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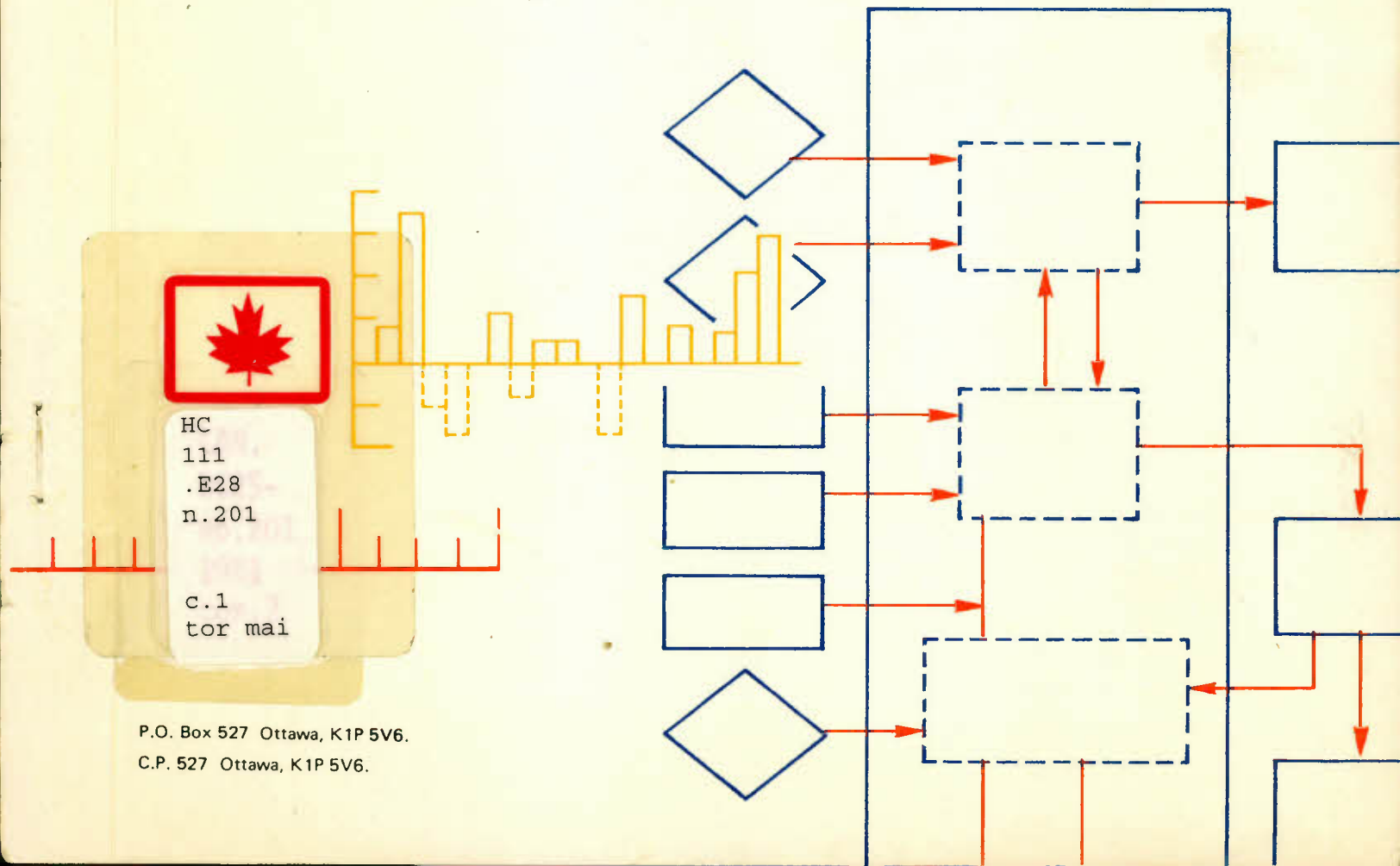

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DISCUSSION PAPER NO. 201

Westward Shift and Interregional Adjustment: A Preliminary Assessment*

by
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Résumé

Au départ, les auteurs soulignent que l'analyse du phénomène du déplacement du centre de gravité vers l'Ouest du pays soulève deux questions : s'est-il produit un déplacement vers l'Ouest du pouvoir économique et politique au cours des années 70 ? Dans l'affirmative, est-ce que, dans un certain sens, ce déplacement s'est fait aux dépens de l'Est ?

Dans la deuxième partie, ils examinent l'évolution récente de l'économie de l'Ouest canadien afin de démontrer qu'il n'y a eu que peu de diversification économique depuis 1971, que la croissance de l'Ouest a généralement été complémentaire à celle de l'Est mais qu'en raison de certains éléments à l'origine de l'essor actuel, surtout en ce qui concerne le secteur de l'énergie, ces deux tendances pourraient s'inverser.

La troisième partie porte sur le processus d'adaptation interrégionale à la hausse des prix pétroliers, en utilisant les résultats des études disponibles sur les mécanismes de transfert et un modèle récent des avantages comparatifs régionaux. Dans les deux parties suivantes, les auteurs examinent les preuves empiriques du déplacement vers l'Ouest et des difficultés économiques de l'Est. Dans la quatrième partie, ils en arrivent à la conclusion qu'il s'est produit une expansion économique rapide dans l'Ouest, mais peu d'évolution structurelle fondamentale, du moins jusqu'ici.

Dans la cinquième partie, ils contestent l'opinion selon laquelle il se serait produit une détérioration de la situation économique de l'Est comme conséquence directe de la prospérité de l'Ouest.

On peut encore s'interroger, cependant, sur les raisons pour lesquelles la question a soulevé autant de préoccupations et de discussions sur le plan politique. D'après certains, le mouvement de contestation tiendrait à la répartition de la baisse des revenus réels dans l'Est. Une perte nette de population dans l'Est se traduirait par des conséquences différentes pour les revenus des divers types de facteurs. Les vrais perdants seraient les propriétaires des avoirs reliés aux industries de service. On sait que leurs revenus sont proportionnels à l'importance de la population à qui s'adressent leurs services. Comme leurs avoirs sont intrinsèquement non transférables, les propriétaires ne peuvent les déménager dans l'Ouest pour y bénéficier de l'essor économique propre à cette partie du pays. On peut donc s'attendre que ceux qui possèdent des propriétés immobilières urbaines et des industries de services personnels vont s'alarmer devant l'exode de la population. Comme ces groupes ont habituellement une grande influence sur le plan politique, il n'est pas surprenant que leurs préoccupations fassent l'objet de la sollicitude empressée des autorités politiques.

Un mouvement de mobilisation des énergies en vue de contrecarrer cette tendance est donc susceptible de se développer parmi les résidents de l'Est du pays. Aux yeux des politiciens et des bureaucrates, le succès se mesure par l'importance des populations qu'ils administrent. En général, le pouvoir de négociation des premiers ministres provinciaux vis-à-vis le gouvernement fédéral et les autres provinces est proportionnel à l'importance de leur électorat. La variété et la complexité des fonctions d'une bureaucratie sont directement déterminées par la taille de leur économie. Alors que les gouvernements des provinces de l'Ouest se servent des avantages que procure la mise en valeur de leurs ressources pour développer leurs économies respectives, il ne faut pas se surprendre de voir les gouvernements des provinces de l'Est s'inquiéter d'une telle évolution. Il en serait ainsi même si le déplacement vers l'Ouest n'était qu'un produit de l'imagination plutôt qu'un fait réel.

Abstract

The paper begins by noting that there are two questions raised in the discussion of the westward shift phenomenon: has there been a shift of economic and political power to the West in the 1970s? if so, is there any sense in which it can be said to have been "at the expense of" the East?

Section II looks at the economic history of the West to demonstrate that there had been little economic diversification until 1971; that western growth had generally complemented that in the East; but that there are elements of the current boom, stemming mainly from the energy sector, that could reverse both patterns.

Section III goes through the process of the inter-regional adjustment to higher oil prices, using results from the transfer mechanism literature and a recent model of regional comparative advantage. The following two sections then look at the empirical evidence on westward shift and eastern economic difficulties. Section IV concludes that there has been rapid economic expansion in the West, but little fundamental structural change -- at least, not yet. Section V disputes the notion that eastern Canada is worse off as a direct consequence of this western prosperity.

The question still remains, though, why there is so much political concern and strife over the issue. One answer given focuses on the distribution of the decline in real incomes within the East. An absolute loss of population by the East will have differential impacts on the various types of factor incomes. The real losers will be the owners of factors specific to the service industries. Their incomes will be proportional to the size of the population demanding their services. Since their assets are inherently non-transferable, the owners cannot move them to the West to take advantage of economic opportunities there. Thus owners of urban real estate and of personal service industries can be expected to view population movements with alarm. Since these groups typically tend to possess disproportionate political influence, it is not surprising to see that their concerns are readily addressed by the political authorities.

Abetting this is the province-building phenomenon in reverse in the East. Politicians and bureaucrats measure success by the size of the populations they administer. Provincial premiers possess bargaining power with the federal government and with other provinces roughly in proportion to the sizes of their constituencies. The variety and complexity of functions that the bureaucracy oversees also vary directly with the absolute size of the

economy. Thus for the same reasons that the western governments are using the advantages the resource boom has given them to develop their economies, eastern governments can be expected to exhibit concern over any such movement. This is true even if the westward shift is only a perception rather than an actual fact.

I Introduction

There is considerable current interest in the notion of a "westward shift" in the Canadian Economy. While the term appears to have as many particular variants as there are commentators on it, all begin with the obvious economic boom that has characterized the western economies, especially Alberta's, over the present decade. From this base however the analysts appear to differ on how fundamental an economic shift is under way, if one at all. Opinions range all the way from the view that we are witnessing a fundamental and far-reaching realignment of economic and political power in Canada to one that sees current western prosperity as another of a long series of staple booms, albeit an unusually significant one.

The Department of Regional Economic Expansion was discussing westward shift already in 1973, at least for Alberta and British Columbia (DREE, 1973,3),

> "...It can be seen that the West generally expanded more rapidly during the sixties than the economy of Canada as a whole and better than the other regions except Ontario. Even more apparent are the substantial differences in growth rates among the four western provinces. Saskatchewan's economy contributed little to western growth during the sixties: agricultural production distorted the income and production figures. Manitoba fell behind the national and regional growth. Alberta and British Columbia surged ahead, leaving Saskatchewan and Manitoba further behind, and performed generally more rapidly than the rest of the country, except again Ontario."

Their projections of economic growth for the 1970s are consistent with the 'gradualist' interpretation offered by some of the contemporary observers of westward shift (DREE, 1973, 23),

"The projections forecast the continuation of two socioeconomic trends, if the status quo remains: the gradual shift of activity towards the west, and from rural areas to large urban centres."

In their most recent survey, the department sees confirmation of its earlier predictions (DREE, 1979b, 8),

"Western economic expansion has produced a westerly shift in Canada's centre of economic gravity. The west's share of national new capital investments, goods producing value added, and new employment creation all increased dramatically during the 1970s.

and (DREE, 1979b, 20),

"The western economy is increasingly providing the developmental dynamics for the national economy."

The C.D. Howe Resesarch Institute (1978, 108) has also called attention to the westward shift phenomenon,

"Most of Canada's new resource development (the new staples) has occurred in the West and in the northern part of the country in recent decades. Economic activity in the West has gained even more momentum; in the 1970s as a result of the changing energy development. Furthermore, as the centre of North American industrial activity shifts westward..."

Mansell and Wright (1979, 32) conclude even more emphatically that a basic regional realignment is underway:

"...energy developments since 1973, have initiated a westward shift in economic power and decision-making in Canada, most of this shift has been to Alberta, and future energy developments offer the opportunity for a continuation of this trend."

An economic boom of the nature and magnitude of that currently underway in the West is clearly deserving of study in its own right. The issue takes on added importance, however, in light of the fact that some observers appear to believe that the West is not only developing rapidly, but is doing so at the expense of the other regions of the country. The Financial Post supplement on Alberta (1979, S3) cites the view of Ron Southern, an Alberta industrialist, that,

"Alberta is not just going through a boom phase. There is a fundamental shift in economic activity and decision-making from the east to Alberta and the West."

The Financial Times supplement (Nov. 19, 1979, A3) is equally emphatic on this point,

"While the other western provinces may feel part of the New West, the current powerhouse is undisputably Alberta...the province is in the strongest position to influence developments as the balance of power swings from East to West. The swing is slow, but it appears to be unstoppable. According to one estimate, Ontario will lose 30,000 people and $3 billion in investment to Alberta this year alone."

In a similar vein the dust jacket of the recent influential book on Alberta and Saskatchewan (Richards and Pratt, 1979) promises "...a timely look at the gradual power shift from Central Canada to the new economic 'empire' of the West." The following quotation aptly summarizes the main thrust of the book (174),

"The rise of the Canadian West in the 1970s is a close parallel to the emergence of the American sunbelt, and the relative economic decline of the Central Canadian heartland approximates the slipping hegemony of the American Northwest...The shift in power is not as far advanced in Canada as it is below the 49th parallel...but it certainly has begun."

DREE gives a somewhat more qualified view of the West as a factor in the relative decline of the East. The shift of economic activity to the West is acknowledged (DREE, 1979a, 1),

"...its (Ontario's) share of GNP has been gradually declining during this decade with the shift in the economic centre of gravity westwards."

but they argue that the magnitude of westward shift is exaggerated to an extent by the poor performance of Ontario's economy (DREE, 1979a, 4),

"Despite the apparent strength of the Ontario economy, conditions have not been conducive to its meaningful development during the seventies. Indeed, during this period, it has on the basis of many economy indicators, actually failed to achieve the same level of performance experienced by the rest of Canada. While the narrowing of

regional disparities across Canada is an entirely desirable objective, and is a federal government policy, the fact it is occurring more by means of Ontario's weakening position rather than through other regions' growing strength, with the possible exception of Alberta and British Columbia, should be a matter of national concern. A weakening of the domestic centre, which results not from offsetting domestic competition and development, but from other outside forces such as foreign competition and energy supply, will have negative implications for the whole country."

Doggett and Emerson (1979, 28), from an analysis of regional macroeconomic data, provide the only skeptical view of westward shift.

"While an increasing share of Canadian economic activity is now accounted for by the western provinces, the increase has been much less significant than the conventional wisdom would have us believe",

and on the western economic boom as a cause of eastern problems, (1979, 28),

"We have concluded that increased power and policy change favouring the West will be slow in coming. As a result, the implications of the westward shift for the other regions of Canada will not be very profound and are certainly not alarming."

The notion that economic growth in western Canada could somehow be to the detriment of other regions, especially the industrial heartland of Ontario and Quebec, comes as a surprise to anyone even vaguely familiar with

Canadian economic history. The current western economic prosperity is clearly based at least in the first instance upon the export of raw materials. In the past, western staple booms have always been viewed favourably by businessmen and political leaders in other regions. Indeed, one prominent interpretation is that the formation of the Canadian state in 1867 was merely a constitutional prerequisite to the subsequent national policy and the attempts to open up the West to agricultural settlement (Fowke, 1952). By any of the usual measures there was a tremendous westward shift of economic activity in Canada between 1900 and 1930. Yet the conventional view is that a significant proportion of Central Canada's prosperity at this time was due precisely to this western expansion. The region ceased to play such a dominant leading sector role after 1929 as agriculture declined in relative importance, but it remained an important market for eastern manufactured goods and services.

The ambiguity stems in part from the lack of agreement on just what the term westward economic shift implies. It clearly should mean more than just the observation that a greater proportion of Canada's population and output is accounted for by the western provinces. This has happened in the past, as noted, without drawing the attention that it does currently. The magnitude of the present western

economic staple boom certainly differentiates it from previous ones. Yet it is not at all obvious why even this should imply economic growth at the expense of the East, since the West typically specializes in products whose prices are determined internationally. Hence it cannot be growth per se which those observers concerned with the phenomena have in mind. Rather, there must be a belief that the current economic growth in the West is somewhow promoting a shift in the structures of the provincial economies away from sectors in which they have historically specialized, to activities which are more directly competitive with the manufacturing and service industries of Central Canada.

The present paper attempts to analyze the westward shift phenomena by addressing two separate though closely related questions. The first, and the one which constitutes the main focus of the paper, is to ascertain the nature of the current economic development in Western Canada. Is it merely a staple export boom of the traditional type, with only its magnitude unique? Or is this expansion structurally different in the sense that the West is truly entering a phase of more general and diversified economic growth, featuring concomitant expansion of the secondary and tertiary sectors? In other words, is this the staple boom which is transforming (or will transform) the West into an industrialized economy?

The second aspect is to enquire how, if at all, the current growth can be at the expense of the other regions. Are the other regions quite literally losing economic capacity to the West? Or is the shift a relative one only, with the basic regional make-up of the country remaining largely intact, but with new tensions being created by a real or perceived transfer of economic and political power westward? We devote considerably less attention to this second question here since the issues are extremely complex, and since we are pursuing the general question of the nature of the interregional economic adjustment process more formally in a follow-up project. It seems important to make some mention of it at this point, however, since much of the political debate seems to automatically equate western prosperity with eastern economic problems.

The paper is organized as follows. The next section addresses the question of why past western staple booms have been considered as growth-promoting for the other regions while the current one is viewed differently. This requires a brief excursion into the economic history of the region to 1972, and a slightly more extensive discussion of economic and political developments since then. Section III is devoted to the interregional economic adjustment within Canada to the several-fold increase in the price of energy products. Section IV looks at the empirical evidence available on the nature of the economic boom in western Canada, while the fifth section looks more closely at the West as a factor in eastern economic difficulties.

II Background

a) The Early Period

The four western provinces came into being economically as a result of favourable developments in markets for raw materials in which they had a comparative advantage. In the case of the three Prairie provinces it was the combination of rising wheat prices, falling production and transportation costs and technological change around the turn of the century which finally made agricultural settlement feasible. Capital and labour poured into the region and an entire grain handling and transportation infrastructure and agricultural service economy developed. These advances in wheat production were complemented by mixed farming in the northern and eastern regions and by developments of minerals in Northern Manitoba and cattle ranching, coal and natural gas in Alberta.

Table II-1 gives an idea of the extent of the economic shift that occurred during this period. The contribution of the Prairie provinces to natinal gross value-added rose from 5.1 per cent in 1890 to 17.3 per cent in 1910 and 19.6 per cent by 1929. British Columbia experienced a surge in growth during this period with its contribution to national gross value-added rising from 3.3 per cent to 8.9 per cent. Employment statistics mirror the output shift. The proportion of gainfully occupied in the Prairie provinces

Table II-1

Distribution of Gainfully Employed and Value-Added, by Region

	British Columbia	Prairies	Central Canada	Maritimes	TOTAL
Panel A					
Distribution of Gainfully Occupied					
1891	3.0	4.7	73.6	18.7	100.0
1911	7.6	20.1	60.4	60.9	100.0
1929	8.2	21.8	60.9	9.1	100.0
Distribution of Gross Value-Added					
1890	3.3	5.1	75.6	16.0	100.0
1910	8.1	17.3	64.6	10.0	100.0
1929	8.9	19.6	65.3	6.2	100.0
Panel B					
Distribution of Value-Added in Manufacturing					
1890	3.2	2.5	81.1	13.2	100.0
1910	6.4	5.9	80.0	7.7	100.0
1929	6.4	7.5	82.4	3.7	100.0
Distribution of Value-Added in Construction					
1890	3.4	1.8	74.9	19.9	100.0
1910	12.9	11.1	66.1	9.9	100.0
1929	9.1	17.1	70.1	3.7	100.0

Source: Green (1971) Appendix Tables B-1, B-2, B-3, C-1, C-2 and C-3.

increased from 4.7 per cent in 1891 to 21.8 per cent in 1929. Similarly, the share of British Columbia in national gainfully occupied increased by over five percentage points during the same period.

These dramatic increases in the shares of the Prairie provinces and British Columbia in national gainfully occupied and gross value-added are not matched, however, by a corresponding increase in the region's shares in manufacturing activity. Table II-1, Panel B does suggest some relative increase in manufacturing activity in the Prairie provinces, but not in proportion to the growth of the region overall. There is on the other hand a dramatic increase in the amount of construction activity locally, reflecting the large infrastructure needs of the grain economy.

It is instructive to look at these changes slightly more formally using shift-share analysis. While this may appear to be an unnecessarily complex way to make the observation presented below, it is nevertheless useful to introduce the technique as it will be employed to greater advantage later in the paper. Begin with the ratio of Gross Value-Added (GVA) in sector i in region j to total national GVA, S_j^i. Thus, $S_j^i = GVA_j^i / \Sigma\Sigma_{ji} GVA_j^i$. This ratio will have increased over the period 1890-1910 as a result of western economic expansion. By exploiting a simple identify we can write,

$$1)\qquad \Delta S_j^i = \left(\frac{\Sigma GVA_j^i}{\Sigma\Sigma GVA_j^i}\right)^{1910}_{ji}\left(\frac{GVA_j^i}{\Sigma GVA_j^i}\right)^{1910}_{i} - \left(\frac{\Sigma GVA_j^i}{\Sigma\Sigma GVA_j^i}\right)^{1890}_{ji}\left(\frac{GVA_j^i}{\Sigma GVA_j^i}\right)^{1890}_{i}$$

By adding and subtracting the term

$$\left(\frac{\Sigma GVA_j^i}{\Sigma\Sigma GVA_j^i}\right)^{1890}_{ji}\left(\frac{GVA_j^i}{\Sigma GVA_j^i}\right)^{1910}_{i},$$

ΔS_j^i can be partitioned into a growth component G and a mix component M, where $\Delta S_j^i = G + M$.

$$2)\qquad G = \left(\frac{\Sigma GVA_j^i}{\Sigma\Sigma GVA_j^i}\right)^{1910}_{ji}\left(\frac{GVA_j^i}{\Sigma GVA_j^i}\right)^{1910}_{i} - \left(\frac{\Sigma GVA_j^i}{\Sigma\Sigma GVA_j^i}\right)^{1890}_{ji}\left(\frac{GVA_j^i}{\Sigma GVA_j^i}\right)^{1910}_{i}$$

$$3)\qquad M = \left(\frac{\Sigma GVA_j^i}{\Sigma\Sigma GVA_j^i}\right)^{1890}_{ji}\left(\frac{GVA_j^i}{\Sigma GVA_j^i}\right)^{1910}_{j} - \left(\frac{\Sigma GVA_j^i}{\Sigma\Sigma GVA_j^i}\right)^{1890}_{ji}\left(\frac{GVA_j^i}{\Sigma GVA_j^i}\right)^{1890}_{i}$$

Thus far the exercise has simply reworked some definitions. Decomposing shifts in this manner becomes economically interesting however, if one is prepared to adopt a certain view of the economic growth process. Specifically, assume that any given natural resource base has a certain amount of manufacturing activity associated

with it in a Leontief-type interindustry arrangement, given the technology and transport costs of the time. This would be, for example, any initial processing of the product plus the small-scale production of market-oriented consumer goods. If the region were then to experience an expansion of its staple sector in excess of the national growth rate, and if there had been no fundamental locational changes, one might expect a proportionate increase in regionally based manufacturing activity. The ratio of GVA in Prairie manufacturing to total national GVA will go up as a result, although the region is still as much a staple economy as it ever was. There has merely been a greater rate of growth of all sectors relative to the national average, with the respective weights within the regional economy unchanged. The growth term of equation (2) captures this statistically.

Suppose however that the same staple expansion induced a greater than proportionate effect on regionally based manufacturing activity. This could be the result of economies of scale in resource processing or in the provision of consumer goods for the local market, or because some minimum threshold population size had been reached so as to allow the local production of goods formerly imported, or any number of other reasons. The implication is that the ratio of GVA in Prairie manufacturing to total national GVA would rise even further than previously predicted.

A positive growth effect is not consistent with economic diversification in this view, since it simply represents the regional economy replicating itself on a larger scale. A ten per cent increase in the output of the staple sector will require (induce) an equivalent expansion of sectors already located in the region and linked to the export sector. More ore production in a region will involve an equivalent increase in refining. If ore production is expanding at a faster rate than overall GNP, then there will necessarily be an increase in the relative manufacturing output of that region. But this should not be taken as indicating that the region is becoming industrialized. A positive mix effect would be consistent with increased industrialization under this view however, as it would represent more than a simple replication of an extant economic structure.

Table II-2 gives the growth and mix effects for the manufacturing and construction sectors over the period 1890-1913. As expected, the total shift is positive, reflecting the rapid economic growth of the West consequent upon opening up the agricultural land. For manufacturing however, the growth effect explains all of this and some, with the mix effect negative. This is true whether the analysis is performed with gross value-added (Panel A) or gainfully employed (Panel B). In other words, the overall economy grew faster than manufacturing output or employment, rendering the Prairies slightly less industrialized at the

Table II-2

Shift and Share Results for Prairie Manufacturing and Construction, 1890-1911

	Manufacturing	Construction
Panel A		
Shift and Share Analysis of the Relative Growth of Manufacturing and Construction Gross Value-Added in the Prairie Provinces, 1890-1910		
Change in proportion of national gross value-added accounted for by value-added in i sector of Prairie region (ΔS) (1)	.87	.54
'Growth' component (G) (2)	1.04	.44
'Shift' component (M) (3)	-.17	.10
Panel B		
Shift and Share in Terms of Gainfully Occupied in the Prairie Provinces by Sector Between 1891 and 1911		
Change in proportion of national gainfully occupied accounted for by i sector of Prairie region (ΔS) (1)	.95	1.39
'Growth' component (G) (2)	.98	1.27
'Shift' component (M) (3)	-.03	.12

Source: Calculated from Table II-1.

end of the boom than prior to it. The region exploited its great comparative advantage in agriculture, and apparently grew slightly more dependent, relatively speaking, upon imports of manufactured products.

The construction sector on the other hand exhibits a positive sign for both the growth and the mix effects. This result is a predictable feature of the boom phase of staple expansion. The infrastructure requirements were considerable and the large population inflows also required residential construction activity. Both types tend to be temporary in that once the investment activity arising from the staple boom peaks, the construction sector enters into a relative decline. In this period then the Prairies apparently became even more specialized in the provision of agricultural and other staples, and in the construction activity associated with the necessary infrastructure.

This particular staple boom clearly had substantial spin offs to the rest of the country. The nature of the staple and of Prairie geography were such that little of the demand for manufactured goods and services generated within the agricultural sector was met locally. The region was just not a good place to locate such activities. Except for the gateway role Winnipeg played, it was eastern manufacturers (aided by the tariff) and financiers who provided these inputs. Rails, railroad equipment, farm supplies and consumer durables generally originated in

Ontario or Quebec, and occasionally even in the Maritimes. While one should not neglect contemporaneous developments in other staple sectors in the other regions and the spin-off effects they had, it is clear that much of eastern Canadian industrialization after 1900 was based on linkage effects from wheat.

The British Columbia experience differs somewhat from the Prairies in that different staples were involved and in that much of the increase in staple production was in response to Prairie demands. The lumber industry in particular was stimulated by the strong backward linkages of the wheat boom. The value of log and lumber production increased from $4.5 million in 1900 to $23.6 million (Canada, 1913) in 1910. Mackintosh (1964, 50) highlights the importance of these backward linkages to British Columbia by noting that the lumber industry shifted from complete dependence on foreign export markets to exporting between 70 per cent and 75 per cent of its output to the Prairies over the course of the decade.

Other staple sectors also experienced significant absolute (and relative) increases in production between 1900 and 1910. The value of mineral production increased by $9.9 million (67 per cent), fisheries by $4.6 million (102 per cent) (Canada, 1915), and agricultural production $10.3 million (156 per cent) (Canada, 1914). Total manufacturing production increased from $19.4 million to $65.1 million

during the decade with the smelter industry experiencing an increase of $7.1 million. Although the manufacturing sector exhibited rapid growth, other sectors of the provincial economy grew even more rapidly. In 1890 gross value added in manufacturing accounted for 23.3 per cent of total provincial gross value added while the corresponding weight in 1910 was 19.6 per cent (Green, 85-86). Hence British Columbia exhibited the same tendency for increased specializatin which was evident in the development of the Prairie Provinces during the wheat boom.

The use of regional shares in national economic aggregates is somewhat misleading in that it tends to represent economic growth as a zero sum game, with one region's prosperity apparently 'at the expense' of the others. The outstanding feature of the wheat boom era though was the rapid absolute growth of all regions of the country. This was possible in large measure due to the highly elastic supplies of capital and labour. Without these, there could not have been parallel expansion of both the western agricultural economy and the eastern industrial and commercial one; expansion of one would necessarily have been at the expense of the other. A wheat boom would have drawn capital and labour out of the East thereby obviating the absolute expansion there. The increase in western output would represent mainly foregone Eastern output.[1] As it turned out, however, European and American financiers were eager to invest in Canada, and the increased labour

demands in both regions were met by immigrants. In this way Central Canada was able to expand its capacity absolutely to meet the western demands for goods and services.

b) Postwar to 1972[2]

The Prairie provinces have seen significant structural changes in agriculture in the postwar period. Beginning during the war and accelerating rapidly after it there was a trend towards capital-intensive methods of production in agriculture, implying increasingly larger farms. The process of farm consolidation and rural out-migration began. With this came the collapse of much of the support activities, the death of the small Prairie town being perhaps the most visible manifestation of this phenomenon. Without alternative opportunities, emigration was the only recourse. Saskatchewan had a net out-migration almost without exception from 1940 through to the early 1970s, with Manitoba's experience being only somewhat less dramatic. Alberta was in the same position in the 1940s until the Leduc and subsequent discoveries of oil and gas turned the province again into a net recipient of labour.

Manitoba and Saskatchewan were never able to generate a sufficient volume of alternative economic activity to offset this net loss of jobs in agriculture. Manitoba supplemented her agricultural base with developments in mineral production, forestry and forestry products and hydroelectric

power. The first two were largely export-oriented, and none of the developments led to any significant industrial or commercial linkages locally. In fact, in the face of the relatively declining wheat sector Winnipeg began to lose its resiliency as the main Prairie service centre.

Saskatchewan has seen important post-war developments in oil and gas exploration and production, potash, some metallic minerals, coal and forestry. In addition, federal and provincial projects such as the South Saskatchewan River Dam and highway construction provided employment opportunities. Most of these were small-scale activities however, contributing little ancillary economic development of other than a purely local nature. The crude oil industry had a more significant impact, although the linkages to Saskatchewan were slight due to the tendency to run the operations out of Alberta. The development of ten potash mines between 1962 and 1970 provided a considerable temporary stimulus to the construction industry but very few linkages into further processing of the ore or the provision of industry inputs.

Alberta alone of the three provinces was able to more than replace the agricultural jobs lost in the post-war period. The more diversified and labour-intensive agricultural industry in the province meant there was not as large a negative impact on employment, linked industries, and population. But the major factor of course was the

pre-eminence of the oil and gas industry. The Leduc strike in 1947 was not the first discovery of oil in the province but it set off the boom that has made Alberta the centre of the Canadian oil and gas industry. Capital and labour were attracted into exploration, production, transmission, and refining. It was a product with numerous linkages into other sectors of the economy. Manufacturing inputs such as steel and pipe, further processing into petrochemical products for the local market, and a range of service industries grew up in response to the oil and gas discoveries. Revenue from petroleum production allowed the Alberta government to expand its provision of services such as highways and education.

Largely as a consequence of these events, Alberta continued to grow relative to Canada and especially relative to the rest of the Prairies. The expansion of employment opportunities outstripped local labour force growth so that Alberta received many of the people displaced from agriculture in the other two provinces. Coal and forestry products, along with a favourable location for tourism have complemented the new economic base. Edmonton benefitted from being the logical focal point for activities associated with opening up the Mackenzie Valley area, much like Winnipeg's position in the West 75 years ago. And finally, the impact of all the developments together created urban areas large enough to support some consumer goods and manufacturing such as textiles and printing and publishing.

The progress of Alberta's economy since the war stands in clear contrast to those of Saskatchewan and Manitoba.

The first half of the 1960s were boom years for the Prairies as for the Canadian economy as a whole. The prosperous business conditions throughout the country were accentuated in the Prairies by a strong agricultural sector, stemming from large wheat sales to China and Russia. But after 1966, economic conditions became more unsettled overall. The three Prairie economies were naturally caught up in the national slowdown, but factors specific to the area made its impact very uneven. It is important to examine these years briefly since they stand in vivid contrast to events since then, and they serve as a useful reminder of the dangers of inferring the existence of structural changes on the basis of a few observations.

The late 1960s and early 1970s were drastic ones for Saskatchewan. On top of the dampening effects of a slower national rate of development and high interest rates were significant turnarounds in her major staple products. The construction phase of the potash industry ended in 1967, and equipment purchasing the following year. It became quickly evident that there was tremendous excess capacity in the industry, which led to price wars until government intervention in 1970 stabilized matters. Petroleum production had stabilized and the mining sector was undertaking no major new explorations or developments. Construction of the South Saskatchewan River Dam had been an

important stimulant through the sixties, but it too was ending at this time.

The real crunch came in 1969, however, with the turnaround in the wheat market. The breakdown of the international wheat agreement led to dumping by some countries, principally the U.S. Huge wheat surpluses were built up, prices fell, and farm incomes dropped off significantly. Over-production seemed a long term problem at the time leading to such federal measures as Operation LIFT in 1970 with its payments for reducing wheat acreage. This agricultural recession, centred especially in wheat, affected the province more generally as all agricultural service activities naturally suffered in turn.

This combination of events had a dramatic effect. An agricultural depression on top of slack in the other staple sectors meant there were no expanding sectors to pick up the slack that developed. Employment fell absolutely as did total personal incomes. There was massive emigration with nearly 28,000 people leaving the province in one year (1970) alone. But even this large out-migration was not sufficient to fully adjust to the depressed conditions. Unemployment rates rose and per capita incomes fell absolutely. The long run pattern of net out-migration was accelerated. The only real difference in this period was that conditions were so abrupt and so dramatic that even the normally efficient adjustment mechanisms were not rapid enough.

Manitoba's experience in these years was mixed. The agricultural setback after 1968 affected the province, but not as strongly as Saskatchewan because of a lesser dependence on wheat. The slack was picked up in part by a booming minerals industry in the North where new mines were opening. Other sectors such as manufacturing and construction helped offset the initial year of the downturn in agriculture. Even so, employment growth slowed dramatically in 1969 and showed zero gain in 1970. The agricultural recession continued, expansion of the minerals sector was being completed and the national recession and high interest rates slowed the remaining sectors. Total personal income grew at less than the national rate and out-migration increased. Manitoba was diversified enough to avoid the rapid decline facing Saskatchewan when agriculture declined. But developments in the other sectors, while allowing Manitoba to register moderate economic advances were not sufficient to completely offset the declining areas. Thus Manitoba continued to lose ground relatively.

Alberta was the western province least affected by events in this period. The more diversified agriculture sector obviously helped, as witnessed by the fact that cash receipts from livestock rose in every year from 1966 to 1973. The main offset, however, continued to be the petroleum industry and its linkage effects on other industries. But even here there was a growing feeling, articulated by the new Opposition Leader Peter Lougheed,

that in the absence of offsetting changes Alberta was in for some major adjustments in the oil and gas sector and thus more generally. The last major discovery of oil had been the Rainbow Field in 1965, and the geological prospects for any further major discoveries appeared slim. As a result, the major oil companies were moving their exploration activities out of the province to the (then) more promising Arctic and east coast fields. Alberta's petroleum industry was clearly moving from the expansive phase to the mature-producer phase.[3] This was seen as an ominous development because the main employment impact of the industry stems from exploration and development rather than from production. The latter is a highly capital-intensive process requiring relatively little labour directly. With exploration and development winding down, the rate of job creation appeared likely to be severely curtailed.

In the sum then the long-term economic outlook for the Prairies at the beginning of the 1970s was not very bright. The agricultural sector was in the midst of its worst recession since the 1930s. The potash industry was relying on a government-run cartel to stabilize prices. Even the oil and gas industry in Alberta was apparently ceasing to play the dynamic role it had since 1947. Given the marginal nature of the remaining sectors the region appeared to be in for a continued structural decline. It is well worth keeping this in mind when considering the economic developments later on in the decade.

British Columbia like Alberta in the postwar period experienced population and output growth at rates second only to Ontario's. Unlike some of the western provinces British Columbia's growth was not simply the result of exploiting a succession of different staples or diversifying about the existing staple base. The Social Credit government under W.A.C. Bennett attempted an active developmental role in the economy in the 1950s and 1960s. The British Columbia Hydro or power authority was created in 1964 by the nationalization of the private British Columbia Electric Company, and massive investments were made to add more generating capacity. The provincially owned Pacific Great Eastern Railway (now the British Columbia Railway) was expanded further into the Peace River district and linked that region to tidewater in North Vancouver. A crown corporation was set up in 1960 to expand and improve ferry service between Vancouver Island and the mainland. Yet British Columbia remained as dependent on forestry and forestry products in the postwar period as it had been in the 1920s.

The postwar period saw the forestry industry expand rapidly into the interior of British Columbia, largely as a result of the railway and highway investments of the provincial government. At the same time the timber resources of the coast region were being used more intensively. In 1961 the processing of forestry products accounted for 42.2 per cent of employment and 41.4 per cent

of value added in manufacturing in British Columbia (Shearer, 1971, 8). The processing of wood products was equally important in the 1920s; 35.6 per cent of net value added (1927) and 43.0 per cent of employment (1921) in manufacturing (Shearer 1971, 15-17). Then as now the service sector was still the largest sector in terms of employment and income, but the dynamics of growth in British Columbia has continued to be forestry and the processing of its output.

The relative position of other staple products fluctuated in the postwar period but none approached the importance of forestry products. Throughout the 1950s and 1960s coal production ranged between 800,000 and 900,000 tons. Copper production was extremely volatile -- output as high as 55 million lbs. in 1949 are as low as 14 million lbs. in 1959. It was not until the late sixties that copper output expanded significantly, with most output destined for Japan. Petroleum and natural gas production began in the 1950s and increased rapidly in the 1960s. But petroleum production peaked in 1973 and natural gas in 1970. Moreover the value of petroleum and natural gas production was relatively small and accounted, for example, for only 21.2 per cent and 19.7 per cent of metal, mineral and coal production in 1967 and 1972 respectively. The commercial fishery experienced large swings in the market value of its catch, and the relative contribution of the industry to the provincial economy decline throughout much of the period.

British Columbia did experience some diversification in the destination of its exports. The United States continued to be the largest single market with a share of 62.6 per cent in 1961, with the United Kingdom and European Economic Community countries second at 19.5 per cent. By the mid-1960s, however, Japan began purchasing significant amounts of metal and mineral products from British Columbia, and by 1972 its share of total exports was 16.9 per cent. But wood and paper products remained British Columbia's most important export and accounted for 67.2 per cent of exports in 1961 (Shearer 1971, 261) and 59.5 per cent in 1972 (British Columbia 1971, 87).

British Columbia had the most rapid population growth of any of the western provinces in this period. In some years net migration accounted for almost three quarters of population growth. This reliance on imported labour stems partly from structural factors unique to British Columbia. Unlike the other western provinces British Columbia never possessed a large agricultural sector. Thus there was relatively less domestic labour available for absorbtion into other sectors of the economy after WW II. The only alternative as these other sectors expanded then was to draw upon internal and external labour markets.

It is useful at this point to indicate briefly the structure of the four provincial economies in the census year 1971, to illustrate their stage of development just

prior to the time when westward shift is alleged to have begun. Table II-3 shows the distribution of the labour force in each of the four provinces, compared with that for Canada and Ontario over the period 1941-1971. One is struck by the continued disproportionate dependence on primary industries, especially agriculture, and the marked under-development of the manufacturing sector. It is especially interesting to note that over the entire period of the development of the oil and gas sector in Alberta, the share of employment accounted for by the manufacturing sector rose by less than one percentage point. Manufacturing did increase its relative share over the period in the three Prairie provinces, however, while it fell for Ontario and B.C. and for Canada as a whole.

The relative under-development of the western manufacturing sector in 1971 is even more evident from Table II-4 which shows the five leading sectors in terms of their share of employment. Food and beverage industries account for the bulk of western manufacturing jobs, followed by wood, metal fabrication and the market-oriented printing and publishing industry. Obviously the processing of export staples dominates the industrial life of the region. Only Manitoba shows any diversification into consumer or producer goods industries with its clothing and transportation equipment employment. There is certainly no evidence that the post-war economic developments in the region set the stage for any kind of take-off of manufacturing activity in

Table II-3

Distribution of the Labour Force for Canada, Ontario and the Western Provinces, Various Years

		Agriculture	Forestry	Fishing & Trapping	Mines, Quarries & Oil Wells	Manufacturing	Construction	Services
Canada	-1941	24.9		3.4	2.2	22.7	5.2	41.6
	-1961	9.8	1.7	0.6	1.8	21.6	6.8	57.7
	-1971	5.6	0.9	0.3	1.6	19.8	6.2	65.6
Ontario	-1941	17.7		1.5	2.2	30.2	5.3	43.1
	-1961	6.9	0.7	0.1	1.8	26.7	6.6	57.2
	-1971	3.9	0.3	-	1.2	24.4	6.1	64.1
Manitoba	-1941	33.4		2.5	1.3	12.8	4.6	45.4
	-1961	17.2	0.4	0.4	1.6	13.6	6.2	60.6
	-1971	11.4	0.2	0.1	1.9	13.8	5.4	67.2
Sask.	-1941	57.5		1.1	0.4	5.0	2.1	33.9
	-1961	36.6	0.3	0.3	1.1	4.6	5.4	51.7
	-1971	27.1	0.2	0.1	2.0	5.4	4.8	60.4
Alberta	-1941	47.3		1.4	3.5	8.2	3.6	36.0
	-1961	21.1	0.6	0.2	2.7	8.6	7.7	59.1
	-1971	12.6	0.3	-	3.9	9.1	7.6	66.5
B.C.	-1941	12.8		8.6	4.4	21.0	8.2	47.0
	-1961	3.9	3.6	0.8	1.4	19.5	6.4	64.4
	-1971	2.5	3.0	0.4	1.6	16.1	7.0	69.4

Source: Census of Canada, 1971, Vol. III - Part 4, (Bulletin 3.4-2)

Table II-4

Share of Total Provincial Manufacturing Labour Force Accounted for by Five Main Industrial Groups, Western Provinces, 1971

	Manitoba	Saskatchewan	Alberta	British Columbia
Food and beverages	21.0	36.1	25.6	13.8
Clothing	11.6	-	-	-
Wood	-	6.6	7.5	30.6
Paper and allied products	-	-	-	12.1
Printing and publishing	8.7	11.1	8.7	6.6
Primary metals	-	5.7	-	-
Metal fabricating	8.0	7.4	10.2	7.1
Transportation equipment	8.0	-	-	-
Nonmetallic mineral products	-	-	6.1	-

Source: Census of Canada, 1971, Vol. III, Part 4, (Bulletin 3.4-3)

the 1970s. Their industrial capacities remained pretty much as they had been in the 1920s.

Table II-5 shows the western provinces' shares of total Canadian employment in various sectors over the period 1941-1971. Their shares of primary production went up, due to a slower out-migration from agriculture and the new resource industries developed after WW II. Manitoba's and Saskatchewan's share of total Canadian manufacturing employment declined slightly, while that for Alberta and B.C. went up very slightly. This is likely accounted for by the relative strength of Canada's resource processing industries in the last three decades. Again, it is perhaps surprising to see that the oil and gas developments in Alberta had such little impact on that province's relative industrial strength.

A final indication of the industrial structure of the region can be obtained from the data on the flows of manufactured products in 1967. Table II-6 shows that fully 70.9 per cent of Prairie industrial output had its first destination listed as within the region. This is far greater than any other region, including even the Atlantic provinces. B.C. has the largest dependence on foreign markets, largely wood products to the U.S. Very little manufactured output moved out of the region. Of that that did, the overwhelming proportion was was made up of food and beverage products or wood products from B.C., with lesser

Table II-5

Labour Force in Each Sector as a Per Cent of the Canadian Total for the Western Provinces, Various Years

	Agriculture	Forestry	Fishing & Trapping	Mines, Quarries & Oil Wells	Manufacturing	Construction	Services
Manitoba-1941	8.7	4.7		3.8	3.6	5.7	7.0
-1961	9.3	1.2	3.5	4.8	3.3	4.8	5.6
-1971	9.8	1.0	1.4	5.6	3.3	4.2	4.9
Sask. -1941	17.4	2.5		1.3	1.7	3.1	6.1
-1961	18.8	1.0	3.1	3.2	1.1	4.0	4.5
-1971	20.9	1.2	1.1	5.3	1.2	3.3	4.0
Alberta -1941	13.2	2.9		10.8	2.5	4.8	6.0
-1961	16.3	2.6	2.3	11.6	3.0	8.6	7.7
-1971	18.0	2.8	0.8	19.1	3.7	9.7	8.1
B.C. -1941	3.9	19.2		15.2	7.0	9.0	8.6
-1961	3.6	19.4	12.4	6.8	8.1	8.5	10.0
-1971	4.8	37.2	15.1	10.6	8.6	11.9	11.1

Source: Census of Canada, 1971, Vol. III - Part 4, (Bulletin 3.4-2)

Table II-6

Percentage Distribution of Shipments of Manufacturing Industries by First Destination of Shipments, 1967

Region of Origin	First Destination of Shipments							
	Atlantic Provinces	Quebec	Ontario	Prairie Provinces	British Columbia, Yukon and Northwest Territories	All Canadian Destinations	Other Countries	Total
Atlantic Provinces	54.4	8.4	8.7	1.8	0.7	74.0	26.0	100.0
Quebec	3.8	54.2	19.4	4.6	2.7	84.7	15.3	100.0
Ontario	3.3	13.2	57.8	7.3	3.9	85.5	14.5	100.0
Prairie Provinces	1.0	6.2	8.2	70.9	7.0	93.3	6.7	100.0
British Columbia, Yukon & Northwest Territories	0.6	2.0	3.9	8.5	48.6	63.6	36.4	100.0
Canada	4.9	23.1	36.9	11.5	7.3	83.7	16.3	100.0

Source: Statistics Canada 31-504.

amounts of Alberta chemicals or Manitoba clothing finding a market in eastern Canada. Finally, Table II-7 shows the source of manufactured products destined for the Prairies. Nearly half of the region's apparent consumption of Canadian-produced goods comes from within, with Ontario contributing the bulk of the remainder. The overall pattern is quite clear then. As late as 1971, after the major resource developments sketched above, Western Canada had a limited manufacturing capacity. There were a few dominant exports of processed staples, a significant concentration of small-scale, locally oriented processing activities, and a large dependence on imported products. It is from this base, it should be noted, that the alleged westward shift of economic activity is progressing.

c) 1973 to the Present

1972 was a significant turning point for Canada and her major trading partners. Like the prior recession, the recovery had special implications for the three Prairie provinces. The American economy began expanding more rapidly in the spring of that year, followed by Europe and Japan later in the summer. This sudden and widespread industrial upswing in areas with high propensities to import industrial raw materials quickly picked up any slack in demand for these products and began exerting upward pressure on prices. Coupled with some supply disruptions, the result was a commodity prices boom similar to that of twenty years

Table II-7

Sources of Shipments of Canadian Manufacturers' Shipments Destined to Regions of Canada and to Other Countries, 1967

(Relative percentage participation of manufacturers of regions of Canada in apparent regional markets for Canadian manufactures)

	First Destination of Shipments							
Region of Origin	Atlantic Provinces	Quebec	Ontario	Prairie Provinces	British Columbia, Yukon and Northwest Territories	All Canadian Destinations	Other Countries	Total
Atlantic Provinces	40.1	1.3	0.8	0.6	0.3	3.2	5.7	3.6
Quebec	21.7	66.1	14.8	11.2	10.3	28.5	26.5	28.2
Ontario	35.5	29.8	81.7	33.2	27.4	53.3	46.3	52.1
Prairie Provinces	1.7	2.1	1.8	49.0	7.6	8.8	3.3	7.9
British Columbia, Yukon & Northwest Territories	1.0	0.7	0.9	6.0	54.4	6.2	18.2	8.2
Canada	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Statistics Canada 31-504.

earlier. The three Prairie provinces especially benefitted from these bullish markets for wood products, coal, sulphur, potash, and metallic minerals.

A second fundamental change was the increases in crude oil prices forced on the world by the new powerful OPEC consortium, and enhanced by the Middle East War in the fall of 1973. Prices increased dramatically in the U.S. and other markets with Canadian products following the trend. The dislocation in the crude oil market put additional pressure on natural gas supplies, at a time when demands for it as the cleanest fuel were already increasing. Higher prices and expanding markets pushed production of crude oil in Alberta and Saskatchewan to capacity and encouraged stepped-up exploration for oil as well as natural gas. They also made the Alberta oil sands a more attractive possibility. GCOS, already in operation, initiated expansion plans. Syncrude received permission to build a plant and Petrofina, Shell, Home Oil, and others announced their intention to proceed also. These developments in the energy sector meant that Saskatchewan, but especially Alberta as the predominant producer, would benefit greatly.

The final major change of significance to the region was the dramatic recovery in agriculture. Massive wheat purchases by the USSR in late 1972, alongside those of China and Japan, coupled with a decline in world production of grains and rice, put pressure on existing inventories in the

major exporting countries. The currency realignment, in effect devaluing the Canadian and American dollars, added to the international demand for these countries' products. Wheat prices began to respond to the tighter demand situation rising quickly to record levels.

The re-emergence of strong markets was not confined to wheat alone. Rising incomes and the high income elasticity of demand for meat meant upward pressure on the prices of cattle, hogs, and poultry. A world-wide shortage of protein in late 1972 caused by the failure of the Peruvian anchovy harvest and a poor U.S. soybean crop, meant demand was switched in part to feed grains. Prices for barley, corn, and soybean meal increased dramatically as a result, putting further upward pressure on animal product prices.

For provinces whose economies are based on agricultural products, industrial raw materials, and energy sources, these developments were bound to be significant. In the space of a year or so international markets for the major products of the three Prairie economies had moved from a normal or in some cases depressed state to a strongly buoyant one, with rapidly increasing demand and record or near-record prices. With an international commodity boom placed alongside a national economic expansion with its spillover effects, the result was an economic expansion of unprecedented magnitude for the region.

Table II-8 illustrates the sharp rise in a number of primary commodity prices beginning around 1972-73. These data illustrate that the current western economic boom is based on several sectors, rather than just energy as is sometimes thought. All the Prairie provinces have some resources whose relative prices have risen -- Alberta with the most, Manitoba the least. The most rapid initial increase occurred in grain prices which rose by 190 per cent between 1971 and 1974. This trend was not sustained, and since 1974 the nominal and real price of grain has been falling. Yet the current level of grain prices is still higher than prices received in the previous decade. The success of the OPEC cartel in raising world oil prices and hence the opportunity cost of western Canadian oil is evident. After a decade of relatively constant prices, the well-head oil price in Canada rose by 266 per cent between 1971 and 1978. The most spectacular increase has occurred in the price of natural gas which has risen by 694 per cent between 1971 and 1978. Coal prices have also risen as foreign and domestic consumers of crude petroleum and natural gas attempt to switch to cheaper fuel sources such as coal, and as the Japanese (especially) and Ontario markets for western metallurgical coal have opened up.

Potash prices have also risen dramatically. After a severe slump in the late nineteen sixties they began to rise, increasing nearly fourfold between 1969 and 1975. But, as in the case of grain, this has not been sustained.

Table II-8

Manufactured and Resource Commodity Prices, 1960-78

(1971=100)

	Total Mfg[1] Selling Price Index (1)	Grain[2] Price Index (2)	Potash[3] (3)	Coal[3] (4)	Import[4] Price of Oil (5)	Average[5] Oil Well-head Price Index (6)	Average Natural[5] Gas Well-head/ Plant Gate Price Index (7)	Newsprint[6] for Export (B.C.) (8)	Lumber[6] Hemlock (B.C.) (9)
1960	82.2	93.5	-	102.7		83.3	65.3		
1961	82.4	99.1	-	102.1		83.7	78.2		
1962	83.3	109.8	-	101.8		83.0	82.3		
1963	84.4	109.4	106.4	102.9		87.3	88.4		
1964	85.1	112.4	107.6	97.4		88.8	94.6		
1965	86.2	108.2	113.3	99.2		89.1	93.1		
1966	88.7	115.0	93.3	110.9		89.1	98.0		
1967	90.4	114.5	83.8	76.8		89.1	98.6		
1968	92.3	109.3	66.1	74.4		89.1	98.6		107.9
1969	95.8	104.2	58.9	71.8		89.1	97.3		110.7
1970	98.1	100.7	94.2	78.5		90.6	101.4		88.5
1971	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1972	104.4	116.2	104.3	110.2	109.5	100.4	104.1	102.9	126.6
1973	116.1	208.0	106.8	120.7	129.8	123.9	115.0	108.4	173.6
1974	138.1	290.0	143.8	194.9	411.3	207.2	181.6	134.7	161.7
1975	153.7	266.9	206.3	319.1	500.4	260.5	369.4	180.3	158.8
1976	161.6	232.5	182.3	327.6	535.7	304.0	600.0	180.4	173.5
1977	174.3	207.2	188.5	-	606.3	365.9	793.9	200.4	204.0
1978	190.1	200.2	-	-		-		223.5[4]	229.5[4]

Sources: (1) Statistics Canada, 62-011, (2) 1960-74, Statistics Canada, 62-002; 1975-78, Statistics Canada, 62-011, (3) Statistics Canada, 26-201, (4) Powrie (1979), 40, (5) Canadian Petroleum Association, (6) British Columbia Economic Activity 1978, Review and Outlook.

Some of the main primary exports of British Columbia have also experienced substantial price changes. The price of newsprint, for example, began rising in 1972. The price of lumber is quite volatile and is closely linked to cycles in residential construction activity in the United States. The export price of newsprint, however, has risen since 1971, except for a pause in 1976.

The discussion thus far has emphasized th magnitude of nominal price increases, whereas the real interest lies in the implications of these changes for the terms of trade between Western and Central Canada. Table II-9 provides rough estimates of the net barter terms of trade facing Western Canada for three main primary exports. Ontario's export prices are represented by the manufacturing industry selling price index (i.e. the price of manufactured goods at the plant gate). It is clear from Table II-9 that there has been a general shift in favour of Western Canada in the first two instances, and a dramatic one with respect to crude oil. Grain products prices rose by 110 percentage points between 1971 and 1974, but have declined by almost as much since Newsprint gained over 17 percentage points relative to manufactured goods to 1978. Domestic crude oil prices more than doubled over the same period.

Table II-9

Terms of Trade Between Selected Primary Prices and Manufactured Goods

(1971=100)

	Grain / Mfg (1)	Newsprint / Mfg (2)	Domestic Well-head Oil Price Index / Mfg (3)	Import Price of Oil / Mfg (4)
1960	113.7		101.3	
1961	120.3		101.6	
1962	131.8		99.6	
1963	129.6		103.4	
1964	132.1		104.3	
1965	125.5		103.4	
1966	129.7		100.5	
1967	126.7		98.6	
1968	118.4		96.5	
1969	108.8		93.0	
1970	102.7		92.4	
1971	100.0	100.0	100.0	100.0
1972	111.3	48.6	96.2	104.9
1973	179.2	93.4	106.7	111.9
1974	210.0	97.5	150.0	297.8
1975	173.6	117.3	169.5	325.6
1976	143.9	111.6	188.1	331.5
1977	118.9	114.9	210.0	347.8
1978	105.3	117.6		

Source: Calculated from Table II-8.

The calculations of Table II-9, Column (3) understate the true deterioration in the East's terms of trade. Since crude petroleum prices in Canada have not risen as rapidly as world prices it is useful to calculate the terms of trade between the West and Central Canada from 1971 to 1978 using the true opportunity cost of crude petroleum. This information is provided in column (4). It is obvious from comparing columns (3) and (4) that Central Canada has managed to avoid an even greater decline in the terms of trade with the West because of the increasing divergence between the domestic well-head price of oil and the world price.

Another reason why the terms of trade calculations may underestimate the true deterioration of the East's position stems from the use of an aggregate manufacturing selling price index to represent the East's export price level. This aggregate index includes many manufactured goods which Central Canada does not ship in significant quantities to the West. Motor vehicles and other consumer durables are important exports, so it might be more appropriate to use these to illustrate relative price changes. Doing this reinforces the general point. Since their prices have not risen as rapidly as the aggregate index. For example, on a base of 1971=100 the industry selling price index for motor vehicle manufacturers in 1977 was 129.2 and that for manufacturers of major appliances, 143.5. The terms of

trade for Western Canada in 1977 using domestic well-head oil prices are 283.2 for motor vehicle products and 255.0 for major appliances, as opposed to 210.0 in Table II-9.

In sum, the decade of the seventies was a very turbulent one for the western provinces. It began with an unprecedented parallel increase in demand for nearly all of the region's main staple exports. This reversed the apparent stagnation of these sectors in the 1960s and early 1970s, and stimulated an impressive turnaround in macroeconomic performance for the economies. While expansion has not proceeded uniformly over sectors or provinces over the decade, the basic strengths were enough to have allowed the region a disproportionately high growth rate. The question that arises then is whether this economic expansion, which in the first instance at least was clearly a staple products export boom of unprecedented magnitude, has begun or is beginning to induce a more fundamental economic restructuring of the economies. To answer this requires looking carefully at the available empirical evidence, which will be the topic of Section IV. First, however, the important political developments over the decade must be mentioned.

d) Political Developments Since 1972

The characteristic nature of western economic development outlined above has had a profound impact on basic western attitudes to economic growth.[4] There is an almost unquestioned belief in the benefits of economic diversification, and especially of industrialization. Industrialization is sought to provide jobs for those continually being released, or ultimately so threatened, from the staple and related sectors. Industrial pursuits, unlike staple production, are seen (correctly or not) to be labour-intensive and less susceptible to the vagaries of the business cycle. Industrialization, it is felt, would reverse actual or imminent population outflows and provide a measure of economic stability heretofore lacking. To the regional businessmen whose sales depend on the size of the local market or to the politicians and bureaucrats whose constituency size is a measure of their political power, these features are highly valued.

Two important types of economic policies have been pursued with renewed vigour since 1971; moves to capture economic rents from resource production, and the use of these revenues along with regulatory powers to attempt to shape the industrial structure of the region. The governments have been quite successful as regards the first goal, although the degree varies from resource to resource and province to province. Table II-10 indicates the

Table II-10

Annual Provincial Government Natural Resource Revenues

(Per cent of Canadian total in parentheses)

	1965	1970	1971	1972	1973	1974	1975	1976	1977	1978[P]
					(Millions of dollars)					
Newfoundland	1.3 (.30)	4.4 (.70)	4.6 (.76)	5.5 (.86)	5.8 (.74)	4.7 (.38)	6.4 (.27)	9.8 (.38)	14.5 (.48)	14.8 (.41)
Prince Edward Island	.02 (.01)	.05 (.01)	.2 (.03)	.6 (.01)	.4 (.05)	.3 (.02)	.4 (.02)	.5 (.02)	.5 (.02)	.4 (.01)
Nova Scotia	1.5 (.34)	1.7 (.27)	1.7 (.28)	2.0 (.31)	2.4 (.30)	3.2 (.26)	3.7 (.16)	3.8 (.15)	4.7 (.16)	5.7 (.16)
New Brunswick	4.3 (.97)	4.4 (.70)	5.9 (.98)	6.2 (.97)	6.0 (.76)	7.4 (.60)	10.4 (.44)	9.4 (.36)	12.7 (.42)	10.1 (.28)
Quebec	39.9 (9.06)	71.2 (11.28)	83.6 (13.88)	82.4 (12.86)	84.5 (10.71)	64.0 (5.17)	69.1 (2.91)	107.0 (4.11)	68.2 (2.26)	128.4 (3.57)
Ontario	42.8 (9.71)	69.3 (10.98)	74.0 (12.29)	55.4 (8.65)	63.0 (7.98)	96.6 (7.80)	210.6 (8.86)	127.2 (4.89)	110.6 (3.66)	189.1 (5.26)
Manitoba	6.0 (1.36)	7.0 (1.10)	10.8 (1.79)	9.0 (1.41)	12.4 (1.57)	27.6 (2.23)	36.8 (1.55)	24.8 (.95)	28.5 (.94)	40.5 (1.13)
Saskatchewan	36.7 (8.33)	37.8 (5.99)	40.2 (6.67)	41.1 (5.42)	46.7 (5.92)	66.5 (5.37)	292.8 (12.32)	316.3 (12.15)	299.0 (9.90)	371.1 (10.32)
Alberta	213.0 (48.37)	267.0 (43.31)	246.6 (40.97)	287.6 (44.9)	351.9 (44.62)	609.6 (49.25)	1406.9 (59.20)	1784.9 (68.57)	2213.8 (73.27)	2626.8 (73.02)
British Columbia	94.9 (21.55)	168.0 (26.26)	134.0 (22.26)	150.7 (23.52)	215.2 (27.29)	357.3 (28.86)	339.0 (14.26)	219.0 (8.41)	268.6 (8.89)	210.0 (5.84)
Canada	440.4 (100.0)	631.1 (100.0)	601.9 (100.0)	640.5 (100.0)	788.5 (100.0)	1237.8 (100.0)	2376.4 (100.0)	2603.2 (100.0)	3021.4 (100.0)	3597.4 (100.0)

P = provisional

Source: Statistics Canada 68-207.

magnitude of the natural resource revenues received by the provinces for selected years from 1965 to 1978. The most spectacular increases have been registered in oil and gas revenues in Alberta. Saskatchewan's additional petroleum revenue is much less, but still represents a marked break with levels typical before 1973. For the other resource products, and thus for the other two provinces, the overall increases are much less dramatic since the price increases, and thus the economic rent generated, have been far less significant and much more transitory in nature. But generally speaking, the sudden appearance of these economic rents and the apparent ability of the provincial governments to capture an increasing share of them have resulted in significant gains to provincial treasuries.

Alberta has also taken the lead in using regulatory powers and tax incentives or subsidies to promote industrial development. In the key area of oil and natural gas the Energy Resources Conservation Board has been given jurisdiction over proposals for using Alberta's reserves, with a clear understanding that the province's fuel and industrial feedstock needs are to be met first. The considerable natural resource revenues are also being used to the same end. They are deployed directly mainly via the Heritage Savings Trust Fund, through one or other of its division. Their indirect contribution comes via the province's ability to provide public goods at taxation rates for individuals and businesses considerably below those in

other jurisdictions. The other provinces have nowhere near as ambitious an industrial strategy since their resource revenues fall far short of Alberta's.

Concomitant with the renewed determination to promote industrialization and the means to finance it has been an increase in the skill and sophistication with which the provincial governments and their bureaucracies function. Richards and Pratt (1979) discuss this at length. In addition, as Mansell and Wright (1979) have written, this sense of province building displayed by the government and its declared intention of involving the private sector has permeated through to the local business class, adding an intangible but important element to the situation.

e) Summary

Many of the features of the current western boom follow the traditional pattern as regards both the nature of the impetus to the economic upswing and their interregional implications. It is clear tht the initial stimulus was provided by an unprecedented increase in the relative prices of the region's main staple exports -- agricultural products, oil and gas, forestry and forestry products and minerals. These are the same staple bases which up until 1971 had not initiated much in the way of industrial diversification for any of the four provinces. One is justified in asking then why an economic upswing based on

these same sectors should now be thought responsible for a fundamental shift in economic power in Canada. The question is even narrower in fact, since it is really only the energy sector which has expanded unabated throughout the decade. The basic query to be answered then is how a fourfold increase in oil and gas prices over the last seven years plus the certainty of even greater price increases in the future could be initiating a westward shift of economic activity.

Much of the current economic boom also fits the historical mould as regards its interregional implications. The commodity price boom of the early 1970s altered the terms of trade in favour of resource producers. For such products as minerals, lumber and agricultural products, many of the other Canadian provinces as net exporters also benefitted from the relative price changes. The West did too, perhaps even disproportionately, but rising incomes here could be expected to be spent on eastern manufactured goods and services along traditional wheat boom lines. In these respects, the western economic expansion should have been seen as complementing economic growth elsewhere.

One important difference currently as distinct from historically, though, is that the major and sustained feature of the staple boom has been the developments in crude oil and natural gas. The large relative price change in favour of energy products has created a significant real

income gain for the owners of these resources, and a loss to consumers. Since Canada's energy supplies are located primarily in the three westernmost provinces, and since the regional governments as landlords capture a significant portion of these rents, the real income gain accrues disproportionately to residents of the West.[5] All consumers suffer a real income loss, but those in the importing provinces experience only this with no offsetting gain.[6] For these reasons the energy pricing issue has an apparent interregional dimension. The West (somehow defined) will appear to be earning its terms of trade inprovement at the expense (somehow defined) of the East (somehow defined). On top of this, in a world of less than perfectly elastic factor supplies an expanding sector will tend to draw resources away from other activities. Because of the geographical specialization of economic activity in Canada, this intersectoral reallocation will involve an interregional movement of capital and labour. Inevitably then, many will see the adjustment to the new energy conditions as impinging more unfavourably on some regions than others.

With respect to both issues raised in the Introduction then, the major new element to have appeared in the 1970s is the energy price increase and its general ramifications. Developments in the other sectors follow the line of a traditional western staple boom, with the usual spin off effects for the rest of the country presumably following.

The task of the next section thus is to ascertain exactly how, if at all, the developments in the energy area could be responsible for a fundamental restructuring of the western economies and whether this might be happening somehow at the expense of the East.

Footnotes

1 For a model along these lines see Chambers and Gordon (1966).

2 Portions of the remainder of this chapter are based on Norrie (1980).

3 This is the terminology used by Shaeffer (1976).

4 For an excellent discussion of economic development strategies in Saskatchewan and Alberta see Richards and Pratt (1979).

5 In the form of lower taxes, expanded government services, Heritage Savings Trust Funds and the like most obviously. The exact nature of these and additional income gains will be spelled out below.

6 Unless they own shares in oil companies and the provincial governments have failed to capture all of the rent.

III The Economic Adjustment to Higher Oil Prices

a) Introduction

The previous section has argued that to the extent that westward drift is a real phenomenon, and that it creates difficulties for other Canadian regions, this must stem primarily from the sudden and dramatic increase in the real price of petroleum products. The purpose of this section is to try and identify the mechanisms whereby the relative price increase could generate such significant structural changes in Canada's regional economic make-up.

It is important to indicate clearly at the outset why energy price increases, which at first glance would seem to simply involve real income transfers from individual consumers to resource owners, should in Canada assume interregional dimensions. This occurs because the energy resources are concentrated in the three westernmost provinces away from the main centres of population and industry, because the BNA Act assigns control over land and resources to the provincial rather than the central government, and because historical accident has meant that much of these energy reserves have not been alienated to the private sector. These three factors together imply first that there will be real income transfer from the East to the

West. Assuming as seems reasonable that the price elasticity for oil is less than unity,[1] residents of the consuming provinces will face absolutely larger expenditures on these products. Westerners as western residents will benefit from this to the extent that their provincial government is able to capture some of the additional revenue and make provincial residence a requirement of sharing in it.[2] Thus the increase in the relative price of oil natural gas implies an interregional income redistribution within Canada.[3]

The means whereby a financial flow (here the increased expenditures on western oil products) is converted into a flow of real goods and services is known as the transfer mechanism. This process as between countries has a long and interesting history in economics, stretching back to Hume's price-specie-flow mechanism but made famous by the Keynes-Ohlin debate on the German reparations question.[4] The issue is rarely discussed in an interregional context, however, generally because it is not assumed to be a problem.[5] The fact that an individual region cannot make offsetting exchange rate or monetary policy adjustments would seem to complicate any adjustment. But these disadvantages are usually felt to be easily outweighed by the fact of a common currency, the existence of a national banking system and multi-regional firms, interregional

factor mobility and federal government fiscal transfers. As Armstrong and Taylor warn though (1978, 85-90) these latter factors ease considerably the immediate adjustment, but they do not obviate the use for an eventual real economic transfer.

It is useful to consider the issue in terms of the transfer mechanism since it makes specific predictions about the type of economic adjustment both the western and the eastern economies will undergo in response to the increased energy expenditures. Thus there will be at least some theoretical basis for judging whether the events of the 1970s can be expected to permanently alter the industrial make-up of the West. Since the problem is an exceedingly complex one, especially when specific institutional features are to be incorporated into the analysis, the procedure followed below is to work through a series of cases beginning with the least realistic up to the most. In this way the several factors involved in the process can be studied separately.

These three considerations also suggest why whatever westward shift is underway as a result of the transfer process is often construed to be at the expense of the East. The geographical factor means that the inevitable intersectoral reallocation of resources occasioned by the

relative price change will have a substantial spatial or interregional element to it. Capital and labour attracted to the energy sector and away from others will find it ncessary to relocate across great distances and across jurisdictions. This adds a political element to the analysis since provincial governments tend to view any outmigration of capital and labour, however natural in an economic efficiency sense it might be, as an unmitigated disaster, and hence something to be resisted as far as possible.

The fact of provincial control over resources adds another factor in the form of enhanced province-building strategies on the part of the producing provinces. It was inevitable that governments in these regions should view the energy price increase as a one-time opportunity to expand and diversify their economies (see Norrie (1980) or Pratt (1977)). Control over energy resources has been interpreted as authorization to implement export controls (e.g. natural gas), pro-rationing, preferential access to raw materials for locally based processing industries, regional content input regulations and local hiring policies. As before, these will all have considerable impact on the adjustment process.

The third, and perhaps the most important, factor centers on the imbalance in provincial governments' revenues from resource production. The large relative increase in the price of energy products, coupled with the fact that the western provinces retained considerable portions of these deposits, has given them (especially Alberta) huge windfall revenues. Fiscal imbalances of this type potentially can cause significant resource misallocations within the country as a whole. This could arise if the provincial governments were to use the revenues to subsidize their province-building efforts outlined above. Offering relatively lower rates of corporate income tax would be one example here, while direct subsidies or subsidized feedstock prices would be others. In addition, even if the entire benefits are used on behalf of residents, there is the possibility that fiscal imbalances may induce inappropriate factor movements. Too many people may be drawn to the western provinces because of their perceived fiscal capacities, at the cost of a misallocation of factors across regions more generally.

These introductory comments suggest that it is useful when discussing these issues to distinguish between those adjustments stemming from the change in relative prices per se, and those from the fact that the economic rents occurring to the region came to the provincial government in the first instance. Accordingly, the first part of this

section proceeds by assuming that all oil and gas reserves in the West were privatized in 1947 at the time of the Leduc discovery. A simple two region, open economy model is outlined and then used to illustrate the nature of the interregional adjustment to higher oil prices. Towards the end of the section the public sector ownership of revenues is reintroduced to investigate the additional considerations that arise under this arrangement.

b) A Basic Two Region, Open Economy Model[6]

The analysis can be simplified by constructing two only slightly stylized regional economies, the West and the East. The West is assumed to produce petroleum products (oil for short), manufactured products and services. The East produces only manufactured goods and services. Oil production requires a specific input available only in the West, so cannot be produced in the East regardless of cost conditions. Services comprise the activities that are inherently non-tradeable in the sense that they must be produced where they are consumed. Construction or personal services would be suitable examples here. As with oil, they will be produced within each region regardless of relative costs.

The manufacturing sector includes that broad range of processed goods and even some services (e.g. financial services) that can either be produced locally or traded. It is useful when considering this sector to adopt the Dornbusch-Fischer-Samuelson (1977) (henceforth DFS) notion of a continuum of products. Their basic model can be sketched briefly as follows. Assume constant unit labour inputs $(a_1,\ldots,a_n)$ and $(a^*_1,\ldots,a^*_n)$ for the n manufactured commodities that can be produced in the West and East respectively. By constructing an interval in order of diminishing comparative advantage for the West,[7] we can define a function

$$A(Z) = \frac{a^*(Z)}{a(Z)}$$

which identifies a commodity Z with each point on the interval and associates it with a specific relative factor input. By entering Z along the horizontal axis in accordance with diminishing western comparative advantage, the function A(Z) plots as a downward sloping curve as in Figure 1.

The second step is to recognize that the West will produce any manufactured commodity for which domestic unit

labour costs are less than or equal to eastern or foreign ones. That is, a commodity will be produced in the West if

$$a(Z)\, w \leq a^*(Z) w^*$$

or

$$\frac{w}{w^*} \leq A(Z)$$

Dropping the inequality, this implies that the West will move along the continuum and produce until it reaches that commodity whose relative labour input equals the factor price ratio. Put differently, from any given point on the A(Z) curve, if the West is to expand the range of processed products it is able to produce competitively it will have to lower its factor price relatively.

The model is closed by considering the demand side. Equilibrium requires that the income derived from producing goods and services in the West equals the sum of expenditures on them. The function relating Z to the relative wage rate, denoted B(Z) in Figure 1, is clearly upward sloping. From any point on B(Z), an increase in Z is an increase in the range of goods produced in the West. Since the stock of factors is fixed along any one curve, the increase in western income commensurate with the increase in output has to come via an increase in the West's relative wage. A greater range of western products must be offset by

higher western wages if income is to equal expenditure. The mechanism whereby higher relative wages are realized is via the excess demand for labour created by a movement along the Z axis at the old relative wage ratio.

The intersection of the A(Z) and B(Z) curves in Figure 1 gives the equilibrium wage ratio and the borderline commodity $\bar{Z}$ which will define the extent of the production of manufactured goods in the West. The system is stable since at any combination of Z and w/w^* other than the equilibrium one there will be an appropriate adjustment of these values.

DFS develop several extensions to the basic model. The most important one for present purposes is the introduction of transportation costs, with the implication that there will now be a range of manufactured goods for which production in each region will be exactly equal to its own consumption. From the viewpoint of the West, for example, this implies a division of manufactured goods into three categories -- exportables such as meat products, non-traded manufactured goods such as refined petroleum products or furniture perhaps, and imports such as automobiles. In each case the DFS model is able to define the borderline commodity separating exportables from non-traded and non-traded from imports.

While the DFS model is admittedly quite abstract, the notion of a continuum of processed goods has considerable appeal in the context of the current problem. One way to think about the phenomenon of a region undergoing gradual economic growth and industrial diversification is to conceive of it as moving rightwards along the Z axis, exporting goods that were formerly produced for the local market only, and substituting local production for commodities formerly imported. The notion of westward shift amounts to a belief that the western economies are undergoing precisely this type of gradual economic maturation. The emergence of world-scale petrochemical plants can be depicted as a movement of a commodity from the non-traded to the export category for example, while the development of a western steel industry is a good example of import substitution. It also ties into the other notion inherent in the westward shift discussion -- that is somehow coming at the expense of Gross Provincial Product in the East. In a static world such as in Figure 1, this is clearly possible. A movement rightwards along the Z axis via an expansion of export or import substitution type industries is clearly replacing production from either the East or offshore.

The DFS model is also useful for present purposes in that it provides the comparative statics behind a movement

along the Z axis. In terms of Figure 1, the equilibrium threshold commodity will lie further to the right as the A(Z) curve and the B(Z) curve shift rightwards. The A(Z) curve would shift in this manner if there were a decrease in a_i relative to a^*_i for some or all i. In the context of the discussion of Section II, this could result from a growing locational attraction to cheap or secure energy supplies or from government subsidies to industries. In any of these cases there would be an increase in the range of processed goods produced in the West, and an increase in its relative wage rate. The position of the B(Z) curve will depend on the relative sizes of the labour forces. Population will reallocate in response to changes in relative wages as well as to lower tax rates in the West, or a higher expected probability of securing employment within a certain period.

These few examples far from exhaust the types of comparative static exercises possible, or the institutional factors that might initiate them. Enough has been said however to indicate why the DFS framework was chosen for the present problem, and how it can be fitted to the concept of westward economic drift. The remainder of this section will accordingly use a version of the model to trace through the interregional implications of the large oil price increase.

Figure III-I

The DFS Continuum

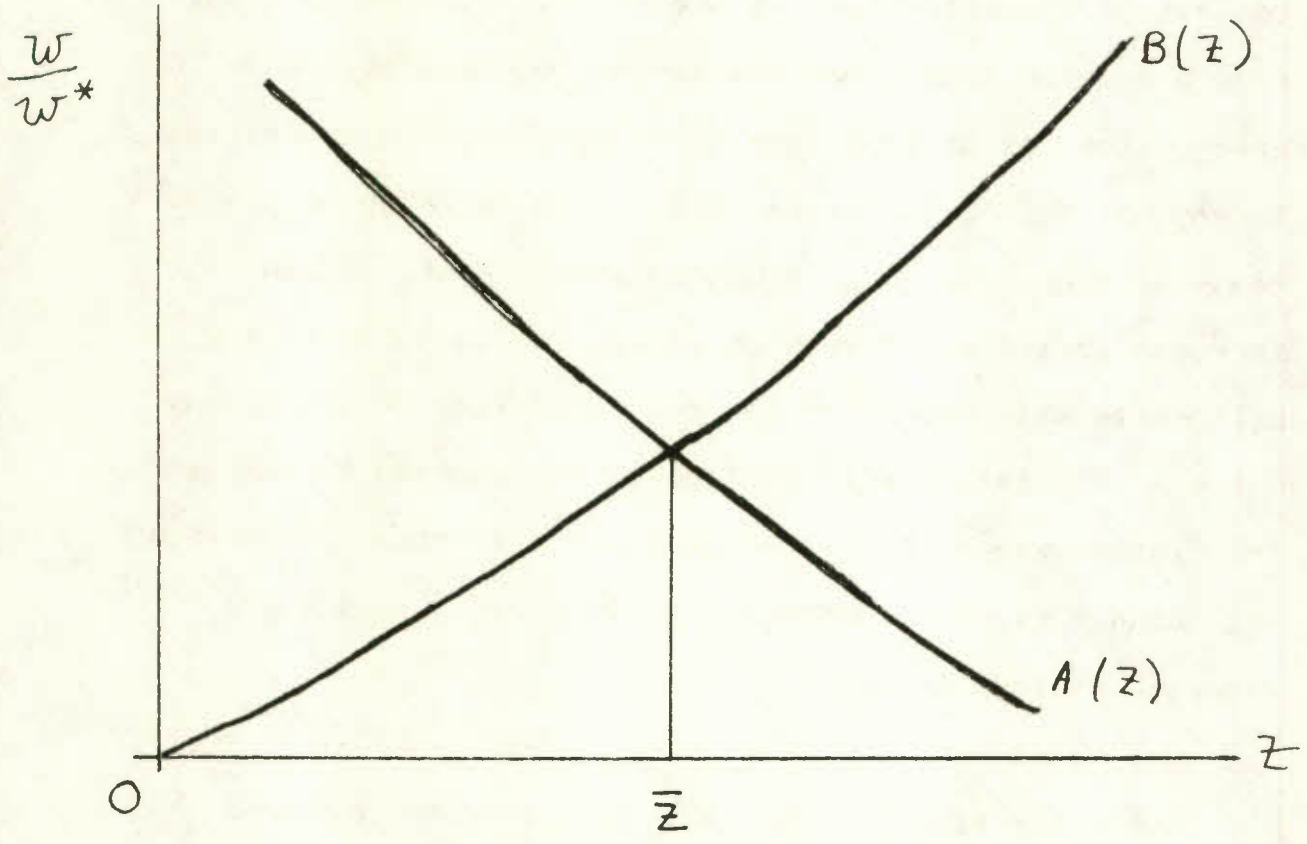
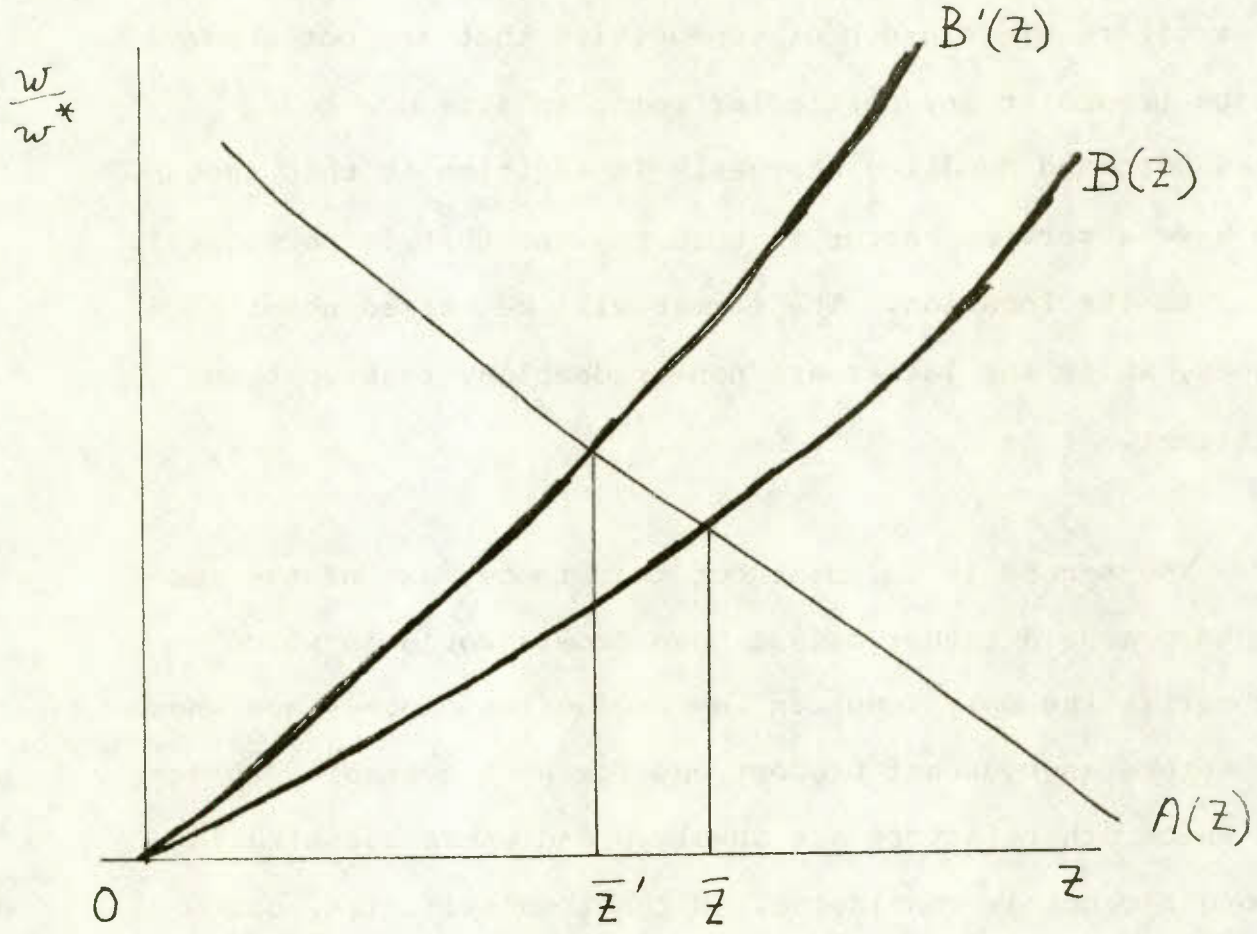


Figure III-2

Impact of an Oil Price Increase

on the DFS Continuum



Two warnings should be issued before proceeding further. The first is a reminder that we are only using the DFS continuum concept for the manufacturing sector. Within that, there are a group of commodities that are not observed to be traded at any particular point in time due to transport and handling charges. In addition to this though, we have a service sector in both regions that is necessarily tied to its location. The former will be termed non-traded goods, while the latter are non-tradeables, to keep them distinct.

The second is to point out that in our use of the model we have made a rather casual jump from a world in which labour is the only input in the production process and where it enters in constant proportions for each commodity to one in which other factors are involved and where substitution among factors is considered. Without substitution, one might possibly think of a constant mix of factor inputs per unit of output, replacing the a's, and of a weighted index of factor prices instead of w. With substitution among factors however, the situation becomes enormously complex. While it certainly would be useful to attempt to reformulate the DFS model rigorously along these lines, we chose instead to focus on attempting to apply the general concepts that come out of the model to the westward shift topic. Since it

is used here to clarify the basic factors inherent in the interregional adjustment to higher oil prices rather than as a basis for any formal econometric work, this rather casual extension of the model was judged to be appropriate.

We begin with an initial equilibrium situation where the West exports a volume of crude oil and a limited amount of processed goods to the East and abroad and imports an equivalent amount of manufactured products. The East, because it is larger and more completely industrialized, has a comparative advantage in a much broader range of manufactured products. Trade for each region is balanced initially, although not necessarily bilaterally. The system is shocked by a large exogenous increase in oil prices, with the East's demand assumed to be price inelastic.

c) Independent Regions with Their Own Currencies and No Factor Movements

i) Flexible Exchange Rates

Assume that the East and West are both independent regions with their own currencies and freely floating exchange rates. There are no factor movements between the regions. This the simplest form of the transfer mechanism,

but it does indicate the nature of the adjustments that need to occur.

In the West the rise in the price of oil creates an incentive to expand this sector's output, and capital and labour are drawn to the industry. With fixed factor supplies this means that the output of at least one other sector must fall. If capital and labour can be substituted for oil in manufacturing the effect on its output will be even more pronounced, as the factor supply constraint becomes even more binding. In the East the increase in the price of oil will lead to a substitution of capital and labour for oil within the manufacturing sector. This means a reduction in the output of both manufactures and services given the assumption of fixed supplies of capital and labour. The reduction in the demand for oil will reduce the size of the imports somewhat, lessening the transfer impact.

The East still has to cover its larger import bill, in this model via an offsetting increase in the value of manufactured goods it exports. The West, on the other hand, has to increase the value of manufactured goods it imports. The questions then are how the West is led to purchase extra products, and how the East is induced to free some local production for export. There are two complementary effects here. The first follows from the fact that the terms of

trade effect has meant a real income increase for the West and a real decrease for the East. Westerners will spend part of their additional income on non-tradeable services which, since they must be produced locally, will attract factors away from the export and import competing manufacturing industries. Imports of these products will rise as a result. In the East the converse is true. The fall in real income will reduce the demand for locally produced services, allowing some factors to be transferred to the manufacturing sector.

Secondly, the appearance of a trade surplus in the West and a deficit in the East will cause an appreciation of the former's currency and a depreciation of the latter's. Western consumers will be induced to substitute eastern and foreign manufactured goods for western ones until the trade balance is re-established. There will be an increase in the volume of traditional imported goods (autos) as well as the movement leftward along the continuum of manufactured goods, with some of the West's import competing industries disappearing in the face of increased imports. In the East the exchange rate movement will have the opposite effect. Export and import competing industries will expand and imports will contract. These adjustments will continue until trade balance is re-estasblished for each region.[8]

When the adjustment is complete the East will end up with a lower total real output (to an extent dependent upon how freely capital and labour can be substituted for oil in the manufacturing sector), and an even lower real absorption of goods and services. Production facilities formerly employed to produce goods for local absorption will now be used to produce the increased flow of exports needed to offset the increased real expenditures on oil. There will be increased volumes of shipments from already extant export industries (autos) plus the emergence of new exports from sectors previously classed as non-traded (e.g. furniture). In the West there will be a reallocation of resources away from the manufacturing sector. Real absorption will have risen by the amount of the terms of trade effect. Westerners will consume more of the goods they already import (e.g. autos), will develop new imports (e.g., furniture) and will export fewer manufactured products, all to an extent depending on the relative income elasticities plus the technological nature of the manufactured goods continuum.

The main point that comes out of this is a simple but important one. Ultimately the increase in the price of oil must lead to a net increase in the flow of manufactured products into the West, while the need to pay more for oil

imports must eventually result in a net new real export surplus of processed goods by the East. The East is worse off by this since it has to export goods it could consume formerly. And the West is better off in the sense that for the same volume of petroleum exports it gets access to a larger flow of manufactured goods. But as regards incentives for industrial production (and services that can be traded), the implication is a contraction of such capacity in the West and an increased dependence on imports. The western region ends up being even more of a staple economy, albeit a richer one.

ii) Fixed Exchange Rates

The next logical question to pursue is how the adjustment proceeds if we retain all of the above assumptions but assume that the exchange rate is fixed by the monetary authorities of the two countries. The resource reallocation within the West towards oil and away from the other sectors proceeds as before, as do the substitution of capital and labour for oil in the East and the demand effects following the real income changes in each region.

The increased expenditure on oil leads to an inflow of foreign exchange to the West and a drain from the East. In the absence of explicit sterilization measures the money

supply will increase in the West and contract in the East. This results in a relative inflation in the West, a deflation in the East, and increased shipments of manufactured goods to the West and from the East until trade balances are re-established. The rising prices in the West induce a substitution of imported manufactured exports for domestic ones and for services. In the East there will be a substitution of locally produced goods for those formerly imported, providing the opposite effect. The net result is the same as in the flexible exchange rate case. Eastern real output falls slightly (if factor substitution takes place), but real absorption falls more with the difference representing the real resource payment for the higher valued oil.

The question then is how, if at all, a more realistic institutional setting could reverse this conclusion; that is, how an increase in the relative price of oil could actually lead to an expansion of the western industrial and service sectors at the same time as the oil sector expands, and as the eastern sectors contracts as a direct result.

d) A Monetary Union with No Factor Mobility

Assume now that the two regions are part of the same monetary union with exchange rates fixed at one. There is

still no interregional movement of labour or capital. Assume also that a national branch banking system exists, and that there is a range of financial assets available within the country. Some are accepted natinally (i.e. are transferable) such as Canadian government bonds while others are more regionally specific (e.g. municipal or local corporate bonds).

i) Immediate Adjustment

The immediate effect of an oil price increase is a reduction in deposits in eastern banks and an increase in those in the West. Eastern banks find themselves short of reserves while western ones are holding excess reserves. Western banks react to this by increasing their asset holdings and those in the East are forced to reduce theirs. To the extent that transferable assets are involved, this exchange can take place with virtually no effect on asset prices. The increased demand by western banks is exactly offset by an increased willingness to supply them out of eastern holdings.

This is the reason why the transfer is accomplished so effortlessly in the short run. The increased inflow of funds to the West for oil is exactly offset by a capital outflow, with only a transfer of wealth involved. The West

in effect lends money to the East to cover its oil import bill. The fact that the same currency is used and the exchange rate necessarily pegged eases the adjustment rather than hinders it in the short run at least, since by removing the exchange rate risk it facilitates the offsetting capital flow. A branch banking system such as Canada's is a further facilitating factor in the adjustment.

ii) Longer-Run Adjustment

This exchange of assets can only delay the time until the real economic adjustment has to be made, however. There are natural economic mechanisms which begin to work to effect the real resource transfer. In the first place the increasing wealth in the West will tend to increase consumption levels there, while the reverse happens in the East. Part of the additional consumption expenditures will be directed towards imports, some of them from the East. Easterners will consume less of these goods themselves, thereby freeing them for export.

As long as the marginal propensity to save is positive, however, a simple income effect is insufficient to fully effect the transfer. There must be accommodating price effects as well. These come about via the expansion of demand in the West for its own manufactured products and

non-tradeables, with the reverse effect taking place in the East. The reallocation of productive factors towards the oil sector in the West exacerbates this relative price change as well. The prices of imported goods fall relatively in the West, inducing a substitution towards them and away from locally produced ones. In the East there will be relatively greater fall in the price of non-tradeables (since the falling demand for the tradeables is offset to some extent by the increased export demand for them), implying a substitution towards them and away from manufactured goods. Thus the combination of the West's increased willingness to purchase imported (including eastern) manufactured goods along with the East's disinclination to consume them themselves makes their export possible. More export-type goods will be sent, and some new eastern export industries will emerge along the manufactured goods continuum. This price effect complements the real income effect in bringing about an export surplus in processed manufactured goods to offset the higher oil import bill.

A complementary effect is possible if the eastern banks attempt to sell and western banks buy less readily transferable assets in response to reserve changes. Prices for eastern-specific assets have to fall if western banks are to be induced to hold them. This fall in asset prices means

interest rates rise, choking off some investment and hence real income, with a corresponding decline in imports. The relative price effect sketched out above is operative again, with the price of non-tradeables falling relative to tradeables, thereby freeing the latter for export.

An additional longer run adjustment would result if the chartered banks in the West reacted to their increased reserves by expanding loans in the West, while eastern banks eventually began to call in some of theirs. This increase in the money supply in the West and contraction in the East will tend to push down interest rates in the former region and increase them in the latter. With this, the real income effects via changes in investment come into play, helping to effect the transfer.

The same effects prevail even if it is the case that the government rather than the residents receive the oil revenues, and that it invests them exclusively in western-based assets, (e.g. Heritage Savings Trust Fund type investments). The increased demand for regionally based assets will raise their price and hence lower the rate of return. In the process a disequilibrium "wedge" will be created between the return available on these and on other types of assets. Private investors will switch from regionally based assets to the more nationally traded ones.

Thus the eastern banks will still find buyers for the assets they wish to sell, and the immediate financial transfer proceeds as before. The real transfer begins as above, with changes in wealth eventually affecting consumption and import volumes, and the lower interest rates stimulating investment, real income and imports again. Thus even this type of "block buying" will not thwart the short-run and longer-run adjustments.

iii) Summary

All of the models discussed thus far predict the same long-run adjustments to an exogenously given oil price increase. There is an absolute increase in the sizes of the oil and service sectors in the West and an absolute decrease in the manufacturing one as a consequence of the induced reallocation of capital and labour. The increase in the terms of trade imparts a real income increase to the West, reflected in the increased manufactured goods it is able to purchase for a given volume of oil exports. The East suffers a real income drop. Absorption declines freeing resources to produce the additional exports. A greater volume of traditional export goods are sold, and some new export industries emerge.

These results follow necessarily because of two key features of the models. The assumption of regionally fixed factor supplies implies first that the expansion of the oil and service industries must come at the expense of the manufacturing one, as capital and labour are bid away. Since the West has an increased demand for manufactured goods but a reduced capacity to produce them it turns increasingly to imports. Its own factors are more profitably employed in the energy and related industries.

The other factor that determines the outcome is the economic necessity that an initial trade imbalance must eventually be re-equilibrated. The real adjustment can only be postponed for as long as westerners are content to hold eastern assets. The increased expenditures on oil imports are offset by a capital inflow to the East in this event. But eventually it must be true that the East comes to export more manufactured goods and the West to import more. This real transfer counterpart to the financial flow from oil comes about via income and price effects outlined above. As with the assumption of fixed factor supplies, the West ends up absorbing a greater volume of traditional export products (autos) plus importing some products that it formerly produced for itself, and the East ends up exporting more of the products it formerly produced for internal usage.

The real income transfer is an inevitable consequence of a change in the terms of trade. Any region or nation in any setting must eventually offset a greater expenditure on one of its imports by an equivalent increase in real exports. Abstracting from economic growth for the moment, this means that domestic absorption of these same commodities must fall to free them for export. By the same token an increase in export receipts by an oil producing region must eventually be offset by an increase in imports of other goods. As shown, there are income and price effects which, however slowly, will eventually ensure that this readjustment occurs. Thus the predictions that emerge from this feature of the model are immutable. It is time, however, to drop the assumption of factor immobility among the Canadian regions.

e) Monetary Union with Factor Mobility

The assumption of factor mobility alters the adjustment process significantly. To see this, it is useful to interpret the discussion to this point in terms of Figure 2. With factor supplies given to each region, the increase in the price of oil will cause an upward shift of the B(Z) curve. For any given Z, the western wage would have to rise relatively to equate the expenditure on western goods to the value of output. Alternatively, for any given relative wage

the range of manufactured products produced in the West would have to be less if trade is to be balanced. The adjustment to the oil price increase discussed above involved both these effects. Western wages rose relatively as a result of the excess demand for labour created by the induced expansion of the oil and service sectors. These rising incomes led to a greater volume of traditional imports. In addition, the increase in the relative wage rate reduced the competitiveness of western manufacturing industries, allowing the East to develop markets in the West for these new products. Together these increased flows of processed goods westward "paid for" the more expensive oil.

With factor supplies endogenous and responsive to wage differentials however, there will be an offsetting rightward shift of the B(Z) curve. Consider the adjustment consequent upon an increase in the price of oil. The expansion of the oil industry together with the fact that part of the real income increase will be spent on non-tradeables requires a diversion of factors from the manufacturing sector. It is this excess demand which drop up western wage rates when factor supplies were assumed fixed. Now, however, the excess demand leads to a factor inflow, that is a decrease in L^*/L, and a rightward shift of B(Z). Part of the excess demand for labour in the West is met by increased supplies, while part of the excess supply in the East is removed by

emigration. Hence w/w^* rises by less, meaning that the reduction in the range of manufactured goods produced in the West will be less. If factor inflows are perfectly responsive the relative wage cannot change at all, implying that the induced rightward shift of the B(Z) curve must exactly offset the leftward movement, with no change at all in w/w^* and $\bar{Z}$. In this extreme case the West maintains the exact industry mix it had prior to the oil price increase. In the event of any inelasticity at all in factor supplies to the region, even this initial industrial base is eroded by the incentives to increased specialization.

Before concluding this section it should be noted that the above analysis has only considered the transfer problem associated with the shift in the terms of trade between the two regions. A complicating factor arises if the expansion in the returns to oil production in the West induces easterners to invest in the region. This capital outflow from the East adds to its balance of payments problems, meaning that an even greater net movement of real resources must eventually result. This is the original form of the Viner transfer problem of course -- the process whereby a financial investment into Canada ended up as a real transfer of capital.[9] Mansell and Wright (1979) estimate that at minimum cost the goal of Canadian energy self-sufficiency would involve capital expenditures in the Prairies amounting

to 60 billion dollars (1977 $) over the period to 1994. To the extent it is to be financed out of eastern savings, the transfer adjustment requirement is exacerbated, though this process will be reversed over the longer run when the West is forced to repay these loans.

To this point in the analysis there is still no evident mechanism whereby the increased oil prices initiate a process of industrialization and economic diversification in the West. In terms of Figure 1, such a link requires being able to demonstrate that the A(Z) and B(Z) curves will shift to the right in response to the oil price change. In all case analyzed to date though, precisely the reverse has been true. The following two sections look at some additional factors beyond the scope of the models used above that might be expected to promote rather than retard diversification.

f) Additional Considerations

The first factor to consider relates to the rather controversial concept of minimum threshold size. The immigration in response to excess demand for labour discussed above increases population in the West. The larger the western population, the more likely it is that some industries will find it increasingly profitable to locate within that region to serve the local market and

thereby avoid transportation costs. This phenomenon is especially true the more important are scale economies in some industries. A former export industry for the East becomes an import competing one for the West, and the larger scale of operation may allow some existing western industries to move into export markets.

The same process can be true of tradeable services such as banking as well. With only a small amount of large scale financial activities normally arising in the West, it would pay to service them from eastern headquarters. But as the number and magnitude of such projects rises, transactions costs may be significantly reduced by decentralizing some of these activities. Locally based personnel will have a more intimate knowledge of local markets, and may be able to specialize in certain types of financial transactions (e.g. oil sector ones). This is likely the explanation for the increased presence of the chartered banks in Alberta. Further, as the industry mix widens agglomeration economies become more important. Some firms will find a western location increasingly attractive simply because other firms have been induced to move there first. The East faces the opposite effect of course as the region losing population.

In terms of the theoretical framework utilized throughout, this scale effect-agglomeration economies argument is

tantamount to postulating a rightward shifting A(Z) curve in Figure 1. Western cost curves will be shifting downwards relative to eastern ones as the scale of economic activity increases. This process can be self-reinforcing too. As the range of industrial production expands in the West an excess demand for labour is created. The migration that responds to this adds to the population, creating yet more scale economies to exploit, and so forth. If there are a large number of these technical possibilities, and population is sufficiently responsive, then the process could go on for some time. The region will have reached that elusive threshold size, and entered a period of self-sustaining economic growth.

While the process sketched above is plausible enough in the telling, to date we know very little about the importance of size in regional economic growth. Certainly the growth pole literature assumes it is very important. The Economic Council of Canada (1977, 131) concluded that the benefits from agglomeration economies were positive but small, and that they likely only existed for urban centres below 1.4 million inhabitants. Other studies [Mera (1973), Sveikauskas (1975), Segal (1976)] also find that productivity increases somewhat with urban size, although there is some doubt as to exactly what they are capturing

with their estimating equations. We return to this aspect in the empirical section below.

The absolute size of the market has been increasing in the West, particularly in the Prairie provinces. It is important to recall, however, that Central Canada is still the largest and most dense market in Canada. Table III-1 provides statistics by region of the size and change in census metropolitan areas between 1961 and 1976. The population of these areas is the best measure of large urban agglomerations available. The population of census metropolitan areas in Central Canada grew by 502 thousand between 1976 and 1971 compared to 278 thousand for the West. Moreover the population of census metropolitan areas in Central Canada was 9,002 thousand compared to 3,272 in Western Canada. The growth of the Western provinces must be acknowledged, but in terms of absolute size and growth Central Canada still is the dominant market. The other fact to consider in assessing urban agglomeration is the proximity between census metropolitan area. Two outstanding features of urban development in the West are the small numbers of census metropolitan areas in each province and the large distances between them. In Central Canada, however, the census metropolitan areas are not only more in number and larger in size but generally are much closer together. Thus, although urban growth in the West has been

Table III-1

Comparative Statistics of Census Metropolitan Areas, 1961-76

(thousands)

	Δ	1976[1]	1971[1]	Δ	1971[2]	1966[2]	Δ	1966[3]	1961[3]
British Columbia	107			170			121		
Vancouver	84	1,166	1,082	149	1,082	933	102	892	790
Victora	23	218	196	21	196	175	19	173	154
Prairie Region	171			193			187		
Calgary	67	470	403	73	403	330	52	331	279
Edmonton	58	554	496	70	495	425	64	401	338
Regina	11	151	141	8	140	132	19	131	112
Saskatoon	7	134	126	11	127	116	20	116	96
Winnipeg	28	578	550	31	540	509	32	509	477
WEST	277	3,272	2,995	363	2,985	2,621	308	2,553	2,245
Central Canada	502			797			923		
Ontario	386	5,529	5,144	580	5,072	4,491	541	3,831	3,290
Quebec	116	3,473	3,357	217	3,357	3,141	382	2,850	2,468
Atlantic Provinces	35	524	484	30	462	432	29	400	371
Canada	814	12,799	11,985	1,190	11,875	10,685	1,260	9,635	8,375

Source: Statistics Canada, 98-806[1], 92-708[2], 92-607[3].

Definition of a CMA: The main labour market of urbanized core having 100,000 or more population. They contain whole municipalities or census subdivisions. CMA's are comprised of (1) municipalities completely or partly inside the urbanized core, and (2) other municipalities of (a) 40 per cent of the employed labour force living in the municipality works in the urbanized core of (b) at least 25 per cent of the employed labour force working in the municipality lives in the urbanized core. (Statistics Canada, 99-819).

large it is not clear that it has been sufficiently large or distributed in such a way that some minimum threshold level of populaton has been reached. Until more is understood about this phenomenon, it seems impossible to be any more precise than this.

A second factor is that the dramatic energy price increases and the perception of a scarcity could mean that fundamental location factors are shifting for a few key industries, even independently of explicit government regulation. It is often suggested for example that the current relative abundance of natural gas over crude oil gives western petrochemical firms an advantage over eastern ones such as Petrosar, based as the latter is on crude oil feedstocks. This argument is uncertain however since the western advantage is at best a transitory one. Cheap natural gas will attract customers away from oil wherever possible (e.g. home heating), increasing the demand and hence the price until there is no longer an advantage to conversion. Only if its disequilibrium is long lasting, so that it pays to locate in the West to take advantage of it, or there is explicit regulation of exports and prices, should basic locational factors be altered. If the first circumstance is relevant, then it must also be true that agglomeration economies and the like give the region a

long-run locational advantage, even after natural gas prices have adjusted.

It is not likely that there has been or will be much westward shift because of the effect of rising oil and natural gas prices in production costs. Melvin (1976) for example has examined the effects of both uniform and regionally differentiated energy price increases on the competitive position of Ontario industries. In the case of uniform increases in the price of Petroleum and Coal across Canada Ontario would benefit relative to the rest of Canada (Melvin, 1976, 41). Only the agricultural and agricultural products sector in Ontario would suffer a major competitive disadvantage relative to the rest of Canada. Even in the case where Ontario was the only province to experience an increase in petroleum prices the impact appears to be slight. Melvin's conclusions on this point are worth quoting (Melvin, 1976, 41),

"It does seem clear, however, that even if Ontario were the only province in which petroleum price rises occur, the over-all price effect for most industries would be very moderate. And if Ontario enjoys a comparative advantage in the production of a wide range of manufactured goods, as is commonly supposed, it seems very unlikely that such a

petroleum price increase would have much of an effect on this position."

It is useful to examine in greater detail those industries which are large consumers of natural gas. This will indicate how important reductions in its price would be in causing firms to relocate in the West. The Ontario government publishes comprehensive statistics on energy consumption by manufacturing industries in Ontario. Table III-2 provides some idea of the composition of energy consumption by energy category and industry. Electricity is the dominant energy input, but the importance of natural gas has risen substantially since 1971. The energy intensive industries in Ontario appear to be those located in the province because of market or resource endowment considerations. Pulp wood endowments would be the main consideration for the location of the pulp or paper mills. Similarly, the size of market and access to ores would be prime determinants for the location of smelting and refinery firms. Transportation costs and size of market consideration would also dominate location decisions for manufacturers of Industrial Chemicals, Cement and Abrasives. The list of the 10 largest users of natural gas in Ontario in 1977 provided in Table III-3 bears out the conclusion that differences in natural gas prices would probably have little influence on the location decision of firms. Some industries are large users of natural gas only because they

Table III-2

Expenditure on Energy by Ontario Manufacturing Industries, 1971, 1974 and 1977

Panel A

	1977		1974		1971	
	$ million	%	$ million	%	$ million	%
Electricity	499.6	38.1	281.2	40.6	201.2	44.3
Natural Gas	468.7	35.8	192.9	27.8	112.6	24.8
Fuel Oil	196.8	15.0	130.2	18.8	66.0	14.5
Gasoline	43.3	3.3	34.5	5.0	26.5	5.8
Coal	25.2	1.9	20.5	3.0	32.8	7.2
Other	77.1	5.9	33.4	4.8	15.2	3.4
Total	1310.7	100.0	692.7	100.0	454.3	100.0

Source: Consumption on Fuel and Electricity by Ontario Manufacturing Industries Ministry of Treasury and Economics, Central Statistics Services.

Panel B

Industries	1977	1974	1971
Pulp and Paper	266	118	176
Industrial Chemicals	388	193	181
Smelting and Refining	278	224	234
Cement Manufacturers	398	312	242
Abrasives Manufacturers	227	185	204
Lime Manufacturers	532	571	530
Miscellaneous Petroleum and Coal Products	-	197	174
Per Cent of Total Value Added	7.2	8.4	7.3
Per Cent of Total Energy Consumption	39.2	37.2	37.4

Source (IBID): An energy intensive industry is defined as an industry whose energy cost per thousand dollars of value added are at least three times the provincial average of:

1977 $58.11
1974 $38.09
1971 $39.21

Table III-3

Ten Largest Users of Natural Gas Ontario, 1977

Industry	Amount Used ($ million)	Quantity Used (MCF) Per $1000 of Shipments
Pulp and Paper Mills	76.4	29
Industrial Chemicals	73.1	29
Iron and Steel Mills	63.3	12
Smelting and Refining	20.5	33
Glass and Glass Producers	15.8	26
Motor Vehicle Parts and Accessories	15.1	2
Petroleum Refining	11.5	2
Cement Manufacturers	10.5	45
Beverage Industries	9.1	3
Motor Vehicle Manufacturers	8.8	1

Source: Consumption of Fuel and Electricity by Ontario Manufacturing Industries 1977, Ministry of Treasury and Economics, Central Statistical Services.

are large industries, not because they are intensive users of natural gas. The motor vehicle, motor vehicle parts and accessories, and beverage industries fall in this category. The intensive users of natural gas (in terms of MCF per $100. of shipments) such as Cement, Smelting and Refinery, Pulp and Paper, Industrial Chemicals, Glass and Glass product industries would find that market size and transportation cost disadvantages would probably outweigh any savings in energy costs. The cost of transportation has risen as a result of rising energy costs, making distance from the market an even greater handicap.

A further factor is that rising energy prices increase the transport costs involved in moving manufactured goods into the West. In DFS terms, the range of non-traded goods increases, implying that the West will find it increasingly advantageous to produce locally goods that were formerly imported. Offsetting this though is the fact that the reverse is also true. Western export industries are at an increasing disadvantage in export markets. The first effect exacerbates the transfer process while the second one eases it somewhat.

It will be recalled from Section II that the oil price increase has coincided with a boom in other primary product

industries. As regards the interregional adjustment to higher oil prices, this fact of a concurrent boom has mixed effects. The rise in the returns to non-oil primary production in the West (e.g. potash, coal, uranium) implies a further bidding away of factors from the manufacturing sector, and hence additional upward pressure on its costs. The offsetting tendency comes if this excess demand for factors leads to increased immigration. This adds to the likelihood of favourable agglomeration economy effects in the West that may be developing already due to the expansion of the oil sector. Western import propensities may be falling, in other words. And to the extent that it is eastern or foreign companies who are investing in western resource developments there will be a further need for a real resource transfer, although this will also eventually be reversed when repayments commence.

g) Provincial Government Revenues

To this point the analysis has proceeded under the assumption that all resource revenues were appropriated by private landlords. This was done to focus attention on the natural or market adjustment to a change in the regional terms of trade. In fact, of course, the provincial governments have retained title to a considerable portion of the petroleum reserves, and have received substantial

revenues thereby. This has provided them the wherewithal to, depending on the province, increase expenditures, reduce taxes, assume ownership of key industries, and even save in the form of Heritage Savings Trust Funds. Actions such as these could certainly be expected to affect economic growth in the West, and to draw the attention of the other less well advantaged jurisdictions. We conclude this section by considering how province-building exercises based on resource revenues might affect western industrialization prospects. Section V picks up the interregional fiscal imbalance issue.

The link between provincial government resource revenues and westward shift can be put quite simply. A jurisdiction with such revenues and bent on promoting economic development can use them to subsidize the more mobile factors of production such as capital and labour. By making provincial residence a condition of enjoying these subsidies, the region can potentially attract a stock of factors and a mix of industries in excess of what economic conditions would otherwise allow. This subsidy provision can be complemented upon occasion by exercising regulatory power over specific projects.

A province can attract labour by providing attractive fiscal benefits to its residents. That is, it can use

natural resource revenues to provide goods and services at the rates well below what individuals perceive the benefits to be, and below the rate other jurisdictions can offer. If it is assumed that labour considers the relative price of government services when making migration decisions, these low tax rates will increase the flow of migrants associated with any given real wage difference. Workers will continue to move to the low tax region, depressing the marginal product there and increasing it in the one they left, until the margin the fiscal benefits they perceive are exactly offset by the lower private sector compensation.[10]

Expressed another way, real wages in (say) Alberta can be lower than real wages elsewhere in equilibrium since real incomes are still the same (abstracting from locational preferences). In terms of the DFS model, this is equivalent to an exogenous increase in the size of the western region. The "B curve" shifts down along the "A curve", implying an expansion in the range of goods produced within the West. The tax subsidy allows wages to fall relatively and hence reduce firm's average costs, meaning that more western-based firms will be able to compete with imported products, and some import competing goods might become viable exports. This is one important way in which the industrial structure of the West might be expanding as a direct result of the oil

boom, especially as it will complement any threshold effects above.

For this to be effective though the government must be successful in capturing a large share of the resource rents. Copithorne (1979) has suggested that when these revenues are captured by the private sector some accrue to labour, making the region a high-wage area instead. This outcome could result if the labour market in the resource sector were characterized by bilateral monopoly and the union accepted as the wage-setter in the province. The mechanism of rent distribution (private vs public) is clearly important in determining whether diversification of the industrial structure is promoted or retarded.

The Alberta government's intention of altering the rate of return to capital in locally based manufacturing and service industries is another example of fiscally induced factor flows, although all provinces are guilty of this practice to some extent. This is done by subsidies and regulatory advantages such as preferred access to natural gas feedstocks. That is, the government is attempting to force a rightward movement along the manufactured goods continuum. They intend to import fewer manufactured goods, not more, and perhaps even to increase their export of these. As with tax breaks, this leads to lower average

costs for any given relative wage rates, implying a cost advantage to western-based firms and depicted as a rightward shift of the A(Z) curve. If the capital investment in these new industrial ventures (e.g. petrochemicals) comes from outside the region, then there is an additional further real transfer to effect initially.

h) Summary

The argument of the paper thus far can be summarized as follows. The initial stimulus to the current western economic expansion was the commodity prices boom beginning in the early 1970s and, in some cases such as energy products, stretching through to the present. Since with the exception of non conventional oil developments this represents upswings in the fortunes of traditional staple industries for the region, and since historically these same staples have led to only limited economic diversification, there seems to be no necessary reason to expect a westward shift of manufacturing and service industries currently. Any shift that does exist must be a result of one or more of, a) the appearance of new energy sector projects with substantially greater linkage effects; b) higher energy prices altering basic locational determinants of key industries (although this was judged to be improbable except perhaps as a transitory disequilibrium phenomenon);

c) deliberate provincial government efforts to promote economic diversification via subsidies, tax breaks and regulatory changes; d) the western economies attracting enough population via the expansion of the primary industries and linked activities or cheap public goods such that it is beginning to achieve minimum threshold size for a significant variety of industries.

Against these considerations though must be set the fact that other basic economic forces are operating in exactly the opposite direction. The increase in the price of energy products means both a relative attraction of western factors of production towards those sectors and a large export surplus. The adverse effects of the factor reallocation can be offset partially or completely by immigration as was seen, and this increased population can in turn increase the range of goods that it is profitable to produce locally if the threshold argument is applicable. But the other effect cannot be offset. The export surplus in the West for as long as it exists be counterbalanced by an equivalent larger net inflow of processed goods and services. This adjustment can be delayed for as long as the West is willing to lend capital outside the region. But eventually, if only because increasing wealth raises consumption levels, net imports must rise. And the price

effects which help bring this about do so by discouraging production of manufactured goods in the West and encouraging it in the East.[11]

With this historical background and brief theoretical discussion in mind, it is time to turn to the empirical evidence available on westward economic shift. The following section examines the economic growth of the western economies since 1973 for evidence of structural changes, while Section V pursues the interregional adjustments issues further.

Footnotes

1 For a survey of the literature on this, see Berndt et al (1980).

2 To the extent that all the oil companies capture a share of the rent the shareholders will be better off. There is no obvious regional aspect to this transfer though since there are no residency requirements involved. The income redistributions here are interpersonal or international instead.

3 And for Canada vis-a-vis the rest of the world to the extent we are net importers.

4 See, for example, Ellsworth and Leith (1975).

5 A partial list of references on the transfer process in an interregional context would include Scitovsky (1969), Kenen (1976), Von Neumann-Whitman (1967), Ingram (1962), Romans (1965), Bowsher et al (1957), Armstrong and Taylor (1978), Courchene (1978), and Courchene and Melvin (1980).

6 This section is a highly simplified and condensed summary of work currently underway on a general equilibrium model of interregional economic adjustment. Courchene and Melvin (1980) approach the problem in a manner similar to our own.

7 This begs the question of what determines regional comparative advantage of course, just as the original Ricardian assertion of different unit labour inputs does. We employ the DFS continuum nevertheless because, as we hope to show below, it provides a particularly suitable framework for discussing notions of regional economic diversification.

8 It is impossible to predict a priori how much of the transfer will be accomplished by a straightforward increase in the flow of manufactured goods from East to West. Some of the West's additional imports will undoubtedly come from the rest of the world. The East's ability to increase its exports to these same countries will depend on relative exchange rate movements among other things. Thus it is quite likely that a portion of the real income transfer from East to West will be accomplished via changes in trade balances with third parties. This interregional versus international adjustment aspect is modelled more formally in our ongoing work. For purposes of exposition here we proceed as if the main portion of the transfer takes place via eastern manufactured goods flowing west. At one point we

consider the implications of a setting where this could not happen.

9 See Viner (1924) and the subsequent work by Ingram (1957).

10 The fiscal induced migration literature goes back nearly thirty years to the Buchanan-Scott exchange. For a rigorous discussion of it see Flatters et al (1974).

11 Note that this does not mean that there cannot also have been an absolute expansion of goods producing industries in the West. If that is the case due to any of the factors discussed above, then the West's net larger imports will be increasingly concentrated in goods for which it has the greatest comparative disadvantage. In terms of the examples used above, the entire oil surplus will have to be offset eventually by increased imports of autos rather than autos and furniture, albeit to a larger western population. Since this is in effect saying that the West's marginal propensity to import eastern goods is declining, this implies that the real income adjustment will have to be that much larger.

IV Empirical Evidence on Westward Economic Shift

a) Introduction

The present chapter provides a survey of economic data for the West, with a view to determining whether an economic shift is underway. The very concept of "westward shift" is not well defined anywhere, however. The sources cited in Section I, for example, appear to apply the term to two quite different phenomena. There are references on the one hand to higher rates of growth for various macroeconomic variables in the West, with the implied increase in the region's share of economic activity. Others, however, appear to be arguing that there is an ongoing shift in the structure of the West's economy away from sectors in which it has historically specialized, and into ones which are more directly competitive with the manufacturing and service industry base of central Canada.

The ambiguity is increased by the fact that one definition of economic shift does not necessarily imply the other. A staple boom with a proportionate increase in the output of the various linked sectors, for example, might increase the absolute sizes of the western economies but it would not alter the basic structure at all. On the other hand, there could be a shift within the West towards new types of economic activities at the expense of the more

traditional ones such that the overall size was only slightly affected. While both processes are economically interesting, they clearly have different policy implications.

The second concept is more in keeping with the definition stemming from the DFS model discussed in Section III. Economic shift there would involve a movement along the continuum of goods (the Z axis) with the West exporting products it formerly produced only for internal consumption, and substituting for imported goods with domestic ones. In this case though the region would retain its original production, so its relative size should increase.

While the DFS model provides a useful conceptual framework within which to discuss the process of regional economic shift, and for that reason was employed extensively in Section III, it does not provide an immediately useful guide to empirical work. In Canada at least we just do not have the commodity composition of the output of each region in the necessary detail. In addition, the data on the interregional flow of manufactured products are still experimental and are available only for the two years 1967 and 1974. There are no comparable series for services at all. As a result, the empirical work that follows uses more traditional techniques such as shift-and-share analysis. Hopefully over time the growing interest in regional

economies will be matched by a better supply of useful data, and regional economics can begin to use the more sophisticated empirical techniques that are commonplace in other specialties of the discipline.

b) Evidence on Aggregate Economic Performance

Table IV-1 gives the compound annual growth rates for various macroeconomic indicators for the period 1961-1978, and for three sub-periods therein. The objectives in presenting the data are to determine how the western economies have fared relatively over the entire period, and whether an acceleration is evident in the 1970s. The sub-periods chosen are 1961-66, 1966-73, and 1973-78. The first one was a period of economic growth and prosperity for the country as a whole, while the seven years thereafter were ones of rising unemployment and inflation. Thus western economic performance can be measured against Canada's and Ontario's in both phases of a national business cycle. The final five-year period is the one of most interest, of course, with 1978 being the latest year for which consistent data are available.

Looking first at Manitoba, it can be seen that for the period 1961-78 as a whole her performance lagged behind the national average in all seven measures, and behind Ontario's

Table-IV-1

Compound Annual Growth Rates for Various Economic Indicators for Canada, Ontario and the Western Provinces, 1961 to 1978

	1961-78	1961-66	1966-73	1973-78
a) Gross Domestic Product at Factor Cost				
Canada	11.0	9.1	10.5	13.9
Ontario	10.7	8.8	10.7	12.5
Manitoba	10.1	7.4	10.0	12.8
Saskatchewan	11.1	13.8	6.9	14.6
Alberta	13.4	9.3	12.2	19.6
British Columbia	12.1	9.8	12.5	13.8
b) Real Domestic Product (1971)				
Canada	5.2	6.7	5.2	3.6
Ontario	5.0	6.8	5.4	2.9
Manitoba	4.4	5.4	4.7	3.0
Saskatchewan	4.8	9.2	1.5	5.2
Alberta	6.5	6.2	6.8	6.2
British Columbia	6.1	7.8	6.4	4.1
c) Population				
Canada	1.5	1.9	1.4	1.3
Ontario	1.8	2.2	1.8	1.3
Manitoba	0.7	0.9	0.5	0.7
Saskatchewan	0.1	0.0	-0.3	0.9
Alberta	2.3	1.9	2.1	2.9
British Columbia	2.6	2.8	3.0	1.9
d) Personal Income				
Canada	11.4	8.9	11.4	14.1
Ontario	11.2	8.9	11.5	13.1
Manitoba	10.4	7.3	11.0	12.8
Saskatchewan	11.6	13.6	8.7	13.8
Alberta	12.	8.9	12.0	17.2
British Columbia	12.3	9.3	13.0	14.4
e) Personal Income Per Capita				
Canada	9.8	6.9	9.8	12.6
Ontario	9.2	6.5	9.5	11.7
Manitoba	9.7	6.3	10.5	12.0
Saskatchewan	11.4	12.8	9.5	12.7
Alberta	10.1	6.9	9.7	13.9
British Columbia	9.4	6.2	9.7	12.3
f) Employment				
Canada	3.0	3.6	2.8	2.6
Ontario	3.2	3.6	3.2	2.6
Manitoba	1.8	1.6	2.0	1.8
Saskatchewan	1.6	1.3	0.7	3.1
Alberta	4.0	3.4	3.5	5.3
British Columbia	4.4	5.4	4.3	3.5
g) Retail Sales				
Canada	8.9	7.1	7.8	12.5
Ontario	8.6	6.8	7.7	11.7
Manitoba	7.7	5.5	7.8	10.0
Saskatchewan	8.3	7.3	5.7	13.4
Alberta	10.3	6.6	8.3	17.2
British Columbia	10.1	9.3	9.2	12.2

Source: Calculated from Conference Board (1979) and Statistics Canada 11-003.

in six of the seven (the growth in per capita income being the exception here). Virtually the same pattern is true for each of the sub-periods as well. Population out-migration has apparently allowed Manitoba to maintain its per capita income position. But in all other respects, whether it be an upswing or a downswing nationally, Manitoba has simply not kept pace economically. The only interesting exception to this is that her Gross Domestic Product (GDP) and Real Domestic Product (RDP) have grown ever so slightly faster than Ontario's since 1973.

Saskatchewan's record is more complicated. From 1961 to 1978 Saskatchewan exceeded the national and Ontario growth rates for GDP, personal income and personal income per capita, but lagged behind both in the other four categories. Her relative performance has fluctuated wildly though. The five years after 1961 spanned an agricultural boom, and the province surpassed the national and Ontario average growth rates in all but population and employment. The agricultural recession discussed above is clearly evident in the data for the following seven year period. Since 1973, however, Saskatchewan has grown relatively in all categories but population. The simultaneous booms in agriculture and energy products reversed the decline of the previous seven years, and allowed the province to maintain its relative position in the Canadian economy over the years since the early 1960s.

The real evidence of dramatically increased relative economic prosperity shows up in the Alberta data of course. Over the entire period the Alberta growth rate exceeds the national and the Ontario ones in every category. Alberta lost ground or held its own in the first sub-period of general economic expansion. Since then the province has consistently led the nation in economic growth. It fared substantially better in the uncertain years after 1966, something which is often overlooked given the gloomy projections that were being made at the time regarding future oil and gas developments. But the most vivid impression one gets from the data is the dramatic acceleration in this performance since 1973. In several of the categories the Alberta growth rate is over twice that of Ontario. Only her per capita income growth compares with the other provinces', and that because of the equalizing impact of the large population immigration. Little wonder then that there is at least the popular impression of an ongoing westward economic shift.

The record for British Columbia is basically that for Alberta, minus extremes. Since 1961 the province has surpassed Ontario's record in all categories, and Canada's in all but per capita income growth. The latter result is a continuation of the long-term decline in British Columbia's relative income status that is often noted (Economic Council, 1977). British Columbia fared better than Alberta

in the sub-period 1961-66, but has definitely not kept pace with the latter since 1973. If any generalization can be made about the years since 1973 in fact, it would be that British Columbia converged somewhat towards the national average in most of the categories. In four of them in fact, Saskatchewan's performance outstripped British Columbia's.

These data reinforce the general impressions of western economic growth since 1973. Alberta leads all other provinces by a wide margin. British Columbia and Saskatchewan follow, with British Columbia's population and employment gaining more rapidly but with Saskatchewan experiencing more rapid increases in aggregate output. Manitoba lags far behind, with an economic performance much more like an eastern province than a western one. This diversity of experiences should be kept in mind when referring more generally to westward economic shift.

The West has clearly experienced a relative economic gain since 1973, but the changes in its share of economic activity have been surprisingly small. Table IV-2 gives the regional distribution of Canada's population, real GDP and labour force for various years from 1961 to 1978. The proportion of the Canadian population residing in the four western provinces has only risen by 1.1 percentage point since 1961, with nearly all of that coming since 1973. The two westernmost provinces account for nearly 3 points more,

Table IV-2

Regional Shares of Population, Gross Domestic Product and Total Labour Force, 1961 to 1978

	1961	1966	1973	1978
Panel A - Regional Shares of Population				
British Columbia	8.9	9.3	10.5	10.8
Alberta	7.3	7.3	7.6	8.3
Saskatchewan	5.1	4.8	4.1	4.0
Manitoba	5.1	4.8	4.5	4.4
West	26.4	26.2	26.7	27.5
Ontario	34.2	34.6	35.9	35.9
Quebec	28.8	28.8	27.5	26.8
Central Canada	63.0	63.4	63.4	62.7
Atlantic Provinces	10.6	10.4	9.9	9.8
Panel B - Regional Shares in Real GDP (1971 Dollars)				
British Columbia	10.2	10.7	11.6	12.0
Alberta	8.2	8.0	8.9	10.1
Saskatchewan	4.1	4.6	3.6	3.9
Manitoba	4.6	4.2	4.1	4.0
West	27.1	27.5	28.2	30.0
Ontario	41.3	41.5	41.9	40.5
Quebec	24.9	24.6	23.7	23.3
Central Canada	66.2	66.1	65.6	63.8
Atlantic Provinces	6.7	6.4	6.2	6.2
Panel C - Regional Shares in Labour Force				
British Columbia	8.8	9.6	10.6	10.9
Alberta	7.6	7.6	8.0	8.8
Saskatchewan	4.9	4.4	3.8	3.9
Manitoba	5.3	4.8	4.5	4.3
West	26.6	26.4	26.9	27.9
Ontario	36.7	37.2	38.1	38.1
Quebec	27.9	28.2	26.9	26.0
Central Canada	64.6	65.4	65.0	64.1
Atlantic Provinces	8.8	8.2	7.9	7.9

Source: Calculated from Statistics Canada 11-003E and The Conference Board (1979).

with Saskatchewan's and Manitoba's shares falling continuously throughout the period.

The West's share of real GDP has increased slightly more since 1961, by 2.9 percentage points, with most of this again occurring since 1973. As before, Saskatchewan's and Manitoba's shares have fallen, although that of the former province is slightly higher in 1978 than it was in 1973. British Columbia and Alberta together account for 3.7 percentage points more in 1978 than seventeen years earlier. The westward shift of the labour force is even smaller than that for GDP; only 1.3 percentage point, nearly all of it in the final five year period.

One final indicator that is sometimes used in this context is the proportion of private and public capital and repair expenditures accounted for by a region. In 1967 the western provinces accounted for 34.0 per cent of the Canadian total. By 1973 the figure had fallen slightly to 32.1 per cent. There was a slight increase to 36.3 per cent in 1976, and this level has been maintained through to 1978 (Statistics Canada, 61-205). This very slight increase is consistent with the picture presented by the other series.

The conclusion to this point then is that there has been a slight increase in western Canada's share of population, GDP, labour force and new investment, but that

it is surprisingly small given the nature and extent of the economic changes discussed above. Clearly the economic boom in the region will have to continue at its current pace for a substantial period of time if there is to be any major changes in the regional shares. This still leaves open the possibility though whether the progress that has been achieved has involved structural changes of any sort, or whether the regional economy has simply been replicated on a larger scale. We turn now to this question.

c) Evidence on Structural Shift

The second definition of westward shift, it will be remembered, is an alteration in the structures of the provincial economies away from sectors of traditional comparative advantage to those more directly competitive with central Canadian exports to the region. While this can involve changes in both manufacturing and service industries, it is useful to begin with the first since data are more readily available.

Table IV-3 provides a breakdown by region and by sector of RDP in 1971 dollars. These data show that the service sector, already the largest component of each economy in 1961, increased in importance in all regions except the Prairies to 1978. There has not been much of a change in the relative position of manufacturing in any of the

Table IV-3

Distribution of Real Domestic Product
by Sector and by Region
(in 1971 Dollars)

	1961	1973	1978
British Columbia & Territories			
Primary	10.0	9.8	7.7
Manufacturing	17.7	17.4	17.7
Construction	8.3	8.1	6.9
Services	64.0	64.7	67.7
TOTAL	100.0	100.0	100.0
Prairie Provinces			
Primary	18.0	22.9	18.8
Manufacturing	8.8	9.8	10.6
Construction	10.9	7.8	9.9
Services	62.3	59.5	60.7
TOTAL	100.0	100.0	100.0
Central Canada			
Primary	6.1	3.6	3.2
Manufacturing	26.0	29.1	27.7
Construction	6.5	5.8	5.0
Services	61.4	61.5	64.1
TOTAL	100.0	100.0	100.0
Atlantic Provinces			
Primary	9.6	8.0	6.9
Manufacturing	12.2	14.0	13.7
Construction	8.8	8.9	7.2
Services	69.4	69.1	72.2
TOTAL	100.0	100.0	100.0

Source: Calculated from The Conference Board (1979).

regions. The proportion of RDP accounted for by this activity remained constant in British Columbia, and rose by 1.8 percentage point in the Praries, 1.7 point in Quebec and Ontario, and 1.5 point in the Atlantic provinces. The primary sector declined in importance everywhere,[1] while construction varied across regions.

The relative changes in the regional economies since 1973 can be analyzed in more detail using the shift-and-share analysis introduced in Section II. There it was used to demonstrate that the large-scale opening up of western lands to agricultural settlement actually increased the staple orientation of that economy. The question here is whether the oil and gas boom, together with the prosperity of the other primary sectors, has had the opposite effect.

Table IV-4 provides the results of applying shift-and-share analysis to estimates of RDP by sector and by region for the period 1973-78. The term ΔS_i is the contribution of the ith sector to the change in the region's share of Canadian GDP. This term is partitioned into two components; G, the growth effect and M, the mix or structural shift effect. The former is the amount of a sector's growth which would arise from the western economy growing overall relative to the national one between 1973 and 1978, assuming the 1978 structure of the regional economy. The mix effect is the sectoral growth due to shifts in the structure of the region's economy between 1973

Table IV-4

Shift and Share Analysis Applied to Real GDP, by Region and by Sector, 1973-78

(in 1971 Dollars)

	ΔS	Growth G	Mix M
		(per cent)	
B.C. & Territories			
Primary[1]	-.21	.03	-.24
Manufacturing	.10	.06	.04
Construction	-.12	.02	-.14
Services[2]	.57	.24	.34
ΣΔS	.34		
Prairie Provinces			
Primary[1]	-.40	.28	-.68
Manufacturing	.29	.16	.13
Construction	.50	.15	.35
Services[2]	1.09	.89	.20
ΣΔS	1.47		
Central Canada			
Primary[1]	-.34	-.05	-.29
Manufacturing	-1.33	-.46	-.87
Construction	-.66	-.08	-.58
Services[2]	.66	-1.07	+1.73
ΣΔS	-1.66		
Atlantic Provinces			
Primary[1]	-.06	-.00	-.06
Manufacturing	-.02	-.00	-.02
Construction	-.11	-.00	-.11
Services[2]	.19	-.00	.19
ΣΔS	-.00		
Alberta			
Primary[1]	-.51	.22	-.73
Manufacturing	.23	.12	.11
Construction	.48	.15	.32
Services[2]	.99	.69	.30
ΣΔS	1.19		
Ontario			
Primary[1]	-.25	-.04	-.21
Manufacturing	-1.14	-.38	-.76
Construction	-.59	-.06	-.53
Services[2]	.66	-.84	+1.50
ΣΔS	-1.31		

1 Includes: Agriculture, Forestry, Fishing and Trapping, Mining.

2 Includes: Utilities, Transportation Storage and Communications, Wholesale and Retail Trade, Finance, Insurance and Real Estate, Commerce, Business and Personal Services, Public Administration and Defense.

Source: The Conference Board (1979).

to 1978, assuming the region's share in national RDP remained constant at the 1973 value. The terms ΔS_i, G, and M are calculated using the basic formulae set out in Section II.

The results provided in Table IV-4 show a positive mix effect for manufacturing in British Columbia and the Territories and for the Prairie provinces. There is also a large negative mix effect for the primary sector in western Canada. Central Canada has a large negative mix effect and a negative growth effect for manufacturing. There is, however, a large positive shift effect indicated for the service sector of central Canada. The provinces of Alberta and Ontario have been analysed separately since they are the growth poles of their respective regional units. The results for the two provinces, however, are the same as those of the regional units of which they are a part. These results appear to suggest that manufacturing activity in western Canada has grown more rapidly than would have been predicted from a simple proportionate expansion in the scale of the economy, and thus are consistent with an hypothesis of economic diversification.

Performing these calculations with constant dollar estimates of domestic product is misleading, however, as it obviously changes in relative prices. Given what has transpired since 1971, this likely means underestimating the

relative importance of the primary sector. Since the sum of mix effects over all sectors in a region must equal zero, the effect of choosing 1971 as the base year is to impart a positive bias to the mix effects of the other sectors.

Table IV-5 provides the results of analysing shifts in the current dollar composition of census value-added in the goods-producing sectors of the economy for the periods 1961-73 and 1973-77. The manufacturing sector exhibited a negative mix effect in every region in both time periods, except for central Canada in the period 1961-73. The mining sector in western Canada, including oil wells, displayed large positive mix effects throughout. It is interesting to note that the decline in central Canada's share of census value-added appears to have accelerated in the period 1973-77. This fell at an annual average rate of 0.35 per cent from 1961 to 1973, but by 1.06 per cent from 1973 to 1977. Yet there is no evidence to suggest that the growth of the West has been directly responsible for this result. The contribution of manufacturing to the decline, for example, is not reflected by a corresponding increase in importance of that sector in the West. The slight increase stems entirely from a significant growth effect, with the mix effect for both the Prairies and British Columbia being negative. Rather, the decline in eastern manufacturing is almost exactly offset by the increase in importance of the primary sector in the West.

Table IV-5

Growth and Mix Components of Shifts in Census Value-Added in Goods-Producing Industries, by Sector and Region, 1961-73 and 1973-77

(Per cent)

	1961-73			1973-77		
	ΔS	Growth G	Mix M	ΔS	Growth G	Mix M
Atlantic Region						
Other[1]	-.17	.04	-.21	-.06	-.01	-.05
Mining[2]	.02	.02	.00	.14	-.00	.14
Manufacturing	-.02	.06	-.08	-.08	-.01	-.07
Construction	.32	.04	.28	-.03	-.01	-.02
Central Canada						
Other[1]	-2.59	-.42	-2.17	-.05	-.44	.39
Mining[2]	-1.03	-.22	-.81	-.66	-.18	-.48
Manufacturing	-2.49	-3.01	.52	-4.04	-2.86	-1.18
Construction	1.79	-.69	2.48	.51	-.76	1.27
Prairie Region						
Other[1]	.29	.59	-.30	-1.27	.83	-2.10
Mining[2]	2.07	.66	1.41	4.00	2.06	1.94
Manufacturing	-.18	.43	-.61	.21	.85	-.64
Construction	-.11	.39	-.50	1.90	1.11	.79
B.C. & Territories						
Other[1]	-.65	.38	-1.02	-.22	-.10	-.12
Mining[2]	1.10	.30	.80	-.19	-.08	-.11
Manufacturing	.76	.97	-.21	-.38	-.27	-.11
Construction	.86	.44	.42	.18	-.14	.33

1 Includes: Agriculture, Forestry, Fisheries, Hunting and Trapping, Electric Power.

2 Includes: Milling, Quarries and Oil Wells.

Source: Census value-added data from Statistics Canada 61-202.

The evidence derived from shifts in regional shares of census value-added is confirmed using employment data. Table IV-6 provides the distribution of nonagricultural employment within regions for the years 1961, 1973, and 1978. Central Canada has the greatest proportion of nonagricultural employment in manufacturing and the smallest in services of any region in each year. The Prairies, on the other hand, devoted more nonagricultural employment to services and construction than any other region. There was a secular decline in the proportion of the nonagricultural employment in manufacturing in every region except the Atlantic provinces between 1961 and 1973. There has been a corresponding increase in employment in the service sector of every region since 1971, with central Canada experiencing the largest increase.

Table IV-7 provides the results of applying shift-and-share analysis to changes in nonagricultural employment for the periods 1961-73 and 1973-78. The period 1961-73 is characterized by a relative constancy in each region's share of nonagricultural employment. British Columbia's share increased by 1.48 percentage point at the expense of every region, with central Canada experiencing the largest decline of -0.84 percentage point. There are, however, significant shifts in the composition of nonagricultural employment. There is a large shift away from manufacturing and into the service sector in every region except the Atlantic where the mix effect for manufacturing was positive.

Table IV-6

Distribution of Nonagricultural Employment, by Sector and Region, 1961 to 1978

(Per cent)

	1961	1973	1978
British Columbia			
Primary	5.6	4.7	4.1
Manufacturing	23.2	18.9	17.0
Construction	4.7	6.4	5.3
Services	66.5	69.9	73.6
Prairie Provinces			
Primary	4.1	4.1	4.6
Manufacturing	12.9	12.2	10.8
Construction	7.1	6.9	7.4
Services	75.9	76.8	77.2
Central Canada			
Primary	3.0	1.6	1.5
Manufacturing	33.0	28.4	25.7
Construction	6.0	5.4	4.6
Services	58.0	64.6	68.2
Atlantic Provinces			
Primary	7.4	4.2	3.9
Manufacturing	15.7	16.1	14.8
Construction	6.3	6.7	5.2
Services	70.6	73.0	76.1

Source: Statistics Canada 72-516, 72-008 (employment estimates unadjusted by seasonal variations).

Table IV-7

Growth and Mix Components of Shifts in Nonagricultural Employment, by Sector and Region, 1961-73 and 1973-78

(Per cent)

	1961-73			1973-78		
	ΔS	Growth G	Mix M	ΔS	Growth G	Mix M
Atlantic Region						
Primary	-.29	-.03	-.26	-.04	-.02	-.02
Construction	-.01	-.04	.03	-.13	-.02	-.11
Manufacturing	-.07	-.10	.03	-.15	-.05	-.10
Services	-.25	-.44	.19	-.04	-.28	.23
Central Canada						
Primary	-.96	-.01	-.95	-.09	-.02	-.07
Construction	-.45	-.04	-.41	-.61	-.07	-.54
Manufacturing	-3.39	-.24	-3.15	-2.32	-.41	-1.82
Services	3.96	-.54	4.50	1.34	-1.08	2.42
Prairie Region						
Primary	-.00	-.00	0.00	.15	.07	.07
Construction	-.03	-.00	-.03	.19	.12	.07
Manufacturing	-.11	-.01	-.11	-.03	.17	-.20
Services	.08	-.05	.13	1.28	1.22	.06
British Columbia						
Primary	-.01	.07	-.08	-.05	.01	-.06
Construction	.26	.10	.16	-.10	.02	-.12
Manufacturing	-.12	.28	-.40	-.03	.06	-.20
Services	1.35	1.04	.31	.66	.27	.39

Mix and growth components may not sum to shift value because of rounding.

Source: Statistics Canada 72-516, 72-008.

The interregional shifts in nonagricultural employment are much larger in the period 1973-78. Central Canada's share declined by 1.68 percentage point in this five-year period while the West's share increased by 2.07 percentage points. The pattern of mix effects observed in the first period is also evident in the second. Every region has a shift in terms of mix effects away from manufacturing and into services. The shift into services is even more rapid in the period 1973-78 for central Canada than it was in the earlier one -- annual average rates of 0.48 per cent and 0.38 per cent, respectively. There is no evidence in terms of mix effects that the current staple boom has led to relatively more labour being devoted to manufacturing in the Prairies or British Columbia.

The evidence suggests instead that manufacturing is becoming relatively less important in every regional economy. Central Canada has experienced the largest change, but this is consistent with it being the largest regional economy and having the largest manufacturing sector. This decline is not reflected in a relative increase in manufacturing activity in the Prairies or British Columbia though. While it is beyond the scope of this paper to explain these trends in manufacturing, three factors can be mentioned in passing. First, the demand for services is income elastic. Thus as incomes rise one would predict the relative expansion of this sector. Second, productivity in

domestic manufacturing may be sufficiently low, or not rising as rapidly as in other countries, so that foreign imports have become relatively cheaper. Or, as the Science Council of Canada argues,[2] domestic manufacturing may be locked into producing 'mature' products for which demand is stagnant.

This impression derived from shift-and-share analysis is supported by looking at manufacturing activity at a slightly more disaggregated level. Table IV-8 gives the share of the value of shipments of two-digit level manufactured goods accounted for by Ontario and the four western provinces for the two years 1973 and 1979. Alberta increased its share of the shipments of all industries except transportation equipment over the period. With the exception of non-metallic mineral products and petro-chemicals, however, one is struck by how little change there has been, and how underrepresented the province continues to be in the manufacturing area. Only in food and beverages, non-metallic mineral products and petroleum products does Alberta's share of shipments even match its population ratio. Aside from the apparent impetus given to energy related sectors, the expansion of secondary industry in Alberta over this period has been more or less commensurate with the gradual increase in the relative size of the provincial economy, and is consistent with the notion of a proportionate growth in all sectors stemming from an export boom.

Table IV-8

Share of Estimated Value of Shipments of Two-Digit Level Manufactured Products, Ontario and the Western Provinces, 1973 and 1979

	British Columbia		Alberta		Saskatchewan		Manitoba		Ontario	
	1973	1979	1973	1979	1973	1979	1973	1979	1973	1979
Food and beverages	8.2	8.2	9.8	11.6	2.9	2.9	5.5	5.0	40.6	38.4
Textiles	1.4	1.0	0.8	1.4	-	-	0.7	0.7	45.7	46.3
Wood	58.0	53.6	4.3	4.8	1.1	1.4	1.0	1.2	14.7	15.4
Furniture & fixtures	5.1	4.3	2.7	4.2	0.2	0.1	4.2	4.3	49.6	51.7
Paper & allied products	18.9	20.5	1.7	2.3	-	-	1.9	-	34.5	30.6
Printing & publishing	7.5	6.0	4.7	5.8	1.5	1.6	4.3	3.8	49.8	50.4
Primary metal	5.3	6.8	3.7	4.2	-	-	2.1	1.7	60.6	60.8
Metal fabricating	6.4	6.4	3.7	5.2	0.6	0.8	2.7	3.2	60.5	61.2
Machinery	5.1	6.0	2.2	3.7	0.9	1.9	4.4	5.9	74.6	65.1
Transportation equipment	3.4	3.6	1.6	0.8	-	0.1	1.2	-	79.7	77.3
Electrical products	2.4	2.2	1.3	1.6	-	0.5	1.4	1.7	69.7	66.9
Nonmetallic mineral products	8.0	7.3	7.0	13.2	1.6	2.8	2.9	3.5	51.2	46.0
Petroleum & coal products	9.2	9.0	8.9	14.4	-	-	-	-	30.5	28.4
Chemical & chemical products	4.3	3.6	4.8	7.3	0.3	0.3	1.4	1.3	59.8	59.8
Miscellaneous manufacturing	-	2.4	1.4	1.9	0.3	0.3	-	1.0	71.3	69.0

Source: Calculated from Statistics Canada 31-001.

The patterns in the other provinces were even less marked. British Columbia experienced slight changes in both directions, but continues to have a significant presence only in the further processing of forest products. There is no evidence of any improvements in the underdeveloped Saskatchewan manufacturing sector. Manitoba at best continues to hang on to its small industrial base. Equally important, there is no evidence of a significant relative shift of manufacturing activity away from Ontario. Her share fell slightly in a few areas, but was maintained or even increased in several others. Central Canada may have experienced some difficulties in its manufacturing sector recently, but the evidence does not support the view that this is due to increased competition from a burgeoning industrial economy in the West.

The best way to check this conclusion would be to look for direct evidence of any import substitution in the West that occurred at the expense of eastern exports. Unfortunately there are no data on interprovincial trade in domestic manufactured products for the period since the rise in resource prices. Statistics Canada, however, has produced estimates of these flows for 1967 and 1974, and these data have been used by Mallon and Potter (1979) to examine changes in interprovincial trade in domestic manufactured goods. The market they consider comprises the receipts of domestic manufacturers in 144 industries in each

of the two years. Foreign imports were not included because no information on their destination in Canada was available. This narrow definition of the market in manufactured goods still permits analysis of a key factor in the debate on westward shift -- regional development and interregional trade flows.

Mallon and Potter use shift-and-share analysis to decompose the change in a region's total supply ratio into what they call market share and industry mix effects, or what have been called growth and mix effects in this study. The total supply ratio is defined as the fraction of a receiving region's total receipts which come from a particular supply region. Thus,

$$1) \quad P_{ij} = R^i_j / R^i = \sum_k R^i_{kj} / R_i$$

where P is the supply ratio and R the receipts of manufactured products, and where i indexes the receiving region, j the sending region, and k the industry. Multiplying and dividing by R^i_k and rearranging yields,

$$2) \quad P_{ij} = \sum_k \left[\left(\frac{R^i_k}{R^i} \right) \left(\frac{R^i_{kj}}{R^i_k} \right) \right]$$

The first term is the industry mix effect (IME), and gives the proportion of region i total receipts of manufactured products accounted for by industry k. The second term -- the market share effect (MSE) -- shows the proportion of region i total receipts of product k that is supplied by region j. To illustrate with an example, suppose that it is observed that Ontario is shipping relatively fewer manufactured products to the West. This could result first if the West has substituted away from the type of manufactured goods that Ontario has a comparative advantage in (the IME). Alternatively, it could be that while the West uses the same amount of the product as before, it has found an alternative supplier. The usefulness of the distinction for present purposes is that it suggests a way to identify regional industrial developments. A positive MSE for a region in its <u>own</u> market is evidence of import substitution (in this case the alternative supply is internal), while a positive MSE by its producers in other markets indicates increased export penetration.

Table IV-9 provides the estimates of market share and industry mix effects obtained by Mallon and Potter. These results suggest taht there were some shifts in the interregional shipments of manufactured goods between 1967 and 1974. The market share effect of Ontario is negative in all regions including Ontario, as is the IME except in this

Table IV-9

Industry-Mix Effect (IME), Market-Share Effect (MSE) and Total Change in Supply Ratio, 1967-74 (As Percentage of Total Regional Receipts of Canadian Manufacturer's Shipments)

Region of Origin	Region of Destination: Atlantic Provinces	Quebec	Ontario	Prairie Provinces	British Columbia
Atlantic Provinces					
IME	5.20	.45	.14	-.05	-.03
MSE	-.73	.32	.10	-.05	.04
Total	4.47	.77	.24	-1.10	.01
Quebec					
IME	-1.53	1.55	-.18	-.47	-1.11
MSE	2.20	.20	1.33	.34	-.06
Total	.67	1.75	1.12	-.13	-1.77
Ontario					
IME	-3.84	-2.03	.02	-2.96	-3.19
MSE	-1.81	-.87	-1.25	-2.08	-1.93
Total	-5.65	-2.90	-1.22	-5.04	-5.12
Prairie Provinces					
IME	-.16	-.01	-.02	3.07	.86
MSE	.49	.37	-.17	1.09	2.22
Total	.32	.36	-.18	4.16	3.08
British Columbia					
IME	.33	.05	.01	.41	3.49
MSE	-.15	-.04	.05	.68	-.32
Total	.18	.01	.06	1.09	3.17

Source: Mallon and Potter (1979), Table 2, p. XIV.

latter case. The decline in its market share ranges from -1.22 per cent in its own market to -5.65 per cent in the Atlantic region, with the IME accounting for most of this. Quebec was successful in maintaining or increasing its market share in its own market and all other regions except for British Columbia, although there was a general movement away from traditional Quebec products. The Prairie region increased its market share in its home market by 1.09 per cent and in British Columbia by 2.22 per cent. Coupled with increases into the Atlantic and Quebec markets, and with the apparent substitution of its own products for imports of other types, this suggests significant manufacturing development on the Prairies. British Columbia was also able to increase its market share in the Prairie region but was unable to maintain its share of its own market. There was a large IME towards B.C. products offsetting this, however.

Mallon and Potter also provide estimates of the contribution of individual industries to MSEs in each region. The transportation equipment industry was the main factor behind Ontario's negative market share in the Atlantic provinces and British Columbia. The decrease in the Prairie provinces rose from the decline of several industries. The following six industries contributed 1.73 percentage point of Ontario's market share decline of -2.08 per cent in the Prairies: transportation equipment (-.61), primary metals (-.43), food and beverages (-.23),

petroleum and coal products (-.18), rubber and plastics products (-.14), and metal fabricating (-.14).

The increase in the Prairie provinces self-supply ratio from MSEs also stems from a range of sectors. The most important ones in order of decreasing contribution to the total MSE are: chemical and chemical products (.35), paper and allied products (.29), primary metals (.19), rubber and plastic products (.16), and food and beverages products (.15). Together these five sectors contribute 1.14 percentage point to the Prairie provinces own MSE of 1.09 per cent. It will be noted that three industries -- food and beverage products, rubber and plastic products, and primary metals -- are common to the main industries contributing to the decline of Ontario's market share in the Prairie provinces and to the increase in its own share of the Prairie provinces.

One must be cautious in treating these figures as firm evidence of import substitution in the Prairies, however. The decrease in Ontario's market share may represent cyclical factors rather than long-term structural change. The Ontario industries which experienced the greatest declines in regional supply ratios are concentrated in terms of economic use categories in the machinery and equipment industries and durable consumer goods industries. Unfortunately, the years 1967 and 1974 lie on different

positions on the business cycle. Expenditures on durable goods and gross fixed capital formation were above or at trend levels in 1967, but well below trend in 1974 (Mallon and Potter). Thus the use of 1967 and 1974 data involves comparing a year where output levels in these industries were below trend. This comparison might cause a negative IME since a smaller proportion of each region's total receipts would be accounted for by these two categories of products in 1974 than 1967.

It is not clear, however, that this potential cyclical problem distorts the MSE. Although receipts of consumer and producer durable goods industries might decline absolutely or relative to total domestic manufacturing receipts, this does not imply that the shares of each region in the receipts of this industry should be affected. The only plausible cause for cyclical influence affecting the value of the MSE differentially between regions is if there is too high a level of aggregation in the industry. That is, the Prairie provinces and Ontario might each produce different products which are classified as output of the same industry. For example, the durable producer goods produced by the Prairie provinces and British Columbia might be intended as inputs into primary manufacturing, while the output of the Ontario durable producer goods sector is an input to secondary manufacturing. Differences in the level of demand facing primary and secondary manufacturing would

be reflected in differences in the demand for producer good inputs. Regional specialization in the manufacture of producer goods would ensure different MSEs between regions.

To this point the focus has been on the regional distribution of manufacturing. But the outstanding feature of the changing composition of nonagricultural employment in the periods 1961-73 and 1973-78 is the relative growth of service sector employment. The evidence of the aggregate data in Table IV-7 suggests that the increase in service sector employment in the West in the period 1973-78 has not been at the expense of that in central Canada. The mix effect for service sector employment in central Canada is positive and large while the growth effect is negative. In western Canada, however, most of the increase in service sector employment is accounted for by the growth effect rather than a shift in the structure of employment. One interpretation of this is that service sector growth, in the Prairies especially, is linked directly and proportionately to the resource boom.

This view is reinforced by looking at evidence at a more disaggregated level. Table IV-10 gives the shares of the output of the five main categories of service sector activity accounted for by Ontario and the four western provinces in 1961, 1973, and 1978. British Columbia and Alberta have increased their shares over the period in all

Table IV-10

Percentage Share of Constant $ Output of Service Sectors, Ontario and the Western Provinces, 1961, 1973 and 1978

	British Columbia	Alberta	Saskatchewan	Manitoba	Ontario
Transport, Communication and Storage					
1961	13.1	7.3	5.5	7.3	37.1
1973	16.1	8.1	4.6	5.6	36.8
1978	15.9	9.3	4.2	5.6	37.3
Wholesale and Retail Trade					
1961	10.1	7.8	3.8	5.5	40.7
1973	12.3	7.9	3.3	5.1	39.9
1978	12.2	9.8	3.5	4.6	38.7
Finance, Insurance and Real Estate					
1961	10.0	7.0	3.3	4.7	44.8
1973	11.7	7.4	2.7	4.0	44.3
1978	12.2	8.7	2.8	4.2	43.9
Services					
1961	9.9	7.4	4.3	4.6	41.2
1973	11.0	8.0	3.2	4.3	41.7
1978	11.7	8.9	3.3	4.0	41.5
Public Administration and Defense					
1961	11.0	8.0	4.6	5.1	39.6
1973	10.9	8.2	3.6	4.5	39.8
1978	12.2	9.4	3.8	4.3	37.8

Source: Calculated from The Conference Board (1979).

areas, with the B.C. gain being the more substantial interestingly enough. In no case though does the gain over seventeen years even reach 3 percentage points. Saskatchewan and Manitoba consistently indicate a lower share in 1978 than in 1961, although there is evidence of a slight reversal in this trend since 1973 in the case of Saskatchewan. The Ontario pattern is mixed, with no significant changes in either direction.

Three conclusions emerge from this. First, the across-the-board expansion in British Columbia and Alberta is consistent with the notion that all linked sectors are expanding proportionately with the raw material export one, rather than that the West has become an increasingly attractive place to locate service industries of national scope. Secondly, in spite of a period of unparalleled staple prosperity, the overall shift to the West in these areas has been surprisingly small. This coincides with the conclusions reached above regarding manufacturing. Finally, and related to the other observations obviously, even after a period of expansion the West's share of service activity still corresponds very closely to its population share, allowing for the relatively higher incomes in the region and the high-income elasticity of these outputs. There is no firm evidence as of yet at least to suggest that Alberta or British Columbia are becoming service centres of national as opposed to regional importance.

Further to these points, Mansell and Wright (1979) examined changes in the regional representation on boards of directors of financial and nonfinancial corporations, and on head office location of nonfinancial corporations between 1968 and 1978. Their findings are summarized in Table IV-11. There was an increase in the West's share of representation in each of the three categories, with the largest increase of 8 percentage points occurring in its share of directors of Canada's 100 largest nonfinancial corporations. All of the growth in the Prairie region's share occurred in Alberta, and seems to stem from the growth of corporations active in the energy sector. The increase in representation arises mainly from the entry into the top 100 Canadian corporations of firms located in western Canada, rather than firms already in that category increasing the representation of the West on their boards of directors. The entry of western firms either active in resources or producing for the western market into the corporate top 100 also probably accounts for the increase in the region's share of head offices. The five largest chartered banks increased western representation on their boards of directors by 3 per cent between 1972-78. But Mansell and Wright note that this increase in representation was accompanied by substantial increases in the discretionary limits for corporate loans by the western regional offices of the chartered banks. This delegation of authority would seem to be a substitute for head office reallocation. These data suggest that the growth in

Table IV-11

Regional Distribution of
Selected Service Industry Indicators

(Per cent)

	British Columbia	Prairies	Central Canada	Maritimes	Foreign
Panel A					
Regional Distribution of Directors of Canada's 100 Largest Non-Financial Corporations					
1968	6.7	5.6	64.7	3.2	19.9
1978	8.6	11.3	60.2	1.3	18.6
Panel B					
Regional Distribution of Directors of Canada's 5 Largest Chartered Banks					
1972	7.6	12.6	61.5	8.1	10.2
1978	9.2	13.8	59.9	9.2	7.9
Panel C					
Regional Distribution of Head Offices of Canada's 100 Largest Nonfinancial Corporations					
1968	7.0	9.0	81.0	3.0	-
1978	10.0	14.0	76.0	0.0	-

Source: Mansell and Wright (1979), Tables 2, 3 and 4.

economic power of the West represents the more rapid growth of firms operating in the resource sector more than it does the reallocation of firms from central Canada to the West. In terms of the aggregative analysis used earlier, the growth effect dominates the mix effect.

d) Summary

The evidence surveyed in this chapter indicates that there has been economic shift according to the first definition employed, but very little according to the second. The West's economic performance (mainly Alberta's) has clearly outstripped that of the other economies, and as a consequence its share of the major economic aggregates has been rising. But even here the changes have been surprisingly small. At current growth rates it would be many years before western Canada began to rival Ontario and Quebec in absolute terms. By comparison, the shift associated with the opening up of western agricultural lands after 1900 dwarfs the present one.

There is no firm indication either from the available data that the four western economies are in the midst of diversifying beyond areas of traditional comparative advantage into ones more directly competitive with those of central Canada. The growth in manufacturing and services

that is evident seems to be directly tied to the expansion of the primary sector, especially the energy industries. This is indicated by the relative sizes of growth and mix effects from the shift-and-share analyses, as well as from the brief look at the more disaggregated data on the manufacturing and services sectors. Again by historical comparison, the current expansion has the same kind of staple or export-led economic structure as that at the turn of the century.

It is tempting to conclude that the lack of evidence on structural shift indicates that the adjustment mechanisms associated with the transfer process have dominated those forces working in the opposite direction. There is even some heuristic evidence to support this view. Housing prices in Edmonton and Calgary are well above those in most other Canadian cities for example, which is consistent with the assertion that the prices of non-tradeables would rise to choke off immigration[3] and expansion into other areas. Inflated construction costs have also hit the business sector. An Ontario Economic Council report (1978, 33) shows Calgary and Vancouver well above Toronto in terms of constructing a 40,000 square foot office building in mid-1977, and behind only St. John's. Even more significant perhaps is the related observation that indexes of the cost of building a petrochemical plant were 100 for the U.S. Golf Coast, 120 for Sarnia, 130 for Montreal and

135 for Calgary. Nearly all of the difference between Canadian and U.S. sites, and among the Canadian ones, is accounted for by labour costs.

DREE (1979b, 33) has also forecast labour shortages in non-service sectors of the type discussed in Chapter 3:

> "Several assessments of the economic structure indicate that an expansion in the resource industry will siphon off labour from the western manufacturing sectors that appear to have the best development opportunities during the 1980s. Among the sectors that are anticipated to contract most because of labour shortage created by an expanding mining industry (i.e. which have requirements comparable to many western development projects) are metal fabricating, machinery, iron and steel, smelting and refining and food and feed. The high demand of the large resource projects for the limited supply of skilled labour, and the attendant rising wage rates, are symptomatic of these limitations. Active public industrial policy initiatives may therefore be required simply to maintain present levels of diversification, let alone realize the expanding regional market opportunity."

The other explanation, however, is that it is simply too early to expect to be able to pick up much of a trend in the data. Energy prices have been increasing relatively for less than a decade, and the data we have available end in 1977 or 1978. Most of the anticipated developments in alternative energy supplies -- uranium in Saskatchewan and heavy oil and in situ processing in Alberta -- are still in the planning stages, and their impact will only become evident later. In addition, structural changes are by definition slow, ongoing processes which only gradually

acquire a momentum of their own. According to this view, it is the fact of rapid absolute economic expansion that is important at this time; only later will the full extent of the transformation be evident.

If this is true though, one or more of the other shift factors discussed in Section III must be becoming increasingly relevant. That is, either locational determinants of key industries are in the process of changing, or the West is near to the size where agglomeration economies become important, or the concentration of provincial government wealth in the western provinces is affecting private sector decisions significantly. Since any of these imply a possible shift of economic activity away from established areas within Canada, they are discussed in the following section under the heading of the West as a Cause of Eastern Economic difficulties?

Footnotes

1 The apparent decline in importance of the primary sector in the Prarie provinces after 1973 may seem surprising. This result arises partly from using estimates of RDP based on 1971 dollars. The dramatic increase in the relative price of many primary products and the accompanying shift of the terms of trade in favour of primary producers occurring after 1971 are not captured. Moreover some non-renewable primary products have passed their peak production levels since 1971. Crude oil production in Alberta reached a peak of 523,610 million barrels in 1973 but had declined to 383,343 million barrels by 1977. Alberta Statistical Review, 1978, p. 67.

2 For the Science Council's argument see Britton (1978).

3 The discouraged westward migrant phenomenon has been receiving a lot of attention in the popular press recently. There are reports of easterners returning from job search in the West after finding that their employment expectations were too optimistic or that accommodation costs reduced their expected real wage significantly.

V The West as a Cause of Eastern Economic Difficulties?

a) Introduction

As has been alluded to earlier, one particularly interesting and unique feature of current western prosperity is the political reaction it has drawn from other quarters in Canada. In the more unsophisticated versions of this lament, the growth in the West is held directly responsible for central Canada's current economic difficulties. Every increase in the relative fiscal capacity of Alberta, or outmigration of Ontario workers, or relocation of a firm is seized on as an example of a deliberate attempt to shift political and economic power westward. Economic growth is a zero sum game in this view, with any western gains necessarily coming at the East's expense. The process is seemingly even more resented since its basis appears to be so "unnatural" and was so unexpected -- an OPEC-imposed oil price increase.

There is no question but that the economy of central Canada did not perform well in the 1970s, either relative to its past performance or when compared to the rest of the economy. The relative decline is particularly striking in the case of Ontario so the subsequent discussion will tend to focus on it vis-à-vis the West. The economic performance of this province has been documented in a recent publication

by DREE (1971a). Ontario was found to rank last compared to the other economies when growth rates of a number of key economic indicators were compared (time period in parenthesis): per capita gross provincial product (1970-77), per capita income (1970-77), per capita personal disposable income (1970-77), public investment (1970-79), and residential construction (1970-78). This mediocre performance was attributed to foreign competition and the deterioration in the terms of trade (DREE, 1979a, 58):

> "The slower growth rates in Ontario vis-à-vis the other provinces are symptomatic of the relatively new vulnerability of the provincial economy, a result which has occurred through the counterbalancing of Ontario's traditional development advantages by the increasing significance of third world competition and the need for cheap available energy. During this recent period, moreover the discovery and exploitation of raw materials have become far more important as a cost input to the production of final goods and services that the processing and manufacturing phases. ...Hence while Ontario has continued to grow during the seventies, development in the industrial heartland has been slow and disjointed."

The performance of the Ontario economy and its relationship to western prosperity has to be placed in the proper context, however. Ontario is totally dependent upon imports for crude petroleum and natural gas. The alternative to buying these products from western Canada is to enter the world market at prices which are currently well above domestic prices. In this respect, the East's economic problems stem at most only indirectly from western

prosperity. The real culprit is higher oil prices and the price inelastic demand. The inescapable fact is that the East must necessarily be worse off in a real income sense as a result of a large increase in the price of one of its important import items. Western Canada would be a cause of this only if it were exercising market power so as to have engineered the price increase in the first place. That this is incorrect is patently obvious.

Exactly the opposite is true in fact. In real income terms the East is substantially better off than it would have been after 1972 without access to western petroleum supplies. This stems mainly from the fact that the region has been and is currently paying well below the world price for its oil. Thus the magnitude of the terms of trade deterioration is far less than it would otherwise have been and the resultant income decline lower. The East also gains because the price of the manufactured output it ships to the West likely embodies the world price of oil rather than the domestic price. Import-competing industries are usually assumed to price up to the world price plus the Canadian tariff. But the world price of these import competing goods reflects the higher world price of energy, as the other industrialized economies have not insulated their producers from rising energy prices to the extent Canada has. The terms of trade facing the East as a result of economic union with the West have declined less than those resulting from next best alternatives.

The East is also relatively better off than it would have been in three other important respects. First, the federal government does collect a portion of the increase in oil prices, and through the transfer system does redistribute it to the harder hit of the oil importing provinces. As Courchene has so vividly demonstrated (1978), this guaranteed capital inflow allows these regions to run a perpetual current account deficit at no penalty. Secondly, many of the head offices of companies operating in western Canada are located in the East. The increased profits from oil and gas related expenditures are thus remitted in part back to the East, ameliorating the burden of the balance of payments adjustment. Finally, the fact that much of the eastern oil is supplied internally means that the immediate adjustment can take the form of an exchange of nationally transferable assets. This allows a much longer time for any real economic forces to operate, presumably allowing a smoother adjustment. Eastern assets might otherwise only have been held by foreigners at a substantial discount, meaning significant immediate impact as well. One advantage of being allowed a longer adjustment period is that the ultimate net transfer of real resources can perhaps be made out of future increased capacity rather than from an absolute reduction of current absorption.

A strong political reaction to economic events since 1972 is hardly surprising though, these considerations

notwithstanding. One explanation, based on an uncharitable but likely realistic view of the Canadian political community, has been eloquently argued by Douglas Hartle (1979, (1979, 2):

> ... there is nothing quite like a massive windfall gain to cause dissension and bitterness in the family, however closely knit. The bitterness, indeed hate, engendered among family members when the estate of a wealthy relative is being divided knows no bounds. Perhaps for the very reason that none, if any, of the beneficiaries in waiting 'earned' the assets, at least in the usual sense, the claims and counterclaims must be based on entirely subjective criteria: criteria that are usually highly charged emotionally and, hardly surprisingly, seldom fail to imply an allocation favourable to those who advocate them. The controversy surrounding the Canadian energy situation has all of these attributes and more.

Another explanation focuses on the distribution of the real income decline within the East. An absolute loss of population from the East as part of the intersectoral reallocation discussed above will have differential impacts on the various types of factor incomes. The real losers will be the owners of factors specific to the service industries. Their incomes will be proportional to the size of the population demanding their services, and since they are inherently nontransferable they cannot migrate to the West to take advantage of economic opportunities there. Thus owners of urban real estate and of personal service industries can be expected to view population movements with

alacrity. Since these groups tend to possess disproportionate political influence typically, it is not surprising to see their concerns being voiced through official political channels.

Abetting this is the province-building phenomenon in reverse in the East. Politicians and bureaucrats measure success by the size of the populations they administer. Provincial premiers possess bargaining power with the federal government and with other provinces roughly in proportion to the sizes of their constituencies. The variety and complexity of functions and bureaucracy overseas also vary directly with the absolute size of the economy. Thus for the same reasons that the western governments are using the advantages the resource boom has given them to develop their economies, eastern governments can be expected to exhibit concern over any such movement. This is true even if the westward shift is only a perception rather than an actual fact.

There are more sophisticated concerns over the manner in which the interregional adjustment to energy price increases is proceeding, however. These fall into two general categories. The first focuses on conditions under which the East's adjustment to higher oil prices is made more rather than less painful as a consequence of its economic union with a petroleum-producing region. The other

concentrates more on the efficiency of the adjustment process itself, arguing that fiscal imbalance among the provinces may be responsible for a significant misallocation of resources on a national scale. We deal with each of these briefly.

b) The Transfer Process and the Canadian Economic Union

One can begin this discussion by asking whether there are any disadvantages to the East in being supplied with domestic rather than imported petroleum. One possibility is that the expansion of the energy sectors in the West will attract factors of production from the East, given the relatively more inelastic factor supplies currently. As seen above, this was not a problem historically for the East as the increased demand was met by immigration and capital inflows. Capital needs can likely still be financed abroad, but current sectoral reallocation comes at a time when the supply of labour to the Canadian economy is likely significantly less elastic. The tightening of the immigration laws has made it more difficult for foreign workers to respond to rising relative Canadian wages. In addition, the rural-to-urban migration has slowed down drastically. In the past, Saskatchewan and Manitoba have provided the bulk of the net inflow of labour to Alberta's petroleum economy. With this flow curtailed or even reversed now, there is a greater

tendency to draw factors out of other sectors including manufacturing and services in eastern Canada.

Without this migration possibility the reduced eastern demand for its own products following an oil price increase would put downward pressure on wages or, in the case of wage rigidities, increase unemployment. Either way manufacturing costs would fall relatively, allowing increased penetration of the western and foreign markets. With emigration though, this downward pressure on costs will be reduced. Thus it may take the East a longer time to bring its relative costs into line so as to generate the required export surplus. If the East were buying oil from foreign countries which prohibited labour immigration, the resultant wage decrease or unemployment might bring eastern costs into line more quickly. Further, to the extent that the population movement between regions is significant, the East may begin to lose the advantages of agglomeration economies as the West gains them.

There is no doubt that there was a significant change in the pattern of interregional migration in Canada over the decade of the seventies. Ontario experienced net out-migration in 1973-74 for the first time in memory, and this has continued through to the present (Statistics Canada, 91-208). It is also clear that the western provinces are proving to be increasingly attractive to easterners.

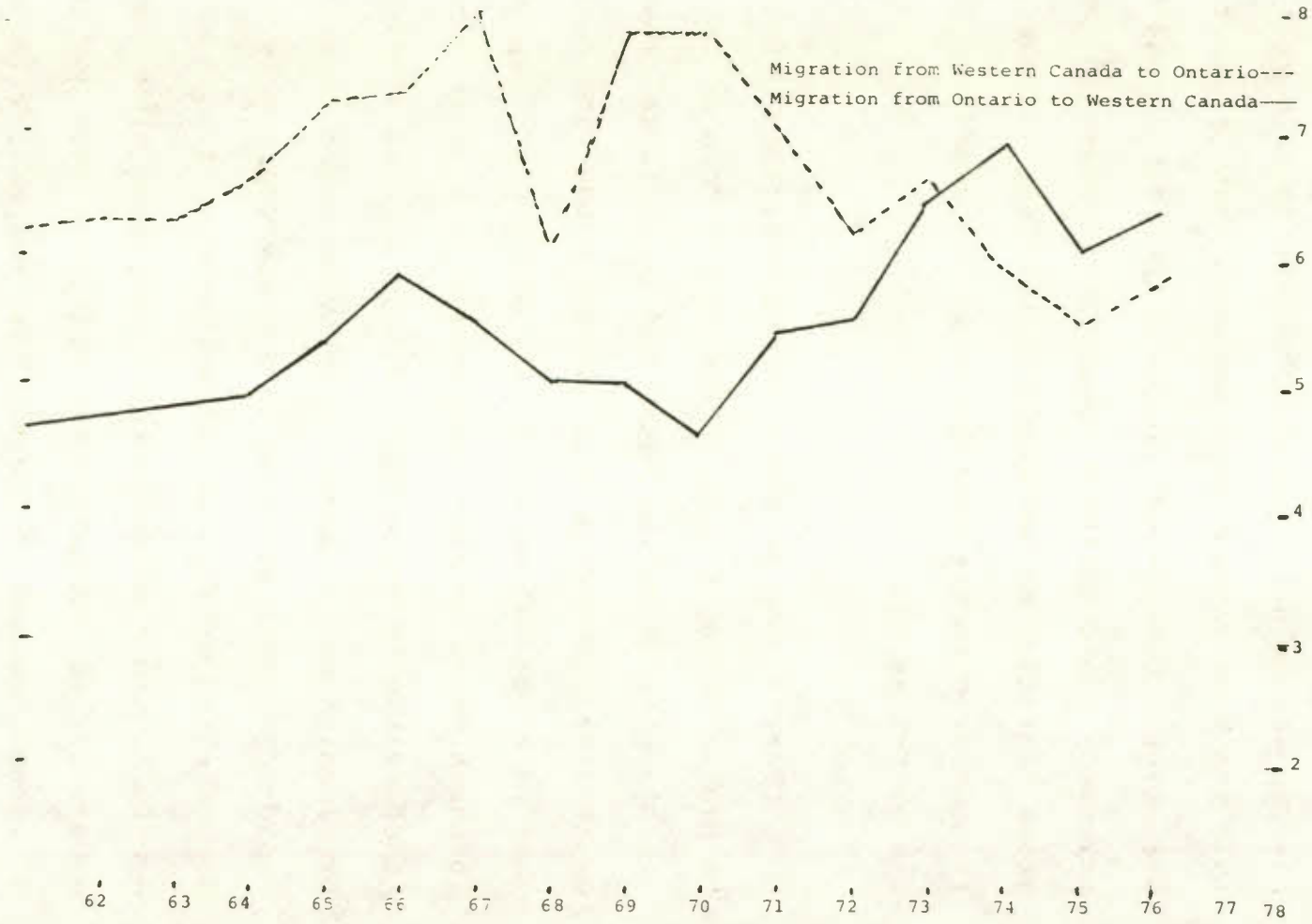
Chart V-1 illustrates the rates of gross migration between Ontario and western Canada from 1961 to 1978, normalized by the population of the sending region in each year. Up to 1973 the West to East rate exceeded that in the reverse direction. Since then, however, the pattern has been reversed. Interestingly, both the decrease in the rate of gross migration to Ontario from the West and the increase from Ontario to the West began in 1970, and not in 1973 when energy prices rose.

Clearly some of the economic adjustment within Canada to higher energy prices is taking the form of increased migration flows to the West, and given these flows, it is quite likely the case that average production costs in the East have not fallen relatively as fast as they would have in the absence of such emigration. But it is surely indefensible to argue that this is a cause of eastern problems, however, since it is by no means clear that a more rapid adjustment would be in any way preferable. The demonstrated willingness of westerners to hold eastern assets together with the observed factor flows westward are apparently accommodating the oil price increase currently. If either becomes inadequate then the East will begin to feel the deflationary effects on wages (a price adjustment) or unemployment (a quantity adjustment) more directly. But as noted above, the longer the actual real transfer can be delayed the greater is the chance of financing it out of

Chart V-1

Rates of Migration Between Ontario and Western Ontario

(Per Thousand)



Source: Statistics Canada, 91-208, 91-203, 91-001.

additions to capacity rather than through absolute reductions in real absorption. In addition, the population out-migration increases the capital-labour and land-labour ratios in the East, increasing real per capita incomes for those remaining, and thereby providing an additional means for paying for the oil imports. Finally, the migrants themselves have demonstrated that they consider the economic and psychic costs of moving to be less than those of unemployment or relative wage deflation. This suggests once again that it is really only the owners of specific, immobile assets whose net worth is tied to the size of the regional population who suffer from net out-migration.

One might argue that the East will have difficulty effecting the transfer with the West since it is possible that rising incomes in the latter region will be disproportionately directed towards types of products for which it has no productive capacity. Perhaps the East is locked into the wrong kind of industries (e.g. gas-guzzling cars), in other words (Scarfe and Wilkinson, 1980, 11). As with many of these kinds of arguments though, it is important to recognize that the problem is with the basic inflexibility of the eastern industrial structure. They would likely face exactly the same problem regardless of where their oil came from. It is highly improbable that western Canada's demand composition is so unsuitable relative to that in other countries. The reverse, if anything, would be true.

There remains one economic argument which suggests that the industrial areas would have adjusted more easily if oil purchases had come from abroad rather than internally. If Canada had been forced to import all her oil instead of only a portion of it and if there had not been any capital inflows into energy projects, the exchange rate would presumably have fallen even further than it did. This would have given eastern manufacturers an added competitive advantage in foreign markets and increased protection in the Canadian market, and allowed the region to generate its export surplus more easily.[1] In the event that wages are sticky downwards, exchange rate depreciation provides one alternative to unemployment as a means of reducing relative costs and increasing manufactured exports. Since research in this area is just beginning, and since we will be attempting to model this phenomenon more rigorously in subsequent work, we will not pursue the topic further here.

The question of the extent and speed with which the interregional transfer process has operated in Canada could ideally be ascertained from provincial balance of payments data. The changes in the current and capital accounts would indicate the magnitude and rapidity of the adjustment. Although there are estimates of the interprovincial flow of domestic manufactured goods, there is virtually no information on the flow of services and other 'invisibles.' The problem is even more acute with regard to interprovincial

capital flows. The financial integration afforded by a national branch banking system and the existence of national firms in the manufacturing and service sectors makes it impossible to determine the origin and magnitude of inter-provincial capital flows. Recently, crude estimates of net provincial balances of trade in goods and services have been calculated (Statistics Canada, 13-213). These estimates suggest that much of the adjustment to the shock of the 1973-74 oil price increases was accomplished in a relatively short period of time. Table V-1 records the estimates of net exports, inclusive of the residual error of estimate, in absolute terms and relative to gross provincial expenditure. The impacts of the energy price increases of 1973-74 are immediately obvious in records of the energy-rich and energy-poor economies. The net trade balance of Quebec and Ontario declined from a surplus of $2,497 million in 1973 to a deficit of $294 million in 1975. During the same period the surplus in Saskatchewan and Alberta rose from $1,675 million to $3,704 million. Alberta accounted for all of this increase. After 1975, however, the net trade surpluses of Alberta and Saskatchewan declined from these record levels, although in the case of Alberta the net surplus as a percentage of gross provincial product averages 7.8 per cent for the three years from 1976 to 1978, compared to the average of 4.0 per cent from 1970 to 1973. On the other hand, the trade balances of both Quebec and Ontario appear to have improved substantially since 1975. Clearly some adjustment mechanism has been operative.

Table V-1

Net Exports and Residual Error of Estimate in Millions of Dollars and as Percentage of Gross Provincial Expenditure, Quebec, Ontario and Western Canada, Selected Years

(millions)

	Quebec		Ontario		Manitoba		Saskatchewan		Alberta		British Columbia	
1963	464	(3.8)	1188	(6.2)	-117	(-5.5)	-22	(-.9)	-156	(-4.2)	-6	(-.1)
1965	266	(1.8)	1100	(4.8)	-69	(-2.8)	-154	(-6.1)	-99	(-2.3)	-387	(-6.8)
1970	1743	(7.9)	1928	(5.3)	-104	(-2.9)	167	(5.5)	113	(1.6)	-375	(-4.1)
1971	1034	(4.4)	1982	(4.9)	-138	(-3.5)	310	(8.8)	142	(1.8)	-926	(-9.0)
1972	621	(2.3)	2185	(4.9)	-205	(-4.7)	228	(6.2)	329	(3.6)	-299	(-2.5)
1973	-279	(-.1)	2776	(5.4)	-109	(-2.1)	680	(14.4)	995	(8.8)	224	(1.5)
1974	-877	(-2.5)	2237	(3.7)	-192	(-3.1)	1305	(20.8)	3068	(19.5)	-177	(1.0)
1975	-2083	(-5.3)	1789	(2.7)	-173	(-2.5)	672	(9.5)	3032	(16.1)	-210	(-1.1)
1976	-979	(-2.1)	3955	(5.2)	-351	(-4.4)	-15	(-.2)	1543	(7.2)	-174	(-7.6)
1977	-1196	(-2.4)	3575	(4.3)	-629	(-7.4)	270	(3.2)	2197	(8.9)	416	(1.6)
1978	310	(.6)	3354	(3.7)	-555	(-6.0)	544	(5.6)	2012	(7.2)	304	(1.1)
Simple Average (%)												
1970-73	3.6		5.1		-3.3		8.7		4.0		3.5	
1973-78	-2.0		3.9		-4.7		7.8		11.8		-1.0	

Source: Provincial Economic Accounts Experiment Data 1963-78, Statistics Canada 13-213.

The importance of manufacturing to central Canada, especially Ontario, in maintaining a balance of trade surplus, and hence financing energy imports, should not be underestimated. Section IV detailed the relative decline in importance of manufacturing activity which occurred in every region of the seventies. Ontario in particular had experienced the largest relative shift. But in 1974 net exports of domestic manufactured commodities to other regions of Canada amounted to $4.3 billion for Ontario and $1.2 billion for Quebec. All other regions of Canada incurred deficits in their net trade in manufactured goods: the Prairies, $2.7 billion; British Columbia, $1.4 billion; and the Atlantic provinces, $1.5 billion (Statistics Canada, 31-522, 49). Unfortunately, these estimates for 1974 are the most current available. In sum then, eastern Canada, by virtue of being part of the Canadian economic union, has had a much better opportunity to adapt to higher energy prices than other industrialized economies.

c) Provincial Government Revenues

The magnitude of the increase in natural resource revenues accruing to the western provinces has been discussed in Section II. The disposition of these resource rents could effect a shift of economic activity to the West independently of changes in the terms of trade. The most obvious way this could be accomplished is by interprovincial

bidding for capital and labour through competitive tax reductions. The resource rents captured by the western provinces enable them to pursue this policy without incurring budgetary deficits. Table V-2 provides a breakdown of selected tax receipts and gross government expenditures per capita for Canada and the provinces for selected years since 1972-73. The two tax categories chosen were personal income taxes and general sales tax per capita, as they are the most visible from the perspective of potential interprovincial migrants. Despite the absence of sales tax revenue in Alberta, per capita personal income tax in the province was significantly below the 'all province' mean in each year. On the other hand, gross government expenditures per capita of the Alberta government exceeded those of all provinces except Prince Edward Island in 1972-73. General sales and personal income taxes financed 9.1 per cent of gross government expenditures per capita of the Alberta government in 1978-79. The corresponding figures for Quebec and Ontario, and the all province average were 40.8 per cent, 37.0 per cent, and 32.3 per cent, respectively.

As discussed above, the lower level of taxes and the greater provision of public goods might be expected to draw additional population to Alberta. This migration should continue until the decline in the value of the marginal product of labour in Alberta equals the tax advantages of

Table V-2

Selected Sources of Provincial Revenue and Gross Expenditures Per Capita

(Estimated)

	New-foundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Sask-katchewan	Alberta	British Columbia	All Provinces
1978-79											
Personal income tax per capita	269	212	298	284	705	406	373	349	307	436	465
General sales tax per capita	282	190	160	190	204	207	144	163	-	238	187
Gross government expenditures per capita	2,065	2,200	1,745	1,873	2,227	1,654	1,692	2,112	3,362	1,901	2,020
1976-77											
Personal income tax per capita	193	146	208	216	579	266	285	301	239	294	348
General sales tax per capita	251	167	166	167	215	216	178	187	-	273	199
Gross government expenditures per capita	1,674	1,794	1,458	1,522	1,787	1,417	1,022	1,766	1,838	1,662	1,665
1972-73											
Personal income tax per capita	62	56	100	86	211	151	143	83	135	135	153
General sales tax per capita	106	106	103	101	117	109	87	81	-	100	99
Gross government expenditures per capita	1,037	970	773	887	863	813	731	702	894	710	8,211

Source: Provincial and Municipal Finances, Canadian Tax Foundation.

moving there. From a resource allocation perspective, this discrepancy in marginal products across regions implies that total national output has been reduced below what it otherwise would be. There could be a net social gain to reallocating this labour properly or to preventing the excess migration from occurring in the first place. The latter point provides the main economic justification for a system of equalization payments.[2] Boadway and Flatters (1980) have gone so far as to assert that moving to world oil prices under current revenue sharing arrangements may lead to greater costs as a result of fiscally-induced migration than are overcome by removing demand and supply inefficiencies. Again this is something we are pursuing in more detail presently, so we leave it as a conjecture.

Fiscal-induced migration of capital is also possible. It now seems probable that the corporate tax may also become a provincial tool in attempting to get firms to relocate. Ottawa has administered and collected this tax for most provinces since the Second World War, although the constitutional rights to levy this and other direct taxes remained with the provinces. The exceptions were Quebec which has always collected its own corporate taxes, and Ontario which began to do so in 1957. Alberta now plans to do the same beginning in 1981. The purpose of the transfer does seem to be aimed at increasing the competitive position of firms in Alberta at the expense of those elsewhere. The Provincial

Treasurer has been cited as arguing that "the new business incentives approach, which still has to be worked out in detail, will permit Alberta, for the first time, to design a tax which could allow reduction of taxes for locally controlled small businesses across the province. This could help them expand, diversify and compete with large national and international corporations" (Edmonton Journal March 7, 1980, D10). To the extent that Alberta and other western provinces can implicitly subsidize through the tax system the relocation of capital and labour, western prosperity would be a the expense of a more efficient allocation of productive capacity nationally.

The other manner in which the West could promote industrialization is via subsidies to the private sector, or using their regulatory powers to favour locally based industries, or through outright public ownership. While the western governments are clearly not above using such tactics, neither are they more active in this respect than the other provincial jurisdictions. Maxwell and Pestieau (1980, Chapter 6) have compiled a list of provincial protectionist policies in effect throughout the country, and it would be difficult to conclude from this that western industries receive any greater preferential treatment than do their counterparts in central Canada or the Atlantic region. There is still the argument, however, that much of the economic activity is in the West currently, and firms

(or labour) that might otherwise operate in the region out of central Canada are induced or compelled to move there instead. In this respect, the apparently less stringent protectionist policies in the West might still be having a greater overall impact on resource movements. Unfortunately, not enough is known about this topic yet.

The Alberta Heritage Savings Trust Fund and its much smaller counterpart in Saskatchewan are often pointed to as the single most important manifestations of the power of western governments to effect a westward shift of economic and political power. While the assets of the Alberta fund do seem large, especially when the present value of future receipts is calculated (Helliwell, 1980), two points need to be raised here. First, to date at least, the Fund has not been used to directly promote economic diversification. The Pacific Western Airlines purchase and the equity position in the Alberta Energy Company are the exceptions rather than the rule. Most of the assets are lent out to other governments, or invested in infrastructure within Alberta, or held as interest bearing assets (Collins, 1980). This is not to deny though that control of a large sum of money such as the Heritage Fund does give the government the potential to intervene on a massive scale in the future, and it may be this thought that is behind the westward shift predictions.

The other point concerns the impact of the Heritage fund on labour supply. If little is known about the actual responsiveness of migration to the current price of public goods, even less is about whether people will move to capture an expected future tax saving. As it stands, there is only the expectation that the assets will be used to provide government services to some extent in the future when the stream of revenue dries up along with the conventional petroleum supplies.

The obverse to the increase in provincial government wealth in the West is the decline in Ontario's relative fiscal position. The extent of this is evident from Table V-3. Much of the shift in fiscal capacity to the West, specifically Alberta, is the result of the rapid growth of the economy because of rising energy and commodity prices. These data probably reflect the same phenomena formed by Mansell and Wright (1979) in their analysis of the shift of economic power to the West. The shift was more the result of the rapid growth of Western firms rather than the relocation of existing firms to the West.

The decline in Ontario's fiscal capacity has been sufficiently large in fact that normally it would now be entitled to payments under the equalization scheme. Her positive entitlements due to an absence of an oil and natural gas tax base have risen rapidly as a result of

Table V-3

Share of Federal Basic Income Tax and Corporate Taxable Income, Alberta and Ontario, Tax Years 1972 to 1977

	Share of Total Accounted For	
	Ontario	Alberta
	(per cent)	
Federal Basic Income Tax		
1972	44.7	7.3
1973	43.8	7.4
1974	42.4	7.9
1975	41.2	8.8
1976	40.4	9.3
1977	40.3	9.6
1978	39.8	10.0
Corporate Taxable Income		
1972	45.2	9.4
1973	44.7	10.3
1974	42.2	15.0
1975	38.8	20.7
1976	38.2	18.9
1977	36.3	22.7

Source: David B. Perry, 'Fiscal Figures', Canadian Tax Journal, Vol. 27, No. 6, Table 4, p. 735.

rising energy prices. Previously these positive entitlements were easily offset by negative entitlements due to a large share of the nation's non-resource based fiscal capacity. But this is no longer true. By 1977-78 the province was entitled to equalization payments of $110 million and this had risen to $255 million in 1979-80 (Perry, 1980, p. 731). To prevent this obvious travesty of the intent of the equalization scheme, federal legislation was introduced to exclude any province from receiving payments if its personal income per capita was regularly above the national mean.

Ontario still benefits indirectly from the system of equalization payments though in the sense that its GPP is larger than it would otherwise be. The 'have not' provinces received $2,087 million in equalization payments in 1976-77 and the estimated total for 1978-79 is $2,720 million. These payments help the 'have not' provinces finance their trade deficits which arise from imports of oil and manufactured goods. The evidence provided earlier showed that every region of Canada incurred a deficit in trade in domestic manufactured goods with central Canada. The demand for domestic manufactured goods is probably more price and income elastic than for oil. Hence the adjustment of regions with trade deficits in oil and manufactured goods would, in the absence of equalization payments, fall more on imported manufactured goods than oil. Thus the flow of

equalization payments probably allows Ontario to maintain a greater export surplus in domestic manufactured goods than otherwise would be possible.

d) Conclusion

In sum, it does appear possible to construct any plausible set of circumstances to support the view that the East is worse off as a result of the West having oil, other than perhaps the case where the exchange rate was kept abnormally high due to developments in the energy sector. The contrary is true in fact. The eastern economies transfer requirement has been significantly less acute, and the adjustment considerably more orderly, than what it would have been under the next most likely set of circumstances. Whatever adjustments the eastern region is going through in response to the increased oil prices, whether deflation or unemployment, are significantly ameliorated by the presence of western oil supplies and the energy policies of the federal and provincial governments. There is still the question of the inefficiencies associated with any purely fiscally-induced migration of capital and labour. To the extent that these are significant though, they should be viewed as a problem for the nation as a whole rather than as an interregional issue.

Footnotes

1 This phenomenon has come to be known as the Dutch disease. A discussion of the problem is found in Flatters et al (1980)

2 See Boadway and Flatters (1981), or Norrie, Percy, and Wilson (1981).

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