Disparities and Interregional Adjustment

This is Volume 64 in the series of studies commissioned as part of the research program of the Royal Commission on the Economic Union and Development Prospects for Canada.

The studies contained in this volume reflect the views of their authors and do not imply endorsement by the Chairman or Commissioners.

KENNETH NORRIE, Research Coordinator

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When the members of the Rowell-Sirois Commission began their collective task in 1937, very little was known about the evolution of the Canadian economy. What was known, moreover, had not been extensively analyzed by the slender cadre of social scientists of the day.

When we set out upon our task nearly 50 years later, we enjoyed a substantial advantage over our predecessors; we had a wealth of information. We inherited the work of scholars at universities across Canada and we had the benefit of the work of experts from private research institutes and publicly sponsored organizations such as the Ontario Economic Council and the Economic Council of Canada. Although there were still important gaps, our problem was not a shortage of information; it was to interrelate and integrate — to synthesize — the results of much of the information we already had.

The mandate of this Commission is unusually broad. It encompasses many of the fundamental policy issues expected to confront the people of Canada and their governments for the next several decades. The nature of the mandate also identified, in advance, the subject matter for much of the research and suggested the scope of enquiry and the need for vigorous efforts to interrelate and integrate the research disciplines. The resulting research program, therefore, is particularly noteworthy in three respects: along with original research studies, it includes survey papers which synthesize work already done in specialized fields; it avoids duplication of work which, in the judgment of the Canadian research community, has already been well done; and, considered as a whole, it is the most thorough examination of the Canadian economic, political and legal systems ever undertaken by an independent agency.

The Commission's research program was carried out under the joint

direction of three prominent and highly respected Canadian scholars: Dr. Ivan Bernier (*Law and Constitutional Issues*), Dr. Alan Cairns (*Politics and Institutions of Government*) and Dr. David C. Smith (*Economics*).

Dr. Ivan Bernier is Dean of the Faculty of Law at Laval University. Dr. Alan Cairns is former Head of the Department of Political Science at the University of British Columbia and, prior to joining the Commission, was William Lyon Mackenzie King Visiting Professor of Canadian Studies at Harvard University. Dr. David C. Smith, former Head of the Department of Economics at Queen's University in Kingston, is now Principal of that University. When Dr. Smith assumed his new responsibilities at Queen's in September 1984, he was succeeded by Dr. Kenneth Norrie of the University of Alberta and John Sargent of the federal Department of Finance, who together acted as Co-directors of Research for the concluding phase of the Economics research program.

I am confident that the efforts of the Research Directors, research coordinators and authors whose work appears in this and other volumes, have provided the community of Canadian scholars and policy makers with a series of publications that will continue to be of value for many years to come. And I hope that the value of the research program to Canadian scholarship will be enhanced by the fact that Commission research is being made available to interested readers in both English and French.

I extend my personal thanks, and that of my fellow Commissioners, to the Research Directors and those immediately associated with them in the Commission's research program. I also want to thank the members of the many research advisory groups whose counsel contributed so substantially to this undertaking.

<div align="right">DONALD S. MACDONALD</div>

At its most general level, the Royal Commission's research program has examined how the Canadian political economy can better adapt to change. As a basis of enquiry, this question reflects our belief that the future will always take us partly by surprise. Our political, legal and economic institutions should therefore be flexible enough to accommodate surprises and yet solid enough to ensure that they help us meet our future goals. This theme of an adaptive political economy led us to explore the interdependencies between political, legal and economic systems and drew our research efforts in an interdisciplinary direction.

The sheer magnitude of the research output (more than 280 separate studies in 70+ volumes) as well as its disciplinary and ideological diversity have, however, made complete integration impossible and, we have concluded, undesirable. The research output as a whole brings varying perspectives and methodologies to the study of common problems and we therefore urge readers to look beyond their particular field of interest and to explore topics across disciplines.

The three research areas, — *Law and Constitutional Issues*, under Ivan Bernier; *Politics and Institutions of Government*, under Alan Cairns; and *Economics*, under David C. Smith (co-directed with Kenneth Norrie and John Sargent for the concluding phase of the research program) — were further divided into 19 sections headed by research coordinators.

The area *Law and Constitutional Issues* has been organized into five major sections headed by the research coordinators identified below.

- Law, Society and the Economy — *Ivan Bernier and Andrée Lajoie*
- The International Legal Environment — *John J. Quinn*
- The Canadian Economic Union — *Mark Krasnick*

- Harmonization of Laws in Canada — *Ronald C.C. Cuming*
- Institutional and Constitutional Arrangements — *Clare F. Beckton and A. Wayne MacKay*

Since law in its numerous manifestations is the most fundamental means of implementing state policy, it was necessary to investigate how and when law could be mobilized most effectively to address the problems raised by the Commission's mandate. Adopting a broad perspective, researchers examined Canada's legal system from the standpoint of how law evolves as a result of social, economic and political changes and how, in turn, law brings about changes in our social, economic and political conduct.

Within *Politics and Institutions of Government*, research has been organized into seven major sections.

- Canada and the International Political Economy — *Denis Stairs and Gilbert Winham*
- State and Society in the Modern Era — *Keith Banting*
- Constitutionalism, Citizenship and Society — *Alan Cairns and Cynthia Williams*
- The Politics of Canadian Federalism — *Richard Simeon*
- Representative Institutions — *Peter Aucoin*
- The Politics of Economic Policy — *G. Bruce Doern*
- Industrial Policy — *André Blais*

This area examines a number of developments which have led Canadians to question their ability to govern themselves wisely and effectively. Many of these developments are not unique to Canada and a number of comparative studies canvass and assess how others have coped with similar problems. Within the context of the Canadian heritage of parliamentary government, federalism, a mixed economy, and a bilingual and multicultural society, the research also explores ways of rearranging the relationships of power and influence among institutions to restore and enhance the fundamental democratic principles of representativeness, responsiveness and accountability.

Economics research was organized into seven major sections.

- Macroeconomics — *John Sargent*
- Federalism and the Economic Union — *Kenneth Norrie*
- Industrial Structure — *Donald G. McFetridge*
- International Trade — *John Whalley*
- Income Distribution and Economic Security — *François Vaillancourt*
- Labour Markets and Labour Relations — *Craig Riddell*
- Economic Ideas and Social Issues — *David Laidler*

Economics research examines the allocation of Canada's human and other resources, the ways in which institutions and policies affect this

allocation, and the distribution of the gains from their use. It also considers the nature of economic development, the forces that shape our regional and industrial structure, and our economic interdependence with other countries. The thrust of the research in economics is to increase our comprehension of what determines our economic potential and how instruments of economic policy may move us closer to our future goals.

One section from each of the three research areas — The Canadian Economic Union, The Politics of Canadian Federalism, and Federalism and the Economic Union — have been blended into one unified research effort. Consequently, the volumes on Federalism and the Economic Union as well as the volume on The North are the results of an interdisciplinary research effort.

We owe a special debt to the research coordinators. Not only did they organize, assemble and analyze the many research studies and combine their major findings in overviews, but they also made substantial contributions to the Final Report. We wish to thank them for their performance, often under heavy pressure.

Unfortunately, space does not permit us to thank all members of the Commission staff individually. However, we are particularly grateful to the Chairman, The Hon. Donald S. Macdonald; the Commission's Executive Director, J. Gerald Godsoe; and the Director of Policy, Alan Nymark, all of whom were closely involved with the Research Program and played key roles in the contribution of Research to the Final Report. We wish to express our appreciation to the Commission's Administrative Advisor, Harry Stewart, for his guidance and advice, and to the Director of Publishing, Ed Matheson, who managed the research publication process. A special thanks to Jamie Benidickson, Policy Coordinator and Special Assistant to the Chairman, who played a valuable liaison role between Research and the Chairman and Commissioners. We are also grateful to our office administrator, Donna Stebbing, and to our secretarial staff, Monique Carpentier, Barbara Cowtan, Tina DeLuca, Françoise Guilbault and Marilyn Sheldon.

Finally, a well deserved thank you to our closest assistants: Jacques J.M. Shore, *Law and Constitutional Issues*; Cynthia Williams and her successor Karen Jackson, *Politics and Institutions of Government*; and I. Lilla Connidis, *Economics*. We appreciate not only their individual contribution to each research area, but also their cooperative contribution to the research program and the Commission.

IVAN BERNIER
ALAN CAIRNS
DAVID C. SMITH

Economic analysis generally proceeds from the perspective of the national economy as a whole. It asks what determines both the degree to which the nation's productive capacity is utilized at any moment in time, and the rate at which it increases over time. It looks at how output is distributed among individuals and occupation groups, and asks whether the record on this score meets some criterion of fairness. Finally, economic analysis deals with the processes whereby an economy such as Canada's adjusts to change, with the manner in which new technologies are adapted, with the reasons workers leave old employments for new ones, and with the ways in which investors reallocate funds as economic prospects shift.

Issues of distribution, fairness and adjustment take on an additional dimension in a federal state, however. One now needs to ask how particular subsets of the national economy — regions — perform, and how these affect, and are affected by, national variables. Incomes must be compared across regions. Does a worker or investor in one part of the country earn the same as an otherwise identical counterpart in another? Adjustment takes on added complexity as well, for now interregional migration is a prominent part of the process. Finally, national economic policies are inevitably analyzed for their regional impacts. When compared with other areas, do some regions appear to gain, or lose, systematically?

The essays in this volume focus on these issues. The paper by Robert Mansell and Lawrence Copithorne looks at regional economic disparities. The authors show first that the conclusion to be drawn about the extent of such disparities depends considerably on the income variable that one uses. They review the considerable literature devoted

to explaining interregional differences, then reach their conclusions. Although much effort has been expended on the subject of interregional differences and underdevelopment, we still cannot distinguish a contributing factor from a symptom.

John Vanderkamp looks at the process whereby capital and labour are reallocated among regions in response to economic shocks. He is particularly concerned with the matter of the efficiency with which such reallocation is carried out, a topic that has recently captured the attention of academics and policy makers. He develops a new analytical framework within which the various adjustment scenarios can be analyzed, and provides a rigorous critique of existing models and empirical work in the field.

The paper by N. Harvey Lithwick complements the Mansell-Copithorne piece by reviewing and evaluating federal government regional economic development policies in the postwar period. Each major policy effort is interpreted in light of the economic orthodoxy prevailing at the time, and of the particular political circumstances of the Canadian federation. Overall, federal government policies receive poor marks. Lithwick sees no discernible progress with regard to regional development, which he regards as a serious indictment of the money policy efforts and very large public sector outlays that, it was argued, could achieve that goal.

The final two papers in the volume examine the question of regional economic grievances from the perspectives of the three regions most commonly identified with such complaints. Mireille Éthier devotes the first portion of her paper to a careful discussion of criteria for judging fairness. She asks what a particular region can reasonably expect of federal government economic policies, then analyzes the impact on Quebec of a number of prominent policy initiatives. In the final paper of the volume, F.J. Anderson and N.C. Bonsor concentrate on the regional impacts of tariff, transportation, and energy policies — the ones most commonly cited in grievances by both the West and the Atlantic provinces. They too question whether federal economic policies are really as regionally discriminating as popular political wisdom suggests.

KENNETH NORRIE

Canadian Regional Economic Disparities: A Survey

ROBERT L. MANSELL
LAWRENCE COPITHORNE

Introduction

The existence of large regional economic disparities has been docu-
mented for much of Canada's history (e.g., Denton, 1966; Chernick,
1966; McInnis, 1968; Green, 1971; ECC, 1977). Further, there is a vast
literature relevant to this problem and an almost equally impressive
array of policies which have been implemented to redress it (Lithwick,
1978, 1985; Munro, 1978; Weaver and Gunton, 1982). It can be argued,
however, that there is little to show for all of this effort; in terms of many
measures of regional inequality, the situation today is not significantly
different from that of the period immediately following World War II
when regional inequality first became an important policy issue. More-
over, with each passing decade these differentials have become an
increasingly contentious national issue.

The primary objective in this paper is to provide a survey of what we
currently know, and do not know, about Canadian regional disparities.
This survey is organized as follows. First, by way of introduction the
general nature of the problem will be outlined along with some interna-
tional comparisons. The next section will summarize the various dimen-
sions of regional inequalities from a purely descriptive viewpoint. The
focus will be on three questions: which regional differences are par-
ticularly important? how large are the differences? how have they
changed over time? We then go on to outline various economic theories
relevant to the problem in an attempt to isolate the critical factors in
terms of explaining the existence and perpetuation of regional economic
disparities. The concluding section of the paper deals with policy issues.

Nature of the Problem

There are a variety of hypotheses frequently used to explain regional economic disparities. One is that most of the measured disparities are actually illusory and that, in fact, the real problem is one of interpersonal, not regional, disparities. Another group of hypotheses is based on the underlying belief that the operation of the market system would eliminate the problem if adjustments were not impaired by certain structural factors and a host of inconsistent and misdirected government policies. Still another set starts from the position that the market system exacerbates rather than reduces regional inequalities, and, hence, it is the absence of appropriate, consistent and sustained regional policies which explains the lack of significant improvement in this area.

At present, there is neither complete agreement about the degree of regional inequality in Canada nor about which dimensions of these disparities are fundamental from both theoretical and policy viewpoints. Nevertheless, the importance of these issues cannot be underestimated. It can be argued that the long-run survival of the nation will depend on our ability both to understand the reasons for regional imbalance and to transform this understanding into policies which reduce it. Indeed, there are few countries where the forces producing regional diversity are so great and where the fabric binding the regions into a nation is so fragile.

There are also important economic arguments for policies to redress this imbalance. Clearly, the existence of unemployed resources in any one or a group of regions means that the national welfare is less than if the resources in all regions were productively employed. For example, if only the unemployment rates and levels of earnings per worker in Newfoundland, Prince Edward Island, Nova Scotia, New Brunswick, Quebec and Manitoba were raised to the national average, the increase in total national labour earnings in 1982 would have been in excess of $6.6 billion, an increase of about 3 percent.[1] Moreover, it is likely that reductions in regional disparities would enhance our ability to achieve the traditional macroeconomic objectives (full employment, price stability, a viable balance of payments, economic growth and an equitable distribution of income). For example, although the relationship between unemployment and inflation is somewhat tenuous, there is evidence that, all other things being equal, the greater regional disparities in unemployment are the greater will be the amounts of national inflation and/or unemployment which will simultaneously exist (Thirsk, 1973).

International Comparisons

Regional disparities can be observed in countries at all levels of development and affluence. One might reasonably ask, therefore, whether the Canadian experience is particularly unusual given the situations in other

TABLE 1-1 Unweighted Index of Regional Inequality (Vuw)[a] for Personal Income Per Capita, Canada and the United States, Selected Years.

Year	Canada	United States	
	(10 provinces)	(10 regions)	(50 states)
1961	0.243	0.141	0.193
1966	0.230	0.127	0.168
1971	0.232	0.120	0.150
1976	0.194	0.126	0.151
1981	0.211	0.133	0.142

Sources: Based on data from Statistics Canada, *National Income and Product Accounts* (various issues), and U.S. Bureau of Economic Analysis, *Survey of Current Business* (1961–81).

a. *Vuw* is an unweighted index of variation defined as:

$$Vuw = \sqrt{\sum_{i=1}^{n} (Yi - \overline{Y})^2/n - 1} \Big/ \overline{Y};$$

where n = number of regions; Yi = per capita income in the i'th region and, Y = national per capita income.
$Vuw = 0$ indicates perfect equality while $Vuw = 1$ indicates perfect inequality.

developed countries. In one of the most comprehensive international comparisons of regional inequality, Williamson (1965, p. 12) found that Canada had the distinction of having the highest degree of regional imbalance among the six most highly developed countries (Canada, United States, Sweden, United Kingdom, New Zealand and Australia) and of being the only one of this group which did not exhibit a significant reduction in regional inequality over the period 1945–60. Although more recent comparisons for this group of countries are not available, measures of regional inequality for the United States and Canada, using 1961–81 data, are presented in Table 1-1. While there has been some narrowing of regional differences in both Canada and the United States (at least in terms of per capita income), Canadian disparities remain considerably larger than those in the United States.[2] In fact, if Yukon and the Northwest Territories are included in the calculation for Canada (or alternatively, if Alaska and Hawaii are excluded for the United States index), the difference between the United States and Canada in the degree of regional inequality in 1981 is roughly the same as that calculated by Williamson using data for 1960.

Canadian Regional Disparities: A Description

If there is to be any meaningful discussion of regional disparities, there are three definitional issues which must be addressed at the outset. They

concern the way in which regions are to be defined, what constitutes a disparity and how differences are to be measured. These are critical issues because both the size and importance of any measured disparities will depend on the definitions used. For example, if regions are chosen such that each constitutes a microcosm of the national economy, very little regional imbalance will be observed. Similarly, if income disparities are measured as absolute differences, the regional problem will appear to be much more serious than if they are measured in relative terms.

Measuring Regional Disparities

In the considerable literature dealing with the delineation of regions, the general conclusion is that there is no all-purpose definition of a region. The appropriate definition will depend on both the nature of the problem and the analysis. Given the problem at hand, four of the criteria set out (Brewis, 1969) are particularly relevant. The first is political and administrative coherence. Since Canada is a federal state in which the provinces are important political decision-making units, this would suggest the use of a provincial breakdown in any analysis of regional disparities. Further, given the policy orientation of the research and the fact that it is at the provincial level that most political pressures are felt and where most policies are administered, the use of provinces as regions satisfies this criterion (Nader, 1980).[3] Second, this breakdown also roughly satisfies the criterion of homogeneity, whereby intra-regional variations in terms of income dispersion are minimized, and interregional variations are maximized (Mansell, 1975). Third, although there are some notable exceptions, the use of provinces as the regional units is generally consistent with the requirement of "uniqueness" involving the minimization of situations where individuals live in one region and work in another. Finally, this breakdown is consistent with the criterion of statistical relevance. Although much of the regional data prior to the mid-1960s was only published on a five-region basis, there has been a steady movement toward a ten-province breakdown.

With respect to the measures of inequality, there are also a number of issues for which there are no unequivocal answers. These include such things as: is it absolute or relative regional differences which are relevant? should provincial differences in, say, per capita income be unweighted or weighted by provincial population shares?[4]; which index of inequality should be used?[5] These issues have been dealt with elsewhere (Mansell, 1975, chap. 2) and it is sufficient to note that the particular measure chosen will depend, in part, on value judgements. For our purposes, the focus will be on relative differences as measured by an unweighted coefficient of variation. (See Table 1-1 for a definition.)

The choice of appropriate indicators of regional inequality is somewhat more problematic. Even if one accepts that (because of some notion of horizontal equity and that in a federal system regions do

matter) regional differences in the average well-being of individuals are important, there is still considerable disagreement as to how such differences should be measured. There appear to be two main reasons for this. First, the concept of well-being or welfare embodies numerous elements (for example, per capita income, health, the quantity and quality of employment opportunities, access to social services and a host of other factors), many of which are difficult to define unambiguously. In addition, each element is weighted differently both among individuals and groups of individuals (i.e., regions). While some work has been undertaken to develop workable social indicators which attempt to take account of many of these elements of well-being (ECC, 1974), they are difficult to apply at this stage in any consistent manner.

The second reason is that there are differences of opinion both within and among disciplines as to which are "intermediate" and which are "final" inputs to well-being and which factors are "causes" and which are "effects." For example, while many economists tend to view interregional population movements as part of an efficient adjustment process serving to reduce inequality, a sociologist (e.g., Mathews, 1981) might see this as simply the result of a process whereby some regions are exploited by the wealthier and more powerful ones. Similarly, the provincial politician would see it as a major part of the problem rather than as a part of the solution. That is, since the power to influence economic redistribution within a federal system is influenced by the provincial politician's population base, part of a region's welfare will depend solely on population flows.

For purely practical reasons, this survey focusses on regional disparities in unemployment and income. Having a job is important in terms of social well-being because of the income it produces and because it is a major source of acceptance and self-esteem in our work-oriented society. Further, it is high unemployment rates which most often catch the attention of regional policy makers. Although per capita income is a less publicized measure of social welfare, it is commonly used as the basis for a wide variety of government programs and policies. Moreover, while it is at best a rough proxy for material well-being, it has the advantage of taking into account other elements of social welfare. For example, as indicated by the expression for disposable per capita income for a region (Yp/P) given in equation (1), a rise in the unemployment rate, all other things being equal, will be reflected in lower per capita income. In fact, since measured unemployment rates in any region depend on both the mobility of the labour force and participation rates (Biehl, 1980), it can be argued that a measure such as per capita income is a better indicator of employment disparities than are regional differences in unemployment rates.

$$(Yp/P) = [(TR - T)/P] + [(W + NW)/N] \\ \times [(p)(P_1/P)(1 - u)] \qquad (1)$$

(where: TR = transfers to persons, T = personal taxes, P = population, W = wage income, NW = non-wage income, N = number employed, p = labour force participation rate, P_1 = non-institutionalized population 15 years and over, and u = unemployment rate.)

Similarly, factors such as low labour force participation and wage rates or regional populations with proportionately few in the working-age groups, all of which represent negative elements in terms of social well-being, would be reflected in low levels of per capita income. It is thus evident that the latter is more than just a measure of economic well-being.

It might also be noted in this context that some authors (e.g., Cameron, 1981) contend that it is regional differences in fiscal capacity and the attendant differing levels of public services and/or taxation which constitute the regional problem in Canada. In this view, provincial disparities in per capita income represent little more than a statistical artifact which only serves to hide a number of important dimensions of the regional problem. For example, Cameron notes that the economic well-being of the lowest-income families is frequently greatest in the provinces with the lowest average per capita income. Recognizing this and the other previously mentioned areas of disagreement, the unemployment and income measures of regional disparities are supplemented in a later section with a variety of other indicators.

Regional Unemployment Disparities

Although the unemployment rate is a rather imperfect indicator of the true nature and extent of unemployment in a region,[6] the large regional variations shown in Table 1-2 are, nevertheless, disturbing. Moreover, the tendency for the lowest income regions to have the highest unemployment rates (British Columbia is a notable exception in terms of this correspondence) obtains over all phases of the business cycle. Further, when similar points on the cycle are compared, there is no evidence of a reduction in the degree of inequality in unemployment rates over recent periods (see the values for the coefficient of variation (Vuw) in Table 1-2).

Another significant characteristic of regional unemployment variations is that during periods of rising (falling) national unemployment there are disproportionate increases (decreases) in the unemployment rates, particularly in the Atlantic and Quebec regions (ECC, 1977, p. 49; King and Clark, 1978; Clark, 1979). In the next part of this study we will offer some possible explanations for this phenomenon using structural and market adjustment theories.

Factors Underlying Regional Variations in Unemployment Rates

In order to isolate the factors underlying the large regional variations in unemployment over all phases of the cycle, it is useful to identify the

TABLE 1-2 Provincial Unemployment Rates Relative to the National Average (Actual rates in brackets), and Values for the Unweighted Coefficient of Variation (Vuw), 1966–83

	Nfld.	P.E.I.	N.S.	N.B.	Quebec	Ontario
1966	171 (5.8)		138 (4.7)	156 (5.3)	121 (4.1)	76 (2.6)
1967	155 (5.9)		129 (4.9)	137 (5.2)	121 (4.6)	84 (3.2)
1968	158 (7.1)		113 (5.1)	127 (5.7)	124 (5.6)	80 (3.6)
1969	168 (7.4)		111 (4.9)	152 (6.7)	139 (6.1)	73 (3.2)
1970	128 (7.3)		93 (5.3)	111 (6.3)	123 (7.0)	77 (4.4)
1971	135 (8.4)		113 (7.0)	98 (6.1)	118 (7.3)	87 (5.4)
1972	148 (9.2)		113 (7.0)	113 (7.0)	121 (7.5)	80 (5.0)
1973	182 (10.0)		120 (6.6)	140 (7.7)	124 (6.8)	78 (4.3)
1974	245 (13.0)		128 (6.8)	141 (7.5)	125 (6.6)	83 (4.4)
1975	203 (14.0)	116 (8.0)	112 (7.7)	142 (9.8)	117 (8.1)	91 (6.3)
1976	187 (13.3)	135 (9.6)	134 (9.5)	155 (11.0)	123 (8.7)	87 (6.2)
1977	191 (15.5)	121 (9.8)	131 (10.6)	163 (13.2)	127 (10.3)	86 (7.0)
1978	195 (16.2)	118 (9.8)	127 (10.5)	151 (12.5)	131 (10.9)	87 (7.2)
1979	204 (15.1)	151 (11.2)	136 (10.1)	150 (11.1)	130 (9.6)	88 (6.5)
1980	177 (13.3)	141 (10.6)	129 (9.7)	147 (11.0)	131 (9.8)	91 (6.8)
1981	185 (13.9)	149 (11.2)	136 (10.2)	153 (11.5)	137 (10.3)	88 (6.6)
1982	153 (16.8)	117 (12.9)	120 (13.2)	127 (14.0)	125 (13.8)	89 (9.8)
1983	158 (18.3)	103 (12.2)	111 (13.2)	124 (14.8)	117 (13.9)	87 (10.4)

	Manitoba	Sask.	Alberta	B.C.	Canada	Vuw(%)[a]
1966	82 (2.8)	44 (1.5)	74 (2.5)	135 (4.6)	100 (3.8)	0.446
1967	79 (3.0)	45 (1.7)	71 (2.7	134 (5.1)	100 (3.8)	0.378
1968	87 (3.9)	53 (2.4)	73 (3.3)	131 (5.9)	100 (4.5)	0.340[b]
1969	73 (3.2)	73 (3.2)	77 (3.4)	114 (5.0)	100 (4.4)	0.386[b]
1970	93 (5.3)	74 (4.2)	89 (5.1)	135 (7.7)	100 (5.7)	0.226
1971	92 (5.7)	56 (3.5)	92 (5.7)	116 (7.2)	100 (6.2)	0.229[c]
1972	87 (5.4)	71 (4.4)	90 (5.6)	126 (7.8)	100 (6.2)	0.256[c]
1973	84 (4.6)	64 (3.5)	96 (5.3)	122 (6.7)	100 (5.5)	0.384[b]
1974	68 (3.6)	53 (2.8)	66 (3.5)	117 (6.2)	100 (5.3)	0.604[b]
1975	65 (4.5)	42 (2.9)	59 (4.1)	123 (8.5)	100 (6.9)	0.495
1976	66 (4.7)	55 (3.9)	56 (4.0)	121 (8.6)	100 (7.1)	0.474
1977	73 (5.9)	56 (4.5)	56 (4.5)	105 (8.5)	100 (8.1)	0.486[c]
1978	78 (6.5)	59 (4.9)	57 (4.7)	100 (8.3)	100 (8.3)	0.468[c]
1979	72 (5.3)	57 (4.2)	53 (3.9)	103 (7.6)	100 (7.4)	0.508[b]
1980	73 (5.5)	59 (4.4)	49 (3.7)	91 (6.8)	100 (7.5)	0.435[b]
1981	79 (5.9)	63 (4.7)	51 (3.8)	89 (6.7)	100 (7.5)	0.466
1982	77 (8.5)	56 (6.2)	70 (7.7)	110 (12.1)	100 (11.0)	0.318[c]
1983	79 (9.4)	62 (7.4)	90 (10.8)	115 (13.8)	100 (11.9)	0.290[c]

Source: Based on data from Statistics Canada, *Historical Labour Force Statistics* (1966–83).
a. Excludes P.E.I.
b. Denotes years where national unemployment was at a cyclical low (average value for *Vuw* for these years is 0.443).
c. Denotes years where national unemployment was at a cyclical peak (average value for *Vuw* for these years is 0.341).

extent of the disparities within each of the main unemployment categories. The latter include seasonal, frictional or transitional, structural and demand-deficient unemployment.[7]

Using a five-region breakdown and data for the period 1953–75, Beaudry (1977) calculated for each region the percentage of total unemployment which could be classified as seasonal. He found that, in terms of this measure, the Atlantic and Prairie regions were the most notable cases. For the period 1953–75, this ratio for the Prairies was 60 percent above that for the nation while the comparable figure for the Atlantic region was 33 percent. In comparison, these ratios of seasonal to total unemployment were lower in both regions for the period 1965–75, but, relative to the national average, the position for the Atlantic region actually worsened (from 33 percent above the Canadian average to 38 percent; the comparable figure for the Prairie region in this later period was also 38 percent). Given that both regions are characterized by primary-based economies with very limited degrees of diversification, it would appear that most of these regional differences in seasonal unemployment are related to disparities in industrial structure.

Even if seasonal unemployment was equalized across all regions, there would still exist large unemployment disparities. Thus, the bulk of any explanation for these disparities must involve regional differences in the other three unemployment categories. Unfortunately, the rather limited research in this area is far from unanimous. For example, work by Postner (1980) suggests that the regional differences in frictional unemployment are small. Research by Lazar (1977), however, indicates that the disparities among the Atlantic region, Quebec and the Prairies in frictional unemployment are about the same as those in seasonal unemployment. Moreover, the latter work suggests that, except for Quebec and the Prairies, regional turnover differentials tend to be the main factor behind provincial unemployment disparities in Canada. It might be noted that more recent studies (e.g., Glenday and Alam, 1982) tend to support the view that regional differences in frictional unemployment are in fact quite important.

There is also evidence that there are significant regional differences in the efficiency with which labour markets match jobs and people (that is, in structural unemployment) and in the evenness with which demand is diffused across regions (that is, in demand-deficient unemployment). In one of the more thorough investigations of these differences, Thirsk (1973) found that for the period 1953–66, the rates of structural unemployment were 5.6 percent for the Maritimes, 5.0 percent in Quebec, 2.9 percent in Ontario, 3.0 percent on the Prairies, 3.3 percent in British Columbia and 3.8 percent for Canada. Further, he concluded (1973, p. 129) that:

At least two-thirds of the unemployment differential between Ontario and

the Quebec-Atlantic region is attributable to greater labour market inefficiencies in the latter area, while the residual third reflects inadequate aggregate demand diffusion related to rigidity of the interregional wage structure.

With respect to this last point, it might be noted that he found significant regional differences in the degree of wage responsiveness to unemployment rates. The Atlantic region exhibited the least sensitivity while Saskatchewan, Manitoba and Ontario showed the greatest degree of responsiveness. These points are taken up further in a later section.

Another factor in regional unemployment disparities concerns differences in urban structure. For example, it could be argued that, because of greater diversity and more efficient labour markets, the greater the concentration of a region's population in large urban centres, the lower will be the amounts of non-demand-deficient unemployment. The Economic Council of Canada (1977, p. 126) has examined this hypothesis and, at least for June 1971, found that, while there was a tendency for unemployment rates to vary inversely with urban agglomeration in the Quebec and Atlantic regions, for the other regions, urban unemployment was not significantly influenced by urban size. In fact, in these regions it was generally higher than the regional average. Schofield (1980), however, found that unemployment rates are indeed influenced by urban size. In any case, unemployment rates are influenced much less by urban size than by the region in which the urban centre is located.

In summary, two important conclusions stand out. First, a very sizable portion of the large regional disparities in unemployment is related to a lack of sustained economic growth at the national level. Second, regional differences in seasonal, frictional, structural and demand-deficient unemployment all contribute in a significant way to disparities in regional unemployment rates. Some possible reasons for these differences will be outlined in the next main section of this study.

Regional Income Disparities

The earliest and most comprehensive research into the levels of and trends in Canadian regional income disparities is that by Chernick (1966), McInnis (1968) and Green (1971). The analyses undertaken by Chernick and McInnis covered roughly the same period (1926–64 and 1926–62, respectively) and led to similar conclusions. Specifically, over this long period, the rather large regional disparities in personal income per capita have remained relatively unchanged; although there have been significant short-run fluctuations in these disparities, this conclusion is not significantly altered by changing the period of the analysis; the degree of inequality in terms of earned income (that is, personal income less interest, dividend and net rental income and less government transfer payments) is significantly greater than that in terms of personal income

but leaves the rankings of the individual provinces unchanged; and, over this period, changes in the regional distribution of government transfer payments and non-farm unincorporated business income have been in the direction of decreasing regional income inequality while changes with respect to farm and property income have tended to increase it. The trend in the dispersion of labour income has been about the same as that for personal per capita income.

In his later study, Green analyzed regional differences in gross value added per capita (as a proxy for income) for the period 1890–1956. He concluded that the rapid growth between 1890 and 1910 tended to increase regional disparities but that they tended to stabilize at these levels over the following periods.

In a subsequent study, Mansell (1975) analyzed regional income disparities for the period 1926–71. After taking account of cyclical variations and major disruptions to the economy,[8] the long-run decline in regional inequality, as measured by an unweighted coefficient of variation, was less than one-tenth of one percentage point per year. Moreover, this slight convergence was almost entirely due to a fall in British Columbia's relative income position (particularly in terms of earned income per worker) and, to a lesser extent, a rise in Newfoundland's relative income position.

Since 1971, there have been three developments which could potentially alter these general conclusions. First, the oil price shocks after 1973, combined with their associated policy responses, served to alter greatly the regional distribution of both economic activity and population. Second, it can be argued that only during the 1970s was the pursuit of policies aimed at reducing regional imbalance both significant and sustained. Third, to the extent that regional inequality is related to overall levels of economic growth, the gradual deterioration of national economic performance over this decade might have been expected to alter the regional distribution of income.

To investigate the impacts of these developments, indexes of inequality have been computed for the period 1970–82,[9] and these are presented in Table 1-3.

As indicated by the values for the unweighted coefficient of variation (Vuw), the slight convergent trend observed over earlier periods is maintained over this later period. However, this equalization is neither general nor necessarily permanent. As can be seen, it is almost entirely due to a dramatic drop in Ontario's relative position which is only partly offset by gains in Alberta and, to a lesser extent, Quebec. If, as is commonly believed, the gains by Alberta and losses by Ontario were, in large part, attributable to the substantial increases in energy prices over this period, any stabilization in energy prices will likely mean a reversion to their former relative positions.

TABLE 1-3 Provincial Personal Income Per Capita as a Percentage of the National Average and Values for the Unweighted Coefficient of Variation (Vuw), 1970–82

	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T.&N.W.T.	Vuw(%)
1970	63.4	66.5	77.5	72.0	88.7	118.4	92.9	72.4	99.3	108.9	94.6	0.238
1971	63.7	63.4	77.5	72.2	88.7	117.0	94.0	80.3	99.0	109.0	86.5	0.232
1972	63.9	66.3	79.8	73.6	89.5	116.0	93.6	78.8	98.4	109.3	88.4	0.223
1973	64.0	70.2	79.8	73.3	89.2	113.6	96.0	91.5	99.6	110.9	88.4	0.206
1974	67.3	66.4	79.6	74.3	90.6	111.8	94.7	96.1	100.2	110.2	93.3	0.201
1975	68.6	70.2	79.2	77.2	91.2	109.9	96.4	103.9	103.0	108.1	92.3	0.186
1976	68.3	67.7	78.5	75.3	93.5	109.5	93.1	98.7	101.8	108.7	92.7	0.194
1977	68.8	67.3	79.6	74.8	93.7	109.5	92.4	91.6	102.4	110.1	97.5	0.197
1978	66.9	71.0	80.6	74.9	93.9	108.9	92.3	91.9	103.4	110.2	96.6	0.191
1979	67.0	69.1	80.4	75.1	93.4	108.3	90.6	92.0	107.5	110.6	98.1	0.197
1980	65.4	70.7	78.9	72.6	94.1	107.6	88.7	91.6	109.3	111.3	101.5	0.204
1981	65.1	67.4	76.8	70.4	93.6	107.4	93.1	99.7	110.3	108.7	103.8	0.211
1982	66.8	69.4	78.6	71.9	93.6	107.8	93.3	96.3	109.2	107.6	101.5	0.200

Source: Based on data from Statistics Canada, *CANSIM* (Matrices 1, 555–562).

Other Measures of Income Disparities

As noted by Abouchar (1971), there are a variety of reasons why personal income per capita may be a rather poor measure in terms of interregional comparisons of economic well-being. These include the fact that it does not take account of: the substantial scale economies associated with household size or the fact that the number of wage earners per household falls as household size increases; taxes, transfer payments and price levels, all of which are important determinants of purchasing power; and regional variations in the shape of the income distribution, consumer debt patterns, intermediate goods (automobiles and urban services), housing imputation and income in kind.

The effects of incorporating regional differences in household size, income taxes, transfer payments and price levels[10] are outlined in Table 1-4. As indicated by a comparison of the figures for disposable and market income, the combination of income taxes and transfers serves to narrow considerably per capita income differences. Further, as observed by Chernick (1966, p. 23) for an earlier period, there continues to be a significant convergence over time in terms of per capita disposable income, and this is due primarily to the equalization effects of the tax and transfer system. For example, the coefficient of variation with respect to per capita market income is 0.266 for 1982 compared to 0.300 for 1949, whereas the respective values using per capita disposable income are 0.180 and 0.270.[11]

When income comparisons are made on a per household rather than a per capita basis, there is a significant reduction in disparities. For example, in 1981, per capita personal income in Newfoundland was about 65 percent of the national average, but in terms of per household personal income it moves up to 88 percent.

Finally, although the regional price indexes used are only crude measures of regional cost of living differences, they do indicate that such price variations do not significantly alter the degree of measured inequality. This agrees with earlier work by Chernick (1966, p. 50). In fact, the only major changes are a drop in the relative positions of British Columbia and Ontario and significant gains by Manitoba and Saskatchewan.

It is tempting to draw from these types of comparisons the conclusion that regional disparities in economic welfare (as measured by inequalities in disposable income) are not a serious problem, even though there are large and persisting disparities in market-produced income. In fact, it could be argued that, as in the past, regional disparities in living standards can continue to be reduced, even though regional inequalities in market income remain large and unchanged, simply by expanding the federal tax-transfer system used to redistribute income from the have to the have-not regions. This would, however, require the quite unrealistic assumptions that there are no limits to the amount of interregional

TABLE 1-4 Alternative Measures of Regional Income Disparities, 1971 and 1981 (Canada = 100)

Index	Year	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Vuw(%)
Market income per capita[a]	1971	55.1	53.6	69.3	66.5	88.5	119.6	93.2	79.1	98.3	109.6	0.285
	1981	53.8	57.5	69.6	63.2	90.7	110.5	92.7	98.7	114.1	110.3	0.274
Personal income per capita[b]	1971	63.7	63.4	77.5	72.2	88.7	117.0	94.0	80.3	99.0	109.0	0.232
	1981	65.1	67.4	76.8	70.4	93.6	107.4	93.1	99.7	110.3	108.7	0.211
Personal disposable income per capita[c]	1971	68.1	68.0	79.8	75.0	89.6	114.8	95.5	85.5	99.6	108.6	0.203
	1981	67.3	71.6	78.7	72.3	90.8	108.3	97.9	104.4	109.0	108.4	0.195
Personal disposable income per household	1971	90.1	76.2	84.9	84.4	94.1	111.1	91.6	82.8	97.6	99.4	0.136
	1981	87.6	79.2	83.0	79.7	91.5	107.0	95.5	103.4	109.4	101.5	0.130
Real personal disposable income per household[d]	1971	89.9	N.A.	82.7	89.3	96.2	106.3	96.4	88.3	97.2	89.8	0.102[e]
	1981	81.5	N.A.	82.5	83.7	94.9	103.2	101.1	111.4	109.3	90.9	0.125[e]

Sources: Based on data from Statistics Canada, *CANSIM* (Matrices 1, 555–562; 7002–7031); and Census of Canada (1971, 1981).
a. Defined as wages and supplementary income, net unincorporated business income, net farm income, and interest, dividend and miscellaneous investment income, all calculated on a per capita basis for the region as a percentage of that for Canada.
b. Personal income is market income plus transfers to individuals.
c. Personal disposable income is personal income less personal income taxes and contributions to social security.
d. Regional price indexes calculated from inter-city partial consumer price index (Winnipeg = 100, May 1971) and city consumer price indexes.
e. Note that the values for this measure exclude P.E.I. and hence cannot be compared to those for the other income measures.

transfers which the federal government can institute and that such transfers will not impede either national economic growth or the regional adjustment process. The current federal deficit, combined with a strained fiscal equalization system, would suggest that solving the problem of regional economic welfare disparities through the tax-transfer system has gone about as far as possible and, in the eyes of many, too far. Moreover, as argued by Courchene (1981), such a solution creates a transfer dependency which only serves to prevent the types of market adjustments necessary to reduce regional disparities permanently. It is clear, therefore, that a major part of the regional economic problem remains that of inordinately large and unchanging inequalities in market income.

Factors Underlying Regional Disparities in Market Income

Earned income (defined as wages, salaries and supplementary labour income, military pay and allowances, net farm income and net income from non-farm unincorporated enterprises) typically accounts for about 85 percent of market income. This, combined with the fact that the residual — property income in the form of interest, dividends, and net rental income — shows much less regional variation (on a per capita basis) than does earned income, would suggest that any explanation of disparities in market income must primarily involve an explanation of regional differences in earned income.

It is useful to note at the outset that regional disparities in earned income per capita tend to vary directly with the level of national economic activity. For example, both Chernick (1966, p. 11) and Denton (1966, App. E) found that over the postwar period, regional inequalities in earned income per capita were significantly and negatively related to the national unemployment rate. This relationship is also evident when more recent data are used,[12] and it is similar to that observed using U.S. and British Columbia data (Bain, Paterson, and Rae, 1974). This is in sharp contrast to the behaviour of unemployment disparities. As previously noted, the level of inequality in regional unemployment rates exhibits a positive relationship with the national unemployment rate.

Standardization analysis has been most commonly used to isolate the factors associated with earned income disparities.[13] The application of this approach to Canadian data for the period 1947–63 led Chernick (1966, p. 26) to conclude that roughly 60 percent of the regional differences in earned income per capita was due to regional variations in earnings per worker. The remaining 40 percent was accounted for by differences in unemployment rates, participation rates and population age-structures. The results from the same type of analysis using provincial data for the period 1975–82 are presented in Table 1-5.

On the basis of these figures, it would not appear that the more recent

TABLE 1-5 Unweighted Coefficient of Variation (Vuw) Using Actual
and Standardized Values for Earned Income
Per Capita (Ye/P)

Index	1975	1977	1979	1981	1982
Vuw, with actual Ye/P	0.237	0.255	0.245	0.256	0.249
Vuw with Ye/P calculated using national values for earned income per worker	0.142	0.145	0.136	0.130	0.125
Vuw with Ye/P calculated using national values for earned income per worker and the unemployment rate	0.121	0.115	0.105˙	0.099	0.097
Vuw with Ye/P calculated using national values for earned income per worker, unemployment and participation rates	0.091	0.097	0.098	0.099	0.095

Source: Based on data from Statistics Canada, *CANSIM* (Matrices 1, 555–562, 2074–2098). (See Note 12 for methodology.)

evidence leads to any substantive changes in Chernick's conclusions. Regional differences in earned income per worker singularly account for at least half of the disparities in per capita earned income. In fact, assuming one can discern trends from this relatively short time period, there only appear to be some small changes in the contributions of the various factors. Specifically, in 1975, an equalization of earnings per worker would have reduced the level of inequality by 9.5 percentage points (that is, 23.7 – 14.2), whereas, for 1982 the figure is 12.4 percentage points. If, in addition, unemployment rates were equalized across all regions, the level of inequality in per capita earned income would have dropped by a further 2.1 percentage points in 1975 and 2.8 percentage points in 1982. The additional reductions from an equalization of participation rates would be 3.0 and 0.2 percentage points respectively for 1975 and 1982. As shown by the last row of figures, the contribution of regional differences in age structure has remained relatively constant. Thus, one might conclude that, at least for this period, disparities in earned income per worker and unemployment rates have been operating to increase per capita income disparities while the opposite can be said with respect to labour force participation rates.

REGIONAL DIFFERENCES IN EARNED INCOME PER WORKER

There is a wide variety of factors which could be relevant in explaining the large regional variations in earned income per worker. Some of the more obvious include regional differences in: industrial and occupa-

tional structures; hours worked per week; labour quality; capital per worker; technology; management skills; urban structure; and scale economies. Fortunately, there has been a reasonable amount of research into the importance of most of these factors, at least from a descriptive viewpoint. The main conclusions are summarized below.

Perhaps one of the most surprising conclusions is that the large regional differences in industrial or occupational structure explain very little of the disparities in per worker incomes. Following the analyses undertaken by Denton (1966) and Poduluk (1968) which first pointed to this result, Auer (1979) and the Economic Council of Canada (1977, p. 65), using data for the period 1970–73, also concluded that industrial structure was of minor importance in explaining regional variations in productivity and wages. In fact there were only two instances where poor industrial structure offered any significant explanatory power. These were in Prince Edward Island where employment tends to be closely tied to agriculture and fishing, and in Saskatchewan where a high proportion of employment is related to agriculture. Drugge (1983), using data for the same period but a more sophisticated standardization technique, also concluded that the industrial structures in the low income regions (for example, Quebec and the Atlantic provinces) explains little of their relatively low wage rates.

The conclusion that regional differences in the average length of the work week do not significantly contribute to regional disparities in earnings per worker is equally clear. In fact, as Denton (1966) observed, with the exception of British Columbia (which historically has had the shortest work week), provincial differences in this variable work in the direction of reducing inequalities in earnings per worker.

The role of regional variations in labour quality in regional differences in output per worker (and, by implication, differences in earned income per worker[14]) has been most recently investigated by the Economic Council of Canada (1977, pp. 70–80) and Auer (1979). In these analyses, labour quality was defined in terms of three characteristics known to be important determinants of labour earnings: age, sex and education. Although this measure is admittedly crude and the analysis embodies some fairly restrictive assumptions (for example, that output per worker is the main determinant of earnings per worker), the results are, nevertheless, suggestive. Specifically, variations in labour quality defined in this manner appear to account for approximately 20 percent of all provincial differences in output per worker, with inequalities in educational attainment being the largest contributor. The two extreme cases were Newfoundland and British Columbia; labour quality accounted for just under one-half of Newfoundland's 15 percent below-average output per worker and two-thirds of British Columbia's 9 percent above-average figure.

It is well known that the amount of capital input per worker is an important determinant of per worker output and earnings. Moreover,

given the enormous provincial variations in capital per worker (for example, in 1973 it varied from $55,963 in Saskatchewan to $31,132 in Prince Edward Island), this would seem to be a potentially important factor in the observed regional disparities in productivity. After adjustments to remove any biases due to the large interindustry variation in capital per worker and regional differences in industrial structure, Auer (1979) and the Economic Council of Canada (1977, p. 82) concluded that provincial variations in capital intensity did explain, on average, about one-half of the variations in output per worker, but its contribution was much less consistent than the inequalities in labour quality. In the cases of Saskatchewan, Alberta and British Columbia, it was the main reason for above-average productivity while for Prince Edward Island and Quebec, it was a major negative factor. For the remaining provinces, such variations explained only a marginal amount of the productivity inequalities. It must be emphasized, however, that these results are based on the rather restrictive assumption that the average and marginal product of labour are equal. As such, they should be interpreted more as being suggestive than definitive.

Taken together, it would appear that differences in labour quality and capital intensity could account for roughly 70 percent of the provincial variations in per worker output and earnings. As for the remaining 30 percent, there are a large number of factors which are, no doubt, relevant, but their individual roles have not been quantified. Further, the importance of these other factors is spread quite unevenly across the provinces. In particular, it would seem that they would have the largest explanatory power for the below-average productivity performance of the Atlantic provinces (ECC, 1977, Table 5-12).

On the basis of regional data on computers, newsprint plants and shopping centres, the Economic Council of Canada (1977, pp. 87–92) concluded that significant differences exist between the low- and high-productivity regions in the rate at which new technology is adopted. Further, this tendency was most notable in the case of the Atlantic provinces. Although there were some exceptions, this conclusion was also supported by a number of Newfoundland studies (Martin et al., 1979; ECC, 1980; Good, 1980). Similarly, on the basis of data on the educational attainment of managers, the location of head offices, and research and development expenditures, research also indicates that regional variations in the endowments of entrepreneurial ability, the effectiveness of management and the amount of research do play some role in regional productivity differences (ECC, 1977).

However, as noted in the Newfoundland productivity research (ECC, 1980; Copithorne, 1981), location and seasonality, as reflected in an establishment's utilization rate, are statistically more significant than many of these latter factors. In peripheral regions like Newfoundland where markets are very small and scattered and where the entire economy is extremely seasonal, the amount of capital invested in all kinds of

establishments, from fish plants to grocery stores and hotels, is very high relative to the amount of labour employed, and relative to the volume of business. As a result, average costs are very high, and capital is poorly utilized.

Although there are significant variations across Canada in the rural-urban population distribution, this factor explains little, if any, of the regional differences in earnings per worker (Denton, 1966, p. 13). Another factor along these lines, which has been investigated, is regional differences in the size distribution of urban centres. The existence of agglomeration economies and the fact that the most highly paid occupations tend to be disproportionately represented in the large urban centres, would suggest that per worker earnings will increase with the average size of a region's urban centres. In fact, the observation that the differences in average salaries across the largest regional cities are significantly less than those across provinces is consistent with this view (Lacroix, 1982; Waslander and Eyford, 1984). Although a complete analysis of this had not been undertaken, the results of a study by Boisvert (1978) based on value added per worker in the manufacturing sector are suggestive. Specifically, it was found that, after controlling for capital per worker, this measure does increase with city size at first but at decreasing rates and actually declines after the population rises above 1.4 million. However, when this result is combined with the observed regional variations in the structure of urbanization, the results indicate that the productivity gains associated with an equalization in urban structures across regions, all other things being equal, would not be very large.

Other potentially important factors in terms of explaining regional productivity and earnings differences include provincial variations in output price, demand and plant size. Using 1961–75 data for Canadian breweries (an industry for which differences in technology and product characteristics are minimal), Denny and May (1980) attempted to quantify the importance of each of these factors. Their results indicate that: there are large regional variations in average plant size, and there is a strong positive correlation between this variable and factor productivity; regional productivity differentials have changed only modestly over the period with the only significant changes being an increase in relative productivity in the Atlantic regions and a decrease in British Columbia; and the existence of a small average plant-size or slow growth in demand has not led consistently to low rates of growth in factor productivity.

In a subsequent analysis, Denny and May (1981) examined the productivity levels and intertemporal productivity changes over the period 1961–75 for two-digit manufacturing industries across the five Canadian regions. Their analysis indicated that, while there were significant regional differences in overall factor productivity in most of the industries, the Atlantic region, with one exception, had levels considerably

below those in the other four regions. On the positive side, however, they observed that the highest rates of productivity growth for a substantial number of industries occurred in the Atlantic and Quebec regions so that, at least for the period covered, there was some evidence of a convergent trend in regional differences in manufacturing productivity levels.

It is risky to generalize; nonetheless, these results would suggest that regional differences in scale economies and in the rate at which new technology is adopted could explain a significant part of the roughly 30 percent "unexplained" regional disparities in output per worker. As noted earlier, roughly 20 percent of the inequalities in per worker output and income appear to be related to disparities in labour quality while 50 percent might be attributable to regional differences in capital per worker.

REGIONAL DIFFERENCES IN EMPLOYMENT BASES

Regional differences in the employment base (that is, the proportion of the population which is employed) arise from variations in any one or a combination of unemployment rates, participation rates and population age structures. Moreover, as noted earlier, these three factors account statistically for over 40 percent of the post-war regional inequalities in per capita earned income.

Although frequently overlooked, regional differences in the population age-structure are important determinants of regional employment base disparities and hence inequalities in per capita income. For example, such differences give rise to disparities in the ratio of the non-institutional working-age population to the total population (denoted P_1/P; see note 13). In addition, differences in the age structure generate disparities in both unemployment and labour force participation rates, since both exhibit a definite pattern with respect to age groups.

Regional disparities in population age-structure can arise from any one or a combination of differences in survival, fertility and migration rates. Although there are significant provincial variations in infant mortality rates (see Table 1-6), overall survival rates show only minor deviations and hence would not appear to be a significant contributing factor. While this would narrow the causes down to differences in fertility and migration rates, it is difficult, because of the dynamics involved, to separate their individual effects. For example, it is tempting to argue that the low value for P_1/P in, say, Newfoundland is due, primarily, to long periods of net out-migration which tends to be concentrated in the working-age groups. This is contradicted, however, by the Alberta case which, in spite of many years of substantial net in-migration, exhibits a value for P_1/P which is considerably below the national average.

Given the complex dynamic interaction of these two factors and the

existence of long-term echo effects, the only way to shed light on their relative importance is to employ a cohort-survival model of population growth. Although such models have been used to address other issues (Denton and Spencer, 1973), they have not been applied to the problem of quantifying the factors underlying disparities in population age-structure across Canadian regions.

In spite of the very large variations in labour force participation rates (for example, in 1982 they ranged from 52.9 percent in Newfoundland to 70.9 percent in Alberta), the results previously presented in Table 1-5 indicate that, all other things being equal, an equalization of these rates would not greatly alter the overall level of inequality in earned income per capita. However, this result is somewhat illusory because the large gains to the lowest income provinces tend to be offset by losses for other provinces. For example, using 1982 data, an equalization in participation rates would raise earned income per capita in Newfoundland by 21 percent, in New Brunswick by 16 percent, in Nova Scotia by 11 percent, in Prince Edward Island by 9 percent and in Quebec by 7 percent. The main losses would be in Alberta (-10 percent), Ontario (-5 percent) and Manitoba (-1 percent). It might also be noted here that Beck and Maki (1978) found that low female participation rates were a major factor in explaining low average income and high poverty rates in the Atlantic region.

The literature on the determinants of participation rates is extensive. For Canada, some of the seminal work (Kaliski, 1962; Montague and Vanderkamp, 1966; Swidinsky, 1969, 1970; Proulx, 1969; Officer and Anderson, 1970) suggests that the following variables are important determinants: age and sex; level of wage rates and per capita income; unemployment rates; level of education; marriage rates; fertility rates and family size; and industrial/occupational structure of labour demand.

Unfortunately, very little of this research has been conducted on a regional basis, and hence it is impossible at this point to say much about the relative importance of each of these factors in terms of explaining the tendency for overall participation rates to be low in low income regions. However, some generalizations as to the direction of the effects can be noted. First, since participation rates tend to be highest for the prime working-age males, low overall participation rates will be observed in those low income regions which have a low proportion of the working-age population in this group. Second, low overall provincial participation rates tend to be caused by disproportionately low female participation rates. The latter, in turn, are partly explained by the higher birth rates, lower education levels and lesser availability of household labour-savings devices which tend to typify the low income region. Third, for males especially, there tends to be a positive relationship between the participation rate and wage rates. Again, since low wage rates are generally

a characteristic of low income regions, this would also partly explain the regional coexistence of low participation rates and low per capita income. Fourth, to the extent that the low income regions have narrow and blue-collar-oriented industrial bases, low average participation rates could be attributable, in part, to the absence of jobs suitable for women and for the very young and older members of both sexes. Along these same lines, the Economic Council of Canada (1977, p. 142) has suggested that urban structure also plays a role. Specifically, there is a positive relationship between participation rates and city size, and this is attributed to the greater diversity of jobs in larger cities.

Finally, the existence of "discouraged worker" or "added worker" effects implies a systematic relationship between unemployment and participation rates. For regions such as Quebec and the Atlantic provinces where unemployment rates are typically much higher than the national average, strong discouraged worker effects could partially explain the below-average overall participation rates. Unfortunately, there is considerable disagreement in the literature as to which effects dominate. For example, Proulx (1969) found that, on the basis of Canadian time series data, added worker effects dominate with the only discouraged worker effects showing up for males aged 14–19 and females aged 20–29. On the other hand, Swidinsky (1969; 1970), using cross-section data, found a predominance of discouraged worker effects while Swan (1974) found the only statistically significant unemployment effects for five Canadian regions to be those of the added worker variety. Different results would probably be obtained if account was taken of the regional differences in structural unemployment. In any case, it is fairly clear that the observed variations in regional participation rates cannot be offered as a cause of regional disparities in earned income per capita. Rather, they are largely the effect of poor or non-existent job opportunities.[15]

The final component of the employment base to be discussed is the unemployment rate. As previously noted, there are large disparities in this variable, and they are particularly acute during periods of high national unemployment. While there can be little doubt about the large social and economic costs associated with the very high rates which characterize the low income regions (British Columbia is a notable exception in this regard), their independent role in explaining per capita earned income disparities is considerably less than commonly believed. For example, if, other things being equal, provincial unemployment rates were equalized to the national average for 1982, the increases in earned income per capita for Newfoundland, Prince Edward Island, Nova Scotia, New Brunswick and Quebec would have been, respectively, 6.7 percent, 1.6 percent, 2.5 percent, 3.9 percent and 3.2 percent. Of course, to the extent that high unemployment rates produce negative

effects in terms of the other variables (for example, participation rates), the true effects of such an equalization in unemployment rates will be larger.

Other Regional Disparities

A compendium of some rather arbitrarily chosen demographic, social and fiscal indicators intended to provide a more complete picture of Canadian regional disparities is presented in Table 1-6.

Differential rates of natural increase (births minus deaths) and migration affect the distribution of population and political power as well as the number of dependants per working-age person. Most of the differences in population growth rates are due to differences in net migration, and there is a close correspondence between population growth and economic growth. Aside from the fact that provincial politicians have a vested interest in population growth, their population base is an important determinant of the number of federal policies benefitting their region. Moreover, for reasons outlined in the next section, there tends to be a positive relationship between regional growth rates and regional wage and income levels.

Assuming infant mortality rates are a significant indicator of the quality of health care, regional disparities in this area have declined rapidly and are currently relatively small. While other indicators such as numbers of hospital beds, dentists or nurses per unit of population or per capita and health care expenditures show somewhat larger variation, the degree of regional inequality in them has also declined over time. In comparison, there are significantly larger differences in educational expenditures; however, these may simply reflect cost differentials more than actual disparities in educational opportunities. Of greater concern, perhaps, are the differences in the percentages of the eligible population attending secondary educational institutions.

Although the disparities in such things as suicide, divorce and abortion rates probably reflect certain socio-cultural differences to a large degree, the large inequalities with respect to these indicators do suggest significant regional differences in "social stress." Further, a variety of indicators such as automobile, dishwasher and other household device ownership tend to follow the trend in income disparities.

Finally, while there is a reasonably uniform pattern of per capita provincial/local government expenditures, there are large differences in the manner in which these are financed (Courchene, 1981, p. 507). Specifically, the proportion of these financed through federal transfers (versus own tax sources) is particularly high for the lowest income provinces, and there are also large disparities in the proportions financed out of resource rents. Both of these represent important political and economic issues. In addition to straining the fiscal equalization system

TABLE 1-6 Demographic, Social and Fiscal Indicators by Region, Selected Years

	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon	N.W.T.	Canada
Demographic													
Population Share							(percent)						
1981	2.3	0.5	3.5	2.9	26.4	35.4	4.2	4.0	9.2	11.3	0.1	0.2	—
Population Change							(percent)						
1976–1981	1.8	3.6	2.3	2.8	3.3	4.4	0.5	5.1	21.7	11.3	6.4	7.3	5.9
Natural Increase	6.3	3.9	3.3	4.3	4.3	3.7	3.9	5.0	6.7	3.9	8.2	12.1	4.3
Net Migration	-4.5	-0.3	-1.0	-1.5	-1.0	0.7	-3.5	0.1	15.0	7.4	-1.8	-4.9	1.6
Youth Dependency Rates							(percent)						
1971	65.9	55.4	50.6	53.9	46.6	45.5	47.3	50.9	51.7	44.5	55.0	78.2	47.5
1981	46.9	39.4	35.7	38.4	31.2	32.1	35.8	38.9	35.3	31.7	37.3	55.9	33.2
Old Age Dependency Rates							(percent)						
1971	10.9	19.1	15.2	14.5	10.8	13.3	15.8	17.2	11.9	15.0	4.4	3.9	13.0
1981	12.3	19.3	16.6	15.6	12.7	14.8	18.3	18.9	10.7	16.0	4.5	4.6	14.3
Median Age							(years)						
1981	25.2	28.8	29.3	28.1	29.7	30.6	29.9	28.7	26.9	30.9	26.6	22.0	27.6
Social													
Infant Mortality Rate						(number of deaths per 1,000 live births)							
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
1982	10.8	7.8	8.6	10.5	8.8	8.8	9.1	10.5	9.8	9.9	21.0	16.2	9.1
Average Life Expectancy							(years)						
Males at Birth													
1975–77	70.58	69.19	69.45	69.73	69.06	70.55	70.65	71.13	71.07	70.95	—	—	70.19
Females at Birth													
1975–77	77.38	78.21	77.81	77.74	76.52	77.66	77.87	78.64	77.92	78.40	—	—	77.48
Physicians						(number per 1,000 population)							
1980–81	141	120	182	112	185	189	179	147	160	189	128	95	179
Hospital Days							(days per capita)						
1977–78	1.4	1.7	1.6	1.8	2.3	1.7	1.8	2.2	2.0	2.2	—	0.5	2.0

TABLE 1-6 (cont'd)

	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon	N.W.T.	Canada
Health Care Expenditure 1978					($ per capita)								
	524	580	670	547	651	801	680	641	755	726	—	665	689
Education Expenditure 1979–80					($ per capita)								
	727	701	742	664	971	841	737	752	851	752	1,258	1,436	855
Full-time College and University Enrollees 1979–80					(percent of population 18–24 years)								
	10.9	12.9	17.4	12.7	24.8	25.1	14.1	13.0	16.2	14.3	—	—	21.0
Abortion Rate 1981					(number per 100 live births)								
	4.1	1.4	14.1	4.1	9.4	24.7	9.5	9.6	17.0	31.8	23.6	16.9	17.5
Divorce Rate 1981					(number per 100,000 population)								
	100	153	270	192	298	251	234	200	376	347	324	144	278
Suicide Rate 1981					(number per 100,000 population)								
	4.2	7.4	10.9	11.1	16.4	12.5	14.0	17.7	15.4	14.5	21.6	21.9	14.0
Automobiles 1982					(number per 1,000 population relative to national average)								
	53	92	100	83	86	103	105	89	127	118	67	32	100
Automatic Dishwashers 1982					(percent of households)								
	14	17	19	23	35	29	32	34	51	39	—	—	33
Fiscal Consolidated Provincial-Local Government Expenditure					($ per capita relative to the national average)								
1960	79.8	80.2	85.2	88.7	86.6	106.3	98.5	107.3	118.3	119.3	59.5	100	
1979	99.9	92.2	84.7	80.7	108.3	88.8	91.1	105.7	129.4	101.4	239.8	100	

							($ per capita)					
Federal Transfers to Provincial Governments Per Capita												
1960	115	117	76	85	28	26	47	58	47	41	54	39
1979	1,168	1,310	943	1,052	618	332	759	459	363	378	4,927	520
Federal Transfers to Individuals ($ per capita)												
1977	512	—	464	496	378	320	350	326	255	391	—	—
Resource Rents Retained ($ per capita)												
1980	856	626	953	1,220	952	789	1,085	1,619	3,814	1,025	1,426	1,206

and impeding a variety of interregional adjustments, disparities in regional tax and resource rent bases have become increasingly contentious political issues.

Explanations of Regional Economic Disparities

The foregoing types of analysis are useful in determining the important characteristics of Canadian regional disparities. However, they are by nature purely descriptive and therefore have little to offer in terms of isolating the basic causes of the problem. For the latter, distinctions must be made between cause and effect, and it is here that theory and its empirical verification play a dominant role. The objective in this section is to outline various theories concerning the causal relationships among the multitude of variables already discussed in an attempt to shed some light on the basic causes (versus symptoms) of regional economic disparities in Canada.

The literature in the field of economics which is relevant to this problem can only be described as vast and varied. Although it tends to fall within the scope of regional economics or regional science, it actually covers such diverse fields as trade, labour, natural resources, industrial organization, economic growth, income and employment determination, economic development and public finance. Moreover, since there are often competing paradigms within each field, any attempt to provide a comprehensive summary is difficult if not impossible.

The theories outlined here are restricted to the two main economic disparities discussed earlier: differences in unemployment rates and in per capita market incomes. Further, although there is considerable overlap, two categories are employed. The first, designated as structural theory, involves explanations which hinge primarily on regional differences in resource bases, locational factors, industrial/urban structures and institutional characteristics. On the other hand, the market adjustment theories comprising the second category emphasize economic processes involving interregional movements of labour, capital, commodities and technology. It must be stressed that this distinction between theory types is made only for purposes of organizing the vast literature relevant to this topic. While there are differences in emphasis, the fundamentals of the theories are often quite similar.

Causes of Regional Unemployment Disparities

CYCLICAL DISPARITIES

The tendency for regional unemployment disparities to vary directly with the level of national unemployment implies that part of the reason for these inequalities is the failure to maintain full employment at the

national level. However, in order to go beyond this rather superficial explanation it is necessary to isolate the factors behind this statistical relationship.

Structural Theories

There is no empirically validated theory which explains this phenomenon; some elements, however, have been investigated. Within the category of structural theories, studies for other countries (Thirlwall, 1966; Siegal, 1966; McKee, 1967) suggest that it may be due to three types of factors. The first is regional differences in the proportion of cyclically sensitive industries. Many primary- and durable-good manufacturing industries fall into this latter category. The second is regional differences in the proportion of small firms and firms which do not have highly skilled or specialized labour requirements. In general, small firms are more sensitive to business swings than larger ones; the less skilled, specialized and mobile a firm's labour, the less the tendency to "hoard" or maintain its labour force during an economic downturn. Finally, there may be regional differences in the proportion of branch plants or differences in product mix. For example, it has been observed that, during an economic slowdown, there is a tendency to scale down production in branch plants more than in the parent operations, and this tendency is greatest in branch plants in the smaller and lower income regions. Although we suspect that these factors at least partially explain the Canadian situation, to our knowledge there have not been any studies quantifying their significance.

Market Adjustment Theories

Most of the research concerning this relationship between unemployment disparities and national economic activity has been conducted within the framework of equilibrium-type theories. Swan (1974) examined and rejected the plausibility of an explanation hinged on regional differences in the cyclical behaviour of labour supply. For example, it was hypothesized that, during a downturn, labour force participation rates would fall less in, say, Newfoundland than in Ontario, and, as a result of this, the unemployment rate would rise more in the former than in the latter.

Another explanation for this cyclical or short-run phenomenon lies in the behaviour of interregional migration. As indicated by Vanderkamp (1968), there is a tendency for return migration to increase during periods of high national unemployment. Since regions like the Atlantic provinces generally exhibit net out-migration, it may be that the disproportionate increase in their unemployment rates during periods of rising national unemployment is simply due to increases in the volume of return migration and a reduction in out-migration. This is also consistent with Vanderkamp's finding that high national unemployment has a nega-

tive effect on the volume of interregional migration. Thus, given that mobility appears to be an important leveller of regional unemployment (Wrage, 1981), the result of less migration would be increased unemployment disparities across regions.

Other arguments along these lines should also be noted. For example, when unemployment rates fall in regions like Ontario, there is a statistically significant increase in the movement of workers from regions such as the Atlantic provinces to Ontario (Boadway and Green, 1981; Gauthier, 1980; ECC, 1980). On the other hand, during economic recessions it would appear that there is a reduction in this migration as the employment opportunities in regions such as Ontario shrink and the wage gap declines. At the same time, natives of the high unemployment regions (who often have less education and seniority) are frequently laid off first and return home to places like Newfoundland where their unemployment insurance benefits last longer (because of the Regionally Extended Benefits introduced in 1971) and where the costs of survival are lower, since they can live with family and friends. [16]

SECULAR DISPARITIES

The existence of large regional disparities in unemployment over all phases of the cycle is unquestionably a very significant part of the problem. However, as previously noted, the important factors here are the regional differences in seasonal, frictional and structural unemployment, with the residual related to an uneven diffusion of demand across regions due to differences in the degree of wage rigidity.

Structural Theories
Most explanations for the disparities in seasonal unemployment are structural in nature. The fact that most of this unemployment is concentrated in the Atlantic and Prairie regions suggests that it is the narrow, resource-based industrial structures which are at the root of this problem. Moreover, there is evidence that, in provinces such as Newfoundland where seasonality is the greatest, it is in part due to the operation of the transfer system. For example, the existence of extended unemployment insurance benefits means that many individuals who would otherwise obtain less seasonal employment (in most cases by moving) are able to maintain a viable living standard by alternating between unemployment insurance income and income earned in a highly seasonal activity (ECC, 1980; Glenday and Alam, 1982).

There are a number of possible explanations for regional differences in frictional unemployment. These include differences in the nature of jobs, the character of workers and the availability of transfers. The research in this area is quite incomplete; nevertheless, it does suggest that at least the last factor is significant. For example, after controlling

for such things as the socio-economic characteristics of workers, reasons for job separation and the national unemployment rate, research by Glenday and Alam (1982) does suggest that more generous unemployment insurance benefits (such as those available in Newfoundland) create a tendency toward temporary jobs that are complementary to unemployment insurance and which create greater turnover rates.

With the exception of several region-specific studies (e.g., ECC, 1980; Postner, 1980; Wilson, 1981) there is little empirical research into the reasons for the high levels of structural unemployment particularly in the Atlantic and Quebec regions. From a purely theoretical viewpoint, there are numerous possible explanations. One is that this market inefficiency arises simply because the labour force is inadequately trained for the existing employment opportunities (either because skill levels are low across the board or because technological change has made skills redundant at a faster rate than new ones can be acquired). Another is that the low rates of pay make many of the available jobs in these regions unattractive, given the existence of unemployment insurance, welfare payments and the possibility of a better job if the search is sufficiently extensive. Yet another explanation is the relative immobility of labour because of one or a combination of cultural factors, low skill levels, large economic or geographical distances to job locations and the existence of unemployment insurance and welfare payments. As noted by Stone (1969), Courchene (1970; 1974), Laber and Chase (1971), Grant and Vanderkamp (1976), Marr, McCready and Millerd (1977) and others, both inter- and intra-regional movements are positively related to education and skill level, and negatively related to age, income status, and level of unemployment insurance/welfare payments. Such things, therefore, as low income and education and the abundance of transfer payments (characteristic of many of these regions) conspire to reduce mobility, raise unemployment and further perpetuate low incomes and transfer dependency. Finally, since efficiency tends to increase with the concentration of labour markets, the significant regional variations in urban structure could partly explain the disparities in structural unemployment. Recent research by Schofield (1980) lends some credibility to this explanation.

The remaining component of the unemployment disparities is related to the existence of significant regional differences in the responsiveness of wage rates to the level of unemployment. As previously noted, wage rates in the Atlantic region tend to be the least responsive to unemployment conditions while those in Saskatchewan, Manitoba and Ontario are the most responsive. One explanation for this focusses on institutional wage behaviour. That is, local unemployment conditions are not reflected in wage setting because of nationwide wage bargaining by unions, the use of regional wage leaders such as Ontario in wage bargaining or the tendency for certain sectors such as governments and Crown

corporations to pay the same wage rates in all regions. Although the evidence is somewhat mixed, the work by Thirsk (1973) suggests that such factors do not appear to be very important. A second explanation involves rigidities caused by minimum wage legislation and government welfare and unemployment insurance policies. Thirsk (1973, p. 126) found evidence that the minimum wage produces some wage rigidity in Newfoundland, but the effects of government transfers were unclear. That is, because of the generally low wages in the Atlantic region, becoming unemployed (and hence, going on welfare or unemployment insurance) involves a smaller income loss than accepting a comparatively lower wage but does not actually provide an income incentive to opt for unemployment. In short, the reasons for most of the regional differences in wage rigidity are, at present, quite unclear.

Market Adjustment Theories

The theories in this category which are relevant to regional unemployment disparities tend to concentrate on labour mobility and the regional distribution of demand. Within a Neoclassical framework where interregional labour movements are motivated by unemployment and income differentials, Wrage (1981) concluded that migration has a significant impact on regional unemployment rates in Canada. Specifically, net outmigration from the high unemployment regions such as Atlantic Canada does indeed reduce unemployment from what it would otherwise be, and hence, according to these results, the explanation for unemployment disparities must involve reasons for inadequate migration rates. With respect to the latter, the research results are fairly clear. As previously noted, interregional mobility tends to be positively related to education/skill level and negatively related to distance, age, income status and level, and availability of unemployment insurance and welfare benefits (Vanderkamp, 1985). Moreover, most of these factors would work to produce low mobility rates in the high unemployment/low income regions and thereby prevent a drop in their unemployment rates. In addition to this, Wrage (1981, p. 61) concludes that low per capita investment and human capital (i.e., education) levels are also significant in explaining above-average regional unemployment rates.

Although the bulk of the evidence does suggest that, in general, migration is an important leveller of regional unemployment differentials, there are instances where it may not be very effective. Using a Keynesian framework where aggregate demand is the main determinant of regional income, Vanderkamp (1970) concluded that, because unemployed out-migrants take transfer income and, hence, demand for them, for every five unemployed workers who leave the Maritimes, two previously employed people lose their jobs. Copithorne (1981), also using a model which takes account of transfer income, reaches similar conclusions.[17] One might reasonably conclude, therefore, that the effi-

ciency with which net out-migration reduces the unemployment rate in a region will be negatively related to the level of transfer income and the labour intensity of the region's sectors in which this transfer income would otherwise be spent. In addition, this mechanism is probably more efficient in terms of levelling out short-run rather than long-run unemployment differentials. The reasons for this, as well as other factors relevant to regional unemployment disparities, are outlined in the following section.

Causes of Regional Disparities in Market Incomes

As noted earlier, it is the large regional variations in per capita market income which constitute the main problem of regional income disparities in Canada. Moreover, these disparities appear to be related to differences in five main factors — capital intensity, labour quality, scale and technology, participation rates and unemployment rates. The objective of this section is to outline the theories which explain disparities in these factors. In addition, these theories, to be considered valid, must also be capable of explaining two other characteristics of Canadian regional income inequality. The first is its relative long-term constancy in spite of the major shocks (for example, the decline of some industries, the rapid growth of others or the energy price increases of the 1970s) which have had differential regional impacts. The second is the tendency for inequalities in per capita earned income to vary directly with the level of national economic activity (even though unemployment rate inequalities exhibit an inverse relationship to the latter variable).

The body of theory relevant to income disparities is more extensive than that applicable to unemployment inequalities but no more conclusive. Two main shortcomings stand out. The first is the paucity of general or complete theories which simultaneously consider all of the elements of regional inequality. Most of the theory is of the partial equilibrium variety which focusses on, say, labour mobility and wage adjustment in isolation from such things as adjustments via commodity trade or industrial location. The second shortcoming is that most of the theories are static and tend, consequently, to ignore the fact that, in a dynamic world, the speed of adjustment is often as important as the direction of adjustment.

Before summarizing the relevant theories, it might help to note several which are irrelevant but which still turn up in discussions of regional income disparities. Both the stages-of-growth and sector theories are based on the notion that there is a definite sequence of stages in regional development (from primary to secondary to tertiary activities) and that the rate at which this progression occurs determines a region's growth rate and level of per capita income (Richardson, 1969). In Canada alone there are numerous cases which contradict this scenario. In fact, it is

often observed that the highest productivity, growth rates and levels of per capita income are generated by primary industries. Another group of theories which is irrelevant, if not misleading, focusses on the level of total (versus per capita) income in a region. Although there may be some cases where total and per capita incomes are correlated, one need only compare per capita income in, say, Sweden with that in the United States to see that this is not generally true.

STRUCTURAL THEORIES

Although they usually embody elements of equilibrium theory, structural theories focus on regional differences in industrial structure. At first glance, such theories would appear to offer little in explaining the Canadian situation. As noted earlier, it is not the regional differences in industrial structures per se which account for most of the earnings disparities; rather, it is that an individual working in a given industry in, say, the Atlantic region earns considerably less than one working in the same industry in other regions. However, it will be recalled that industrial (and by implication, urban) structure does significantly affect both participation and unemployment rates, and these are important determinants of earned income per capita. Further, the larger regional markets concentrated around a diversified industrial base can contribute to important scale, urbanization and localization economies, all of which contribute to per capita income levels.

One of the earliest and most widely applied structural approaches is the staples theory (associated with Innis, 1930, 1940; MacIntosh, 1936; Watkins, 1963) which links the resource base to industrial development and economic growth. Within it, regional growth is initially explained by the gap between the price of a staple and its production costs which leads to profitable export opportunities. As an integral part of this development process, both capital and labour are attracted to the location of the staple by the prospect of higher returns. This process is further enhanced by the development of backward linkages to transportation and supply industries, forward linkages to processing industries and final-demand linkages to supply goods and services to the local population. However, the extent of these secondary developments depends on the economic or physical life of the staple, the development of new exports, the area and capital intensities of the production process and the adaptability of the region.

Within this paradigm the eventual decline in a region's fortunes and the associated increase in regional disparities can be explained by a combination of factors. The first set of factors is the physical exhaustion of the staple or economic redundancy through either technological change or demand/supply shifts which reduce its price below its production cost. The second is the inability to establish new export industries

because of the inadequacy of the resource base or because of commodity and factor-price rigidities which prevent a reallocation of the region's resources. For example, a decline in a region's staple export would depress incomes to the point where net out-migration would restore the balance between the population and resource base, and raise per capita income to its original level. This view, which is favoured by Watkins (1963), Scott (1978) and Copes (1969), among others, leads to the conclusion that the failure for market incomes to recover in regions such as the Atlantic provinces is due to rigidity in wage/price levels and/or a relative immobility of labour.

In terms of its heavy emphasis on the role of natural resources, this theory has only limited relevance in explaining regional disparities in per capita incomes in Canada. Not only are there numerous examples of resource-poor regions having high per capita incomes, but also work by Copithorne (1979a) raises serious doubts as to any close relationship between natural resources and regional disparities. The importance of this theory lies rather in its pointing out the critical role of labour market adjustment and, specifically, labour mobility. Scott (1978, p. 59) notes that:

> Regional incomes need not decline below the national average if labour is at least as mobile as capital, and if both inputs emigrate at the rate dictated by the rate of decline of the staple industry's market (while it pays national wage and interest rates) and by the associated decline of the residentiary industries.

Nevertheless, there are instances where regional resource disparities contribute to income inequalities. One is where a significant proportion of a region's population is employed in the exploitation of a common property resource such as a fishery. In this situation, there is a tendency for over-entry with the result that the average catches and hence, average incomes, of fishermen are depressed below what might be the case were the resource privately owned. These effects, which are particularly relevant to the coastal regions of Atlantic Canada and British Columbia, are further accentuated by the operation of the unemployment insurance system (Ferris and Plourde, 1980). A second case is one in which there are regional differences in the collection of resource rents. For example, as noted by Copithorne (1979b) and the Economic Council of Canada (1984), the failure of the resource owner to collect rents (such as in the case of the B.C. forestry industry) may twist regional wage/cost structures so as to generate above-average wage and unemployment levels in the region.

In an interesting extension of the staples approach, Boisvert (1978) argued that the degree and structure of urbanization depends on whether the region specializes in the exploitation of natural resources, in the processing of resources or in the production of finished goods involving

many inputs from various regions and selling in scattered markets. Further, because of scale economies, greater diversification and a variety of agglomeration economies, worker productivity and per capita income should be positively related to urban size. He found that these correspondences were at least partly supported by Canadian data. Regional differences in resource bases and industrial structures do, therefore, play some role in per capita income disparities. However, it must be emphasized that this potential role is small in comparison to the large regional differences in per capita income which are observed at every urban size level (Boisvert, 1978, p. 5).

A somewhat more restrictive theory concerning the role of the resource base in a region's economic performance has been presented by Mansell (1981). For example, it was suggested that the remarkable similarities in growth rates and levels of per capita income between Alberta and Texas (relative to their national counterparts), in spite of quite different historical, political and economic environments, may in large part be due to resource base similarities. Their closeness in terms of character (i.e., independent, risk-taking and highly mobile labour forces) and industrial structure (both regions are characterized by industries closely linked to petroleum and agriculture) may be due to the simple fact that both economies developed around similar agricultural and petroleum resource bases. This, in combination with external influences (e.g., internationally determined commodity prices) would in turn explain the similarities in economic performance.

Another group of theories which emphasize the importance of industrial structure are those associated with Perloff et al. (1960) and Thompson (1969). Although the mechanisms differ somewhat, the basic argument is that a region's fortunes are to be found in its industry mix: through supply, market and agglomeration linkages, a region's initial industrial structure contains the seeds for future growth and prosperity.

Given that regional differences in industrial structure have some bearing on income disparities, one would expect to find considerable help in the vast literature on location theory. Here one finds a variety of models which explain how transportation and labour costs, natural resources, market structure, weight-loss, linkages and agglomeration economies, and scale economies all interact to determine which industries locate where. However, few of these theories have much relevance to the problem at hand. As noted by Scott (1978, p. 50), they do a good job of explaining the geographical locations of industries and population at a specific point in time, but they explain neither the process by which this map changes nor the direction of change. In short, this body of theory basically takes as given regional differences in such things as wage rates and population size and is, therefore, incapable of explaining why such differences exist or how they will change.

It has been argued for a long time that freight rates and other transportation disparities have acted to constrain industrial development severely and to reduce real incomes in both the Atlantic and Prairie regions. As a purely theoretical matter, the mere existence of transport costs will create spatial price differentials that may generate regional income differences (McRae, 1981; Anderson, 1982). Thus, the elimination of all transport costs could well increase regional incomes and alter substantially the regional distribution of industries and people. However, the real question is whether or not the existing structure of transportation systems and rates distorts the regional distribution of income and industrial structure. Although the evidence on this issue is incomplete, it does not indicate any serious distortions (see Anderson and Bonsor, 1985). On the one hand, a lowering of transportation rates on processed goods relative to those on primary products would increase the amount of manufacturing in the Prairie and Atlantic regions; on the other, it would reduce incomes in their primary sectors and decrease the local market protection many of their industries receive by high transport costs on incoming manufactured shipments.

Finally, as Norrie (1972; 1978) argues, regions such as the Prairies and Atlantic Canada do bear a disproportionate share of transport costs (and thus there is some compression in terms of factor incomes and industrial structure), but this is due primarily to the fact that peripheral regions tend to be price takers. In this sense then, it could be argued that a part of the problem of regional disparities is due to regional differences in the economic bases and geographical locations of regions: the closer the region is to the major market areas and the smaller the proportion of a region's exports sold in highly competitive international markets, the higher will be its income level.

MARKET ADJUSTMENT THEORIES

Most of the explanation of regional income disparities is based on Keynesian and Neoclassical equilibrium theories. The main focus within the Keynesian-type models is on the distribution of aggregate demand and the existence of various imperfections which hinder normal market adjustments. For example, consider the case of a decline in a region's exports because of the depletion of its natural resources, technological change or simply the types of adverse market shifts which eliminated many of the Atlantic region's comparative advantages. In a Keynesian world, with downwardly rigid wages and prices, this fall in aggregate demand would lead to a multiplied decline in regional income and an increase in unemployment, both tending to reduce imports and thereby restoring balance of payments equilibrium. If, in turn, the increase in unemployment led to a sufficient amount of out-migration,

there would be no long-run divergence in regional wage rates. Within this paradigm then, one of the reasons for the existence of long-run regional differences in wage and income levels is that federal interregional transfers allow regions to maintain long-run trade deficits thereby preventing or impeding the required adjustments. There is some evidence of this at least for the Atlantic region. For example, as noted by Levitt (1969), in 1960 the current account deficits as a percentage of each province's total income for Nova Scotia, New Brunswick, Newfoundland and Prince Edward Island were 29 percent, 19 percent, 37 percent and 42 percent respectively, and these were financed almost entirely by an excess of federal expenditures over provincial tax collections. Additional evidence on this point is provided by Czamanski (1972). In fact, some authors go so far as to argue that regional problems of slow growth, high unemployment and low per capita income are primarily balance of payments problems. Thirlwall (1980), for example, argues that such regional problems can almost always be linked to a weak trade sector, or, more precisely, to a low ratio of export growth to income elasticity of demand for imports.

Other imperfections arise through the interplay of the interregional transfer system and migration. As noted by Courchene (1970), transfers, particularly in the form of unemployment insurance, have worked in the direction of reducing labour mobility. On the other hand, Vanderkamp (1970) suggests that the existence of such transfers may actually make migration disequilibrating through the multiplied effects of decreases in autonomous aggregate demand associated with out-migration. Another set of imperfections has to do with the regional differences in labour market efficiency, previously outlined.

The Neoclassical approach to regional inequality is perhaps best distinguished by three main characteristics: an emphasis on optimizing behaviour, the operation of free markets, and greater attention to the supply side. With this approach then, the search for reasons to account for regional disparities is directed toward those factors which prevent efficient operation of the market mechanism.

Although there are many relevant Neoclassical theories, they tend to concentrate on two main issues — interregional trade and interregional factor movements. The most commonly applied trade theory in a regional context is that associated with Heckscher and Ohlin. According to this theory, each region specializes in, and hence, exports, those commodities which use its relatively abundant factors most intensively in their production. Moreover, as demonstrated by Samuelson (1948), if certain assumptions hold, trade, according to this theory, will produce an equalization in wages and returns to capital across regions even in the absence of interregional factor movements. Within this narrow framework then, the persistence of regional wage differentials could be explained by trade which does not follow the pattern predicted, by

disequilibrating factor movements or by a violation of one or more of the basic assumptions.

Marooney and Walker (1966) did test this trade theory for U.S. regions and found qualified support, but only one limited test has been done for Canada (Vaillancourt, 1974). Nevertheless, it is interesting to note that at least one of the predictions of interregional trade holds for Canada. Specifically, Thirsk (1973, p. 14) found a high correlation among regional cities in the levels and rates of change in the prices of traded commodities. In any case, the existence of transportation costs, regional differences in production functions for similar goods, differences in the quality of factor inputs, and/or complete specialization would all serve to prevent complete factor price equalization. Nevertheless, free trade across regions, particularly when combined with factor mobility (Mansell, 1975), should generate a *tendency* toward an equalization of wage levels.

The second main component of the Neoclassical approach is migration theory. Within this approach, individuals "invest" in migration whenever the return, in the form of income and employment opportunities, exceeds the monetary, opportunity and psychic costs associated with moving. In this way, the movement of labour to the high wage/ low unemployment regions from the low wage/high unemployment regions works to raise wages and lower unemployment rates in the region of origin and to produce the opposite results in the destination region.

While interregional migration in Canada does generally follow the pattern predicted by this theory (see Vanderkamp, 1985), empirical work to test its predicted effects on regional income inequalities is surprisingly scarce. Wrage (1981) found that, for Canada, it does reduce regional wage gaps somewhat, but the equalizing effects are small relative to those that would occur with an equalization of labour productivity and per capita investment levels. This result is also consistent with the (untested) views associated with Myrdal and most recently presented in a Canadian context by Vanderkamp (1970) and Polèse (1981). Specifically, because of the highly selective nature of migration (with respect to age, education and entrepreneurial skill) and because of Keynesian multiplier effects, its equalizing effects are offset by its tendency to affect (in a negative manner) labour force quality and the population age structure in the regions with net out-migration.[18] It is also consistent with empirical results obtained by Grant and Vanderkamp (1980) indicating that, at least within a five-year period, migration does not have any significant positive effects on income.

On the other hand, there is the view that interregional migration is on balance strongly equilibrating. For example, on the basis of results showing substantial income gains by migrants (but ignoring any "backwash" effects associated with the selective nature of migration), Grant and Vanderkamp (1976, p. 89) conclude that migration clearly contri-

butes to the elimination of regional disparities. This view is also favoured by Courchene (1970) who suggests that the problem may simply be insufficient migration to close regional income gaps. That is, the existing structure of income disparities represents an equilibrium where the large regional differences simply reflect such things as high mobility costs (due to large distances, low incomes or psychological/cultural factors) and government transfers which reduce mobility (Courchene, 1981).

Two of the earliest attempts to incorporate both commodity trade and factor mobility in a Neoclassical regional model were by Borts (1960) and Borts and Stein (1964). Within this framework, they concluded that the failure of wage rates to equalize across regions could only be explained by one, or a combination, of three factors. The first was a higher return to investment in the high-wage region than in the low-wage region, either because of regional differences in production functions or larger increases in the prices of exports from the high-wage region than in those from the low-wage region. In the second place, people, for non-economic reasons, migrate to the higher-wage region and transfer capital with them, or migrants demand capital once they have completed the move. Thirdly, residents of high-wage regions save a higher percentage of their incomes, and this is invested, for non-economic reasons, in enterprises within the region. Within a Canadian context, there is some limited evidence that the first factor could be important. As noted previously, factor productivity does in fact tend to be lower in most industries in the low-income regions. Further, even if the rates of return on investment were not lower in, say, the Atlantic region compared to Ontario, there may well be differences in either the actual or perceived risk-adjusted rates of return.

Using the same type of model, Bradfield (1976) makes three important observations. First, differences in capital/labour ratios (the most important statistical factor underlying regional wage differentials) cannot be used as an explanation for equilibrium wage inequalities. For example, profit-maximizing behaviour would lead to the use of less capital intensive production techniques in low-wage than in high-wage regions. Rather, the true explanation for low regional wages are: low prices received per unit of output (because of an intense market competition); low levels of labour quality and output per unit of capital (because of capital age or outdated technology) and an overabundance of the least efficient industries; and a high price for capital goods and/or above-average rates of return required on capital investment or certain immobilities (for example, in entrepreneurs) which limit the transferability of technology. Second, according to Bradfield, none of these imperfections can explain a stable pattern of regional wage inequality unless there is labour immobility. Finally, contrary to the prediction by Borts (1960, p. 375), there is likely to be a positive correlation between regional wage levels and growth rates, since the factors which tend to contribute to high wages also generate rapid growth.

While many of these factors are no doubt important in explaining the pattern of regional wage inequality in Canada, there are even simpler explanations. Using a dynamic Neoclassical model, Mansell (1975) demonstrated that the size of equilibrium wage differentials (even with no imperfections in either factor and product markets) will generally exceed the size of movement costs, and this size will depend on the rate at which migration responds to income differences rather than simply the direction of factor movements. Further, there are both theoretical reasons for and empirical evidence of a non-linear relationship between migration and income differentials (Mansell and Wright, 1978), and the resulting variable response rates are also important in determining the size of the equilibrium differentials. Based on tests using the two peripheral economies of Nova Scotia and Alberta, it was concluded that the constant, but below-average, income position of Nova Scotia and the constant, but average, position for Alberta[19] was not so much due to differences in demand conditions as it was to differences in two main factors — lower factor productivity and a lower responsiveness of migration to income differences in Nova Scotia as compared to Alberta.

While this explanation is, no doubt, more applicable for some regions than others, casual observation would suggest that in most cases its predictions are consistent with the facts. For example, it is difficult to find a more adverse combination of demand and structural shifts than in the case of Saskatchewan. Nonetheless, it has consistently remained close to the national average in terms of per capita income. Within this theory, the reason for this would seem to be the inherent mobility of the population and the fact that any transfer dependency has been limited and hence, has not impaired this mobility. Further, the increases in regional income inequality observed in Canada when the national growth rate increases is also predicted by the model. That is, the size of the equilibrium wage differential increases in proportion to the national growth rate because the responsiveness of migration to income differentials declines rather than increases as the level of interregional migration increases.

One of the most general Neoclassical theories of regional inequality is that used by Williamson (1965). Incorporating many of the "cumulative causation" elements suggested by Myrdal (1957), he concludes that the degree of regional inequality is directly related to the level of national development. Specifically, during the early stages of development, we should observe increasing regional inequality but, after a point, the level of inequality should steadily decline. At least three arguments are given for this decrease. First, as economic development proceeds, the costs of migrating from the low-income regions become less prohibitive, and skilled-unskilled wage differentials decrease. This increases labour mobility and reduces the age-education bias of migration which works against raising incomes in the sending regions. Secondly, as economic development proceeds, regional markets become more highly integrated

through trade, and the increased volume of interregional trade produces a tendency for product and factor price equalization. In addition, as capital markets become more efficient and the external economies accruing from agglomeration in the high income regions are exhausted, net outflows of capital from the low income regions slow and eventually reverse. Finally, beyond some level of national development, government policy shifts from the development of infrastructure in the high-income, rapid-growth and most populous regions to redistributing expenditures and income to the poorer regions.

This theory was confirmed by data for most of the countries in Williamson's sample and no doubt contains elements which at least partially explain the Canadian experience. For example, as noted by Green (1971) the period 1890–1929 was characterized by increasing regional disparities and followed by a long period of only marginal convergence. Thus, we must either conclude that all of the adjustments have been completed and Canada has reached a long-run equilibrium level of inequality, or factors such as the tendency for certain regions to trade more internationally than interregionally (because of the geographic nature of the country) have prevented or impeded various equalizing forces (Percy and Wilson, 1984).

Somewhat along these lines are the disequilibrium theories associated with Perroux (1970), Myrdal (1957), Hirschman (1958), Hughes (1961) and writers from other disciplines (Mathews, 1981). In general, they argue that, given the free play of market forces, regional income inequality will increase because the "backwash" or "polarization" effects associated with interregional movements of labour, capital goods and services are greater than any "spread" or "trickle-down" effects.

The latter involve the increases in purchases and investment by expanding regions in the lagging regions and the absorption of disguised unemployment in the stagnant region. This tends to increase demand, productivity and per capita consumption in the lagging regions. The "backwash" effects, on the other hand, operate to increase disparities through a variety of mechanisms. For example, it is argued that out-migration tends to denude the poorer regions of the young, the entrepreneurial and the highly educated, as well as to reduce demand and population in the region and, thereby, prevent the gains associated with agglomeration (i.e., the development of "growth-poles"). At the same time, the rate of return on and security of investments in the region are adversely affected, and the banking system operates to siphon off savings for the richer and more progressive regions. In addition, there are a variety of arguments based on the Marxian paradigm. For example, according to Dependency Theory (Matthews, 1981), the expanding regions drain the natural resources of the lagging region and exploit its "reserve army" of labour. This is followed by the development of a social and economic structure designed to support the domination by the wealthier and more powerful regions.

While many elements of these theories are probably more relevant to explaining the situation between Third World and developed regions,[20] some (for example, agglomeration economies) are no doubt relevant to the Canadian problem. Taken as a whole, however, they exhibit two serious weaknesses. The first is a lack of empirical verification. The second is that their general predictions of increasing regional disparities are difficult to reconcile with the Canadian experience. It could be argued that interference (via a variety of transfers and policies) with the market mechanism on the part of the central government in recent decades has prevented the disequilibrating "backwash" effects from dominating. However, the observed constancy in market income disparities over the long run (in spite of many disequilibrating shocks) could only be explained by a precarious balance between "spread" and "backwash" effects.

Policy Implications

If the answers to the problem of regional economic disparities in Canada were obvious, it would likely have been solved long ago. It should not be surprising, therefore, that no simple answers leap from this limited survey. Rather, what emerges are the conclusions that the problem is very complex, that there are many factors involved and that there remains considerable ambiguity as to which are the key causes of these disparities. Further, even if all of the answers were in, the existence of numerous trade-offs precludes an easy policy response. For example, there are, no doubt, many instances in which the agglomeration and specialization required for greater economic efficiency (and less regional income inequality) would directly conflict with equity considerations — not to mention the population, diversification and province-building aspirations of provincial politicians.

Nevertheless, there are at least four general policy themes which do emerge. First, the economic disparities problem is not so much one of regional inequalities in living standards (as measured by real disposable income per household) as it is inequalities in unemployment and market income and in provincial tax bases. Second, there is every evidence that the unemployment/market income inequalities represent a long-run "equilibrium" in which the size and structure of the disparities are as much a result of government transfer policies which impede normal market adjustments as they are an effect of market imperfections. The important implication here is that attempts to reduce regional inequalities in unemployment and market incomes via traditional inter-regional transfer schemes are largely self-defeating (although such schemes may be well justified by other objectives). Third, even in the absence of these, a perfectly functioning market mechanism would not eliminate all regional differences in unemployment or market incomes. So long as there are large geographical distances, non-economic regional

preferences and costs associated with interregional movements of population, goods, or capital, significant equilibrium regional variations in these measures would exist. Finally, although the existing inequalities are too large in most instances to be simply explained by these factors, there is little doubt that the substantial interregional movements of goods, labour and capital have, on balance, served to prevent a widening of regional inequalities.

Assuming that there is a desire to reduce regional unemployment and market income disparities in Canada (a not altogether realistic assumption if significant equity, political or other economic trade-offs are involved), what general policies are suggested by current research? In terms of reducing unemployment disparities, policies aimed at producing sustained growth and low unemployment at the national level would have positive effects. However, this by itself cannot be considered a panacea, and in fact, without attacks on other fronts, it would likely increase market income disparities.

Perhaps the single most important policy area concerns regional productivity differences. It is reasonably clear that a major part of the differences in earned income per capita can be attributed, either directly or indirectly, to the disparities in output per unit of capital and in output per unit of labour or in overall industry productivity. While it is impossible to be as clear about the policies required, five characteristics of activity in the low-income/high-unemployment regions stand out. These are: small scale and relative labour intensity; lack of agglomeration; low education and skill levels of the labour force; lags in the adoption of new technology; and high degrees of seasonality or cyclicality in demand.

Another factor which shows up in most explanations of regional inequality is the relatively low mobility rates in the low-income/high-unemployment regions. Although there is some disagreement as to the effectiveness of increased migration in reducing regional disparities, it does appear that, on balance, it is an important leveller so long as the adjustment is reasonably rapid. Given this, it would appear that policies aimed at altering the transfer mechanisms (for example, by moving toward lump sum, non-place-oriented transfers — see ECC, 1982) which impede migration and, reducing migration costs and the age/education bias of migration, would work to reduce regional disparities in unemployment and, to a lesser extent, market incomes.

While attempts to increase the efficiency of labour markets and migration would undoubtedly reduce the unevenness in the regional diffusion of demand, it is also possible that policies aimed at reducing the strain on these adjustment mechanisms could be helpful in narrowing regional economic disparities. One approach is to direct federal government purchases to existing or newly established firms in the low income regions.[21] Another involves the use of greater fiscal stimulus (less fiscal constraint) in the low income/high unemployment regions than in those

with high incomes as part of the overall policies aimed at stabilizing aggregate demand over the business cycle. Following the work by Engerman (1965), Swan and Glynn (1976) and Miller (1980) have examined the feasibility of greater use of such policies in Canada. Although the large leakages associated with expenditures or tax reductions in the lower income/higher unemployment regions greatly reduce the effectiveness of this policy approach, it appears that some regional equalization might be achieved in this manner. More research in this area seems warranted.

Although low labour force participation rates, particularly among females, were noted as an important factor underlying regional disparities, they appear to be more a symptom than a cause. Thus, policies which achieve higher productivity and employment growth would have significant positive effects on participation rates in the low income regions thereby creating a further upward tendency in per capita incomes.

Finally, there is a variety of industry-specific policies which would likely be effective for certain regions. Those aimed at reducing the seasonality and excess effort in the Atlantic fishery are one example. In any case, the reduction of Canadian regional economic disparities will require substantial, consistent, sustained and simultaneous policy efforts in at least the areas mentioned. Whether they materialize will likely depend on both the number of intervening problems in other areas and the elasticity of our national fabric.

Notes

This study was completed in November 1984.

1. Based on calculations reported in Table 1-5.
2. In general, the value of Vuw varies somewhat with the number of regions. Hence, for purposes of comparison the index for Canada is most appropriately compared to that for the United States calculated on the basis of ten regions. See U.S. Bureau of Economic Analysis, *Survey of Current Business* for the states comprising these regions.
3. In the absence of these considerations, it can be argued that the problem of regional disparities in Canada is really no more than a problem of interpersonal disparities.
4. While the provincial premiers would argue that each province should be given equal weight in the determination of both disparities and policies, it can be argued that, from the viewpoint of national welfare, weighted indexes of inequality based on population shares are more appropriate.
5. Examples include the Gini coefficient, mini-max ratio, relative mean deviation and the coefficient of variation.
6. For example, workers in high unemployment areas who, because of the apparent futility, stop actively searching for work, are not included in the unemployment statistics. Further, published unemployment rates do not measure "underemployment" or accurately account for unemployment in certain industries such as agriculture which typically rely on owner-operator and family labour.
7. Seasonal unemployment is that due solely to the seasonal nature of certain activities. Frictional unemployment is related to the time involved in moving from one job to

another. Structural unemployment arises from the geographical, occupational or industrial mismatching of jobs and people. Demand deficient unemployment is that due primarily to a lack of adequate demand for the goods and services produced.

8. Specifically, the convergent effects of expenditures associated with World War II and the divergent impacts of the Great Depression were removed in evaluating long-term trends.

9. Although, ideally, the end points for the analysis should correspond to similar points on the business cycle, it is difficult to find an earlier year which is comparable to the last year for which complete data are available.

10. On the basis of computations using 1966 data, Abouchar (1971) found that adjustments for the other factors are of little consequence.

11. Based on data from sources shown in Table 1-4.

12. When the coefficient of variation for earned income per capita (V) is regressed on the national unemployment rate (U) using Canadian data for the period 1947–82, the following results are obtained:

$$V = 0.356 \quad - \quad 0.022(U) + 0.001(U)^2 \qquad OLS; \ R^2 = 0.60; \ D.W. = 1.91$$
$$\quad (12.80) \quad (-2.70) \quad \quad (1.96) \qquad \qquad \text{(t statistics in brackets)}$$

The implied values for V at 3, 6, 8 and 10 percent levels of national unemployment are, respectively, 0.305, 0.272, 0.260 and 0.256.

13. Note that earned income per capita (Ye/P) can be expressed as:

$$Ye/P = [(Ye/N)] \ [(1 \ - \ u)(p)(P_1/P)]$$

In this context, standardization analysis attempts to determine statistically the amount of the inequality in per capita income due to each of the differences in earnings per worker (Ye/N), unemployment rates (u), participation rates (p), and population-age structures (P_1/P). This is accomplished by calculating the per capita earned incomes for each region assuming, say, all regions had the national unemployment rate, ceteris paribus, and then comparing this hypothetical figure to the actual. It should be emphasized that, while this type of analysis is useful in terms of quantifying the importance of factors associated with regional income differences, it cannot isolate the basic causes. It offers no explanation as to why, for example, unemployment rates vary across regions, and, more importantly, it does not take account of the interdependencies among the variables included in the analysis.

14. On this point see Economic Council of Canada (1977, p. 80).

15. Research by Kovacs and Copithorne (1979), Postner (1980) and Wilson (1981) indicates that a lack of job opportunities is a major factor explaining low participation rates in Newfoundland.

16. About half of the people moving into Newfoundland in 1971 were born in Newfoundland (ECC, 1980).

17. Specifically, the effectiveness of out-migration in reducing measured unemployment in a region is reduced if: output per worker in local (vs. export) sectors is low; the proportion of income spent in the local sector is high; the proportion of the population which is employed is low; the elasticity of labour supply with respect to the availability of jobs is low; and direct transfers and government spending predominate over equalization-type transfers.

18. It might be noted that Olsen (1967) has proposed a fairly elaborate simulation model which could be used to determine the net effects of interregional migration in Canada.

19. While Alberta, in terms of per capita income, did rise above the national average after the mid-1970s, the most recent data show it is quickly moving back to its historical position which is equal to the national average. Moreover, this adjustment-period aberration does not appear to be much different from that observed during the energy-industry induced investment boom in the late 1940s and early 1950s.

20. For example, it would be difficult to argue that the Atlantic region's natural resources were drained or exhausted by the expanding central provinces. In cases like forestry

and coal, the resources simply became uneconomic as a result of technological change (e.g., introduction of diesel locomotives), the development of transportation systems (e.g., the Panama Canal, which allowed B.C. lumber to penetrate eastern markets) or the development of closer/cheaper sources (e.g., Pennsylvania coal).

21. For example, defence purchasing has been used extensively in the United States as a way of redistributing regional demand. See Bolton (1966).

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The Efficiency of the Interregional Adjustment Process

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Introduction

"Canada has too much geography and too little history." Like many aphorisms, this one contains an element of truth. Throughout our economic development, geographical size and distance have presented problems and opportunities. The process of interregional adjustment within Canada is significantly affected by its geography, but it is also significantly affected by our history. Interregional adjustment is, for example, affected by the French "fact" of Quebec, by the deep-rooted community ties of many inhabitants of the Atlantic provinces, and by the mixture of people who settled the agricultural regions of the West. During the last two centuries of economic development, the pattern of growth has sometimes favoured one region and sometimes another, and interregional adjustment has thus been part of much of our history.

The purpose of this paper is to review the interregional adjustment process and to indicate the impact on it of various policy measures. Any attempt to do so requires a theoretical framework or a "model." This implies that the discussion is inherently technical in nature, although the main presentation will, I hope, be accessible to the non-expert. A theoretical framework should be reasonably consistent with empirical facts about the Canadian economy, and I shall therefore be reviewing such facts and studies on a number of occasions.

The interregional adjustment process involves aspects aside from the purely regional, including industrial and occupational dimensions. By the same token, any inter-industry adjustment typically has regional implications in Canada. This paper will concentrate on the regional side of economic adjustment, although it will become clear that industrial

developments are important in determining regional fortunes. The optimal delineation of a regional structure would probably be in terms of industrial characteristics of regions; Oksanen and Williams (1981) make an interesting attempt along these lines for Canada. For reasons of statistical convenience and in recognition of political reality, I shall for the most part treat the Canadian provinces as our regions.

The interregional adjustment process consists of many sub-processes involving flows of goods, services, capital and people, and changes in relative prices, wage structures, unemployment and job vacancies. To include all these aspects in a theoretical framework would require a large and complex model of the regional economy. To view at least one important part of this forest, I shall concentrate on three aspects: the flow of people (migration), changes in the rate of regional employment growth, and the adjustment of the interregional wage structure. Because the wage adjustment process is partial, the framework has important implications for regional differences in excess supply or demand, including unemployment.

The purpose of this focus is to provide an explanation for regional disparities in wages, incomes and unemployment rates. The persistence of these disparities on the Canadian economic scene represents an analytical and empirical challenge, since most economic analysis would stress that the interregional adjustment process will work toward their disappearance. Thus, questions arise about the adequacy of this process. In considering these questions, our primary concern will be with economic efficiency, although questions of equity and provincial autonomy will also be raised. The term economic efficiency refers to a situation of maximum output or more strictly one in which economic welfare (utility) is maximized. It is one of the principal themes of this paper that in policy design it is difficult to pursue efficiency and equity at the same time. Many of the shocks that affect the regional labour market arise on the demand side, e.g., through changes in the terms of trade or in the pattern of comparative advantage, technological changes and resource discoveries. These shocks alter differentials in wages and employment opportunities, which in turn affect the regional supply side, largely through migration. Labour supply also has its shock elements, mainly associated with migration and natural increase of the labour force. The rate of wage response may also be affected by shocks such as the changing nature of contractual arrangements in the labour market, the extent of unionization and the nature of collective bargaining, and by policies on minimum wages and unemployment insurance.

From this discussion emerge four sets of empirical questions:
1. Is migration behaviour influenced by wage differentials and by differences in employment opportunities? What factors are associated with autonomous migration flows, and how important are provincial tax bases and personal transfer schemes, including unemployment insurance? These questions will be examined in the section on migration.

2. Is regional employment growth influenced by wage differentials? Some brief reference to this question will be made in the section on demand and supply adjustment.
3. Do regional wage rates respond to differences in excess demand and is this adjustment process characterized by upward flexibility and downward rigidity? These questions are discussed in the section on wage adjustment and excess demand.
4. Taken as a whole, is this framework consistent with observed patterns of regional disparities? The section on empirical implications will deal briefly with this question by providing some statistical evidence on many of the variables.

It is clear that a variety of policy measures play direct or indirect roles in the interregional adjustment process. The following questions will be discussed in the final section of the paper. What are the effects of differences in provincial fiscal capacities and should they be eliminated by equalization policies for reasons of efficiency or equity? (The theoretical aspects of these questions will also be reviewed in the section on long-run equilibrium.) The controversy surrounding the 1982 report, *Financing Confederation*, by the Economic Council of Canada will be looked at in the context of these questions. Is there an efficiency or equity basis for migration subsidies? What are the efficiency consequences of various employment protection policies, such as quotas and Department of Regional Economic Expansion (DREE) subsidies? Do federal wage policies and provincial minimum wages increase wage rigidity and how does this affect the efficiency of the adjustment process? What are the consequences of increasing wage rigidities, combined with wage spillovers between regions?

As indicated, most of the discussion in the next four sections of the paper is of necessity somewhat technical in nature. The non-expert reader may prefer to move straight to the final sections dealing with empirical implications of the analysis and its policy implications, which can be read as a summary of the paper.

Migration Studies

This section will review briefly recent Canadian studies on migration, a crucial component of the interregional adjustment process and an area in which there has been considerable empirical work. The general framework used in most migration studies is based on human capital theory. Thus, migration is seen as an investment, for which financial and psychic costs are incurred and payoffs take the form of increased "private" income or "public" benefits over some future period. Although the argument normally proceeds in terms of complete certainty about future payoffs, the approach can be modified to allow for risk differences. Since migration costs vary between individuals (depending on age, marital status, family size, and length of residence), the probability of a migra-

tion decision in response to any private and public payoff factors will obviously also differ with the individual. This implies that migration flows will increase along with potential payoff factors, and, of course, will decrease as migration costs go up.

Since most Canadian migration studies have recently been reviewed elsewhere (Winer and Gauthier, 1982; Shaw, 1985), our summary can be brief. All these studies have used tabulated data on migration flows with data sources varying from census to tax data and family allowance information. In other words, the dependent variable typically is the proportion of a particular region's population that migrates to another region during a certain time period. There are two reasons for this kind of specification which uses observed flows rather than individual data. First, not many micro data bases are available (but see Grant and Vanderkamp, 1980; Robinson and Tomes, 1982). Second, the modelling of individual migration choices with many possible alternative destinations presents difficult technical problems.

Among the explanatory variables the cost of migration (moving as well as uprooting) is generally represented by the distance between regions. Almost without exception the distance variables has a significant negative impact on migration implying that migration flows diminish as distance increases. The potential migrant's income prospects are generally represented by average earned incomes in origin and destination regions; some researchers have used average wage rates (e.g., Shaw, 1985) and others have experimented with an expected income measure which reflects the income position of a migrant group as well as average incomes (Grant and Vanderkamp, 1976; Winer and Gauthier, 1982). The results generally support the conclusion that income in the destination region has a positive impact and income in the origin region, although less often significant, has a negative effect. A common specification relating migration flows to the income or wage differential appears to be inappropriate, although recent results involving complex equations, including various fiscal variables, provide much more support for this restriction (Winer and Gauthier, 1982; Shaw, 1985).

Unemployment rates are often included to represent the employment opportunities of potential migrants, but these variables have a checkered career in empirical work. Often these variables are insignificant, and sometimes they are significant but with the opposite impact to that expected. It is not clear how these results should be interpreted although it may be argued that employment growth is more likely to be a good proxy for future employment opportunities than unemployment. Indeed, Winer and Gauthier (1982) and Shaw (1985) appear to have had some success with employment growth variables particularly related to the destination region. It might be argued that the existence of unemployment insurance may confuse the supposed role of the unemployment rates and that the appropriate inclusion of unemployment insur-

ance variables may clear up the confusion. But there is no evidence for this in Shaw (1985) nor in Winer and Gauthier (1982). In the latter study there are many instances where unemployment in the destination region has a significant impact opposite to expectation, but the authors do not pay much attention to this problem.

Overall, the evidence regarding the relative importance of wages and employment opportunities is mixed. At first glance one might argue that wages are the more important determinants of Canadian migration behaviour. But job opportunity variables, perhaps more broadly conceived than unemployment rates, often also have a significant effect. Moreover, in quite a few instances researchers have used average incomes per capita instead of strict wage rate variables, and this implies that differentials in unemployment (and participation rates) are automatically incorporated (Grant and Vanderkamp, 1976; Winer and Gauthier, 1982). My somewhat hesitant conclusion is that we cannot reject the hypothesis that wages and job opportunities (or excess demand) have about equal effects on migration behaviour. This implies that a 10 percent reduction in average income per capita has about the same impact on migration flows regardless of whether the 10 percent reduction results from a 10 percent wage decline or a 10 percent increase in unemployment (or excess supply).

The above variables are part of the standard migration model, but three further variables, which are occasionally included, perhaps deserve brief mention. Grant and Vanderkamp (1976) argue that the population size of the destination region should be included to reflect the turnover aspect of employment opportunities, and their results strongly confirm this argument; the basic idea is that a region with a larger population generates a larger number of job vacancies in a steady state situation (Vanderkamp, 1976; 1977). In some studies (e.g., Shaw, 1985), the average education level of the population in the origin region is included on the argument that a better-educated work force is likely to be more mobile. Results generally support this proposition. Cultural factors sometimes play an important role by separate estimation of the migration model for different regions of origin. This device implicitly allows for such factors in the form of different migration response rates. The results are difficult to interpret and do not provide unequivocal support for the proposition that potential migrants in Western provinces are more mobile than those in the East (Winer and Gauthier, 1982; Mills, Percy and Wilson, 1983). On the other hand, studies that explicitly allow language differences to play a role generally obtain strongly supportive results (Grant and Vanderkamp, 1976; Robinson and Tomes, 1982; Shaw, 1985). In particular migration, propensities are reduced to and from predominantly French-speaking areas.

In recent years quite a few migration studies have included various fiscal variables representing personal transfers and net fiscal benefits

(NFBs) in total or broken down into components. At latest count there are six such Canadian studies, which are listed in the references. Most of these studies have been reviewed and appraised in two recent surveys (Vanderkamp, 1983; Grant and Vanderkamp, 1983), so I shall restrict myself to a brief overview of the four most recent papers. Courchene's 1970 paper constitutes a precursor of most of this work.

The Winer and Gauthier (1982) study constitutes the most ambitious attempt to test for the effects of fiscal variables on migration, and their work formed an important base for the report, *Financing Confederation*, published by the Economic Council of Canada. Their basic model is fairly standard and they use two migration series (family allowance and tax data) in their empirical work. A serious difficulty with this study is that it presents a large volume of empirical results which are not easy to digest and which are not all discussed or given detailed scrutiny by the authors. This mass of results arises from various disaggregations for income groups (in the case of the tax data) and for different origin and destination regions. Because they use time series combined with partial cross sections they have a sufficient number of observations, but it is not clear that they have properly allowed for some of the time series variation, e.g., related to return migration or productivity growth. Return migration is likely to vary cyclically and productivity growth gives rise to secular trends in wage variables.

As indicated already Winer and Gauthier do not always discuss their results in detail and they are often rather selective about which results are highlighted. In particular, they pay little attention to the fact that the effects of variables are often opposite to theoretical expectation. If a variable is insignificant, it contradicts the hypothesis in question, but if it has the opposite sign and is significant the result suggests there is something seriously wrong with the theoretical formulation. In quite a few instances Winer and Gauthier come to a (perhaps qualified) conclusion regarding a particular hypothesis when the number of significantly wrong results is close to the number of significantly right results (while ignoring insignificant results in either direction). For example, with regard to the effect of unemployment insurance (benefits to wage ratios), using family allowance data with provincial disaggregations, Winer and Gauthier (chap. 2) obtain a score of 14 correct, 12 incorrect and 10 insignificant cases. They conclude quite modestly that "at least with respect to out-migration from the Atlantic region . . . the unemployment insurance system has retarded interprovincial migration" (p. 24), but in fact the validity of the hypothesis must be questioned when the results are so mixed.

In view of these problems my assessment is that the results regarding the role of fiscal variables in migration decisions in the Winer and Gauthier study are weak; for a more detailed assessment see Grant and Vanderkamp (1983). Relatively speaking, the strongest results are in two

areas. When Winer and Gauthier (chap. 4) use tax filer data for low income groups migrating from Atlantic provinces, their "generosity" index relating to unemployment insurance has the expected effects; this generosity index is a complex variable (weekly benefits not included), composed of the ratios of maximum benefit period to minimum qualification period and of accepted claims to filed unemployment insurance claims. For migration to Alberta and British Columbia, the fiscal variable representing natural resource revenues appears to have had an impact during the 1970s; although the results here are also very mixed. And for the same disaggregation the variable representing the differential in equalization payments has the expected positive effect in about half the equations tested.

The study by Shaw (1985) is unique in Canada in examining the pattern of migration between census metropolitan areas (1961, 1971, 1976 and 1981 censuses). Most of the basic variables are standard, and Shaw concentrates on unemployment insurance and on unconditional grants transferred to provinces. Shaw's strongest results relate to his unemployment insurance generosity index (weekly benefits divided by weekly wage) which is significant for the period after 1971. On the other hand, the variable representing grants is of little significance and quantitatively unimportant. Shaw also has variables for natural resource revenue, but they are of no significance or they work in the opposite direction to what is expected. In the "full" model Shaw includes a large number of variables (related to dwelling starts, female participation rates, immigration, crime, and snowfall) not normally found in migration studies in Canada, but the results are mixed. Moreover, the inclusion of these variables does not have an enormous impact on the rest of the model although the wage variables become somewhat less significant.

The study by Mills, Percy and Wilson (1983) employs family allowance data and includes relatively few explanatory variables: distance, wage differentials, fiscal differentials, and housing price differentials. No unemployment insurance or other personal transfer variables were considered. They work with three models, two of which use a lagged dependent variable as one of the explanatory factors in a time series–cross section analysis. I am suspicious about the undoubted significance of the lagged dependent variable, since it captures far too much including unobservable variable effects. For this reason, I shall concentrate on the standard model, which is disaggregated by region of origin. The basic variables in this model work reasonably well, although the results for Ontario out-migration are strange. The housing price differentials variable has a significantly negative effect on most migration flows. The fiscal differential variable is the most comprehensive attempt to capture the notion of net fiscal benefits, and it is moderately successful for out-migration from Saskatchewan, Alberta and British Columbia.

The study by MacNevin (1983) is probably the most sophisticated and comprehensive investigation available to date. Personal transfers are included in the income variables (adjusted for cost of living differences and excluding taxes) which always perform strongly and in the expected fashion. The unemployment variables generally work in the expected direction and often significantly so. MacNevin uses two fiscal variables that include the activities of provincial and local governments. Generally speaking, the variable representing the level of government expenditure is not significant, and it is argued that this may be due to the fact that on a per capita basis these expenditure levels were similar across the provinces during the period under consideration (1963–78). On the other hand, there were large differences in tax rates, and the tax variables (including income and commodity taxes) are generally significant and work in the expected direction. Some simulations show that an average cut of 10 percent in Alberta taxes would have increased in-migration by about 8 percent.

Two overall conclusions emerge from this brief review of migration studies. First, potential migrants appear to respond to private costs of migration and to private payoffs in the form of income differences. Second, the empirical support for the role of public transfers on migration is less strong. But there is some evidence that personal transfers and in particular unemployment insurance, have retarded out-migration from high unemployment areas. And there is also evidence that migrants are attracted by net fiscal benefits, which reflect the provision of public services and the taxes raised in the region. While realizing the need to react cautiously, I shall assume for the purpose of this paper that migrants are indeed influenced not just by private costs and gains, but also by fiscal transfers and benefits.

Traditional Approach: Long-run Equilibrium

The traditional approach stresses the nature of the long-run equilibrium. This may seem a strange starting point in an analytical discussion of regional adjustment, but it should be noted that the direction of adjustment is crucial. In other words, if adjustment of the regional system proceeds toward long-run equilibrium, then the nature of that equilibrium provides an important foundation. Conversely, if the regional system does not display any tendency to adjust (or if adjustment goes the wrong way), then the traditional approach only presents an intellectual curiosity. It is an underlying premise of most economic analysis that the adjustment, however slow it may be, proceeds toward long-run equilibrium.

The analysis in the central part of the paper proceeds in the manner of "building blocks." In this section I deal with the long-run equilibrium approach with no costs of adjustment. In the next section I allow for adjustment costs on the supply and demand side of the regional labour

FIGURE 2-1
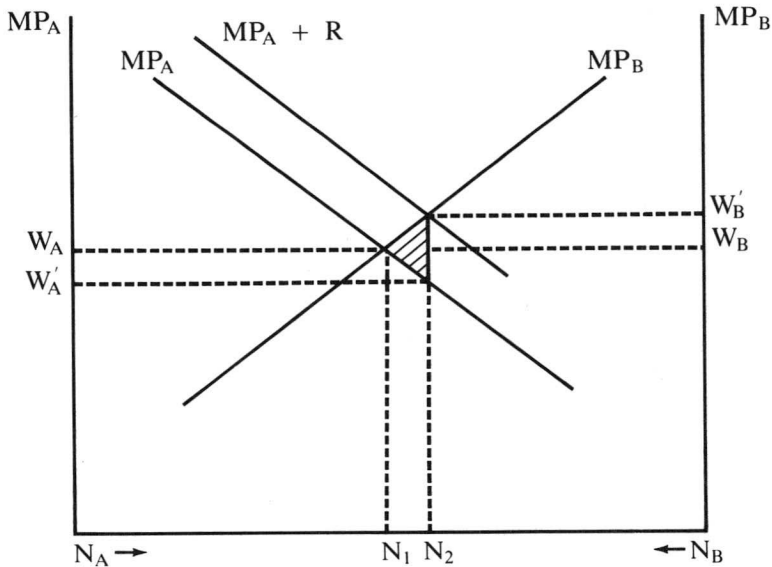
market, but wage adjustments are still assumed to be costless. Next, this assumption is abandoned, and wage adjustment is allowed to be "imperfect" and costly, to lead to an examination of the relationships between supply, demand, wage and excess demand adjustment.

The simplest version of the long-run equilibrium model is presented in Figure 2-1. In this model there are no migration costs, and since wages adjust fully, there is no unemployment. Under normal circumstances, there are no regional wage disparities, and the equality of marginal products (*MP*) is consistent with maximum output for the country as a whole.

Figure 2-1 presents two regions, *A* and *B*, each of which has a marginal product, or demand for labour function, which is downward sloping in the relevant range (the MP_B-curve slopes down from the right). The total labour force for the country as a whole is fixed (horizontal distance) and an increase in the workforce of *A* (N_A) takes place at the expense of *B*'s labour force (N_B) by people migrating from *B* to *A*. If there are no costs to migration, then wage rates will be equalized (at $W_A = W_B$) by people switching regions, and this represents the optimum distribution of the country's workforce (N_I).

This happy state of affairs may be disturbed by a number of things, but we shall concentrate on resource rents being received by the government of *A*, since this subject has received most of the recent attention in this area. These resource revenues are "distributed" by the government in *A* in the form of lower taxes or increased provision of public goods, and the

value of this to the individual resident of A is indicated by R in Figure 2-1. This, of course, raises the real income (utility) of living and working in A compared with B, and $(N_2 - N_1)$ people will move from B to A in response to these resource revenues, assuming no costs of migration. The new N_2 distribution of population is inefficient in the sense that there are too many people in A and that there is a difference in marginal product with wages in B (W'_B) exceeding those in A (W'_A). It can be seen that the actual efficiency loss is the marked triangle in Figure 2-1. If potential migrants react to resource revenues in the same way as they do to earned income, then the wage differential in Figure 2-1 ($W'_B - W'_A$) will be exactly equal to the net fiscal benefits per capita caused by the resource revenue.

Thus, in long-run equilibrium the existence of NFBs creates an efficiency loss caused by excessive migration. As already indicated, long-run equilibrium is only a relevant concept if the economy is always tending toward such an equilibrium. An analogy may be helpful. The notion of sea level is useful in the context of connected seas and oceans because the sea always tends toward this level. The fluid character of sea water and the forces of gravity ensure this adjustment. The actual sea level may never be generally observed because of shocks and changes affecting the surface, but it remains a crucial concept. If the sea level were to be raised by 100 feet because of the melting of the polar ice caps, this change in the long-run equilibrium would clearly be vital for parts of the globe. For the time being we shall maintain the hypothesis that the interregional adjustment process moves the system in the direction of long-run equilibrium.

How large is the efficiency loss in our long-run equilibrium? For illustrative purposes, I assume that region A in Figure 2-1 has resource revenues equivalent to 10 percent of earned income on an annual basis, and I assume that the regional demand for labour has unit elasticity in the relevant range; the latter assumption means that in the long run a 1 percent reduction in relative wages will increase employment by 1 percent. If migrants view the NFBs in the same way as earned income, then the wage differential ($W'_B - W'_A$) will be 10 percent by the first assumption. The second assumption implies that migration from B to A ($N_2 - N_1$) is in the order of 5 percent of the labour force of each of the regions A and B if they are roughly comparable in size. The efficiency loss (the marked triangle in Figure 2-1) will then be 0.125 percent of annual earned income in the country as a whole. In short, the efficiency loss represents a typical economist-triangle which is small by common standards.

It should be noted that such a distortion may arise for other reasons. For example, if people in the country as a whole have some preference for living and working in region A, perhaps because of the presence of mountains there, there will also be a distortion as in Figure 2-1 with the

wage in A being below that in B. This wage differential may be thought of as a compensating differential in the sense that it compensates those who are living and working in region B for not being in their preferred region A, which involves a utility loss for them. This kind of distortion does not create an efficiency loss, although there is some loss in total output, but it is offset by a utility gain. Now if these mountains could be costlessly redistributed across the country, we could argue that the loss in production also represents an efficiency loss. This example points out that labelling the effects of resource revenues in A as an efficiency loss assumes a belief that these resource revenues can be costlessly redistributed. But if we believe that the very existence of provinces, such as A and B, with their jurisdictional powers, including the ownership of resources, gives Canadians generally some utility, then it is not so clear that we can speak of costless redistribution of resource revenues (Economic Council of Canada 1982).

Boadway and Flatters (1982a) point out that a federal government can devise an equalization scheme to avoid the efficiency loss associated with unequal resource revenues. In particular, it can be visualized in Figure 2-1 that, if resource revenues are redistributed in such a way that they are equal in provinces A and B on a per capita basis, we achieve the optimal distribution of the labour force N_1. This implies that the federal government is empowered to take resource revenue away from province A and give it to province B. Whether such a net equalization scheme represents costless redistribution appears dubious and is in any case a political question. Alternatively, the federal government could equalize on a gross basis by raising tax revenue to be handed over to province B, the amount being equal on a per capita basis to A's resource revenues; in terms of Figure 2-1, this would also bring us back to N_1. Using our earlier illustrative example such a gross equalization scheme would require the federal government's setting a 5 percent tax on the earned incomes of the average person in the country as a whole. Such a scheme is therefore by no means costless either, since the federal tax is bound to lead to distortions and inefficiencies. In short, the efficiency loss due to unequal resource revenue receipts by the provinces is likely to be small and an equalization scheme is likely to be costly in political or economic terms (Bird, 1984).

So far I have made no mention of equity in this context. In terms of Figure 2-1, there would appear to be no equity problem, since the typical individual is equally well off in both provinces regardless of whether the distribution of population is optimal (N_1) or distorted by unequalized resource revenue (N_2). At N_1 average earned incomes are equal and at N_2 the compensating wage differential ensures that the average individuals have equal utility. This outcome is basically the result of the assumption that migration takes place without costs. If there were discrepancies in utilities between individuals in different provinces, there would be

migration flows until these discrepancies were ironed out. The exchange between Norrie, Percy and Wilson, and Boadway and Flatters in *Canadian Public Policy — Analyse de politiques* (1982b) appears to indicate that equity arguments may still call for full equalization if equity implies equal federal taxes to be paid by people with equal utilities in different provinces; the equity problem arises because federal taxes cannot be levied on any NFBs which may result, e.g., from resource revenues. The equity issue becomes complicated when we have people with different labour market characteristics, including human capital, and with different preferences for public goods. I shall not pursue this aspect any further. I shall refer to equity problems only in the context of differences in earned incomes for the typical person in different provinces. This appears closest to the usual notion of inequities, since a province with low average income has a lower potential tax base; Cameron (1981) in fact thinks that differences in fiscal capacities are the only regional disparities worth worrying about.

The Boadway and Flatters (1982a) conclusion about the desirability of complete equalization of all NFBs is based on a much more complex argument than the simple model in Figure 2-1. They discuss aspects of public goods provision, fiscal externalities, and redistributive policies at provincial levels. An unpublished paper by Krelove (1983) is very much in the spirit of this literature and is critical of their conclusion. In particular, Krelove argues that equalization payments are redundant as a policy instrument if provinces have freedom to arrange tax rates and have the incentive to take account of migration flows. Under these circumstances the optimal regional distribution of the labour force will be attained as a result of the "competitive" behaviour of provinces, and equalization is not required.

This completes my brief review of the long-run equilibrium approach. It may be that a long-run regional equilibrium is affected by migration in response to a resource revenue bonanza, but the efficiency loss is likely to be small. Moreover, any equalization scheme is likely to incur considerable costs. In the context of this model I have deliberately discussed only the problem of resource revenues accruing to some provinces and the policy instrument of equalization schemes. Other policy issues do not really arise within the strict confines of the simple model. For example, unequal tax capacities are not at issue unless we have differences in income across provinces. In our simple long-run model there are no income disparities except those associated with discrepancies in resource revenues. Also, unemployment insurance effects cannot really be discussed until we have a model which includes unemployment.

We shall therefore turn next to a model which deals with the process of regional supply and demand adjustment, and in the subsequent section we will allow for wage adjustment and unemployment. The simple equilibrium model of this section is not designed to study such ques-

tions, and any attempt to do so is likely to be rather tortuous. For example, the Boadway and Flatters (1982b) introduction of a cost of migration function into this simple model is not really satisfactory, since it does not take proper account of theoretical and empirical work in migration. Migrants respond to differences in income, but the model does not indicate how regional wage levels change. Moreover, the empirical observation that net migration into a region will be positive if its wage level is above that of other regions (other factors being neutral) is not in line with the Boadway and Flatters equilibrium position; in their L_o-equilibrium (1982b, p. 622, ignoring the resource revenue case) there is a continuing wage differential favouring province A but no migration.

Demand and Supply Adjustment[1]

It is convenient to concentrate first on supply and demand adjustment with full wage adjustment and no unemployment, and then go on to consider partial wage adjustment and unemployment disparities along with demand and supply adjustment. This is a natural evolution, since the present section fits between the long-run static and short-term adjustment framework. In a way, we can visualize the relevance of the present section in an economy in which dynamic changes affecting the various regions have been going on for some time.

Two relationships must be explained and I shall start with the adjustment of regional labour supply. There are two components of labour supply change: natural increase and migration. I assume that natural increase is exogenous, that it cannot be explained by any of the factors considered in this framework. We can draw on a considerable theoretical and empirical literature on migration. In line with this literature, I postulate that the flow of migrants between two regions is a function of wage levels and excess demand levels (to be discussed in the next section), distance and some autonomous factors such as net fiscal benefit (NFB) levels, and population composition variables to reflect cultural, sociological and historical differences between the regions. The net effect of the various migration flows can be summarized in the form of a relationship between net (in or out) migration and a region's wage level, its NFB level, and other independent factors, all expressed in relation to averages for the country as a whole. It should be noted that in the absence of autonomous factors, net in-migration will be zero if the region's wage level is at the country's average. It becomes positive when the wage level is above the national average, and the net flow increases as the wage disparity increases. Combining these two components we therefore have a relationship in which the change in a region's labour supply is a (positive) function of its wage level, a relationship which is shifted by natural increase, NFB levels and other factors affecting migration.

In the previous section the long-run regional demand for labour (MP curves in Figure 2-1) is negatively related to the region's wage level. If we assume that actual employment slowly adjusts to the long-run demand, then we can express the regional change in employment as a function of its wage level. This functional relation will be negative, meaning that a higher wage in a region will reduce its employment growth (or increase its decline), and the size of this effect will depend on the elasticity of the long-run regional demand curve and on the size of adjustment costs affecting employment changes. This functional relation will be shifted as the actual employment level approaches the long-run equilibrium, and it may also be shifted by exogenous factors, such as the discovery of natural resources in a particular region. At a later stage we shall consider the possible effect of migration on employment growth as a shift variable to capture the possible destabilizing impact of migration.

Is there any evidence for a negative relation between regional employment growth and wage levels? I know of no systematic evidence for Canada on this question. Casual evidence suggests that the relationship is likely to be positive, since employment growth has typically been highest in those provinces with higher wage levels. We have to interpret such evidence carefully, however, since the employment change relation is part of a simultaneous system. In particular, autonomous components of employment growth may be the cause of the observed higher wage levels. The most common "explanation" of the pattern of regional employment is in terms of differential growth in so-called basic or "export" industries. This kind of explanation does not provide any evidence on our question, since the regional wage level is not even considered, but some of the export-base ideas may be included in our autonomous employment change factors. There is some evidence for the United States that the pattern of location for manufacturing industries is related to wage levels, with lower wage areas experiencing more rapid employment growth (Milne, Glickman and Adams, 1980; Britton 1978). In an econometric study of the location of new firms in some U.S. manufacturing industries, Carlton (1979) found a negative relation between location decisions and wage levels, although agglomeration economies were also found to be important. In short, there is little evidence on this question, and I shall simply assume that there is a negative relation between regional employment change and wage level.

At this stage it is assumed that regional wage levels adjust to equate demand and supply changes. This implies that we ignore regional unemployment or excess demand disparities, or more strictly that regional excess demands are fixed at some historical level. This closes the simple model of regional demand and supply adjustment being considered in this section. It is useful to illustrate this framework in the form of simple diagrams to answer three questions. First, how does the model incorporate the emergence of resource revenues in one of the provinces? Sec-

FIGURE 2-2
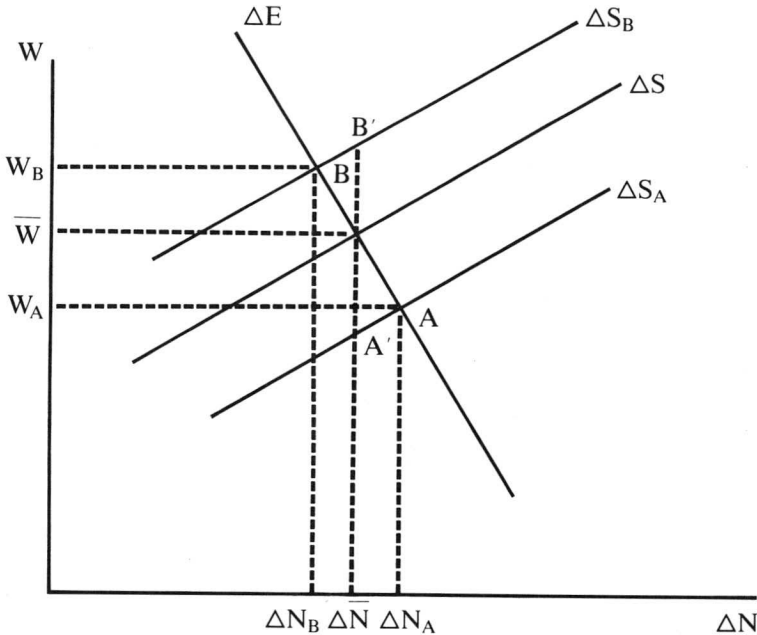
ond, what does this framework tell us about the factors responsible for regional wage disparities? Third, how do we evaluate adjustment costs in a regional economic structure which is experiencing wage disparities as a result of continuing differential shocks?

The question about resource revenues allows us to link back with the previous section. Suppose that province A becomes the recipient of resource revenues which give rise to A having lower tax rates (or more public expenditure) and, as a result, migrants are attracted from B to A. Figure 2-2 illustrates this situation in the present framework. The horizontal axis represents the quantity aspect, changes in supply and employment (labelled ΔN). The vertical axis shows the regional wage rates. The point marked by $\overline{W} - \Delta\overline{N}$ can be thought of as a kind of pseudo-origin where the regional demand and supply changes are just in balance; for example, at this point there is no independent migration, and natural increase is equal to employment growth. This $\overline{W} - \Delta\overline{N}$ point is where both regions A and B would be in the absence of the resource revenue discrepancy.

Because migrants are attracted to province A owing to the resource revenues, the supply-change function for A shifts to the right to ΔS_A in Figure 2-2. As a kind of mirror effect the supply-change curve for province B shifts to the left (ΔS_B), by exactly the same distance if the two provinces are of equal size. The "equilibrium" positions during the

FIGURE 2-3
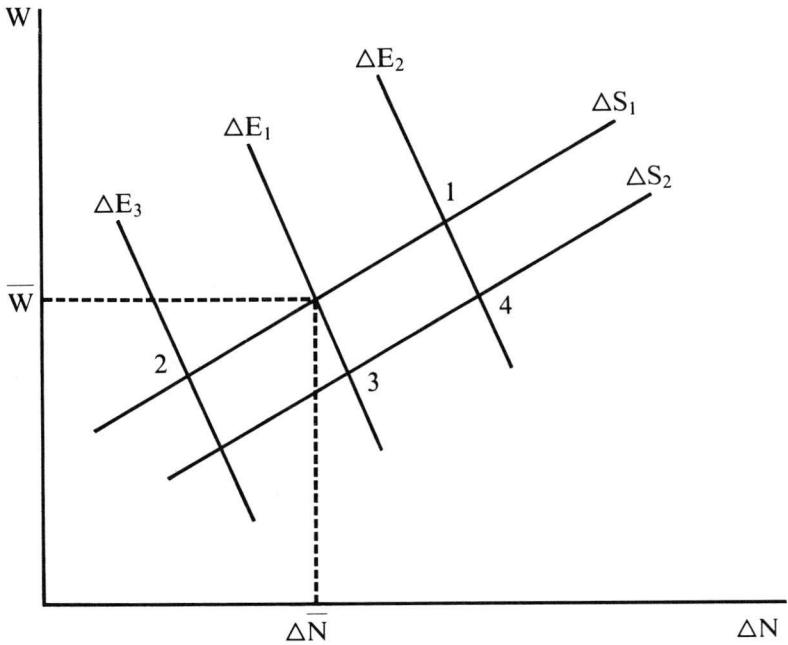
adjustment will be at points A and B respectively. Province A has a lower-than-average wage, induced employment growth, and net in-migration related to the NFB effect. Province B has a higher wage level, lower-than-average employment change and net out-migration. A glance back to Figure 2-1 assures us that these adjustments are consistent with the changes in long-run equilibrium positions from N_1 to N_2. When the adjustment has been completed on the demand side the ΔE schedule in Figure 2-2 will become vertical through ΔN and points A' and B' will be fully consistent with the new long-run equilibrium (N_2 in Figure 2-1). In short, the adjustments in this framework proceed along reasonable lines and are quite consistent with the long-run equilibrium approach of the previous section.

To analyze the factors responsible for regional wage disparities we look at Figure 2-3 which shows a number of scenarios. If a province's autonomous employment growth exceeds the natural increase of its labour force, migrants need to be attracted from other provinces and thus its wage level would have to be above the national average. This scenario is pictured as point 1 in Figure 2-3. The opposite case of low or negative employment growth is illustrated as point 2. A region with a very high rate of natural increase and an "average" rate of autonomous employment growth will be at point 3 with a lower wage level, some induced employment growth, but also net out-migration. Finally, point 4

might represent a province, like Alberta perhaps, with a higher-than-average rate of growth in autonomous employment and substantial NFBs associated with resource revenues; thus a (large) part of the NFB-shift is compensated for by a reduction in wages.

In this framework there are three factors that will increase a regional wage level: a large rate of autonomous employment growth, possibly associated with changing terms of trade; a low rate of natural increase associated with low birth rates in the past; and a larger-than-average autonomous rate of out-migration, perhaps associated with low NFB levels or with sociological or cultural factors that make its population mobile. Because of these three factors, there will in general be wage disparities in our regional structure. Moreover, the pattern of such disparities may be maintained, or at least little changed, over a considerable period of time, since a number of these factors do not change frequently or rapidly. It will be apparent from Figure 2-3 that the predicted impact of these various shocks on regional wage levels will depend on the slopes (or elasticities) of the two functions representing employment and supply change. In particular, if migration is strongly responsive to wage levels then the change in supply curves will be flat, and the shocks will only give rise to small wage disparities. In the extreme case of "perfect mobility" there will be no wage disparities arising from any of the shocks on the demand side.

The third question relates to the evaluation of adjustment costs in a regional system that is subject to differential shocks. I want to argue that adjustment costs are expressed in the respective shapes of the demand and supply change curves, e.g., as pictured in Figure 2-3. If the costs of labour supply adjustment are high then the ΔS curves in Figure 2-3 are bound to be steep. In other words, if migration costs increase sharply with the volume of net migration then the ΔS curve is steep because at the margin, migration or supply adjustment is expensive. Similarly on the employment side the ΔE curve will be steep if the costs of adjusting employment are high.

Let us look at this more closely, starting with supply adjustment and migration response. Figure 2-4 shows the migration relationship which has been used so far, but here for convenience a two-region case is considered in which migration flow from region B to A is positively related to the wage differential $(W_A - W_B)$; this can be thought of as a compressed version of the ΔS relation in Figure 2-3. It is assumed that at the origin 0 there is no net migration, so we ignore any autonomous migration for the moment. Now, we envisage a small wage differential $(W_A - W_B)$ which implies that the typical resident of B would make some small income gain by moving to A. We implicitly assume that the expectations about incomes in A are related to the average income or wage level in A. Let us for simplicity assume that for all B residents the wage prospects in A are directly related to the average wage level. This

FIGURE 2-4
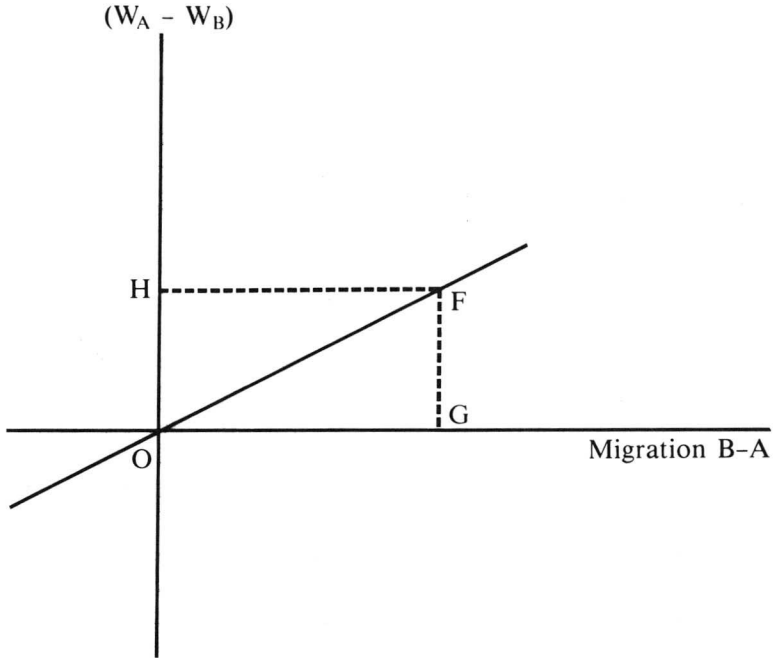
means that the small increase in the wage differential creates a positive present value from migration to A for all B residents; the present value is the discounted sum of present and future income differences. As indicated earlier there is a wide range of migration costs in any population, from people who are firmly rooted in B to those who are quite footloose. A person will not migrate if the present value does not exceed the monetary and psychic costs of moving. At the margin of indifference are those individuals for whom the present value of the income gain is just equal to the cost of migrating. On the strength of those considerations, a few individuals will decide to migrate when the $(W_A - W_B)$ differential is very small, viz., those individuals who have very low migration costs. If we increase the differential in wages, an additional group of B residents is prepared to move to A, viz., those with the next lowest migration costs. Thus we can see the migration function, line OF in Figure 2-4 as the line-up of people in B prepared to move to A as the wage differential increases raise their present value from migration to the point where it just exceeds their moving costs. In other words, the migration line OF is directly related to the costs of migration of the marginal migrant. It is clear that if the wage differential is at OH, most migrants are in fact receiving a surplus, a higher wage level than is necessary to induce them to move to A.

It follows from this discussion that we can relate the triangular area *OGF* in Figure 2-4 with total migration cost. It is useful to recall that this requires the assumption that average regional wage differentials are a direct indicator of differences in individual income prospects or present value calculations. Thus, adjustments on the supply side take the form of migration, and the costs of these adjustments are directly related to the volume of migration and the wage differential. In fact, for any migration function the adjustment costs are directly (quadratically) related to the observed wage differential. If the wage differential is increased by some shock, the economy's costs of adjustment are raised.

Using this framework we can provide a numerical illustration of adjustment costs. Regions *A* and *B* are equal in size and there is a $(W_A - W_B)$ wage differential of 20 percent. The migration function has a slope of 0.05 which means that a 1 percent differential in wages will induce a 0.05 percent increase in annual net migration flows. Finally, we assume a 10 percent discount rate to translate wage differentials into present values. All these numbers, except the discount rate, are fairly realistic in terms of Canadian experience (as will be shown in the discussion of empirical implications). This produces an estimate of supply adjustment costs of 0.5 percent of total wage income per year.

It is tempting to apply the same technique to the demand or employment adjustment side of this framework. Unfortunately, that is not possible. The slope of the employment adjustment curve is determined by the slope of the traditional status demand for labour function (see discussion of long-run equilibrium) and by the employment adjustment coefficient. Unless we have information on the static demand elasticity, which is not readily available, we cannot separate the two components. Moreover, as Nickell (1984) makes clear, the relation between the employment adjustment coefficient and adjustment cost is complex and highly non-linear. A more complete modelling of the employment-change side would obviously be desirable but is beyond the scope of this paper. Nevertheless, the point remains that the shape of the employment-change function is in part determined by the importance of employment adjustment costs.

What can we say about the welfare economics of the regional adjustment process? Should adjustment be more or less rapid? It is often argued that speeding up the economy's adjustment processes is obviously beneficial, but that is by no means clear. Adjustment costs are somewhat analogous to friction in the physical world. In a world without friction, it would be easier to move the dining room table, but, by the same token, in a world of shocks, the configuration of the furniture would be highly unstable. And when gravity is absent, as in a spacecraft, or when the shocks are abnormally severe, as on an ocean liner, friction is often increased, e.g., by screwing down the furniture.

The general topic of the optimal rate of adjustment is complex and

beyond the scope of this paper. Under present circumstances, in which we implicitly assume that the adjustment of wages is costless, I will argue that the equilibrium positions of our model are likely to be optimal. If participants on both sides of the market respond to signals related to the true costs of adjustment, then there is no reason to believe that the outcomes in terms of wage disparities and adjustment speeds are inefficient. Firms individually adjust their employment levels in response to exogenous shocks, such as international price changes, and to regional wage levels in such a way that profits are maximized taking into account the costs of adjustment. On the other side, workers maximize their utility with respect to choices about work, leisure and migration taking into account the costs of migration. In the final section I shall briefly discuss what policy measures might be used if there are discrepancies between private and social costs of adjustment. For the purpose of this section, I shall assume that such discrepancies do not exist and that the outcomes are efficient.

Using this framework we can make some normative observations about different equalization schemes. Figure 2-5 illustrates a number of scenarios in which province A has a higher-than-average rate of employment growth (caused by exogenous shocks) and province B is at the other end of the spectrum. Under normal circumstances the two equilibrium positions will be A_1 and B_1; these are efficient in the sense discussed. Now suppose that province A also has the higher rate of natural increase in its labour force then the supply function for A will be displayed towards the right ($\Delta S'$) while the situation in B is reversed ($\Delta S''$). The equilibrium positions A_2 and B_2 are efficient in this case, since the natural increase differential is an exogenous shock. The $A_2 - B_2$ combination under these conditions involves smaller adjustment costs than the $A_1 - B_1$ combination which is obviously the result of the fortuitous coincidence of employment and natural increase shocks.

Alternatively, the same shock (e.g., in the terms of trade) that favoured province A's employment growth also gave rise to a bonanza in resource revenue for province A, while province B is in the opposite camp on both counts. Equilibrium positions such as A_2 and B_2 will then also prevail, but these are not efficient if we assume that the differential in resource revenues could be costlessly eliminated. There is more migration from B to A in the $A_2 - B_2$ combination than in the $A_1 - B_1$ combination, and in a way we can think of the resource revenue differential as providing a subsidy to migration. By referring back to the section on long-run equilibrium we can see that this conclusion is analogous in that the resource revenue differential produces excessive migration; it contradicts my earlier arguments on this score (Vanderkamp, 1982). An equalization scheme that compensates for the resource revenue differential will correct this situation. The question again arises whether such a scheme can be introduced without political or economic costs, and the reader is referred to the previous section for a discussion of this question.

FIGURE 2-5
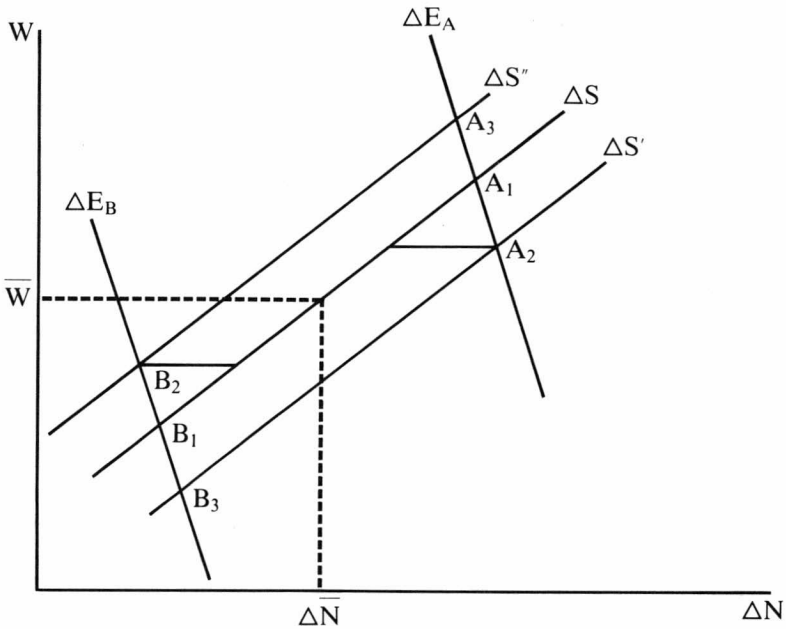
The $A_3 - B_3$ combination in Figure 2-5 is designed to illustrate another scenario. Suppose that for equity reasons an equalization scheme is put in place to provide province B with a larger tax base; it will be apparent that in the equilibrium combination $A_1 - B_1$ the wage level and therefore the tax base in A exceed those in B. This means that with the scheme in place, province A now has a below average NFB-level while province B's is above average. The resulting shifts in the supply-change functions give rise to the combination $A_3 - B_3$ which is inefficient. We can think of the equalization scheme as a tax on migration from B to A with the result that adjustment is slowed down. The size of the inefficiency cannot readily be measured, but we should note that the taxation required for the equalization scheme is bound to add to the costs.

This completes the review of the simple model of demand and supply adjustment in a regional labour market system. The basic assumption is that these adjustment functions are the result of maximizing behaviour on the part of firms and workers. The upward slope of the supply adjustment function derives from the differences in migration costs across potential migrants. The downward slope of the employment change function reflects the adjustment costs faced by individual firms. Both functions will shift as a result of a number of factors. Since wage adjustment is assumed to be costless at this stage, the regional labour market clearing determines the regional wage structure.

This model is applied in two directions, in attempts to answer both

positive and normative questions. The positive issue relates to the factors which supposedly determine regional wage disparities, since such disparities are symptoms of regional adjustment problems; some empirical facts will be discussed briefly in a later section. The normative problem relates to the character of the equilibrium adjustment. It is argued in a somewhat heuristic manner that as long as the adjustment costs to which firms and individuals react are true social costs, then the equilibrium adjustment patterns of this model are optimal. In the next section we discuss the issue of partial wage adjustment and its consequences.

Wage Adjustment and Excess Demand

There are two important implications to partial or incomplete wage adjustment. First, it means that at some particular point in time the regional system is unlikely to be in equilibrium. In the previous section we have already seen that a regional system subjected to shocks will not in general be in long-run equilibrium, and we in fact developed the idea of a dynamic equilibrium or adjustment path which describes the responses to such shocks. But partial wage adjustment complicates the notion of equilibrium considerably as it introduces an interaction between the adjustment paths of labour supply, employment and wages. Second, incomplete wage adjustment implies that unemployment and job vacancies, or, more broadly, excess demand, will be evident and changing over time. Moreover, we may expect individual market participants, e.g., migrants, to react to differences and changes in excess demand, and their reaction further complicates the adjustment process.

The most common price or wage adjustment scheme is associated with the excess demand hypothesis. While this hypothesis was originally conceived in connection with changes in relative prices, it has in recent decades become the foundation for the so-called Phillips curve which explains the movement of nominal wages in relation to excess demand or unemployment. The basic idea behind the excess demand hypothesis can be explained as follows. If crop failure or a change in consumer preferences creates an excess demand for potatoes, which may be evident in the form of excessively low inventory levels, dealers in potatoes will have an incentive to raise the price. Conversely, if there is a glut in the potato market, in the form of excessively high inventory levels, there will be a tendency for potato prices to be lowered. It should be noted that such price movements will tend to reduce or eliminate such excess demand or supply situations. More specifically, the excess demand hypothesis states that the rate of price adjustment will be a function of the level of excess demand (or supply).

When applied to regional labour markets this hypothesis translates as follows: the rate at which the relative wage in a region adjusts depends on its relative excess demand position. If a province has little unemploy-

ment and lots of job vacancies, we would expect the wage level in that province to increase relative to that of other regions. Conversely, when a region experiences lots of excess supply in its labour market, we expect its average wage to decline in relative terms. Such a decline may not involve a decline in nominal wages or a reduction in real wages but may simply mean a reduced rate of advance in real wages. The empirical specification of the excess demand variable may involve some problems, although relative unemployment rates or job vacancy rates (if available) may present themselves as proxy variables, or alternatively a variable (X) which represents the ratio of a region's employment to its population of working age. This X variable fits naturally into the model used here, and it encompasses regional variations in participation rates as well as unemployment rates.

There is little direct evidence on the question of whether excess demand determines relative regional wage changes. There is quite a lot of evidence to support the Phillips curve idea that at the national level wage changes (at first nominal but more recently real) are a function of excess demand in the Canadian labour market. Thirsk (1973) applied the Phillips model to Canadian provinces and found some support for the existence of regional Phillips curves; the regional unemployment rate had a negative impact on annual wage changes which was significant in most cases. The alternative hypothesis that wage changes at the provincial level are a function of national or Ontario labour market conditions received little support although it could not be rejected in a few cases. The provincial Phillips curves present quite different shapes with the result that there is much more similarity in the rate of provincial wage changes than there is in provincial unemployment levels; most provincial unemployment rates vary in the same direction but not by the same amounts. The similarity in provincial wage changes of course implies little change in relative wage levels. Thirsk then turns his attention to structural problems within provincial labour markets, and we shall take up that issue shortly. As a piece of indirect evidence it should be noted that Christofides, Swidinsky and Wilton (1980) in their analysis of wage adjustment at the micro level of individual bargaining units use as their preferred labour market variable the regionalized help-wanted index. This suggests that regional labour market pressure matters in determining regional wage changes, although its impact may be quite small, particularly when we examine annual wage changes (see also, Swan and Kovacs, 1981; Milne, 1984).

If we accept the excess demand hypothesis regarding the adjustment of relative regional wage levels, it has important implications for regional disparities. In particular, there are now regional disparities in unemployment or excess demand (X), as well as wage disparities. The impact of shocks on wage disparities still is in the same direction but is more muted. The shocks which affect wage disparities also have an impact on X disparities in the same direction, or on unemployment disparities in

the opposite direction. In other words, the same shocks (natural increase in labour force, autonomous migration and exogenous employment changes) are expected to be the basic factors in an explanation of disparities in wages and unemployment. This implies that there should be a negative correlation between regional wage levels and unemployment rates, or a positive correlation between wages and excess demand levels. We shall turn to some descriptive evidence in the next section.

But life is more complicated because wage adjustment provides the system with more of its own dynamic. In particular, past levels of wages and excess demand now have an influence on the pattern of current wage and X variables. The most interesting of these links is the effect of the past wage level on the current X disparities. Not surprisingly perhaps, this effect is negative, meaning that the higher a region's past wage level the lower its X variable or the higher its unemployment rate. This positive link between unemployment and wage disparities will be stronger the weaker the wage adjustment response process is. If relative regional wages are completely unresponsive or rigid, the link is strongest, and of course any external shocks would then have no impact on wages. As a result, if relative wages are unresponsive to excess demand differentials, there will be a positive correlation between wage and unemployment disparities. This contrasts with the negative correlation discussed in the previous paragraph. A possible indirect test of the wage adjustment hypothesis is therefore to look at the correlation between wage and unemployment disparities: a predominantly negative relation is evidence of wage adjustment, and a positive one suggests wage rigidity.

This raises the question as to why there would be wage rigidity in the sense that relative regional wage levels do not move up or down. There has been a great deal of discussion about the wage rigidity, particularly downward rigidity, in the context of macroeconomics. It is an extremely complicated subject, and I shall only provide some brief comments. The main difficulty in the area is that many people accept the assumption of wage rigidity without asking what kind of micro behaviour, presumably of a maximizing variety, could explain wage adjustment and the supposed lack of it, wage rigidity. Only then can we try to answer the normative question about the optimum amount of wage adjustment.

It is frequently asserted that downward rigidity is the result of general social attitudes, implying that workers in general do not like the idea of wage reductions. In our context this would require that people do not like relative wage reduction presumably based on social attitudes about an acceptable regional-industrial wage structure. Such a rationale does not seem credible, since many people probably also dislike increases in the price of goods without their feelings having much apparent impact. A somewhat more credible argument is that there is wage ridigity in the short run because the short-run demand for labour is believed to be so

inelastic (responds so little to wage rates) that the wage reduction would have to be very large, and it might even be so bad that there is no short-run equilibrium wage rate. In our context this would mean a belief that regional employment adjusts little if at all to relative wages. This may well be true, but the belief has to be translated into action by people in the labour market acting in their own interest.

Trade unions are possible groups of actors on the supply side of the labour market. If there is a general feeling among union members that wage declines are to be avoided, the union can formulate a bargaining strategy to avoid them. Of course, such a strategy requires union workers collectively to trade off potential employment gains against wage stability. In the regional context there might be an additional reason for a union to wish to maintain wage equality across regions, viz., to eliminate "unfair" competition based on wage differentials. Many of the firms in an industry would also have an interest in maintaining wage equality. Presumably, this tendency would be strongest in highly unionized industries in which firms are in direct competition with each other across provincial boundaries. Collectively, such groups cannot account for a large part of the Canadian labour force. Quite a few industries are fairly region-specific, which means that interregional competition within a narrowly defined industry is often not present. Moreover, only about one-third of the Canadian labour force is unionized, although many of the industries in manufacturing, transportation and communications are quite highly unionized. It should be added that national wage and salary standards applied to federal employees in all regions of the country also have the effect of reducing the flexibility of the regional wage structure. Since many of the federal employees are unionized, we can put this in the category of union effects on regional wage rigidity, although federal wage standards would probably apply without unionization.

There is some recent evidence on this subject in the study by Christofides, Swidinsky and Wilton (1980), in which they examine spillovers between wage contracts in unionized industries. (A spillover occurs when the rate of wage change negotiated in one bargaining group is related to other recent contracts in the same reference group.) A number of different reference groups are tested, and their strongest results relate to a reference group definition in terms of narrow industries and broad regions. In other words, spillovers occur but they appear to be confined to firms within relatively narrow industries. This evidence provides some support for the argument that there is a tendency in unionized industries to have inflexible relative regional wages; the finding that the spillovers are confined to broad regions obviously weakens this evidence (see also Lacroix and Dussault, 1984).

It may be argued that there are spillovers between union and non-union sectors which tend to reinforce the inflexibility of relative regional wages. For example, most of the wage adjustment decisions in non-

unionized firms in a region might follow the lead of key negotiations in unionized firms within the region; these key negotiated settlements might then be aligned across regions by the competitive mechanism described above. This kind of scenario seems difficult to believe, since the actors in the non-union sectors are presumed to respond rather mechanically to some signals that may not serve their best interests. In particular, from the points of view of a typical worker's utility and a typical firm's profit position, it may be preferable to contemplate relative wage reductions rather than employment cuts including layoffs and outright closure.

My overall conclusion is that union strategy and federal wage standards may have some influence in making the regional wage structure inflexible. In particular there is some evidence to support the contention that they may link wage changes in one region with those in others. But there is no evidence for the equality of absolute wages across regions, which is the strict implication of the argument. This fact does not suggest, of course, that the regional wage structure is highly flexible. In particular, if for similar reasons wages in all regions are not very flexible in nominal or real terms, this will show up as a stable regional wage structure. For example, if the real wage is completely rigid downward in each province, the relative wage position of a province being subjected to unfavourable shocks can only change as a result of relative wage gains in provinces at the other end of the spectrum.

The theory of implicit labour contracts is helpful in understanding such inflexibility. The theoretical arguments are quite complex, and my brief remarks will not do justice to them. The basic idea is that the firm and employee both have strong interests in a continuing relationship. This relationship is strengthened by the investment in workers of specific skills and by the alleged fact that workers are risk-averse while firms are not. This means that out of self-interest the firm offers an implicit contract (may not be written down anywhere) which reduces the worker's risk regarding fluctuations in real wages. For this purpose the worker pays an "insurance premium" in the form of a lower wage. Since, however, the insurance does not typically provide complete coverage, there will be occasions when the demand for the product is sufficiently depressed that the firm will be forced temporarily to lay off workers. There are two broad reasons why firms and workers may prefer temporary layoffs to temporary reductions in wages in such situations. First, picking up on a point made earlier, if the demand for labour is insensitive to wages in the short run, the reduction in real wages may have to be large to the extent that the worker's value of time, e.g., as leisure, is greater than the wage compensation. Second, the existence of unemployment insurance and other transfer payments puts a floor under the wage level or, to view it another way, subsidizes the layoff rather than the temporary wage reduction. Even in the case of perfectly predictable

fluctuations, e.g., seasonal and some cyclical swings, the firm and worker may prefer the layoff to other methods of temporary adjustment (including variations in wages, hours of work, or inventories) because of unemployment insurance (Feldstein, 1976). These kinds of implicit contracts may, of course, become explicit contracts in the case of unionized firms.

This contract argument may help to explain why wages are in general not very flexible and in particular why wages may be inflexible downward. This approach has the advantage of being firmly rooted in some form of maximizing behaviour on the part of labour market participants. It also makes clear that wage rigidity may be prevalent because, from the point of view of the firm's profit function or the worker's utility, wage flexibility is too "expensive." At this stage in the development of the wage rigidity theory, it is not possible to quantify the costs of wage adjustment. Without such knowledge it is difficult to make normative statements about whether increased wage flexibility would be beneficial. It may be that under "normal" circumstances the amount of flexibility prevalent is optimal, i.e., participants in the labour market have correct perceptions of the social (= private) costs and benefits of greater wage flexibility. To allow me to proceed on this question I shall assume that such normal flexibility is indeed optimal and that any interference through policy measures to speed up or slow down the rate of wage adjustment produces inefficiencies. It should be emphasized that this is only an assumption and further work in this area is required.

There is some indirect support of this assumption. I would argue that most policy measures which may interfere with the wage adjustment process, such as minimum wages, federal wage standards and personal transfers (including unemployment insurance), were not designed for that purpose. There seems little doubt that most of these policy measures were adopted for equity reasons and were not implemented to slow down wage adjustment. It is interesting to note that in this view, unemployment insurance has a direct impact on the rate of wage adjustment, and thus an indirect one on regional unemployment disparities; unemployment insurance may of course also have direct impact on unemployment (Cousineau, 1985) and it may work indirectly through migration flows as we have discussed in earlier sections.

The various arguments presented above suggest that we should not expect wages to be perfectly flexible. In particular, there may be considerable rigidity in real wages, especially in a downward direction, because from the point of view of the participants in the labour market this presents a less costly form of adjustment than perfect flexibility. These costs and benefits of wage adjustment may of course be affected by various policy measures including minimum wages and unemployment insurance. I know of no empirical work that has directly attempted to assess the effects of such policies on wage adjustment (but see Swan and Kovacs, 1981). If there is

considerable rigidity in real wages, this will affect the speed with which the regional wage structure can respond to shocks. Moreover, the extent of unionization in certain industries may create a direct link between regional wages, as will federal wage standards.

What are the consequences of slow wage adjustment, or of complete wage rigidity? As discussed, there will be labour market imbalances in the form of unemployment and vacancies. In our framework the shocks which affect the regions will in part (or in total) be reflected in the form of unemployment or excess demand disparities. Some people jump from this, to argue that the size of these disparities or imbalances is a direct indication of the costs of wage rigidity; Thirsk (1973) appears to equate efficiency with lack of imbalances. In view of the foregoing discussion this jump is not legitimate, since part of these disparities results from a cost-benefit trade off between wage rigidity and flexibility alternatives. On the other hand, if my assumption about the efficiency of "normal" wage adjustment is correct, we can at least identify the inefficiencies associated with the impact of policy measures on wage adjustment.

It is not immediately obvious that, in the framework developed here, there are such inefficiences. In particular, I want to argue that the size of such inefficiencies depends crucially on the way the regional system responds to excess demand disparities and how these disparities are translated into output losses. Figure 2-6 presents a simple case to support this argument. The diagram is similar to the ones used in the previous section; the presence of Y on the vertical axis will be explained momentarily. The two regions A and B are experiencing shocks as before, and points 1 and 4 are the equilibrium positions of A and B respectively under the assumption of full wage adjustment discussed before. In the case of complete wage rigidity we have to make an assumption about the wage levels prevailing before the shocks. For simplicity I assume that the wage levels in the two regions were pre-viously equal at $\overline{W}$. It might be thought that the effect of the shocks is to produce equilibrium positions at points 2 and 5 for A and B respectively. In that case, the two regions would be experiencing excess demand and supply respectively with the distances 0-2 and 5-0 indicating the rates at which A's excess demand and B's excess supply are increasing.

But the matter would not rest there unless we assume that neither supply nor demand sides of the regional labour markets respond to excess demand. In particular, the empirical evidence on migration behaviour provides some support for the proposition that migration flows not only respond to wage differentials, but also to excess demand differences. Let us suppose that migration flows are equally responsive to both. Our measure of excess demand is the regional employment-population ratio, and this combines with the level of wages into a variable representing per capita earned income (Y). With our assumption of equal responsiveness of migration, we can then maintain the same

FIGURE 2-6
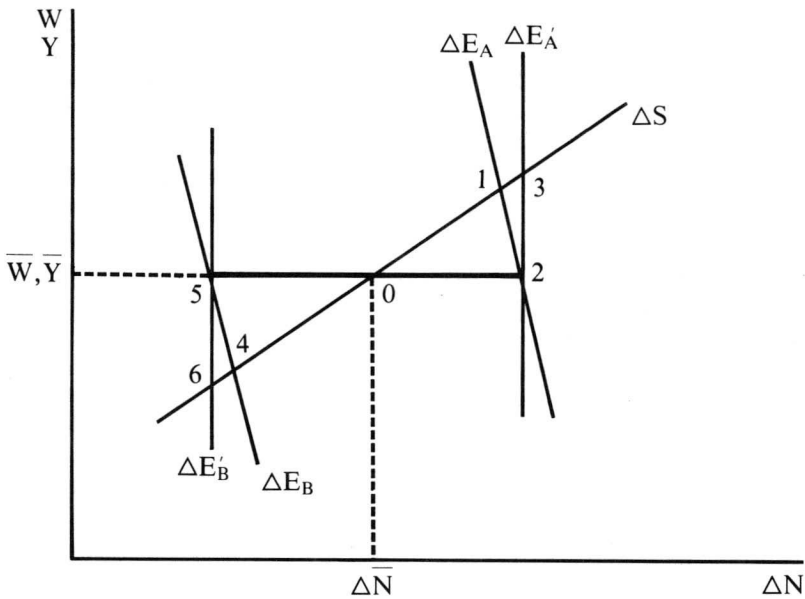
supply change curve in Figure 2-6 as before, except that it expresses supply change as a function of Y instead of W. I assume that employment changes do not respond to excess demand (only to wages which are rigid and equal), so that $\Delta E'_A$ and $\Delta E'_B$ reflect the (lack of) responsiveness of employment to income differentials (Y). Under these assumptions, the two regions would adjust to the shocks along the paths indicated in Figure 2-6 by points *3* and *6* respectively for *A* and *B*. In other words, even without any adjustment in wages the regional system may adjust much as before.

To appreciate the process behind Figure 2-6 it is useful to describe the adjustment pattern in looser terms. When regions *A* and *B* are hit by the external shocks, wages do not adjust and *A* registers excess demand while *B* experiences excess supply. After a lag, migrants start to respond by moving from *B* to *A*. If this response is complete, the differential in employment opportunities will stabilize; if not, the differential will widen until the induced migration response is large enough. During this adjustment, the labour market in *B* will register increased unemployment and reduced participation rates; our *X* variable (employment-population ratio) has no obvious limit in this downward direction. On the other hand, region *A* will register decreases in unemployment and increases in participation rates. Our *X* variable is likely to have an upper limit (unemployment cannot be negative, and participation rates probably have a maximum level), and when this is being reached region *A* will

also start to register an increase in job vacancies. In technical terms, the relation between our X variable and true excess demand is likely to be non-linear.

It is clear from this discussion that, in special circumstances, the interregional adjustment process under conditions of complete wage rigidity will proceed in the same way and be equally efficient as under complete wage flexibility. Specifically, the conditions are:

1. regional wages are equal (and fixed);
2. employment change does not respond to regional wage differentials;
3. migration responds to excess demand disparities with the same strength as to wage disparities; and
4. our X variable is completely flexible in both directions.

Although these four conditions are no doubt unrealistic, it is instructive to see why the adjustment process under these conditions is the same as with complete wage flexibility in the sense discussed in the section on demand and supply adjustment. Under both sets of circumstances, points 3 and 6 in Figure 2-6 are the equilibrium positions of regions A and B respectively. Under conditions of wage flexibility, a wage differential of, say, 20 percent will characterize the adjustment path. With wage rigidity, there will be an X differential between the two regions of 20 percent. In both cases there will be a 20 percent differential in per capita earned income (Y), which will induce the same migration flow from B to A regardless of whether W or X is responsible for the Y disparity. Although these two cases may be equivalent from an efficiency viewpoint, they are likely to be unequal in equity terms. The W disparity may fall on all people equally, but the X disparity implies higher unemployment and lower participation rates in B which are likely to fall unequally on different groups in society. In short, while the incidence of adjustment costs in terms of different groups is likely to be unequal, the aggregate adjustment costs under conditions of wage rigidity may not be as disastrously large as is sometimes implied.

The crucial condition in the previous paragraph is the fourth, that the X variable is completely flexible when wages are rigid. As already indicated, this condition is unlikely since X has an upper limit and is likely to exhibit some upward inflexibility. It is interesting to note that this complements wage flexibility which is likely to be less in the downward direction. When in Figure 2-6 the X variable in region A approaches its upper limit, A will start to register increases in job vacancies. Presumably these increases in vacancies imply some loss in aggregate output. This loss in output, and the coexistence of unemployment (in B) and job vacancies are not necessarily indicative of inefficiency. For example, despite the general tenor of their interesting paper, Harris, Lewis and Purvis (1984, p. 102) simply list price (and wage) rigidity as a deviation from an efficient adjustment path. These phenomena may reflect the quite legitimate costs associated with wage adjustment, although some

costs may also be induced by policy measures such as minimum wages or unemployment insurance.

To get away from the extreme cases discussed so far, we may assume that, in reality, the system is likely to display some wage flexibility, particularly upward, and some X flexibility, particularly downward. As long as these flexibilities are not perfect or perfectly complementary, some of the flavour of the wage rigidity case will survive. In particular, the more rapidly expanding region A will experience increases in job vacancies with some aggregate loss of output. Any policy measures that increase wage inflexibility, that reduce the responsiveness of migration to W or X disparities, or that increase the extent of wage flexibility required in the system will be costly to the national economy in the form of increased unemployment and vacancy disparities and lost real output.

Empirical Implications

In this section I will briefly discuss some of the empirical implications of the analysis of the preceding two sections. The analysis clearly permits the existence of regional disparities, and in fact it predicts that such disparities will arise under a variety of circumstances. At the same time, the analysis does not imply that regional disparities will always favour the same regions. If and when the winds of change veer, a rearrangement of regional differentials including their possible disappearance should result.

The analysis identifies a number of shocks that will affect the regional system. First, on the demand side, it is predicted that a region with a higher rate of autonomous employment growth will have relatively high wage and low unemployment levels. Such a high rate of autonomous employment growth may be associated with resource discoveries or depletions, technological changes and changes in international terms of trade or comparative advantage. These differential employment shocks are largely associated with different fortunes of industries and based on the industrial specialization of regions.

On the regional labour supply side, shocks arise from differentials in natural increases and autonomous migration. Natural increase in a region's labour force is determined essentially by past birth rates. Differences in migration patterns may arise for cultural or sociological reasons and because of differences in provincial tax rates and expenditures patterns, e.g., due to natural resource revenues or equalization payments. A province or region with a low rate of natural increase or with a relatively large amount of autonomous out-migration (perhaps due to the cultural make-up of its population or to low net fiscal benefit levels) is predicted to have a relatively high wage rate and low unemployment level. In this context it should be noted that a general change in migration behaviour (perhaps because of reduced transport costs) will affect the

whole pattern of wage (and unemployment) differentials. In particular, an increase in migrants' responsiveness to income differentials is predicted to lead to a narrowing of wage differentials for any given set of autonomous shocks.

Taken together, these three "real" shock variables (autonomous employment growth, natural increase and autonomous migration) will have an important impact on wage and unemployment differentials. A region exposed to a favourable combination of real shocks will have a high relative wage and a low unemployment rate. This appears to lead to the prediction that there will be a negative correlation between wage and unemployment levels when we look at the regional cross-section pattern. This prediction is, however, subject to two qualifications, both related to the nature of the wage adjustment response.

First, because it is assumed that relative wages respond with a lag, the system has a "memory" with past events influencing present developments. For example, a region whose fortunes have changed for the worse will for a time have too high a relative wage level, which will also imply a relatively high unemployment (low X variable) level. A more rapid response of relative regional wages to excess demand will reduce this tendency of a positive correlation between wage and unemployment levels. Related to this point, any real shocks will have a more potent impact on wage levels than on excess demand if the wage responds strongly to our X variable.

The second qualification relates to the possibility of autonomous components in the wage adjustment process, i.e., factors unrelated to the level of excess demand. For example, if the labour force in a province like British Columbia becomes heavily unionized, its wage level may rise, incorporating part of the resource revenues that would otherwise accrue to the province (Mansell and Copithorne 1985). Such an autonomous raise in wage level will then lead to a higher unemployment rate (lower X level). In short, the prediction of a negative correlation between regional wages and unemployment will need to be modified if there are turnarounds in regional fortunes and if there are important independent forces in the wage adjustment process.

In the previous section, I discussed a few policy initiatives, i.e., related to minimum wages, national wage levels and unemployment insurance, which may be considered as shocks to the wage adjustment process. If such policy measures are regional in nature, they may represent autonomous regional wage shocks analyzed in the previous paragraph. If such policy measures are introduced nationally, they may lead to increased wage rigidity. Over the last 50 years or so there have been important policy initiatives in minimum wages and unemployment insurance which likely contributed to increasing wage rigidity in the Canadian economy. If so, we would predict that during recent decades the real shocks will have had a smaller impact on wage differentials and a greater

impact on unemployment or X differentials. This in turn suggests that over recent decades wage disparities will have narrowed and X disparities widened.

Before we take a brief look at some descriptive evidence, it is useful to consider the relationship between the analysis presented here and the static model discussed earlier. In the section on long-run equilibrium, I indicated that the static model may be characterized by the absence of adjustment costs. Under such circumstances, there will never be any regional disparities for reasons of dynamic shocks, only wage disparities due to static or ongoing events such as permanent resource rent differences or location preferences of individuals. A less extreme characterization of the static model might be that adjustment costs are relatively unimportant with the result that after a sudden shock, e.g., a change in the terms of trade, the regional system will return to full equilibrium if we allow sufficient time to elapse. From this emerges the traditional prediction that regional disparities will diminish and disappear over time.

This comparison of the two models points up two important differences. First, the adjustment model of the preceding two sections puts the costs of adjustment at the centre of the analysis, while in the static model adjustment costs are ignored or at least assigned a minor role. The recognition of the central role of adjustment costs brings an awareness that in the self-interest of all labour market participants, adjustments will be slow. Thus even in response to a one-time shock, e.g., an improvement in the terms of trade, there will be a lengthy adjustment period which may be captured by the following scenario:

- Capital investment decisions need to be translated into actual growth in the demand for labour in the region.
- Excess demand once manifested in the form of more vacancies, lower unemployment and high participation rates will cause some upward adjustment in wages.
- Increasing excess demand and higher wages will attract potential migrants.
- Once the increased rate of employment growth returns to "normal," excess demand will diminish because of continuing net in-migration.
- This reduced excess demand will tend to drive down the regional wage rates.
- The combination of reduced excess demand and reduced wage rates will diminish migration.

The second difference is that the comparative static model typically considers one-time shocks while the adjustment model appears to emphasize ongoing shocks; this is not strictly true, since the adjustment framework can easily cope with wildly varying shocks, but it should be recalled that the explanation of persistence of regional disparities relies

on the ongoing nature of shocks as well as on slow adjustment. It seems more reasonable to characterize most shocks as ongoing than as one-time. For example, shocks associated with cultural or sociological factors are not likely to change overnight. This means that regional differences in natural increase rates and in autonomous migration behaviour are likely to persist. The same argument applies to shocks in the nature of wage adjustment behaviour. Even on the demand side, shocks associated with changing comparative advantage and with technological developments are likely to be drawn out. Resource discoveries and international price changes may come closest to the one-time variety, but even here the impact will be slowed by phases of realization, expectation and implementation. For example, the 1973–74 oil price shock did not produce all its employment impact on Alberta in one year; the employment shock persisted for the rest of the decade, after which there were further oil price shocks.

How then would the adjustment model cope with a one-time shock? The answer is somewhat analogous to the discussion surrounding Figure 2-2 in the section on demand and supply adjustment, and it follows the scenario outlined earlier in this section. Suppose a one-time international price shift occurs in a commodity in which our region has a strong comparative advantage to the extent that regional employment must rise by 10 percent. In this example the time pattern of adjustment will be crucially determined by the capital investment and employment decisions of the firms in our region. For example, the total employment increase might be spread over a 15-year period with a peak employment growth of 1 percent in the third year, diminishing thereafter to no growth by year 16. During this adjustment period, excess demand, relative wages and net-migration will also increase and then diminish. When the shock has petered out, regional disparities will have disappeared again, and net migration will also be down to zero as the balance in regional factors of production (resources, capital and labour) has been restored. This pattern is mirrored by adjustments in the opposite direction in the other regions of the country.

In our analysis the persistence (not necessarily constancy) of regional wage and unemployment disparities is attributable to slow adjustment to fairly persistent shocks. The identification and quantification of the various shocks will obviously be an important goal of empirical work. As indicated earlier, the empirical literature on migration is quite voluminous, but there has been little work in the other areas. In particular the determinants of regional employment growth require examination, and the process of regional wage adjustment needs to be better understood. It is possible, as is suggested in the concluding section of the paper, that migration flows may have a direct impact on regional employment growth and decline, and this issue requires careful empirical investiga-

tion. It should be noted that such an impact may in part be responsible for the slowness of the total adjustment process.

For reasons of space the descriptive evidence will be very brief. Table 2-1 provides some summary statistics for two groups of provinces. Group A includes the three provinces of Ontario, Alberta, and British Columbia which in recent decades have been favoured in the Canadian development process. Group B contains the other seven provinces which together had about the same working-age population as group A in 1950. It is interesting to note that during the last three decades group A provinces have grown more rapidly than group B so that their labour force population now exceeds that in group B provinces by about 25 percent. The groupings are quite convenient, since most provinces in a group have shared similar experiences; the principal exceptions will be noted.

It appears that the real shocks have been quite persistent. Except during the 1930s (when only Quebec had above-average employment growth), group A has consistently had a greater employment growth rate than B. At the same time natural increase rates have been higher in group B for all of the 50 years although the difference has narrowed in recent decades; Alberta in group A has had above-average natural increase rates for all five decades. Together these two shocks elements have been quite stable for our two groups since the 1930s, although there has been some convergence in experience largely due to the rates of natural increase. There is no direct evidence on autonomous migration in Table 2-1 although the patterns of personal transfers and net fiscal benefits have generally favoured group B particularly in the recent decade. Assuming that migration is affected at least by NFB differentials, the increase in these differentials by itself will have contributed to a widening of income disparities in recent decades.

The increasing importance of net fiscal benefits is largely attributable to the growth in provincial governments. It can be seen from the column on provincial revenue in Table 2-1 that intergovernmental transfers are an important source of revenue for group B and that resource revenues are relatively more important for group A provinces, particularly in the last few decades; the only province which is below average on all counts is Ontario. The net out-migration data include net international migration which has contributed about 4 percent to Canadian population over recent decades. Group A provinces have generally experienced net in-migration while net out-migration is more common among group B provinces. The 1970s saw some changes in this pattern with Atlantic provinces having relatively little net out-migration and Ontario losing population to other provinces; part of this change in pattern may be attributed to increases in unemployment insurance payments and intergovernmental transfers to Atlantic Canada.

In line with the persistence of the real shocks, income disparities have

TABLE 2-1 Statistical Comparisons for Two Groups of Provinces (Averages for Each Decade)

Disparities

	Income[a]		Wage[b]		Excess Demand[c]		Unemployment[d]	
	A	B	A	B	A	B	A	B
1931–40	1.1616	0.8709	1.1561	0.8713	1.0048	0.9996	—	—
1941–50	1.1244	0.8804	1.1103	0.8913	1.0127	0.9878	—	—
1951–60	1.1424	0.8523	1.1070	0.8815	1.0320	0.9669	3.7	5.5
1961–70	1.1212	0.8636	1.0710	0.9116	1.0468	0.9473	4.0	6.0
1971–80	1.1078	0.8669	1.0479	0.9327	1.0571	0.9295	6.0	8.1

Fiscal

	Personal Transfers[e]		Net Fiscal Benefit[f]		Provincial Revenue[g]			
					Transfers		Resources	
	A	B	A	B	A	B	A	B
1931–40	0.0613	0.0725	0.0006	0.0060	0.1236	0.2318	0.0790	0.0820
1941–50	0.0666	0.0803	0.0186	0.0243	0.2453	0.2850	0.0866	0.0642
1951–60	0.0906	0.1182	0.0465	0.0537	0.2778	0.3084	0.1574	0.0636
1961–70	0.1010	0.1340	0.0605	0.0961	0.1868	0.3021	0.0914	0.0300
1971–80	0.1345	0.2082	0.0865	0.1248	0.1637	0.2878	0.1498	0.0294

Demand and Supply

	Employment[h]		Natural Increase[i]		Net Out-Migration[j]		Labour Force[k] (millions)	
	A	B	A	B	A	B	A	B
1931–40	0.0614	0.1268	0.1441	0.2388	−0.0246	0.0642	3.78	3.91
1941–50	0.2661	0.1230	0.0952	0.1853	−0.1007	0.0322	4.47	4.65
1951–60	0.2539	0.1189	0.0976	0.1899	−0.1769	−0.0033	5.54	5.34
1961–70	0.4085	0.2584	0.1852	0.2460	−0.1320	0.0466	7.19	6.39
1971–80	0.4209	0.2499	0.1904	0.2187	−0.1045	0.0387	9.39	7.60

Source: Compiled from *Census of Canada*; 1931–81 Statistics Canada, *The Labour Force*; 1946–81 National Accounts; 1931–81 Provincial Financial Accounts; 1931–81 Vital Statistics 1931–81.

Notes: Group A includes Ontario, Alberta and British Columbia; group B includes Newfoundland (except during 1930s and 1940s), Prince Edward Island, Nova Scotia, New Brunswick, Quebec, Manitoba and Saskatchewan. An appendix which contains data for each province separately may be obtained from the author on request. (See note 1 at the end of the study.)

a. Earned income (wages, salaries, military pay, farm income and income from unincorporated business) per member of the labour force population (15+) expressed as a proportion of the Canadian average for each decade.

b. Earned income per employed person expressed as a proportion of the Canadian average for each decade.

c. Ratio of employment to labour force population expressed as a proportion of the Canadian average for each decade.

d. Unemployment as percentage of labour force.

e. Government transfers to individuals expressed as a ratio to average earned income.

f. Net fiscal benefits per person in labour force population expressed as a ratio to average earned income. NFB is difference between gross provincial government expenditure (less interest on public debt), and total gross revenue (less revenue from corporate taxes, natural resources and intergovernmental transfers).

g. Proportion of provincial government revenue accounted for by intergovernmental transfers and by natural resource revenues.

h. Change in employment over each decade expressed as a proportion of employment at start of decade.

i. Natural increase in labour force population over each decade expressed as a proportion of labour force population at start of decade. Natural increase derived by "survival method" using mortality rates for Canada.

j. Net out-migration expressed as a proportion of labour force population at start of decade. Net out-migration is the residual difference between the change in labour force population and natural increase.

k. Labour force population in millions.

been quite persistent over the last five decades, although they have narrowed slightly in recent decades. The two components (wages and excess demand) have moved in opposite directions, although both continue to favour group A. Wage disparities have narrowed noticeably over the whole period while our X variable exhibits widening disparity, partly because of increasing employment-population ratios for Alberta and British Columbia and declining ratios in Atlantic Canada and Quebec. It is tempting to attribute the widening of our X disparities to increasing wage rigidity associated particularly with policies on minimum wage and unemployment insurance. Our X (excess demand) variable is the ratio of employment to working-age population, and it therefore incorporates unemployment and participation rate differences; the implied assumption is that differences in participation rates reflect not simply tastes but labour market pressures. X is of course well correlated with unemployment rates, and the little available evidence suggests that it also reflects differences in job vacancies fairly well.

Finally, at any one point in time there appears to be a negative correlation between wage and unemployment disparities, or a positive correlation between wage and X disparities. Over time these correlations appear to have weakened somewhat, which suggests that the workings of interregional wage adjustment have been weakening. In view of the qualifications and interrelationship discussed in the first part of this section, such a conclusion must be handled with care and caution. The evidence presented here is sketchy and at best only illustrates some of the empirical implication of the adjustment model. The paper by Mansell and Copithorne (1985) provides a rather more eclectic discussion of facts and theories regarding regional disparities. Obviously a more complete test of the adjustment model is called for, and such work is underway.

Policy Measures and Efficiency Considerations

We may now be in a position to discuss a number of policy issues in the framework developed. I assume that the framework has sufficient empirical validity to provide a basis for explanation of the interregional adjustment process. Moreover, I take it as a premise that the various components of adjustment (supply, demand, wage and excess demand) are proceeding efficiently if the various participants in labour markets are optimizing without the presence of distortions. Such distortions may be associated with non-competitive market structures, externalities, and government policies.

Summarizing the earlier discussions, we can identify the following three efficiency principles. The outcomes will be inefficient:
1. if events or policy measures tend to disturb the long-run equilibrium conditions associated with wage equality;

2. if events or policy measures change wage disparities and adjustment paths from what they would be in full recognition of adjustments costs on demand and supply sides; and
3. if events or policy measures increase (or reduce) wage inflexibility or increase the need for wage flexibility, thereby raising the potential costs of wage adjustment.

But efficiency is only one goal of economic policy. The goal of increasing equity is probably of equal importance. Nevertheless, the study of efficiency aspects is relevant, since it allows us to indicate how costly the pursuit of equity is. There are also other policy goals such as maintaining price stability, and within a federal structure there are also constraints relating to provincial autonomy and areas of jurisdiction. These constraints may be considered as fundamental (or constitutional) aims of policy in the sense that Canadians collectively have opted for a confederate structure of government. This fundamental aim in turn implies that the objective of equity relates to individuals and to provincial governments. The first may take the form of income distribution toward individuals at the low end of the economic scale, and the second may be redistribution toward provincial governments (and perhaps municipalities) that have lower tax bases. In the world of welfare economists, this kind of argument about redistribution to provinces per se may not be attractive, since for them the collective has no utility except in catering to individual preferences.

It would be convenient if the various goals of economic and social policy could be pursued independently so that the pursuit of one goal had no impact on the economy's performance regarding another objective (Boadway and Flatters, 1982a). But in many instances there are conflicts between policy objectives, e.g., between those related to equity and efficiency. Such conflicts are ultimately only resolved politically. The role of economic analysis in this resolution process is to indicate whether and how much of a particular goal is achievable given market interactions in terms of supply, demand, and wage rates, and to indicate what the costs are in terms of another policy goal. These two aspects of economic analysis are generally related. For example, the federal government may decide for equity reasons to subsidize the expenditures of governments in low income provinces. Such a policy will be partly counteracted by the market: out-migration is reduced which will tend to depress average incomes in those provinces (reduced wages or increased unemployment). This reaction chain defeats the policy objective to the extent that the tax base in those provinces is eroded in the process. The equity goal may be unachievable, but efficiency costs remain. On the other hand, if migrants did not respond at all to the federal-provincial subsidies, the equity goal may be achievable without any efficiency costs in terms of interregional adjustment.

Ideally one would like to have quantitative estimates of efficiency losses for the purpose of evaluating the costs of other policy goals. This may be possible in specific instances, but in general our knowledge of interregional adjustment is not sufficiently precise for such estimates. At the theoretical level we know too little about the nature of adjustment costs regarding capital stock and employment and about the costs of wage adjustment. Moreover, our empirical knowledge is too imprecise or is simply unavailable for many relationships. By way of example I refer to some earlier numerical illustrations. In the section on long-run equilibrium, we saw that the long-run efficiency costs of a 10 percent differential in resource revenues favouring region A was 0.125 percent of total wage income per year. This calculation was based on the assumptions that the demand for labour in regions A and B is unit-elastic, that there are no regional location preferences, and that migration is costless. From the analysis of demand and supply adjustment we can derive that the costs of adjusting to such a 10 percent resource revenue differential is 0.08 percent of annual wage income with an 8 percent wage differential during the adjustment which lasts about 25 years (see Figure 2-2). This estimate ignores the adjustment costs on the demand and wage side. It also assumes that employment change is sensitive to wage differentials (with a response coefficient of one-quarter that of migration), and that migrants equate net fiscal benefits arising from these resource revenues with private incomes. In the context of the section on wage adjustment we cannot estimate the additional costs that may arise from complete wage rigidity for the resource revenue case, since under these circumstances there would be no employment change in A or B. An interesting example of an attempt to integrate the various cost elements in a model with a declining industry is a recent paper by Forster and Rees (1983); the case is not analyzed in quantitative terms and rests on a number of special assumptions. Quantitative measurement of efficiency losses, though no doubt desirable, is not generally attainable at present.

Another problem in the resolution of conflicts between policy objectives is the theory of second-best. The general proposition in the theory is that once an interrelated system has been disturbed or distorted in one "place" it will not be optimal to remove another distortion with what would have been first-best measures. In other words, once one accepts the existence of some event or policy measure, the general principles indicated above do not necessarily apply in considering other policy issues.

I will briefly consider five policy areas: intergovernmental transfers, mobility grants, industrial subsidies, personal transfers and wage-setting. The framework developed above will be applied in each of these areas. All involve aspects of regional adjustment, but in some instances other important aspects can only be mentioned, since they are outside the scope of this paper.

Federal-Provincial Transfers

Under this heading we consider whether it is desirable to eliminate differentials in resource revenues and whether an equalization scheme for equity reasons represents a good policy. From a centralist point of view, in which the provincial governments are little more than branch offices of the federal government, differentials in natural resource revenue across provinces are undesirable (Boadway and Flatters, 1982a). These differences in revenues will distort the equality of wages and thus be inefficient in the long run. Moreover, the economy incurs adjustment costs through relocation of capital and migration, as well as adjustment costs on the wage side. All these costs can be avoided if we have an equalization scheme whereby differences in resource revenues across provinces are automatically eliminated. Such an equalization scheme would not conflict with the goal of equity. The obvious equalization scheme in this approach is a so-called net scheme whereby the natural resource revenues of the various provinces are simply redistributed in such a way that they become equal on a per capita basis. Since we assume that these resource revenues are derived from taxes on economic rents, there are no distortions involved, and the net redistribution scheme would not generate any.

When we recognize the constitutional fact of provincial autonomy, such a net equalization scheme is impossible, except as a cooperative venture among all provinces (Courchene, 1984). Instead, the federal government can adopt a gross equalization scheme in which it transfers enough money to the provinces to make up the differences between actual resource revenues per capita and those of the province with the highest per capita resource revenues. As the Economic Council of Canada (1982, chap. 5) indicates, such a scheme would involve very large sums under present conditions. As already discussed, such federal-provincial transfers would need to be financed by a federal tax, e.g., on incomes, and such a taxation scheme is likely to produce major distortions of its own. To judge this issue properly, we need quantitative estimates of the inefficiencies involved in unequal resource revenues and in the taxation scheme, but it is possible that from an efficiency viewpoint the cure may be worse than the disease.

Sewell and Slater (1982) point out that the federal government is now the recipient of a large amount of resource revenues, which, they argue, can be used to finance such a gross equalization scheme. This argument appears spurious, since without such a gross equalization scheme federal taxes on income would be lower. Moreover, the receipt of resource revenues by the federal government appears to be at odds with the position taken by the Economic Council of Canada (1982) regarding the provincial ownership of natural resources. The council argues that there should only be partial equalization of resource revenues because of

provincial ownership. In an interdependent federal state (and world), ownership is not an absolute, and the fact that the federal government receives considerable resource revenues corroborates this. Like Norrie, Percy and Wilson (1982) I have great difficulty with the council's position in this regard.

So far we have looked at the question of resource revenues as an independent event. It seems rather more realistic to consider the case in which the shocks that gave rise to resource revenue differentials also produced differences in autonomous employment growth. For example, the oil price hikes of the 1970s changed the terms of trade, thus boosting Western resource revenues and at the same time causing increased employment growth there. As the discussion of Figure 2-5 makes clear, this scenario by itself does not lead to different conclusions about efficiency and equalization. Let us now add a further touch of realism which leads us into the world of second-best. Suppose that because of the existence of unemployment insurance (or other personal transfer programs) the rate of interregional wage adjustment is excessively slow. Accepting this situation we should now adopt policies which reduce the need for wage adjustment. Under such quite realistic circumstances, we may not want to equalize for unequal resource revenues because it would impose more demands on wage adjustment (see Figure 2-5 points A_2 and B_2). By not equalizing we avoid some of the costs (unemployment, vacancies, lost output) that would be incurred to pull the regional wage structure further apart. We can think of the resource revenue disparities as a subsidy to wage adjustment to counteract the tax imposed on it by the unemployment insurance scheme. Harris, Lewis and Purvis (1984) also discuss some interesting examples of counteracting policies in a second-best framework.

The present equalization scheme is designed to equalize only a small part of resource revenues (Courchene, 1983). Now, it may be argued that despite its design the scheme in fact ends up transferring money to provinces with little or no resource revenues (Dales, 1983). The reason is related to the scenario in the previous paragraph. The equalization scheme has attempted to redistribute money toward provinces with small tax bases (i.e., with low average incomes), but these are also among the provinces with least resource revenues. A glance at empirical data confirms that intergovernmental transfers have favoured Atlantic provinces and Manitoba in recent decades, compensating to a large extent for their lack of resource revenues. But the correspondence is far from perfect, and in the case of Ontario and British Columbia the transfers in fact widen the disparities in net fiscal benefits. In short, our equalization scheme is designed to be redistributive, and we should look at it in that light.

It is clear from the discussion following Figure 2-5 that an equalization scheme that redistributes money toward the provinces with below-average incomes is not efficient. There is no problem with regard

to the first efficiency principle outlined at the start of this section, since unequal wages and incomes are not a feature of long-run equilibria. The other two principles, however, are involved: demand, supply and wage adjustment are all affected, and thus all adjustment costs are raised. This can be seen from a comparison of $A_3 - B_3$ combination with $A_1 - B_1$ in Figure 2-5, which indicates the greater wage disparity and the greater need for wage adjustment. It will be noted that the redistributive objective is largely defeated, since market incomes in part compensate for the equalization scheme. In short a redistributive equalization scheme may not be effective and is in any case inefficient in that it slows down adjustment by creating excessively large disparities in wages and unemployment. This is a clear case of a conflict between the policy objectives of efficiency and equity.

Equalization payments are only one form of federal-provincial transfer activity (Economic Council of Canada 1982, chap. 2). Equalization transfers are unconditional grants which respect provincial autonomy in deciding how much to tax and how to spend. Other transfer programs, e.g., those related to health and higher education, are more in the nature of grants conditional on the provinces' maintaining some national standards in those areas. This mixture of transfer programs reflects the tug of war between provincial autonomy and federal jurisdiction. The principle of equalization is now enshrined in our constitution, and it has support from most provincial governments with the poorer provinces considering it vital to their existence. Since it is argued here that the redistributive objective is largely defeated, we must ask why a premier of a poor province would think equalization so crucial. A number of answers are possible including that a premier may not be aware of this framework. It may also be felt that migration does not respond to differences in net fiscal benefits, so the theory may be wrong on this score. Alternatively, out-migration may be reduced by equalization which means that the premier's population base is shrinking less rapidly, and this may convey political benefits. Finally, it is possible that political actors are so preoccupied with the short run that the medium and longer terms do not influence their thinking. In the short run, before migration responds and before wages and unemployment disparities begin to change, the removal of the equalization scheme would indeed have a major impact on provincial finances in some provinces. On the other hand, premiers of richer provinces may favour the principle of equalization since it provides an insurance against adverse shocks which may affect their provinces in future.

Mobility Subsidies and Barriers

Some people will argue that the fact that migration flows are relatively small provides a prima facie case for subsidizing the migration process. We have seen in the previous section that migration can make a substan-

tial difference to the growth of a region's workforce. But, more importantly, if migration decisions reflect the true costs of moving, there is no efficiency case for a subsidy. In the context of the numerical example in the section on demand and supply adjustment, the wage differential $(W_A - W_B)$ of 20 percent generates a net migration flow from B to A of 1 percent per year. Using wage figures for the 1970s and assuming the migrants receive average wages, the moving costs for the marginal worker-migrant at that migration rate would be about double the average wage, or $24,000. Although this figure may seem large it should be remembered that it applies "at the margin," that it presumably covers migration costs of other dependents, and that transportation and relocation costs for an average family are a sizable sum. Moreover, we have no way of knowing the dollar equivalent of the psychic costs of uprooting. In short, it is difficult to know from available data whether migration decisions are based on the true costs. It would be even more difficult to obtain quantitative estimates of the difference between true or social costs and privately perceived costs.

A discussion of various migration subsidy programs, such as manpower mobility grants and the tax deductibility of moving costs, is beyond the scope of this paper. I shall simply comment on some reasons that have been advanced for differences between private and social costs of migration. First there is the issue of possible externalities. There is no question that in many instances the act of leaving a place has a negative impact on the welfare of family and friends who stay behind; but since these ties presumably run both ways, the migrant might be expected to take account of them. Moreover, strong ties may be "internalized" by groups of people, perhaps in succession, moving to the same destination. There is clearly an important element of this group-location phenomenon in migration generally and in international migration in particular. In any case, if such externalities are important, they would imply that it is efficient to tax migrants not subsidize them.

Second, it is often argued that the capital market is imperfect, since loans for human capital decisions are typically hard to obtain (Harris, Lewis and Purvis, 1984). If correct, this argument would suggest that the (federal) government should introduce a migration loan scheme, perhaps analogous to the Canada student loan scheme but without subsidies; but it is difficult to make this case convincingly. The so-called capital market imperfection may be nothing more than the recognition of basic human rights. It is a bit like arguing that the capital market is imperfect in charging higher interest for car loans than mortgages. No one would suggest that we need government intervention in this case.

Third, as has been indicated, migration decisions are made under conditions of uncertainty, and if people in general are risk-averse, the true costs of migration may be overestimated. This argument is often used in defence of a public manpower information agency. It may also be

an argument in favour of a migration insurance program, although the moral hazard problem would be severe. The psychic element of moving (uprooting) may well be the most important cost, and it seems difficult to provide insurance for that. Grant and Vanderkamp (1976) indicate that about 20 percent of migration flows constitute return migrants, mostly people unhappy about their initial migration decision. While disappointment about income experience appears significant in the return migration decision, this factor does not explain a large part of the variation (Grant and Vanderkamp, 1984). This appears to suggest that uncertainty about psychic costs is crucial, and they may be difficult to insure against.

The fourth issue relates to the behaviour of provincial governments in erecting barriers to mobility. A number of these reach newspaper headlines from time to time, but probably far more important are the rules for provincially regulated professions and occupations. If such barriers are important and cannot be removed (although they might be challenged on constitutional grounds), it may be appropriate to consider a migration subsidy as a counteracting distortion. Such a subsidy is general, however, and the barrier problem is specific and differs for the various occupations. In summary, the arguments for migration subsidies are not overwhelmingly convincing, and the actual migration subsidies provided at present appear quite modest.

Industrial Location Subsidies

There is a plethora of policy measures related to specific industries or sectors which also have some impact on regions and provinces. For example, tax policy in the case of mining affects some regions specifically, as do the subsidies for oil and gas exploration on Canada lands. There may be good reasons for such policy measures, but their consideration is clearly beyond the scope of this paper. I shall restrict myself to a brief discussion of two policy areas: measures to protect region-specific industries that are in decline, and subsidies to industries locating in declining regions.

Two examples of the first are subsidies to the shipbuilding industry and quotas and tariff measures in the clothing and footwear industries. These industries are quite specific to certain regions, and they have been suffering from declining comparative advantage for a number of decades. In terms of the long-run equilibrium framework, such policy measures are clearly inefficient. If relative wages are flexible in the adjustment process, this conclusion holds because these policy measures increase the total adjustment costs by slowing down the adjustment beyond what it would be under normal circumstances. But there may be a kind of second-best argument for such protection devices if wages are artificially inflexible because of other policies, e.g., those related to unemployment insurance and minimum wages. The artificially

inflexible wages create some additional labour market imbalances, increases in unemployment and job vacancies, and these in turn are likely to be associated with output losses. By instituting a subsidy or tariff for the declining industry (and region), we can regain some of these output losses but only at the cost of slowing down the adjustment. In the context of our framework there are two channels of adjustment, through wages and supply and demand, and through excess demand and migration, and we have seen that these channels complement each other. A subsidy or quota will obviously slow down both by reducing the need for wage adjustment and the appearance of excess demand differentials.

Thus a policy measure to aid a declining industry in a particular region may be justified on second-best grounds as an adjustment policy. From the political point of view, it may be difficult to devise a policy measure that is not perceived as permanent. Particularly when an industry is concentrated in a relatively depressed region, the danger is that political lobbying will attempt to perpetuate such a measure. Assuming we can devise an appropriate adjustment policy, what should be its time pattern? Our framework needs to be more precisely specified before such a question can be answered. Since the model is stacked in such a way that the adjustment process ultimately may lead to the long-run equilibrium situation, any policy measure should diminish to zero over time. But this does not indicate how large the subsidy or tariff should be to start with and how long it should be diminishing.

The subject of optimal adjustment paths is complex and in an early stage of development. Harris, Lewis and Purvis (1984) usefully discuss some of the literature in this area. Their general conclusion about adjustment policies is in line with the discussion here, although they appear to favour a rapid start to the adjustment process, e.g., with a subsidy that falls well short of the effect of the initial shock and then diminishes gradually over time. The interesting paper by Forster and Rees (1983) appears to come to a contrary conclusion, that the subsidy to the declining industry should increase gradually over time. But in their model a subsidy is necessary even in long-run equilibrium because its natural adjustment process is distorted by complete wage rigidity and capital immobility. It is not clear what their formal framework would imply about optimal adjustment paths in our circumstances.

I have treated various policy measures such as tariffs, quotas, employment and output subsidies as equivalent; but they will not be equivalent in costs in economic or political terms. There is a large literature on this, and I want to make only one comment. These measures may not be equivalent in their long-term impact when the declining industry is subject to ongoing shocks such as continuously increasing comparative disadvantage vis-à-vis other parts of the world. Under these circumstances, the protective value of a given-size tariff or subsidy will erode over time as it should in our framework. However, a quota system

becomes in fact more costly and protective over time which is a very undesirable feature, since it postpones the inevitable adjustment and builds unreasonable expectations and political pressure groups for the declining industry.

The second class of policies relates to subsidies for new industries locating in declining regions. The old DREE grants are perhaps the best example. (The Department of Regional Economic Expansion was superseded by the Department of Regional Industrial Expansion on December 1, 1983.) If such grants are effective — and a number of researchers are skeptical about the effectiveness of DREE grants — the policy measure is analogous to the ones discussed so far. Instead of providing a subsidy to the declining industry directly, the DREE grant provided a subsidy to a new industry locating in the region. Thus an automobile assembly plant could be subsidized to locate in a region in which shipbuilding is on the decline. If the adjustment costs are all region-specific, this is equivalent to a shipbuilding subsidy; in terms of Figure 2-6 they would both shift the employment change function in region B to the right. If a major part of the adjustment cost is industry-specific then the DREE subsidy is bound to be less effective; i.e., a given-size subsidy would have less impact in boosting employment growth than a direct subsidy to the declining industry.

If location subsidies are likely to be less effective than subsidies to declining industries why did DREE grants become such a major policy measure? The economic answers to this question are often framed in terms of infant industry, agglomeration or "growth pole" arguments. The infant industry argument basically assumes that a declining region has a hidden comparative advantage in some activity or industry, and the location subsidy is designed to facilitate the learning stage of the infant industry. This seems a weak argument in general and because DREE grants were available to a wide range of industries which cannot all be considered promising infants. The agglomeration idea is that new establishments are attracted to locate near existing establishments not for any other reason than that they are there already. Although there may be agglomeration economies in certain industries, as an argument in favour of general location subsidies, it seems weak. The growth pole logic in the context of our neo-classical framework is even less convincing, since it is based on the idea that regional growth once fostered tends to be self-perpetuating. In my conclusion I shall briefly refer to an alternative or supplementary framework, which, if empirically correct, provides a foundation for this kind of argument.

Finally, a brief word about various location subsidies used by provincial (and municipal) government to attract industries. Many observers argue that such competition in "bribes" is inefficient, a charge that may contain some truth. Basically, however, one has to argue that regional governments are not aware of the true costs and benefits of such a policy.

For example, it seems quite legitimate for a region with a preference for certain industries to use a bribe to attract firms in those industries. Since higher income regions can spend more money on this kind of activity, the competition may potentially make the rich richer; but richer regions can also afford to be more concerned about such disadvantages as industrial concentration, possible pollution and population density. In this context one can even rationalize DREE grants as a counteracting scheme to equalize the "unfair" competition. I have no figures on provincial and municipal expenditures to attract industries, and some quantitative information would obviously be useful in evaluating how serious this problem is.

Transfers to Individuals

Most transfer policies are adopted for equity reasons to redistribute income toward people with lower incomes. As a result, provinces with below-average incomes tend to record above-average figures for personal transfers. Moreover, unlike other transfer programs, unemployment insurance has been regionally differentiated since 1971, with longer benefit periods and shorter qualification periods (employment time to become qualified) in those regions with above-average unemployment rates. It was shown in the previous section that personal transfers have become more important as a proportion of earned income in the last few decades. Moreover, presumably largely because of unemployment insurance reforms, the distribution of transfers across provinces became more unequal in the 1970s; during that decade personal transfers to the Atlantic provinces constituted 25 percent or more in relation to earned income, while in Ontario the figure was 13 percent.

Because of its nature and size, the effects of unemployment insurance transfers are likely to be far-reaching for the interregional adjustment process. The effects of unemployment insurance on labour supply and unemployment are reviewed by Cousineau (1985). The effect of unemployment insurance on migration was discussed earlier, and although the evidence is not entirely convincing, it appears reasonable to accept as a working hypothesis that out-migration from higher unemployment regions is retarded by unemployment insurance. It is clear from the discussion of wage adjustment and excess demand that this creates an inefficiency in that it reduces supply adjustment and increases the need for wage adjustment.

Unlike other personal transfer schemes, unemployment insurance benefits are proportional to the wage (up to a maximum). Its impact on wage adjustment is therefore likely to be larger than that of other personal transfer programs. Suppose that an industry has been hit by an unexpected decline which will produce a 50 percent reduction in output and employment unless there is a dramatic lowering of the wage rate. For

the typical worker, a six-month layoff will still generate 80 percent of the normal annual income before tax (with 60 percent unemployment insurance replacement), and the after-tax situation is likely to be better. Moreover, the six-month layoff may be worth something in terms of leisure and related activities. As a result, wage reduction is likely to be unacceptable, producing downward wage rigidity. Such rigidity is not likely to be absolute; there are, no doubt, circumstances when an industry's decline is so serious that only a combination of layoffs and wage reductions will prevent bankruptcy. But at any given time an unexpected decline will largely be accommodated by layoffs and unemployment with wages remaining unchanged. The regional differentiation of unemployment insurance is likely to have an even stronger impact, since in those regions with a large share of declining industries the equilibrium wage rate is declining, but the easier availability of unemployment insurance makes such a downward adjustment more difficult and less likely.

As we have already seen, unemployment insurance also increases the need for wage adjustment. In particular, it constitutes a subsidy to industries with a fairly regular seasonal or cyclical pattern. Part of the cost of a seasonal layoff is financed by unemployment insurance. Therefore the introduction or increased generosity of an unemployment insurance scheme requires a downward adjustment in wages in those industries strongly affected by season or cycle. Atlantic provinces and eastern Quebec have a disproportionately large share of such industries which means that in regions with low wages they are under pressure to decrease even further.

In summary, personal transfer programs are typically introduced to promote greater equity, but they may have a major efficiency cost. I have not even discussed the potential distortions created by the taxes necessary to finance the various transfer programs. Unemployment insurance affects supply adjustment, increases the need for regional wage adjustment, particularly in the downward direction, and increases the cost of wage adjustment thus promoting wage rigidity. The regional differentiation of unemployment insurance introduced in 1971 reinforces all these effects. Three policy changes may be worth considering although they all have their equity "price." First, the replacement rate of the unemployment insurance scheme could be reduced from 60 to 50 percent. This would constitute a broadside attack on the scheme and is probably least acceptable in terms of the overall equity (and insurance) goals of the program. Second, regional differentiation aspects could and probably should be removed. Third, the program should be experience rated, a modification which should be phased in over a number of years. Experience-rating is a feature of many unemployment insurance programs in the United States, and it relates contributions to the unemployment insurance fund by an employer to withdrawals caused by that employer.

This policy change would remove the subsidy from seasonal (and cyclical) industries and would reduce the need for downward wage adjustment, but it would not directly affect the costs of wage adjustment. The first suggestion would probably improve wage flexibility most, followed by the second.

Wage-Setting

Under this heading I shall discuss two policy issues: national wage standards and minimum wages. The obvious example of the first is the federal wage standard whereby the same wage is paid to all federal employees in a particular occupation-skill category across all regions and provinces. Another example may occur in a heavily unionized industry which is regionally dispersed but sells in national markets. In these circumstances it is possible that the collective bargaining outcome is a national wage rate. Only a small minority of a regional labour force is likely to be directly affected by such national wage standards, but they may affect wage adjustment and unemployment. If a number of establishments in a low income region pay at national standard rates, downward wage adjustment may be retarded. In other words, the wage comparisons may make workers psychologically less prepared to consider reductions in real wages. As a result, national wage standards may introduce inefficiency by reducing regional wage flexibility in low income regions; thus, more of the adjustment will take place through the excess demand channel with possible unemployment (and vacancy) consequences.

The effect on unemployment is related to the dual economy argument in the economic development literature (Thirsk, 1973). For people in low income regions jobs in establishments with national wage standards are very appealing. In fact, obtaining a job is such an attractive alternative to migration, and potential migrants may wait in the hope of obtaining such a job. The result is to reduce the rate of out-migration, increase unemployment disparities and increase the pressure for greater wage disparities.

In short, national wage standards may lead to inefficiencies by increasing the need for regional wage adjustment and by increasing its costs. It is not clear that the quantitative impact of these standards is very great. Nevertheless, the notion of a federal wage standard may well require rethinking. If it is based largely on equity principles, then the notion of equity may require reconsideration. In particular, ideas of what is equitable are normally related to some average level of well-being, and a policy whereby the federal government wage rates are geared to the average regional wage is therefore also equitable.

Minimum wages have been subjected to a great deal of economic analysis. The consensus is that minimum wages are not only inefficient (in the sense of constituting a distortion) but also ineffective. The usual

argument for minimum wages is based on equity principles: the protection of the low-wage, low-income segment of the labour force. It has frequently been demonstrated empirically that minimum wages actually harm the group being protected. If that is so, why are minimum wages so persistent? Some economists have argued that the political pressure for minimum wages comes from the trade union sector in its efforts to minimize "unfair" competition in the labour market; according to that scenario the only group that benefits from minimum wages are unionized workers.

Minimum wages largely come under provincial jurisdiction, and over the last few decades they have been more uniformly applied within each province. With some notable exceptions, e.g., Quebec in the late seventies (Fortin, 1979), minimum wages appear to be related to the average wage level. This accounts for most of the variations over time and also across provinces. As a result, minimum wages probably contribute little to regional disparities in wages and unemployment directly. Courchene (1981) appears to argue that provincial governments in low income regions have an incentive to raise minimum wages, thereby exacerbating unemployment disparities. The evidence does not seem to support this.

The inefficient outcomes of minimum wages are two. First, in low wage, low skill occupations the minimum wage is likely to create unemployment, although part of this impact is not observable due to labour force withdrawal (Swidinsky, 1980). Second, for occupations with wage rates just above the minimum, the rate of downward wage adjustment is naturally reduced. This means that minimum wages artificially increase the costs of wage adjustment. The result is that the system will rely more heavily on excess demand adjustment with the probable consequences of increased unemployment, vacancies and lost output. If minimum wages have no favourable equity results and are inefficient, they should be removed or at least reduced in relative terms. This may be difficult, since it appears to be a well-entrenched policy.

Concluding Comments

This paper has the dual purpose of explaining the interregional adjustment process in the light of regional disparities and evaluating various policies in terms of their impact on the efficiency of the process. By way of abbreviated summary I will simply refer to the two main themes of the paper. In terms of positive economics, a useful framework for analysis should be able to explain the main empirical facts. Most relevant among these stylized facts is the persistence of regional disparities over a number of decades despite the existence of adjustment particularly with respect to migration. In the framework developed here the persistence of regional disparities is attributable to the persistence of shocks and to the slowness of the adjustment process. The main exogenous or natural

shocks are identified with differential rates of employment change and with differences in the rates of natural increase, both of which display constancy over decades. On the other hand, the policy-induced shocks associated with personal transfers and net fiscal benefits are more recent and are particularly associated with federal government initiatives in the sixties and seventies. It is argued that the adjustments on the demand and relative wage side are particularly slow, with some evidence that the wage adjustment component may in fact have become less responsive in recent decades.

In terms of normative economics it is argued that a slow interregional adjustment process is not in itself evidence of economic failure. While adjustment is no doubt naturally costly, a number of policy measures have increased the need for adjustment and decreased adjustment responses especially with regard to relative wages. While many of these policy measures may create inefficiencies, they were introduced to improve equity. The old conflict between inefficiency and equity is paramount in the discussion. Although this conflict can only be resolved politically, the identification (and potential quantification) of inefficiencies may be useful in its resolution.

In connection with the controversy surrounding the Economic Council of Canada's report *Financing Confederation* (1982), two of our conclusions should be recalled. First, the equalization of natural resource revenues across provinces is indeed efficient, but because of provincial autonomy the cure may be worse than the disease. Second, the equalization of provincial tax bases, which differ because of regional income disparities, is inefficient. Since equity considerations largely motivate these equalization activities, they are an example of the efficiency-equity conflict referred to in the previous paragraph.

Finally, two afterthoughts can be seen as qualifications to these conclusions. Some people argue that one of the side effects of federal equalization and transfer payments is to make people in low income regions more able to consider a migration decision. For example, some intergovernmental transfer payments are spent in improving the health, training and education of the population, thereby making them potentially more mobile. By way of another example, personal transfer payments may enable potential migrants to accumulate sufficient capital to finance a migration decision. The empirical evidence reviewed on migration does not provide a great deal of support for this view, but we should recall that with regard to the effects on migration of both types of transfer, the evidence is rather weak and somewhat mixed. Moreover, any observed effect will be the net impact of the two opposing arguments. Thus there may be some truth in this school of thought, although it may be difficult to disentangle the effects empirically.

Throughout the paper it has been argued that migration is an important component of the interregional adjustment process, a component

which works toward equalizing regional disparities. There is an alternative view, often associated with the name of Myrdal, which highlights the selectivity of the migration process, making it potentially destabilizing. Polèse (1981) argues that migration is selective in terms of age composition, human capital, and especially in terms of personal traits related to ambition, drive, risk-taking and entrepreneurship. This selectivity may produce a link between migration flows and employment growth. Because of the composition of migration, regions with net in-migration experience more rapid employment growth, and the opposite is true for regions with net out-migration. Moreover, in the short run, migration creates multiplier effects (Polèse, 1981) and there may also be a kind of investment accelerator impact, since net in-migration requires increases in the stock of housing and social capital. If this positive effect of migration on employment growth is sufficiently strong, the system will become unstable in the sense of not moving in the direction of long-run equilibrium. But even if the adjustment system remains stable, the positive link from migration flows to employment growth may help to explain the persistence of the regional patterns of disparities, migration and employment growth that we observe in Canada in recent decades.

Notes

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1. A technical appendix with the formal model of regional disparities and adjustments is available from the author upon request, College of Social Science, University of Guelph.

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Federal Government Regional Economic Development Policies:
An Evaluative Survey

N. Harvey Lithwick

Introduction

The concern of this Royal Commission is with the economic union and development prospects for Canada. One key issue that links these two elements is regional development. Wide disparities in levels of development have long been considered an important cause of regional discontent, contributing to the divisiveness in the federal system.

As a result, for the past 25 years, the federal government has pursued a wide array of policies designed to deal with regional development concerns. The intention of this study is to review these efforts in a critical manner, raising five key questions:

- What kinds of policies have been pursued?
- Why were particular policies chosen?
- What view of the Canadian federal system was implicit in these policies?
- How effective were the policies?
- What lessons can be learned from this experience that might be relevant to the framing of new policy options?

Conceptual Issues

Answers to these key questions require a minimal level of conceptual clarity, to focus our attention and to avoid the tendency to include virtually all policy concerns, and all policy efforts, under the rubric of regional development policies. Regional policies are generally understood to include those policies aimed explicitly at changing the underly-

ing relationships among regions. In the case of Canada, the provinces have been the primary regions for policy attention. This particular emphasis reflects the realities of Canadian federalism, rather than any analytically rigorous partitioning of national space into functional entities.

The emphasis on provinces is particularly important when we narrow our focus to regional economic policies. These policies attempt to change economic relationships among the provinces. It must be remembered, however, that the provinces are complex economic entities, and their interrelationships are determined by the underlying structure of the Canadian economy. Simply stated, the national economy cannot be divided into neatly segregated provincial economies. Hence, attempts to change economic relationships among the provinces must take into account the relevant background conditions.

It is general practice to refer to all regional economic policies as developmental, whether for the political bonus implied in the concept of development or because of a more fundamental problem of confusion over a key concept.

Economic development has, fortunately, a relatively unambiguous meaning. The term refers to the structural transformation of an economy such that over time it becomes increasingly capable of sustaining its capacity for further expansion out of its own, internal resources. Since the prerequisites for such sustained expansion include an increasingly differentiated and integrated economic structure, combined with incentives for its key actors to accumulate capital, to innovate and to be efficient, the goal of development policy is to ensure that such prerequisites are created.

A paradox emerges from this concept of regional economic development: there may be an intrinsic contradiction between regional development and national development. For if national development requires specialization in various sectors, and if these sectors are located in different regions on account of particular advantages, then an optimal national development policy may require rather distinct regional economic structures. Resource exploitation may be concentrated in uniquely advantageous locations, processing of these resources perhaps best located in another region because of its particular attributes; and manufacturing of final products and capital goods in yet other regions because of the different locational requirements these activities impose.

In other words, in the course of development the national economy may become increasingly diversified and integrated, but this does not imply that each region will achieve similar structural characteristics. Indeed, the likelihood is that regions will be quite distinct in terms of industrial (sectoral) mix.

This feature of national development has tended to conflict with what most regions wish to achieve in the name of regional development.

Virtually all such programs stress industrialization within the region, moving away from resource dependency and into higher states of processing and manufacturing.

In a smoothly functioning national economy, with strong, unimpeded links between sectors and thus between regions in terms of trade flow as well as labour and capital mobility, the benefits from national economic development tend to be distributed throughout the nation. Indeed, under many circumstances this process tends in time to eliminate serious economic disparities among regions.

Regrettably, the inverse process, of stressing regional development outside the context of the national economic structure, tends to dampen overall economic development and can augment disparities. This regional bias occurs for the not surprising reason that many people in peripheral areas prefer not to see their region lose resources. Rather than move to jobs themselves, they prefer to see jobs come to their region.

The widespread preference for province-building over nation-building stems from a lack of faith in the smooth functioning of the Canadian economy. Some argue that our large distances and thin population make regional integration fragile at best. Others argue that imperfections in our economy, including monopoly elements, a branch-plant structure, and strong unions and professional organizations, negate the predictions from an idealized competitive model. A more extreme argument is that neoclassical economics is a fraud and must be replaced by alternative models, particularly in analyzing regional disparities.

Rarely have these arguments and concerns been proven convincingly. Whatever the imperfections in the economy, the evidence appears to support the argument that adjustments will be made through the market mechanism, more or less in line with predictions, certainly for a sophisticated economy such as that of Canada. The experience of other countries similar in structure to our own, particularly the United States, warrants such a conclusion.

Still, the case for province-building remains politically attractive. It caters to the desire of provincial governments to be their own economic bosses, and to the strong interventionist predilections of federal and provincial bureaucrats alike. What is of most interest is the persistence of this attitude, despite the fact that the results of attempts to develop these provinces have generally been modest, at least with the particular forms of assistance that have been introduced.

Most of our focus will be on explicit regional development expenditure policies. There is, of course, a variety of public policies with regional implications, from tariffs, to transfers, to tax-based incentives. Unfortunately, inclusion of such indirect policies within our purview would require an examination of virtually all government activity. Furthermore, most such policies are designed to foster certain activities regardless of location; they are not introduced to transform regional

economic systems as a whole, and thus do not constitute regional policies according to our understanding of the phrase. In the few instances where such policies seem to have an explicit regional-development objective, we will consider them.

The distorting regional impact of such policies nevertheless has often been a major factor in the development of regional policies. Tight fiscal policy, which has aggravated unemployment in Quebec and the Maritime provinces, has no doubt provided a strong argument in favour of designing specific regional policies to offset these distortions.

No less significant have been the policies of the provinces themselves. Certain provincial policies, such as excessive minimum wages or rent control, aggravate labour and housing-market problems, leading to demands for offsetting federal-regional policies. Provincial development schemes that are less than robust have required federal policies to prevent their demise.

On the other hand, federal policies, national or regional in focus, have led provinces to implement offsetting development policies where Ottawa was short-sighted, and supportive development policies where federal programs were seen to be in the provinces' best interests.

Ottawa's regional economic policies, then, do not exist in a policy vacuum. They must be seen in the context of Ottawa's other policies, social no less than economic. And they must be seen in the larger context of Canadian federalism, where a variety of policy initiatives necessarily interact with each other.

Our study of federal regional policies does not explore these wider issues as comprehensively as might be desirable. However, an attempt has been made to highlight the most important policy interrelationships.

Another paradox in the concept of regional economic development, besides the intrinsic conflict between regional and national development policies, is the conflict between general regional economic policies and regional development policies. Many regional economic policies are compensatory: they attempt to help those regions most in need. Thus, more liberal unemployment insurance benefits, tax incentives and transfer payments to these regions are important elements in the regional policy arsenal. Unfortunately, many of these well-intentioned policies tend to create what Courchene has called transfer dependency. Rather than induce an appropriate set of wages, prices, profits, and hence product and factor movements, all of which are essential to overall economic development, the policies reduce incentives and thereby retard economic transformation.

Our evaluation of regional development policies will examine these two essential contradictions: between a regional and a national development focus; and between compensatory and transformational approaches.

Policy Phases

In reviewing the federal government's various regional economic development policies, we have identified six distinct phases in recent Canadian experience. Not surprisingly, the phases coincide with particular political regimes, since each regime's attempt to distinguish itself from its predecessor was reflected in no small measure in its regional policy. The six phases are:

1. the postwar decade, 1947–1957;
2. the Diefenbaker era, 1957–1963;
3. the Pearson era, 1963–1968;
4. DREE 1968–1973;
5. DREE 1973–1981;
6. reorganization, post-1981.

These phases are not as unique as might be suggested; indeed, several interesting overlaps can be observed between them. First, programs and institutions tend to persist from one phase to another. Second, certain concepts, discarded at one point in time, tend to be readopted somewhat later. Indeed, it is precisely for this reason that we have included a brief review of the period prior to 1957, for several key concepts that have persisted in one guise or another emerged in that period.

To assist the reader, we have included in the Appendix some summary data on the economic milieu for each of the periods identified. Table 3-A1 provides information on the national economy's performance in areas such as growth, unemployment and inflation. Table 3-A2 provides several indicators of regional disparities at the beginning of each policy phase. Figures 3-A1 and 3-A2 present annual regional unemployment rates for the entire postwar period.

Evaluative Framework and Prospects

In evaluating regional policy, and to answer the questions raised at the outset, we have identified three sets of issues: policy context, policy content and policy assessment. These three issues will be explored in detail for each of the policy phases.

The policy context involves an examination of the prevailing economic and social issues that might have influenced the particular policy approach chosen. Also studied are the political considerations involved, such as inter-governmental, bureaucratic and electoral issues; and the theoretical or conceptual rationale that was provided, if at all, for that choice.

The second issue, policy content, involves a consideration of the characteristics of the preferred policy, the way in which it was implemented, and any modifications that may have occurred. The actual assess-

ment focusses on the questions of effectiveness and efficiency, stressing the goals that were achieved and the impact of the policy on federal-provincial relations.

In our concluding section we shall draw on our findings to indicate where policy has failed and discuss possible alternative approaches, giving consideration as to how the federal system can facilitate such approaches.

The Postwar Decade, 1947–57:
Emergence of the Regional Disparity Issue

Regional disparities have been part of the Canadian landscape at least since Confederation. Until the Second World War, however, policies were directed to unique problems in particular regions: hence the Maritime Freight Rates Act of 1927 and the Prairie Farm Rehabilitation Act of 1935. In addition, in 1926, a Royal Commission on Maritime Claims recommended fiscal assistance to place the Maritime governments on a more equal basis with the other provinces.

The decade following the end of Second World War was concerned primarily with national issues, concentrating on postwar reconstruction and economic development. But while the federal-provincial conflicts that were to characterize subsequent periods were subdued, the evolution of social and economic policy in this decade helped shape much of the reality and many of the perceptions of the regional development issue in Canada.

Policy Context

Although the dominant policy concern was reconstruction, the fact remains that until the mid-1950s the regional issue was not recognized as part of that problem, or of its solution. This is somewhat surprising, since the Great Depression had had such a devastating impact on the economies of the peripheral provinces. So serious were its consequences that in 1940 the Rowell-Sirois Royal Commission on Dominion-Provincial Relations recommended massive restructuring of federal-provincial fiscal arrangements. The dominion, it argued, should ensure "fiscal equity," such that Canadians would be assured of similar levels of provincial services wherever they lived. In addition the commission proposed that the dominion take over provincial relief programs to the unemployed and to poor farmers; assume all outstanding provincial debts; and pay national adjustment grants to the provinces. To finance this dominion funding, the latter would have sole occupancy of the personal, corporate and inheritance tax fields.

A dominion-provincial conference to consider the recommendations was convened in 1940. There the provinces, led by Quebec (Duplessis)

and Alberta (Aberhart), vehemently opposed the essence of the commission's report.

The exigencies of the war, however, permitted the federal government to begin implementing selected aspects of the report. The key element was the Tax Rental Scheme, whereby Ottawa forcefully took over the tax fields and agreed to pay the provinces an equivalent amount for the duration of the war. The provinces had no means by which to oppose this fundamental shift in fiscal balance. Very soon thereafter there emerged from Ottawa crucial embryonic expenditure programs, including unemployment insurance, family allowance, national housing, and the farm improvement loans act.

With the end of the war, the clear shift of power to Ottawa had to be accounted for, and a dominion-provincial conference was held in 1945. The key document outlining the Dominion's philosophy and strategy was *The Proposals of the Government of Canada*, one unique document in this package being the *White Paper on Employment and Income*.

The central issue in these documents was the urgent need for a massive national effort at economic stabilization. Fear of a return to the unemployment of the 1930s was augmented by the prospect of demobilized soldiers being added to the work force. The solution was provided in the theoretical work of Keynes (Macintosh, 1965), which demonstrated that economic stabilization could in fact be effected through major public investment programs.

The political consequence was a powerful federal claim to maintain its pre-eminent fiscal position. The plan would ensure a coherent macroeconomic policy unimpeded by provinces acting against this obvious national interest, and a rationalized and efficient tax collection system. In exchange, the provinces would receive unconditional grants, replacing earlier conditional grants and hence preserving their spending autonomy.

Other recommendations were made, stressing federal-provincial cooperative arrangements in resource development, which would emerge several decades later in regional policies such as the Agricultural and Rural Development Act (ARDA). Social policies were also proposed, including national health insurance and pensions, which would later strain the bonds of the federal system (Macintosh, 1965, pp. 20–21).

Policy Content

Despite these ambitious programs, the central focus of postwar economic policy was stabilization. Scott Gordon has argued:

> What took place in the 1930s was the development of the view that the state should not only succor the unemployed, but that it should cure unemployment; that it should strive to eradicate the disease as well as assisting its victims. (Gordon, 1965, p. 25)

This was a truly revolutionary view in that it argued against "compensation" as an adequate policy response. Governments had to understand problems and assume the responsibility for solving them. Fortunately, in this era the nature of the central problem and the means of dealing with it were amenable to public policy solutions. The dominion budgets of the mid- and late 1940s were sharply expansionary, with particular emphasis on tax cuts. As late as 1955, most budgets remained strongly Keynesian in nature.

Assessment

Until 1956 the results were reassuring. Keynesian policy provided substantial stability, and the public sector investments undertaken stimulated the transformation of the Canadian economy itself. These efforts were largely in the field of public infrastructure building, including projects such as the Trans-Canada Highway system, airport development, telecommunications, and initiation of the Trans-Canada Pipeline. Links with the private sector were forged in the area of resource development, much of which was financed by American capital. Branch-plant manufacturing also was promoted in this period.

As a result, economic growth was rapid. Since all regions shared in this prosperity, the regional issue did not surface as a priority policy concern. Regional development was seen as a natural adjunct of national development.

However, toward the end of the period, latent regional concerns began to emerge. Much of this unrest can be attributed to the sharp recession after 1956, which impacted severely on the peripheral regions. A second development that reinforced regional discontent was the publication for the Gordon Royal Commission on Canada's Economic Prospects of the first quantitative examination of the issue of regional disparities. It was a study entitled *Some Regional Aspects of Canada's Economic Development* by R.D. Howland (1957). Howland defined "the regional problem" more broadly than in previous studies; for him it was the persistence of a gap between the richer and poorer provinces. Merely growing as quickly as the richer provinces was not seen as sufficient improvement for the poorer areas. Howland's data indicated wide and consistent divergencies among provinces in all key economic indicators: income, employment, capital formation, level of industrialization, and so forth. The greater instability of the peripheral provinces was attributed to their resource dependency, and the strength of the core to its modern financial and industrial structure.

This work had several key consequences. It identified Canada's regional problem in a unique way: as gaps in key economic attributes among provinces. Implied were two policy concerns that were to dominate subsequent thinking: that the problem was the gap, not its causes; and that provinces were the units upon which policy was to be focussed.

The first policy concern was a natural conclusion if only because, unlike macroeconomics, regional economics had no well-developed theoretical core to explain what was being observed. A heavy emphasis on compensatory policies resulted in most subsequent periods.

The latter focus, on provinces, was natural in a federal state, although it was to prove increasingly problematic in the 1970s and 1980s. This emphasis was reinforced by the introduction, in 1957, of the first federal-provincial tax-sharing agreement, which entrenched the concept of equalization. Equalization payments provided a more automatic and elastic source of revenue for the provinces than the earlier per capita grants, and contributed to the growing power and autonomy of the provinces as a result.

The inevitable consequence was the emergence of the provinces as key players in regional economic policy. Federal interventions in social policy ultimately would have to face up to provincial constitutional responsibilities in that sphere. And the infrastructure-building policies that modernized provincial economies enriched the provincial fiscal base. Even more important for many provinces was the profitable exploitation of their natural resources for export.

In response to these forces, the provinces had to begin improving the numbers and developing the expertise of their public employees, to deal as much with Ottawa as with the issues themselves. The reason that these provincial interests were not defended within the federal government has been analyzed at length by Smiley (1980) and Careless (1977).

Nevertheless, during most of the period 1947–57, the role of the provinces as regional advocates was restrained because of the economic and political dominance of the federal Liberal government, and the prevailing climate of economic prosperity. Later the severe post-1956 recession created a climate of disenchantment with the hitherto unquestioned economic management capabilities of the Liberal government, particularly so in the case of the resource-based peripheral provinces. Relief was sought from a new political party, which appealed to the emerging sense of alienation, powerlessness and economic despair in those regions.

The Diefenbaker Era, 1957–63: A Voice from the Regions

The election of 1957 moved regional economic development concerns to centre stage. Certain policy elements of the earlier period continued into this era. Most important among these was the 1957 renewal for five years of the federal-provincial tax abatement agreement, which entrenched the concept of equalization payments. But it was clear that this instrument was a palliative: it eased problems but did not get to their roots. The problem of shifting focus, from compensating poorer provinces in the

periphery of Canada to stimulating their development, was a major election issue for the Conservatives and their leader, John Diefenbaker.

Policy Context

The election of the Conservatives in 1957, due in large measure to the impact of the recession and to disenchantment with the Liberal government, provided an environment and opportunity for new initiatives with regard to regional development policy. The Conservatives had already addressed the issue, as John Diefenbaker indicated.

> Indeed, in July, 1956, I spoke in the House of the need for a national vision to equalize economic opportunities everywhere in Canada. The emphasis in that debate was on the federal government's responsibility to ensure an equality of development throughout the Dominion, with an emphasis on processing, scientific education and research in Canada, stimulated if necessary by tax concessions. The Party convention's Resolution on Policy in December 1956 added weight to these positions. (Diefenbaker, 1976, p. 11)

Significantly, the emphasis throughout this period was on regional development. The fact that the sharply increased severity of regional problems was attributable in large part to the recession was not addressed. As a result, solutions to both the regional and the national economic problems of the period were to stress developmental efforts as opposed to anti-cyclical. This flawed diagnosis would prove costly to the regions and to the Conservative party itself.

Paradoxically, the conceptual basis for this emphasis lay at least in part with a Liberal initiative. The Gordon Royal Commission Report, completed in 1957, was particularly critical of Canada's continued dependence on foreign (U.S.) ownership, which it blamed for the country's excessive concentration on resource exports as the leading edge of its development pattern. To overcome this dependence, Gordon stressed the technological diversification and modernization of the Canadian economy, with greater Canadian ownership. It was felt that Canada's dependence on staples was a major cause of the severity of the 1957–61 slump.

While Diefenbaker was disinclined to endorse anything produced by a Liberal appointee, especially in the 1957–58 period of minority government, by 1958 he would propose elements of a national development policy that were not significantly different from Gordon's proposals.

Northern Vision and Development Policy

Diefenbaker's integrated vision of regional and national development was articulated during the 1958 election campaign. On February 12, 1958, he spoke for the first time of his "vision" for a new Canada, a

Canada of the North. (Newman, 1963, p. 69). This vision called for (a) preparing a national resource inventory; (b) improving transportation links to northern resources; and (c) increasing domestic processing of resources (ibid., p. 141). Conceived by Alvin Hamilton and his economic advisor, Dr. Merrill Menzies, Diefenbaker's vision captured the public imagination. The Conservative party was returned with a majority unprecedented in Canadian history.

Turning the vision into policy, however, proved to be much more difficult. The severity and prolongation of the recession produced a series of crises with regard to economic stabilization that demanded much of the government's attention. In addition, the Diefenbaker style of leadership prevented coherent policy development. As one cabinetminister put it, "Instead of discussing what we should do next, we spent most of our time arguing 'How do we get out of this one?'" Deep distrust of the bureaucracy further inhibited policy planning (Careless, 1977, pp. 37, 38).

Yet some original initiatives did emerge in this period. In particular, one program, targetted at relatively small "regions," proved to be a major innovation. It was intended essentially to deal with seasonal unemployment, and entailed a federal-provincial shared-cost winter works program for 1958–59 and 1959–60. Because the cyclical slump was so severe, these programs could not have a significant impact on the problem, but they did demonstrate that locally targetted programs were feasible. However, this departure from focussing all regional policies on the provinces was to remain a relatively isolated event until the 1980s.

More directly in the development field was an attempt to deal with the perceived need to upgrade human capital. Called the Technical and Vocational Training Assistance Act (TVTA), the program provided the provinces with $1 billion over a six-year period on a cost-shared basis. Ironically, this form of transfer had an unanticipated effect: because the poorer provinces had difficulty financing their share, the program, Careless suggests, "probably heightened the disparity between rich and poor [provinces]" (ibid., p. 60).

In 1962 the government formed the Atlantic Development Board (ADB) as a purely advisory body with respect to the economic problems of Atlantic Canada, which had been seen by Howland and the Gordon commission as the most seriously deprived region.

But the most innovative of the regional development programs were the products of the fertile collaboration between Alvin Hamilton and Merrill Menzies. These included Roads to Resources and the Agricultural Rural Development Act (ARDA).

As minister of Natural Resources and Northern Development, Hamilton initiated the creation of the National Energy Board, accelerated the technical survey of Canada, inaugurated the Resources for Tomorrow Conference, and began negotiations with each of the provinces for federally-provincially funded resource roads. Agreements for

4,000 miles of roads in nine provinces were signed by 1960, at a total cost to the federal government of $145 million. The government also committed itself to $100 million in expenditures on 2,200 miles of roads north of the 60th parallel.

Whether or not the program would ultimately have worked is impossible to establish. The initiative appeared to be entirely with Hamilton, who was transferred from the Northern Affairs portfolio just as the program was achieving momentum. Efforts to secure additional mineral-processing industries in Canada were not pursued, and therefore few if any mines were opened in response to the road-building effort.

As a result of his move to the Department of Agriculture, Hamilton, again with Menzies' help, shifted attention to the rural sector. In 1961, ARDA was created to deal with the severe problem of rural poverty. The intention of the program was to avoid forcing marginal farmers off the land (Brewis, 1969, p. 108).

But once again the idea fell short in its implementation. Initially, the program stressed research into the use and physical properties of land. Also, only two-thirds of the initial $50 million was spent because the poorer provinces found it difficult to meet the 50/50 matching requirement. And finally, the program lacked focus and direction (ibid, pp. 108–13).

Assessment

Despite interest in regional development as a national issue, the Diefenbaker regime was unable to come to grips with the problem in an effective manner. In part, the prime minister himself was responsible: his sensitivity to political needs was marred by weakness in organization and foresight. In part, the regime's lack of effectiveness was equally due to a faulty diagnosis of the problem: the government attempted to solve what were essentially short-run cyclical problems with long-run economic development policies. In addition there was insufficient clarity of the relationship between national and regional development goals. It was accepted as an article of faith by this government of outsiders that what was good for the periphery was good for Canada. In structural terms, then, development would necessarily be led by agriculture and resources, and the role of industrial policy in national economic development was largely ignored.

Nevertheless, the regional development implications of the Diefenbaker government's programs were of paramount importance. For the first time, explicit policies to assist the deprived regions were advanced. TVTA, Roads to Resources and ARDA were all conceived as devices to help the most disadvantaged regions, even if the implementation fell short and the results proved counter-productive. By offering the various programs to all provinces on a cost-shared basis, the policy could not favour the weaker ones and indeed actually discriminated against them.

Perhaps the most significant contribution of Diefenbaker's government was to define regional development clearly as a federal-provincial issue. The prime minister's personal empathy for the peripheral regions of Canada and the weakness of his own government, relative to those of the provinces, ensured that the provinces would have a significant say in regional development policies.[1] Roads to Resources and ARDA were to constitute crucial prototypes for the cooperative federalism framework that characterized the Pearson era.

The net impact of these initiatives, flawed as they were in their execution, and introduced in a period of economic instability, proved to be modest at best. Regional disparities were not reduced, and in the 1963 election the Liberals were returned to power.

The Pearson Era, 1963–68: Politicians versus Planners

The return of the Liberals in 1963 did not entail a return to the style of government they had enjoyed prior to 1957. For one thing, throughout the Pearson era the Liberals had a minority government. In addition, the relative fiscal power of the provinces had increased significantly.[2] It should be noted, however, that overall economic climate had improved considerably as the economy underwent a powerful recovery, continuing until 1966. An environment was created in which attention could turn from stabilization and national development to other concerns, and the dominant concern that emerged in this era was social policy.

With the election of John F. Kennedy in 1960, a key social policy issue that had surfaced in the United States was poverty, and this issue was to dominate much of the Pearson government's approach to economic and social policy throughout the period. To the extent that the government was concerned with development, it focussed on industry, with such initiatives as the Canada–U.S. auto pact typical of the government's orientation. Regional development policy as such moved to the background, although important improvements were made to the rather haphazard initiatives of the Diefenbaker government.

Policy Context

The recession of 1957–61 had demonstrated once again the vulnerability of the poorer peripheral regions to downturns in the national economy. The post-1961 expansion saw the widened regional disparities of the recession narrow again. But improved macroeconomic stabilization was not stressed as the best way to deal with regional problems, particularly, unemployment and low incomes. Rather, these issues were considered to be intrinsic aspects of the poverty problem — an interpretation that led to demands by the reform wing of the Liberal party, and its NDP

coalition partner, for a broad range of social programs to shield the poor from the blows of future recessions.

This philosophy of compensatory policy was to have major long-term consequences. It led to a fundamental redefinition of the regional disparities issue, and fostered a spate of regional policies that were to inhibit rather than promote regional development.

The initial thinking on this approach was outlined in a paper by Pearson's assistant, Tom Kent (1962). Pearson elaborated on the social security issue in the 1963 election campaign. The program of the federal Liberals included many promises to initiate policies clearly within the provinces' domain, such as medicare and an old age pension plan. But the provinces had increased their fiscal capacity, so that Pearson's social policy goals required him to continue, and indeed expand on, the process of cooperative federalism.

Such an approach was crucial in dealing with the province of Quebec. The new Lesage administration believed the French-Canadian community could thrive only with strong provincial intervention in Quebec's social and economic affairs. The province's resolute resistance to federal intrusions into its jurisdiction forced considerable federal compromise on policy issues.

This heightened political sensitivity to provincial interests was not conducive to the ambitious plans of Ottawa's leading bureaucrats. To implement their aggressive social policy agenda, they required a substantial recentralization of economic and political power into federal hands (Careless, 1977, pp. 127–28).

Finally, the minority status of the Liberal government meant any policy decision would have to provide an answer to the following question: "How many votes will it bring us?" As a result, the Liberals were restrained from pursuing policies with long-term benefits, especially if they also entailed short-term costs. And since most development policies have precisely these characteristics, the political advantages of a social policy with a compensatory orientation were bound to determine the course of regional policy.

Programs and Policies

The Liberals inherited both the Agricultural Rural Development Act (ARDA) and the Atlantic Development Board (ADB) from the previous Diefenbaker administration. The ADB was immediately given a program orientation by its new director, Secretary of State J.W. Pickersgill. The board became a primary vehicle for Liberal party patronage in the Atlantic provinces; it received a budget of $100 million, increased to $150 million in 1966. In consultation with the Economic Council of Canada, the ADB was required to prepare a comprehensive plan for the promotion of economic growth in the Atlantic region. It could also, subject to

cabinet approval, enter into agreements with private and public agencies for regional development programs for which adequate financing was unavailable.

In fact, most expenditures were for social infrastructure projects. Three years later the $100 million had been spent, no plan was in place, and the Department of Finance and Treasury Board were increasingly concerned about the lack of objectives and coordination of projects and programs. As Careless points out, the ADB:

> . . . failed to direct the development of provincial capacity for self-help. Lacking initially a planning division and constantly lacking a plan, the ADB had no decisive objectives or strategy to impart to provincial officials except for a narrow and immediate commitment to infrastructure. Federal expenditures under ADB, unlike ARDA and FRED, did not deliberately encourage structural or methodological changes within the provinces except indirectly through provincial frustration with the lack of coordination or absence of any evident overall rationale in federal programs. (Careless, 1977, p. 118)

Given the lack of planning involved in ADB expenditures, it is not surprising that the board failed to consider in its programs the differences in economic structure among the Atlantic provinces. Nova Scotia and New Brunswick were much more industrialized than were Newfoundland and Prince Edward Island, whose economies were more clearly resource-dependent. Furthermore, the provinces traded more with other regions than with each other; consequently, social infrastructure projects that did not recognize this orientation, and most did not, were found to have little impact (Brewis, 1969, pp. 169–78).

The ARDA program as developed by the Conservatives was a modest, heavily research-oriented effort. It did little to try to alter the commercial viability of poor farms (ibid., p. 166). The Liberal government expanded the program and slowly reoriented it. In 1964 the original legislation was amended and placed under the new Department of Forestry and Rural Development. Under new agreements signed in 1965, the criteria for funding were expanded to include low incomes, underemployment and unemployment. The focus of the program switched from agricultural assistance to regional development, and an additional $125 million was allocated to the program over a five-year period.

Under the program, depressed areas could be designated Rural Development Areas and granted funding to foster employment because of the apparent immobility of labour. Alternatively they could be designated Special Rural Development Areas: areas with potential in which labour was to be mobilized to achieve sustained economic growth (Careless, 1977, p. 77).

The shift in emphasis toward a planned approach to regional development was most evident in the creation by the federal government of the Fund for Rural Economic Development (FRED) in 1966. FRED was to

implement both a rural development and a rural adjustment strategy. The rural development strategy, derived from growth pole theories, involved the development of comprehensive, long-range rural assistance programs in areas deemed to have economic development potential. The rural adjustment strategy involved providing education, retraining and manpower mobility grants in areas deemed to lack economic potential. Farm consolidation was to be encouraged (Green, 1974, p. 336.).

A second major initiative was directed at expanding the industrial base of regions. The Area Development Agency (ADA) was created in 1963 to coordinate assistance within specific regions. In fact, little serious development planning was undertaken, and the agency was little more than a granting agency to attract industry to areas of high unemployment. Although ADA originally stressed tax-exemption programs, its emphasis shifted in 1967 to cash grants to improve the liquidity position of potential investors. The overall impact of ADA was modest, and the agency certainly failed to achieve the goals originally set for it (Brewis, 1969, p. 169).

Nevertheless, an important strategic approach was launched by ADA that would influence subsequent policy approaches. It involved the identification of "designated areas." On the basis of high unemployment and slow growth rates, the designated areas were selected from the local offices of the National Employment Service. Thirty-five such areas were identified for tax exemptions. In 1965 the new Area Development Incentives Act (ADIA) expanded the criteria for identifying areas, and 81 were designated, diluting substantially the amount of aid targetted to the most depressed areas. In addition, ADIA introduced direct grants as a key policy instrument.

Finally, the federal government also rationalized the TVTA scheme developed by the Diefenbaker government. In 1967 a Department of Manpower and Immigration was created, with Tom Kent appointed deputy minister. The ministry announced in 1966 that the TVTA would be replaced by the Adult Occupational Training Act (AOTA), which, unlike the TVTA, was to be administered solely by the federal government. An implicit objective of the act was occupational and geographic mobility to deal with structural unemployment. Mobility incentives were not introduced, however, as Ottawa did not want to touch what was and remains a politically sensitive issue in the poorer provinces. The program did address the problem of spatial disparities by channelling twice the per capita expenditures to the Atlantic provinces than were channelled to the wealthier provinces. But the secrecy and uncertainty of federal policy-making caused resentment among provincial officials (Careless, 1977, pp. 61–69).

Assessment

The Pearson era marked a period of rapidly expanding federal presence in the regional policy field. Despite the federal government's commit-

ment to "cooperative federalism," its bureaucrats tended to act in autocratic ways in administering the programs. Such appeared to be the case with the AOTA. Where the federal government met serious provincial resistance, as in the case of Quebec, the resulting infighting frequently delayed programs or distorted their implementation. Some ARDA projects in Quebec took as long as three years to implement. And the evidence is that programs in Quebec were much less carefully screened than those in the other provinces (Careless, 1977, pp. 61–69).

The question of the need to be politically sensitive produced what was perhaps the most fundamental conflict during the Pearson era: that between the old-fashioned, pork-barrelling politicians, such as J.W. Pickersgill, and the hard-nosed planners, such as Tom Kent. At first Pickersgill appeared to have his way with the ADB. But eventually programs such as ARDA and the ADA became increasingly rationalized, while later programs such as FRED and the AOTA developed a more rational format from the beginning. Toward the end of Pearson's reign, the rational programs were clearly ascendant. However, while possibly through trial and error the programs were more rational, they still lacked an overall, consistent strategic framework.

The federal relationship with the provinces was similarly unresolved. While Pearson had gone to the provinces with an olive branch, his bureaucracy had fought to maintain and expand federal control in areas that lay clearly within provincial jurisdiction. This federal aggressiveness was particularly apparent with regard to the wide range of social initiatives launched under his aegis, from health care to pensions. Transfers, to persons and to governments, in fact constituted the dominant activity of this period. The result was that by 1968 there had been no real change in underlying regional disparities, excluding the effect of transfers. The compensatory transfers had closed the gap in personal incomes,[3] but, for the poorer provinces, at the cost of increased dependency on Ottawa's largesse. This compensation solution in turn contributed to a false sense of satisfaction with the regional disparities issues, such that Pearson seemed to display virtually no interest in the issue.[4]

Thus, regional development, though much improved in conception and somewhat improved in program delivery, remained a secondary issue during the Pearson era. As a result, insufficient effort was made to rationalize the regime's various, often conflicting programs.

DREE 1968–73: The Early Years

With the election of Pierre Trudeau, a radical change in regional policy was to be expected. Trudeau believed strongly that Canada was threatened by the excessive devolution of fiscal and hence political power to the provinces.[5] The deteriorating situation in Quebec was merely the most visible symptom of this erosion of federal power (Gwyn, 1980, pp.

57–59). Clearly a "rational" regional policy could play a key role in reasserting federal power vis-à-vis the provinces; and the instrument for delivering this policy was to be the new Department of Regional Economic Expansion (DREE).

Policy Context

The economy continued to prosper, with minor cyclical swings, throughout the early years of the Trudeau regime. The problem areas that persisted could be handled by the social safety nets erected by Pearson, which gave Trudeau the opportunity to shape more political goals such as national unity and the "Just Society." The two issues were seen to be linked, and intrinsically related to the regional question. Trudeau had argued:

> If the under-development of the Atlantic Provinces is not corrected — not by charity or subsidies, but by helping them become areas of economic growth — then the unity of the country is as surely destroyed as it would be by the French-English confrontation.[6]

Mr. Trudeau's conception of both the problem and its solution was shared by the men he had chosen to run DREE, Minister Jean Marchand and Deputy Minister Tom Kent. To them DREE represented a rational, synoptic way to deal with a complex amorphous problem. Prior to DREE's formation there had been a consensus in the federal cabinet that the then current regional development programs, such as the Prairie Farm Rehabilitation Act (PFRA), ARDA and FRED, suffered from a serious lack of coordination. The rural bias of these programs negated some potential regional development strategies. Most important, they, and particularly FRED, appeared to combine a lack of direction with an inordinate appetite for government spending (Brewis, 1974, p. 316).

DREE's Approach

Under DREE, the ADB, ADA and FRED were to be brought under one department. All agreements signed under the earlier programs would be honoured. DREE was given powers for:

> a) all matters over which the Parliament of Canada has jurisdiction, not by law assigned to any other department, branch or agency of the Government of Canada, relating to economic expansion and social adjustment in areas requiring special measures to improve opportunities for productive employment and access for these opportunities, and

> b) such other matters over which the Parliament of Canada has jurisdiction relating to economic expansion and social adjustment as are by law assigned to the Minister (Canada, *Department of Regional Economic Expansion Act*, R.S.C. 1970, section 5).

This new focus indicated the federal government planned to play a much more proactive role in regional development. The new DREE was:

> . . . a great deal more unilateral and single-minded than the agencies it replaced. DREE (Kent and Marchand) made a hard-headed political decision to focus upon jobs, the provision of infrastructure, and public works. The new pre-packaged, pre-financed approach of Ottawa meant that the provinces became increasingly recipients of rather than partners in federal expenditure decisions. (Careless, 1977, p. 89)

The DREE approach involved the development of "Special Areas" (SAs). The concept was based on growth pole theory, which posited that "growth points" of economic activity could be developed that would spread the benefits of their expansion over a wider hinterland. The theory bridged regional economics and regional policy and had been implemented as policy in a number of countries, particularly in Europe. It was advocated by Kent and was adopted by the department with little consideration given to how a theory designed to explain the growth of cities could be applied to primarily rural Atlantic Canada.[7]

Besides making social infrastructure available, DREE designed the new Regional Development Industrial Assistance program (RDIA). The program provided special industrial assistance for areas of 5,000 or more square miles in each province, which suffered from depressed economic conditions but could sustain economic growth. Under the program, qualified entrepreneurs could receive a primary development incentive, of which the federal government would pay the lesser of 20 percent of capital costs or $6 million for the expansion and modernization of existing plants; and an additional secondary development incentive that provided up to 5 percent of capital costs and $500 for each job created by companies establishing new facilities or undertaking new product expansion. This once-only grant was not to be available for natural resource activities, which would reinforce the existing industrial mix and required a high capital cost per job created.

To develop its SA and RDIA program, the department was given $139 million, as compared to $94 million devoted to resource development in the previous fiscal year (Phidd, 1974, p. 185). In March 1970, 22 SAs were designated. These included all major cities in the Atlantic provinces, and Quebec City and Trois-Rivières. Also included were towns in the Newfoundland Resettlement Program, resource communities in a number of provinces, and Regina and Saskatoon. (A map of designated regions and special areas appears in the Appendix as Figure 3-A3.)

To implement its development plans, the federal government devoted one-third of DREE's expenditures in its early years to social infrastructure: roads, services and buildings. In time, more and more communities became eligible, diffusing the agglomerative power of any one community.

The RDIA-designated regions were established for a three-year period in 1969 and included part of each province. In 1970, the program was

expanded to include a three-tier system: grants of up to 35 percent of capital costs for new, expanded plants; $7,000 for each job created; and loan guarantees for manufacturing and processing facilities. Unfortunately, the program could not direct the industries it assisted to the SAs. In fact, between 1969 and 1975 designated growth poles within the Atlantic region as a whole received a smaller percentage of manufacturing employment than did other communities. Further, most industries attracted were the "footloose" type, offering few backward-and-forward linkages within the region (Hayter and Storey, 1979, pp. 97–99).

Two issues had led to a downplaying of industrial incentives, particularly in the Maritimes. One was the apparently sincere belief that infrastructure could and should lead development. The second and vastly more important factor was the growing turmoil in Quebec, which led Ottawa to divert major policy efforts in an attempt to forestall the separatist movement. The federal government's attitude toward Quebec is clearly reflected in the allocation of DREE funding. In 1969–70, 51 percent of the department's expenditures went to Atlantic Canada, and 12 percent to Quebec. By 1973–74, the proportions were 38 percent and 39 percent respectively. The absolute amount spent in Atlantic Canada actually declined from 1970 to 1974 (Canada, Department of Regional Economic Expansion, 1980b, p. 33).

Assessment

An internal policy review of DREE's activities was begun in 1971 and completed in 1973. The review led the minister of regional and economic expansion, Don Jamieson, to conclude that the department's programs, and particularly RDIA, had been moderately successful in alleviating regional disparities (statement to Standing Committee on Regional Development, April 10, 1973, 2:11). The review argued that the regional development problem was multidimensional; no federal agency, including DREE, could coordinate it alone. Moreover, intergovernmental cooperation was required. And further, the development "opportunities available in each province required specific attention, involving to a greater extent both the provinces and the private sector." (Francis and Pillai, 1972, p. 61)

The report both indicated and glossed over some of the problems with DREE. In the early years of DREE the gap in the rate of unemployment between Atlantic Canada and the rest of Canada did diminish. But the extent to which DREE was responsible is unclear. There was also a lack of solid evaluation of the effectiveness of the SAs and social infrastructure programs, though it has been noted that on balance federal transfer payments would have been more helpful (Gillespie and Kerr, 1977, p. iv).

A great deal of attention was devoted to the study of the effectiveness of the RDIA program, with somewhat more critical conclusions. DREE,

using a questionnaire to determine the users' sense of need for the grant, and the export orientation of the industries involved, found 80 percent of these industries would not have located in the region without the grant. A study by the Atlantic Provinces Economic Council (1971) reached similar conclusions. On the other hand, based on a sample of interviews, Springate (1973) found that the program influenced the locational choice of only about one-third of its recipients, while Gillespie and Kerr argued that the correct figure was between 0 and 48 percent (p. 28). More microlevel analyses of RDIA proved to be still more damaging, as academic economists could find few redeeming features in the program.[8] The Economic Council of Canada did, however, give somewhat higher marks to DREE for its efforts although the department's conclusions were also critically challenged (Economic Council of Canada, 1977, p. 172; Bradfield, 1977, pp. 504–509).

But even if DREE's program evaluations were debatable, there was agreement on one point: the department's rational problem-centred approach and the bureaucratic style that went with it had made cooperation with other provinces and government agencies more difficult. As Tom Kent noted, good relations were considered less important than money well spent.

> While the plan with provinces for development is a joint one in the sense that substantial sums of money are provided by the federal government to undertake programs that otherwise would not be possible, the federal government obviously has to be satisfied that these moneys are being well spent. (House of Commons, Standing Committee on Regional Development, 1970–71; *Minutes*, 12: 9–11)

The provinces naturally had their own ideas about how money could be well spent. They clearly desired greater autonomy, if possible with federal fiscal support. Without some rethinking of its highly unilateralist approach, DREE was bound to run headlong into provincial resistance and resulting program inefficiency.

DREE 1973–81: The GDA Approach

The period 1968–73 had been one of rapid growth, during which real income disparities had moderated. But simultaneously unemployment and inflation had risen to historically high levels, impacting with particular severity on the peripheral regions. Hence the expectations fuelled by the creation of DREE — that finally regional disparities would be dealt with — were being frustrated. Pressure for more and better regional policies was bound to increase at a time when the world was on the brink of a major economic crisis precipitated by the rise in the price of oil.

Policy Context

The oil shock of October 1973 plunged Canada into a new kind of economic stagnation that persists to the present. Real per capita income and productivity grew at negligible rates while inflation and unemployment soared.

A major consequence was the serious fiscal difficulties into which Ottawa and the provincial governments, with the exception of energy-rich Alberta and Saskatchewan, were plunged. Expansionary budgets up to 1975, the oil compensation program, and the declining tax base led to rapidly escalating federal deficits[9] and a difficult period for launching new regional policy initiatives.

In addition, the 1972 federal election had produced a minority Liberal government that was weak in the Maritimes and in Western Canada. It was believed that the previous authoritarian approach to regional development by DREE had contributed considerably to the growing rift between Ottawa and the peripheral regions (French, 1980, p. 4).

General Development Agreements

The new "multidimensional approach" proposed in the DREE evaluation appeared to provide the kind of framework that could help ease federal-provincial tensions while preserving Ottawa's visibility in the regional policy field. Two elements were required: greater interdepartmental control at the federal level; and, working with the provinces, a definition of the unique development opportunities of each and a set of programs to realize those opportunities. The arrangements were to be set out in general framework plans called General Development Agreements (GDAs). These would contain (a) a statement of purpose and objectives; and (b) a number of subsidiary agreements that detailed requisite policies and programs for individual sectors, such as tourism, or small business assistance (DPA Consulting Ltd., 1982).

To implement the GDAs, joint management committees composed of provincial bureaucrats and officials from the provincial DREE offices were established. The committees had the power to develop new projects and were the final decision-making bodies reviewing annual expenditures, budgets and programs. The actual programs themselves were run by the provinces. The GDA agreements were up to 90 percent funded by the federal government, with the remainder coming from the provinces.

As part of its reaching out to the provinces, DREE shifted a significant portion of its staff to the regions.[10] By 1974, all provinces had entered into signed agreements.[11]

GDA Evaluation

The new GDAs restored much of the initiative for regional policy to the

provinces, and shifted the emphasis to a clear region-wide developmental orientation. But the focus on provinces meant that regional development policy was really provincial development policy.

The role of the provinces was further enhanced by the complex requirements of the GDAs themselves. The heavy emphasis on solid research, data and coordination stimulated the creation and then expansion of increasingly sophisticated provincial economic development bureaucracies (Savoie, 1981a, p. 153).

In addition, the stagnation of the economy had left resources as virtually the only growth sector, one over which provinces had the greatest control. A new impetus was given to an old phenomenon called "province-building" (Stevenson, 1981, p. 103). Using federal funding whenever possible, as well as private sector initiatives, the goal was to guide and accelerate the development of the province as a quasi-autonomous economic and political unit. The most visible prototype was the Quiet Revolution, which had begun in Quebec in 1960. In the 1970s, Alberta and Saskatchewan, eager to protect their energy revenues and reinvest them in the future growth of their provinces, joined in this new autarky. The election of the separatist Parti Québécois in 1976 added a shrill note to the chorus of demands for ever-increased autonomy. Newfoundland, anticipating revenues from offshore oils, was a noisy latecomer.

The GDAs were an excellent tool for province building. They made federalism a truly profitable partnership for the provinces, since Ottawa carried a major share of the cost.[12] Not surprisingly, different provinces even within the same "region" developed very different economic strategies. New Brunswick, for example, pursued a balanced growth strategy, with numerous social infrastructure projects spread throughout the province. Nova Scotia, on the other hand, continued to pursue a growth pole strategy, with expenditures concentrated in the Halifax-Dartmouth and Strait of Canso areas (DPA Consulting Ltd., 1982, pp. 43–44).

Nonexpenditure Programs

In 1977, an explicit tax policy was introduced, providing higher investment tax credits in poorer regions as a way of regionally differentiating its stimulative effect. Unfortunately, data on the regional impact of these credits are not available. Based on a crude method of estimation, it has been calculated that for 1978 the value of the credits was $261 million, or almost twice the level of RDIA grants in that year. Other programs were also increasingly differentiated by region, including an employment tax credit and unemployment insurance benefits. The regional transfers in these programs exceeded $1 billion in 1978, about twice DREE's entire budget (Lithwick, 1982b, pp. 139–41).

The Clark Interlude

In May 1979 a minority Progressive Conservative government led by Joe Clark was elected. Clark viewed Canada as a nation of culturally and economically diverse regions, for which the provinces were fully legitimate advocates. The design of the GDAs corresponded with this outlook. The new government announced its intention of strengthening DREE's role in coordinating the activities of other federal ministries and in establishing a regional development fund for relevant federal projects of benefit to needy regions (Canada, House of Commons, Standing Committee on Regional Development, 1979, 2:18).

Federal-provincial relations appeared to warm under the Clark administration. The periphery was now included in the established power base in Ottawa, and had the Tories survived the election of February 1980, it is likely the trend to decentralization would have continued.

Assessment

The GDAs represented Ottawa's recognition that provinces pursuing regional development had to proceed in distinct ways. Unfortunately, the program precluded the creation of interprovincial economic policies through which the Canadian economy could have been more closely integrated. Indeed, throughout the GDA period the provincial governments continued to implement procurement, transportation and marketing policies that promoted their jurisdiction to the detriment of the others. Federal policies were no less a factor in balkanizing the national economy.

More irksome to the federal Liberals was their view that the provincial governments were claiming the bulk of political credit for the GDA programs. Furthermore, other federal departments — such as Transport; Energy, Mines and Resources; and Industry, Trade and Commerce — saw themselves as having a national mandate and were unwilling to shift resources or programs to correspond to GDA program objectives, which they considered to be parochial (Lithwick, 1982b, p. 131).

Political control of regional development policy by the federal Liberals was further weakened by the elaborate federal-provincial bureaucracies required for the operation of the GDAs. A pattern developed whereby provincial officials would propose program activities, which would then be evaluated by DREE officials. Alteration of the proposals at the federal or provincial ministerial level was discouraged as a threat to the consensus required by all proposals. As in the Pearson years, key policy control appeared to lie at the bureaucratic level (Savoie, 1981a, p. 153), although by now both federal and provincial bureaucrats were pulling the strings.

Termination of DREE

With diminishing program control and hence visibility, and with growing internal conflict between departments, the federal government began to back away from DREE and, in particular, the GDA approach, which had come to dominate the department's efforts after 1973. By 1980 DREE's share of the federal budget had been reduced by half, and other regionally discriminatory policies had begun to dominate the policy landscape (Lithwick, 1982b, p. 135).

In June 1980 Robert Montreuil, deputy minister of DREE, outlined a number of perceived failures of the program.

> There is concern about federal visibility because projects are usually implemented by the provinces and because provincial Ministers are often seen by the public as being more frequently involved with GDA sponsored initiatives than are their federal counterparts. [Secondly] the system . . . has demonstrated only a limited capacity to involve the private sector in specific projects . . . [Finally] . . . the GDA system is essentially a bilateral one. Thus, although it has been highly successful in harmonizing federal-provincial development priorities it cannot be readily oriented to deal with issues that cross provincial boundaries. (Montreuil, 1980)

The department concluded that any new regional programs would require (a) greater federal interdepartmental cooperation; (b) more consistency with other economic policies; and (c) a secure source of federal funding.

The federal government was also concerned with the broader implications of province-building, for with provincial power came increased provincial intervention into the workings of the Canadian common market. A variety of barriers was created to protect the respective provincial economies, with implications for the overall performance of the Canadian economy.[13] Significantly, the disintegrating effects of many federal policies were not addressed. Hence, provincial economic development, at least as it was being implemented, was seen to be directly at odds with national economic development. Regional economic development would have to be reformulated if the Canadian economy was to achieve its economic potential.

The federal government had already begun to shift its focus to deal with these concerns. Increasingly, economic development concerns were given a sectoral focus (e.g., energy), with regional considerations at best secondary (Lithwick, 1982b, pp. 140–45). In its key strategy paper, *Economic Development for Canada in the 1980s* (Canada, 1981), the federal government clearly identified a sectoral approach that, because it was heavily based on resource exports, would coincidentally benefit all regions. This was a far cry from the well-defined strategic approach to provincial development of the GDAs.

In addition, to downplay further the role of the provinces, attention was to be directed to "local development" of subunits within provinces.

Finally, a major reorganization was being conceived that would embody these radically altered approaches and launch a new era in regional economic policy.

Reorganization, Post-1981: Integrating Regional and Sectoral Development

The early 1980s featured sharpened hostility in federal-provincial relations. Patriation of the Constitution and the Quebec referendum on sovereignty association added to the strains on Canadian federalism. The struggle between the energy-rich provinces and Ottawa over resource rents, and especially the National Energy Program (NEP), further aggravated regional tensions. The increasingly narrow political base of the Liberals in the periphery reflected these tensions and indeed played a major role in convincing Trudeau of the importance of the visibility issue.

Channelling of funds through provincial bodies was perceived as ultimately serving regionalist divisions because the programs appeared as provincial rather than federally shared initiatives.[14] Visibility was to be achieved by maximizing direct contact between the federal government and the individuals, businesses and organizations that benefited from federal funding and programming. This visibility goal was most evident in the patriation decision and the launching of the NEP.

Policy Context

The economy of the early 1980s began an even steeper slide into recession. Real growth declined sharply, and unemployment and inflation soared to over 10 percent. Once again the peripheral regions were hardest hit. But for the first time central Canada fared almost as badly.

Under these circumstances it was urgent to concentrate on national economic recovery. The more advanced provinces, which historically had been an important engine of growth, required stimulation. Some of the sense of urgency and direction in economic policy of this period is set out in the federal government's aforementioned key strategy paper of November 1981. Thus, the establishment of a $4 billion Western Development Fund in October 1980 signalled that a prosperous region, which had been ignored by DREE, would have to play a leading role in the new development framework. Similarly, industrial and international trade policies favouring Ontario and Quebec would receive much greater attention.

The long-standing popular regional conception of Canada as composed of underdeveloped peripheral provinces and a highly developed

core had finally been laid to rest by the energy boom in the West. More and more through the 1970s the issue was seen as an East (Quebec and the Atlantic provinces) versus West partitioning. But in the 1980s every province was hurting. It was recognized that regional and national development policies must be closely integrated and mutually supportive.[15]

The multiplicity of incentive programs and province-building efforts of the 1970s had proved unequal to the task of restimulating the Canadian economy. If anything, regional disparities had increased by 1981.

The rational approach of Trudeau's planners, which emphasized institution design (and almost continual redesign) to achieve greater policy control and coordination, had been directed to this challenge with the creation of the Board of Economic Development Ministers (BEDM) and the Ministry of State for Economic Development (MSED) in early 1979. DREE became but one of many agencies under this policy umbrella, and its status diminished. MSED's major task was to address the sectoral requirements, as spelled out in the 23 sector task force reports, and to try to rationalize them (Andras, House of Commons *Debates*, Dec. 15, 1978, pp. 2, 185).

The sectoral approach was elaborated on in the economic development paper that was tabled with the ill-fated November 1981 budget. The emphasis was on resource sector megaprojects, which would in turn stimulate infrastructure and manufacturing industries. It was asserted that all regions had potential for megaproject development, and that regional development would be an inevitable consequence of this strategy. This point was made explicit by Trudeau.

> The traditional Canadian economic balance between have and have-not provinces is shifting, largely under the impetus of present and forecast resource developments in the West and offshore of the Atlantic provinces. For the first time in our history every region of the country, and not just those that traditionally have been well off, is faced with major opportunities for development. (Office of the prime minister, Jan. 12, 1982)

With one stroke, the persistent problem of regional disparities was to be eliminated. National development, sectorally based, would do what three decades of policy innovation had failed to achieve.

At the same time it was recognized that, while the peripheral regions would develop based on resource exploitation, the industrialized provinces required substantial industrial restructuring to become internationally competitive. Incentives to expand and innovate were required, along with a new emphasis on international markets. Lower trade barriers would, however, expose central Canadian manufacturers to foreign competition in the formerly protected peripheral markets. Thus, the new context held out challenges as well as opportunities, and the federal government's effectiveness would depend on how precisely this new development policy would be implemented.

Policy Design

The assumptions that all regions would be swept along as the new economic strategy gained momentum, and that a new approach to regional development was now appropriate, led to the major reorganization of several economically important departments, announced by the prime minister on January 12, 1982. The reorganization was intended to strengthen departmental sensitivities to the importance of regional development and to enhance Canada's export promotion capacity.

DREE and the Department of Industry, Trade and Commerce (IT&C) would be disbanded, and their programs and responsibilities distributed to other departments. The bulk of these would be absorbed by the new Department of Regional Industrial Expansion (DRIE), which would incorporate the industrial programs of DREE and the industrial, small business and tourism wings of IT&C. DREE's involvement in non-industrial sectors like primary resources would be transferred to other line departments. Regional development planning and policy formation would become the responsibility of the new Ministry of State for Economic and Regional Development (MSERD), which was an expanded version of MSED.

DRIE would focus exclusively on national industrial and commercial concerns. IT&C involvements in the resource sector would pass to resource departments, while the department's trade function would pass to a restructured Department of External Affairs (DEA), which would have a trade branch with a minister of international trade. Trade promotion and economic matters would become a primary focus of the new DEA. Trade policy development would be handled by the new MSERD, which would expand its capacity to analyze global trade strategy in relation to regional and sectoral economic development concerns.

This institutional restructuring fundamentally altered the relationship between sectoral and regional development policies. Regional development no longer would have a comprehensive departmental base. DRIE was limited to regional industrial and commercial development; regional resource development now was in the hands of the resource departments, and regional infrastructure in the hands of the Departments of Transport and Communications. Overall responsibility for the General Development Agreements passed from DREE to MSERD, while the administration of specific subagreements was passed to the appropriate line departments.

The new focus for regional development policy would be at the cabinet rather than the departmental level. The existing Cabinet Committee on Economic Development was given expanded responsibilities for regional development and renamed the Cabinet Committee on Economic and Regional Development (CCERD). CCERD would be chaired by the minister of state for economic and regional development, who

would be responsible for raising regional issues within the committee. In moving the responsibility for regional development from a departmental minister to the minister who chaired CCERD and headed MSERD, the intention was to make regional economic development a feature of the programs and policies of all departments in the economic sector.

To provide the necessary support to the minister in his role as the coordinator of regional development policy, regional offices of MSERD were created in each province in 1982. The Federal Economic Development Co-ordinator (FEDC) in each region is responsible for the provision of information about each region directly to the CCERD through the minister. In addition, the FEDC is mandated to inform the regional officials of other federal departments about the decisions and objectives of the CCERD; to coordinate between federal departments the implementation of CCERD decisions in the regions; to propose economic development policy for cabinet consideration; and to maintain contacts with the provincial government and with local labour and business organizations.

The MSERD regional offices thus have responsibility for information flow between the regions and cabinet in both directions, for the coordination of federal departments in the regions, and for the development of regionally specific policy proposals. They do not, however, carry administrative responsibilities for ongoing programs, which are all administered by line departments such as DRIE, DOT, and Fisheries and Oceans. The FEDCs also serve to provide additional federal visibility within the local labour and business communities.

To describe fully the implementation of the current regional policy, it would be necessary to include the regional activities of virtually all departments. We shall concentrate upon MSERD and DRIE, the two departments that inherited the bulk of DREE's responsibilities. However, some passing mention can be made of recent initiatives in other departments.

Implementation

Since 1982 policy implementation has progressed on several fronts. The institutional reorganization has been largely completed, and the new structures are now functioning. The enabling legislation, the Government Organization Act, was passed on October 25, 1983.

New initiatives in resource development have gone forward, particularly the $2.25 billion North East British Columbia Coal Project, which has provided bulk-handling facilities for coal in northern B.C., and the reorganization of the Newfoundland fishing industry. The federal government has stepped into the reorganizational process in Nova Scotia fishing, as well. The painful parliamentary battle over the alteration of the Crow Rates arose from the federal decision to increase

the incentives for the rail handling of nongrain resources, such as coal and potash, and thereby enhance their export potential.

A new Industrial and Regional Development Program (IRDP) has been brought into effect under Bill C-165, which was passed by the House of Commons in June 1983. This program consolidates many existing programs of IT&C and DREE in the area of industrial and commercial development.

The IRDP absorbs the Enterprise Development Program, the Support for Technology Enhanced Productivity Program, the Cooperative Overseas Market Development Program, the Institutional Assistance Program, the Regional Development Incentives Act, the Montreal Special Area Program, and the Magdalen Islands Special Area Program. While established levels of funding for these programs are maintained, the IRDP will in addition administer the $300 million Special Recovery Investment Fund announced in the April 1983 budget (Lumley, 1983b).

The IRDP will be administered by DRIE through a series of regional offices. The intention of the program is to simplify access and enhance direct contact between individual applicants and the federal government through the establishment of one-stop shopping for federal industrial assistance, thus meeting the visibility objective.

The IRDP, then, attempts to combine two not necessarily complementary policy concerns: regional development and industrial development. Although the program is consistent with the intentions of the 1981 paper on economic development, its success will depend very heavily on the logic of that paper, and the optimistic assumptions about the economic environment on which the strategy was based.

That the challenge may be unattainable is suggested in the actual technique developed to provide assistance. Under the IRDP, designated areas for special economic development assistance will be phased out. The program will rely instead upon a "Development Index" to determine what level of assistance is appropriate in a specific subprovincial district. Currently 189 districts are listed, but the number may expand to 260 if sufficiently detailed statistical data can be compiled for these additional areas. Each district is ranked by the Development Index into one of four tiers based upon unemployment level, average per capita income, and the fiscal capacity of the province in which it is located. Each of the four tiers is associated with specific levels of assistance in the form of grants and loans.

The fourth tier includes those subregions supporting the most needy 5 percent of the Canadian population as determined by the Development Index. The third tier supports the next most needy 15 percent of the population, plus the Yukon and the Northwest Territories. The second tier supports the next most needy 30 percent of the population; and the first tier, the remaining 50 percent of the population.

Assistance is available for a variety of investment objectives, enhanc-

ing the industrial development climate through: the creation of specialized nonprofit institutions and infrastructure; innovative product development, technology development and related studies; the establishment of new plants and the modernization and expansion of existing facilities; market development; and industrial restructuring. For most categories of assistance all tiers are eligible, but the federal government's percentage contribution will be higher in the less developed districts. For most categories tier-one districts are eligible for 50 percent of costs, tier-two districts for 60 percent of costs, and tiers three and four for 75 percent of costs.

Provinces thus are not the regional development focus of this new program. The more developed areas of an economically disadvantaged province may be located in tier one and eligible for the lowest level of assistance, while the least developed areas of an industrialized province may be located in tier four and eligible for the highest level of assistance. The potential for avoiding provincial input and maximizing federal visibility is obvious.

Theoretically, the FEDC is supposed to help involve the province. Each region forms an economic development council, chaired by the FEDC, on which sit the local directors of all those federal departments whose ministers sit on CCERD. This council prepares a consensus document on the economic prospects for the region. The FEDC, lacking a large staff, cannot submit policy proposals in isolation.

Before going to cabinet, all information submitted by FEDCs is reviewed and integrated by MSERD in Ottawa, and it is at this stage that policy control is exercised. But since MSERD has no program authority, it is up to the line departments to implement policy. The FEDC has no direct authority over this implementation.

The FEDC role is thus largely to keep a federal ear to the ground in each province. FEDCs are reported to have played active roles in negotiations leading to the North East British Columbia Coal Project and the Newfoundland fisheries restructuring. They are also responsible for preparatory work on the new Economic and Regional Development Agreements (ERDAs) that are being negotiated between the MSERD minister and each province as replacements for the GDAs that lapsed in 1984. The thrust and pattern of these agreements is not yet clear. One ERDA and two subagreements had been signed between Manitoba and the federal government as of late 1984, covering mining, transportation, communications, culture, agriculture, and forest products. But the weight of ERDA funding in relation to other federal economic and regional development programs is still unknown.

If provinces have been effectively downgraded as regions for economic development policy, the designation of subunits does not necessarily solve the problem that led to federal concern about the Canadian common market. The problem created by strong provinces was that of

barriers to mobility and efficient resource units. Weakening the provinces was intended to reduce those barriers and spur national development. But the strategy for dealing with the new subunits, from selecting them to funding them, demonstrates little if any appreciation of the need to deal with regions as integrated spatial components of a national economy. Rather, the subunits are approached as autonomous development entities whose links to each other, and hence to the national economy, seem to be of no concern whatsoever. No national policy for regional development guides these fragmented efforts.

Western Development Fund

The other major development program with strong regional implications was the establishment of the Western Development Fund. From the outset this was a rather ill-defined effort, with little initial regional input. Indeed, when first proposed to Premier Lougheed as early as July 1980, the scheme met with a negative response, perhaps because it was seen as a means to deflect criticism of the National Energy Program. Ottawa pressed ahead with it and, in the budget speech of October 28, 1980, announced the creation of a $4 billion fund, with half to be spent in the period 1980–83. Negotiations with the provinces were to determine actual expenditures, but these were to reflect, in the first instance, federal priorities: modernization of the transportation and grain-handling system, and industrial diversification. A special cabinet committee, chaired by Lloyd Axworthy, was to manage the fund (Canada, House of Commons, *Debates*, Oct. 28, 1980, pp. 4, 189).

From 1981 to 1986 the estimated outlay of the fund was to be under $2 billion, of which $1.5 billion was to be for transport and $0.35 billion for a variety of housing and social programs for native peoples. Both the decelerated pace and the absence of a clear development strategy suggest that, except for transportation, the program was hardly one of regional development in any meaningful sense.

By 1983 the new finance minister was preoccupied with the recession and in the April budget announced a new $4.8 billion contra-cyclical special recovery program focussing on capital projects, an investment fund, and export financing. The 1984 federal budget doesn't mention the Western Development Fund, and it is unclear where the program now stands.

Assessment

The post-1981 changes have been very ambitious and reflect a sharp break with the evolutionary trends in regional policy that preceded them. First, there has been a greater emphasis on development than on compensation. Second, that emphasis has attempted to put national

economic priorities ahead of those of the provinces. This strategy is reflected in the establishment of a federal spokesperson for and in the provinces in lieu of provincial spokespersons. In addition, the current focus on subprovincial units is intended to enhance the visibility of Ottawa and check the relatively free rein given to the provinces under the GDAs. Because these changes are recent, no adequate evaluation can be provided as yet.

Certainly the severe recession of 1981–82 and the very incomplete recovery to date complicate any development policy. Funding has been seriously curtailed because of the persisting deficit. No less serious has been the change in the global energy picture,[16] which has made the entire megaproject strategy obsolete, or perhaps premature. Attempts to rescue the industrial strategy by negotiating sectoral free trade agreements with the United States offer very little by way of a regional development policy for the peripheral regions, which have been in severe economic straits for more than a decade. Ad hoc efforts such as the Western Development Fund and the Special Recovery Program have little merit as regional development policies.

While the data are not yet available, it may well be that even the modest progress made up to 1973 will have been reversed. And the prevailing combination of a badly battered economy and a somewhat simplistically conceived approach to regional development leads to the pessimistic conclusion that this problem area of regional disparities, which has contributed so significantly to tensions in the federal system, will continue to be a divisive and debilitating feature of this country.

Summary and Conclusions

This evaluative survey has attempted to summarize what is in fact a myriad of programs and policies that by design or by accident have addressed the regional development issue in Canada. Because our analysis has been somewhat general, so also must be our conclusions and recommendations. In any event, detailed policy evaluation is impossible at this stage simply because we lack the technical equipment, such as robust quantitative models, capable of measuring the net impact of various efforts. The few regional models that have been developed are still too primitive, and too peripherally concerned with policy analytical questions, to serve this purpose.

Our most important finding is that regional disparities have not disappeared. Despite widely varying policy thrusts and economic circumstances, there has been little improvement in the relative position of most of the poorer provinces as measured by income net of transfers. The only significant changes have been in the region west of Quebec, where the relatively rich provinces of Ontario and British Columbia have converged closer to the average Canadian experience, and the once

poorer province of Saskatchewan has improved considerably, as has Alberta.

The widely discussed "improvement" in personal incomes that is supposed to have taken place in the eastern half of Canada has been due to the eastern provinces' increased share of transfer payments only.

It seems reasonable to conclude that there has been no discernible progress with regard to regional development. This finding alone would appear to be a serious indictment of the many policy efforts, and very large public sector outlays, that were designed to achieve that goal. It could be argued that the goal was too ambitious, and that regional policies did improve on what would have been even wider disparities although the means to test this hypothesis are not at hand.

In any event, there are grounds for serious doubt about the depth of federal concern over regional development. In fact, most federal regional efforts have gone into compensatory policies, with very few programs directed to actual development. To demonstrate this point we have computed comprehensive estimates of the relevant totals for the periods under examination. Table 3-A3 presents estimates of all federal cash and tax transfers to the provinces, while Table 3-A4 provides detailed expenditures for selected economic development programs and compares them to the total federal transfers. The key finding is that from a high of 9.9 percent of transfers in the Pearson era, economic development programs currently add up to only 3.7 percent of transfers. Table 3-A5 compares DREE's departmental expenditures to federal transfers; we observe here another steady decline, from close to 6 percent in the early years (1968–73) to 2.5 percent by 1983.

Clearly, then, most of Ottawa's efforts have gone into compensatory programs. Despite the deep concern expressed by federal politicians over regional development problems, and the publicity attached to their efforts, the evidence indicates that resources have not been assigned to this task. And the situation is still more frustrating. In the most recent period, 1973–81, when regional policy had become a serious and reasonably well articulated goal of public policy, real disparities actually worsened for all of the poorer provinces save Quebec, whose position remained roughly stagnant.

Two conclusions follow. The first is that progress with regard to regional development appears to be dependent on the broader context of national economic development. In periods when the Canadian economy has prospered, disparities have diminished and the regional issue has become relatively quiescent. Recessions, and particularly the post-1973 stagnation, have exacerbated the regional problem. The immediate policy conclusion is clear: improvement of the performance of the Canadian economy as a whole is a necessary condition for improvement of relative and absolute regional economic performance.

The second conclusion is that regional development policy cannot be pursued in the absence of a clear understanding of how the regions relate to the national economy. Attempts to solve the problem via the "foreign aid" approach, transferring spending power from richer to poorer provinces, may in most circumstances actually make matters worse, by delaying necessary adjustments in the poorer areas and by taxing efficient behaviour in the more prosperous regions. Since this process reduces national economic efficiency, the result necessarily means augmented real disparities. And this failure to adjust in turn means that compensation payments will be a continued and expanding drain on federal resources.

The alternative route has been for Ottawa and the provinces to try to solve the problem by building regions. But in Canada the regions that we have focussed on are the provinces. While this emphasis is logical, given our federal structure, the results of province building have been no less damaging to the national economy. Dysfunctional competition for industry, artificial barriers to trade and factor flow, and misguided, grandiose concepts of what is possible at the provincial level have done much harm to the provinces — directly by wasting resources, and indirectly by again reducing the efficiency of the Canadian economy.

A radically altered approach appears necessary. The most obvious strategy would be to shift our focus from regional development to a program of national development in which all of the regions could participate. This requires that each region's actual and potential role in the national economy be clearly understood. It also means that provinces may not always be the appropriate focus for efforts to integrate regions into the national economy. Certainly, the provinces must play a vital role in the development effort; failure to include them would be politically myopic and economically unworkable. But the provinces' involvement must be based on the recognition that their own positions can most effectively be improved by strengthening the overall performance of the Canadian economy.

To date, cause and effect have been badly confused. It is tempting but fallacious to argue that what is good for province X's development is also good for Canada. The evidence we have examined refutes this assumption. It is to be hoped that the more productive approach, of building a strong national economy and thereby improving the prospects for all regions, will finally be understood by those who profess to be concerned with the welfare of Canadians residing in less developed areas.

The policy requirements for such an approach at the federal level are first and foremost to assist in the integration of all regions into the mainstream of the nation's economy. Crucial are improved transportation and communication links, facilitating the mobility of capital and labour, ensuring access by producers to all markets in Canada, and

eliminating barriers, regulations and subsidies that protect intrinsically inefficient, backward activities from competition from other provinces. Beyond that, there is an urgent need for a concerted federal effort to reinvigorate our stagnant economy, particularly within an increasingly competitive global economy.

To the predictable reponse — that our enormous budget deficit precludes such an effort — it must be pointed out that many of our current policies are demonstrably ineffective with regard to both economic development generally[17] and regional development in particular. The recent "rationalization" of regional and industrial development institutions has not been based on a clearly articulated policy conception. Thus, the improved machinery still requires focus other than the ineffective congeries of programs it has inherited. Reorienting and sharpening policy is never easy; interest groups emerge to protect their privileges, and the public sector itself tends to resist innovation. But on the basis of the experience we have reviewed, such innovation appears to be absolutely essential.

Finally, it ought to be clear to Ottawa that a national development effort cannot be a purely federal enterprise. The federal government must be much more conscious of the impact of its full panoply of policies on the provinces. All too often the "national interest" has been advanced as an excuse for ignoring or overriding legitimate provincial concerns. The federal budget *is* a matter of provincial concern, as are tariffs and social assistance programs. Without federal sensitivity to these concerns and a willingness to accommodate them in its policy framework, no amount of spending on regional disparities will be an adequate corrective.

Moreover, federal impatience with self-serving provincial policies fails to be sufficiently self-critical. Ottawa's own many regional policies have been no less fragmenting and divisive, because the federal government has not had a clear sense of the regional development issue. The goal of greater regional integration into a rapidly developing national economy is one that few provinces could, or would wish to, oppose.

Appendix
Selected Tables and Figures

TABLE 3-A1 The National Economic Milieu, 1947–1983 (by period)

Indicator	1947–57	1957–63	1963–68	1968–73	1973–81	1981–83
Real GNE	5.0	3.5	5.7	5.5	2.8	−1.0
Real GNE per capita(%)	2.2	1.3	3.9	4.2	1.6	−2.1
Unemployment rate(%)[a]	3.3	6.5	4.4	5.4	7.1	10.2
Inflation[b]	4.1	1.4	3.4	5.1	9.6	10.3

Sources: Department of Finance, *Economic Review*, April 1983; F.H. Leacy, ed., *Historical Statistics of Canada*, 2d ed., (Ottawa: 1983, Statistics Canada), Series D491.
Note: GNE and inflation figures indicate average annual rate of growth.
a. Average annual rates: 1957–68 data based on unrevised Labour Force Survey (*Economic Review, April 1976*, p. 140); 1968–83 data based on revised survey (January 1975).
b. Measured by implicit price index for GNE.

FIGURE 3-A1 Regional Unemployment Rates, 1947–1969

□ Atlantic Provinces   • Quebec
○ Ontario

□ Prairie Provinces   • B.C.
○ Ontario
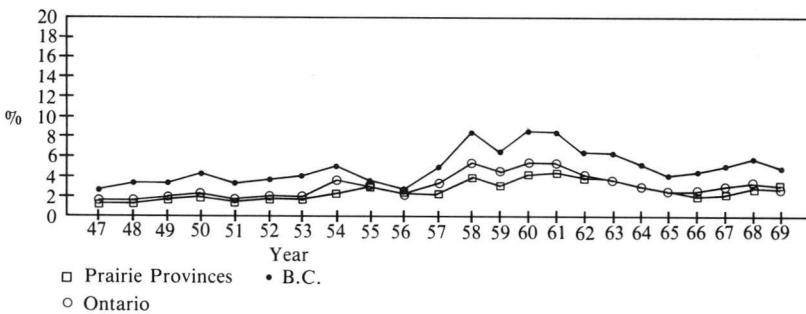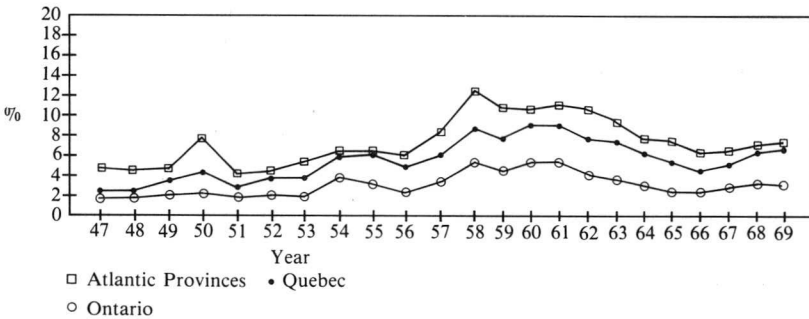
Source: CANSIM

TABLE 3-A2 **Trends in Regional Disparities, 1947–1983 (key years)**

Indicator Region	1947	1957	1963	1968	1973	1981	1983
Unemployment rate							
Atlantic Provinces	4.7	8.4	9.5	7.3	7.9	11.6	15.0
Quebec	2.5	6.0	7.5	6.5	6.8	10.3	13.9
Ontario	1.8	3.4	3.8	3.5	4.3	6.6	10.4
Prairies	1.4	2.6	3.7	3.0	4.7	4.5	9.7
British Columbia	2.8	5.0	6.4	5.9	6.7	6.7	13.8
Canada	2.2	4.6	5.5	4.8	5.5	7.6	11.9
Personal income per capita[a]							
Newfoundland	—	.54	.56	.62	.64	.65	—
Prince Edward Island	.55	.51	.59	.64	.70	.68	—
Nova Scotia	.80	.74	.76	.77	.80	.79	—
New Brunswick	.72	.65	.67	.70	.73	.72	—
Quebec	.85	.88	.89	.89	.89	.93	—
Ontario	1.16	1.20	1.17	1.17	1.14	1.08	—
Manitoba	1.02	.94	.94	.97	.96	.94	—
Saskatchewan	.88	.78	.98	.85	.91	1.01	—
Alberta	1.06	.99	.98	1.00	1.00	1.11	—
British Columbia	1.17	1.22	1.12	1.08	1.11	1.09	—
Canada	1.00	1.00	1.00	1.00	1.00	1.00	—
Personal income less transfers to persons per capita[a]							
Newfoundland	—	.51	.52	.53	.54	.54	—
Prince Edward Island	.52	.47	.53	.58	.64	.60	—
Nova Scotia	.77	.71	.73	.73	.76	.74	—
New Brunswick	.69	.61	.62	.66	.68	.65	—
Quebec	.85	.88	.88	.88	.88	.89	—
Ontario	1.18	1.22	1.19	1.19	1.16	1.10	—
Manitoba	1.01	.94	.94	.96	.96	.94	—
Saskatchewan	.86	.75	.98	.84	.91	1.00	—
Alberta	1.06	.99	.98	1.01	1.01	1.15	—
British Columbia	1.18	1.19	1.11	1.08	1.11	1.10	—
Canada	1.00	1.00	1.00	1.00	1.00	1.00	—

Source: Table 3-A1 and CANSIM.
a. Relatives, Canada = 1.00

FIGURE 3-A2 Unemployment Rates by Province, 1966–1983
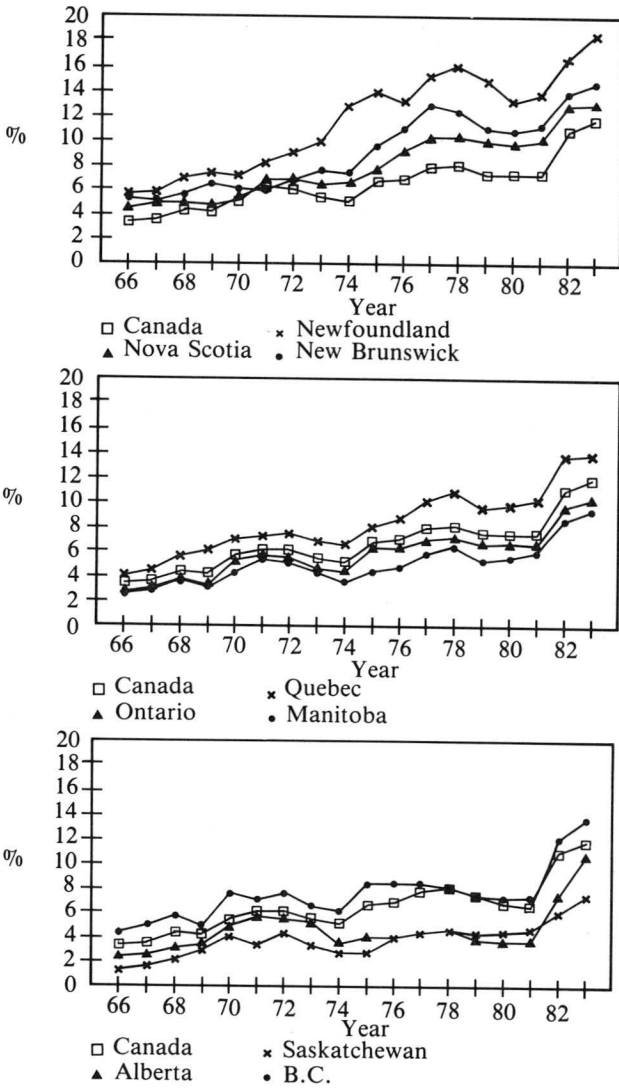
Source: CANSIM

TABLE 3-A3 Federal Transfers to the Provinces (average annual federal transfers to the provinces and municipalities), 1947–1983 (by period)

	1947–57	1957–63	1963–68	1968–73	1973–81	1981–83
			($ millions)			
Fiscal transfer cash payments[a]	237.8	452.7	418.7	993.9	2,818.9	4,852.9
Established programs financing cash payments[b]	7.4[e]	191.0	455.9	1,588.9	3,853.4	5,766.8
Other cash payments[c]	101.3	299.8[f]	709.2	1,065.0	2,223.5	3,952.4
Total cash payments	346.5	943.5	1,583.8	3,647.8	8,895.8	14,572.1
Established programs financing tax transfers[d]	—	—	-g	352.5	2,481.2	4,802.2
Total cash payments[h] and tax transfers	346.5	943.5	1,583.8	4,000.3	11,377.0	19,374.3

Sources: Department of Finance, Federal-Provincial Relations and Social Policy Branch Statistical Summaries (various years).

a. Includes net of statutory subsidies; tax rental payments; fiscal equalization; revenue guarantee; public utilities income tax transfer; youth allowance recovery; share of federal estate tax; interest payments on 1962–67 overpayments; sharing of undistributed income; sharing of oil export tax; Sales Tax Reduction Program; Population Recovery Adjustment Payments; and prior-year adjustments. Reciprocal taxation payments are not included.

b. Includes hospital insurance; medicare; university grants and post-secondary education; extended health care; and similar transfers for years prior to the EPF arrangements. Also includes the value of tax abatements for provincial programs that were "contracted out" to Quebec before 1976–77.

c. Includes municipal grants; vocational and educational grants; Canada Assistance Plan and other welfare; various departmental transfers for Agriculture, Industry and Trade, Transportation, Natural Resources and Environment, Economic Development, Regional Development; and all other federal cash transfers. Includes value of tax abatements for "contracting out" arrangements with Quebec prior to 1976–77.

d. Includes the estimated value of tax transfers to the provinces for post-secondary education that began in 1967–68, and the value of "contracting out" tax transfers to Quebec after 1976.

e. Annual average for period 1951–52 to 1956–57.

f. Annual average for period 1959–60 to 1962–63.

g. The 1967–68 post-secondary-education tax transfer of $227.6 million is excluded since it occurred only in the last year of the period.

h. Excluded from these totals are the values of abatements of federal taxes made under the 1962 *Fiscal Arrangements Act* between 1962 and 1972. These abatements were partial withdrawals of the federal government from the income and corporate tax fields in order to allow the provinces to exercise their taxing authority under the *BNA Act* (1867). There was no obligation on the part of the provinces either to occupy this tax area or to restrict their taxes to an equal amount. Hence there was no direct correlation between the value of the federal abatement and the additional revenue enjoyed by the provinces. After 1972 such abatements ceased to be considered as federal transfers to the provinces. For long-term consistency it is thus necessary to exclude them.

FIGURE 3–A3 Designated Regions and Special Areas
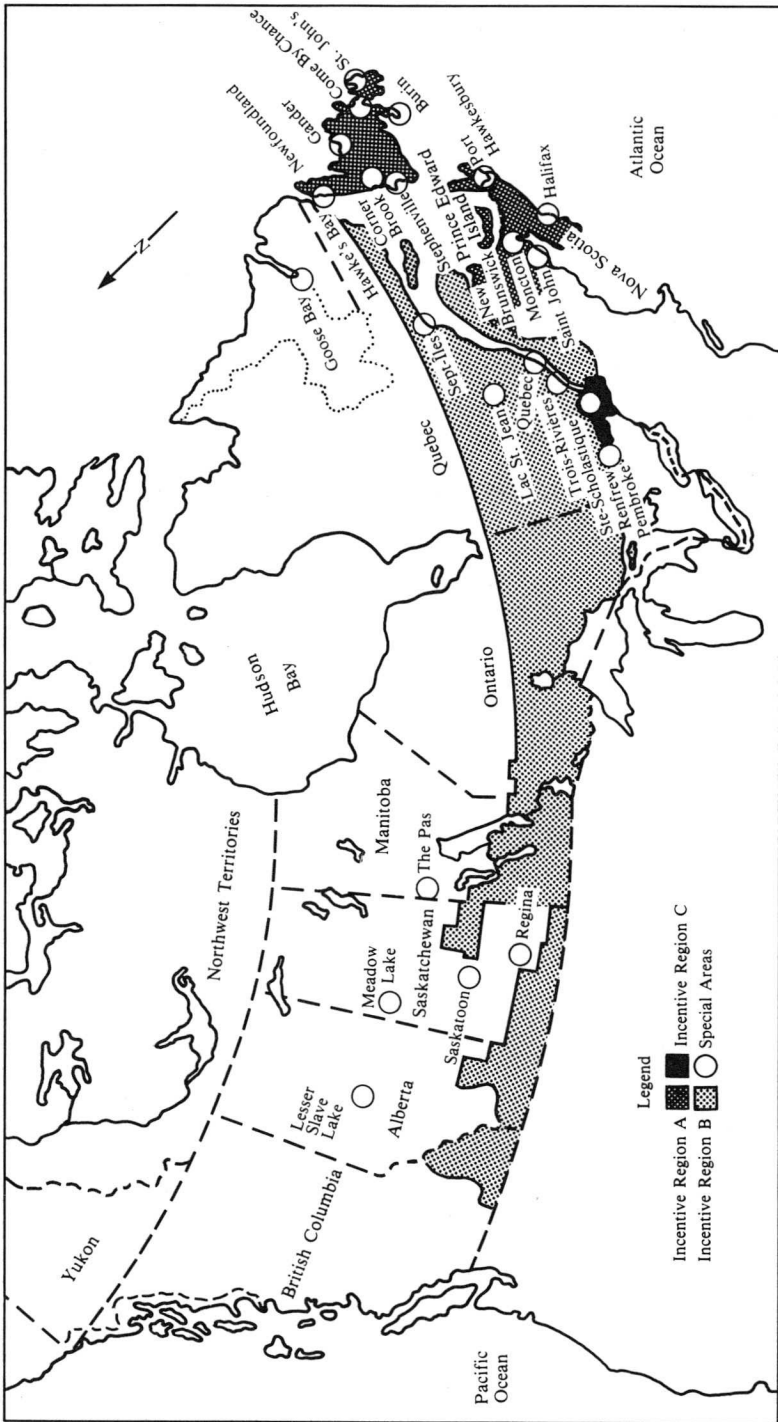
Source: DREE, Annual Report, 1970–71, p. 12.

TABLE 3-A4 Federal Transfers and Development Programs (comparison of average annual federal transfers to the provinces with annual averages of selected economic and regional development program expenditures) 1946–1983 (by period)

	1946–57	1957–63	1963–68	1968–73	1973–81	1981–83
			($ millions)			
Agricultural and Rural Development Act	—	3.7	15.8	22.7	24.1	12.3
Area Development Incentives Act	—	—	17.4	35.0	—	—
Atlantic Development Board	—	—	22.1	40.0	—	—
Cape Breton Development Corp.	—	—	—	39.2	53.6	114.7
Fund for Rural Economic Development	—	—	6.1	34.6	44.1	—
General Development Agreements	—	—	—	—	224.1	257.2
Maritime Marshland Rehabilitation Act/ Prairie Farm Rehabilitation Act	3.5	15.7	25.1	10.6	—	—
Regional Development Incentives Act	—	—	—	88.6	93.9	134.7
Roads to Resources	—	9.0	5.7	1.1	—	—
Technical and Vocational Training Act	—	84.2	162.1	1.2	—	—
Trans-Canada Highway	15.9	53.6	64.5	21.3	1.2	—
Winter Works	—	4.2	—	—	—	—
Total of selected programs	19.4	170.4	318.8	294.3	441.0	518.9
Total federal transfers	346.5	943.5	1,583.8	4,000.3	11,377.0	19,374.3
Program expenditures as percentage of total transfers	5.6	18.1	20.1	7.4	3.9	3.7
Program expenditures excluding Technical and Vocational Training Act as percentage of total transfers	5.6	9.1	9.9	7.3	3.9	3.7

Sources: Public accounts (various years); DREE annual reports (various years); Table 3-A3.
Note: For programs operative over less than the full period, annual averages only for the years of operation are used.

TABLE 3-A5 Federal Transfers and DREE Expenditures (comparison of average annual federal transfers to the provinces and municipalities with average annual DREE expenditures) 1968–1983 (by period)

	1968–73	1973–81	1981–83
		($ millions)	
Average annual DREE expenditures	235.2	486.3	484.4
Average annual federal transfers	4,000.3	11,377.0	19,374.3
DREE expenditures as percentage of federal transfers	5.9	4.3	2.5

Sources: Table 3-A3; Canada, *Public Accounts*, various years.

Notes

This study was completed in October 1984.

This study owes much to a unique group of students in the School of Public Administration at Carleton University, who participated in a seminar on Canadian regional policy. Fascinated with the mandate of the Royal Commission, they identified topics more or less related to the theme of this paper and produced some exceptional research essays. I learned a great deal from their efforts, and much of what has been written here draws on their work. Nevertheless, I alone am responsible for the actual conception and orientation of the study, and am to be held fully accountable for its interpretations and evaluations.

The names of these students do warrant mentioning. They are: John Arseneau, Stephen Beatty, Diane Burrows, Jane Cochran, David Crawford, George Jacoby, Steven Labelle, Ian McGregor, Scott Murray, Ron Naylor, Anne Marie Pellerin, Mike Presley, Doug Russell, Mike Sheridan, Nancy Timbrell-Morrow, and Stuart Wightman.

Particular thanks go to my research assistant Owen Toop, who not only participated in the seminar but helped assemble the materials, edit sections and prepare the Appendix. John Devlin also assisted in researching the final (post-1981) phase and developing the data for Appendix Tables 3-A3 to 3-A5. Donald Savoie kindly permitted me to refer to material from his new manuscript, *Regional Economic Development: Canada's Search for Solutions*, for the pre-1947 period. Finally, a word of thanks to Ken Norrie for asking me to try my hand at this type of evaluative survey, and to two reviewers for their useful suggestions.

1. Federal transfers to the provinces as a percentage of federal expenditures grew from 9.3 percent in 1957 (virtually unchanged in the preceding decade) to 14.5 percent in 1963. See Bird (1979, Table 20, p. 57).

2. Federal expenditure as a percentage of total government expenditures had declined from 56 percent in 1956 to 46 percent in 1963. Federal taxes fell from 71 percent to 58 percent in the same period. Bird (1979, Table 22, p. 68).

3. By 1968 federal transfers constituted 19 percent of federal expenditures. Bird (1979, p. 57).

4. It was not mentioned once in his memoirs. See Pearson (1972).

5. By 1968 federal expenditures as a share of total government expenditures had fallen to 40 percent (from 46 percent in 1963) and federal taxes were 52 percent of total taxes (from 58 percent in 1963). Bird (1979, p. 68). Also, most of the increase had been in unconditional rather than conditional grants, augmenting provincial autonomy.

6. Quoted by the Hon. Jean Marchand, "A New Policy for Regional Development," speech to the Atlantic Provinces Economic Council, October 29, 1968.

7. Francis and Pillai concede that the concept, as adopted by the department, was nebulous in character (1972, p. 61).

8. Many of these papers can be found in Lithwick (1978). Of particular relevance are Woodward (1975, chap. 7d); and Usher (1975, chap. 7f).

9. On a national accounts basis the federal budget shifted from a small surplus in 1973 and 1974 to a deficit of $7 billion in 1981, and over $30 billion by 1983. *Bank of Canada Review* (February 1984, S.23).

10. In 1971, 70 percent of DREE's staff was in Ottawa; by 1978 the number had been reduced to 50 percent. See Lithwick (1982b, p. 134).

11. P.E.I. continued to operate under the framework of a 15-year FRED agreement signed in 1969.

12. Federal transfers to the provinces continued to expand as a share of federal revenues. From 21 percent in 1973 they grew to 28 percent by 1978. Department of Finance, *Economic Review*, April 1983, Table 65.

13. Many of these barriers are outlined in Michael Trebilcock et al. (1977, pp. 101–22).

14. See Doern (1981, chap. 1).

15. It may well be that such an integration had not been attempted since Macdonald's National Policy. See Lithwick (1982a, pp. 276–77).

16. Oil and natural gas in the case of Alberta and Saskatchewan and coal in the case of B.C. have been disappointing leading sectors recently.

17. See Lithwick and Devlin (1984).

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Regional Grievances:
The Quebec Case

MIREILLE ÉTHIER

This study outlines Quebec's regional grievances with respect to the federal government's economic policies, which are here divided into three categories: structural policies, stabilization policies, and the debate surrounding the "battle of the balance sheets." Under the first heading we will examine the canalization of the St. Lawrence Seaway, Canadian oil policies (more precisely, the Borden Line), and federal tariff policies (more specifically, the Auto Pact). Under the second, we will look at monetary and fiscal policies;[1] and under the third, we will review and summarize the debate on balance sheets which occurred at the end of the 1970s, just prior to the Quebec referendum. Considerable emphasis will be given to an examination of the effects of structural policies on the Quebec economy, as they are at the heart of the province's grievances (see Fortin, 1978; Fortin, Paquet and Rabeau, 1978; Maxwell and Pestieau, 1980; and Bonin and Polèse, 1980).

Section one outlines the various criteria for assessing the validity of these grievances and investigates what constitutes a fair federal policy from a regional perspective. In the second section, following a brief outline of Quebec's economic situation, we present the province's main economic grievances and an assessment of their relevance in light of the criteria mentioned earlier. This study is in no way intended as an evaluation of the pros and cons of Confederation from Quebec's point of view, but rather an investigation of the validity of some of its grievances.

Criteria Used to Assess the Validity of Grievances

Various criteria have been used by economists to determine whether economic policies are fair to a particular region. We will examine four

such criteria here. The most frequently used yardstick is the difference between the percentage of spinoff (benefits) in a region and the percentage of the overall population which lives there. A second criterion is the comparison between the percentage of regional spinoff and the percentage of tax revenue which the federal government receives from the region. A third method is to determine whether or not a given policy improves the relative position of the Ontario economy in relation to that of Quebec (or vice versa). A fourth criterion is that of looking at the number of jobs created or lost, on the assumption that a policy is fair for a region if it entails job creation.

First, in order to clarify the notion of fairness to the regions, it is useful to discuss the problem in the broader framework of the cost-benefit analysis and the distribution of such benefits to the regions. In Canada it is logical to assume that where a project has been carried out, the benefits to be derived from its implementation were deemed greater than the costs to be borne, that is, that the cost-benefit ratio was greater than one. Benefits are defined as the additional real output which was achieved owing to the particular project. Costs are defined as the collective option cost or lost opportunity of doing business related to the resources used in carrying out and in maintaining the project in question. However, there is no point in examining in detail the special problems raised by the cost-benefit analysis: in the Canadian context, we will hypothesize that, because a project has been carried out, its cost-benefit ratio was greater than one, and it was one of the projects which could be implemented at the time a choice was made.

Second, it would be useful to study to what extent benefits have been distributed throughout the regions, which entails examining various criteria respecting the fairness of federal policies to the regions. These criteria might include:

(i) A comparison of the percentages of regional spinoff and of the population residing in the region, as used, for example, by Bonin and Polèse (1980).

(ii) A comparison of the percentages of regional spinoff and of tax revenues obtained from a given region by the federal government. This second criterion is more useful than the first as it constitutes a regionalized cost-benefit analysis. The benefits a region receives are assessed, and the costs incurred by it are roughly calculated on the basis of its share of federal taxes. Even where a project is clearly profitable on the national level, one region might pay more for it than it receives in benefits. Therefore, if the region in question had the necessary political power, it might not have undertaken the project, but allocated its resources to other ends. Bonin and Polèse (1980), the OPDQ (Office de planification et de développement du Québec), 1978, and the Government of Canada (1979b), among

Data	Region			Total
	A	**B**	**C**	
Population	27%	15%	58%	100%
Cost-benefit ratio	$\frac{50}{30} = 1.67$	$\frac{20}{20} = 1$	$\frac{130}{50} = 2.6$	$\frac{200}{100} = 2$
Percentage of total benefits	25%	10%	65%	100%

others, have used variations of this criterion, although not within
the framework of the cost-benefit analysis. Although what is impor-
tant here is that the regionalized cost-benefit ratio be equal to at
least one, this does not imply a comparison between the cost-benefit
ratios of several regions.

(iii) The comparison of the cost-benefit ratio of one region with that of
another. This criterion means that the cost-benefit ratio of a given
region must not be lower than that of another region for a policy to
be considered fair. Thus, the net relative benefits obtained by the
region in question must be positive. Fortin (1978), Fortin, Paquet
and Rabeau (1978), Simeon (1976), and the Government of Canada
(1979c) have employed this criterion (or a variant of it) in comparing
Quebec with Ontario.

The following example clearly illustrates the difference between the
three criteria set out earlier and involves three regions, A, B and C, in the
same country which account for 27, 15 and 58 percent, respectively, of
the country's total population. Together, they obtain $200 million in
benefits, of which $50 million is allocated to region A, $20 million to
region B, and $130 million to region C. Costs total $100 million, of which
$30 million is borne by region A, $20 million by region B, and $50 million
by region C. Table 4-1 compares the three criteria.

The application of the first criterion for fairness to the regions (com-
paring the percentage of benefits received by a province in relation to its
share of Canada's overall population) shows that the policy under con-
sideration is good only for region C. The second criterion (according to
which the regionalized cost-benefit ratio ought to be greater than one)
reveals that the policy is good for all three regions.[2] Under the third
criterion (comparing regional cost-benefit ratios), region C is better off
than region A, which is better off than region B. This example illustrates
the importance of clearly explaining which criterion for fairness to the
regions has been selected when a particular region's grievances are
analyzed.

(iv) The number of jobs created or lost. This criterion enables us to
conclude that a federal policy toward a region (in this instance,

Quebec) is fair when it leads to the creation of jobs in the province or when it does not hinder the creation of potential jobs. The relative immobility of French-speaking Quebeckers means that a reduction in the number of available or potential jobs implies a real additional cost for Quebec society, as it entails a drop in real Canadian output, whereas losses of jobs in other provinces do not have this result. This criterion of job creation or loss serves as a backdrop to numerous remarks on the effects of federal policies on the regions (OPDQ, 1978; Bonin and Polèse, 1980) and is similar to one used by Norrie (1976) and Norrie and Percy (1983). In principle, it suggests that a region is justified in complaining about a federal policy that results in lower incomes (after taxes and benefits) for residents of the province than would have been produced without the policy. Thus, elimination of the policy would lead to an improvement in social well-being. The distortion engendered by the policy under study may be measured by the difference between potential income in its absence and actual income (where production factors are mobile).

A justified economic grievance arises from the systematically unfair treatment of production factors which cannot avoid such treatment because of their intrinsic characteristics, for example, sex or race. In this light it is not easy to speak of regional grievances, to the extent that production factors are mobile among the regions.[3] However, the existence of geographically immobile factors such as agricultural land, in the case of the West, and wage earners in Quebec may alter this situation. It is here that the economic dimension of Quebec's regional grievances take on their full importance. It can be argued that Quebec, unlike the English-speaking provinces of Canada, must concern itself with the availability of jobs for residents of the province precisely because of their relative immobility. Of course, that does not exclude the possibility of the federal government also concerning itself with the availability of jobs in Quebec for the same reasons.

In the next section we will examine certain frequently mentioned regional grievances in Quebec and assess their validity in light of the criteria mentioned earlier and documentation concerning the ways in which they affect the regions. It is important to note that, while one or more grievances were deemed reasonable (or unreasonable), this in no way reflected on the advantages (or costs) of Confederation for Quebec. To study this question, it is necessary to examine the political processes which lead to the adoption of certain economic policies and the cumulative effects of all federal policies on a region. This issue was investigated during the "battle of the balance sheets"; however, the results obtained do not constitute a valid answer, as they disregard the impact of federal structural policies on the regions.

Quebec's Grievances

The grievances expressed in economic and political literature emanating from Quebec can be divided into three broad groups. The first and most important in relation to this study covers structural policies — those governing transportation, energy, and international trade. The second category concerns stabilization policies. The fact that such policies are formulated in a centralized manner and that the provinces do not experience economic cycles which are synchronized or of equal magnitude has raised some doubt about the uncertain nature of these policies as they pertain to various regions. The third category deals with the combined effects of federalism on a province. Does the province derive a net benefit from Confederation? Two different points of view may serve as premises in this type of analysis. According to the first, federalism is a "zero sum" in which some provinces win and others lose. The second is based on the notion of a "positive sum," that the whole is greater than the sum of its parts because the policies which improve the economic integration of the provinces increase the well-being of their residents. The debate on whether federalism is profitable for Quebec reached its apogée immediately prior to the 1980 Quebec referendum, during what was later called the "battle of the balance sheets." Proponents of the "yes" and "no" options published numerous figures supporting their respective positions concerning what Quebec gained from federalism. In this paper, however, we are most interested in the analyses published at the time of the consequences of the various types of federal government expenditures in Quebec rather than in the amounts of expenditure themselves.[4]

Before we examine particular policies, we should note that numerous policies other than those dealt with in this study have given rise to grievances. Take, for example, the policy respecting the transportation of feed grains which, it has been claimed, prevented Quebec from becoming a grain producer and forced it to specialize in cattle raising (Bonin and Polèse, 1980). Since 1973 the feed grain market has been deregulated and it now operates more freely, though grain transportation costs are heavily subsidized. The price of feed grain has dropped and hog production in Quebec has flourished (Bonin and Polèse, 1980). Without this policy, hog producers would probably have located near grain supplies in the West.

The government's dairy policy has occasionally been cited as an example of a policy which is detrimental to Quebec, as it may have encouraged the overspecialization of Quebec farmers in milk production (Fortin, 1978). The federal government has been criticized for wronging Quebec in the nuclear industry resulting in the centralization of nuclear firms in Ontario (Bélanger, 1985). Another regional grievance relates to

banking in Quebec, in that chartered banks, trust companies, and other financial institutions are accused of taking money out of Quebec to the detriment of its economy (Canada, 1979a). In this instance, it is the federal government's inertia, rather than its policies, which is blamed (Bonin and Polèse, 1980). Funds generally flow to the area where return on capital (taking into account investment risks) is highest; it may well be that the drain of funds from Quebec (if it actually occurs) means that the return on capital is lower in Quebec than in other regions where it is invested. Ottawa's science policies have also sparked considerable controversy (Bonin and Polèse, 1980). Between 1970 and 1980 intramural projects were centred in the Hull-Ottawa region; consequently, it is hard to assess their regional impact. Extramural activities appeared to be more equitably distributed, especially if grants to the universities are taken into account. The fact that such research activities are grouped together to facilitate contacts between various research agencies seems compatible with minimizing the costs of distributing information.

We could mention other areas which have been the object of regional grievances; however, it is more useful to concentrate on the most important among them — given that time and space are limited. The policies we have selected have been chosen for two reasons: the frequency with which they are mentioned by knowledgeable authors for their detrimental effect on Quebec, and the fact that they have given rise to specific studies within various agencies of the federal and provincial governments. On the basis of these criteria, the structural policies which stand out are, unquestionably, the building of the St. Lawrence Seaway, oil policies, and the Auto Pact.

The question of the overall effect of federal policies on a province, as opposed to the effect of each one of the policies, must also be considered. Can (and should) a region expect every federal policy to be to its advantage? In our view, such an expectation is clearly unrealistic; what is important is the net balance of the effects of federal policies on a region. Were the balance negative, the region would be entitled to complain. In the next section, following a brief review of Quebec's economic situation, we will study particular policies in order to assess the validity of the grievances they spark.

Table 4-2 outlines the relative industrial structure of each province. Industrial output in Quebec and Ontario depends less on the primary sector and is more concentrated in the secondary sector than in the other provinces. The tertiary sector is essentially the same in both provinces as it is elsewhere in Canada. At the outset, Quebec appears to differ little from Ontario; however, the composition by type of industry within each province's secondary sector is considerably different. So-called "soft" sectors such as textiles, clothing, knitted goods and leather are concentrated in Quebec, while Ontario's output is centred more on machinery

TABLE 4-2 **Relative Importance of Various Sectors of the Economy, by Province, 1983 (gross domestic product by industry in 1971 constant dollars)**

Province	Primary Sector	Secondary Sector	Tertiary Sector
	(percent)		
Newfoundland	10.9	29.5	59.6
Prince Edward Island	12.6	14.7	72.7
Nova Scotia	6.7	22.4	70.9
New Brunswick	6.8	23.6	69.6
Quebec	2.8	32.9	64.3
Ontario	3.1	33.9	63.0
Manitoba	7.1	21.2	71.7
Saskatchewan	20.6	15.8	63.6
Alberta	15.5	21.6	62.9
British Columbia	7.4	24.3	68.3
Canada	6.1	29.7	64.2

Source: Compiled from data in *Quarterly Provincial Forecast* 8 (3), Table 1, p. 68 (Ottawa: Conference Board of Canada, 1984).

and automobiles. Quebec's economic structure is changing very slowly; as a result, it specializes in the production of non-durable and current consumption goods, for which demand is fairly stable and competition from developing countries is stiff. In contrast, the demand for capital and durable goods, production of which is centred in Ontario, has changed much more rapidly. Several authors have attributed responsibility for this situation to federal textile and automobile tariffs. Similarly, it has been suggested that the national oil policy has adversely affected Quebec's industrial structure. Moreover, the St. Lawrence Seaway is deemed to have had an effect on industrial structure, particularly on activities related to shipping.

Quebec's industrial structure is often explained in terms of federal economic policies toward the province. Few authors have disputed the positive effects such policies have had on the Canadian economy; consequently, they do not deny that Quebec may have benefited indirectly from them. However, the direct effects of the policies are often criticized. The federal government is accused of banking on the mobility of wage earners between regions to counteract the negative effect of a number of policies on certain regions. The use of transfer payments to redistribute income between privileged and underprivileged regions has also come under attack because of its temporary nature, which does not solve an ongoing problem. Moreover, this practice may prevent underprivileged regions from taking themselves in hand. We will examine this question in greater detail in the section devoted to the "battle of the balance sheets."

Structural Policies

THE ST. LAWRENCE SEAWAY

The Great Lakes and the St. Lawrence River make up a waterway which extends to the Gulf of St. Lawrence and the Atlantic, over a distance of 2,400 miles. However, several natural obstacles were found along the route, before the building of the Seaway: Niagara Falls, the Long-Sault rapids, and the narrow waterways connecting the Great Lakes. The Canada–U.S. border runs through the middle of four such obstacles, and it is for this reason that a 112-mile section of the Seaway between Montreal and Lake Ontario falls under the authority of both countries and is called the international section.

First, the United States built canals between Lakes Michigan and Huron; Canada subsequently built the Welland Canal between Lakes Ontario and Erie. The St. Lawrence River was also modified in various ways. In 1848 a nine-foot deep passage already existed; in 1901 it was dug to a depth of 14 feet, although the new channel was soon inadequate. A deep waterways commission was set up to study the comparative advantages of links between the Great Lakes and the Atlantic. For nearly 60 years little progress was made because of conflicting interests, including those of advocates of an entirely Canadian seaway. The Canadian and U.S. governments finally signed a treaty respecting the building of the Seaway in 1932, although it was never ratified by the U.S. Senate. In 1954 the United States adopted a bill authorizing the establishment of a corporation responsible for building the St. Lawrence Seaway; the same year work began in Cornwall on the Montreal–Lake Ontario segment of the Seaway. Canalization of the river was completed five years later: it covered 182 miles between Montreal and Lake Ontario and included seven locks, two of which were built and are operated by the United States in the international zone near Cornwall. The Welland Canal, built in 1932, is located at the western end of Lake Ontario; it includes eight locks. The St. Lawrence Seaway comprises both segments, from Montreal to Lake Ontario, and the Welland Canal.

During the 1930s and 1940s, waterways were primarily considered as routes for transporting grain destined for export. Until that time, railways had been used extensively. However, with the increase in the volume of grain shipped, traffic on the Great Lakes also increased. During the 1950s the discovery of ore deposits in Quebec-Labrador led to the establishment of a profitable trade, involving the offloading of grain shipments from Lake Superior in Quebec and the loading of iron ore which was then shipped to steel mills in the Toronto-Hamilton area and the United States. Economic motives led to the building of the St. Lawrence Seaway; it was essentially a question of facilitating the transportation of various products at lower costs than those which prevailed prior to its inauguration.[5]

Most studies which deal with the building of the Seaway state that an increase in traffic in Quebec ports benefits the Quebec economy. However, this assumption is not necessarily true. An expanded economic activity in a province will positively affect its residents only to the extent that they attain greater well-being. With regard to the cost of shipping products through the Seaway, it is clear that if Quebeckers pay less for their goods because of the canalization, they benefit from it. In a regional perspective, however, in order to determine the net benefits which residents of a region derive from the Seaway, these gains must be measured against the costs incurred. Obviously, it is difficult in certain instances to calculate these advantages accurately and, for this reason, most studies on the regional impact of the canalization of the St. Lawrence put their main emphasis on its impact on transportation costs. We will examine these studies and several regionalized cost-benefit analyses.

The St. Lawrence Seaway has become a source of fundamental disagreement between the federal and provincial governments with regard to the economic spinoff it has generated in Quebec. On April 30, 1977, Jacques Parizeau told the *Financial Post* that "it is now accepted fact that the building of the Seaway was one of the factors that contributed to the shift of economic activity from Montreal to Toronto." In April 1977 Bernard Landry concluded that the building of the Seaway was a perfect example of the conflict between regional and national interests. This study mentioned the drop in investments made in Quebec compared to those in Ontario which coincided with the opening of the Montreal–Lake Ontario segment of the St. Lawrence Seaway. No causal relationship was shown in the study, though the timing of both events led the author to conclude that a cause and effect relationship existed between them. Several studies were subsequently undertaken to verify the validity of this statement. One such group (e.g., Sussman, 1979) investigated the impact of the canalization of the St. Lawrence on Seaway traffic, while other studies were regionalized cost-benefit analyses (Canada, 1979b; OPDQ, 1979).

The Sussman study concludes that Quebec benefited from the building of the Seaway because traffic in its ports increased. However, it is not certain that this expansion led to improved social well-being among Quebec residents. Using the criterion of fairness to the regions, according to which any federal policy which creates jobs in Quebec is beneficial (since Quebeckers are little inclined to move to other provinces and, consequently, any loss of jobs entails a cost which they alone must bear), the argument is justified. Although Sussman does not use the criterion of fairness to the regions, it is interesting to outline the conclusions of her study.

She endeavours to determine whether or not traffic declined in the port of Montreal following the building of the Seaway, as opponents of the project claimed, or whether it increased because shipping costs

decreased in relation to what they would have been had the Seaway not been built. Her methodology is to compare the cost-benefit ratios for several means of transportation to determine which of them could be used the most efficiently to transport the 80 million or so tons of goods which pass through the Seaway every year. However, she does not carry out this analysis, but describes the elements it should contain and examines shipping before and after the canalization to determine how it affected Quebec's economy; thus, it deals with changes in traffic in Quebec ports. These ports are divided into two categories: established ports (Montreal, Trois-Rivières, Sorel and Quebec City), and new ports (Sept-Iles, Port-Cartier, and Baie-Comeau on the North Shore). What is interesting in this study is the distinction between the effect of building the Seaway on all Quebec harbours and on the port of Montreal alone. It would appear that activity shifted from harbours in the mid-St. Lawrence to those on the North Shore. The study by Landry (1977) showed that building the Seaway put Quebec at a disadvantage. This conclusion was based on a comparison of the effects of the canalization on Montreal and on Toronto.

Maritime shipping is centred primarily on grain and metals. Iron ore from Quebec-Labrador[6] is first transported by rail from Shefferville, Wabush and Port-Cartier, then through the Seaway to harbours in steelmaking centres in Canada and the United States. U.S. grain is shipped from the Great Lakes to St. Lawrence ports; it used to be offloaded in Montreal, but is now sent as far as the North Shore (particularly Baie-Comeau and Port-Cartier) as it is advantageous to unload the freighters at the same place where ore is loaded. Under the circumstances, Canadian authorities allow grain from the United States to be unloaded in several Quebec ports, as was the case before Montreal's full capacity was utilized for handling Canadian grain. With the advent of new ports in Quebec, it was possible to increase total grain unloading capacity. Montreal, as the nucleus of the railway network needed to distribute grain, has continued to play an important role in grain transportation. Thus, the grain trade has grown in Quebec ports with the building of the Seaway, as capacity increased and transportation costs decreased. Iron from Quebec-Labrador has flourished owing to the canalization of the St. Lawrence; it has been able to compete with Ontario ore shipped via the Welland Canal and U.S. ore from Minnesota shipped through the Great Lakes to steel plants in Toronto and Hamilton.

Little oil has been shipped via the Seaway since the pipeline was extended from Sarnia to Montreal; oil tankers, moreover, are too big to navigate the canal. When the Seaway was built it was feared that ocean-going ships would sail to Toronto rather than stopping in Montreal. This diversion has not eventuated, however, as containerized shipping was introduced in the 1960s. Competition in this area was stronger between the Atlantic ports (especially Halifax) and Montreal and Quebec City

than between Montreal and Toronto. Ocean-going freighters carried general cargo which accounted for 17 percent of all traffic in the port of Montreal between 1960 and 1976.

Aside from increased traffic on the St. Lawrence, the building of the Seaway may have had other results. Among them was its effect on transportation costs and the price of the goods shipped, influenced in turn by the subsidy granted by the federal government to maritime shipping. The cost of shipping goods through the Seaway seems to have dropped. With respect to iron ore, consumers should ultimately benefit from this cost decrease as it should be reflected in the price of manufactured goods containing iron. However, with regard to grain, it would appear that Prairie producers benefit most from reduced transportation costs, as the Canadian Wheat Board sets the farm price of grain by determining the difference between the international price of wheat and transportation costs. Another reason explaining the relatively low transportation costs incurred by Seaway users is that the tolls collected do not cover capital costs but only maintenance costs.

The canalization of the St. Lawrence increased competition among Quebec ports, especially between those in Montreal and on the North Shore. At the outset this result seems positive, as increased competition generally leads to lower prices than under a monopolistic or oligopolistic situation. However, this argument would only be valid were Montreal the only possible choice prior to the building of the Seaway. Ontario ports were already competing with those in Quebec; it may well be that prices were not affected by an increase in the number of ports in operation.

Canalization of the St. Lawrence appears to have benefited Quebec with respect to the volume of traffic in its ports, although the percentage of general cargo in relation to overall cargo handled remains higher in Ontario than in Quebec. As the indirect effects of shipping general cargo are more important than those related to overall cargo, the value of shipping to Ontario is slightly higher. Moreover, the fact that goods shipped through the Welland Canal are more heavily subsidized by the federal government than those shipped through the Montreal–Lake Ontario section[7] of the Seaway has proved to be a disadvantage for iron ore from Quebec-Labrador compared with ore from Ontario and the United States shipped through the Welland Canal to Toronto and Hamilton. However, the difference in toll rates between the two sections of the Seaway is partially offset by higher federal subsidies to infrastructures on the Montreal–Lake Ontario section.

The volume of shipping in Quebec ports appears to have increased following the building of the St. Lawrence Seaway. Between 1958 and 1976 such traffic increased more rapidly than in Ontario ports. If we adopt the criterion according to which jobs created in Quebec produce an evident gain in well-being, we can conclude that Quebec's grievances with respect to the Seaway are unfounded. At the same time, if we limit

ourselves to the regional distribution of benefits without taking costs into account, we obtain an incomplete picture of the effects of policy on various regions. We will now examine those studies of the Seaway which use regionalized cost-benefit analyses, one of which was prepared by the federal government and the other by the Quebec government. While studies agree on Quebec's share of the costs of building the Seaway (about 24 or 25 percent, which is equivalent to Quebec's share of federal tax revenues), differences arise in their assessment of benefits — on the impact of the Seaway on port activities, on the location of industries, and on transportation costs.

The federal study on the profitability of the Seaway concludes that it is indeed profitable (Canada, 1979b). The author examined changes in, and the make-up of, traffic on the Welland and Montreal–Lake Ontario sections of the Seaway. Ports on the North Shore and those in Hamilton and Thunder Bay seem to have benefited from building of the Seaway. If Montreal's relative importance has declined, it is because it is too far downstream for general cargo and too far inland for heavy cargo. According to this study, containerization has been the main factor contributing to the decline of the port of Montreal. In general, however, the impact of the Seaway on freight handling has been more favourable to Quebec than to Ontario because of the increase in the volume of shipments of iron ore from Quebec and Labrador and and Labrador and transhipments of wheat and the off-loading of U.S. grain in Quebec. The Seaway's impact on the cost of shipping iron ore appears to be decidedly positive in instances where freighters arrive in Quebec ports carrying grain and return from them laden with ore. Impact on shipbuilding is deemed to be positive;[8] with respect to industrial activity, Montreal seems to have benefited little from increased grain shipping, as flour mills, malt houses and distilleries were already located there. The Seaway does not appear to have affected the location of steel mills; consumers of steel (automobile and machinery manufacturers) are located in Ontario, and in the steel industry proximity of manufacturers is more important than that of suppliers of raw materials. The building of the Seaway seems to have had a positive effect on the production of electricity in Ontario, as a number of its generating stations (for example, the Robert Saunders power plant) are coal fired, while Quebec relies on hydroelectricity.

This federal study attributes spinoff arising from the canalization of the St. Lawrence to various factors. Quebec appears to have benefited from improvements in freight handling, reductions in transportation costs, and subsidies for shipbuilding, and the overall benefits seem to outweigh the costs.[9]

A study published in 1979 by the Office de planification et de développement du Québec (OPDQ) draws somewhat different conclusions: its authors state that the St. Lawrence Seaway has been a net disadvantage

for Quebec. Particular emphasis is placed on difficulties encountered in assessing the effect of the building of the Seaway on the costs of transportation, especially since tolls collected do not reflect actual transportation costs and, therefore, cannot be deemed to represent such costs accurately. Nonetheless, the authors conclude that transportation costs have decreased, although such a drop has not necessarily led to better utilization of resources. Maritime shipping has declined (resulting in under-utilization of infrastructures), and the two principal users of the Seaway, Iron Ore of Canada and the Canadian Wheat Board, are oligopolies, for which a reduction in costs does not necessarily lead to a drop in the price of the product in question. However, no convincing proof of these statements is presented, and it is somewhat illogical to consider Iron Ore or the Canadian Wheat Board as oligopolies on the international market. They are oligopolies on the domestic market, but this has little effect on the price of their products given the structure of the international market with which they deal.

There is no consensus on the effects of the building of the Seaway on the volume of iron ore shipped to Ontario. The OPDQ study points out that mines on the North Shore would have been operated in any case, but this argument strikes us as weak. The decline of the port of Montreal is also attributed to the building of the Seaway, which also strikes us as dubious, as other factors, including, above all, the advent of containers, are of more significance. According to the OPDQ, the fact that ports on the North Shore experienced an upswing in activity owing to the canalization of the St. Lawrence is not important, as these ports depend primarily on the shipment of iron ore which, in turn, depends on subsidies on grain shipments, for which Ontario accounts for only half of the overall market. This observation also seems unconvincing. The Seaway's effect on shipbuilding is not considered important, as relatively few subsidized shipyards are Quebec-owned. However, this argument does not take into account the jobs and indirect spinoff resulting from activity in the shipyards.

In our view, activity in Quebec ports has increased as a result of the canalization of the St. Lawrence, especially thanks to iron ore and U.S. grain shipments. The centre of attraction has shifted from Montreal to the North Shore, thereby facilitating the development of new ports. Montreal continues to play an important role in the unloading of grain shipments from the United States, because of its well-developed railway network. The net effect on Montreal appears to have been positive, as considerable indirect spinoff is associated with intensive port activities. Between 1958 and 1976 total traffic[10] in Quebec ports increased by 252 percent; that in Ontario, by 148 percent; and in Maritime ports by 266 percent (Canada, 1979b, p. 26). Moreover, overall traffic increased more rapidly in the Montreal–Lake Ontario section than in the Welland section between 1958 and 1976, although traffic in absolute terms on the

latter section was still higher. The impact of the canalization on the location of industries was less pronounced in Quebec. Flour mills, distilleries, malt houses and grain-processing facilities were already located in Montreal prior to the building of the Seaway. Plants for transforming iron ore into iron pellets have developed to some extent, although the international economic situation does not seem to favour expansion of this industry at present (*Globe and Mail*, November 3, 1982). The Seaway has been blamed for the concentration of peripheral industries (primarily the electrical and steel industries) in Ontario rather than in Quebec. It does not appear likely that the steel industry would have developed in Quebec, with or without the building of the Seaway, because of the heavy concentration of industries in Ontario which consume steel. The criticism is more valid with regard to the electrical industry, as the Seaway made possible the establishment of a coal-fired generating station which produces low-cost electricity; however, Quebec's electric potential is by no means inferior to Ontario's. The Seaway's impact on transportation costs also appears to be evident and comprises two facets: a real drop in such costs and a decrease owing to subsidies granted to users. It is hard to determine who benefits the most from these reduced costs. The oligopolistic structure of the iron ore industry has led some observers (see OPDQ, 1978) to believe that the reduction in transportation costs has resulted not in a drop in prices but in an increase in profits. However, this hypothesis does not take into account the fact that the companies in question enjoy an oligopoly only in Quebec; outside the province they must compete with Canadian and U.S. firms. It is therefore likely that a drop in price actually did occur, thereby making Quebec ore more competitive.[11] With respect to grain, producers in Western Canada have probably benefited from an increase in profits because of the method the Canadian Wheat Board uses to set prices. The effect of subsidies on users of the Montreal–Lake Ontario section of the Seaway is determined by the fact that they are borne by all Canadians and may lead to higher taxes. However, they help reduce transportation costs and help redistribute income from non-users to users of the Seaway.

Based on these observations, it would be hard not to conclude that Quebec has benefited from the building of the St. Lawrence Seaway. Studies carried out by the OPDQ and the federal government indicate that the regional benefits obtained by Quebec from the Seaway outweigh the costs borne by it. If we return to the criterion according to which a regional grievance is unfounded where a region obtains a net benefit, the grievance is unjustified. If we apply the criterion respecting the number of jobs created in Quebec through spinoff resulting from a federal policy (taking into account the relative immobility of Quebeckers), Sussman's study shows that this grievance is unjustified. Quebec appears to have gained greater net benefits from the building of the Seaway than has

Ontario. Consequently, if we adopt the criterion of fairness to the regions, which entails a comparison of cost-benefit ratios in the various regions, we conclude that Quebec's grievances with regard to this policy are unfounded.

THE BORDEN LINE

1961–73

In 1959 the Royal Commission on Energy, called the Borden Commission, submitted a report which served as the basis for the federal government's national oil policy (NOP). In 1961 Ottawa divided the Canadian market in two parts by means of a line running through eastern Ontario, a division later called the Borden Line. Markets west of the line were reserved for petroleum products refined from Canadian crude oil, while markets to the east were to continue to be supplied by crude oil shipped by sea, especially from Venezuela, and refined in Montreal. As a result of this policy a captive market was created for petroleum products refined from Western Canadian crude. In Quebec it enabled refineries to continue purchasing imported crude which was cheaper than Canadian crude, although it did reduce the market available until then for products refined in Montreal. The dual price for oil had several effects, which we will examine in turn, on the Quebec government's tax revenues, the location of the petrochemical industry, and the substitution of other forms of less expensive energy (above all, natural gas).

David and Dubreuil (1971), in a study carried out for the ministère de l'Industrie et du Commerce du Québec, studied the effect of the existence of the Borden Line on the Quebec government's tax revenues and, more precisely, the effects of the dual price for oil. According to the authors, the pricing policy enabled companies to sell oil at higher prices in the East than they would have done on an open market, although such prices were from 10 to 15 percent lower than those in effect west of the Borden Line. The multinationals' profits were then transferred to their maritime shipping subsidiaries, established in countries with little or no income tax. Such tax evasion, called offshore profits, probably cost the Quebec government about $65 million in 1969. Quebec consumers may have paid more for their oil than they should have between 1961 and 1973, but less than Canadians living west of the Borden Line. However, it is doubtful whether multinationals used offshore profits solely because they could demand an artificially high price east of the Borden Line. It is illogical to blame the policy for tax evasion by multinationals refining oil in Montreal.

Quebec had two grievances with regard to the oil policy. The first concerned the relatively greater expansion of the petrochemical industry in Ontario compared with that which took place in Quebec. By limiting the market available to refiners located east of the Borden Line,

the energy policy may have prevented subsequent development of the Quebec petrochemical industry in favour of Sarnia and Alberta. The second grievance arises from the replacement of various forms of energy (especially oil) by natural gas, which did not occur in Quebec because the federal government's policy may have maintained the price of oil at artificially low levels. Let us examine the validity of these grievances.

The effect of the NOP on the location of petrochemical industries appears to have been to favour its concentration in Ontario, particularly Sarnia. According to Bernard Landry (1977), petrochemical firms established themselves in Sarnia rather than Montreal in order to hold the Ontario market. However, explicit restrictions were never imposed on the movement of petrochemical products over the Borden Line. Indeed, it would seem that such trade posed no problems (Beigie and Maxwell, 1977). At the same time, there is no doubt that the policy prevented Montreal refineries from producing gasoline for the Ontario market; they had to be content with the local market.

When the petrochemical industry was spawned by the union of the chemical and petroleum industries, facilities in Montreal adapted themselves accordingly. However, such facilities have always been modest and have never developed into an industry of international stature. Considerable economies of scale can be achieved through the integration of infrastructure and the pipeline required to transport both crude and the finished product. The proximity of markets appears to be a key consideration when petrochemical firms decide where to locate (Martin, 1974). It is for this reason that they were already well established in the Sarnia area before the Borden Line was drawn (Beigie and Maxwell, 1977). Two other decisive factors with respect to the development of Sarnia were the proximity of the United States and the tariff agreement under which petrochemical products made from Alberta crude entered the United States duty-free.

The impact of the Borden Line on the replacement of oil by other forms of energy is less evident. Because an artificially low price was maintained in the East, substitutions which should have occurred as a result of relative prices that were unfavourable to oil did not take place. In Ontario, meanwhile, natural gas made considerable inroads. It should be pointed out that, while multinationals benefited from the dual-price policy in order to increase prices east of the Borden Line, some substitution should have taken place, unless the price to the east were established at a level which was just low enough to avoid substitution but sufficiently high to bolster profits. If we accept that the NOP dissuaded Quebec from using a less expensive form of energy, it follows that the oil policy did affect the province. However, this argument strikes us as being rather unlikely. It is not proven, economically speaking, that maintaining artificially high oil prices in Ontario and, consequently, forcing the substitution of natural gas for oil in that province did not result in an even greater distortion.

1973 to the Present

In 1973, with the advent of the oil crisis, the national oil policy was altered considerably. The federal government decided to eliminate the Borden Line and extend the Sarnia pipeline to Montreal, while maintaining domestic oil prices below world levels. The purpose of this policy was to protect Canadians from the sudden increase in oil prices and to enable them to absorb the shock gradually. Refiners in the East continued to purchase oil abroad and received a subsidy to compensate for the higher cost of imported oil in relation to Canadian oil. Such compensation was financed by the federal government, which collected the difference between the price of Canadian oil sold to the United States at the international price and the price received by oil producers, that is, the Canadian price.[12] These import subsidies represented a transfer of income from producers in the West (especially in Alberta) to both refiners in the East and consumers throughout Canada. Quebec benefited from this policy, which sheltered it from the effects of the increase in international oil prices and ensured it some security of supply from the West. Moreover, Quebec received a share of producing provinces' revenues through equalization payments. However, the province also paid its share of investments made in the West and part of the excise tax on gasoline necessary to finance the single-price policy.

Natural gas was also shipped by pipeline from the West to the East. At the beginning of the 1960s the pipeline reached Montreal, then, about ten years later, Sorel, and, more recently, Quebec City. However, natural gas was substituted on a limited basis for oil until 1973 in Quebec, mainly because of low electricity prices in the province. The cost of shipping natural gas from the West to the East is very high, and for this reason the federal government adjusted prices in Montreal and Sorel, making them identical to those in Toronto. This initiative enabled natural gas to make greater inroads on the Quebec market, although it is only a secondary source of energy in the province. Only 12.3 percent of Quebec's overall energy needs are satisfied by natural gas (Fréchette, Jouandet-Bernadat, and Vézina, 1975).

Quebec does not appear to have suffered particularly from the national oil policy. Between 1951 and 1973 the prices of oil products were between 10 and 15 percent lower than those in effect in Ontario, although the market accessible to Montreal refiners was limited. This did not lead to an exodus of such firms, as they retained the Quebec market (proximity to the market is crucial to gasoline sales). Since 1973 Western Canadian oil producers have subsidized consumers and refiners in the East; it does not appear that we can readily establish that Quebec has not benefited from this measure.

However, the impact of the NOP on Quebec is not as clearcut with respect to the location of the petrochemical industry — those industries related to the chemical and petroleum sectors. The refining of oil produces gasoline and heating oil and secondary products used in the manufacture of many

other chemical products, such as varnish, antifreeze, polyesters, and synthetic textiles. Secondary products are obtained through various distillation processes: their production determines the industry's sector-based impact, as most of the other industries employ them as inputs. The overall capacity of the primary and secondary petroleum industry increased between 1960 and 1973, although Quebec's share of the secondary sector declined during the same period as the industry shifted to the West. Following the energy crisis, the low domestic price of Canadian crude encouraged the establishment of petrochemical plants (using crude and natural gas) in Alberta and Sarnia, where they had already located prior to the extension of the pipeline. The centering of the petroleum industry in southern Ontario satisfies criteria respecting the minimization of transportation costs to the United States and to Ontario industries which employ secondary products.

It may well be that the Quebec petrochemical industry developed to a lesser extent than it would have had the energy policy not been implemented, and that fewer jobs were created as a result. In the light of the job-loss criterion outlined above, the NOP adversely affected the province. However, it is far from certain that a reduction in the number of jobs available in a province results in a decline in the collective well-being of its residents. The purpose of any policy is not to allow as many people as possible to work, but to ensure that the real output of the economy increases. At the same time, a policy which reduces potential jobs may be deemed detrimental when those who would have held such jobs are unemployed and, consequently, become a burden to society. Where such is not the case, it is hard to establish in what way a policy has adversely affected the collective well-being of a region's inhabitants.

TARIFF POLICIES

Among various tariff policies the Automobile Pact is deemed to have had a negative impact on Quebec; tariffs designed to protect the textile industry have been cited, although rarely, as an example of a federal policy which is detrimental to the province. It has been said that the protection accorded the textile, clothing and shoe sectors has discouraged the conversion of these industries. As a result, Canadian tariff policies with regard to textiles may have hindered the development of a solid industrial structure in Quebec (Fréchette, Jouandat-Bernadat, and Vézina, 1975).

The American-Canadian Automotive Agreement was reached in 1965, although it was only ratified by the U.S. Senate in 1966, and its effects were felt in Canada after 1967. Negotiators set themselves three goals: to benefit from specialization through access to a broader market; to increase the market share of Canadian manufacturers; and to encourage the establishment of a free market with respect to the automobile, as a means of maximizing the return on investments and productivity in

Canada. As a result of the pact, Canada's trade balance improved until 1972 and Canadian car prices dropped. However, in 1975 the auto industry experienced a sharp downturn in demand, which led to a decrease in Canadian output. Quebec has benefited little from the agreement, as most of the manufacturing plants are located in Ontario (in 1976, 6 percent of the overall value of shipments of parts and 1 percent of the parts sector originated in Quebec, compared with 89 and 90 percent, respectively, in Ontario). The General Motors plant in Sainte-Thérèse and SOMA (Renault) in Saint-Bruno were established before the Auto Pact was ratified. Two positive aspects of the pact should be noted with respect to Quebec: it may well be that the plant in Sainte-Thérèse increased output owing to the increase in exports made possible by the agreement; moreover, the inclusion of snowmobiles in the pact enabled Quebec to benefit from it. The plant in Sainte-Thérèse, which specialized in the construction of small cars during the oil crisis, benefited from increased demand for such cars.

Fernand Martin studied the regional impact of the Auto Pact in 1978, using as his measurement the difference between the prevailing situation and that which would have existed had the pact not been signed. He employed the CANDIDE model to simulate gross domestic product (GDP) prices, and the level of unemployment (a) where no policy was implemented and (b) where other fiscal policies related to the exchange rate had been adopted. The Auto Pact's effect on different variables was measured by the difference between prevailing levels and the levels which would have existed without the pact, as the model indicated. The results thus obtained represent the Auto Pact's maximum effect, as it is unlikely that the federal government would not have implemented fiscal or other policies had the agreement not been reached. According to Martin, on the national level the pact led to an average increase in Canada's real gross domestic product at $1.25 billion between 1968 and 1976; real wages were 2 percent higher, and the unemployment rate was 1 percent lower in each year under consideration. The balance of payments deficit was some $3 billion lower and the government deficit, $7 billion. The costs engendered by the policy are of two types: the inflation rate would have been 1 percent lower had the pact not been ratified, and the Canadian economy would not have become more susceptible to fluctuations in the U.S. economy. The impact of the Auto Pact on various regions was also assessed.

The regional breakdown of data was carried out using the Statistics Canada input-output tables for 1966. The results indicate that the effect of the Auto Pact varies appreciably according to the province considered. Ontario received 90 percent of the increase in gross domestic product attributable to the policy; the province's share of its overall impact in 1968, 1971, 1973, 1974, 1975 and 1976 was 76, 72, 80, 149, 98 and 80 percent, respectively, while for the same years, Quebec obtained 12,

13, 10, less than 0, 0.6 and 8 percent. In 1979 all of the provinces lost, except Ontario, which gained what the others lost. However, for the period under study, the Auto Pact resulted in a positive gain in all provinces. Moreover, as the pact produced a surplus in Ontario, part of the surplus was redistributed to the other provinces in the form of equalization payments. Thus, on the basis of this empirical study, it appears that Quebec was not put at a disadvantage by the Auto Pact, although the situation is less clear in relation to what might have prevailed had other policies been implemented.

With regard to the Auto Pact, Quebec claims that Ontario has benefited disproportionately and that the pact has encouraged the automobile industry to locate in Ontario. The latter argument does not strike us as convincing, since much of the industry was already established in Ontario before the pact was implemented in order to minimize transportation costs. The first argument rests on the criterion of relative benefits, according to which the regional cost-benefit ratio for a given region must be greater than that of other regions for a grievance to be unjustified. The study carried out by Martin (1979b) showed that Quebec received more from the Auto Pact than it paid, but that Ontario received even more. The criterion respecting net positive benefits leads us to conclude that grievances related to the pact are unjustified, while the criterion regarding net relative benefits suggests that they are justified.

"The Battle of the Balance Sheets"

> The variety of results one may obtain from the calculations of Quebec's net gain or loss in its dealings with the federal government shows how volatile such calculations are and how important it is to excavate the assumptions on which they are based" (Fortin, Paquet and Rabeau, 1978, p. 562).

The means by which the federal budget is distributed among the provinces may prove valuable in answering certain precise questions, although it cannot be used to prove that a political system favours or handicaps a province or region. To do so, it would be necessary to add up the effects of so-called budgetary policies (federal expenditures), structural policies and regulations. We would also have to take into account certain stabilization policies which do not involve expenditures and which are not, therefore, included in the budget balance (for example, policies related to interest and exchange rates). Moreover, to obtain an accurate picture of whether federalism is profitable or not, this situation would have to be compared to other possible options. Thus, we do not have at our disposal a real cost-benefit analysis of the political system in question.

The use to which balance sheets have been put has changed over the years, as have the methods employed. In 1964 Leon Balcer, MP for Trois-Rivières, asked the minister of finance in the House of Commons how much Ottawa paid Quebec in relation to what it received from the

province. The concern at the time was only with redistribution and was thus of a microeconomic nature. In 1965 the Lesage study, which endeavoured to answer the question, was published. It was intended to assess to what extent Quebec had benefited from federal policies; the nature of the exercise added a macroeconomic dimension (the effect of federal expenditures on the regions) to the microeconomic dimension (redistribution). Subsequent studies published by the Quebec government (1970, 1977), the Ontario government (1977) and Canada (1977) were increasingly oriented toward macroeconomic considerations, and abandoned the matter of redistribution.

The imputed benefits and revenue-expenditure approaches were used to prepare the balance sheets. It is easy to account for 55–70 percent of federal disbursements to the regions, regardless of the method employed (C.D. Howe Research Institute, 1977; Banks, 1977), as they entail transfers from the federal government to provincial and municipal governments and to individuals. However, the impact on the provinces of such services as foreign affairs, national defence, intercontinental transportation, immigration, and foreign aid are harder to assess. Similarly, to evaluate the share of federal revenue imputable to each province we must know the effect of various forms of taxation. The question is straightforward with regard to income tax but not when we consider corporate income tax or indirect taxes. The problem arises from the fact that it is difficult to determine who ultimately pays such taxes,[13] the consumer (through price increases) or the producer (through reduced profits).

Indivisible services supplied by the federal government may be allocated on the basis of population, for example. Theoretically, however, such services should be distributed according to the share the provinces would request were they free to do so. It may be thought that an approach based on each province's share of total revenues would correspond more closely to this principle (Fortin, Paquet and Rabeau, 1978). Federal studies which employ the benefit method generally adopt the criterion respecting population to distribute indivisible expenditures. The provinces tend to use other criteria, such as the relative importance of manufacturing in the provinces or the amounts requisitioned by federal establishments in a given region. It should be noted that all government studies impute federal expenditures on goods and services to the ultimate entrepreneur, thereby neglecting certain links between the provinces.

An assessment of the effect of the federal sales tax may be made following the method established in Statistics Canada's provincial accounts, that is, on the basis of location of activities which generate taxes. It could also be based on each province's share of Canadian retail sales. The 1977 federal study imputes the tax entirely to the consumer.[14] Various government documents use either the point of collection or sale

to impute the tax on transactions (Quebec, 1977), or the point of destination or consumption (other studies).

The budget balance and debt service also pose problems with respect to regional distribution. The 1964 federal study does not impute the deficit to the provinces and divides debt service on the basis of population. Quebec studies, however, impute part of the deficit to Quebec and use the amount of life insurance held by Quebeckers as a basis for attributing their share of debt service.

It is, therefore, hardly surprising to find marked differences according to the approach adopted by various authors. Still, all of the studies concur on certain points: Quebec experienced a deficit in its exchanges with Ottawa until sometime between 1965 and 1975 (the date varies with the study); the balance then showed a surplus with the advent of various social programs and the implementation of oil subsidies. In fact, Quebec's problem lies at a much more important level than establishing whether or not it has paid more or less than it has received from Ottawa. It is a question of studying the nature of federal expenditures in Quebec and their impact on the province's economy. Former Quebec finance minister Jacques Parizeau has admitted that the province has probably received more from the federal government than it has paid to it, although he expressed some reservations about the long-term impact of this money on Quebec's economy. Maxwell and Pestieau (1980) point out that federal government assistance in the form of transfer and equalization payments has created an illusion of well-being by giving Quebec access to higher revenues than its economic structure should have enabled it to obtain. According to the authors, this buffer has prevented numerous adjustments from taking place and has proved a handicap to Quebec in the long run. This could be summarized as:

> Basically, transfers impeded the process of regional adjustment. Decades of interrupting the process of regional economic adjustment have led some provinces into a position where they are increasingly dependent upon transfers for their economic well-being. This has now come to be known as transfer dependency. (Courchene, 1981, p. 509)

Conclusion

The purpose of this study was not to present an assessment of federalism but to review Quebec's principal grievances with regard to selected federal economic policies, including structural policies such as the St. Lawrence Seaway, the National Oil Policy and the Auto Pact.

The validity of regional grievances must be judged on the basis of the criteria outlined in this study. With respect to the St. Lawrence Seaway, it seems obvious that Quebec has attained a regional cost-benefit ratio greater than one, and probably greater than that achieved by Ontario. It is, therefore, difficult to acknowledge that Quebec's grievances in this

area are justified. The case of the oil policy is not as clear cut, as we do not have at our disposal any study which assesses the benefits Quebec has received, and the costs incurred by it, with regard to the project. The point of contention is linked to the effects the oil policy may have had on the location of the petrochemical industry: the loss of potential jobs arising from the establishment in Ontario of new facilities may constitute a valid regional grievance where the labour force is relatively immobile, as it is in Quebec. The province clearly obtained a regional cost-benefit ratio higher than one as a result of the Auto Pact. However, the province's grievance in this regard arises from Ontario having benefited more from it than Quebec. Ontario has achieved a higher regional cost-benefit ratio than its neighbour. In our view, this is not an entirely realistic basis for a regional grievance. Indeed, what appears to be the most logical criterion for assessing the validity of a regional grievance is a regional cost-benefit ratio greater than one.

Generally, what is important is that the overall effect of all policies on a region be positive. First, we examined structural policies, then turned our attention to the "battle of the balance sheets." Following a brief overview of the debate surrounding this question, we concluded that Quebec should take an interest in all types of federal government expenditures rather than in their amounts, as the province's long-term economic structure depends much more on the first parameter than on the second.

Notes

1. Stabilization policies have not been dealt with in this study as they are more closely examined within the framework of research in macroeconomics (see the Commission study by Yves Rabeau, 1985).

2. Nonetheless, region B might be justified in complaining in this case were the project carried out, not the one which maximizes the benefits received by the region, although it entails a cost-benefit ratio greater than one. Similarly, where a systematic bias exists in the regional distribution of the surplus, a region is justified in complaining.

3. However, in the long term, when we introduce the hypothesis of the non-nullity of the elasticities of the migration of production factors in relation to their relative returns in various regions, we generally find that the only (positive or negative) beneficiaries are often immigrants in one province and not people who lived there prior to the implementation of the policy in question. At that point, we cannot readily speak of regional discrimination; in fact, discrimination occurs against a category of individuals who may or may not be regionally concentrated. If such individuals are, in fact, regionally concentrated, it is all the more difficult to determine whether or not the grievance is actually justified.

4. Similarly, it is interesting to note that equalization payments made by Ottawa do not take into account the effect of its structural policies differentiated by region.

5. A decrease in the cost of shipping a product creates a gain in well-being, which is

shared between the consumer and the producer of the goods in relative proportions determined by elasticities in the supply and demand of the goods.

6. In 1977 about 40 percent of this iron ore came from Quebec, and the rest from Labrador.

7. This is due to the fact that the United States and Canada jointly set tolls on this section, while Canada alone determines those in effect on the Welland Canal.

8. However, Bonin and Polèse (1980, p. 174) mention that subsidies for this type of construction have probably benefited big builders more than small traditional Quebec firms.

9. Such costs, it should be remembered, are estimated in proportion to Quebec's contribution to federal revenues.

10. Defined as total goods loaded and unloaded.

11. However, it is hard to be sure, as it may well be that Canadian and U.S. iron ore industries cooperate, thereby constituting an oligopoly.

12. An excise tax of $0.10 a gallon on gasoline for all drivers, except users of commercial vehicles, was also collected to finance this compensation.

13. Readers interested in this matter should refer to Dahlby (1985) for a more thorough review of the question.

14. Hazeldine (1979) has shown that the consumer and the producer equally share indirect taxes.

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Regional Economic Alienation:
Atlantic Canada and the West

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Introduction

In this paper we examine three issues of Canadian federal policy that are frequently believed to discriminate against the economic interests of the Western provinces and the Atlantic region: tariff barriers between the United States and Canada; Canadian federal transportation policy; and federal resource policies, particularly in the energy sector. These three issues have been identified by previous discussions of regional griev- ances stemming from federal policies as worthy of further examination. In an influential paper on prairie economic alienation, Norrie (1976) examined a number of matters of concern, among which these were the most prominent. Norrie was inclined to give most weight to the adverse effect of resource policy on Western Canada and granted only qualified support to grievances concerning tariff and transportation policies. Whalley (1983) examined the regional impact of federal policies on resources, tariffs, taxes and transportation, and policies affecting capital markets and the interprovincial allocation of investment funds including the Department of Regional Economic Expansion (DREE), as well as the regional impact of the Equalization Program and unemployment insur- ance benefits. Once again, tariffs, transport, and resources emerged as the most important matters in which centralized policies can have important effects on Canadian regions in a way that may be acting counter to regional equity objectives avowed by federal policy makers.

Residents of Western Canada and the Atlantic region usually have mixed feelings about accepting the implications for regional real income of trading at international prices. In the case of tariffs and petroleum, they tend to believe that international prices ought to prevail. The tariff

is considered not only a cause of inefficiency (the usual textbook view) but also a means by which trade is diverted to Central Canada and by which Central Canadian producers of secondary manufactures place a tax on the consumption of these goods in other regions. Similarly, domestic pricing of energy resources is viewed as a method of transferring real income from the West to consumers in other regions: hence, "fair" prices are equated with international prices. On transportation issues, residents of the West and the Atlantic provinces are often slower to accept the regional implications of world prices. The prices received and paid for traded goods in Canada usually involve the subtraction of transport charges on exports and the addition of transport charges on imports (unless specific subsidies are in effect). Greater distance from world markets means that international pricing leads to lower incomes from exports and higher costs for imports. In addition, the highly visible nature of transport costs leads to the suspicion that transportation services are being priced in such a way as to increase the costs borne by these regions.

These price-system issues form an important theme in the following examination of tariffs, transport costs and resource revenues. To a large extent, and not unpredictably, residents of the Western and Atlantic provinces tend to support world prices when they consider it in their interest to do so (for example, in the case of tariffs and petroleum prices) and to seek relief from world prices in the opposite situation (for example, in the case of transportation).

In what follows, we tend to accept the argument that international prices should influence decisions concerning resource allocation within Canadian regions, in keeping with the conventional view that resources are allocated most efficiently in this way. Tariffs, on the other hand, produce inefficiencies and interregional transfers; in the next section, we concentrate on the likely effect of these inefficiencies and transfers on the West and the Atlantic regions. In the following section the argument that transport costs produce special regional burdens is examined from three points of view: does competitive international pricing produce unfair transport burdens? Do transportation rates systematically discriminate against the West? Do subsidies on Maritime traffic actually benefit Maritime residents? Following this, we go on to re-examine the conflict between Alberta and the federal government over resource revenues, again stressing the effect on the West of divergences from world prices and the arguments surrounding the resulting interregional transfers.

Regional Tariff Burdens

It is traditional to assume that Central Canada favours tariffs and that the Western and Atlantic provinces oppose them. For the latter regions, the

traditional absence of free trade — commencing with Sir John A. Macdonald's National Policy (Tariff Policy) — is viewed as little more than a device to bolster Central Canadian industry and transfer real incomes out of Canada's less industrialized areas. Even though tariffs were considerably reduced during the 1970s and will fall even further in the 1980s, it is well worth examining the economic analysis that underlies this long-standing grievance.

Most of the theoretical and empirical work on the liberalization of Canadian trade has concentrated either on unilateral free trade or on the establishment of a free trade area with the United States and has stressed the total national benefits rather than the net benefits to specific regions such as the West or the Atlantic region. The two analytical models used have been the (Neoclassical) Heckscher-Ohlin-Samuelson (HOS) approach to the tariff burden and the Eastman-Stykolt (ES) approach.[1] The former is ordinarily constructed as a two-sector model in which both sectors operate under atomistic competition and constant returns to scale, both in the presence and in the absence of trade barriers erected by domestic and foreign countries. The ES approach, by contrast, introduces interdependency between trade barriers and the domestic market structure and returns to scale so that domestic and foreign trade barriers reduce the degree of domestic competition and cause the sizes of domestic firms to fall below minimum efficient scale. The HOS model is highly developed in the literature, while the home-grown ES approach has not yet been fully developed, in part because of the range of results that inevitably surround small-number models of industrial organization (Muller, 1982).

It seems natural enough to organize a discussion of regional tariff burdens around these two models that have figured prominently in the national discussion. Regional results should be theoretically consistent with national results. Further, consistency should also extend to empirical estimates so that the sum of regional tariff burdens developed through applications of the HOS or ES model (or a blend of the two) add up to estimates undertaken for Canada as a whole. Our first task in this section is to describe the main theoretical implications of the HOS and ES tariff burden models for individual regions like the West and the Atlantic region by scaling down and, where necessary, modifying the national versions of these models. Second, we survey the empirical estimates that have been made of the size of domestic and U.S. tariff burdens for the national economy and for particular regions. These estimates have been made under varying blends of HOS and ES assumptions and using data from different years. Tariff burdens are not as large as they were in the past, and they will be even smaller with the completion of multilateral tariff cuts under the GATT Toyko Round in 1987. In the future, much greater attention will probably be given to negotiations to reduce or eliminate non-tariff barriers. (The following

discussion of the HOS and ES models is somewhat technical. The remainder of the paper, however, is quite understandable for the non-specialist reader.)

HOS and ES Models at the Regional Level

By assuming perfect competition and associated minimum-efficient-scale (MES) outputs for individual firms, the HOS framework applies only to the effect of trade barriers on the allocation of broad classes of production factors between export and imports. The simplest case occurs when the region or country is small in the sense that it cannot influence the relative prices on world markets of the products it produces. In this section, we adhere to this small country assumption. Recent work is beginning to examine the implications of an "almost-small" approach in which export prices are responsive to export volumes while import prices are not (e.g., Cox and Harris, 1983; Harris, 1984). In the next section we consider an export demand for grain that is less than completely elastic. Once strict price-taking behaviour is dropped, it is no longer optimal to reduce domestic trade barriers to zero (the "optimal-tariff" argument). In the price-taking case, however, the tariff raises the prices of imports in relation to exports by the full amount of the tariff (i.e., there is a 100 percent incidence on the domestic economy). Aside from the real income transfers among factors of production in the domestic economy that raise equity questions, two efficiency or deadweight losses appear and can be measured as production and consumption effects (Corden, 1957). The protected sector that is competing with imports expands its output until marginal cost equals the domestic price: the difference between marginal cost and the world price (i.e., true opportunity cost) summed over all these extra units is the production effect. Consumers give up units of protected production until the value they attach to the marginal unit (marginal valuation) equals the tariff-ridden domestic price. The consumption loss is measured by adding up the differences between marginal valuations and world prices on all these units given up.[2]

The elimination of the domestic tariff allows the domestic economy to recover the deadweight losses incorporated in the production and consumption effects. If the foreign country imposes a tariff, the relative price of the country's exports is reduced by the full amount of the foreign tariff again owing to the small-country assumption. If there is no domestic tariff, the foreign tariff distorts domestic production away from exports and toward imports so that the removal of U.S. tariffs would again permit the domestic recovery of deadweight consumption and production losses. A more important deadweight loss from the foreign tariff is the revenue lost to the foreign treasury from tariffs collected on domestic exports. If both countries eliminate tariffs simultaneously,

thereby establishing a free trade area (FTA), the small country recovers deadweight production and consumption losses because of the distorting effects of both tariffs and recaptures foreign tariff revenue on its exports as well.

To extend the HOS tariff burden framework to a regional context, the small country has to be disaggregated into at least two subnational areas. If Canada is the small country, it can be divided into a metropolitan manufacturing area (Central Canada) and a peripheral resource extraction area (the West and the Atlantic region).[3] The peripheral (P) region is a net exporter of extractive goods and primary manufactures (metallic minerals, oil and gas, wheat, lumber, pulp and paper, coal, potash, fish products and so on) and a net importer of secondary manufactures from the metropolitan (M) region and the United States. The M region is a net importer of extractive goods and primary manufactures and a net exporter of secondary manufactures to the P region (and possibly to the United States as well). Canada's overall balance of trade involves exports of extractive goods and primary manufactures and imports of secondary manufactures.

If a domestic tariff is imposed on secondary manufactures, consumption and production in both the M and the P regions will be affected in the ways just described. Secondary manufacturing expands in both regions, and resource extraction declines in both regions. Since consumption of the protected good declines in both regions and production of the protected good expands in both regions, imports of the protected good are lower in both. Since the P region pays the international price plus the tariff on imports from the United States and from the M region, imports from both are likely to fall. This contrasts with the suggestion made by Melvin (1983) and Whalley (1983) that the tariff will expand interregional trade. In the Melvin-Whalley case, high transportation costs between the M and P regions lead to small interregional trade flows in the absence of the tariff, whereas the tariff diverts trade from international to interregional markets. Transport costs on the diverted trade flows are additional deadweight losses associated with the tariff. Since measures of the the magnitude of the "diversion loss" are not as yet available, we confine our attention to losses in consumption and production (trade destruction) without diversion.[4]

Residents of all regions could recapture their various deadweight consumption and production losses by opting for unilateral free trade. Another effect appears with regional disaggregation, however. Since the P region is an importer of secondary manufactures from the M region, there is a transfer from the residents of the P region to those in the M region. The domestic import tariff is actually equivalent to three border taxes imposed by the regions: an import duty levied by the M region on U.S. secondary manufactures (if there are imports or, if not, an indirect tax on the consumption in the M region of secondary manufactures

remitted to producers in that region); an exactly equal export duty levied by the M region on exports of secondary manufactures to the P region and remitted to M region producers; and an exactly equal import duty levied by the P region on imports of secondary manufactures from the United States.[5] In addition, the tariff revenue raised on U.S. imports to both regions goes to a central government presiding over both M and P regions.

The residents of the P region now have one substantial and one potential grievance beyond the effects on consumption and production they experience. They are also being forced to remit the equivalent of an export tax (with 100 percent incidence on themselves) as transfers to producers of secondary manufactures in the M region. They may also feel that import duties collected by the central government on imports from the United States to the P region do not produce commensurate benefits to them. Abstracting from this issue of the division of tariff revenues, the transfer from consumers of secondary manufactures in the P region to producers in the M region may very well be sizable compared to the consumption and production effects. The size of the transfer has been estimated by Shearer, Young and Munro (1971) for British Columbia and by Pinchin (1979) for all Canadian regions; their estimates wlll be discussed in the section below entitled "Empirical Evidence."

Regional deadweight losses due to consumption effects are usually assumed to be proportional to regional personal incomes, provided that the proportion of personal income spent on tariff-ridden goods is about the same in all regions and that price elasticities of demand are also about the same for these goods in all regions. A comparable approach to the regional allocation of deadweight losses due to production effects is not as yet available in the literature.

Most discussions of the regional effects of trade liberalization have been confined to the removal of Canadian tariffs. Since foreign tariffs on Canadian exports of extractive goods are light or non-existent, the HOS framework of analysis, in which secondary manufactures (on which foreign tariffs are significant) are imported, does not deal satisfactorily with the free-trade-area option.[6] When more complex and realistic models involving two-way trade in secondary manufactures (and agricultural goods) are brought to bear, however, the removal of foreign tariffs contributes significantly to the elimination of production and consumption deadweight losses and tariff revenue recapture at the national level and particularly for the M region.

The Eastman-Stykolt (ES) approach captures this important second dimension of trade liberalization by concentrating on the effect of trade barriers on the economic efficiency of industries in the context of two-way trade in secondary manufactures. Unlike the HOS framework, however, the ES approach does not assume that industries operate under constant returns to scale with or without tariffs. By isolating small

groups of firms within their domestic markets, trade barriers alter market structures and lead to less than optimal firm sizes and excessive product diversification within firms. Domestic costs in tariff-ridden sectors rise toward the foreign price plus tariff, not because of changes in relative factor prices and accompanying domestic transfer effects as in the HOS model, but because protected and cut-off domestic industries become populated with enough firms and products to reduce productivity to the point at which increases in average costs absorb all (or a large part of) the excess of domestic over world prices of the protected products. ES-type models produce larger efficiency losses due to trade barriers than do HOS models. The consumption effect is still present, since domestic consumers restrict their purchases of protected products below consumption levels under free trade. Depending on the details of the model, domestic production of protected commodities may rise, fall or remain constant, hence the production effect may or may not be as important in the ES approach as in the HOS model.[7] The crucial deadweight losses in ES models follow from the fact that increases in average costs in protected sectors do not represent transfers among broad classifications of productive factors but rather measure a decline in these sectors of factor productivity caused by trade barriers. If, in the extreme case, the increase in average cost fully absorbs the domestic tariff, this ES deadweight loss for a particular industry equals the tariff multiplied by domestic production in the presence of trade barriers.

Reverting to the simple two-region model of the domestic economy, it can be shown that ES deadweight losses exert their most important effects on the M region rather than the P region, provided interregional transfers due to the presence of trade barriers are already taken into account. That is because, in the HOS-type model, the higher prices paid by consumers in the P region are substantially transferred to the producers of protected products in the M region. Under HOS assumptions, these transfers appear as deadweight losses to the P region, but they show up as gains to M-region producers since firms are all operating at minimum-efficient-scale levels of output. Under ES assumptions, the transfers are still deadweight losses to P-region residents but are no longer clear gains to M-region producers. The P region now experiences five kinds of losses due to domestic trade barriers: the consumption effect previously discussed; the production effect previously discussed (the magnitude of which is, however, uncertain under ES assumptions); the transfer from P-region consumers to M-region producers, which is now largely or entirely absorbed by excess production costs in the M region's protected sectors; the deadweight loss in the P region's own protected sectors as productivity declines in the presence of trade barriers; and perceived or actual losses due to the capture of tariff revenue on P-region imports by the central government. The M region experiences rather large losses, since the ES inefficiencies are concentrated in its

relatively prominent manufacturing sectors. Instead of an inward transfer to the M region from P-region purchasers equivalent to the national export tax described above, the inward transfer is transformed wholly or partly into inefficient cost increases. In addition, HOS transfers from its own consumers of protected products to its own producers of protected products are similarly dissipated.

The inclusion of the Eastman-Stykolt effects permits a more comprehensive approach to regional net losses from two-way trade barriers. Even a two-region model is sufficiently complex to permit the main issues of the free-trade-area model to become apparent. The removal of Canadian tariffs alone would force the Canadian protected sectors to meet foreign prices and would eliminate the notional M-region export tax on P-region residents as well as some inefficiencies in the protected sectors of both regions. Transfers of tariff revenues from residents of both regions to the coffers of the central government would be eliminated. The removal of U.S. tariffs on secondary manufactures would permit revenue recapture on Canadian exports as mentioned earlier. In all likelihood, these benefits to Canadian producers would be concentrated in the M region; to the extent that P-region manufacturers export to the United States, these gains would have to be added to the five sources of gain listed above. If U.S. tariffs had been levied on primary exports from the P region (fish products, for example), the small-region HOS analysis predicts not only tariff revenue recapture for P-region producers but additional efficiency gains in the form of consumption and production effects.

Which tariffs — Canadian or U.S. — are more important in raising domestic average costs in manufacturing under the ES approach is itself an interesting question. As Muller (1982, p. 759) points out in his discussion of the theoretical structure of the ES model, "the model does not explain why an aggressive entrant should not build a plant of minimum efficient scale and drive out his less efficient competitors". This kind of behaviour seems even more probable in the absence of U.S. tariffs since a domestic firm operating at minimum efficient scale could then sell any proportion of its output in the U.S. market while bidding down the domestic price toward the minimum-efficient-scale level of average costs.[8] Domestic plus foreign tariffs together with relatively unaggressive behaviour seems to be necessary to generate ES equilibria.

Empirical Evidence

Two different kinds of evidence on regional tariff burdens are available. The first is obtained by scaling down or allocating national tariff burden analyses to the regional level, or at least attempting to infer the regional implications of the national evidence. The second type consists of direct evidence to be found in studies that explicitly examine the regional question.

Some recent work on the national burden allows for ES (or rationalization) effects of trade liberalization, and some studies give considerable prominence to rationalization (see, for example, Cox and Harris, 1983; Harris, 1984). Other national studies use an HOS-style framework (constant returns to scale) disaggregated into a large number of sectors with inter-industry activities (see Williams, 1976; 1978). Regional studies tend to stress the transfer effects from P regions to the M region that accompany international trade barriers (see Shearer, Young and Munro, 1971; Pinchin, 1979).

Beginning with the production and consumption losses in HOS theory, most studies find that these combined deadweight losses are small compared to national (or regional) income. Williams (1978) produces one of the larger estimates of production losses that might be recaptured by unilateral free trade. Using a constant-returns-to-scale interindustry model, a fixed-consumption bundle (thus eliminating the consumption effect) and 1961 data, he finds an increase in the real consumption bundle equal to about 0.9 percent of GNP.[9] How this gain should be allocated among regions is difficult to say. If the relative change in protected-sector outputs is approximately equal among regions in response to relative price changes, production losses relative to regional income will be smaller in those regions with the smallest manufacturing sectors relative to regional income. In the Atlantic region, manufacturing value-added in 1980 was 4.3 percent of the Canadian total, while Atlantic gross domestic product (GDP) was 5.4 percent of Canadian GDP. In Western Canada manufacturing value-added was 18.4 percent of the Canadian total and GDP was 33.9 percent of Canadian GDP (Statistics Canada, 1982; 1983). These comparative figures suggest that the production effects for these regions may be somewhat smaller in relation to their GDPs than would be the case for Canada as a whole.[10] If this hypothesis is correct, a figure of 1 percent of GDP would be a firm upper bound for the HOS production loss in P regions.

Consumption losses are usually taken to be proportional to regional personal incomes, but they vary depending upon the assumed price elasticity of demand for the protected goods. Pinchin (1979) used an elasticity of demand equal to unity leading to losses (based on 1971 data) of 0.4 percent of personal income, or about 0.3 percent of GDP in each Canadian region. It seems probable that the combined HOS regional deadweight loss for the Atlantic region or Western Canada, consisting of consumption and production losses, is under 2 percent of regional GDP for the removal of domestic tariffs. This is particularly likely to be so in the early and mid-1980s, since tariffs have been reduced considerably since the 1960s and 1970s and will be relatively low by 1987.

The main purpose of Pinchin's work was to analyze Canadian inter-regional transfers by which P-region residents pay tariff-protected prices on goods imported from the M region — the national export tax discussed in the previous section. The similarity in the magnitudes of

interregional and international trade flows in Canada suggests that these transfers may be significant. Pinchin included interregional input-output relations in his analysis to arrive at estimates of transfers, including those between industries. Referring first to the Atlantic region, the estimated cash cost of the tariff in 1970 was $221 million, where cash cost measures the increased consumer expenditure on protected goods in the presence of Canadian tariffs (equal to about 4.2 percent of Atlantic (GDP). Of the $220.7 million cash cost, $72.5 million was retained (after outward transfers on input purchases) by firms in the Atlantic provinces, and another $7.6 million was received (again net of transfers) from other regions by firms in the Atlantic provinces. So the net outward transfer, including tariff revenue, due to the Canadian tariff was estimated at $140.6 million, or 2.7 percent of Atlantic GDP in 1970. Similar calculations for the West placed the transfer loss at 2.3 percent of regional GDP. The Shearer, Young and Munro (1971) study of British Columbia's economy in 1963 estimated an interregional transfer equal to about 2.5 percent of British Columbia's GDP. This transfer effect, which included consumption and purchases of capital goods, agrees well with Pinchin's estimates seven years later. The transfer effect accounted for 65 percent of the potential gains to British Columbia from a free trade area. With tariffs lower in the mid-1980s than in the early 1970s, these transfer effects are likely to be smaller, but by how much is difficult to say without new estimates. Unadjusted for changes in tariff levels in the 1960s and 1970s, the overall HOS effects could add up to 4–5 percent of P-region GDP, which would include production and consumption effects, recapture of interregional transfers and recapture of tariffs remitted to the federal government.

The issues that remain are the effect of the removal of U.S. tariffs (production and consumption effects plus revenue recapture from the U.S. Treasury) and the ES effects on domestic efficiency in previously protected sectors that are forced to rationalize in a free trade area. Williams found that the overall effect of removing U.S. tariffs in the early 1960s for the constant returns-to-scale domestic model was to reduce the cost of his standard consumption bundle by 2.03 percent, or 1.32 percent of GNP. This figure includes production effects and tariff recapture. It has already been indicated above that production distortions may not weigh quite as heavily on the P regions. At the same time, only about 7 percent of Canadian exports originate in Atlantic Canada, while 36 percent originate in the West with most of the West's exports concentrated in primary products subject to low or zero foreign tariffs (wheat, lumber, potash and gas). Therefore, the recapture of foreign tariffs in the P regions could not be expected to be very significant. Shearer, Young and Munro's (1971) study of British Columbia found that tariff recapture was a very small part (5.5 percent) of the potential gain to the province from free trade. Elimination of U.S. tariffs could produce production

and consumption effects additional to those associated with unilateral free trade, but again, these effects are liable to be small so long as P-region exports encounter low foreign tariffs. This is not always the case; foreign tariffs may distort regional allocation away from products subject to those tariffs. But most misallocation in the P region probably stems from the effect of the Canadian tariff. U.S. tariffs on manufactures assist in creating ES-type inefficiencies in manufacturing but do not add to (or subtract from) the domestic price of imported goods to consumers.

As mentioned in the previous section, ES inefficiency in Canadian manufacturing sectors does not add as much to P- as to M-region costs, once interregional transfers are accounted for. But it is still true that suboptimal plant sizes and excessive product diversity may also affect the protected sectors in the P regions. The most widely known estimate of the size of ES inefficiencies for Canada as a whole is by Wonnacott (1975). Assuming that free trade would permit Canadian manufacturing productivity to increase to the level of U.S. productivity, Wonnacott argued that the gain to Canada would be 5.9 percent of GNP (see also Wonnacott and Wonnacott, 1982). This is a sizable estimate, and it was pointed out by Wilkinson (1982) that the differentials between U.S. and Canadian manufacturing productivity probably have other causes beyond the suboptimal Canadian plant sizes and excessive numbers of product lines induced by border taxes. Nevertheless, there seems to be no doubt that *some* U.S.–Canadian productivity differentials are due to ES effects. Recent work for the Economic Council of Canada supports the existence of tariff-induced inefficiencies of this kind (see Baldwin and Gorecki, 1983a; 1983b).[11] Some support for Wonnacott's estimate can be found in the work done for the Ontario Economic Council by Cox and Harris (Cox and Harris, 1983; Harris, 1984). Using an inter-industry model with economies of scale and 1976 data, the authors argue that "for a wide range of parameter values, the welfare gains from a unilateral free trade policy were found to be in a range of 2 to 5 percent of GNP, while the benefits to multilateral free trade were found to lie in the range of 8 to 10 percent of GNP; numbers which are much larger than conventional estimates. The mechanism through which much of these benefits are achieved is through intra-industry rationalization" (Cox and Harris, 1983, p. 34).

One way of inferring ES-type gains for our P regions is to return to Pinchin's data on cash costs and interregional transfers. Cash costs to P-region producers due to the Canadian tariff are either transferred to P-region producers, who also receive a small additional transfer from other regions, or are transferred outside the P region to M-region producers and as tariffs to the central government. Suppose all transfers to P-region firms are dissipated by higher costs due to suboptimal scale so that these transfers are transformed into deadweight ES losses. For the Atlantic region, for example, essentially the whole cash cost of the

domestic tariff is now a deadweight loss, since part or most of the cash cost is transferred to M-region firms and the central government and the rest vanishes in intraregional production inefficiency. In 1970 this cash cost was about 4.2 percent of Atlantic GDP, of which 2.7 percentage points were due to the interregional transfer to M-region producers and federal tariff revenues.

The empirical evidence for the Atlantic and Western regions may be summarized as follows. If we ignore production and consumption effects, unilateral free trade might produce gains in the range of 4–4.5 percent of GDP, consisting of recovery of interregional transfers *and* ES effects that disappear when P-region firms competing with imports are exposed to the world price. The consumption effect of the domestic tariff would add another 0.3 percent of GDP if, as in Pinchin's analysis, demand curves for protected products have unitary elasticity (i.e., a 1 percent cut in price leads to a 1 percent increase in demand, and consequently, sales revenue is constant). The P-region import-competing sectors would probably decline in size, and the production effect could contribute an additional 1 percent to real GDP. So the overall effect of UFT might be a gain of 5–6.5 percent of GDP for P regions. While there would be some exceptions (like processed fish subject to U.S. tariffs), the removal of U.S. tariffs in addition to the removal of Canadian tariffs would probably not add much in the way of gains for P-region residents. Tariff recapture from the U.S. Treasury would be small. Nor does the U.S. tariff inflict additional consumption losses. To get some idea of relative magnitudes, if the gain to the Atlantic region or the West resulting from free trade is placed at, say 6 percent of GDP, about 1.5 percentage points might be due to ES effects, about 2.7 to interregional transfers and the balance to traditional HOS production and consumption losses.

While the above breakdown is inevitably speculative, it is not unreasonable. The large gains often attributed to U.S. tariff removal (Williams, 1978; Cox and Harris, 1983) are more likely to be concentrated in the M region, i.e., Central Canada, where more than 75 percent of Canadian manufacturing is located, and where two-way trade in the products of protected industries is significant, and where rationalization of manufacturing will also imply net gains on exports to P regions. For the latter, (P regions) it is equally reasonable to attribute a large portion — perhaps half — of the gains from a free trade area to the elimination of interregional transfers.

It is important to realize that the empirical work surveyed in this section applies to trade patterns in the 1960s and 1970s. Because tariff barriers were dismantled during that period and during the 1980s, the remaining gains are lower than those measured previously. As an example, the Cox-Harris estimates for 1976 were derived in the context of an

unweighted average Canadian tariff on manufactures of 11 percent and unweighted average foreign tariffs of 16 percent on manufactures (Cox and Harris, 1983, p. 15). When the current Tokyo Round is complete in 1987, about 65 percent of U.S. industrial exports will enter Canada duty-free and 91 percent with domestic tariffs of less than 5 percent. About 95 percent of Canadian exports to the United States will enter tariff-free (Canada, 1982, p. 33). Canada's average reductions on dutiable products during the Tokyo Round will be about 40 percent with the weighted average declining from about 15 percent in 1979 to 9–10 percent on dutiable industrial products in 1987 (Department of External Affairs, 1983, p. 133). Wilkinson (1982) estimates that the weighted average tariff rate on all Canadian exports to the United States will be under 1 percent at the close of the Tokyo Round, and the Senate Standing Committee on Foreign Affairs (Canada, 1982) refers to the resulting arrangements as a "de facto free trade area" with respect to tariffs. The Department of External Affairs offers the view that "tariffs no longer act as the major determinant to the location of investment and as the major impediment to the achievement of economies of scale in most cases" (ibid., p. 153).

It should be noted, however, that non-tariff barriers, such as quotas on the number of Japanese automobiles imported into Canada, certainly lead to inefficiencies and to interregional income transfers. It is also possible that the introduction of quotas on manufactured goods may make it more difficult to sell Canadian resources to countries whose exports are subject to Canadian quotas.

The Transportation Burden

It has been frequently shown that transportation costs, like tariffs, create price differentials between regions that can lead to real income being different between regions (Anderson, 1982; McRae, 1981; Usher, 1968). In the West and the Maritimes there is a long-held belief that federal transportation policies place an unfair burden on the regional economies. The two regions believe that the distribution of transportation costs works to the advantage of Central Canada and to the disadvantage of the West and the Maritimes and is in part responsible for regional income disparities as well as representing a significant barrier to the development of a regional manufacturing sector. The freight rate grievance is based on an assumption that rail rates unduly discriminate against Western and Maritime interests. Specifically, it is claimed that rail rates in the West and the Maritimes are set at a level significantly above the cost of producing such services and at a level above that prevailing in Central Canada.

Although there have been a large number of complaints concerning

transportation costs, the two most common assertions have been the following.

- The West and the Maritimes, being peripheral regions, are forced to bear the burden of transportation charges on both imports and exports and, because of this absorption, factor incomes (e.g., wages, rents, etc.) are lower in peripheral regions than in the central region (Norrie, 1976; 1979).
- The structure of rail freight rates discriminates against the West and the Maritimes by inhibiting the growth of a regional manufacturing sector. This is usually taken to mean that rates on finished products moving out of the region are higher than on similar products moving into the region and that rates are set much lower on the export of raw materials than on the outward movement of finished products. In addition, the West has frequently complained that Canadian rail rates for a given commodity are absolutely greater for a short haul than for a long haul.

To a large extent the first assertion is probably correct. If the P region is a price-taker and in consequence trades at prices that are exogenous to itself, transportation costs will have the effect of decreasing the prices paid for exports and increasing the prices paid for imports — in both instances by the full amount of the transportation charge. The theory of the incidence of transportation costs is formally equivalent to the theory of incidence of indirect taxes. Given that a peripheral region is assumed to face perfectly elastic supply and demand for imports and exports at prices determined in the central region, the peripheral region absorbs the full amount of the transport costs. Thus the peripheral region receives a lower net price for its outputs than it would in a situation in which transport costs are assumed to be zero, and higher delivered prices for imports as compared with the zero transportation case.

In the context of a typical neoclassical regional model, factor incomes will be reduced by transportation charges. If capital is assumed to be perfectly mobile, the incidence of transportation costs on regional exports will fall on real wages or natural resource rents, or both (Bradfield, 1976).

If the prices paid for a region's exports are not strictly exogenous to itself, as might be the case if regional production represented a large fraction of actual or potential market supply, such as potash in the case of Saskatchewan, a part of the transportation bill will be shifted forward in the form of a higher delivered price.

Although it is clear that the removal of transportation costs would lead to an increase in regional real income, it should not be thought that transportation costs are distortive in the same sense that tariffs are. Whereas tariffs create purely artificial barriers to trade, transportation services require the presence of real factor inputs. Provided that trans-

portation services are efficiently produced, transportation charges will accurately measure the cost of overcoming the goegraphic distance between economic agents and are thus true marginal costs.

Rate Discrimination

The second assertion, that rail rates discriminate unfairly against the West and the Maritimes, has been at the centre of Western and Maritime complaints about transportation policies for over 80 years. Both regions have viewed transportation policies in much the same way as they have tariffs: designed to benefit Central Canada at the expense of the peripheral regions. During the early 1920s, regional grievances over freight rates again became a prime political issue. In the West, dissatisfaction with rail rates was in part due to the suspension of the Crowsnest Pass grain rates in 1920 and in part to the fact that rates on Western traffic were considerably higher than those prevailing in Central Canada.[12] The Crowsnest Pass agreement of 1897 between the Dominion government and the CPR called for the railway, in return for a subsidy for building a line between Lethbridge, Alberta, and Nelson, British Columbia, to reduce its rates on grain and flour products moving from Prairie points to the Lakehead by 3 cents per 100 lb., which was equivalent to a rate reduction of between 10 percent and 25 percent, depending upon location, and to reduce its rates on inbound settlers' effects by 10 percent. The grain rates were restored by statute in 1925, with the Crow rate applying to all movements of grain and grain products from Prairie points to export positions on the West coast, in Churchill and at the Lakehead. In the case of the Maritimes, the initial freight rate grievance was caused by rates on the Intercolonial Railway increasing from 80 percent of those prevailing in Central Canada to parity between 1912 and 1923.[13] In 1927 the Dominion government, following the recommendation of the Duncan Commission, enacted the *Maritime Freight Rates Act*. This measure provided for a reduction of 20 percent on rail rates for traffic originating and terminating within the "select territories"[14] and for the select territories portion of traffic (other than imports) originating in the Maritimes and moving to other parts of Canada. The subsidy, which was restricted to rail freight traffic, was paid directly to the rail carrier by the Dominion government. The Duncan Commission gave three reasons in support of its recommendation for a 20 percent subsidy: first, the circuity of the route taken by the Intercolonial Railway for reasons of national defence; second, pre-Confederation promises made to the Maritime provinces to enable them to obtain entry into markets in the central region; and third, to offset the greater increases in rates on the Intercolonial since 1912 compared to increases in the rest of Canada. The effect of both of these measures will be analyzed in the next two subsections.

   With few exceptions, rail freight rates in Canada have not been subject

to detailed regulation. The 1967 *National Transportation Act* effectively freed rail carriers from rate regulation on the movement of non-grain traffic.[15] Rates are not determined by a cost-of-service formula but are set according to a value-of-service principle. Thus, subject to minimal regulatory restraint, carriers are allowed to price according to whatever the traffic will bear.

It has long been recognized that the production of rail services gives rise to large joint and common costs — costs that are not traceable with any degree of precision to the provision of specific rail services. The presence of joint and common costs imply that it is not possible to construct a meaningful set of cost functions that would serve as a basis for the detailed regulation of rates. The efficient solution to pricing in the presence of such costs is to allow the market to perform the allocation on the basis of demand. A fully functioning market would lead to a situation in which these costs would be borne by users in proportion to their relative demands for rail services (Kahn, 1971). This means that even in a competitive environment, the existence of joint and common costs will give rise to different prices for similar but conceptually distinct services and also to claims of "unjust discrimination" on the part of those paying the highest prices.[16]

Rail carriers do not, however, operate in a perfectly competitive environment. The rationale for the Canadian policy of not regulating rates rests on a presumption that market forces will set rates more efficiently than would government regulators. In the absence of regulation, the ability to discriminate among commodities, locations and consumers depends on the level of competition and the difference in demand for transport services among the consumers of such services. Economic theory dictates that, the greater the monopoly power and the greater the differences in demand elasticities among the consumers of transport services, the more price discrimination will be practised.

Given the small number of rail carriers, the fact that carriers are allowed to determine jointly both the aggregate rate level and the level of individual rates, and the elasticity of demand for rail services, competition from highway and water carriers will be a prime determinant of rail rates.

The West, and to a lesser extent the Maritimes, have claimed that owing to the lack of effective intermodal competition, the railways have a large measure of monopoly power in the transportation of regional imports and exports and that in consequence rail rates are set in a manner that places an unfair burden on these regional economies.

In the case of bulk commodities — commodities that account for a very high proportion of regional exports — the absence of water transportation in the West does give the railways a near monopoly. Moreover, except for very short-haul movements, highway trucking is not an economically feasible means of transporting bulk commodities. Thus, we would expect the elasticity of substitution for the rail mode to be very low.

Although rail carriers do not face meaningful intermodal competition in the regional bulk transportation market, their exercise of market power is constrained by the nature of the market for bulk commodities. Since the demand for freight transportation is a derived demand and the demand for bulk commodities can reasonably be assumed to be highly elastic, an increase in freight rates cannot be passed on to buyers of bulk commodities in the form of higher prices. In consequence, an increase in transportation costs will have the effect of leading to lower netbacks for bulk commodity producers and to a possible decline in the demand for transportation of bulk commodities. Norrie (1979) notes that the ability of a producer facing a highly elastic demand to bear transportation costs depends on the margin between the given market price and the average "factory gate" production cost. In general, the presence of a fixed natural resource base will mean that, for producers of mine and farm products, supply will be more inelastic than for producers of finished products. A discriminating monopolist supplying transport services will therefore be in a position to capture some of the rent generated by the natural resource.

In the case of non-bulk commodities, there is a considerable body of evidence to suggest that over a wide range of commodities and distances, rail and truck transport are highly interchangeable. Using highly disaggregated Canadian data, Oum (1979) argues that for a wide variety of non-bulk products, effective competition between truck and rail prevails over large distances, and therefore elasticities of substitution between the two modes are very high.[17] It must be noted, however, that the structure of rail and truck costs means that, as the length of haul increases, the truck mode is placed at an increasing disadvantage, and therefore we would expect the elasticity of substitution between the two modes to decline as distance increases.

Competition between rail and truck is made less effective by the economic regulation of highway trucking. All provinces practise entry regulation in the interprovincial segment of the industry. The existence of such entry barriers will serve to raise interprovincial trucking rates and therefore to reduce the competition between rail and truck transport.

For most manufactured goods, transportation costs constitute only a small percentage of delivered market price — under two percent.[18] The total demand for transportation with respect to manufactured goods is thus relatively insensitive to prices. However, the railways' ability to take advantage of this fact is limited by a relatively high elasticity of substitution between rail and truck modes. Norrie (1979) suggests that because manufacturing and processing operations on the Prairies are small marginal concerns (and that might also be the case in the Maritimes), the margin between market price and average factory-gate production cost can be assumed to be small. This, coupled with relatively elastic supply, implies that producers have a limited ability to absorb

transportation, especially if labour and capital are assumed to be highly mobile.

Norrie (1979) posits that in the absence of distortions of the type created by the statutory grain rates, the divergence between rail rates and costs would tend to be greater on raw, i.e., bulk, products than on manufactured or processed products and not vice versa as is frequently claimed. Unfortunately, the hypothesis is extremely difficult to test owing to the fact that the cost of providing specific rail services is not known.

On a priori grounds we would predict that freight rates on manufactured goods moving from the West or the Maritimes to Central Canada would be below the rates on such goods moving into the two regions from Central Canada. This is in sharp contrast to the claims of the two regions to the effect that the reverse occurs. First, as Norrie (1979) notes, the elasticity of demand in major markets for goods produced in the peripheral regions is likely to be relatively high.[19] Second, there is a substantial inbalance in both truck and rail movements of general freight between the West and Central Canada and between the Maritimes and Central Canada, with the inbalance being particularly large in the case of rail. The main direction of flows, once allowance has been made for the movement of grain and mine products, is from Central Canada to the West and from Central Canada to the Maritimes, implying that rail carriers have substantial excess capacity in cars from the West and the Maritimes to Central Canada. Thus, since West-to-Central and Maritimes-to-Central can be considered as backhauls, we would expect rail rates to be lower on traffic moving to the central region from the West and the Maritimes than the reverse. The Economic Council of Canada (1977) claims that in the case of the West, the major flow is west to east and therefore rates should be lower on traffic moving from east to west. The Council lumps all traffic together and does not take account of the fact that grain cars operate in a unit-train manner (i.e., special purpose trains, trains not broken up). In any case, it is difficult to envisage manufactured goods being carried in hopper cars.

The available evidence supports the above contention. Table 5-1 shows rail rates for (full) carload non-bulk traffic. It can be seen that the rates on movements originating in Quebec and Ontario and terminating in the three Prairie provinces are considerably higher than on movements originating in the three Prairie provinces and terminating in Quebec and Ontario. The same is true for movements between Ontario and Quebec and the Maritimes.[20]

It should be noted that the above would appear to encourage rather than discourage the development of industry in the two peripheral regions, since the comparatively high rates on the inbound movement of finished products provide a "tariff wall" for local industry.[21]

TABLE 5-1 Average Revenue per Ton Mile on Carload Manufactured and Miscellaneous Products, 1977 (cents)

	Destination			
Origin	Manitoba	Saskatchewan	Alberta	Maritimes
Quebec	4.36	4.55	4.19	4.69
Ontario	4.48	4.68	4.33	4.49
	Quebec	Ontario		
Manitoba	1.79	2.40		
Saskatchewan	1.68	2.24		
Alberta	2.10	2.30		
Maritimes	2.90	2.37		

Source: Canadian Transport Commission, *Commodity Flow Analysis 1977* (Ottawa, 1980). Compiled from various pages.

Norrie and Percy (1983) simulate the effect on the regional economy of an arbitrary decrease in rail rates on inbound shipments of processed products. Assuming a rather large decrease — five percent — in the landed price of secondary manufactured products, they suggest that the real gain from the rate reduction to the regional economy in the short run would be equal to 1.28 percent. However, since imports are substituted for local production, manufacturing production and employment decline.

The Western provinces, especially Alberta, have long complained that the railways place an unfair burden on the region by practising long-haul/short-haul price discrimination. The cause of the complaints is that the rate on traffic from Toronto or Montreal to Vancouver, for example, can be absolutely lower than the rate on the same type of traffic moving from Toronto or Montreal to Calgary or Edmonton. The reason is that there is actual or potential competition for the movement of many commodities between the West coast and Central Canada in the form of ocean shipping via the Panama Canal. Hence, the railways are effectively constrained on the rates they charge for transcontinental traffic by the level of actual or potential ocean rates. The threat of competition thus serves to place a ceiling on rail rates.

For movements between the Prairie provinces and Central Canada, however, there is no such threat. Thus, given that competition from highway carriers may not be very strong owing to the long distances involved, rail carriers face a much lower elasticity of substitution on traffic between the Prairies and Central Canada than on transcontinental traffic. As far back as 1931, Western users of rail services requested the regulatory authorities to order the rail carriers to cease long-haul/short-haul discrimination. However, the *Railway Act* of 1925 (and for that

matter the *National Transportation Act* of 1967) permitted this type of pricing policy. Under pressure from the West, the *Railway Act* was amended in 1952 to include a "one and one-third" rule whereby rates to intermediate points could not be set at more than one and one-third of the transcontinental rate. Carriers avoided the rule by replacing published transcontinental rates with "agreed charge" rates (rates that are negotiated between the individual shipper and carrier). Regulatory attempts to eliminate long-haul/short-haul discrimination were abandoned in 1955. The basic problem is quite simple: rail carriers cannot (and obviously should not) be forced to increase their rates on transcontinental traffic, since this would result in a loss of rail traffic to ocean carriers. At the same time, a forced reduction on rates to intermediate points would lead to a loss in the carriers' revenue that would be reflected in a lower rate of return on capital.

The ability of the railways to indulge in a long-haul/short-haul discrimination has been greatly enhanced by the existence of tariffs on U.S. manufactured goods. In the absence of such tariffs, it is reasonable to assume that the Prairie region would have greater access to U.S. produced goods and, in consequence, the railways would be less able to discriminate, since they would have more competition.

Given the structure of rail costs, especially the presence of large joint and common costs, and an element of market power, it is to be expected that carriers will adopt a value-of-service pricing principle and that the resulting structure of rates will lead to claims of price discrimination. Although the pricing scheme may be relatively efficient in that it can be considered a variant or imperfect application of Ramsey pricing, it will clearly appear inequitable to those paying the largest mark-up over marginal cost.[22]

A number of different rate-making bases have been suggested as an alternative to value-of-service pricing.[23] Alberta and Manitoba have both proposed that all rail rates be standardized. The Alberta proposal, termed the Equitable Pricing Policy, would standardize rates by type of car, whereas the Manitoba proposal, termed the Destination Rate Level Technique would set rates by point of destination. The latter method would require that the rate on any movement of a specific commodity would be set at "the lowest uniform percentage mark-up over variable cost which may be applicable to a corresponding carload from any origin." Both proposals are aimed at eliminating the alleged barriers to the growth of industry in the West. From the viewpoint of economic efficiency, such proposals are inherently flawed, since joint and common costs would be apportioned uniformly to all traffic and, in addition, subsidies would be required. It is, of course, entirely possible that rates on the movement of finished products from the West to Central Canada would increase under such pricing schemes rather than decline.[24]

Statutory Grain Rates

A major source of distortion in the structure of Canadian rail rates has been the statutory grain rates. The West has viewed the Crow rate as a measure that offsets a tariff policy that it believes provides benefits to Central Canada at the expense of the West. The question of the size and distribution of the costs and benefits generated by rates has been a source of considerable controversy.

The statutory grain rates have the effect of giving a direct subsidy to grain producers equal, per unit of grain shipped, to the difference between the Crow rate and the real cost of shipping grain from the Prairies to export points. Essentially, grain producers receive the world price for grain, less the cost of moving their grain to export positions. In consequence, producer netbacks are larger when transportation rates are determined according to the statutory rate than they would be if transportation rates reflected the real cost of moving grain.

The absolute size of the subsidy to grain producers, although difficult to calculate with precision, has been growing. In the 1950s it was evident that the statutory rates were set at a level below the rail carriers' variable costs. The Macpherson Commission reported that the statutory rates fell short of meeting variable costs by $6 million (Canada, 1961). The Snavely Commission (Canada, 1976; 1977) estimated that, based on 1974 data, the statutory grain rates covered only 38 percent of the variable cost of moving grain. For 1977, the shortfall was estimated to be $239 million, with the federal government absorbing $63 million of the loss in the form of subsidy payments to carriers for uneconomic branch lines and the rail carriers absorbing the remaining $175 million. The real value of the subsidy to grain producers is much larger, however, because the figures above relate only to variable cost, and hence no amount is included to cover long-run fixed costs. Gilson (1982) estimated that for the 1981–82 crop year, the total cost of moving grain was $644 million greater than the revenues received from the statutory rates. This estimate must be considered as crude because it includes an arbitrary apportionment of joint and common costs and an estimate of a "required" rate of return on capital.

Western provinces have asserted that many of the benefits flowing from the statutory rates have accrued to regions other than the West. Specifically, they contend that since the statutory rates are only available on raw grain products, the processing of agricultural products on the Prairies is discouraged because such products move at rates that are considerably higher than the statutory rates. The two most frequently cited examples are those of rapeseed crushing and livestock feeding.[25]

In the case of rapeseed, Abouchar (1977) and Norrie (1979) both show that the distortion occurs because the low statutory rates on rapeseed

lead to an artificially high price for rapeseed on the Prairies. A removal of the statutory rate on the movement of seed to Vancouver would reduce producer netbacks and thus lower the price paid for seed by Prairie crushers, thereby leading possibly to an increase in the production of rapeseed derivatives on the Prairies. It should be noted, however, that an expansion of the processing sector would be accompanied by a decline in the income of rapeseed producers.

Heads (1977) shows that the livestock feeding question is similar to the rapeseed dispute. The availability of subsidies on the movement of feed grains raises the farm gate price of such commodities, thus increasing the production costs for Western feedlot operators. The removal of the subsidy would reduce the income of grain growers and possibly allow an expansion of livestock feeding operations.

A number of authors have attempted to simulate the effect on the Prairie economy of various proposals for freight rate reform. Harvey (1980) analyzes the "probable" effect of abolishing the Crow rate and replacing it with rates that reflect the real cost of transporting grain. He argues that, although the statutory rates provide a large subsidy to grain producers, they also reduce the output of the overall agricultural sector in Western Canada. The most sophisticated analysis is given by Norrie and Percy (1983), who simulate both short-run and long-run responses to a change in the statutory rates. They argue that, although an uncompensated removal of the Crow rate would reduce the income of grain producers, the net overall aggregate loss to the regional economy is in real terms very small. If grain producers were to be compensated for the loss in income that would follow from the elimination of the Crow rate, the net benefit to the Western regional economy might well be positive.

In 1982, the federal government — faced with mounting evidence that the statutory grain rates had become a severe burden on the railways and were in addition responsible for a large number of intersectoral distortions — announced that it intended to alter the Crow rate and further, that it was committed to the principle of paying grain producers compensation equal to the difference between the cost to the railways of moving grain and the revenue accruing to the railways from the Crow rate. J.C. Gilson was commissioned to determine how a new grain freight rate policy should be implemented and how compensation should be paid. As noted above, he reported that the value of the Crow rate to Western grain producers in the 1981–82 crop year was equal to $644 million (the so-called Crow Benefit). Gilson recommended that higher freight rates be phased in gradually. For the first year, the entire Crow subsidy should be paid to the railways, and thereafter it should be gradually transferred to grain producers so that by the 1989–90 crop year, grain producers would receive 81 percent of the subsidy and railroads 19 percent. The increase in the percentage of the subsidy paid to grain producers would be accompanied by an increase in freight rates. Gilson also recom-

mended that any future increase in the rail cost of shipping grain should be split between the government and grain producers.

In 1983, the federal government accepted most of Gilson's recommendations, except that it proposed that the split of the Crow subsidy between producers and rail carriers be held to 50–50 and the whole issue be reviewed again in 1985–86. Western grain producers and eastern feedlot operators were opposed to any of the annual Crow subsidy being paid to producers. From the viewpoint of economic efficiency, 100 percent of the subsidy should be paid to grain producers. If the subsidy were to be paid to the railways, grain producers would face a freight rate equal to the original Crow rate plus some portion of future cost increases. In consequence, the farm gate price of grain would be kept artificially high, and the intersectoral distortions that have arisen under the Crow rate would remain. If, on the other hand, the entire subsidy were paid to producers and grain freight rates increased toward the full-cost level, the farm gate price of grain would decline, and the distortions noted above would be eliminated. In particular, the price of grain to feedlot operators in the West would fall, leading to an increase in livestock production and processing in the West.

Owing in part to lobbying by the Quebec and Saskatchewan governments, the 1984 *Western Grain Transportation Act* provides that the annual subsidy (raised to $651.6 million) shall be paid entirely to the rail carriers. As Norrie (1983) notes, this feature of the legislation will merely serve to perpetuate the distortions that have arisen under the Crow rate structure.[26]

Maritime Freight Rate Subsidies

The *Maritime Freight Rates Act* of 1927 provided rail carriers with an ad valorem subsidy of 20 percent on the movement of freight within the Maritimes and on the Maritime portion of freight moving to the rest of Canada. In 1957, the subsidy was increased to 30 percent on outbound international shipments. The *Atlantic Region Freight Assistance Act* of 1967 extended the benefits of the 30 percent subsidy to truckers on the Maritime portion of outbound traffic. In 1970 traffic moving wholly within the Maritime region by truck was granted a subsidy equivalent to rail traffic. The level of the subsidy on movements within the Maritime region was reduced to 17.5 percent in 1971 and to 15 percent in 1974. The general subsidy on traffic within the Maritimes was phased out in 1980 and replaced with a 15 percent subsidy on the movement of select commodities. In 1974, the subsidy on outbound traffic by both truck and rail was increased by 20 percent on top of the basic 30 percent subsidy for a select list of commodities — basically on almost everything that is produced in the Maritime manufacturing sector.

In 1980, subsidy payments to rail and highway carriers amounted to

$60.8 million. The question arises as to whether or not the subsidies have been effective in reducing transportation costs for Maritime producers. The effect of transportation subsidies on the output and price of transportation services will be determined by the elasticity of the supply and demand for the goods being shipped and by the degree of competition in transport markets. Analytically, the Maritime subsidy program is equivalent to a negative ad valorem tax on the output of transportation services. If transport services are produced in a competitive environment, the full amount of the subsidy will be passed on to shippers in the form of lower per unit transportation rates. If, however, the carriers have market power and in consequence set their rates in an imperfectly competitive market, the rates will not fall by the full amount of the subsidy, and thus a portion of it will accrue to carriers.

George (1970) and Mohring (1974) have both argued that, owing to market power, the subsidies paid to rail carriers have not generally resulted in lower rates to shippers. Both suggest that the benefit to Maritime shippers is small, certainly much less than the stated value of the subsidy.

One of the factors that decreases the effectiveness of the Maritime subsidy programs is that highway trucking is subject to a high degree of economic regulation with respect both to traffic within the Maritimes and between the Maritimes and Quebec and Ontario. Thus, not only are highway rates above a competitive level, but the rail carriers enjoy greater flexibility in setting rail rates owing to the suboptimal level of competition from highway carriers.[27] In particular, both rail and highway carriers have, in recent years, increased their rates considerably more on westbound movements originating in the Maritimes (i.e., movements that are the beneficiaries of the subsidy) than on eastbound movements originating in Ontario and Quebec destined for the Maritimes — traffic for which a subsidy is not available (Canadian Transport Commission, 1982b). It is therefore probable that provincial regulation of highway trucking causes highway and rail carriers to be the prime beneficiaries of the transport subsidy program.

Natural Resource Revenues

Few Canadians are unaware of the federal-provincial strains that have prevailed in the natural resources field since the mid-1970s. The importance of natural resource revenues in federal-provincial relations has changed considerably since the 1960s. By the beginning of the 1980s, the prominence of oil and gas revenues in Alberta, equal to 11–12 percent of provincial GDP (see Table 5-2), had greatly altered Alberta's relative economic position within Confederation and had raised a number of questions related to equity and efficiency. Without the federal export tax on crude oil, Alberta's oil and gas revenue would have been nearly four

TABLE 5-2 Natural Resource Revenues as a Percentage of Regional
GDP, 1980–81

| | | | | Uncollected Rents | | |
Region	Forestry	Minerals	Oil & Gas	Oil & Gas	Hydro	Total
Atlantic	0.07	0.23	0.00	0.00	4.79	5.09
Que.	0.06	0.09	0.00	0.00	2.06	2.21
Ont.	0.04	0.07	0.00	0.04	0.63	0.78
Man. & Sask.	0.02	1.28	1.54	5.53	1.87	10.24
Alta.	0.02	0.11	11.51	31.12	0.01	42.77
B. C.	0.86	0.20	1.16	1.84	0.35	4.41
Canada	0.14	0.20	1.82	4.92	1.16	8.24

Sources: Economic Council of Canada, *Financing Confederation* (Ottawa, 1982, Tables
B-1 and B-2); Statistics Canada, *System of National Accounts, Provincial Economic Accounts*, 1966–1981, (Ottawa, 1983), Table 1.

Note: Regional GDP is calculated as a simple average of 1980 and 1981 provincial GDP at
market prices. Uncollected rents are low estimates.

times its value in 1980–81. In this section we shall concentrate on energy
revenues, though Table 5-2 suggests some other areas in which problems
arise in connection with regional resources. (The existence of large
uncollected rents on hydroelectric resources due to suboptimal power
prices is one such area.)

In the late summer and fall of 1973, the federal government responded
to the rises in world energy prices with its domestic price freeze and
export tax. The relationship between the Canadian blended domestic
price of oil (and the linked gas price) and the world price, and the
associated size of the export tax, has been a contentious issue since the
mid-1970s, though it has been (at least temporarily) in abeyance since
world oil prices and the Canada-Alberta energy pricing schedule converged in 1983 (see Figure 5-1). Although the Canadian blended price
converged with the world price in 1983, the wellhead price for old,
conventional oil remains below the world price.

The initial rationale for lower domestic oil prices was largely the
protection of domestic consumers, together with an unwillingness to
permit increased resource profits to flow through to the foreign owners of
Canada's domestic oil companies (see, for example, Roseman and
Wilkinson, 1973). This argument, which was essentially an equity argument, appeared to provide a simple method of preserving the Canadian
status quo in the face of rapidly rising world energy prices, particularly
since Canada enjoyed an approximate balance between crude oil
imports and exports at the beginning of the 1970s.

Subsequently, the status quo strategy failed for a number of reasons,
most of which could have been foreseen. Alberta's belief that it was
entitled to resource revenues set the political stage for a series of
contentious conferences on domestic pricing. An upward revision of the
domestic price was accompanied by increases in Alberta's revenues,

FIGURE 5-1 Canadian and World Oil Prices

Canadian $/barrel   Canadian $/barrel

44	...	44
40	...	40
36	...	36
32	...	32
28	...	28
24	...	24
20	...	20
16	...	16
12	...	12
8	...	8
4	...	4

1970 1971 1972 1973 1974 1975 1976 1977 1978 1979 1980 1981 1982 1983

——— Middle East imported crude oil in Montreal

•••• United States composite refiner acquisition cost of crude oil

– – – Refiner cost of crude oil in Toronto area
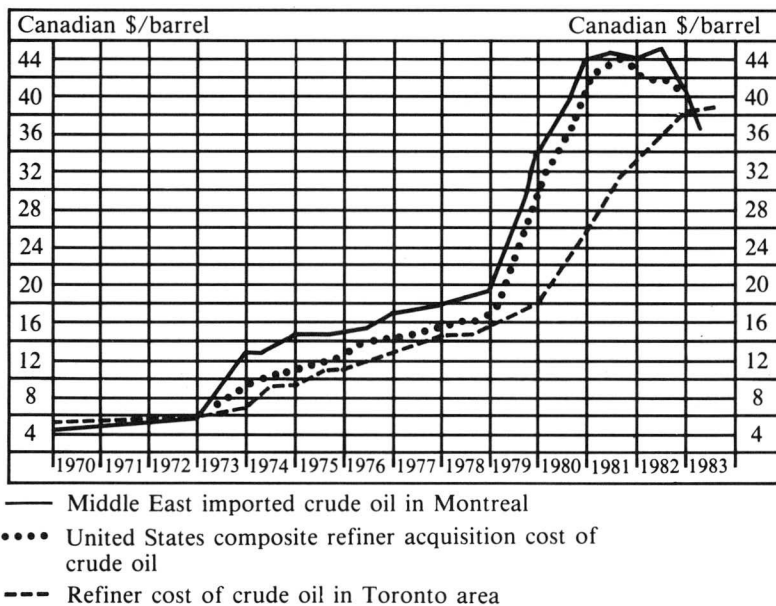
Source: Ontario Ministry of Energy (1983)

which in turn triggered additional federal payments to the "have-not" provinces under the Fiscal Equalization Program.

The federal government was trapped between two competing conceptions of regional equity. The first conception, held by the producing provinces, was a simple entitlement interpretation under which resource revenues at world prices belonged to the provinces under the *Constitution Act, 1867*. This property right to natural resources located within provincial boundaries, combined with the stricture against taxation of one level of government by another, meant that the export tax was viewed from the provincial perspective as a federal gambit to deprive the producing provinces of the rightful returns to their own wasting assets. The Fiscal Equalization Program, on the other hand, as well as other federal programs directed to regional issues, embodies an alternative concept of equity in which property rights are subsidiary to considerations of real-income distribution. This is a broader conception of inter-regional equity (see Economic Council of Canada, 1982), under which real incomes attributable to provincial resources enter into a higher-order equalization process. Indeed, the domestic pricing policy itself involved a redistribution plan in which revenues that would otherwise have flowed to a single region — the West — were transformed into export taxes to subsidize oil consumption in all regions, however ineffi-

ciently (Waverman, 1976).[28] From time to time, Western residents have argued that their provincial oil revenues constitute redress for past discrimination, and to this extent their arguments have departed from a strict property rights position. From this perspective, increases in Western oil revenues and higher energy prices for all Canadians have operated as a kind of fortuitous reparations scheme. Again using a relative real-income model rather than property rights model, some Westerners have also argued that they must be allowed to gather revenues while they can, since their resources are being depleted: interest on Heritage Fund assets will be needed to hold up relative incomes in Alberta in the future when the oil and gas has been used up.

It was noted in the first section of this paper that an import tariff generates national deadweight losses by discouraging consumption and encouraging production of protected commodities. It also redistributes income in the form of tariff revenues to the central government and redistributes income from residents of regions with small protected sectors to those with large protected sectors (Pinchin, 1979). The oil export tax had analogous effects. The discouragement of domestic production generated deadweight production losses in the Western provinces together with nation-wide consumption losses as energy users expanded their consumption to the point at which the marginal valuation of oil and gas fell below the opportunity costs determined by world prices. The export tax transferred to the federal government returns that would otherwise have accrued to Western resource owners and oil producers. In addition, interregional movements of oil and gas at reduced domestic prices meant that consumers in Central and Atlantic Canada were receiving transfers from Western resource owners and producers. This latter kind of transfer increased at the expense of the transfer to the federal government after the completion of the Montreal section of the Interprovincial Pipeline. The real difference between the tariff and the oil export tax turns on the magnitudes of the transfers and distortions involved. Oil and gas revenues that were uncollected because of reduced domestic prices amounted to over 30 percent of Alberta's GDP in 1980–81, about 5.5 percent of GDP in the other Prairie provinces, and just under 2 percent of British Columbia's GDP (see Table 5-2).

The effects of domestic pricing on the Western provinces' access to revenues from energy resources can be divided into three periods (see Figure 5-1). From 1973 to approximately the end of 1978, domestic oil prices rose gradually in relation to the world price (i.e., the price of imported Middle Eastern and Venezuelan crudes at Montreal). In 1979 and 1980, the second world oil price shock, associated with the Iranian Revolution, produced a large divergence between domestic and world prices. By 1980 the federal government realized that much larger increases in domestic prices were required, and in the summer of 1981 a new pricing schedule for 1981–86 was developed that provided for large

increases in Canadian oil and gas prices. From the end of 1980 to 1983, the domestic price of oil increased, whereas the world oil price declined (largely under the influence of the recession that began in 1981). The Canadian blended price and world prices converged early in 1983.

Does the convergence of domestic and world prices mean that the federal government now fully accepts world prices as determining domestic prices? If the answer to this question is yes, then Alberta's efforts to obtain resource revenues based on world prices as a right attaching to its ownership of resources will have won out over the alternative view that resource revenues must be shared by all Canadians through an independent domestic pricing mechanism. The 1981 Canada-Alberta Energy Agreement actually placed a 75 percent-of-world-price ceiling on "old oil," i.e., oil discovered before 1974, a ceiling that became inoperative in June 1983 as the scheduled price increases for old oil ran into falling world prices. Oil discovered from 1974 to 1980 was subject to the same ceiling in the 1981 agreement but was fixed until the end of 1984 at world prices. Oil discovered since 1980 or produced by enhanced recovery or from oil sands receives world prices under the 1981 agreement. If world oil prices were to increase sharply in the middle or late 1980s, the original 1981 agreement might come back into force and override the 1983 amendments. In that case, world and domestic prices would again diverge. It is true, however, that the trend under the National Energy Program has been to bring increasing quantities of domestic oil into the world pricing category. Import prices, along with several new federal taxes, are now rolled into the domestic price paid by consumers, and this eliminates the pressure on the federal government to generate revenues to assist in meeting import compensation payments. In addition, the Fiscal Equalization Program has been altered to remove Alberta from the base on which payments to the have-not provinces are calculated. This represents a shift away from the broad-based approach to equity. The new five-province fiscal "equalization" system of 1982 is described in Courchene (1983).

The discovery of commercially viable offshore reserves of oil and natural gas in the Atlantic region has been accompanied by a series of disagreements between the federal government and provincial governments over the ownership of the resources and the sharing of resource revenues. Provincial claims to ownership of offshore resources have not been upheld by the Supreme Court of Canada, and individual provinces have been negotiating resource revenue sharing arrangements with the federal government; the negotiations that have in fact caused considerable resentment toward the federal government in the Atlantic regions, especially in Newfoundland.

There is a discernible trend toward viewing provincial claims to various natural resources as an acceptable feature of the Canadian federation, even where these claims will give rise to substantial variations in

provincial per capita real incomes and fiscal capacities. This is not to suggest that greater equality of real incomes and fiscal capacities among regions will no longer be sought by means other than blocking increases in Alberta's revenues with low domestic prices and export taxes. Suggestions have been made (see Gainer and Powrie, 1975; Powrie, 1981; Helliwell and Scott, 1981) that any redistribution of energy rents should be sought directly, either by simulating (i.e., modelling) the effects of federal taxation on these revenues or through limited voluntary sharing.

Revenue sharing has attracted attention from an efficiency as well as from an equity perspective. Boadway and Flatters (1982; 1983) have argued that interregional differences in provincial resource revenues may lead to the failure of national markets by causing people to migrate from one region to another. Thus they have produced an efficiency argument for interprovincial fiscal equalization that is separate from equity arguments. Migration to Alberta can be thought of as resulting from the real wage differential between Alberta and Central Canada plus the differential between net fiscal benefits between the two regions. Large resource revenues in Alberta increase fiscal benefits and cause migration to proceed until Alberta's real wage falls below the real wage in Central Canada by enough to offset the difference in public sector net benefits to migrants moving to Alberta from Central Canada. The result is that the marginal product of labour is lower in the West than in Central Canada, so that an improvement in the overall allocation of the country's production factors could be had by discouraging westward migration. Appropriately selected equalization or revenue-sharing arrangements that increase Central Canadian fiscal benefits could be used to correct for the market failure. (Alternatively, Western resource revenues could be transformed into private income streams along the lines of the British Columbia Resources Investment Corporation as McMillan and Norrie (1980) and Courchene and Melvin (1980) have suggested.)

This market failure induced by migration has been derived from a framework in which labour, capital and resources cooperate to produce a single commodity. If a tradable manufacturing sector is introduced whose value-added is generated with mobile labour and mobile capital, the market failure will not occur in this form because the real wage is determined in the manufacturing sector and will, abstracting from transportation costs, be equalized across regions (Chambers and Gordon, 1966; Copithorne, 1979).[29] Additional theoretical and empirical analysis seems to be needed before the argument for a market failure induced by migration can be established.

Moving from the theory and practice of resource-revenue sharing to the legal issues, it is apparent that the *Constitution Act, 1982* does not provide an adequate framework for the resolution of the resource revenue-sharing problem (Whyte, 1983). On the one hand, provincial owners of natural resources are permitted to enter into any contractual royalty

or rent-capture arrangements they wish provided they do not discriminate between users of resources within and outside of the province. Standing against this is the Martland decision in the case of *Canadian Industrial Gas and Oil Ltd. (CIGOL) v. Government of Saskatchewan*, in which Saskatchewan's attempt to capture windfall profits on all oil and gas resources, both freehold and Crown, was ruled to be indirect taxation and therefore beyond the constitutional powers of the province. This decision was made even though it was impossible for the province of Saskatchewan to shift the tax, since it was unable to influence the domestic or export price of its energy resources.

The federal export tax, on the other hand, has clearly been shifted onto resource owners, mainly provincial Crown owners. The taxation of exports fell under the *BNA Act's* trade and commerce provision as a federal prerogative, but its economic effect was, in part, to place a de facto tax on provincial Crown property. If such a tax had been levied directly on provincially owned resources, it would have been in violation of section 125 of the *BNA Act*, which prohibited such taxation. The *Constitution Act, 1982*, does not speak to this issue, and so the potential for conflict remains, though as previously mentioned, recent developments might suggest that export taxation will not reappear in the 1980s. But whether it does or not is a matter of federal policy and not a matter of constitutional guarantees to the provinces of their rights to resource revenues. The federal government's general taxation power also permits it to levy particular taxes in the oil and gas sector provided it does not attempt to tax provincial Crown corporations or resources that remain the property of the province. The appearance of such new taxes in the National Energy Program of 1980 led to constitutional challenges from the provinces with the result that agreements were reached with Saskatchewan and British Columbia to exempt the provincial Crown corporations from payment of the Natural Gas and Gas Liquids Tax and the Petroleum and Gas Revenue Tax in exchange for revenue-equivalent grants from these provinces to the federal government (Whyte, 1983, p. 218). Again, these taxes tend to be shifted backward onto resource revenues and represent a mechanism by which the federal government can obtain resource revenues, even when taxes are not levied directly on resource property.

Although the *Constitution Act, 1982* offers little or nothing to resolve the resource revenue dispute, it adds a section on the subject of interprovincial fiscal equalization.

Parliament and the government of Canada are committed to the principle of making equalization payments to ensure that provincial governments have sufficient revenues to provide reasonably comparable levels of public services at reasonably comparable levels of taxation (section 36).

The judicial meaning of "reasonably comparable" remains open to

interpretation. Nevertheless, this new section appears at a moment when the Fiscal Equalization Program and federal energy policy have been moving in the opposite direction by removing Alberta's revenue base from the equalization formula and by allowing the Western provinces' energy resource revenues to be determined by world prices.

In summary, the recent ascendancy of provincial claims to resource revenues at world prices may be partially fortuitous but is real nonetheless. The provinces with extensive and valuable resources are benefiting despite the fact that their success may be temporary and does not receive any more legal support from the *Constitution Act, 1982* than it would have from the unamended *BNA Act*. One casualty of the process has been the original concept of fiscal equalization and, in a sense, that is ironic, since one of the sections added to the Constitution in 1982 elevates provincial entitlements to equalization to a legal right, albeit a rather vague one.

Conclusions

There is a long-standing belief in the West and the Maritimes that federal policies on tariffs and transportation — and more recently on natural resources — have placed an unfair burden on the economies of the two regions. It is widely believed that federal policies in these three areas discriminate against regional interests and have led to income transfers from the West and Maritimes to Central Canada.

In both the West and the Maritimes, tariff and transportation policies have been considered a major reason for regional economic alienation. Tariff policy, beginning with the National Policy, has been viewed as a device whereby the two regions have been forced to trade with Central Canada for secondary manufactured goods at prices above world prices while at the same time having to absorb transportation charges on the movement of these goods from Central Canada. The alleged unfairness has been heightened by a belief that producers in the two regions must sell their products at world prices and absorb transportation charges on regional exports. In addition, the structure of transportation charges is widely believed to discriminate against the economic well-being of the two regions. It is thought that tariff policies have created a captive market in the two regions for Central Canadian producers to exploit and that federal transportation policies have allowed the railways to exploit the resulting captive transportation market.

We have argued that, although tariff and transportation policies did in fact place an unfair burden on the regional economies in the late nineteenth and early twentieth centuries, the effects of these policies have greatly diminished with time. The claims that federal freight transportation policies discriminate unduly against the regional economies are not well grounded in fact. Our analysis of regional tariff burdens indicates

that during the 1960s and 1970s, the tariff burden on the West and the Atlantic region was probably in the range of 6 percent of GDP. The process of trade liberalization in the 1980s should greatly reduce this regional tariff burden by the end of the decade. Most of the gains from the removal of U.S. tariffs would accrue to Central Canada, where more than 75 percent of Canadian manufacturing is located. For the West and the Atlantic region it is reasonable to assume that a large portion of regional gains from free trade would arise from elimination of inter-regional transfers. It should also be noted that tariff reductions on Canadian imports from the United States may well lead to reductions in the transportation costs borne by the two regions if long-haul (east-west) movements are replaced by short-haul (south-north) movements.

Given that federal tariff transportation policies in recent years cannot be shown to discriminate unduly against the interests of the West and the Atlantic region, the question arises as to why these two issues have taken centre stage as a continuing source of regional alienation. It is probable, as Darling (1980, p. 196) notes in connection with freight rates, that with time the two grievances became accepted orthodox dogma and "assumed a life of their own independent of the real status of the original cause-effect . . . the ideology took off from the facts."

Since the mid-1970s it has become clear that federal-provincial conflicts over the pricing of natural resources and the distribution of resource rents have been a major cause of regional economic alienation. Western provinces, especially Alberta, have been denied full access to rents on non-renewable energy resources. At the same time the Atlantic provinces, especially Newfoundland, have felt cheated because they have little control over offshore oil and gas resources.[30] The federal government, however, has not attempted to deny the province of Quebec access to large rents on hydroelectric resources — an apparent unfairness that contributes to alienation.

Notes

This study was completed in December 1984.

1. The HOS model is set out in, e.g., Chacholiades (1981, chap. 5); Layard and Walters (1978, chap. 4). For the ES approach, see Eastman and Stykolt (1967) as well as the discussion and references in Muller (1982) and Cox and Harris (1983).
2. Consumption and production effects are measured by the familiar triangular dead-weight losses associated with pricing distortions. Where marginal valuation of the importable depends on real income, the consumption loss measure depends on the convention employed to measure changes in consumers' surplus.
3. The division is being made on economic rather than geographic criteria.
4. The notion that the domestic tariff diverts trade to interregional channels seems to be a traditional Canadian view. See, e.g., Marr and Paterson (1980, chap. 12).
5. It should be noted that if the M region had been exporting secondary manufactures to the United States before the tariff, the tariff would price these goods out of U.S. markets and they would be exported to the P region instead, replacing an equal amount

of imports of secondary manufactures to the P region from the United States. With three areas, the simple two-good HOS model has one degree of freedom in its three-way trade pattern (i.e., the trade pattern is indeterminable).

6. If the M region does export secondary manufactures to the United States in our three-region model, a U.S. tariff would be avoided completely by redirecting exports to the P region and replacing equal amounts of U.S. imports into the P region (see also note 4). In the two-way manufacturing trade models typical of the ES approach, this kind of perfect substitution is not in evidence as it is in HOS models (see for example, Grubel and Lloyd, 1975; Lancaster, 1979, chap. 10). In some models, product differentiation caused by distance also reduces product substitutability (Armington, 1969).

7. Factors of production are redeployed within the secondary manufacturing sector rather than shifted between manufacturing and other sectors.

8. Recent work on "contestability" (Baumol, 1982; Baumol, Panzar and Willig, 1983) tends to weaken the theoretical plausibility of the ES suboptimal scale result. Indeed, in the absence of the U.S. tariff, Canadian markets for manufactures appear to be perfectly contestable unless relative factor prices differ between the two economies.

9. The consumption bundle increases by 1.36 percent. With personal expenditure in 1961 equal to 65 percent of GNP, the gain relative to GNP is 0.884 percent.

10. The magnitude of lost production in protected industries in British Columbia in 1963 due to the free-trade area was estimated to have a maximum value of 30 percent in Shearer, Young and Munro (1971, p. 200).

11. See also the earlier work by Bloch (1974).

12. Darling (1980) provides an extensive treatment of this topic.

13. Before 1912, rates on the Intercolonial were deliberately set by the Dominion government at 80 percent of the rates prevailing in Central Canada.

14. The select territory was defined as the Atlantic provinces plus the part of Quebec located east of Diamond Junction and Lévis.

15. The Act includes a provision that rates must not be less than variable cost or greater than variable cost plus 150 percent. A detailed description of the regulatory structure is given in Canadian Transport Commission (1982a).

16. In particular, "front-haul" movements bear a higher proportion of total trip costs than will "back-haul" movements.

17. McRae and Prescott (1980a) provide additional data on competition between rail and truck transport.

18. Levin (1981) discusses this issue.

19. Regional production of such goods is assumed to be a small proportion of the total supply of such goods, and as a consequence regional producers face a highly elastic demand curve.

20. The latter has also been examined by Mohring (1974).

21. That is, transportation costs provide effective protection.

22. An explanation of Ramsey pricing is given in Zajac (1981).

23. These proposals are evaluated in Ross and Partners (1974).

24. Ross and Partners (1974), commenting on the two proposals, suggest that their implementation would tend to reinforce the status quo with respect to the location of particular industries.

25. Subsidies for feed grains have been provided under the *Feed Grains Assistance Act.* Heads (1977) discusses the effects of the assistance program.

26. The 1984 Act makes grain producers responsible for paying the first three percentage points of increases in railroad costs until 1985–86, when their share will increase to the first six points, with the federal government picking up the remainder.

27. A considerable amount of empirical evidence shows that regulation of the trucking sector raises rates above a competitive level. See, for example, McRae and Prescott (1980b).

28. The contrast between the property rights position and the income distribution position with respect to regions has its counterpart in alternative theories of justice, with Rawls

(1971) and Nozick (1974) occupying the polar positions. The federal-provincial revenue issue has seldom, if ever, ascended to such philosophical heights, however.

29. "What natural resource enthusiasts might find . . . surprising . . . however, is that if one expands the . . . model by realistically adding some non-primary tradable goods (which may be produced from tradable material inputs but which do not directly require local natural resource inputs), then it is productivity in the non-primary tradable goods sector that determines the wage level of the region. . . ." (Copithorne, 1979, p. 186).

30. The recently (1985) negotiated agreement between the federal government and Newfoundland with respect to offshore oil and gas resources may well alleviate this specific grievance.

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FEDERALISM AND THE ECONOMIC UNION

Disparities and Interregional Adjustment

KENNETH NORRIE, Research Coordinator

This is one of twelve volumes dealing with **Federalism and the Economic Union** (see list in back of book), included in the Collected Research Studies of the Royal Commission on the Economic Union and Development Prospects for Canada.

The disparity among regions is a major issue in the context of Canadian federalism. In theory, economic differences should not exist because of interregional product and factor flows. In fact, they are a matter of great concern. The causes and results of these differences, the efficiency of government policies of regional economic development and some of the ways of righting the imbalance are explored in these papers.

AUTHORS AND TOPICS:
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