require new housing at time of job location and entry into the new labour market. Usually they are better educated than others of the same age group; they are more likely to be technicians or professionals; and they tend to move over greater distances, the higher their educational attainment. Among three broad ethnic groupings — i.e., British, French and "other" — those of British origin and, to a lesser extent, those of "other" ethnic origin are more likely to migrate than those of French origin. Language facility appears to make for greater mobility. Those who speak English, or both English and French, have higher migration rates than those who speak only French, or neither English nor French. Migration from one province to another is least likely for those who speak only French.

The income incentive is probably the single, most important factor in the determination of migration flows, and it is interesting to see just how large it really is. To estimate its magnitude properly, it is necessary to make allowance for regional differences in the price of food, clothing, and shelter, and in other expenditures. As noted in Table 9-3, the cost of a standard "consumer basket" varied in 1971 by as much as 15 per cent among cities — from a low of 94 per cent for Saint John, New Brunswick, to a high of 109 per cent for Vancouver, British Columbia. These are marked differences; but they are not systematically related to income differences, whether positive or negative. Thus income disparities are not generally compensated for by lower living costs in the low-income regions, and they exist to about the same degree regardless of whether incomes are measured in terms of local purchasing power or in absolute dollars.

In fact, after proper allowance is made not only for regional differences in consumer prices but also for differences in taxes, occupational structure, education levels, and age/sex distribution, some real-income differences among regions still remain high enough to provide economic incentives for migration. As shown in Table 9-4, an "average" worker who migrated from Prince Edward Island to Ontario in 1971 would

Table 9-3

Price Indexes of Major Canadian Cities, 1971

	Price index
	(Average, 11 cities = 100)
St. John's (Nfld.)	100
Charlottetown	103
Halifax	102
Saint John (N.B.)	94
Montreal	97
Ottawa	101
Toronto	106
Winnipeg	95
Regina	94
Edmonton	99
Vancouver	109

SOURCE Estimates by the Economic Council of Canada.

Table 9-4

Gain or Loss in Average Annual Income per Worker as a Result of Interprovincial Migration, by Province, 1971[1]

	Province of departure									
	Newfoundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia
	(Dollars)									
Destination:										
Newfoundland	–	120	−470	−600	−1,150	−1,340	−1,250	−1,200	−1,280	−1,200
Prince Edward Island	− 120	–	−590	−720	−1,270	−1,460	−1,370	−1,320	−1,400	−1,320
Nova Scotia	470	590	–	−130	− 680	− 870	− 780	− 730	− 810	− 730
New Brunswick	600	720	130	–	− 550	− 740	− 650	− 600	− 680	− 600
Quebec	1,150	1,270	680	550	–	− 190	− 100	− 50	− 130	− 50
Ontario	1,340	1,460	870	740	190	–	90	140	60	140
Manitoba	1,250	1,370	780	650	100	− 90	–	50	− 30	50
Saskatchewan	1,200	1,320	730	600	50	− 140	− 50	–	− 80	0
Alberta	1,280	1,400	810	680	130	− 60	30	80	–	80
British Columbia	1,200	1,320	730	600	50	− 140	− 50	0	− 80	–

1 The estimated gains from migration are represented by positive values; the losses, by negative values. The first column indicates that migration from Newfoundland to Prince Edward Island would have yielded a loss of $120 and to Ontario a gain of $1,340. These estimates are based on a Canada-wide regression of earnings differences among provinces, with proper allowance for variations in occupation, education, age, and sex. The gain of $1,340 in migrating from Newfoundland to Ontario, for example, was calculated after eliminating from each province's average income the distorting effect of differences between these two provinces in the above variables.

SOURCE Estimates by the Economic Council of Canada.

have increased his annual income by an estimated $1,460. Because income in Prince Edward Island was very low, the same worker could have migrated to any of the other provinces and increased his earnings. A closer examination of the estimated gains and losses in Table 9-4 suggests that the monetary incentives for migration out of the Atlantic provinces were strong, but those among the other provinces were quite weak. Of course, these estimates represent averages and, depending on qualifications, they would vary greatly from one person to the next. Where, for example, the move of an average worker from Quebec to Ontario would have yielded only $190, for a person with higher education — i.e., with 14 to 16 years of schooling — the same move would have yielded an extra $1,000.[1] In general, migration from lower- to higher-income provinces would have yielded the most favourable returns to males under thirty years of age with higher education.

The Effect of Migration on Disparities

Economic theory, contrary to what is often asserted, does not show that migration would necessarily eliminate disparities in income levels and unemployment rates, even if continued for long periods. This is not the place to prove such a statement rigorously, but a brief outline can be given.

Migration is likely to do best as a remedy when there is a once-and-for-all deterioration in the economic fortune of a region, as, for example, in the case of an area that once had a good proportion of its population employed in coal mining but later became faced with a situation where the coal ran out or became too expensive relative to substitutes. Theoretically, and often in practice, the resulting decline in wages and increase in unemployment will generate an outflow of people that, sooner or later, will eliminate the unemployment and, by gradually making labour scarce again, will bring relative wages back to their former level. Not only are the migrants better off in the long run, but so are those who remain behind.

On the other hand, there are situations where the causes of unemployment or low income are such that migration cannot cure them, however long it persists, though it can ameliorate them — for example, where the rate of natural increase, and so the rate of growth of the labour supply, is much larger than in neighbouring areas. The resulting excess labour supply could depress wages relative to elsewhere and could cause higher unemployment. Out-migration occurs in this situation, but it occurs permanently and acts only as a palliative, as long as the fundamental problem of a high rate of increase in population persists. An increased willingness to migrate in such a case can reduce, but never eliminate, the continuing income and unemployment disparities.

1 Estimated gains or losses as a result of migration from one province to another by migrants with certain characteristics of occupation, education, age, and sex are based on province-specific regressions of employment income. For example, the earnings differential of $1,000 is based on the Ontario-Quebec difference in regression estimates of employment income for a person with the same educational attainment.

Efforts to assess in quantitative terms the value of interprovincial migration in Canada, by looking at data on migration flows and their connection with disparities, have not been very sucessful. The data problems and conceptual difficulties are quite daunting. Examination of empirical data suggests that migration might help a little to reduce regional disparities and that increasing it could help a little more, but it could hardly become a panacea.

Given the high rates of migration, which have been sufficient to generate large differences in provincial rates of labour force growth, some striking changes in unemployment rates might have been expected. In the Atlantic region, for example, the unemployment rate averaged about 8 per cent during the period 1951-71 — about 3 per cent above the national average. If migration did have a direct impact on unemployment rates, either by moving the unemployed or by leaving job vacancies for others as migrants moved away, the unemployment gap should have been eliminated long ago. From 1951 to 1971, net out-migration from the Atlantic region represented about 15 per cent of the population — sufficient to close the unemployment gap of 3 per cent five times over! But, since the gap did not close, there must have been other factors opening it up as fast as migration could close it. It follows that any link between migration and the elimination of unemployment must be quite tenuous.

Disparities in average income between regions will generate migration to take advantage of them; through this process, income gains will be made. The size of the gains to the economic system is hard to estimate, because only part of all migration takes place because of regional income disparities. Some of it occurs from high- to low-income regions and between regions with comparable incomes. One reasonable procedure for estimating the gain in incomes — and thus in national output — that results strictly from the part of migration caused by income disparities involves assuming that the net outflows from low-income regions are satisfactory measures of the amount of such migration. If so, the average annual gain in national output resulting from disparity-induced migration can be estimated. It was between $36 and $42 million over the 1966-71 period — less than 0.05 per cent of Canadian gross national product in 1971. To this figure perhaps should be added some allowance for the possible effect of migration on regional differences in unemployment rates. Although migration does not eliminate these, it may keep them smaller than they would be without migration. But note that, even if the unemployment rate were lowered by out-migration in the sending regions, it would simultaneously be raised in the receiving regions, except in years of high boom. The total amount of unemployment would not change much, just its geographical distribution. The net effect on gross national product would be small and could be positive or negative. We have not attempted to calculate it.

On balance, we conclude that the contribution of current rates of interprovincial migration to the annual increase in Canadian gross domestic product is not a dramatic one. Even doubling current rates of migration, if it could be achieved, would not change this conclusion. A corollary is that there is little need to worry, from the point of view of national economic efficiency, about whether certain regional policies like those of DREE happen to have some inhibiting effect on migration.

The Manpower Mobility Program

Although the contribution of migration to reducing disparities is not likely to be a dramatic one, it probably does help to some extent; therefore, it is worth examining mobility policy. Canada's first Manpower Mobility Program went into effect in December 1965.[2] It provided relocation grants (travel expenses, plus a resettlement allowance of up to $1,000) to those workers involuntarily unemployed for four of the previous six months. For those involuntarily unemployed for shorter periods, relocation loans were made available. Eligibility depended only on the applicant being Canadian and unable to find employment locally, but with a reasonably permanent job prospect at his new location.[3] The initial budget was 8.5 million — $3.5 million for grants and $5.0 million for loans. Between December 1965 and April 1967, fewer than 1,500 workers made use of the grants and 1,300 took advantage of the loans; consequently, the regulations were eased in 1967. The loan provisions were removed; grants became available to any worker unemployed or about to become unemployed. Similarly, the four-out-of-six-month unemployment prerequisite for relocation grants was dropped. Furthermore, a $500 housing grant (later increased to $1,500) was instituted to facilitate the purchase of the worker's home at the new location. Finally, an exploratory grant was introduced to encourage the unemployed to search for a job in the nearest area. As a result, for fiscal year 1967-68, about 6,000 workers received relocation grants and 4,400 obtained exploratory grants,[4] for an expenditure of about $4 million (relocation grants averaged $600 and exploratory grants, $60). Between 1968 and 1975 a number of other revisions were made to the regulations. Underemployed workers (those working fewer than thirty hours) became eligible for all grants. The relocation grant was extended to include a preliminary examination allowance that permitted examination of a new locality before relocating. A special travel grant was instituted to provide travel expenses for those requiring manpower services not locally available. In 1974, the eligibility requirements were changed; workers had to apply for assistance before relocating, before starting employment, and subsequent to registering at a Canada Manpower Centre. Furthermore, the salary range governing eligibility was extended up to $17,500 for 1975. Finally, travel grants for temporary employment outside a worker's locale were introduced.

Over 80 per cent of the recipients of relocation grants[5] are male, although the proportion of women is increasing. Of all recipients, over 80 per cent are between 20 and 44 years of age, with the 20-24 age group accounting for roughly half of these. Of all recipients, 40 per cent have 11 to 12 years of education. Most of them have no

2 Before 1965, assistance for manpower mobility purposes consisted of either financial assistance to move agricultural workers under federal-provincial farm labour agreements or an advance on transportation costs to impecunious workers moving to jobs from designated high-unemployment areas.

3 Immigrants from abroad received similar assistance.

4 About 30 per cent of the exploratory grants resulted in employment and the subsequent relocation of families.

5 Based on data from the Department of Manpower and Immigration for 1974-75 and part of 1975-76.

dependants and this proportion has increased substantially — from 24 per cent in 1972-73 to 72 per cent in 1974-75.[6] About 80 per cent of all relocation grants are for moves of less than 500 miles, within a province or region. About half of all moves between regions are to the Prairie provinces (two-thirds of them to Alberta), with the Pacific region sending the highest proportion of its migrants to other regions (40 per cent). Seven out of every ten relocated workers found employment: two of them in manufacturing, two in mining, and three in community, business, and personal service industries.

The program, which is administered by the Department of Manpower and Immigration under the authority of the Appropriations Acts and the Manpower Mobility Regulations, has a small budget compared with that of DREE. Between fiscal years 1967-68 and 1975-76, expenditures doubled approximately, from $4.0 million to $8.4 million, with the budget for fiscal year 1975-76 set at $11.7 million. Relocation grants per recipient, for the three periods, were approximately $600, $620, and $640; exploratory grants were $60, $70, and $90, respectively.[7] The distribution of relocation grants in 1975-76, the latest period for which a regional breakdown could be obtained, is shown in Table 9-5.

Table 9-5

Distribution of Relocation Grants, by Region of Origin, Fiscal Year, 1975-76

	Distribution of grants
	(Per cent)
Atlantic region	18
Quebec	46
Ontario	18
Prairie region	6
British Columbia	12
Total	100

SOURCE Estimates by the Economic Council of Canada, based on data from the Department of Manpower and Immigration.

It has been suggested[8] that the program has successfully reduced the amount and duration of unemployment. Proportionally more families have moved from depressed areas than would otherwise have done so and, if wages are any guideline, the productive output of workers who moved has increased by between 10 and 15 per cent.

6 Although 25 per cent of all relocation grants went to workers with four or more dependants. See W. R. Dymond, "Manpower and Mobility," Department of Manpower and Immigration, a paper delivered at the Round Table on Manpower Mobility, sponsored by the Economic Council of Canada, September 1968, p. 7.

7 This involved 6,000, 11,000, and 10,000 relocation grants and 4,400, 12,000, and 14,000 exploratory grants, respectively.

8 Dymond, "Manpower and Mobility," p. 10.

Despite this apparent success, however, the program has not moved many people, given the high mobility rate in Canada. On average, approximately 50,000 jobs were filled each month in Canada during 1974-75; however, only 1,000 workers per month relocated and found jobs under the mobility program. Moreover, in any one month, there was an average of 41,500 more jobs that went unfilled.[9] The program accounted for only 2 per cent of the vacancies filled each month across Canada; for less than 5 per cent of the migrants that moved interprovincially in 1974-75; and for substantially less than the total number of migrants who moved Canada-wide.

Revenue and Income Transfers

A growing share of output in our economy has been directed to enhancing individual welfare through the provision of public services, such as education and health care; through transfers of income to selected groups in society (for example, old age security and family allowance payments); and through a broad range of social security programs that compensate individuals for loss of income, disability, or other inequality of opportunity beyond their control. Some of these programs are financed specifically to equalize the ability of provinces and local governments to deliver services. Others can be expected to result in different per capita payments in different regions because of the variations in the demographic composition of regional population or because of the inequality of opportunity among regions, which is what the programs are designed to address. We shall examine federal-provincial fiscal arrangements and other federal expenditures to determine the relative levels of payment in the different regions, with a view to determining how much these payments help in closing interregional income gaps.

Federal-Provincial Fiscal Arrangements

Federal transfers to other levels of government over the postwar period increased from 9 to more than 22 per cent of federal expenditures. The $8 billion that the federal government contributed to the provinces and the territories in 1974-75 accounted for one-quarter of their revenues. These transfers consisted of $2.6 billion in general-purpose transfers ($1.8 billion of which were equalization payments), which go into provincial general revenues and are spent according to provincial priorities, and $5.4 billion in specific-purpose transfers, for public services such as health, education, and social welfare (Table C-1).

9 According to Statistics Canada. A sample of any given month would show, on average, that 91,500 vacancies existed, 41,500 of which lasted a month or more. However, such figures are not additive for the year. A stock-flow problem exists; for any given month, existing vacancies consist of newly created vacancies less those which have disappeared plus those from previous months. Consequently, we would be double-counting some portion of the vacancies if monthly figures were added to reach a yearly total. It should also be noted that, because of the possibility of measurement error, these figures are probably understated.

General-purpose transfers are chiefly an instrument for equalizing the ability of provinces to provide services. They vary from less than $30 per capita in Ontario and British Columbia to nearly $400 per capita in Prince Edward Island and Newfoundland. If total general-purpose transfers were spread equally among Canadians, they would amount to $110 per head.

Specific-purpose transfers, on the other hand, are geared to the provision of particular services such as health, welfare, and education. While making an important contribution towards the financing of public services (on average, $242 per capita), most of the payments depend upon provincial matching of contributions to the programs. Thus the level of federal payout depends not only upon the need for the programs in various regions but also upon provincial priorities and ability to commit resources to them. Total federal grants for postsecondary education are higher than the Canadian average (on a per capita basis) in Quebec and Alberta but are less than three-quarters of the average in New Brunswick, Prince Edward Island, Newfoundland, and British Columbia. Variations in the federal contribution in the health field are less pronounced among regions, while contributions to welfare programs, mostly under the Canada Assistance Plan, through which the federal government pays 50 per cent of the costs of welfare services, are below average in Nova Scotia, Ontario, and the Prairie provinces. Overall, specific-purpose transfers are higher in per capita terms in Quebec[10] and in the Atlantic provinces except for Nova Scotia. As will be seen later, however, this does not imply that they fully compensate for differences in earned incomes in those areas.

Since the unconditional grants may be used by provinces for any purpose, including the supplementing of programs eligible for specific-purpose contributions, it is perhaps more appropriate to compare the total yield rather than the individual components of federal transfers. These figures, in absolute and per capita amounts, appear in Table C-1 and are illustrated in Charts 9-1 and 9-2.

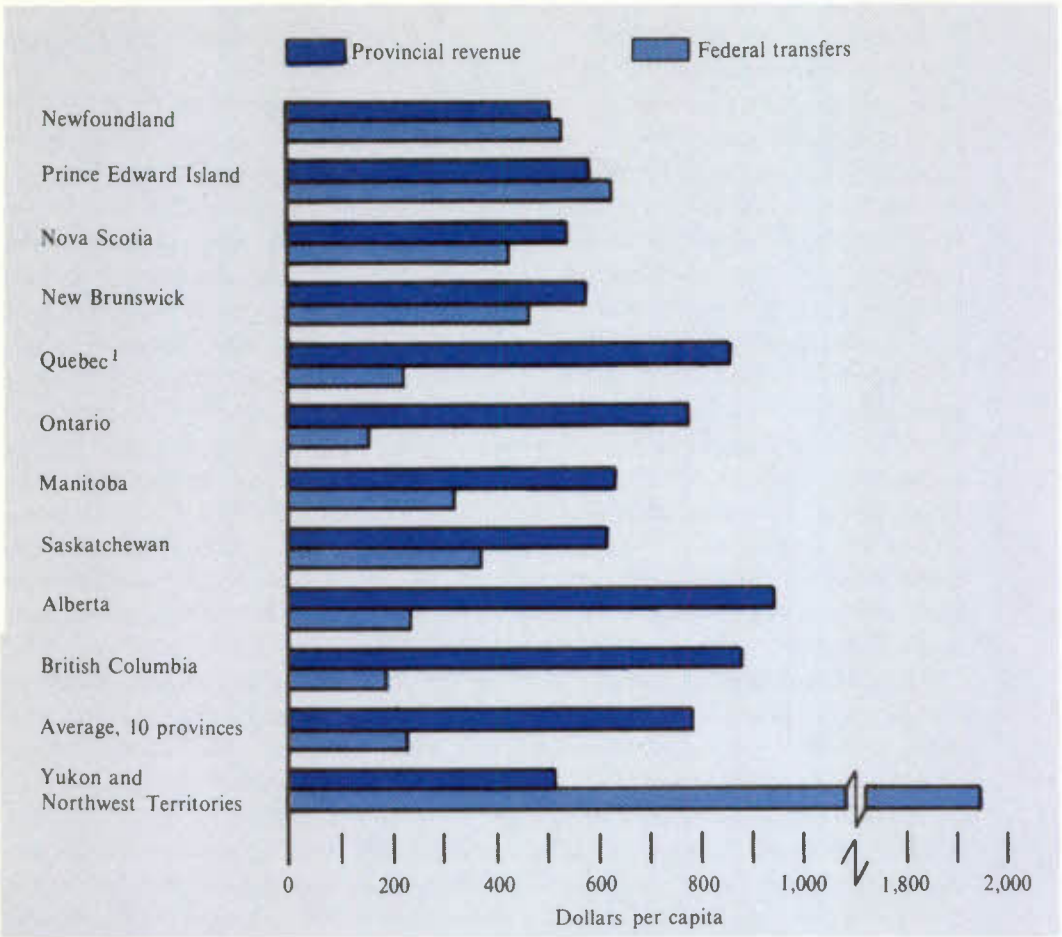
Chart 9-1 shows that provincial revenues per capita are somewhat more evenly distributed in total than are revenues from their own sources, so that the federal transfers do have an equalizing effect. The shaded part of the bars shows that revenue from own sources is much lower than average in the Atlantic provinces, Manitoba, Saskatchewan, and the Northwest Territories. It is above average in Alberta and British Columbia and close to average in Ontario and Quebec. Quebec appears to collect more than Ontario, but this is largely because Quebec pension plan receipts are included in the shaded part of the bar for Quebec, whereas Canada pension plan receipts are excluded for Ontario and elsewhere.

Chart 9-2 shows more clearly that total federal transfers are highest in the Atlantic provinces and the Northwest Territories and lowest in Ontario, Alberta, and British Columbia. It can be seen that most of the interprovincial differences are attributable to equalization payments and not to variations in specific-purpose transfers or other

10 Quebec does not participate on the same basis as other provinces in hospital care programs or in the Canada Assistance Plan. For purposes of comparison, the value of federal tax abatements in lieu of these programs has been allocated to Quebec in Charts 9-2 and 9-3, as calculated by the Federal-Provincial Division of the Department of Finance.

Chart 9-1

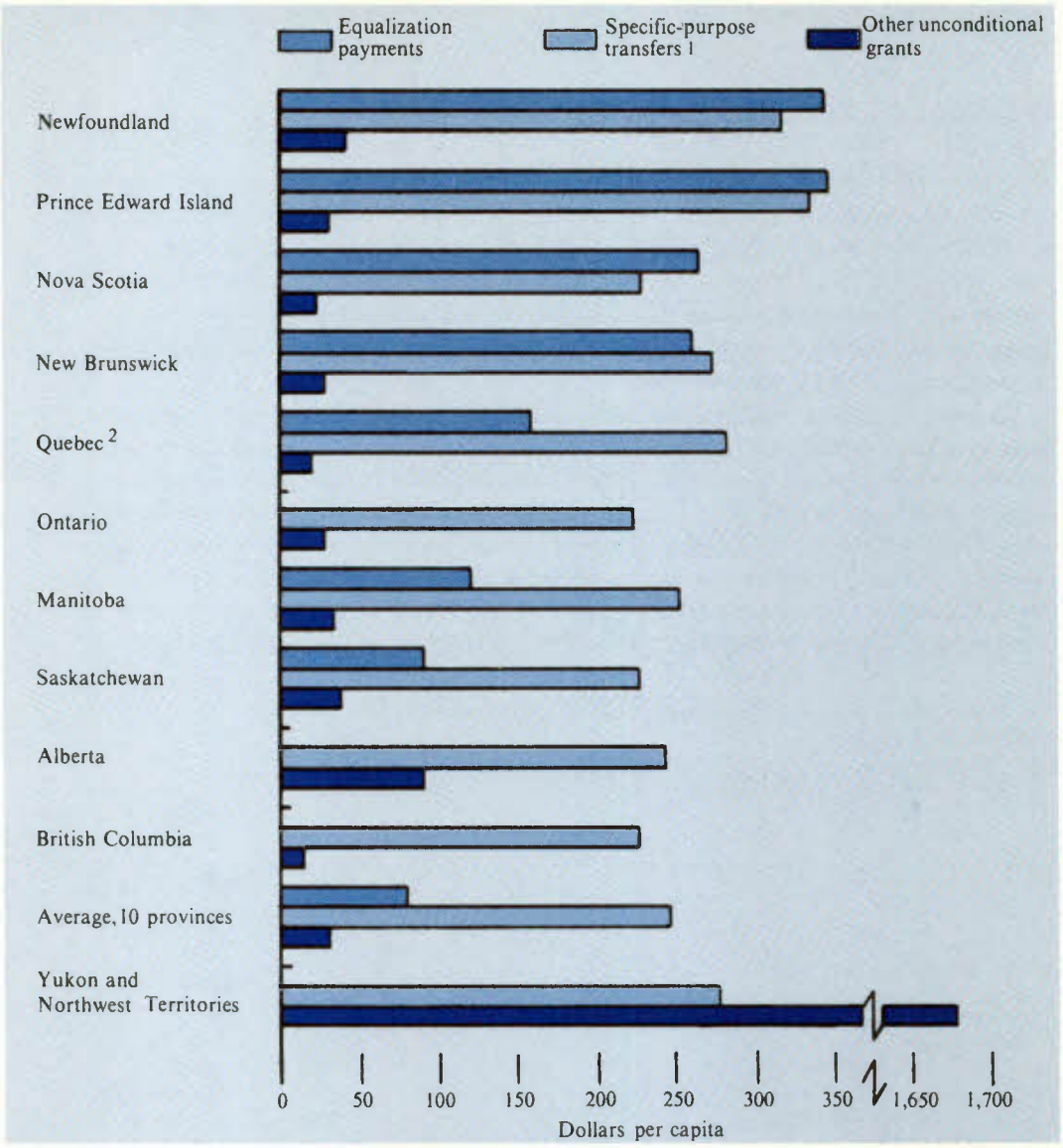
Distribution of Revenue per Capita, by Province and Territories, 1973-74



[1] Excluding federal tax abatements for programs that are contracted out.
SOURCE Data from Statistics Canada.

Chart 9-2

Composition of Federal Transfers per Capita, by Province and Territories, 1974-75



1 Transfers to local governments are included in the specific-purpose transfers; these payments totaled $125.1 million, or 2.3 per cent of the category.

2 Federal tax abatements to Quebec are included for comparative purposes.

SOURCE Data from the Department of Finance and from Statistics Canada.

types of unconditional grant. Even so, Chart 9-3 indicates that the Atlantic provinces, with the exception of Nova Scotia, do much better than average from specific-purpose transfers, as does Quebec.

Transfers to Individuals

Federal government transfers to persons (more than 30 per cent of federal expenditures in recent years) have traditionally exceeded transfers to other levels of government. Although there has been some increase in this proportion over the postwar period, it can be partly accounted for by the increasing presence of the federal government in the income support field and the offsetting withdrawal of other levels of government. On average, for the years 1947 to 1975, just over 23 per cent of the expenditures of all governments were transferred to individuals.

In 1974-75, federal transfers to persons totaled about $9 billion (Table 9-6). Family and youth allowances, old age security and the guaranteed income supplement, and unemployment insurance represented 20, 37, and 25 per cent of the total, respectively. Family and youth allowance payments are lower than average in Ontario and British Columbia; old age security and guaranteed income supplement payments are below average in the Territories, Quebec, and Ontario; and both programs reflect the demographic characteristics of the regions and, in the case of the guaranteed income supplement, income levels. The UIC payments increase mainly with the rate of

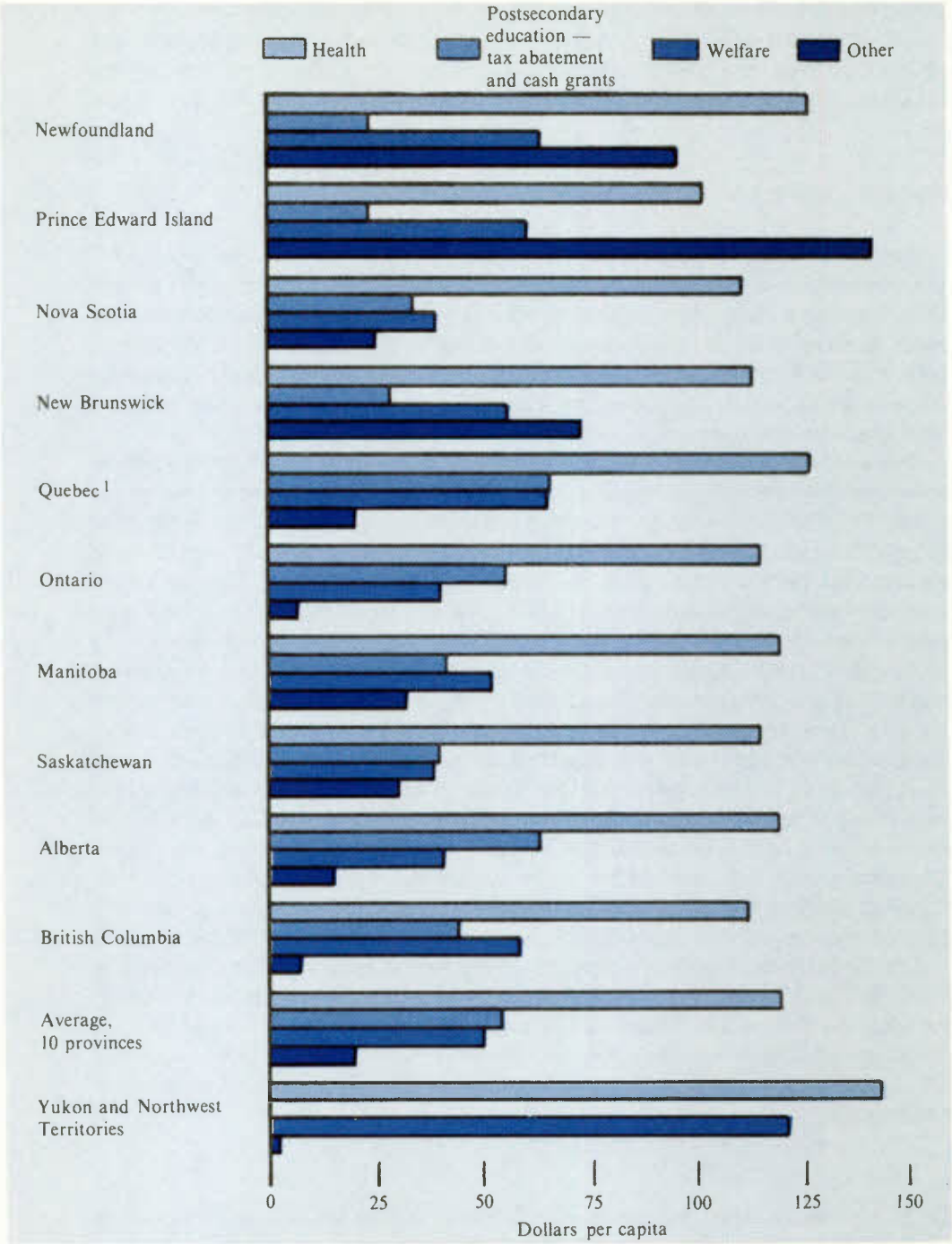
Table 9-6

Federal Transfers per Capita, Canada, by Region, 1974-75

	Atlantic region	Quebec	Ontario	Prairie region	British Columbia	Yukon and Northwest Territories	Canada	Total transfers
				(Dollars)				($ Million)
Old age security and guaranteed income supplement	169	141	149	168	168	55	153	3,444.5
Unemployment insurance	169	131	84	43	131	121	103	2,320.5
Family and youth allowances	91	81	79	84	77	115	81	1,824.1
Veterans' pensions and allowances	40	9	19	23	31	–[1]	20	456.9
Other pensions[2]	41	30	44	33	46	20	38	856.7
Manpower–mobility and training allowances	13	8	6	7	8	21	8	173.2
Other job-creating and miscellaneous transfers[3]	13	8	3	4	6	15	6	130.0
Total	537	408	384	362	466	346	410	9,205.8

1 No data available.
2 Public Service and Canadian Forces superannuation, and Canada and Quebec Pension Plans.
3 LIP, OFY, New Horizons, etc.
SOURCE Estimates by the Economic Council of Canada, based on data from Statistics Canada.

Chart 9-3
Composition of Federal Specific-Purpose Transfers per Capita, by Province and Territories, 1974-75



1 Federal tax abatements for Quebec are included for comparative purposes.
SOURCE Data from the Department of Finance and Statistics Canada.

unemployment among the insured population and, to some extent, with employment incomes; they are substantially above average in the Atlantic region and below average in the Prairie region and Ontario.

Taking the total of all these programs on a per capita basis, the Atlantic region and British Columbia receive above-average transfers to persons; Quebec receives just less than the Canadian average, while the other regions receive even less per capita.

Effect of Transfers on Income Disparities

Our discussion has dealt with very large amounts of money. In fact, federal government transfers to other levels of government and to persons accounted for more than 10 per cent of the gross national product in recent years. We have noted that the share received from the programs by the Atlantic provinces and, in the case of contributions to provincial governments, also by Quebec has been higher than their share of the Canadian population; we must try to determine how far these transfers have gone towards eliminating disparities in incomes between regions.

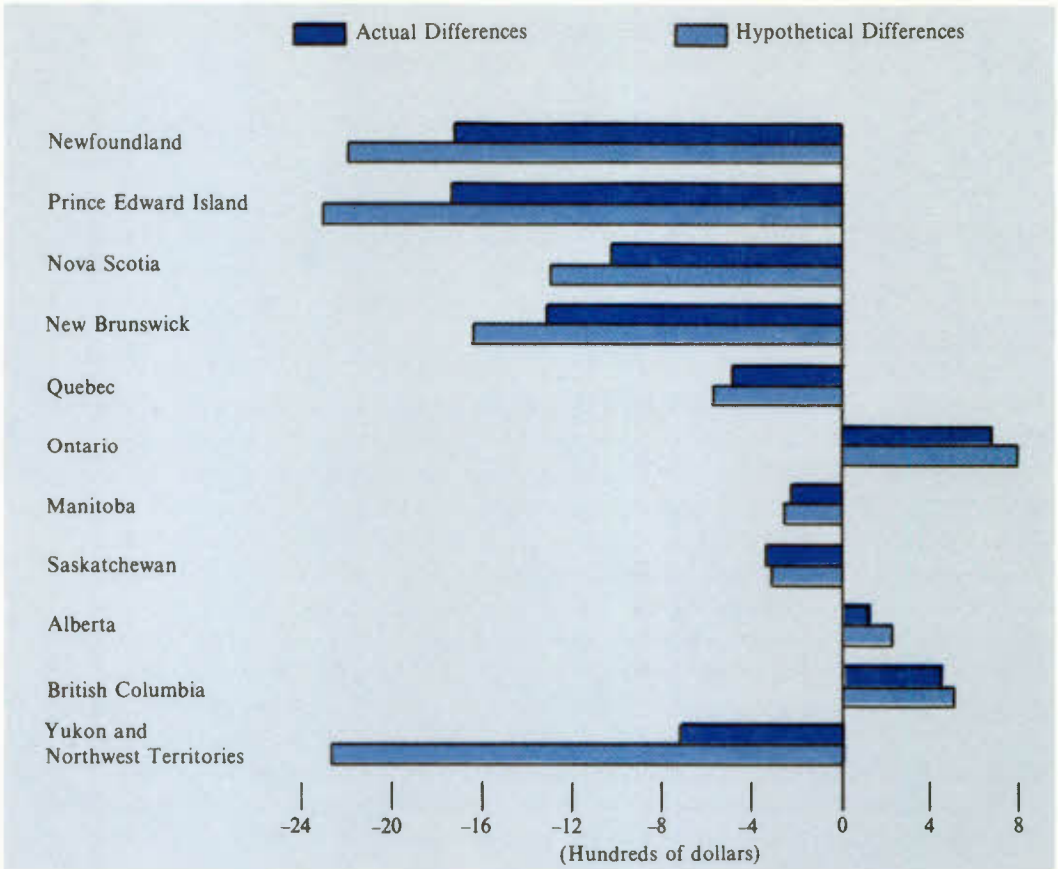
One way is to determine what the disparities would have been, had the federal government distributed its transfers on an equal per capita basis across provinces (Chart 9-4). We have assumed that a transfer dollar is equal to a dollar in personal income. In actual fact, there will be leakages between provinces and additional income and employment multiplier effects that are not taken into account. We expect these secondary effects to be small, however. We see that income disparities would have been greater had the federal government transferred money solely in proportion to population[11]. The reduction in absolute terms was greatest in the Atlantic region and was sufficient to eliminate more than 20 per cent of the gap that would have existed had transfers been distributed on an equal per capita basis. The effect of the actual distribution, compared with our hypothetical, equal per capita distribution, was to eliminate about 17 and 11 per cent of the income shortfall in Quebec and Manitoba, respectively. The income gap would have been nearly three times as large in the Yukon and Northwest Territories, while the richer provinces of Ontario, Alberta, and British Columbia would have been better off in the absence of the equalizing effects of transfers. Only in the case of Saskatchewan did the actual distribution of transfers increase the size of the income disparity; however, the amount involved was minimal.

Leaving aside the financing arrangements for federal programs, the expenditures shown in Chart 9-4 may be interpreted as a per capita transfer from Ontario, Alberta, British Columbia, and Saskatchewan, in amounts ranging between $18 and $136, to the Yukon and Northwest Territories, $1,530; to the Atlantic region, $353; to Quebec, $98; and to Manitoba, $31. In the process, about one-fifth of the income disparities are eliminated.

11 Except in the case of the Prairie provinces, these disparities would have been greater still had the government transferred money in proportion to tax collections.

Chart 9-4

Actual and Hypothetical[1] Differences between Personal Income per Capita in the Provinces and the National Average, by Province, 1974-75



1 Differences that would have existed if federal transfers to other levels of government and to persons had been distributed on an equal basis per capita.

SOURCE Estimates by the Economic Council of Canada.

Transportation

In Canada, great distances and a small population unevenly distributed among the various regions render markets small and fragmented. The geography of the nation reinforces this. Canadians have traditionally regarded transport policy as a major vehicle to offset such tendencies and to foster economic growth. Despite this, a relatively limited amount of quantitative analysis has been undertaken in this area. We present some data relevant to an understanding of the issues involved in the regional transport question, and we draw a few conclusions. Given the complexity of the transportation issue in Canadian social and economic affairs, however, our findings should be regarded as only tentative.

The Atlantic Region

The Atlantic region's concern with transportation began as a consequence of the instability of the Atlantic economy at the time of Confederation. The period prior to Confederation saw the existence of isolated and tiny colonies in British North America. They were distinctly separated, and their ties with world markets — Britain and the United States, in particular — were much stronger than those with each other. The ramifications of successive losses of trade preferences with the above-mentioned nations were thus momentous for the tiny settlements. British policy moved from the old mercantilism to free trade, with the consequent removal of the imperial preferential treatment of colonial wheat and timber, while the abrogation of the Reciprocity Treaty of 1854 by the United States remained a threat until it was carried out in 1866. The impact of these events was greatest in the Maritime colonies. Nova Scotia and New Brunswick looked seaward: Nova Scotians were highly dependent upon the free entry of fish into the New England states, while the new Brunswick economy was based upon timber and shipbuilding for the British and U.S. markets, respectively. In order that the well-being of the region might be improved, Maritimers hoped that Confederation would alleviate this critical situation by providing the Atlantic region with access to the greatly expanded market of central Canada, whose population by 1867 had surpassed three million.

It was the provision of the Intercolonial Railway with the maintenance of an artificially low level of rates that was to provide this access. The rate advantage, however, was continuously eroded after 1912; in 1926, the Royal Commission on Maritime Claims estimated that, while rates on the Intercolonial had risen by 92 per cent over the previous fourteen years, the rates in the rest of Canada had increased by only about 55 per cent. The Maritimes argued that the combined impact of such rate increases and Canadian tariff policies had restricted their markets and inhibited the economic growth of the region. Their claims were substantiated by reference to the fishing industry, the forest-products industry, and the allied industries of coal and steel. The Commission's recommendations, which were introduced in the Maritime Freight Rates Act (MFRA) of 1927, were that a 20 per cent subsidy, payable to the

railways, should be implemented on movements within the Maritime region[12] as well as on the Maritime proportion of movements to the rest of Canada, in order that rates might be reduced. The subsidy was increased to 30 per cent in 1957.

Increased trucking competition in central Canada, however, and the post–Second World War horizontal[13] percentage rate increases led to reconsideration of the assistance granted by the MFRA. At the time of the MacPherson Commission in 1961, the Atlantic provinces argued that trucking competition tended to bring down rail rates or prevented them for increasing and that the slower growth of trucking in the Atlantic provinces led to a smaller proportion of their traffic being competitively rated. Although the first columns of Table 9-7 present such evidence, it is clear from both the final column of this table and from Table 9-8 that by 1973 the situation had substantially changed and rail rates were no more monopolistic in the Atlantic region than in central Canada, though indeed they were in the Prairies. Further, the Atlantic region asserted that the general horizontal increases in freight rates had militated against the region's competitiveness, as much of the traffic in the Atlantic region moved from 700 to 800 miles, whereas the average movement in central Canada was about half that. They argued that, as a result, a given percentage freight rate increase would raise the delivered price of goods from the Atlantic region relative to those from central Canada because of the larger transportation component in the Atlantic region's delivered price. It should be noted that this is true only if the f.o.b. prices do not increase by as high a percentage as the transportation charge. In times of general inflation this might not be the case, and horizontal increases would not then disfavour the Atlantic region. In any event, these forces, the Maritimers argued, had counteracted any advantage that the MFRA had given them. As a result of these representations, attempts were made to move to a more competitive rate structure and to eliminate the internal cross-subsidization by the railways that disfavoured the Atlantic region. It is by no means clear, however, that much was achieved.

In recent years, transportation has remained a central issue in regional analysis. Transportation has been viewed as an instrument for the alleviation of regional disparities. The Atlantic Region Freight Assistance Act, 1968-69, and its subsequent amendments are excellent illustrations of this. In essence, they provide for the extension of the MFRA subsidies to trucking as well as additional assistance for extraregional movements of manufactured goods and new subsidies for intraregional traffic. Under the Act, a basic subsidy of 30 per cent is provided on the "select territory" portion of outward movements. The select territory encompasses roughly all of the area of Quebec east of Lévis and south of the St. Lawrence, as well as the Atlantic provinces. On movements within the Atlantic region, the Act has made provision for a subsidy of 15 per cent. Finally, it also established the Atlantic Region Selective Assistance program, which, if certain reasonable requirements are met, authorizes a

12 For purposes of the Maritime Freight Rates Act, this region included that portion of Quebec east of Lévis and south of the St. Lawrence River.

13 Horizontal freight rate increases were general freight rate increases of a certain percentage, which were granted by the Board of Transport Commissioners to cover the higher costs of the post–Second World War period.

Table 9-7

Traffic, by Type of Transportation Rate, Atlantic and Central Regions, Selected Years, 1949 to 1973

	1949	1954	1957	1959	1964	1973
			(Per cent)			
Atlantic region						
Class[1]	3.8	1.9	2.0	2.2	1.5	2.2
Commodity[2]	89.0	77.7	69.9	61.9	51.2	15.1
Total, noncompetitive rates	92.8	79.6	71.9	64.1	52.7	17.3
Competitive[3]	6.8	19.8	23.1	22.4	24.8	48.3
Agreed charges[4]	0.2	0.3	4.7	13.2	22.5	34.3
Total, competitive rates	7.0	20.1	27.8	35.6	47.3	82.7
Unclassified rates	0.2	0.3	0.3	0.3	–	–
Total,[5] all rates	100.0	100.0	100.0	100.0	100.0	100.0
Central region						
Class	7.4	3.1	3.0	1.9	1.6	2.3
Commodity	67.2	61.6	48.4	46.0	28.8	15.8
Total, noncompetitive rates	74.6	64.7	51.4	47.8	30.4	18.1
Competitive	17.7	25.6	37.3	33.6	29.5	51.7
Agreed charges	7.1	8.5	10.3	17.4	40.1	30.4
Total, competitive rates	24.8	34.1	47.6	51.0	69.6	81.9
Unclassified rates	0.6	1.2	1.0	1.1	–	–
Total,[5] all rates	100.0	100.0	100.0	100.0	100.0	100.0

– Not available.

1 Class rates are the maximum rates chargeable by the railways.

2 Commodity rates apply to those products that are shipped in considerable quantity; they are somewhat lower than class rates.

3 Competitive rates are issued in order to meet competition from alternative modes; they are lower than noncompetitive, commodity, or class rates.

4 Agreed charges are by contract between a shipper and the railways, so that the shipper receives a discount in return for the guarantee that he will ship a given, major proportion of his output by rail.

5 Totals may not add up to 100 because of rounding.

SOURCE The Economist Intelligence Unit Ltd., "Legislation and Public Policy," *Atlantic Provinces Transportation Study*, Vol. 5 (Ottawa: Queen's Printer, 1967); and data from the Canadian Transport Commission.

subsidy payment of an additional 20 per cent, over and above the basic 30 per cent, on the movement of certain goods out of the region. Building products such as bricks, shingles, windows, and wallboard; textiles and clothing; paper and related products; as well as miscellaneous manufactures, ranging from automobiles to hair dryers, are among those goods eligible for selective assistance. They are almost all produced in the manufacturing sector, and they include practically everything that this sector actually produces in the Atlantic region.

In sum, on movements out of the Atlantic region, the transport of most manufactured goods is subsidized at a rate of 50 per cent; that of nearly all other goods,

such as primary products, at 30 per cent. Within the region, all transportation receives a 15 per cent subsidy.

Table 9-8

Traffic in Major Regions as a Proportion of Total Regional Traffic, by Type of Transportation Rate, 1973

	Region			Western option no. 1[1]
	Atlantic	Central	Western	
	(Per cent)			
Type of rate:				
Class	2.2	2.3	.1	.2
Commodity	15.1	15.8	44.1	67.3
Total, noncompetitive	17.3	18.1	44.2	67.5
Competitive	48.4	51.5	15.2	23.3
Agreed charges	34.3	30.4	6.0	9.2
Statutory grain rates	–	–	34.6	–
Total, competitive	82.7	81.9	55.8	32.5
Total, all rates	100.0	100.0	100.0	100.0

– Not available.
1 Excluding traffic moving under statutory grain rates.
SOURCE Data from the Canadian Transport Commission.

The Prairie Region

The Prairie provinces have, for many decades, been trying to free themselves from what they have often referred to as "an economic framework decreed by Canada's national policy of the nineteenth century."[14] This policy sought to foster Prairie settlement and to draw traffic along an all-Canadian east-west axis. To lend force to these objectives, the Dominion Government became involved in the rate-setting of the transcontinental lines with the signing of the Crownest Pass Agreement of 1897. Under this agreement, the Canadian Pacific Railway reduced rates on grain and flour moving from the Prairies to the Lakehead by three cents per 100 pounds. At the time, this amounted to a subsidy of between 10 per cent and 25 per cent, depending on the origin of the grain, with the average probably being towards the upper end of the range. They also reduced the rates on a number of household and building supplies moving west from central Canada by 10 per cent. In return, the CPR received land grants, as well as a subsidy of $11,000 per mile for the construction of a line from Lethbridge through the Crowsnest Pass to Nelson, British Columbia. The government hoped that

14 Premier Alan Blakeney (Saskatchewan), "Opening Remarks," Western Economic Opportunities Conference, Calgary, July 24, 1973.

the reduction in the rate on grain moving east would stimulate the development of a Prairie economy based on agriculture. At the same time, the lowering of the rates on westbound manufactures would, it was deemed, provide a greater outlet for manufactures from central Canada. Since their inception, the Crowsnest rates have become the "heart" of the Canadian rate structure. They were briefly suspended in the early 1920s, but in 1925 they were cast into their present form when Parliament eliminated the reduced statutory rates on certain westbound traffic that was originally in the agreement. Simultaneously, they extended coverage of the reduced eastbound rates on grain and flour to all railway lines serving western Canada.[15] In a world of general inflation it is clear that rates based on the dollar values of the 1920s are now very low in real terms and may therefore have more substantial effect than originally intended on the location of economic activity in Canada.

Prairie representatives have adamantly asserted that the freight rate structure has had a detrimental effect on Prairie development, implicitly defined by them in terms of a shift in the composition of output away from specialization in primary activities. Because of the low rates on extraregional movements of primary products, further processing of these products, which would otherwise take place within the region, occurs elsewhere. From the Turgeon Commission in 1951 through to the Western Economic Opportunities Conference in 1973, the Prairie provinces have contended that the rates on raw materials and finished products should not be such as to discourage the location of processing plants within the Prairie region.

Regional Differences: Some Quantitative Results

When actual data on the role assumed by transportation in the shaping of Canadian development are tabulated, some surprises are immediately generated; in total, they may suggest that less emphasis should be placed on transportation now than several decades ago. We are not suggesting, however, that transportation no longer exerts any impact upon the structure, level, and location of Canadian output. We acknowledge that, if rates charged are not set according to proper economic principles, interregional trade and the location and level of regional economic activity will be adversely affected. If the rates are too high, socially beneficial trade will not take place; if they are too low, socially harmful movements will occur.

Nevertheless, one important surprise is the small and declining proportion of gross domestic product that is accounted for by the value added in transportation. Such a trend emerges directly from an examination of Table 9-9, which traces the decline of value added in the ratio of transportation to gross domestic product over the post-

15 These major aspects of the Crowsnest Pass rates are documented in George W. Wilson, "The Economics of the Crowsnest Pass Rates," *Canadian Journal of Agricultural Economics* 7, no. 1 (1958):34-43; and The Royal Commission Report on Dominion-Provincial Relations, 1940, Appendix III, published as W.A. Mackintosh, *The Economic Background of Dominion-Provincial Relations,* Carleton Library (Toronto: McClelland and Stewart Limited, 1964).

Second World War period. Generally, such a downward trend may be looked upon as a consequence of the changing structure of Canadian output — away from primary activities and towards services. On this point, over half of the gross domestic product today bears no transport costs, since it consists of services. Among commodities, the costs of moving finished products, such as automobiles, or semi-finished products, such as manufactured iron and steel, are quite low. More precisely, to move an automobile all the way from Ontario to Alberta adds only about 6 per cent to its cost; for agricultural implements, it is less than 5 per cent; and, even for something as heavy as manufactured iron and steel, it is only just over 10 per cent. For shorter movements, such as those from Ontario to Manitoba, the percentages are even smaller. Finally, it should be noted that the figures presented in Table 9-9 include passenger transport. If passenger transport were excluded, we might well find that the value added in the transport of goods has, in recent years, merely constituted between 3 and 4 per cent of Canadian gross domestic product.

Table 9-9

Value Added in Transportation[1] as a Proportion of Gross Domestic Product, Selected Years, 1945 to 1974

	Transportation	Gross domestic product	$\frac{\text{Transportation}}{\text{Gross domestic product}} \times 100$
1945	874	10,748	8.13
1950	1,225	16,854	7.27
1955	1,903	25,630	7.42
1960	2,358	34,192	6.90
1965	3,078	48,894	6.30
1970	4,434	75,427	5.88
1974	6,966	125,377	5.56

1 Excluding transportation by privately owned and operated trucks.
SOURCE Data from Statistics Canada.

Table 9-10 shows the revenue freight traffic, by commodity classification and by two major surface modes — truck and rail. It will be observed that, while crude materials, whose major components include iron ore, bauxite, nickel ore, and concentrates, account for over 50 per cent of the rail traffic, the share of this tonnage carried by trucks is about 18 per cent. Conversely, while fabricated materials and end products (manufacturing output with high values per unit of weight), together, account for only 28 per cent of rail tonnage; their proportion of total tonnage in the trucking industry is 65 per cent. Generally, it can be said that, despite great technological advances in trucking, the rail and marine systems have the advantage in long-haul shipping of bulky commodities, while trucks have the advantage in the shipping, over shorter distances, of manufactured goods with higher values per unit of weight. Taking this

into consideration, as well as the greater dependence of the Atlantic and Prairie regions on primary production, the modal shares of tonnages, by region of origin, as presented in Table 9-11 are not surprising. It is observed that a disproportionately large amount of Atlantic and Prairie freight traffic moves by rail and a disproportionately small amount by truck, compared with figures for central Canada. The large differential between Canada and the Prairies with respect to tonnage moved by water is readily explained by the lack of ports (other than Churchill) within the Prairie region.

Table 9-10

Revenue Freight Traffic, by Commodity Classification, 1973[1]

	Proportion of tonnage transported	
	By truck	By rail
	(Per cent)	
Live animals	1	0
Food, feed, beverages, and tobacco	14	13
Crude materials	18	55
Fabricated materials	51	26
End products	14	2
General cargo	1	–
Special traffic[1]	–	4
Noncarload freight[2]	–	1
Total	100	100

– Not applicable.
1 Including piggyback traffic and containers returned empty.
2 Less than carload; express; etc.
SOURCE Data from Statistics Canada.

Table 9-11

Freight Tonnage, by Mode of Transportation, Canada, by Major Region, 1973

	Region of origin				
	Atlantic	Central	Prairie	British Columbia	Canada
	(Per cent)				
Mode of transportation					
Rail	73.2	50.9	79.9	52.1	59.7
Truck	11.0	31.0	20.1	23.5	25.0
Water	15.8	18.1	0.0	24.4	15.3
Total	100.0	100.0	100.0	100.0	100.0

SOURCE Data from Statistics Canada.

What is surprising, for road and rail traffic, is the proportion of tonnage carried extraregionally, compared with intraregionally. Table 9-12 gives the details. It reveals that well over half the rail traffic (61.2 per cent) is intraregional. Since 93.7 per cent of truck traffic is intraregional as well, the implication is that trade between major regions is surprisingly low — another reflection of the already mentioned dominance of services in the economy. One is led to the conclusion that if transportation, despite its small share in gross domestic product, is a significant factor in regional development, it may well be the intraregional transport that matters the most.

Table 9-12

Estimate of Freight Tonnage Transported by Rail and Truck, by Region of Origin, 1973

	Proportion transported	
	By rail	By truck
	(Per cent)	
Atlantic region		
Within region	9.5	5.5
Outside region	1.8	0.5
Central region[1]		
Within region	32.3	61.9
Outside region	6.1	2.3
Prairies region		
Within region	8.6	13.2
Outside region	28.1	2.3
British Columbia		
Within province	10.8	13.1
Outside province	2.8	1.2
Total, intraregional	61.2	93.7
Total, extraregional	38.8	6.3
Total, intraregional and extraregional	100.0	100.0

1 Ontario and Quebec regions combined.
SOURCE Data from the Canadian Transport Commission and from Statistics Canada.

If one considers the costs per ton-mile actually paid by shippers in each region, it will be seen that, contrary to much popular opinion, the less-developed regions of Canada are not at a disadvantage relative to central Canada because of higher trucking costs, partly because of existing subsidy policies (Table 9-13). Indeed, looking at intra-regional movements by truck it is observed that the highest costs per ton-mile are incurred in the Central region followed by the Atlantic region, the Prairie region, and finally British Columbia. In that the trucking mode is most suited to the intraregional

transportation of manufactured goods, it may be concluded that trucking costs are not a handicap for producers of manufactured goods within the less-developed regions of Canada.

In contrast to trucking, the pattern of rail costs presented in Tables 9-13 and 9-14 may keep the share of manufacturing and processing somewhat lower in the Prairie region than would an economically efficient rate structure. It is less likely that this is the case for the Atlantic region.

Table 9-13

Cost per Ton-Mile of Shipping by Truck or Rail, by Region of Origin, 1973

	Cost per ton-mile[1]	
	By truck	By rail
	(Cents)	
Atlantic region		
Within region	5.9	2.7
To Central region[2]	4.3	1.5
To Prairie region	–[2]	2.8
To British Columbia	–	2.3
Average	5.5	2.0
Central region[2]		
Within region	7.6	2.1
To Atlantic region	5.8	1.8
To Prairie region	4.3	2.8
To British Columbia	3.1	2.4
Average	6.7	2.2
Prairie region		
Within region	5.6	2.0
To Atlantic region	–	1.1
To Central region[2]	3.5	0.8
To British Columbia	5.3	0.7
Average	5.0	0.8
British Columbia		
Within region	4.7	0.9
To Atlantic region	–	1.2
To Central region[2]	–	1.6
To Prairie region	4.3	1.5
Average	4.6	1.2

– Insignificant because of insufficient traffic.
1 Subsidies received by trucking and rail companies are not included.
2 Ontario and Quebec regions combined.
SOURCE Data from Statistics Canada and from the Canadian Transport Commission.

Our preliminary analysis of a pattern of rail transport costs that would be socially efficient suggests two quite distinct changes in the present structure. The first concerns

the relationship between the transport charges incurred in moving products of a given commodity class in different directions between two regions — for example, moving manufactures from the Prairie to the Central region and vice versa; the second concerns the relationship between the charges for raw materials and manufactures moving in any given direction, say from the Prairie to the Central region.

Table 9-14

Average Revenue per Ton-Mile, by Commodity Group and by Province of Origin, 1968-72 and 1973

	Commodity group					
	Statutory grain		Mine products		Manufacturing	
	1968-72	1973	1968-72	1973	1968-72	1973
Province of origin						
Alberta	0.48	0.49	0.84	0.72	1.68	1.79
Saskatchewan	0.47	0.47	0.83	0.88	1.57	1.60
Ontario	0.71	0.53	1.42	1.47	2.65	2.78

SOURCE Data from the Canadian Transport Commission.

On the first point, we note from Table 9-13 that at present it costs much less per ton-mile to ship from the Prairie region to the Central region (0.8 cents) than vice versa (2.8 cents). However, an economically efficient rate structure requires that, on a given route, the cost per ton-mile be *higher* in the direction with the heaviest demand for transport services.[16] In the case of the Prairie-Central routes the more heavily trafficked direction is west to east;[17] yet this direction has by far the lower charge. An efficient rate structure would raise the charge of 0.8 cents for west-east movement and lower the charge of 2.8 cents for east-west movement. This could mean that fewer primary products would move from the Prairies, because it might pay to process them first, given that primary products are heavy in relation to their value. In central Canada, it would be more costly to import bulky materials from the West, and this would also inhibit the ability of central manufacturers to compete in the West. On the other hand, it would be less expensive to move manufacturers from central Canada to the Prairies, and this would somewhat enhance the ability of the Central region to compete.

On the second point, an efficient rate structure would require that the difference between charges per ton-mile for primary products and those for manufactures, in a given direction, be no greater than the difference in the costs of rendering transport

16 A detailed treatment of this kind of problem is found in Herbert Mohring, "Transport Subsidies and the Economic Development of the Atlantic Provinces." in K. W. Studnicki-Gizbert, ed., *Issues in Canadian Transport Policy* (Toronto: 1974).

17 In 1973, for example, 14.9 billion ton-miles of traffic flowed from the Prairies to the Central region, comprising 277,752 carloads. In the reverse direction, the movements were only 4.5 billion ton-miles and 116,161 carloads (Canadian Transport Commission, Commodity Flow Analysis, 1973).

services for the two types of product. Table 9-14 shows that the costs per ton-mile to move manufactures from the Prairies are about twice those to move raw materials. It seems unlikely that costs incurred by the railways to transport manufactures are twice as high as those for raw materials, for any given direction of movement. If so, a more efficient rate structure would again reduce the existing incentive to move raw materials out of the Prairie region in their unprocessed form.

On balance, we think that a more economically efficient rate structure would be conducive to an increased amount of manufacturing in the Prairies. It is difficult to be categorical about this, however, because a large number of rate changes would be required; and what our analysis suggests is that, while most of them would favour more manufacturing in the Prairies, not all of them would do so.

As far as the Atlantic region is concerned, matters are more complex still than in the Prairies. For example, it costs less to ship out (1.5 cents) than to ship in, just as in the Prairies (0.8 cents). But, in this case, the heavier traffic flow is from the centre eastward,[18] despite the fact that subsidies are available only for westward movements; so this particular pair of rates may not be too far from economically efficient. There is, moreover, the question of how effective transport subsidies are for generating growth in the Atlantic region. The only valid economic rationale for them is that they may enable producers to take advantage of economies of scale, but a program of direct subsidization might be more efficient in achieving this goal.[19] The is one of the questions that will receive more attention in our continuing analysis of the role of transportation in Canadian regional disparities.

The Regional Distribution of the Federal Wages Bill

In Chapter 6 we reviewed the regional effects of federal fiscal stabilization policies. It was shown that changes in the geographical distribution of demand could be achieved by this route and could be used to favour high-unemployment regions. It might also be possible to achieve a shift in the pattern of regional demand by acting directly on the federal portion of it — i.e., on the regional distribution of expenditures by the federal government on goods and services. In this section we look at this possibility for expenditures on wages and salaries only. Comprehensive data on other types of expenditure are not available.

There can be dangers in this approach, and they should not be lightly dismissed. Federal activities, like private activities, can sometimes have an economically "best" location, if it can be found. Relocating federal activities could be more or less costly, depending on whether it causes them to be in less optimal locations. For activities with definite locational requirements, such as naval installations and airports, there

18 Central to Atlantic traffic was 4.0 billion ton-miles in 1973; Atlantic to Central was 1.9 billion ton-miles (Canadian Transport Commission, Commodity Flow Analysis, 1973).

19 As Mohring argues in "Transport Subsidies."

would usually be a cost. For others, some costs would be increased, some decreased. Travel and communication expenses would probably rise if the Department of External Affairs, the Treasury Board, or the Department of Finance were shifted from Ottawa, but rental and maintenance costs might be decreased. Computer, consulting, and library services would probably become more expensive with decentralization. Thus it is necessary to calculate the costs of the policy, as well as its employment benefits, before implementing it. That being said, it is of considerable interest to examine the actual pattern of federal spending on wages and salaries, which comprise the bulk of direct demand-creating expenditures by the federal government.

We have compiled estimates for 1974-75, and these are given in Table 9-15. It can be seen that for that year the wage bill for general government workers and Canadian Forces personnel amounted to more than $4.0 billion, with an additional $1.6 billion going to wages and salaries for employees of federal corporations. The table shows that the wages and salaries of general government and military employees in the Atlantic provinces, particularly in Nova Scotia and Ontario, are substantially above the per capita average of $185 for the ten provinces. The federal wage bill in Manitoba is just above average, while that in Alberta and British Columbia is 11 and 8 per cent below, respectively. Saskatchewan and Newfoundland fall well below average (26 and 30 per cent, respectively). Quebec receives the smallest per capita amount — 45 per cent below average.[20]

It is of some interest to determine the kind of effects that a policy of redistributing federal employment could have in reducing disparities in unemployment and income levels. This, however, is very tricky.

If the redistribution increases federal employment in a province with high unemployment, then the unemployment rate will fall; but where there is low unemployment, as in the Prairies, it is not certain what will happen. Out-migration might fall for a while, so that extra employment would result, but with little or no reduction in the unemployment rate. It is also possible that government employment would take the place of other types of employment in the private sector, with no effect on total employment, out-migration, or the unemployment rate. In these circumstances, there might even be inflationary pressures for a while.

Despite these problems, it would be interesting to find out how much difference could be made by a redistribution of federal employment if we were prepared to assume that unemployment or the possibility of reduced out-migration was always sufficient to permit total incomes and employment to rise in the provinces gaining federal employees. The particular redistribution of federal employment that we have examined is such that federal wage and salary expenditures are distributed on an equal per capita basis to each province.[21] The results of the exercise are shown in Table 9-16.

20 Since the wage bill is allocated by place of employment, the wages and salaries of Quebec residents working in Ottawa are allocated to Ontario and vice versa.

21 We also allowed for multiplier effects, which are positive in the gaining provinces and negative in the losing ones, and almost cancel out, though not quite, for Canada as a whole.

Table 9-15

Distribution[1] of the Federal Government Wage Bill, by Province and Territories, 1974-75

	Newfoundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Total, all provinces	Yukon and Northwest Territories
						(Millions of dollars)						
Budgetary expenditures	70.7	28.2	357.8	134.2	626.4	1,927.7	188.8	123.9	280.9	407.2	4,145.7	28.5
General government[2]	62.0	15.2	218.0	87.8	524.4	1,652.1	144.8	106.0	196.6	317.2	3,324.1	28.5
Canadian Forces	8.6	13.0	139.8	46.5	102.0	275.6	44.0	17.9	84.3	90.0	821.6	–
Nonbudgetary expenditures												
Government enterprises	68.1	9.4	54.8	80.7	470.1	465.2	143.0	53.1	87.3	98.1	1,529.8	18.1
						(Dollars per capita)						
Budgetary expenditures	130	241	440	203	102	238	187	137	164	170	185	(501)
General government	114	130	268	133	85	204	143	117	115	132	148	501
Canadian Forces	16	111	172	70	17	34	44	20	49	38	37	(–)

1 According to where civil servants are employed.
2 General government includes departments, departmental agencies, and administrative and regulatory agencies but excludes commercial Crown corporations, military personnel, elected representatives, and the Governor General.
SOURCE Estimates by the Economic Council of Canada, based on data from Statistics Canada.

Table 9-16

Comparison between the Distribution of the Actual Federal Wage Bill and the Distribution in Proportion to Provincial Population, by Province, 1974-75

	Newfoundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	All provinces
						(Millions of dollars)					
Excess or deficit of 1974-75 wage bill over equal per capita distribution	−29.8	6.6	207.2	11.7	−509.4	429.0	1.6	−44.0	−36.5	−36.3	0
Estimated impact of excess or deficit on total provincial income	−38.4	9.4	274.6	17.6	−707.6	598.3	2.3	−58.7	−53.4	−51.2	−7.1
						(Dollars)					
Excess or deficit per capita	−71	80	338	27	−115	74	2	−65	−31	−21	0

SOURCE Department of Regional Economic Expansion, "An Interprovincial Input-Output Model, Version III," May 1976; and I. Banks, "The Provincial Distribution of Federal Government Expenditures," Economic Council of Canada Discussion Paper 81, 1977.

The figures in the first row show how much more or less each province got in 1974-75 in federal wages and salaries than would have been the case with an equal per capita distribution. Thus Ontario, for example, got $429 million more federal wages and salaries than it would have with an equal distribution; Quebec got $509 million less.

The second row shows the estimated effect of the excess or deficit in the first row on total income, after allowing for all multiplier effects (including interprovincial leakages) and therefore indirectly on employment and perhaps the unemployment rate. Thus Ontario's income was estimated to be $598 million higher than it would have been under an equal per capita distribution; Quebec was $708 million lower.

The third row converts the results of the second row to per capita values. Continuing our earlier example, Ontario's gain, compared with the equal per capita distribution, was $74 per capita; Quebec's loss was $115. In interpreting this row, it should be borne in mind that the divisor was the current population. If the redistribution exercise also redistributed population between provinces, then per capita incomes might change by more than the table shows, and the effect on the unemployment rate might not be in the direction suggested by the figures. That would be the case if the employment gains and losses were accommodated through changes in interprovincial migration flows.

By way of further comment on this table, the fact that the actual distribution of federal wages and salaries was different than an equal per capita distribution could conceivably have been partly responsible for Newfoundland's higher-than-average unemployment and so for part of its shortfall from the Canadian average in per capita income. By the same token, Ontario may have been favoured.

In these cases and in the cases of Saskatchewan and Quebec, a population-porportioned distribution of federal employment might have reduced disparities. It might have made things worse in the Atlantic region (especially Nova Scotia) and in Manitoba, but it would have tended to improve the already good economic situation in Alberta and British Columbia. All these effects are in the same direction but are greater in magnitude than simple comparisons based on Table 9-15 would have implied. Our analysis serves to highlight the potential strength of federal employment, as a policy tool, to affect employment and income in the regions, though they may exaggerate its potential effects on unemployment rate and per capita incomes, for reasons given above. There may also be costs involved in using this policy tool, as indicated above, which should be compared with the costs of alternative ways of achieving the same objectives.

International Experience

Comparisons between different countries must be approached with more caution than comparisons between the regions of a single country, even where regions are as distinctive and geographically separate as Canada's. For example, the federal political system in Canada means that the provincial governments have considerable voice in setting industrail development policy within their boundaries, while the federal

government attempts to achieve "national" priorities of prosperity and balance between regions. Resolution of conflicting goals in such a framework is not so straightforward as in countries with a highly centralized administration, such as France for example, which relies on regional administrations for consultation and perhaps even more fundamentally, the geographic distance between economic regions in Canada is more similar to the whole of Europe than to any one country. Canada's population is sparse, and natural resource deposits are situated hundreds or thousands of miles from markets, creating a set of development problems quite different from those in countries such as the United Kingdom, where labour availability and transportation costs of locating industries in lagging areas are considerably less.

While being cognizant of the differences in the national setting, the fact that other countries have recognized problems of regional imbalance and have adopted policies to redistribute the burdens or to change the underlying distribution of economic activity suggests that their experience may contain lessons for the Canadian situation.

Table 9-17 compares the regional policy expenditures of Canada, France, Italy, and the United Kingdom. By all measures, Italy has made the greatest "regional effort." The figures must be interpreted with care, however, since, for example, while France is shown to have spent little for specific regional purposes in relation to other countries, we show later that France has been able to achieve a considerable degree of consistency between regional priorities and "nonregional" government and private projects. Canada is shown to occupy a middle place in terms of resources committed to regional policies; however, once again these figures do not tell the whole story. Net interregional transfers under the equalization formula, for example, are not included.

Thus the relative policy strengths reflected in Table 9-17 relate chiefly to specific regional development programs and do not reflect the impact of other types of policy intentionally designed to have regional effects.

France

Economic activity has long tended to concentrate in the Paris basin, raising incomes in this area and draining labour from the agricultural regions in the West, Southwest, and Massif Central, and from the old industrial regions in the North and East of France. By 1974, 19 per cent of the French population lived in the Paris basin, and congestion had pushed the cost of providing public services for an additional family in Paris to about 1½ times the level in provincial cities. In the West and Southwest, declining agricultural employment and the slow growth of alternative job opportunities has kept per capita incomes 20 per cent below the national average[22] while new technology had displaced labour in the mining and textile industries of the northern

22 Organisation for Economic Co-operation and Development, *Aims and Instruments of Industrial Policy*, (Paris : OECD, 1975), p. 96.

and eastern regions. New industries and the expanding service sector have located in and around Paris and, to a lesser extent, along the Mediterranean and in the Rhône-Alpes region of the Southeast. These changes in economic activity have been accompanied by substantial interregional migration[23] out of areas of declining job opportunities and mainly into Paris.

Table 9-17

Public Expenditures[1] for Specific Regional Policy Purposes,[2] Selected Countries, 1961 to 1975[3]

	Average annual expenditures		Proportion of gross domestic product
	Total	Per capita	
	($ Million)	(Dollars)	(Per cent)
Canada			
1969-70	203.4	10	0.27
1974-75[2]	474.5	21	0.36
France			
1961-63	40.4	1	0.05
1970-72	207.0	4	0.13
Italy			
1965-70	745.6	14	0.99
1971-75[2]	2,448.0	45	1.77
United Kingdom			
1967-68	326.9	6	0.30
1971-72[2]	579.4	10	0.42

1 In U.S. dollars, at current prices and current exchanges rates.
2 Including direct spending programs for regional development or assistance but excluding measures such as the regionally differentiated provision of public infrastructure, intergovernmental fiscal arrangements, government procurement and investment requirements, or the value of regional tax incentives. Inclusion of these items would have considerable impact on the level of "regional policy effort" in all countries and perhaps also on the relative policy strengths among countries.
3 Estimates.
SOURCE Organisation for Economic Co-operation and Development, *Re-appraisal of Regional Policies* (Paris: OECD, 1974), and *National Income Accounts;* and United Nations, *Demographic Year Book.*

Regional policy in France was initially directed towards slowing down the rate of growth of Paris. In the mid-1950s, a system of building permits was introduced, which required manufacturing firms to obtain special authorization to locate or expand facilities in Paris, and subsidies were given to induce manufacturing industries to move out of the region.

23 It is estimated that 28 per cent of the French population changed their region of residence between 1962 and 1968. Institut National de la Statistique et des Études Économiques, *Statistiques et indicateurs des régions françaises*, (Paris: INSEE, annually).

Since the late 1950s, regional objectives have been incorporated into national planning strategies. These strategies included a continuing effort to decentralize industrial and service activities in order to provide employment opportunities outside Paris and to stimulate regional towns and cities to serve as growth poles to lead in the development of their respective areas.

DATAR (Délégation à l'Aménagement du Territoire et à l'Action Régionale) was created in 1963 as the chief agency for French regional policy. It is composed of a small group of professionals responsible for the co-ordination of government decisions in regional planning and action. It carries out its functions through the direct administration of the regional planning fund (Fonds d'Intervention pour l'Aménagement du Territoire) and negotiates with various government departments to ensure that regional concern about such matters as the geographic distribution of public investment or transportation development are reflected in policy. DATAR also uses its expenditures to influence the location decisions of private enterprise by providing services such as housing, telecommunications, and training facilities, and acts as an advisory body to the Minister of Finance in the administration of subsidies and other private-sector location incentives (exemptions from certain taxes and special depreciation allowances).

The provision of infrastructure has played an important role in the regional policies of France, as in other countries. French planners have, however, made a conceptual distinction between infrastructure projects designed to compensate for disparities in the level of public services and those designed to actively promote growth through the attraction of industry. The latter are used in conjunction with other public expenditures, such as the location of government departments, housing, and education facilities, in order to stimulate regional growth centres. The French have also applied higher taxes to residents and businesses in the Paris region to discourage location there and to cover the higher cost of public services in congested areas.

It should be noted that the French system of "indicative planning" allows the government to make effective use of tax incentives for location in designated areas. Enterprises know that indicative signals may be backed up, if necessary, by control over investment financing and by direct controls on building. Although expenditures for specifically regional programs have been small in relation to those of other countries (only about $4 per capita or 0.13 per cent of GNP in the early 1970s), DATAR has had considerable success in using the planning framework to achieve consistency between regional priorities and overall economic policy.

United Kingdom

Regional imbalance in the United Kingdom, as in other countries, is manifest in a persistent tendency towards disequilibrium in regional labour markets. North and Northwestern England, Scotland, and Wales are characterized by high unemployment rates, despite continuous outflows of labour, while inflows to the Southeast have not been sufficient to alleviate labour shortages. The "problem" areas of Britain are those

where early industrialization created regional economies largely dependent upon heavy industries (such as steel and basic capital goods), textiles, shipbuilding, and coal mining. Changes in the industrial mix and the growth of service-sector employment have increased demand for labour and created congestion in the rapidly expanding Southeast and Midlands, particularly in the London urban area.

Income differentials between regions in the United Kingdom are generally much less acute than in Canada, France, or Italy. This fact may be linked to the ability of nationally organized trade unions to achieve a high degree of regional uniformity in wages for given skills, despite the existence of surplus labour in depressed areas.

Concern with congestion and the inflationary consequences of further concentration in growth regions has meant that British economic policy has been aimed at increasing national output by expanding demand for labour within labour surplus areas — a policy that simultaneously avoids the social cost of further congestion and the cumulative decline of depressed areas.

Active industrial location policy began with the British postwar reconstruction effort. Incentives in the form of loans and subsidized rent on government-owned industrial facilities supplemented a policy of issuing industrial development certificates to control the location of all industrial building in Britain. Under the influence of these measures, more than half of new industrial building in the late 1940s took place in development areas that contained less than one-fifth of the population.

The next important policy initiative came with the Local Employment Act of 1960. Incentives were strengthened by allowing firms to become eligible for capital grants and loans even when other sources of financing were available to them; building grants were introduced in development districts; and expenditures on government-owned factory buildings were greatly increased.

There have been a number of changes in the strength and coverage of industrial location policy since the early 1960s; however, the basic tool of providing cash grants for investment in designated areas has survived. In addition, "free" or preferential rates of depreciation have been used to influence location (Table C-2 summarizes the changes in grants and taxation allowances applied to manufacturing industry in this period.) The government has also continued to expand its postwar program of providing serviced industrial sites, often at subsidized rental rates. This policy has provided a stock of light industrial premises in depressed areas where the previous concentration of mining and heavy industry left a legacy of factories ill-suited for subsequent occupation by growth industries.

A Regional Employment Premium was introduced for a seven-year period beginning in 1967. The government gave direct subsidies for each employee in the manufacturing industry in development areas; these subsidies were fixed in nominal terms and thus, while worth about 7 per cent of the average earnings of male manual workers in 1967, they declined in real value thereafter. Employment premiums were intended to be passed through to price decreases, which would improve the terms of trade between regions and thus stimulate output and employment in the development areas. It is not clear to what extent the policy achieved this specific objective, as

opposed to being passed on in higher wages or profits; however, there is evidence that it has provided or preserved a large number of jobs.[24]

As in Italy, industrial promotion assistance covers more than 40 per cent of the population in the United Kingdom.

Italy

Prosperity and economic growth in Italy are concentrated in the Turin-Milan-Genoa triangle of the North and Northwest, while vast stretches of the Mezzogiorno in southern and central Italy have a long history of underemployment, declining population, and per capita incomes some 35 per cent below the national average. Disparities in incomes and opportunity between the "have" and "have not" regions are more severe than in any other country considered. Certain parallels can, however, be drawn with the Canadian situation, where the Atlantic region (like southern Italy) lies a great distance from markets and the income gap has persisted despite considerable government intervention.[25] Literally millions of southern Italians (about five million between 1885 and 1915 and another three million between 1951 and 1966) have responded to their lot by emigrating overseas or to the industrial centres of northern Italy and western Europe. Early regional policy efforts did not, however, attempt to stop the tide of emigration; instead, they concentrated on programs (similar to the Canadian PFRA and FRED programs) to alleviate the worst burdens of rural and agricultural poverty through infrastructure, land reclamation, water, and irrigation projects. Land tenure was also substantially reorganized in the early 1950s, when some 30 per cent of agricultural land in three southern regions was redistributed from large, mainly absentee, landlords to peasants and farmers.

The Cassa per il Mezzogiorno (Fund for the South) was formed in 1950 under the control of an Interdepartmental Committee of Ministers. It has been the primary instrument for implementing infrastructure and rural development projects and, since the late 1960s, has participated in a number of financial consortia to assist farmers and to promote agricultural processing and industrial enterprise through grants and credit. The Cassa has also financed various educational and technical assistance institutions.

In the 1960s Italian regional policy was brought within the framework of national economic planning, and a more concerted effort was made to improve employment opportunities in the South. The new approach was reflected in the Cassa's expenditures, which nearly doubled in total, and shifted from heavy emphasis on agriculture towards greater assistance to second industry. The Cassa's expenditures on agricultural projects declined from 56 per cent for 1950-65 to 25 per cent for the 1966-70 period, while industrial expenditures increased from 7 to 36 per cent.

24 Barry Moore and John Rhodes, "Evaluating the Effects of British Regional Economic Policy," *Economic Journal* 83, no. 329 (March 1973): 104.

25 Italy has devoted about $20 billion, or less than 1 per cent of national output, to regional development in the postwar period. While the figure is not large it is a considerable share compared with other countries.

Like France and the United Kingdom, Italy has decided to use public investment and controls on private enterprise to influence the regional distribution of economic activity. Guidelines have been issued to public and semi-public enterprises directing them to carry out a high proportion of new investment and goods procurement in the South. Large private corporations are required to submit investment plans to the Minister of Budget and Economic Planning for approval.

Industrial location incentives include outright grants but have emphasized credit and financial assistance. Fiscal measures have been increasingly used in the 1970s. In particular, a 30 per cent reduction in social security contributions has been implemented to stimulate labour-intensive industry in the South.

The Lessons of International Experience

None of the countries considered have eradicated or even significantly reduced their regional problems. Canada's difficulty in reducing disparities is obviously widely shared; and abroad, as here, recourse is usually had to the argument that disparities might have been worse had regional development money not been spent. Despite individual variations in the approaches and instruments used in different countries, a number of other parallels emerge. Both Canada and Italy began to tackle regional disparities as a relief operation to buoy up incomes and ease the transition of depressed agricultural areas. France engaged in this type of program but was concerned at the same time with easing congestion in Paris. The United Kingdom, with the most developed industrial sector, had fewer rural problems and thus launched a concerted effort to influence industrial location at an early date. All countries have directed considerable effort to infrastructure projects, both to provide more equitable services to residents of lagging regions and to promote growth. There has been an increasing tendency everywhere, however, to address regional policies to the location of industry through fiscal measures and direct aids to investment. It appears that no startlingly original methods for tackling disparities can be found on the international scene. One method that has been found to work abroad but that is not used in Canada is the use of direct compulsion in matters of industrial location. But that is not very likely to be acceptable on the Canadian scene.

10 CONCLUSIONS AND RECOMMENDATIONS

Disparities in Canada are surprisingly large — certainly larger than many of us expected and larger than they need to be or ought to be. And it does not seem likely that migration of individuals in search of better opportunities can make any major contribution towards eliminating them in the foreseeable future. As far as the sources of disparities are concerned, a number of seldom discussed causes have turned out to be of great importance. In particular, the roles of human capital, demand, technology gaps, urbanization, and perhaps even government expenditures for nonregional purposes, have all been underemphasized relative to the emphasis traditionally placed on the roles of industrial structure, physical capital, resource endowments, and transportation. A recognition of the importance of these rarely discussed causes leads us to believe that the arsenal of effective policy weapons could be broadened with little or no increase in taxes and that there is scope for much more provincial action; we are therefore optimistic about what can be done. Present federal efforts through DREE are small, but they do seem to be having fruitful results, as do the large expenditures on equalization payments. Finally, and this is far from being a conventional caveat, there is an enormous amount of research still to be done. The factors underlying regional disparities have turned out to be extraordinarily complex.

The Size of Disparities

It is a human failing to avoid acting on a problem by pretending or protesting that it does not exist. The language is rich in expressions that attest to this reaction: ostrich heads are buried in the sand; Nero fiddles while Rome burns; blind eyes and deaf ears are turned; and Levites pass by on the other side. Regional disparities are no exception. It is not infrequently argued that higher unemployment in some regions relative to others reflects free choice by the unemployed and so is not a problem. Low income levels may be conceded, but the suspicion lingers that they are mostly compensated for by lower living costs, by income in kind, by the joy of living in an unpolluted environment, and by the pleasures of maintaining customary life-styles.

Our investigation in Chapter 4 shows that regional differences in rates of unemployment and rates of employment growth cannot be gainsaid; they are large and clear-cut.

Income disparities, however, do vary quite a bit, depending on the method of measurement. It depends on whether one speaks of families or of individuals, of earned income or of total income, and on whether one takes into account regional differences in price levels and tax rates, and so on. While the Atlantic provinces remain poor no matter how one looks at income, it is less certain that there are significant income differences among the other provinces. Social indicators also cloud the disparity issue somewhat, for who can say categorically that lower divorce and suicide rates, for example, do not outweigh lower incomes and poorer job opportunities?

All this being said, we are impressed that no amount of juggling with statistics can lead any reasonable person to deny that economic well-being is sharply affected by the region in which one happens to be born or brought up. In short, disparities are real.

Migration as a Cure

At the beginning of our research, we thought that natural economic mechanisms, migration of people, and movements of firms might suffice to resolve Canada's regional disparity problems, particularly the unemployment and income problems in the Atlantic region and Quebec, if they were permitted and encouraged to operate freely. That does not seem to be the case. While no published data exist to determine whether firms are relocating in an equilibrating fashion, information is available on the migration of people, and it does not seem to be doing the job.

It could, of course, be argued that out-migration is stopping the disparities from getting wider, especially in the Atlantic region; but that is not the same as narrowing them. The same is true for Quebec; and, for this province especially, it is worth stressing that any increase in out-migration, regardless of whether it cured unemployment and income problems, would be seen as a cure that was worse than the disease. It is less certain whether Atlantic residents would feel this way. Some increase in out-migration, which might come about through voluntary decisions by individuals if full information were available about opportunities elsewhere and about the assistance in moving that can be obtained from federal government sources, would certainly be beneficial not only for the migrants but also, through improving job prospects, for those remaining in the region. But migration as a complete cure for the Atlantic region's unemployment and income problems would probably be a very long and slow process. Even with double the average outflow of the past twenty years, it would be many decades before substantial alleviation of the problems was achieved. Thus, while the individual initiative implicit in the migration process should be encouraged by providing more information on what is possible, it is not realistic to rely solely upon migration as a solution to regional disparities in the Atlantic region or, for that matter, anywhere else.

Rarely Discussed Causes of Disparities

We have shown that regional differences in income are very closely related to differences in productivity. Yet the most commonly cited cause of regional prob-

lems — poor industrial structure — can only explain a very small part of the productivity differences. Capital per employee, corrected for industrial structure — another frequently hypothesized cause of productivity differences — does better. But most productivity problems cannot be explained by poor industry structure or by lack of capital. At least three other less commonly considered factors are important.

First, labour quality differs among provinces, and by enough to explain a significant and policy-correctable part of the productivity differences. Most of the variation in labour quality appears to be traceable to differences between provinces in educational attainment — this despite the great effort that has gone into education over the last decade or so. Second, there is some evidence that the achieved level of technology is not geographically uniform within Canada. It has not so far proved feasible to pin down the quantitative importance of these technology gaps in accounting for regional productivity differences; but they do exist, and it would not seem impossible to close them up somewhat. If computers and shopping centres were paying propositions in the Atlantic region by 1970, it is hard to argue that they would have been losers as little as five years earlier. Finally, productivity is also favourably affected by the proportion of a region's population that resides in cities and, up to a limit of perhaps a population of 1½ million or so, by the proportion that resides in the larger cities.

Variations in industry structure, capital availability, educational attainment, technology, and urban structure are not the only sources of regional productivity differences. A more complete listing would also include differing potential for the exploitation of scale economies, varying ability to exploit comparative advantage resulting from regional differences in market accessibility and transportation cost, and variations in the quality and quantity of available mineral and agricultural resources as one moves across the land. There can be little doubt that these factors partially explain why Newfoundland's productivity is lower than Ontario's. But the emphasis in this report has been on those factors which are not only important for productivity but are also fairly readily amenable to influence by government policy. If a major part of the productivity problems of the poorer regions is in fact caused by such factors as poor agricultural land, inaccessibility, or inadequate mineral resources, the prospects and scope for narrowing disparities could be rather dim. As of now, we cannot pronounce definitively on this question. But our ongoing research encourages us to believe that these limitations are not so great as to render otiose any regional development initiatives that governments might take.

The importance of export demand in creating jobs in a region is universally acknowledged; this is what the export base theory of regional development is mostly about. We agree that deficient demand for labour is an important proximate cause of regional problems, in terms both of the growth of employment and of the rate of unemployment of labour. That does not deny the part played by frictional, structural, and seasonal problems in labour markets; it does deny that they are the only important causes. We do not agree, however, that deficient demand for labour is due exclusively to a deficient rate of regional exports or to excessive regional imports. Rather, just as at the national level, deficient demand can occur in any province because the sum total of all types of demand is too low — not only export demand but also demand by

households for consumption, by provincial and federal governments for the goods and services they buy in the province, and by private firms for investment goods made in the province. It turns out that an important cause of regional unemployment problems is regional variations in the strength of aggregate demand. In particular, demand is secularly and cyclically weak in the Atlantic provinces and Quebec, and probably in British Columbia as well.

Broadening the Policy Arsenal

Canada presently has three weapons designed specifically to fight regional disparities. They are, in decreasing order of importance in terms of the proportion of total federal expenditures that these programs represent, equalization payments, the Department of Regional Economic Expansion, and the Manpower Mobility Program. It is possible that, dollar for dollar, small programs can be more effective than large ones. Equalization payments correct for the inability of certain regions to generate enough output and income to pay for an adequate level of government services, by transferring money from the richer provinces to the poorer ones. The Department of Regional Economic Expansion has the more complex task — less certain in its effectiveness — of correcting the inability of certain regions to generate output and income by encouraging firms to settle and expand there and by otherwise generating development opportunities. Manpower mobility programs get people out of a region where they cannot earn, or cannot earn enough, and help them to go where they can.

The attack on disparities can move beyond these programs, and at not much cost, except in terms of ingenuity and will. Our analysis of the determinants of productivity shows that the power of certain regions to generate output and income can be enhanced by paying closer and more direct attention to educational disparities, by seeking out and closing technological gaps, and by nurturing a more economically efficient urban structure. These three methods have one important characteristic in common in that action on all of them is almost certainly best taken by provincial ministers. There is also some scope for action by private businessmen in the provinces. Pulling oneself up by one's own provincial bootstraps is more feasible than has hitherto been thought.

If productivity is one bootstrap that the province can pull upon, aggregate demand is the other. Our analysis has shown that relatively deficient demand is an important cause of regional unemployment disparities and that the cure for it rests, to a significant degree, in the hands of the provincial finance ministers of Quebec, the Atlantic provinces, and British Columbia. We shall be more specific below. The federal government could support those provinces that undertook their own fiscal stabilization policies and could also manage its own national stabilization policy in a more regionally sensitive manner.

Finally, it may be possible from time to time to twist general federal policy in a regionally beneficial manner. The regional side effects of federal expenditures and federal policies, as a whole, need to be continuously monitored. Without such a general equilibrium approach, there is danger that the beneficial effects of the federal

programs explicitly targeted at disparities will be partially and unintentionally offset by the indirect effects of programs implemented with other purposes primarily in mind. The manpower flea, the DREE mouse, and the equalization cow are all in bed with the budgetary elephant; being crushed is an ever-present danger.

The Efforts of DREE

The program of the Department of Regional Economic Expansion is quite small in relation to total federal spending — about 1 per cent. About one-third of the expenditures go to the most familiar part of the program — the subsidization of firms under the Regional Development Incentives Act. Somewhat more than one-third goes to infrastructure spending, mainly roads. Nearly all the rest is divided between rural development and social adjustment programs. Expenditures to promote the recently introduced idea of development opportunities are at present mainly for what would have been called infrastructure, rural development, and social adjustments in earlier years, but there is scope here for a welcome increase in the flexibility of approach in helping development efforts by the private sector.

Much controversy has arisen over whether DREE's efforts have been successful. Nearly all the debate and analysis has centred on the subsidy program. Our own assessment of previous evidence, together with our analysis of data on the births and deaths of establishments in one region only (the Atlantic), has led us to the view that the subsidy program is far less successful than published estimates of job creation would imply. To that extent, the critics are right. But the subsidies, nevertheless, seem successful enough to be a paying proposition. The value of the jobs created appears to outweigh the inefficiency involved in locating production inappropriately.

Far less is known about the value of DREE's largest single program — the support given to highways and other infrastructure. While much development literature stresses the importance of this type of assistance to backward regions, there is not much quantitative evidence — in fact, none for Canada as far as we know. Much the same is true for rural and social assistance programs.

The Area of Ignorance

We have no doubt that this report will be found inadequate because it does not reach definitive conclusions in many areas of analysis and ignores others altogether. We make no apology for that, but we would like to explain our viewpoint.

Regional disparities are very longstanding in Canada and, indeed, in many nations. Literally thousands of man-years of intellectual effort have been expended all over the world on regional problems, and no truly general theory of disparities has yet emerged. As a direct consequence of the lack of a satisfactory explanation of disparities, comprehensive solutions have not been discovered. Instead, governments and economists in nations with regional problems are trying this and that, and doing what they can in a difficult situation. It is not different in Canada. Doctors used to try to cure syphilis with mercury and emetics. We now know that mercury works but emetics do

not and, moreover, that penicillin is best of all. We suspect that the regional disparity disease is presently being treated with both mercury- and emetic-type remedies, but we do not know which is which. Perhaps one day an economic penicillin will be found; but we certainly cannot claim such a discovery in this report.

The complexity of the problem explains why neither we nor the many other researchers in the field have been able to canvass all the possible plausible explanations for regional disparities in the detailed quantitative manner that is necessary for going beyond generalities. We focused our own initial efforts, as reported here, on those areas of enquiry where, as far as it was possible to tell in advance, there was some hope of reaching new insights with policy implications relatively quickly. But, of course, more work remains to be done. We are thinking here especially of transportation policy, of the role played by endowments of natural resources in development, of frictional problems in labour markets, and of the regional effects of the complete range of federal government expenditures and decision-making. Our readers will undoubtedly be able to extend this list.

Recommendations

Two general principles underlie our thinking about recommendations. Since they involve value judgments, we feel they should be made clear at the outset. One is that the proportion of gross national product passing through the hands of governments as a group should not increase. To put it another way, we have resisted the urge to advocate measures that would require increases in tax rates. The other is that local efforts are better than outside help. Provincial ministers, officials, and private businessmen can take action to help alleviate disparities between their province and others; they should do so. The same goes for individuals; when an opportunity presents itself for improving their own economic lot, they should take advantage of it.

Our first group of recommendations is aimed primarily at reducing regional differences in productivity levels. Because productivity differences are the prime explanation of earned income differences, these recommendations are intended to help achieve the goal of reducing income disparities. The second group is aimed at reducing unemployment disparities. Within it, we grasp a nettle and say something on the difficult question of the trade-off between wage levels and unemployment rates. The division into productivity and unemployment recommendations is a convenient expositional device, but we do not intend to imply a rigid dichotomy between productivity and unemployment in the economy. The two will not always be sharply separate, for success in raising productivity will sometimes react favourably on employment, and lowering unemployment may improve productivity. In making these recommendations we are fully aware that they will sometimes appear to be bitter medicine. We do believe, however, that they will help to alleviate longstanding disparities in income and unemployment, and we present them with this overall purpose in mind.

Productivity

Spending on education was a global fashion in the 1960s. Canada was no exception and, by the end of the decade, much had been achieved. Deficiencies in physical plant and equipment had been remedied; and the numbers, and to some extent the qualifications, of teaching staff had been increased. Average years of schooling had lengthened, and participation in postsecondary education had greatly expanded. It was only natural that such an expansion would increase the amount of formal education most in provinces where there was most room to increase it, and provincial disparities in the educational attainment of younger members of the labour force have been narrowing.

But there is still much to do. Considerable regional variations in the qualifications of teachers — at least on paper — appear to remain. New entrants to provincial labour forces still do not have the same average amount of formal schooling in each province, partly because of differences in voluntary decisions about how much postsecondary education to acquire and partly because of differences in the amount of compulsory schooling. To illustrate the latter point, compulsory schooling in Newfoundland lasts only eight years (from seven to fifteen) — 20 per cent less than in Ontario (six to sixteen). Moreover, nearly half of today's labour force is old enough to have been educated before the 1960s, when differences in educational standards between provinces were greater than today. It will not be until the turn of the century that improvements made in the 1960s will have existed long enough to have influenced the educational attainment of every person in the labour force. Meanwhile, the legacy of past inadequacies will continue to mean lower labour quality and productivity in the poorer provinces. Thus are the educational sins of the past visited upon the present generation.

Our research in Chapter 5 suggests that provincial productivity, and so income disparities, could be reduced if means could be found to narrow further the chronic provincial disparities in educational attainment. That implies not only improving the qualifications of labour force entrants by lengthening the average number of years of formal schooling, but also finding means for adults already in the labour force to upgrade and expand their education. In the latter connection, each province might more systématically examine the trade-training programs and curricula in other provinces. For some trades, the examinations for certification are much more difficult and technically demanding in certain provinces, resulting in eventual beneficial effects on productivity and earnings.

In those low-income provinces whose labour forces have below-average educational attainment — Newfoundland, Prince Edward Island, New Brunswick, Quebec, and Manitoba — where a strategy of narrowing educational disparities seems appropriate, certain shifts in government expenditure priorities might be needed. Within the present educational budgets, one might aim to increase the proportions spent to increase average years of schooling, to upgrade the educational and skill capacities of mature labour force members, and to improve average teacher quality, while trying to decrease the proportions spent on plant and equipment and on maintaining small class sizes,

neither of which appear to have very significant effects on pupil achievement.[1] Within the total provincial budgets, it might be appropriate to lower the proportion spent on provincial aid to physical development capital, such as highways and industrial assistance, so as to be able to increase the proportion spent on the development of human capital.

The federal government, through its manpower training program, is already making a considerable and successful effort at upgrading the qualifications of the labour force. This work is extremely valuable and should continue. At the same time, the set of regulations governing who can or cannot get training makes it difficult to reach all those who could benefit from upgrading their general education. On the one hand, it is almost always the case that, to get help, one must first be unemployed, thereby ruling out from the beginning the bulk of the labour force. This is so, despite the fact that a fairly high fraction of the employed at any one time either have had in the past, or will have in the future, a spell of unemployment. On the other hand, the training that qualifies for support is usually skill-specific and often even confined to skills that happen to be in short supply in a particular place at a particular time. These regulations are probably excellent for preventing abuses of the system, but they tend to inhibit the acquisition of more general education in the wider sense by the labour force as a whole, and this is what is needed to improve productivity and income levels in the poorer provinces. Thus the federal program, while doing a very good job, does not fully meet the needs we have in mind. Since general education is under the jurisdiction of the provinces,

Recommendation 1

We recommend that the governments of the provinces where incomes and educational attainment are lower than the national average examine ways of improving the educational attainment of new entrants to the labour force and of increasing the ease with which mature members of the labour force can upgrade their education.

Another important determinant of productivity is the level of technology. If a region is slow to adopt new methods, not necessarily in all of its industries but in at least some of them, its average productivity will be lower than elsewhere. It could be argued that new methods cannot be installed until a region is ready and that readiness cannot be hastened; the entrepreneurs of a region know what can and cannot be done, what will and will not be profitable and, in seeking their own best interests, will ensure that innovations are put into place as soon as the region is ready for them. We find this view of technological receptivity too fatalistic. There is much evidence, from work done on the process of adopting innovations, that some firms within individual industries adapt later than others and do less well as a result. Businessmen cannot always infallibly detect their own best interests; there are firms who follow and firms who lead. Canadian evidence is not inconsistent with the view that, as a group, the firms in some industries in low-productivity provinces are followers, on average, rather than leaders.

1 V. Henderson, P. Mieszkowski, and Y. Sauvageau, *Peer Group Effects and Educational Production Functions*, Economic Council of Canada (Ottawa: Minister of Supply and Services, 1976).

With this in mind,

Recommendation 2

We recommend that, in the provinces where incomes are lower than the national average, each minister of industrial development or his equivalent, in co-operation whenever possible with private industry associations and trade unions, investigate what is the best applicable technology in each provincial industry, including service industries, with a view to encouraging its adoption where it is not yet in use.

Rural areas are usually poorer than urban areas; small urban areas, poorer than large. This relationship holds in a broad way within regions in Canada, although there are exceptions, with some small urban areas having high incomes. Part of the link between income and urban size comes about because the industrial structure of a region exerts a simultaneous influence on its productivity and urban structure. That accounts for some of the observed connection between income levels and urbanization but not for all of it. Until cities reach a population of about 1½ million, urbanization exerts a beneficial influence on manufacturing productivity in Canada independently of a region's industrial structure.

On the other hand, the kind of economic activity that characterizes a region does impose certain limitations on its urban structure. In regions where a larger-than-average proportion of employment is in agriculture and the natural resource sector, efficient exploitation of the resources will often require an urban pattern characterized by numerous hamlets and towns; this pattern is needed in order to cope properly with the development of the primary sector and to meet adequately the daily needs of the population in terms of trade and personal services. Even in this type of region, however, there often exists a drift of population from rural and semi-urban areas to larger settlements. Our evidence suggests that such a drift may have economic benefits in that it improves productivity in whatever manufacturing activities the region has and it encourages more efficient local provision of services formerly imported from outside.

In other types of regions, where the dominant activities are not resource-oriented, the industrial structure again imposes certain limitations on the urban structure, but that is consistent in these regions also with an ongoing movement of population to larger settlements, with consequent beneficial effects on manufacturing productivity and on activity in the service sector.

Thus, the present process of increasing urbanization, whatever its merits or demerits from the social point of view, does appear to be desirable from the point of view of improving manufacturing productivity, with the benefit being especially marked in going from rural and semi-urban areas to towns of at least 5,000, but continuing thereafter until cities of 1½ million or so are reached. For cities larger than this, further productivity benefits in manufacturing are not present; indeed, there is a slight decline. What happens to productivity in the service industries is unknown, and this is also the case for the provision of municipal services; and there is an increasing level of social costs in terms of pollution and congestion.

On balance, we consider that, in regions where productivity improvement is a high priority because incomes are below the national average, provincial and federal governments should be rather cautious about the possible adverse effects on productivity that might result from adopting an inappropriate urban strategy. In particular, they should be aware that manufacturing productivity levels may be sensitive to the urban structure and that they may be adversely affected by policies that discourage people from moving from rural and semi-urban areas into small and medium-sized towns or from small to medium-sized towns. We should make it clear that we are not speaking here of policies intended to inhibit the growth of the very largest cities, notably Montreal, Toronto, and Vancouver.

A problem with a permissive approach to growing urbanization is that social justice, at least in the short term, may require that life be improved in rural and semi-urban areas by providing schools, sewage, and so on, and perhaps by subsidizing job creation there. Yet such policies, by encouraging people to stay, may conflict with the kind of economic development that is necessary for social justice in the longer term. Therefore,

Recommendation 3

We recommend that, in provinces where incomes are lower than the national average, any existing or future urban strategy give full consideration to the productivity advantages in manufacturing that may be gained by working with, rather than against, the tendency for population to drift from rural to urban areas and from smaller to medium-sized urban settlements.

Given the earlier-mentioned decline in manufacturing productivity in cities larger than about 1½ million, the balance of social advantage in Montreal and Toronto appears to lie more with encouraging the development of nearby intermediate-sized cities than with a policy of either laissez-faire or favouring the metropolises themselves. This might apply to Vancouver also, if it were not for topographical problems peculiar to the area. There are a number of ways in which governments might influence the distribution of future population growth, through the development of the highway network, the provision of airports, and the availability of public transportation. Therefore,

Recommendation 4

We recommend that the growth of satellite cities of intermediate size, in the vicinity of Montreal and Toronto, be encouraged by the provincial governments concerned.

Federal policy on transportation freight rates has long been recognized as an influence on the location of economic activity. The present structure of rates is a witch's brew of history, economics, and politics. It would be hard to find agreement on what constitutes an ideal structure, but one that might be accepted as a useful standard of comparison is the structure that maximizes benefits to final consumers, subject to covering the full costs. The general characteristics of such a structure are not difficult to work out, and they were explained in Chapter 9. Departures from it could be justified if they encouraged production in areas where labour was unemployed, such as

the Atlantic region, or if they led to an evening out of regional income differences. To determine whether they were in fact justifiable, it would be necessary to make a detailed comparison of the costs and benefits. Conversely, changes from the present structure towards a structure that would benefit consumers more, while covering costs, would be desirable, unless they caused an unacceptably large change in unemployment or income disparities.

Our analysis has not yet advanced to the point where we can comment in detail on the present structure of freight rates and on all the possible changes that have been advocated for it. But one situation where the cost efficiency of the system could benefit with almost no likelihood of affecting unemployment or income disparities unfavourably appears to exist in regard to rail rates in and out of the Prairie region. Preliminary analysis gives support to the contention, voiced by the four western premiers in their joint submission to the Western Economic Opportunities Conference in 1973, that the railway rate structure militates against Prairie expansion of secondary manufacturing in favour of central Canada. Moreover, expansion of secondary manufacturing in the Prairies would probably be economically efficient from the national point of view and, in Saskatchewan and Manitoba, out-migration is presently high enough to suggest that a shortage of labour would not pose a problem.

We defer formal recommendations pending further analysis of this extraordinarily complex subject, but note that, to overcome the problem, changes in rail rates would apparently be required to bring about less difference between the present costs per ton-mile of shipping similar goods eastward, compared with westward, and also between the cost per ton-mile of shipping manufactured goods and that of shipping primary products out of the Prairie region.

Neither we nor the government can hope to know, or find, all the detailed reasons why productivity is so much lower in certain regions of Canada than others. There may be some general weakness in management, although the evidence we have seen adduced on this point is not entirely convincing. Regardless of whether there is or is not, it seems likely that one way to upgrade, or upgrade further, the quality of entrepreneurship would be to tap more effectively the knowledge that must already exist in the private sector, among progressive firms inside and outside these regions, concerning the methods by which productivity can be improved. A number of useful exchanges have been organized over the years by trade associations and by bodies such as the Atlantic Provinces Economic Council. More diffusion of knowledge of this kind could readily be developed through strengthening existing channels for the exchange of information on production techniques between managers in different regions. The wider dissemination of this knowledge, both to firms and to government officials who might usefully act upon it, offers some potential for productivity improvement. Therefore,

Recommendation 5

We recommend that industry trade associations, trade unions, and other appropriate institutions undertake formal studies to determine why productivity levels in their own industry differ from province to province and that they disseminate the results together with appropriate recommendations.

Another way to improve productivity is to increase the amount of formal training for existing and potential managers. To this end,

Recommendation 6

We recommend that all provincial governments, but especially those in low-income provinces, consult with appropriate educational institutions on ways to expand training in formal techniques of management available to existing and potential managers in the province.

Recommendations 5 and 6 might require some federal assistance, of which we approve, despite our general reluctance to advocate measures that would increase government spending. We are willing here to make what we believe to be a small exception.

Unemployment

There appear to be no convincing reasons why provincial ministers of finance should not make use of fiscal policy to cure unemployment in exactly the same way as does the national minister of finance. A significant proportion of the unemployment in Quebec, the Atlantic region, and British Columbia is demand-determined and hence susceptible to fiscal measures. Estimates show that the leakages that such a policy would be subject to are small and, for this and other reasons, the effectiveness of an independent fiscal policy is likely to be at least as great as in the smaller European nations, which operate independent fiscal policies even though they have relatively fixed exchange rates. Much of the extra provincial government debt required would be saleable within the province from the extra annual saving flows that an expansionary fiscal policy would generate. Although a small amount of the extra debt would require financing from sources external to the province, the future burden of this external debt would be modest in relation to gross provincial product or to the extra output available as a result of the policy itself. Consequently, we strongly favour the provincial use of fiscal policy to lower unemployment in the high-unemployment regions.

When fiscal stimulus is necessary, it can be given either through tax reductions that cause private demand for goods and services to increase while government expenditures are held steady or through increasing government expenditures while tax rates are held constant, or through some combination. The same propositions apply, *mutatis mutandis*, when fiscal contraction is needed, though it is clear that, if unemployment is to be lowered on average, the extra provincial stimuli given during recessions must more than offset any contractory measures taken in booms. In view of this and of our preference for an average rate of increase in government expenditures no larger than the long-run average rate of increase in total output, Canada-wide and within each province, we strongly prefer that provincial fiscal policy be applied by varying provincial tax rates. Nevertheless, variations in the rate of increase of government expenditures, to make them rise more slowly than gross domestic product

near cycle peaks and more rapidly near cycle troughs, could be a useful supplement to tax rate policy. Because the first step in an active fiscal policy is knowing the degree of stimulus or restraint being exerted on the provincial economy by the provincial government,

Recommendation 7

We recommend that the governments of all provinces, but especially those where unemployment rates are above the national average, calculate each year the amount by which the provincial budget would be in surplus or deficit if the provincial economy were operating at full capacity.

Before undertaking fiscal stimulation, it is important to assess the amount of a province's unemployment that could potentially be eliminated by an increase in demand. This will vary by province and with the state of the general business cycle. As a general guide, it seems clear from our own work that, in some provinces, significant amounts of unemployment could be so eliminated; for example, in business cycle troughs 2 to 3 percentage points of the unemployment in the Atlantic region and Quebec is demand-determined, and 1 to 2 percentage points in British Columbia. But at the very peak of the cycle it is likely that none of the unemployment would respond to extra demand pressure. Provinces can, and should, make detailed continuous assessments of the amount by which it is feasible to reduce unemployment through extra demand, and they should undertake cyclical stabilization policies accordingly.

A more active provincial stabilization policy will be inappropriate if it is likely to create difficulties in financing government bond issues within a few years. We have explained in Chapter 6 why we think this is a small risk in two of the provinces whose unemployment is typically above the national average, British Columbia and Quebec, especially if the federal government passes on to them part of the extra net revenues it will obtain in these provinces in the event of provincial demand stimulation. It would also help if the federal government assisted the provinces in selling debt issued for purposes of provincial stabilization policy on the national market. There is more of a risk in the Maritime provinces of Nova Scotia, New Brunswick, and Prince Edward Island, but it would probably be acceptable there also if some federal help were forthcoming, if these provinces acted together in setting their fiscal policy, and if Quebec were usually stimulating its economy at the same time.

Newfoundland's case is different and, unless some federal assistance is given (we think it would be efficient to do this rather than give assistance in other forms), the increase in the debt burden of the province to the outside world would probably be unacceptable.

In view of the above,

Recommendation 8

We recommend that, in all the provinces where unemployment rates are usually higher than the national average, except Newfoundland, each provincial government continuously assess how much of its unemployment is due to demand deficiency and

stimulate demand by increasing the full-employment budget deficit or decreasing the full-employment budget surplus, as the case may be.

This kind of policy will always be most needed at times when it appears most impractical from the short-term point of view. At times of heavy unemployment, as in 1976, the actual budget deficit will usually be large. Revenues will have fallen off as a consequence of the very unemployment and low output that the policy is needed to cure. The implementation of recommendation 8 is then most urgent. In the long run, the extra demand for goods and services, by consumers and others, that the policy makes possible will increase output, augmenting both tax revenues and the ability of the system to absorb government bond issues. Yet there is no denying that a larger deficit will actually be required in the short term. Thus the recommendation is counter-intuitive, like fighting fire with fire, and to follow it will not be easy. We cannot even assert with absolute certainty that it will work; predictions in economic matters, which concern human affairs, can never be as certain as those in the physical sciences. But the probabilities are good, and the potential gains from removing tens or even hundreds of thousands from the unemployment and welfare rolls and putting millions of dollars' worth of underutilized capital equipment to fuller use, make the risks involved well worth taking.

The strength of provincial fiscal policy in Nova Scotia, New Brunswick, and Prince Edward Island depends partly on the degree of federal help, partly on the extent to which Quebec succeeds in its policy, and partly on the ability of the Maritime governments to co-ordinate their own policies and so eliminate problems caused by interprovincial leakages within the Maritimes. This last is directly under Maritime control; so

Recommendation 9

We recommend that the governments of New Brunswick, Nova Scotia, and Prince Edward Island attempt to agree among themselves, each year, on appropriate joint changes in the full-employment budget surplus or deficit.

While the major unexploited power to cure unemployment problems lies in the hands of provincial finance ministers, the federal government can certainly help in a number of ways, whether or not it passes on part of the extra net revenues it gains from provincial success in lowering unemployment.

In the pursuit of a stabilization policy at the national level, the federal government has a choice of several fiscal instruments — e.g., income tax changes, alterations to capital consumption allowances, and changes of various types in the level of federal expenditures. Some mix of such instruments must be chosen. As we have seen, the amount of stimulus or contraction achieved varies among regions according to the particular mix selected. It would not be simple, but it would not be exceptionally difficult either, to use variations in the instrument mix in such a way as to increase the fraction of national demand going to high-unemployment regions; so

Recommendation 10

We recommend that the mix of fiscal policy instruments used by the federal government for cyclical stabilization purposes be chosen in such a way as to increase the proportion of national demand going to high-unemployment regions.

In implementing this recommendation, it will be even more necessary and desirable than in the past to make full use of the annual meetings of the federal and provincial ministers of finance for the federal government to inform the provinces of the regional implications of its stabilization policies, as well as for the provinces to inform the federal government about what they are doing in this area.

A demand-oriented policy instrument that has received increasing attention recently is the relocation of federal activities to high-unemployment areas in an attempt to generate jobs rather than simply achieve a closer match between the places where federal services are needed and where they are supplied.

A consistent strategy of regional development requires that, when possible, the costs of one method of reducing disparities be compared with those of alternative methods of achieving the same end. In this case, the implication is that the cost of relocating federal activities, when the purpose is partly or mainly job creation, should be explicitly compared with the cost of job creation in the private sector, using the RDIA program. Moreover, the same constraints on the level of acceptable costs should apply.

The dollar cost, under RDIA, of subsidizing private firms in order to induce them to relocate has an upper limit. In the same way, there should be an upper limit on the costs that the government is willing to incur as a result of job-motivated shifts of federal employment into areas of high unemployment. Such costs will not generally be zero. Thus, after the cost of relocating any federal government activity has been calculated, it should be compared with the subsidy that would be needed to induce a private company or companies to create the same number of jobs. The relocation should not generally be undertaken if its cost is higher but, if it is, the extra cost should be made known and justified in terms of benefits that can be expected to accrue from government, as opposed to private sector, employment. One such benefit sometimes mentioned is that government jobs require a higher average level of qualifications, so that the more educated residents of a region do not have to leave to find work. Therefore,

Recommendation 11

We recommend that the cost of relocating any particular federal activity for the purpose of creating jobs rather than achieving better local provision of federal services be always compared with the cost of creating a similar number of jobs through other programs involving direct subsidies.

Without making it an explicit recommendation, we also consider it a good idea to publish the cost of such job creation in the same way that costs under RDIA are published.

The full effects of federal government tax and expenditure policies on the redistribution of purchasing power across the nation, and so their effects on the distribution of overall demand, cannot be determined without more adequate information about the regional distribution of federal expenditures. Therefore,

Recommendation 12

We recommend that the federal government publish, every two to three years, a breakdown, by province and territory, of the location of its cash expenditures and tax receipts.

Creating jobs by provincial and federal stimuli to demand is the major method whereby regional unemployment differences can be lessened. However, perhaps more can be done to move those workers who are willing to available jobs elsewhere in the country, either temporarily or permanently. As Chapter 9 indicated, there are a number of excellent mobility programs currently in operation but, for one reason or another, the extent to which they are utilized is very low.

As far as temporary mobility is concerned, in certain industries — e.g., construction and agriculture — there is sometimes a short-term need for workers in one area of the country at the same time as there are unemployed workers in other areas. Unemployment disparities might be reduced by moving the unemployed to those jobs. Over the years, a number of federal arrangements for moving workers have been made in recognition of this, and the Canada Manpower Mobility Program presently assists with temporary moves. In the private sector, co-operation between firms and unions in moving workers without government assistance, on a temporary basis, takes place from time to time, notably in the construction industry. But there is currently no program that permits subsidization of such initiatives by the private sector. Yet such initiatives, which might be taken if financial help were available on a shared-cost basis, offer the potential for reducing unemployment disparities and might be desirable from the taxpayer's point of view because of the unemployment benefits saved and the tax receipts generated. Unfortunately it is difficult to measure the potential for this, because it is impossible to tell in advance the extent to which subsidies would accrue to firms and workers who would have been willing to pay moving costs anyway or the extent to which they would induce extra mobility and thus make a real contribution to disparity reduction. But the possibility of gain is attractive enough that social experimentation to determine its likely size, or very existence, would be well worthwhile.

Experiments would also throw some light on the important question of administrative feasibility and on the ease or difficulty of avoiding subsidies to those who do not really need them. It is important, too, to explore the factors that make temporary mobility programs successful, such as the best means of providing accommodation, the appropriate number of allowable trips home, and the resolution of interprovincial differences in trade qualification requirements. One might also explore the possibility of offering higher rates of assistance to workers who move out of regions that have especially high unemployment rates. Social experiments in mobility assistance have been used with considerable success in the United States. In this instance, experimentation would imply that, for a trial period of perhaps two or three years, the

Department of Manpower and Immigration would offer to pay part of the cost of moving workers to temporary jobs, in cases where private firms and trade unions in any industry were willing to submit proposals and themselves pay part of the costs. At the end of the trial period, an evaluation would be made of the costs and benefits of the program to the taxpayer and to any other groups, such as the communities from which temporary workers were typically drawn; this would be based on information collected in the interim. Since the program would be experimental, assistance could be on a discretionary basis and could vary in form. Therefore,

Recommendation 13

We recommend that the federal government review the terms under which assistance is available for moving workers to temporary jobs and consider undertaking a social experiment to discover whether the benefits of financial assistance to temporary mobility initiatives by the private sector would exceed the costs to the taxpayer.

As far as permanent moves are concerned, the limited use being made of the many mobility programs available may imply that awareness within a province of job vacancies in other provinces is low and that not much is known about the various programs of assistance already offered by the federal government to those who wish to find a job. This is likely to be the case, especially for those of low or average skill levels — the very people who are perhaps most in need of the programs. If awareness is low, it would pay to try and increase it by, for example, the use of advertisements on television and radio to publicize nationwide the existence of job vacancies in every region and at all levels of skill, as well as the availability of assistance to get where the jobs are. Such techniques have been used successfully in Sweden. Therefore,

Recommendation 14

We recommend that a survey, or surveys, be taken to determine the degree of awareness among the unemployed of job opportunities outside their province of residence, as well as their degree of knowledge about federal programs of mobility assistance.

The Relationship between Wage Levels and Unemployment Rates

It is important in encouraging demand for labour in a province to keep productivity as high as possible. We have already suggested a number of ways to do this. But it would be unrealistic to expect productivity differences to disappear overnight. Until they do, it is important to try and maintain a realistic relationship between wage levels and current productivity levels, so as not to discourage demand for labour. Setting Canadian wages higher than productivity in relation to the United States can shift jobs away from Canada into the United States, unless it is possible to make compensating adjustments to the rate of exchange between Canadian and U.S. dollars. In exactly the

same way, if the wages in a particular province are higher in relation to productivity than elsewhere, jobs can be shifted from that province into other provinces. One of the factors that helps govern the average level of wages in a province is the level of its minimum wage, as legislated by the provincial government. The minimum wage is sometimes taken as a standard of comparison for other wage and salary rates, so that changes in it can influence, through a whole series of relativities, the general level of rates of remuneration in a province. A realistic approach to provincial full employment requires that minimum wages be appropriately geared to the average level of productivity within the province.

A problem here is that minimum wages may need to be reasonably high in relation to benefits attainable under social security programs, lest work incentives be harmfully affected. For unemployment insurance benefits, there is no difficulty, since they are set at between two-thirds and three-quarters of the wage previously earned. Nor is it a problem for the majority of social assistance recipients who are not, and never were, in the labour force because of sickness, disability, widowhood, and so forth. But, for the minority of the assistance caseload that does have a choice about staying in or leaving the labour force — the unemployed who have exhausted, or never qualified for, unemployment insurance benefits and a proportion of the spouseless mothers — there can be a problem. However, its quantitative importance should not be exaggerated.

A provincial government may, of course, choose to keep its minimum wage higher in relation to provincial productivity than other provinces for good, humanitarian reasons. Our concern is to point to the undesirable consequences that this can have for the level of unemployment in the province and, perhaps through that, for the rate of out-migration in the case of some provinces. At the time of writing, the minimum wages in three provinces that have always had higher-than-average unemployment rates — New Brunswick, Nova Scotia, and Quebec — were actually above those in Ontario and Alberta, traditionally low-unemployment provinces. Provincial ministers might consider discussing among themselves the appropriateness of their minimum wage relativities. We ourselves believe that the lowering of the unemployment rate in high-unemployment regions is a more urgent priority than minimum wages as high as this. But we do not advocate cutting minimum wages; rather future increases should keep in mind the priority of lowering unemployment as well as other priorities, such as avoiding exploitation and keeping an appropriate relationship with benefits under the social security system. It would be reasonable to take two or three years to make appropriate adjustments to minimum wages. Therefore,

Recommendation 15

We recommend that, as part of a strategy of full employment, the ministers of labour in high-unemployment provinces gradually move to a situation where their minimum wages are not higher than in any province where unemployment is lower than the national average.

It is the present federal government policy to pay the same wage rate nationwide for a given type of worker, irrespective of whether this is necessary to obtain labour in that

particular region. Paying a national rate makes economic sense if it is needed to obtain qualified people but, if it is not, the practice is likely to create unnecessary unemployment in the lower-productivity provinces, for reasons analogous to those given in connection with minimum wages. Like the latter, federal wages can sometimes be taken as a standard of comparison for other wages, causing an upward drift in wage rates generally and reducing the demand for labour. The benefits of higher wages to the employed must then be weighed against the zero wages obtained by the unemployed. We would rather that the federal government stimulated employment by adopting the principle of paying what the private sector pays. If that sector pays national rates for a particular type of skill in order to attract it to the region, the federal government should do the same. If the private sector pays local rates, the federal government should act similarly. It is, of course, important that nobody's wage fall as a result of such a policy, and it will therefore be necessary to phase it in very gradually through appropriate adjustments to wage increases in the future. Since the new policy, if adopted, would be a major break with present practice, it would not be unreasonable to take considerable time to bring it in, perhaps five years or more. Therefore,

Recommendation 16

We recommend that the federal government very gradually move to a situation where the wages of its own employees in each province are more closely related to wages for comparable workers in the private sector.

* * * * *

"What is past is prologue," Shakespeare wrote in the *The Tempest*. Our determined objective in Canada must be to see that gross disparities in living standards and opportunities over the long distant past do not become a prologue to the indefinite future. The triumph of medical science over so many devastating human diseases is a story of long, arduous, painstaking, and often frustrating experiment and research. We still have a long way to go in our experiments and research before we can expect to overcome the problems of economic disparity, which are also a source of considerable human misery. Notwithstanding our own frustrations at the doors of knowledge that still remain locked to us, we remain convinced they will eventually open to us if we have enough persistence and patience. We are hopeful that this study will prove useful in adding to the store of knowledge we urgently need in order to hasten our understanding of the problems and that that knowledge might provide a basis for formulating new policies that will contribute to a reduction in regional disparities. We believe the vicious circle can be broken if there is the will, particularly among those trapped within it, to do so.

A IDENTIFICATION OF URBAN SYSTEMS

Identification Criteria

The purpose of this procedure is to replace the large economic regions and provinces with a greater number of regions that reflect interurban relationships and, in particular, the dominating effect of the metropolitan agglomerations. Three criteria are used:

1 A regional metropolis must have a population of at least 100,000.
2 The distance between two regional metropolises must be at least 200 miles, except when a city that is not one of the largest centres attracts at least 10 per cent of the automobile traffic within a radius of 500 miles; this criterion enabled us to establish, from data provided by the Canadian Transport Commission, separate urban systems for Quebec City and Ottawa, but it required us to link Hamilton, St. Catharines, Kitchener, Oshawa, and London with Toronto, and Victoria with Vancouver.
3 Only those urban agglomerations located less than 250 miles from a regional metropolis are considered as part of its urban system; 29 out of 204 urban agglomerations are therefore excluded from an urban system. Furthermore, in each case where zones of influence overlap, the urban agglomerations affected by this overlapping are grouped with the regional metropolis whose population, divided by the square of the distance, results in the highest index, based on gravity models widely used in specialized texts to measure the level of interaction between two urban centres. It is also important to point out that, because of their isolation, Windsor and Thunder Bay are not retained in this division.

List of Agglomerations in 13 Urban Systems, by Hierarchical Level and by Population, 1961 and 1971[1]

	Population		Percentage change	Hierarchical level
	1961	1971		
St. John's, Newfoundland				
St. John's	106,556	131,814	23.7	3
Gander	5,725	7,748	35.3	6
Grand Falls	6,605	7,677	16.2	6
Wabana	10,651	5,421	-49.1	6
Windsor	5,505	6,644	20.7	6
Halifax, Nova Scotia				
Halifax	193,004	222,637	15.4	2
Sydney	94,242	91,162	- 3.3	3
Charlottetown, P.E.I.	21,633	25,253	16.7	5
Sydney Mines	33,624	34,026	1.2	5
Amherst	10,788	9,966	- 7.6	6
Antigonish	4,344	5,489	26.4	6
Bridgewater	4,497	5,231	16.3	6
Kentville	4,612	5,198	12.7	6
New Glasgow	9,782	10,849	10.9	6
Springhill	6,063	5,262	-13.2	6
Stellarton	5,327	5,357	0.6	6
Summerside, P.E.I.	8,611	9,439	9.6	6
Truro	12,421	13,047	5.0	6
Yarmouth	8,636	8,516	- 1.4	6
Saint John, New Brunswick				
Saint John	98,083	106,744	8.8	3
Moncton	62,429	71,416	14.4	3
Fredericton	28,954	37,684	30.2	4
Bathurst	13,416	16,674	24.3	5
Campbellton	9,873	10,335	4.7	6
Chatham	7,109	7,833	10.2	6
Dalhousie	5,826	6,255	7.4	6
Edmundston	12,791	12,365	- 3.3	6
Newcastle	5,236	6,460	23.4	6
Oromocto	12,170	11,427	- 6.1	6
Chicoutimi, Quebec				
Chicoutimi	127,839	133,703	4.6	3
Alma	20,124	22,622	12.4	5
Baie Comeau	23,602	25,290	7.2	5
Sept Îles	14,196	24,320	71.3	5
Chibougamau	5,153	9,701	88.3	6
Dolbeau	6,052	7,633	26.1	6
Roberval	7,739	8,330	7.6	6
Quebec, Quebec				
Quebec	378,939	480,502	26.8	2
Rimouski	24,503	28,956	18.2	4

(cont'd.)

1 The hierarchical level has been determined from the population size of the agglomeration and its immediate hinterland. Here we have six hierarchical levels, rather than five, as in Table 7-4 of the text, because we consider the metropolitan agglomerations of Montreal and Toronto as a separate class. The population in 1961 is comparable with that in 1971 because we have modified the geographical limits of each agglomeration to conform to the 1971 Census demarcations.

	Population		Percentage change	Hierarchical level
	1961	1971		
Thetford Mines	25,798	26,126	1.3	5
Victoriaville	21,697	26,525	22.3	5
Asbestos	11,083	9,749	-12.0	6
Donnacona	5,849	5,940	1.6	6
Lac Mégantic	7,015	6,770	- 3.5	6
Matane	11,066	11,841	7.0	6
Mont Joli	6,178	6,698	8.4	6
Montmagny	11,415	12,432	8.9	6
Plessisville	6,570	7,204	9.6	6
Rivière du Loup	10,835	12,760	17.8	6
St. Georges (Beauce)	10,292	13,554	31.7	6
Montreal, Quebec				
Montreal	2,215,877	2,743,208	23.8	1
Sherbrooke	70,253	84,570	20.4	3
Trois-Rivières	89,171	97,930	9.8	3
Cornwall, Ontario	43,639	47,116	8.0	4
Drummondville	42,495	46,524	9.5	4
Granby	35,123	39,307	11.9	4
Joliette	24,098	29,350	21.8	4
St. Hyacinthe	32,968	39,693	20.4	4
St. Jean	39,281	47,044	19.8	4
St. Jérôme	29,195	35,335	21.0	4
Shawinigan	63,400	57,246	- 9.7	4
Sorel	28,906	34,479	19.3	4
Valleyfield	34,699	37,430	7.9	4
La Tuque	13,023	13,099	0.6	5
Magog	13,139	13,281	1.1	5
Bécancour	8,225	8,182	- 0.5	6
Coaticook	6,963	6,569	- 5.7	6
Cowansville	8,187	11,920	45.6	6
Farnham	6,354	6,496	2.2	6
Hawkesbury, Ontario	8,661	9,276	7.1	6
Lachute	11,710	11,813	0.9	6
Mont Laurier	7,132	8,240	15.5	6
Prescott, Ontario	5,366	5,165	- 3.7	6
Ste Agathe	5,725	5,532	- 3.4	6
Ste Scholastique	13,675	14,787	8.1	6
Windsor	6,589	6,023	- 8.6	6
Ottawa, Ontario				
Ottawa-Hull	457,038	602,510	31.8	2
Brockville	17,774	19,765	11.2	5
Pembroke	16,791	16,544	- 1.5	5
Amprior	5,474	6,016	9.9	6
Carleton Place	4,796	5,020	4.7	6
Deep River	5,377	5,671	5.5	6
Maniwaki, Quebec	6,349	6,689	5.4	6
Perth	5,360	5,537	3.3	6
Petawawa	5,574	5,784	3.8	6
Renfrew	8,935	9,173	2.7	6
Smiths Falls	9,603	9,585	- 0.2	6
Sudbury, Ontario				
Sudbury	126,771	155,424	22.6	3
North Bay	40,892	49,187	20.3	4

(cont'd.)

	Population		Percentage change	Hierarchical level
	1961	1971		
Sault Ste Marie	65,948	81,270	23.2	4
Timmins	42,195	41,473	- 1.7	4
Espanola	5,353	6,045	12.9	6
Haileybury	4,412	5,280	19.7	6
New Liskeard	4,896	5,488	12.1	6
Parry Sound	6,004	5,842	- 2.7	6
Sturgeon Falls	6,288	6,662	5.9	6
Toronto, Ontario				
Toronto	1,918,558	2,628,043	37.0	1
Hamilton	402,266	498,523	23.9	2
Kitchener	154,864	226,846	46.5	3
London	226,669	286,011	26.2	3
St. Catharines	257,899	303,429	17.7	3
Barrie	28,737	38,176	32.8	4
Brantford	68,785	80,284	16.7	4
Guelph	47,259	62,659	32.6	4
Kingston	72,992	85,877	17.7	4
Oshawa	86,095	120,318	39.7	4
Peterborough	57,288	63,531	10.9	4
Sarnia	68,395	78,444	14.7	4
Belleville	30,655	35,128	14.6	5
Chatham	30,076	35,317	17.4	5
Orillia	19,809	24,040	21.4	5
Owen Sound	17,421	18,469	6.0	5
Stratford	21,933	24,508	11.7	5
Trenton	26,222	28,650	9.3	5
Woodstock	22,309	26,173	17.3	5
Bowmanville	7,397	8,947	21.0	6
Bracebridge	5,771	6,903	19.6	6
Cobourg	10,710	11,282	5.3	6
Collingwood	8,385	9,775	16.6	6
Dunnville	5,181	5,576	7.6	6
Fergus	3,831	5,433	41.8	6
Gananoque	5,096	5,212	2.3	6
Goderich	6,411	6,813	6.3	6
Gravenhurst	5,964	7,133	19.6	6
Hanover	4,727	5,063	7.1	6
Huntsville	8,180	9,784	19.6	6
Ingersoll	6,874	7,783	13.2	6
Leamington	9,030	10,435	15.6	6
Lindsay	11,399	12,746	11.8	6
Midland	9,595	10,992	14.6	6
Orangeville	4,593	8,074	75.8	6
Penetanguishene	5,340	5,497	2.9	6
Port Hope	8,246	8,872	7.6	6
Simcoe	9,704	10,793	11.2	6
Strathroy	5,150	6,592	28.0	6
Tillsonburg	6,690	6,608	- 1.2	6
Wallaceburg	10,079	10,550	4.7	6
Winnipeg, Manitoba				
Winnipeg	476,543	540,262	13.4	2
Brandon	28,166	31,150	10.6	4
Kenora, Ontario	10,904	10,952	0.4	5

(cont'd.)

	Population		Percentage change	Hierarchical level
	1961	1971		
Dauphin	8,031	8,891	10.7	6
Dryden, Ontario	5,728	6,939	21.1	6
Fort Frances, Ontario	9,481	9,947	4.9	6
Portage la Prairie	12,388	12,950	4.5	6
Selkirk	8,576	9,331	8.8	6
Steinbach	4,290	5,197	21.1	6
Regina-Saskatoon, Saskatchewan				
Regina	113,749	140,734	23.7	3
Saskatoon	95,571	126,449	32.3	3
Moose Jaw	33,370	31,854	- 4.5	4
Prince Albert	24,243	28,464	17.4	4
Estevan	7,970	9,150	14.8	6
Lloydminster	6,329	8,691	37.3	6
Melville	5,191	5,375	3.5	6
North Battleford	11,230	12,698	13.1	6
Swift Current	12,439	15,415	23.9	6
Weyburn	9,101	8,815	- 3.1	6
Yorkton	11,297	13,430	18.9	6
Calgary-Edmonton, Alberta				
Calgary	282,031	403,319	43.0	2
Edmonton	359,657	495,702	37.8	2
Lethbridge	39,300	41,217	4.9	4
Medicine Hat	26,705	28,773	7.7	4
Grande Prairie	9,936	13,079	31.6	5
Red Deer	22,170	27,674	24.8	5
Camrose	7,943	8,673	9.2	6
Drumheller	3,743	5,446	45.5	6
Fort McMurray	1,682	6,847	307.1	6
Peace River	3,553	5,039	41.8	6
Wetaskiwin	5,824	6,267	7.6	6
Vancouver, British Columbia				
Vancouver	826,415	1,082,352	31.0	2
Victoria	154,432	195,800	26.8	3
Kamloops	26,007	43,790	68.4	4
Kelowna	21,756	36,956	69.9	4
Nanaimo	30,317	38,760	27.8	4
Chilliwack	26,872	33,322	24.0	5
Penticton	14,111	18,146	28.6	5
Port Alberni	21,075	26,509	25.8	5
Courtenay	3,485	7,152	105.2	6
Merritt	3,039	5,289	74.0	6
Vernon	10,250	13,283	29.6	6

Spatial Interaction Index

The spatial interaction index, values of which are cited in Table 7-5, has been defined as follows:

$$I = \frac{1}{100} \cdot \frac{1}{P} \cdot \sum_{k=1}^{K} \sum_{l=1}^{n_k} \frac{P_{kl} \cdot P_j}{d_{lj}}$$

in which P is the population of the urban system; P_{kl} is the population of a city that belongs to the k^{th} level in the urban hierarchy (the regional metropolis is represented by P_{K1}); n is the number of cities of the k^{th} level in the hierarchy; P_j is the population of city j, which is that city of a higher hierarchical level nearest to city l; and d_{lj} is the road distance in miles between cities l and j.

B THE INCREMENTALITY OF DREE EXPENDITURES

There have been a few empirical investigations into the incrementality question. The Atlantic Provinces Economic Council in its Annual Review in 1971 presented the findings of a mail survey of firms that had accepted capital incentive grants from DREE.[1] Firms outside the Atlantic region were queried as to grants for new plant construction only, whereas firms receiving grants for projects inside the Atlantic region were queried as to all grants. Approximately 20 per cent of the firms that replied indicated that their capital projects would have proceeded in the absence of the grant. Of the remaining firms, the questionnaire was not sufficiently discriminating to determine the minimum size of grant that would have made the operation a financial possibility; consequently, somewhat less than the remaining 80 per cent of the grant money had really been needed to call into place the additional investment.

Springate[2] examined the business investment decisions of a sample of thirty-one firms that received incentive grants from DREE from the time of DREE's creation to September 30, 1971. Senior executives responsible for the investment decisions of the firm were interviewed and questioned about how they decided whether or not to build a new plant or expand a facility and where to put it, and about the extent to which the availability of an incentive grant influenced the location, timing, or size of the project. Springate found that, for the limited sample of firms, the overall effectiveness of incentive grants ranged from around 30 per cent for large firms to 46 per cent for small firms.

The location effect — the extent to which the grant facilitated or caused the firm to select a location in a designated region — was extremely small for large firms (serving mostly to attract foreign investment) and not much more substantial for small firms (in several cases, moving the location of a facility less than seventy miles in order to qualify for a grant). In large part, this seems to result from the firm's location choice process: large firms considered many sites before narrowing the range in terms of the most

1 Atlantic Provinces Economic Council, *The Atlantic Economy*, Fifth Annual Review (Halifax : APEC, 1971).

2 David J. V. Springate, "Regional Development Incentive Grants and Private Investment in Canada: A Case Study of the Effect of Regional Development Incentives on the Investment Decisions of Manufacturing Firms," Ph.D. Thesis, Harvard University, Graduate School of Business Administration, 1972.

profitable; it was only if these few preferred sites were thought to be located where incentive grants were available that the firm would seek out details of available grants. Small firms, on the other hand, considered first the existing plant location as a possible site and only if it were unsuitable did they look at other sites — usually one or two others not too far removed from the existing plant. In such circumstances, the firm considered the availability of an incentive grant as an integral part of the location choice decision.

Some may view the Springate sample as too small a group of firms from which to draw general conclusions about the effectiveness of grants; we consider that it is indeed necessary to be cautious about the weight to be attached to the findings. In addition, the Springate findings have come under critical scrutiny because of the methodology of relying upon unstructured subjective interviews and because of the difficulty of discerning biased information given in such interviews. Springate's report makes it clear that the executives did not wish to be thought of as relying upon government help; this may have led some of them to understate its real importance.

In the winter of 1972-73, the Atlantic Development Council carried out a survey of the projects in the Atlantic provinces that had accepted RDIA grants for new facilities from the start of RDIA to the end of May 1972.[3] Part of the survey involved a random sample of fifty-one firms that had received at least one payment. Three had gone bankrupt; one did not reply. Of the remaining forty-seven, seventeen said they would have gone ahead without the grant, giving an incrementality ratio of about 60 per cent. The exact ratio depends on what one decides about the nonresponding and bankrupt firms. For employment, the ratio was higher — almost 80 per cent. These findings may be subject, however, to the same kind of problem in discerning biased information as Springate's.

The Department of Regional Economic Expansion has carried out its own analysis of incrementality.[4] The first stage of DREE's analysis was based on a priori reasoning about whether a free choice for plant location really existed in each of a sample of projects. If the project involved natural resources and if less than two-thirds of the production was for sale outside the region, it was reasoned that the firm had no location option. If the project involved no use of natural resources or if it involved use of natural resources and more than two-thirds of the production was for sale outside the region, then the firm had a location option. The projects of all firms classified as having a location option were assumed to be 100 per cent incremental to the region. On this basis, taking into account adjustments to allow for the effect of the grants on the size of firms and the timing of their investment, it was deduced that the incrementality ratio for establishments was 78 per cent; for employment, it was 70 per cent.

These are the only studies we are aware of that have estimated the proportion of DREE-subsidized employment or investment that is incremental. The estimates range from a low of 30 per cent (Springate) to a high of 80 per cent (Atlantic Provinces Economic Council).

3 Atlantic Development Council, *Regional Development Incentives Program: Atlantic Region* (St. John's: ADC, 1976).

4 Department of Regional Economic Expansion, *Assessment of the Regional Development Incentives Program* (Ottawa: DREE, April 1973).

As mentioned in Chapter 8, we only examined the question of incrementality for the Atlantic region. Our basic technique was to look at the annual births of establishments, by industry, in each province of the region before and during the period when federal grants were available. Then we looked for any increase in the number of births in the latter period, to see whether the increase was as large as the DREE claims. To illustrate the method, let us look at three examples: the manufacture of electrical products, of chemical products, and of furniture and fixtures — all in New Brunswick (Table B-1).

Table B-1

Births of Establishments in Three Industries, New Brunswick, 1962 to 1973

	Number of establishment births vs. DREE claims											
	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973
Electrical products												
Actual births	–	1	–	–	–	–	1	–	1	–	2	1
DREE claims								–	–	–	2	1
Chemical products												
Actual births	2	3	2	3	3	1	5	1	6	1	3	–
DREE claims								–	–	–	3	–
Furniture and fixtures												
Actual births	–	3	3	4	2	–	3	6	–	5	8	3
DREE claims								–	–	2	1	1

SOURCE Data from Statistics Canada and the Department of Regional Economic Expansion.

For electrical products, we note that in a seven-year period before DREE became active, 1962-68, only two new electrical products manufacturing establishments were set up in New Brunswick; that is an average of one new establishment every three-and-a-half years. On the other hand, in the four-year period when DREE was active, 1970-73,[5] no less than four new electrical establishments were set up — three of them, it is claimed, as the result of help from DREE. It seems reasonable to maintain then that births of electrical establishments were unusually high in the DREE period relative to earlier years and that, without the births claimed by DREE, the number remaining appears normal in the light of past experience.[6] In this case then, we conclude that DREE claims are probably valid and that the three electrical establishments in New Brunswick were indeed "incremental."[7]

5 DREE began in 1969 but was not really active until a year later.

6 These conclusions can, in fact, be established statistically, using the (testable) proposition that the annual number of births follows either a Poisson distribution (when the number of births is small) or a normal distribution (when the number is large), possibly with a trend.

7 The method relies on using 1962-68 as the "control" period. The problem with this is that, during the last half of the period, ADIA, the predecessor to DREE, was active though considerably smaller in scope than RDIA. It makes little difference to our results if the 1962-65 period is used as control, except that they become somewhat more uncertain because ADIA was not active in this early period. There were, however, some tax incentives. They seem to have had little effect but, to the extent that they, and later ADIA, had some effect, some bias exists in our test. That bias will be in the direction of *understating* DREE's effectiveness.

For chemical products, the situation is somewhat different. In the pre-DREE period, 1962-68, there were nineteen births — an average of one birth every four months. From 1970 to 1973, the "DREE period," there were ten births — an average of one every five months. That represents a slight slowdown in the formation of new establishments. Moreover, three of the births were claimed by DREE, which is to say that, without DREE, they allegedly would not have occurred. If DREE is right, there would have been only one birth every seven months without their help, which seems rather low in light of the experience of earlier years. It then seems reasonable to maintain that births in the DREE period were not unusually high relative to earlier years and that, without the births claimed by DREE, the number remaining would have been abnormally low in the light of past experience. In this case then, we conclude that the DREE claims were probably invalid and that the chemical establishments were not incremental; in other words, they, or others like them, would have existed even in the absence of DREE subsidies.

The manufacture of furniture and fixtures is the most difficult example. Births of these establishments averaged about one every five-and-a-half months in the pre-DREE period and one every three months during DREE. That seems to be a significant impact but, even without the DREE claims, the frequency of births would have jumped to one every four months. With or without DREE, the formation of new establishments in the manufacturing of fixtures quickened significantly in 1970-73 compared with 1962-68. In a situation where circumstances are improving anyway, there is no way of telling how far DREE claims are justified. We therefore chalk up furniture and fixtures as a case of uncertainty; we cannot detect whether DREE-supported establishments are incremental or not.

Proceeding as in these illustrations, we were able to develop the results presented in Chapter 8, indicating the proportion of all new establishments claimed by DREE that were incremental, the proportion that were not, and the proportion for which no decision could be reached one way or another.

Table C-1

Federal Transfers to Provinces and Local Governments, Canada, by Province and Territories, 1971-75

	Newfoundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Total, all provinces	Yukon and Northwest Territories	Canada
						(Millions of dollars)							
Transfers to provinces													
Unconditional grants	208.9	44.2	233.9	191.6	1093.1	227.9	156.4	117.8	156.6	32.4	2462.2	94.9	2557.7
Equalization	186.6	40.5	215.8	172.9	974.7	–	122.0	82.4	–	–	1795.0	–	1795.0
Other	22.3	3.7	18.1	18.6	118.3	227.9	34.4	35.4	156.6	32.4	667.2	94.9	762.7
Conditional grants	168.0	38.5	178.1	178.7	1705.3	1755.2	247.5	202.6	409.2	528.9	5411.9	15.2	5427.1
Health	68.3	11.9	89.9	74.6	781.4[1]	934.4	120.4	104.1	203.7	269.4	2658.3	8.2	2666.4
Postsecondary education[2]	13.5	2.8	35.7	18.9	402.3	447.2	42.6	35.9	110.5	102.3	1211.7	–	1211.7
Welfare	34.9	7.1	32.0	37.0	396.6[1]	320.0	52.5	35.6	70.1	139.8	1125.6	6.9	1132.5
Other	51.3	16.6	20.5	48.2	124.9	53.5	32.0	27.0	24.9	17.4	416.3	0.1	416.5
Total	376.9	82.6	412.0	370.3	2798.4	1983.1	403.8	320.5	565.9	561.3	7874.7	110.7	7985.4
Transfers to local governments													
Unconditional – grants in lieu of taxes	0.7	–	4.3	–	14.6	33.1	5.1	1.9	3.5	5.5	69.0	0.5	69.5
Conditional grants	2.5	0.5	2.4	1.8	14.1	20.5	1.6	0.7	4.2	7.1	55.4	0.2	55.6
Welfare	1.9	0.2	0.9	0.9	6.1	3.6	0.4	0.3	0.6	2.1	17.0	0.1	17.2
Other	0.6	0.2	1.5	0.9	8.0	17.0	1.2	0.4	3.5	5.0	38.4	–	38.4
Total	3.3	0.5	6.8	1.8	28.7	53.6	6.8	2.6	7.7	12.6	124.5	0.6	125.1
Transfers to provinces and local governments	380.2	83.2	418.7	372.1	2827.1	2036.7	410.6	323.1	573.6	573.9	7999.2	111.3	8110.5
						(Dollars per capita)							
Transfers to provinces													
Unconditional grants	385	376	288	289	178	28	155	130	91	14	110		
Equalization	344	347	265	261	159	–	121	91	–	–	80		
Other	41	31	22	28	19	28	34	39	91	14	30		
Conditional grants	310	329	219	270	278	217	245	224	238	221	242		
Health	126	102	111	113	127	115	119	115	119	112	119		
Postsecondary education	25	24	44	29	66	55	42	40	64	43	54		
Welfare	64	61	39	56	65	40	52	39	41	58	50		
Other	96	142	25	73	20	7	32	30	15	7	19		
Total	695	708	507	559	456	245	399	353	330	234	352		
Transfers to local governments	6	5	8	3	5	7	7	3	4	5	6		
Transfers to provinces and local governments	701	713	515	562	461	252	406	356	335	240	358		

1 Special arrangements including a federal tax abatement have been made for the province of Quebec for these programs. Amounts shown are the federal contribution including the tax abatement.

2 The total contribution includes (a) a federal personal tax abatement of 4.357 points and a federal corporate tax abatement of 1 point; (b) the equalization (where applicable) and the revenue guarantee arising from those tax points; and (c) a cash transfer to bring the total contribution to the eligible contribution. The equalization of $72 thousand is included with equalization payments above and the revenue guarantee of $1.8 million is included with other unconditional grants.

SOURCE Estimates by the Economic Council of Canada, based on data from Statistics Canada.

Table C-2

Grants and Taxation Allowances on Capital Expenditures in Manufacturing Industries, United Kingdom, 1963-72[1]

	New plant and machinery		New industrial building	
	Development areas	Nondevelopment areas	Development areas	Nondevelopment areas
	(Per cent)			
Local Employment Act, 1963				
Cash grant	10	–	25	–
Investment allowance	30	30	15	15
Initial allowance	Free depreciation	10	5	5
Industrial Development Act, 1966				
Cash grant	40	20	25	–
Initial allowance	–	–	15	15
White Paper, October 1970				
Cash grant	–	–	35	–
Initial allowance	Free depreciation	60	40	15
White Paper, April 1972				
Cash grant	20	–	20	–
Initial allowance	Free depreciation	Free depreciation	40	15

1 This table records only the major changes in policy. Special Development Areas and Intermediate Areas are excluded. Investment incentives for Northern Ireland differ from British Development Areas, and differential present values were calculated separately. Investment grants under the Industrial Development Act, 1966, were temporarily increased to 45 and 25 per cent in 1967 and 1968. Under the 1966 Act, grants were *deducted* for purposes of calculating tax allowances. Under the 1972 legislation, 20 per cent grants were available *in addition to* 100 per cent free depreciation. In 1971 the initial allowance for investment in plant and machinery in Nondevelopment Areas was raised from 60 to 80 per cent. Annual writing-down allowances, which are not shown here, were not regionally differentiated.

SOURCE Barry Moore and John Rhodes, "Evaluating the Effects of British Regional Economic Policy," *Economic Journal* 83, no. 329 (March 1973):105.

Tables

Tables (cont'd.)

Tables (cont'd.)

Tables (concl'd.)

Charts

Charts (concl'd.)

Maps

PROJECT STAFF

N. Swan, Director

Research

L. Auer
I. Banks
G. Barker
R. Beaudry
M. Boisvert
J. H. Chung
L. Copithorne
D. L. Emerson
G. A. Glynn
L. Harrison
M. Hinton
S. Kirby
M. Legault
N. McMartin
M. Meunier
J. Quiroga
W. Watson
P. Wrage

F. Flatters, Queen's University
W. I. Gillespie, Carleton University
R. Kerr, Health and Welfare Canada
N. H. Lithwick, Carleton University
F. Martin, University of Montreal
J. MacKinnon, Queen's University

Translators and Editors

M. Forand
J.-G. Guertin
G. Loubier
R. J. Lyle
J.-P. Vallée
M. Villeneuve

Support Staff

B. Gelineau
T. Hodgins
A. Martin
J. Pépin
Y. Sawyer
C. Sigouin

Other Reports by the Economic Council of Canada

Thirteenth Annual Review: The Inflation Dilemma
Of interest to all Canadians, this report focuses on how recent inflationary trends have affected the main economic participants — governments, firms, and households. (EC21-1/1976, $5.00, 187 pages)

Efficiency and Regulation: A Study of Deposit Institutions
In this timely report, the Council suggests ways to improve regulation and stimulate competition in order to make Canada's financial system more efficient. (EC22-47/1976, $5.00, 152 pages)

People and Jobs: A Study of the Canadian Labour Market
This report, which continues to be pertinent in view of persistently high unemployment rates, examines how the labour market can work more effectively. (EC22-42/1976, $6.00, 289 pages)

Looking Outward: A New Trade Strategy for Canada
This report on the need for free trade is especially important, as Canada pursues this option in the current round of international trade (GATT) negotiations. (EC22-27/1975, $5.00, 208 pages)

The above reports are available from your local bookstore or bookstores authorized to sell government publications, and by mail from Printing and Publishing, Supply and Services Canada, Ottawa, Ontario, K1A 0J9.