The Economics of Constitutional Change Series
Article Number 5/June 1991

NATURAL RESOURCES AND THE WESTERN CANADIAN ECONOMY: IMPLICATIONS FOR CONSTITUTIONAL CHANGE

Edward J. Chambers, Faculty of Business
Michael B. Percy, Department of Economics
University of Alberta

NATURAL RESOURCES AND THE WESTERN CANADIAN ECONOMY:

IMPLICATIONS FOR CONSTITUTIONAL CHANGE

E.J. Chambers
Faculty of Business and
Western Centre for Economic Research
University of Alberta

M.B. Percy
Department of Economics
University of Alberta

Discussion Paper Prepared for
Western Economists Meeting on the Constitution
University of Alberta

May 24 to 25, 1991

INTRODUCTION

The failure to ratify the Meech Lake Accord in the summer of 1990 has led to a period of intense evaluation by individual Canadians, various provincial constitutional task forces, and an array of federal government task forces and commissions on what is expected of the Canadian Confederation. These discussions, and certainly their timing, have been determined by a very clearly articulated vision of a far more decentralized confederation coming from Quebec, one which meets its perceived economic and political needs. Though Quebec has been successful in highlighting the nature of constitutional change that it desires, there has been little discussion or debate on what other regions of the country might want from constitutional change in light of their perceived unique characteristics. Rather with certain exceptions,(Courchene, 1991, Boothe, 1991) the spatial blocks of various constitutional scenarios have often been in the context of "rest of Canada" and Quebec. Clearly the rest of Canada excluding Quebec is not a homogeneous economic and political entity and it is misleading to treat it as such.

This paper focuses on the economic structure of Western Canada and addresses the distinctive features of the region which should be considered in the discussion of constitutional change. Our paper is unabashedly empirical in nature and draws heavily upon work either completed or in progress at the Western Centre for Economic Research at the University of Alberta. Its purpose is to demonstrate the continuing importance of natural resources to Western Canada and to offer an overview of some of the economic consequences which follow. This provides the framework for policy makers in Western Canada when assessing proposed revisions to the current structure of the economic union.

Our discussion proceeds as follows. Section 1 is an overview of the nature of the economic gains which derive from an economic union such as Confederation and highlights the most important from the perspective of Western Canada. Section 2 describes key features of the Western Canadian economy, looking first at industrial structure and employment, and then turning to the composition of the region's international trade. In section 3 the consequences of continuing economic specialization in natural resources are then assessed for an array of provincial economic variables. The evidence indicates that specialization in natural resources does increase provincial economic variability through a variety of channels, especially commodity prices, exchange rates, and rates of capital formation. The final section asks if the Canadian economic union as configured accommodates the distinctive features of the Western Canadian economy, and if the region could better deal with these problems on its own.

1. THE GAINS FROM ECONOMIC INTREGRATION

The literature on the economic aspects of Confederation draws heavily from international trade theory to outline the potential gains in real income - the " economic surplus" - which derive from the arrangement, and how this potential income gain can be dissipated - "balkanization". The basic approach is to describe the various stages of economic integration possible among countries and to suggest the sources of real income gains as we move to successively greater integration (Norrie et al, 1986). A free trade area in which the participating countries remove all barriers to trade in goods and services among themselves, but each maintains its separate pre-agreement trade barriers with non-partici-

pating regions represents the lowest degree of economic integration. The next stage of integration, a customs union, is merely a free trade area in which the partic-ipants agree to common trade barriers with the rest of the world. The next highest stage of integration, a common market, includes all of the features of a customs union with the further provision that all participants agree to the unhindered flow of capital and labour among member countries.

An economic union such as Confederation moves beyond the integration of output and factor markets into the realm of integration of policy instruments by participating members. An economic union possesses all of the characteristics of a common market, includes a monetary union, and provides for harmonization or integration of policy instruments at a level compatible with the political structure chosen by participating members to allocate government functions. In the context of the Canadian economic union there is a relatively high degree of decentralization of economic policy instruments to the participating provinces.

What then are the sources of economic gain from greater integration? Maxwell and Pestieau (1980:13-20) have provided a framework and explicit discussion of the sources of the potential economic surplus from an economic union such as Confederation. They suggest four basic gains from the integration of factor and commodity markets and harmonization of policy instruments. These gains can be thought of as relative to a case in which the provinces were autarkic. The first set of gains are those which derive from the incentives for greater specialization of labour and the exploitation of scale economies because of the elimination of barriers to interregional output and factor flows. The larger market of the economic union permits a more efficient allocation of labour and other factors between sectors and regions. The result is greater specialization, improved factor productivity, and higher real incomes.

The second source of economic surplus is the potential for the pooling of risks at the national level to ameliorate the consequences of regional instability. This pooling includes interregional insurance and transfer programs, labour and capital flows between regions in response to varying economic opportunities, and macro stabilization policies aimed at specific regions. The ability to pool risks nationally is a highly valuable feature of an economic union. It permits regions to specialize in those areas of production in which they are most efficient, while at the same time providing mechanisms of insurance against some of the costs inherent in specialization. In the short-term the broader tax base of the economic union compared to the region permits transfers via the federal government from regions on the expansion phase of an economic cycle to those whose economies are in downturn. In the longer term, labour mobility is the ultimate insurance for those residents of regions whose economic base is in secular decline.

The sharing of overhead expenditures on activities such as defence, provision of justice, and large scale transportation projects is the third source of the surplus in the Maxwell-Pestieau framework. The final source of economic gain is the possible market power possessed by an economic union but which would be lacking for any individual region in international trading relationships. Bigger and more diversified economies often appear to be more successful in trade negotiations because of both their sheer size and their ability to engage in more trade-offs in light of a more diversified economy. The use of this market power

to increase export prices, or reduce import prices, will improve the terms of trade faced by an economic union and increase the aggregate real income of its residents.

When seen in this perspective, Confederation does seem to offer the potential of increasing the real incomes of provinces and their residents through the benefits derived from regional integration. The real issue when evaluat-ing the economic benefits of Confederation is whether benefits of similar or greater magnitude are available to the participating regions through alternate trading arrangements. The magnitude of the potential surplus derived from Confederation is not a constant. Its size will vary as a result of changes within Canada that influence the structure of the economy, the mechanisms of interregional adjustment, and external factors (foreign tariffs, transportation costs) that offset the possibility of trade with other countries.

Distributional considerations are also critical. From the perspective of any one region, it is not the size of the economic surplus accruing in aggregate to the economic union which is important. Rather, it is the share of the economic surplus which the region receives, and the efficacy of the institutional structure distributing the benefits of economic integration which is paramount.

From this perspective it is highly likely that two sources of economic surplus - the sharing of overheads and the gains from trade - are probably not very important from the perspective of Western Canada. The Free Trade Agreement with the United States, and the possibility of continued trade liberalization through multinational vehicles such as GATT, mean that many of the gains from specialization and scale can be captured through international trade rather than trade with the rest of Canada. In fact, to the extent that interregional trade in Canada encounters remaining trade barriers, it may be quite costly relative to trade with external partners. The sharing of overheads may also no longer be an important source of economic gain to Western Canada. The logic of greater trade liberalization, especially the Free Trade Agreement, means that North-South linkages may become increasingly more important than the traditional East-West ones. The existing economic union is probably not well structured to deal with this new spatial orientation.

The two remaining sources of economic surplus from Confederation - the insurance gains and greater market power are likely to be very important to the economic well-being of the residents of Western Canada. The evidence to follow in sections 2 and 3 suggest a highly volatile economy in which economic stabilization and insurance aspects of an economic union are critical, an economy whose specialization in and geographic concentration of exports makes it particularly susceptible to trade harassment.

2. RESOURCES IN THE WESTERN CANADIAN ECONOMY

The following two sections of the paper are empirical in nature and cover much factual material. Thus throughout the section we restrict ourselves to highlighting the main points (at least to us) which emerge from the evidence.

2.1 Distribution of Employment

Chart 1.1(a) shows the industrial distribution of employment for each of the four provinces, for Western Canada and to permit comparisons, the distribution for Western Canada is compared in Chart 1.1(b) with that for the country as a whole. The most important points of contrast with the national data are:

(1) The share of agriculture is 6.9% or approximately twice the national average.

(2) Those with jobs in non-agricultural primary industries amount to 4.1% of total employment compared with a national average of 2.5%

(3) Only 10.1% of jobs are in manufacturing compared with 17.2% nationally.

(4) Otherwise the distribution of employment in construction and the service industries resembles the national average.

The comparison of employment across the four Western provinces indicates that differences between the provinces are also striking. Within the Prairie provinces, agriculture's relative importance in Saskatchewan is more than twice as great as in Alberta and Manitoba. In all provinces the proportion of employment in non-agricultural primary industry exceeds the national, more so in alberta than the other three provinces because of the energy sector. While all four provinces have smaller shares of employment in manufacturing than the national average, manufacturing is relatively more important in B.C. and Manitoba

2.2 Merchandise Trade Links with the Rest of the World

Table 1 provides an overview of the region's major export categories reported in terms of province of origin defined as the province in which the commodity exported was grown, extracted, or exported. What is striking from the Table is the fact that six primary commodities account for more than one-half of total export values for the period 1986-89. The figures in brackets refer to the H.S. codes for the export categories.

When 23 other export groups are added to the top 6 of Table 1 some 85% of the West's total international exports are covered. Most of these additional export categories consist of unprocessed and processed primary commodities.

Table 2 profiles the five leading exports of the four provinces to the international economy and the percentage each of the items is of the 1986 to 1988 annual average of total exports. Notable is the dominant position of unprocessed and processed primary commodities in each of the Western provinces international exports. Manitoba alone of the provinces had secondary manufactured products entering the leading five commodity exports and this was only for one year.

Given the heavy concentration of the region's major exports in just 6 categories (Table 1) and the evidence of similar concentration at the provincial level (although varying by product across provinces) it is not surprising that

market slumps for just a few primary products will cast a pall over the region while favourable market conditions in the same products generate a "boom" atmosphere.

2.3 Spatial Distribution of Markets

Table 3 provides a profile of the geographic distribution of international export markets for each province, for Western Canada, and for Canada. Two features stand out from this Table. One is the smaller relative importance of the U.S. market and greater importance of Japan and other Pacific Rim countries for Western Canada in comparison to Canadian exports. Even in the case of Alberta where the share of exports going to the U.S. is similar to the Canadian average, the commodity composition of the exports differs dramatically. The other feature is the substantial variation which exists across the Western provinces.

2.4 Western Canada's Production and Export Shares in the World Context

The evidence of Table 4 is that with the exception of potash, sulphur, and natural gas relative to the U.S. market, the region accounts for a small share of world production, though its importance in export markets is considerably greater.

The concentration of the West in a narrow range of primary products (Table 1) differentiated from other competitors mainly by price rather than quality, combined with its small share in world production (Table 4) has an important implication for the nature of competition in these markets. There is not simply competition with domestic producers in those markets into which Canadian producers ship, but at least equally important is the head to head competition with "third countries" in these respective markets.

2.5 The Contribution of Exports to Provincial GDP

Table 5 provides a measure of the contribution of foreign exports and total exports to provincial GDP. The relative importance of interprovincial exports is simply the difference between columns 2 and 1. Not only is there significant variation across provinces in the importance of total exports but wide variation also exists in the relative importance of interprovincial and international markets between provinces.

Chart 2 focuses specifically on the relative contribution of inter-provincial exports to provincial GDP. Since it is likely that at least some of these manufactured exports destined for rest of Canada markets could be sold in foreign markets, one can treat these data as providing an upper bound estimate of the contribution of interprovincial to provincial income. It is upperbound in that some of this trade represents trade diversion within the economic union. These are small shares indeed.

3. ECONOMIC CONSEQUENCES OF THE WEST'S RESOURCE SPECIALIZATION

3.1 Variability in Capital Formation

The region is characterized by a variability (Standard deviation of annual percent changes in real fixed capital investment) which is approximately twice as large as that in the rest of Canada.

3.2 Variability in Prices

Table 6 illustrates the degree to which prices in the markets for raw and semi-processed materials are more volatile than those in markets for finished goods. This Table reports the standard deviation of quarterly price changes for the four main Western Canadian export product groups over the period from the second quarter of 1972 to the fourth quarter of 1988. For comparative purposes the data for the consumer price index and industrial selling price index have been provided. Since these coefficients are based on quarterly percentage rates of price change rather than levels of prices, a direct comparison based on standard deviations is possible. The outstanding feature of this Table is the high degree of price variability in the West's main exports. On the other hand import prices as proxied by the Industrial product price index are only slightly more variable than consumer prices.

3.3 Variability in Economic Aggregates

Charts 3, 4 and 5 (Mansell and Percy, 1990) depict the variability of GDP, Total and Per Capita Personal Income, and Population respectively for the provinces and the nation. Regardless of the variable in question The Western provinces with the exception of Manitoba demonstrate a much greater level of economic variability than other provinces or the nation.

High variability and capital formation variability at the provincial level in the West derives in part from the price variability noted previously. It also stems from movements in the exchange rate.

3.4 The Western Centre Real Exchange Rate Measure

In the post-1973 period, following adoption of a floating exchange rate regime by the international economy, volatility in the external value of the currency has also contributed to the commodity price volatility facing Western producers. Variations in the external value of the currency can serve to offset fluctuations in commodity prices. Appreciation of the external value of the currency during periods of rising commodity prices can temper the stimulus to economic activity while a depreciation during a period of falling prices can counter the pressure on profit margins of producers. On the other hand currency changes can have perverse effects on producers if appreciation accompanies commodity price declines and depreciation accompanies commodity price increases.

A new exchange rate index for Western Canada is described in greater detail in Chambers (1991). Its main features are that it reflects the importance of Western Canada's leading export commodities and their destinations and it is double weighted to take into account third country competition.

The evidence from both existing exchange rate indexes (Bank of Canada G-10 index) and that of WCER indicates that exchange rate movements did for some of the period in question 1972(2) to 1988(4) move perversely, in that they tended to amplify booms and exacerbate contractions in the region through reinforcing commodity price movements.

Regression analysis employing the percentage rate of change quarterly of employment in Western Canada as the dependent variable and the percentage change each quarter in real commodity prices and the index of real effective exchange rates as the two independent variables with one and two quarter lags confirms the important effect of both variables. The cumulative effect of a 1 percent rise in commodity prices over three quarters is a 0.2 percent increase in employment, while an increase in the real exchange rate of 1 percent is associated with 0.3 percent decline in employment (Chambers and Percy 1991).

3.5 Mechanisms of Interregional Adjustment

The provinces and regions of Canada trade with one another on a fixed exchange rate - the Canadian dollar. Hence the adjustment of the provincial economies to terms of trade shocks and other economic disturbances manifests itself through a number of mechanisms of which relative price movements and migration are most important in the short to medium term. The relative price movements of particular importance are how traded prices vary relative to non-trade prices - the relative price of traded goods. When a regional economy is in decline non-traded prices, of which housing is perhaps the most visible, often decline relative to traded prices, and this shift in relative prices helps improve the competitive position of the region in external markets. Conversely, booming regions often experience rapidly rising non-trade prices relative to traded ones. This shift in relative prices helps to ameliorate the magnitude of the boom and to bring the regional balance of payments into equilibrium.

As a proxy for non-traded prices we use land prices. Land prices will change for a great number of reasons directly unrelated to adjustment issues, for example changes in property taxes. Nonetheless it is likely that over all variability as shown by Charts 3 to 5, and the traded price volatility illustrated in Table 6 will be reflected in land prices. Only indices of land prices at the city level are available. The evidence of Table 7 suggests that this is so with the exception of Regina which for the period displayed a level of volatility less than regional counterparts and not commensurate with the evidence of macro instability.

Regional economies are not immune from the so called "Dutch Disease" phenomena of deindustrialization accompanying resource booms. For national economies an appreciating exchange rate during periods of rising resource prices squeezes the competitive position of traditional (non-resource) export industries and domestic import-competing goods industries. For regional economies movements in non-traded prices perform much the same role. Escalating non-traded prices also hinder the competitive position of traditional export industries and import-competing good industries during resource booms. Conversely, during slumps in resource prices, non-traded prices may fall dis-proportionately. However, the incentives for industrialization or greater diversification are often offset by high rates of out-migration and declining domestic demand.

An additional problem faced in resource-rich Western Canadian economies is that government revenues often move in synchronization with resource prices, especially in the cases of Alberta and Saskatchewan. Hence government fiscal policy may tend to exacerbate swings in market induced activitiy initiated by resource price movements.

Table 8 provides estimates of the volatility of real fixed capital formation referred to above by category for provinces and regions. It is very clear that the volatility of resource prices is reflected in the volatility of fixed capital formation in the West. Alberta in particular is more volatile than the West or the rest of Canada. This volatility in fixed capital formation arises from three main sources. The first is the volatility of resource prices and the capital intensive nature of investments in the sector. Second, interregional migration responds to resource price movements and tends to induce shifts in population sensitive capital formation such as residential capital formation. Third, provinicial government capital formation is sensitive to provincial resource revenues which, in turn, are themselves very volatile.

The evidence for the West as whole also indicates that interregional migration is a further important mechanism of adjustment. The ratio of gross or net migration relative to the population stock for selected years, Panel A of Table 9, seems to suggest that this mechanism is not important. However, the relevant measure is the ratio of net migration to the change in population - the contribution of migration on the margin. The evidence of Panel B certainly indicates that interregional labour market adjustment is important. The alternative to interregional migration is greater variability in income or unemployment.

4. IMPLICATIONS FOR ALTERNATE CONSTITUTIONAL SCENARIOS

We focus on three basic scenarios: the status quo, a revitalized confederation, and an independent Western Canada. For the two major sources of economic surplus from integration relevant to Western Canada - market power in international markets and insurance/stabilization we suggest heuristically what the data suggest for each of these benefits under the three scenarios.

4.1 Market Power in Trade

In the case of market power there really is no distinction between the status quo and a revitalized confederation. The key question is whether the West would fare better as an independent entity, or as part of the Canadian economic union. The evidence presented in section 2 depicts the Western Canadian economy as remaining highly specialized in a narrow range of resource and processed resource products destined for a geographically concentrated set of international markets. Had the West been an independent entity it is highly likely that the softwood lumber dispute of 1986 would have ended with a countervail duty being imposed by the U.S. and revenues accruing to the U.S. Treasury. The actual outcome - an export tax levied by the federal government as an interim measure until the provinces modified their timber pricing systems - probably does reflect in no small measure the market power that a larger economy has in resolving trade disputes.

A similar argument could be made in the Potash anti-dumping case. The actual outcome was unfavourable from Saskatchewan's perspective, but probably better than would have been the case for a "stand alone" Western Canadian entity.

Western Canada because of its pattern of trade and industrial structure will almost certainly bear significant costs associated with U.S. protectionist sentiments. Successful countervail and anti-dumping suits by U.S. producers will be at the expense of resource producers in the West, and those governments and individuals whose incomes derive from these sectors. The potential for Western Canadian resource producers to withstand successfully the exercise of monopsony power by the U.S. or other countries is greater within an economic union than outside of it. Trade harassment will continue but costs would be less for the West within economic union that on its own.

The current discussions under the Free Trade Agreement regarding a common definition of subsidy, if successful, will probably lead to a better definition from the perspective of Western Canada than the region as a separate entity could negotiate. Moreover, it is by no means clear that a separate Western Canada would be a party to the Free Trade Agreement as it presently exists. Lipsey (1991) has argued that it is unlikely that the Free Trade Agreement would remain intact were Canada to fragment. While the various Canadian regions would hope the Agreement would remain in force, this outcome is by no means in the Americans' best interests, nor perhaps consistent with the enabling legislation of the Agreement.

4.2 Insurance and Stabilization Issues

Western Canada is a highly volatile economy by virtually any measure deriving from its industrial structure, specialization in products exhibiting significant price volatility, and concentration in a few export markets. This volatility is reflected in a range of macro variables and in mechanisms of adjustment, such as shifts in relative prices within the region and the interregional migration.

Which of the constitutional scenarios best deals with this characteristic of the Western Canadian economy? A stand alone Western Canadian economy would likely exhibit greater volatility than under the status quo, and certainly more than a revitalized confederation with policy instruments directed specifically at insurance and stabilization issues. The reasons for the claim that a stand alone West would be even more volatile than it is now are varied. They stem in part from the arguments that we would forego many of the current avenues of interregional adjustment to economic shocks (Courchene, 1978). Shifts in real income and wages, rather than adjustments through interregional migration and asset transfers through the national banking system, would become the dominant mechanism of adjustment. Income and employment variability would necessarily be greater in an independent West than they are now.

Perhaps more importantly, the West would forego the ability to pool risks nationally, a feature deriving from the fact that the national industrial structure is more diversified than any one region. The ability of an independent West to provide economic stabilization would be much less than exists in Confederation currently because it would lack a diversified tax base.

Although the present institutional framework of Confederation does not deal very well with the problem of volatility exhibited by the West, that does not preclude it being addressed in a revitalized confederation. Designing unemployment insurance programs which were truly insurance programs rather than income maintenance schemes for declining regions and sectors would be an integral element of reform. Ensuring federal transfer programs were automatically more responsive to cyclical regional economic conditions, and less directed to preserving the spatial distribution of population in the long-run, would also be required. Federal policies that promoted labour mobility, and which made market based mechanisms of regional adjustment more efficient, would further enhance the insurance/stabilization aspects of the economic union.

4.3 Issues of Regional Equity

A revitalized economic union would also have to accommodate the distribution of potential economic surplus. A study undertaken for the Royal Commission on the Economic Union indicated that the current structure of confederation generated a negative economic surplus (Whalley and Trela, 1986) and discriminated significantly against resource producing regions. While the conclusions of this study reflect its choice of a 1981 base year, and the distortions introduced into the energy sector by the since dismantled NEP, an array of federal policies remain which continue to dissipate portions (or all) of the gains from the economic union.

Data available on regional net fiscal balances (federal revenues in a province less disbursements) indicate that on equity and insurance grounds one can fault federal policies, especially in terms of their effects on the Alberta and British Columbia economies (Mansell and Schlenker, 1990). Shifting the focus of the institutions of confederation from maintaining the status quo in the spatial distribution of economic activity and population in Canada, to dealing with the consequences of economic volatility, would improve the well-being of all Canadians - not just those in Western Canada - and contribute to a larger surplus from economic union.

4.4 The Political Economy of Resource Specialization

The structure and role of government in the economy in an independent West needs articulation. Would the West be a federal or unitary state? Would it be laissez-faire or interventionist in its approach to the market?

4.4.1 Fiscal Relations in Western Canada

The late transfer (1930) of remaining Dominion Lands to provincial jurisdiction has meant that within the west, Crown ownership of the resource base is significant, and the transfer of ownership to the private sector has not occurred to the same extent as in the rest of Canada. Significant differences exist among the Western provinces in revenues captured by government from the resource base, although the magnitude of potential rents today are likely no where near those as estimated by the Economic Council in 1980 when real energy prices were far higher. Smith (1990) provides estimates of resource revenues actually captured by provinces on a per capita basis and these are provided in Table 10. Substantial variation in the level of these revenues exist for a given

province through time and across provinces at a point in time. A similar variation exists in the relative contribution of these revenues to provincial expenditures.

A substantial body of literature exists demonstrating the responsiveness of interprovincial migration to fiscal incentives, one which argues such migration is inefficient. It is clear that the potential for net fiscal benefits to influence both interregional and intraregional migration is very great. Any central government in an independent west would have to deal with the incentives that net fiscal benefits give to inefficient migration should provincial structures remain.

Smith (1990) also provides estimates of tax effort and tax capacity for Canadian provinces in 1988 as presented in Table 11. These data show significant variations in tax effort and tax capacity for Western provinces. The design of a stand-alone Western regional grouping would, with current provincial configurations, face identical problems currently confounding the federal government in equalization, EPF, and CAP programs.

The logic of these data suggest that only a unitary state would make sense in an independent West. The alternative - the existing configuration of provinces and a Western central government with a significant redistributive role would be a high cost institutional structure for a relatively small population base. It would be unrealistic to presume that the residents of the West would want to replicate a central government with many of the functions held by the current federal government, though on a smaller economic base.

4.4.2 The Role of Government in an Independent West

Table 12 provides data derived from a random sample of 1045 Alberta residents taken in 1988 on the issue of trade offs between the gains from economic specialization and the instability which accompanies it (Mansell and Percy, 1990). The evidence indicates that the overwhelming proportion of Albertans would prefer a more stable albeit lower income. Logit analysis of the individual responses finds that neither rural-urban dichotomy nor levels of educational attainment explain individual views regarding specialization. However, employment in non-traded industries, and increasing amount of mortgage payments by individuals, led them to view specialization as undesirable. The latter variable likely picks up the correlation between wealth effects and terms of trade, while the former picks up the link between the terms of trade and non-traded employment.

The response to this question and others included in the survey provide evidence of a strong demand for diversification strategies, even though such policies would have a negative effect on incomes. A laissez-faire Western Canadian economy would likely end up even more specialized and more volatile than currently. In light of these survey results it is probable that the political market place would lead Western politicians to be highly interventionist in the regional economy. Thus any set of policies to enhance further market incentives for greater specialization, or further increase the degree of regional economic instability, would undoubtedly lead to the demand for provincial diversification policies - with all their associated economic inefficiencies.

CONCLUSIONS

Two basic themes emerge from our analysis. The first is that the West's continued economic specialization in natural resource products (inclusive of agriculture) has important implications for trade policy, elements of fiscal federalism, and issues of regional adjustment, especially as they relate to the labour market. Resource markets do differ in certain respects from markets for services and secondary manufactured products: they influence the likelihood of trade disputes, they increase the variability of the Western Canadian economy, they affect the mechanisms of regional adjustment to economic shocks, and they shape how residents view the operation of market forces.

The second theme is that despite the importance of natural resource and agricultural sectors in each of the Western provinces, significant economic diversity exists between them. These intra-regional differences are probably sufficiently large that many of the problems which currently confound federal-provincial relations would remain, and perhaps be even more serious for a grouping of Western Canadian provinces. For example, the issue of regional disparities, the need for an equalization mechanism, and the possible conflicts between equity and efficiency would remain.

References

Boothe, Paul (1990) "The Economics of Association: A Regional Approach to Constitutional Design" Research Paper 91-11, Department of Economics, University of Alberta.

Chambers, E.J (1991) "Indexes of Effective Exchange Rates For Western Canada", Information Bulletin, No. 2 (Edmonton: Western Centre for Economic Research).

Chambers, E.J. and Michael B. Percy (1991), Western Canada in the Global Economy, Western Studies in Economic Policy No. 2, Western Centre for Economic Research, Edmonton: University of Alberta Press.

Courchene, T.J. (1978) "Avenues of Adjustment: The Transfer System and Regional Disparities" Confederation at the Crossroads, Vancouver: Fraser Institute

Courchene, T.J. (1990) "The Community of Canadas" a submission to Quebec's La Commission sur l'avenir politique et constitutionel du Québec, November, 1990.

Lipsey, R.G. (1991) "Trade Issues Involved in Quebec 'Separation'", paper presented at the Meeting of Western Economists on the Constitution, Simon Fraser Harbour Centre, March 20-21, 1991.

Mansell, Robert and Michael B. Percy (1990) Strength in Adversity: A Study of the Alberta Economy, Western Studies in Economic Policy No. 1, , Western Centre for Economic Research, Edmonton: University of Alberta Press.

Mansell, Robert and R. Schlenker (1990) "An Analysis of the Regional Distribution of Federal Fiscal Balances: An Update", University of Calgary Department of Economics Research Paper.

Maxwell, Judith and C. Pestieau (1980) Economic Realities of Contemporary Confederation, Montreal: C.D. Howe Institute.

Norrie, Kenneth, Richard Simeon and Mark Krasnick (1986) Federalism and the Economic Union, vol. 56, Royal Commission on the Economic Union and Development Prospects for Canada, Toronto: University of Toronto Press.

Smith, R.S. (1990) "Spending and Taxing: The Recent Record of Western Canadian Provinical Governments", Information Bulletin, No. 1 (Edmonton: Western Centre for Economic Research).

Whalley, John and Irene Trela (1986) Regional Aspects of Confederation, Vol. 68, Royal Commission on the Economic Union and Development Prospects for Canada, Toronto: University of Toronto Press.

TABLE 1:

Top Tier Western Canadian Merchandise Exports
(1986-89 Average)

Commodity	% Share of total exports
Crude Petroleum (27.09)	11.73
Sawn Softwood Lumber	11.08
Woodpulp (47)	9.29
Wheat (10.01)	8.04
Natural gas (27.11.21)	7.59
Coal (27.01)	5.11
Newsprint (48.01)	2.75
Potash (31.04)	2.48
Copper ores and concentrates (26.03)	1.98
Sulphur (25.03)	1.82
Fish (3)	1.51
Canola (12.05)	1.40
Aluminum (76)	1.39
Paperboard (48-48.01)	1.38
TOTAL	67.55

Source: Exports by Country (65-003).

TABLE 2:

Leading Five Commodity Exports by Province as a Per Cent of Total Exports (1986-88 Averages)

Alberta

	1986(%)	1987(%)
Crude petroleum	27.16	30.26
Natural gas	21.51	19.26
Sulphur	5.33	4.78
Wheat	4.62	4.52
Coal	3.19	3.07
Total	**61.81**	**61.89**

British Columbia

	1986(%)	1987(%)
Sawn and planed lumber	23.38	25.72
Woodpulp	13.99	17.08
Coal	11.37	7.83
Newsprint	6.52	5.90
Copper ores and concentrates	3.41	3.63
Total	**58.67**	**60.16**

Saskatchewan

	1986(%)	1987(%)
Wheat	28.31	26.50
Crude petroleum	16.96	20.04
Potash	13.08	13.08
Canola (rapeseed)	3.76	3.56
Woodpulp	2.81	3.38
Total	**64.92**	**66.56**

Manitoba

	1986(%)		1987(%)
Wheat	23.55	Wheat	14.20
Flaxseed	4.84	Nickel and alloys	6.12
Electricity	4.51	Aircraft parts	4.05
Lumber products	3.55	Motor vehicle parts	3.73
Canola	3.29	Canola	3.17
Total	**39.74**	**Total**	**31.27**

Source: Exports by Country (65-003)

TABLE 3:

Geographic Markets: Per Cent Share for the Four Western Provinces, from 1986-88 export value averages

Market	Alberta	B.C.	Manitoba	Sask.	W. Canada	Canada
U.S.	71.55	44.97	57.07	39.74	54.06	75.30
Japan	6.54	26.30	7.63	10.63	15.93	5.78
Pacific Rim	4.68	7.19	2.36	4.64	5.59	2.72
W.Europe	2.59	13.40	10.45	6.23	8.50	8.33
Latin America	1.65	1.36	2.00	3.79	1.86	0.82
Central America	1.66	0.66	2.73	3.34	1.36	1.26
USSR, E.Europe	2.87	0.20	6.16	10.75	3.13	1.07
China	2.94	1.61	5.87	11.41	3.82	1.36
Middle East	1.34	0.25	2.84	4.25	1.40	0.43
Africa	2.31	0.35	0.96	2.60	1.38	0.78
Other Asia	0.74	0.66	1.02	1.66	0.86	0.72
Australia N.Z.	1.68	2.97	0.88	1.01	2.09	1.12
Total*	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

*Totals may not add to 100.0 because of rounding.

Source: Exports by Country (65-003).

TABLE 4:

Western Canada's Share of World Production and Exports:
Selected Commodities, Volume basis

Commodity	% Share of Production	% Share of Exports
Copper ores and concentrates	5	9
Natural gas	5	5[1]
Crude oil	2	8[1]
Sawn and planed lumber	10	38
Paper and paperboard	1	4
Woodpulp	3	14
Sulphur (all forms)	12	45
Zinc ores and concentrates	11	11
Potash	25	40
Wheat	5	20
Rapeseed	17	43
Barley	8	24

[1]Represents percent share of the US market

Sources:

COPPER: Data on Canadian and world production and exports of copper ores and concentrates from UNCTAD, Commodity Yearbook 1987, and the U.S. Bureau of Mines, Minerals Yearbook 1987; Western Canada production from Energy, Mines and Resources, Statistical Summary of the Mineral Industry in Canada 1987, Table 5; Western Canadian exports from Statistics Canada, Exports by Country (65-003).
NATURAL GAS: Data on Canadian and world production, and on imports from Canada as a share of the U.S. market from OECD, Annual Oil and Gas Statistics 1985, 1986.
CRUDE OIL: Data on Canadian and world production from OECD, Annual Oil and Gas Statistics 1985, 1986, and US import data from OECD, Imports by Commodity 1986 and 1987.
SAWN AND PLANED LUMBER (coniferous): Data on Canadian and world production and exports from FAO, Yearbook of Forest Products 1984; Western Canadian production estimated from Statistics Canada, Sawmills and Planing Mills and Shingle Mills 1984 (35-204); Western Canadian exports from Statistics Canada, Exports by Country (65-003).
NEWSPRINT: Data on Canadian and World production and exports from FAO, Yearbook of Forest Productions 1984; Western Canadian production estimated from Statistics Canada, Pulp and Paper Industries 1984 (36-204); Western Canadian exports from Statistics Canada, Exports by Province (36-204).
PAPERBOARD: Data on Canadian and world production and exports from FAO, Yearbook of Forest Products 1984; Western Canadian exports estimated from share of Western Canadian value added in Canadian paperboard production in Statistics Canada, Pulp and Paper Industries 1984, (36-204).
SULPHUR: Data on Canadian and world production and exports from UNCTAD, Commodity Yearbook 1987; Data on Western Canadian exports from Statistics Canada, Exports by country (65-003).
ZINC: Data on world and Canadian production of ores and concentrates and alloys from U.S. Bureau of Mines, Minerals Yearbook 1987; Data on Western Canadian exports from Statistics Canada, Exports by Country (65-003).
POTASH: Data on Canadian and world production and exports from U.S. Bureau of Mines, Minerals Yearbook 1987, Volume 1.
WHEAT: Data on Canadian and world production and exports from FAO, Yearbook of Agricultural Production 1988, and FAO, Yearbook of Trade and Commerce in Agricultural Products 1988.
RAPESEED/CANOLA: Data on Canadian and world production and exports from FAO, Yearbook of Agricultural Production 1988, and FAO, Yearbook of Agricultural Trade and Commerce 1988.
BARLEY: Data on Canadian and world production and exports from FAO, Yearbook of Agricultural Production 1988, and FAO, Yearbook of Trade and Commerece in Agricultural Products 1988.

TABLE 5:

Commodity Exports: Out of Provincial Exports and Exports to Foreign Countries, as a Share of Provincial GDP (1986-88 Averages)

	Foreign exports as a % of GDP	Total exports as a % of GDP
British Columbia	24.5	33.1
Alberta	19.5	39.0
Saskatchewan	27.4	40.4
Manitoba	13.4	30.4

Source: Provincial Economic Accounts (13-213), Exports by Country (65-003).

TABLE 6:

Standard Deviation of the Price for Main Export Groups
vs. that of Finished Goods Prices

Sector Price Index	Standard Deviation	Multiple of CPI	Multiple of IPP
Agricultural	10.90	12.1	8.1
Forestry	5.21	5.8	3.9
Energy	5.66	6.3	4.2
Metals	5.27	5.9	3.9
Aggregate Primary Product Index	3.56	4.0	2.6
Consumer Price Index (CPI)	0.90	---	0.7
Industrial Product Price Index (IPP)	1.35	1.5	---

Sources:

1. Commodity price index coefficients from: Price Series constructed at Western Centre for Economic Research.

2. CPI coefficient from Cansim D 484000.

3. IPP coefficient from Cansim D 694000.

TABLE 7:

Standard Deviation of Annual Per Cent Change of Land Prices,
Selected Cities, 1976-1987

City / Variable	Standard Deviation (%)
Industrial Product Price Index (IPP)	3.80
Canada	4.80
Toronto	4.57
Winnipeg	4.78
Regina	4.18
Edmonton	10.44
Vancouver	16.14

Sources:

1. Construction Price Statistics, (62-007).

2. IPP from: Industry Price Indexes, (D-550000).

TABLE 8:

Standard Deviation of Annual Per Cent Changes in
Real Fixed-Capital Investment,
Selected Regions and Provinces, 1972-1988

Investment by: Province/Region	Private Sector Standard Deviation (%)	Public Sector Standard Deviation (%)	Total Standard Deviation (%)
British Columbia	12.25	10.45	11.11
Alberta	14.17	16.29	13.41
Saskatchewan	11.51	9.23	10.45
Manitoba	10.23	8.74	9.04
Western Region	10.66	8.88	9.65
Rest of Canada	5.33	5.96	4.90
Canada	6.25	4.10	5.44

Sources:

1. Provincial Economic Accounts, STC 13-213.

2. National Income and Expenditure Accounts, STC 13-001.

3. Implicit Price Indexes - GDP, STC 13-531 (D14486), to convert current dollars to constant dollars at 1986 = 100.

TABLE 9:

Various Measures of the Relative Importance of Migration

PANEL A: Average Inter-regional Migration Rates Without Intra-regional Migration in West and Atlantic (%)

Region	Gross		Net	
	1985	1989	1985	1989
West	1.9	1.7	-.32	.71
Ontario	1.9	1.9	.36	-.07
Quebec	1.0	1.0	.05	-.11
Atlantic	3.15	3.6	-.26	-.03

PANEL B: Marginal Inter-regional Mobility Rates (%)

Region	1985	1989
West	-38.8	13.8
Ontario	28.6	-4.3
Quebec	-7.9	-14.3
Atlantic	-5.3	7.2

Source:

1. Report on the Demographic Situation in Canada (91-209E)
2. Interprovincial Migration (91-001).

TABLE 10:

Provincial and local government per capita spending and natural resource revenues, in 1981 dollars

	1976/7	1982/3	1987/8
Expenditures:			
Ontario	$3235	$3234	$3722
Manitoba	3295	3449	4128
Saskatchewan	3418	3908	4080
Alberta	4097	5711	5043
British Columbia	3422	3800	3767
Nat.Res. Revenues			
Ontario	21	14	21
Manitoba	44	33	42
Saskatchewan	516	527	300
Alberta	1915	2049	805
British Columbia	173	193	152

Source:

Provincial and local government expenditures are from financial data found in Statistics Canada financial management series as adjusted by Irene Ip of the C.D. Howe Institute. Population data are from the same source as in Table 1, and the price index used is that for government current expenditures in goods and services in Appendix II of Statistics Canada, Provincial Economic Accounts: Annual Estimates, 1984-88 (Ottawa: Ministry of Supply and Services, March 1990), p. 133.

TABLE 11:

Indices of tax effort (a), and provincial-local fiscal capacity for all own-source revenue (b), plus the federal equalization transfer (c), plus all federal transfers (d).

	Tax Effort Index (1988)		Fiscal Capacity Indexes (1988/89)	
	(a)	(b)	(c)	(d)
Newfoundland	102	61.8	92.8	95.1
Prince Edward Island	95	65.0	92.8	95.0
Nova Scotia	92	76.6	92.8	94.4
New Brunswick	95	72.2	92.8	96.2
Quebec	120	86.8	92.8	93.5
Ontario	98	108.7	101.9	100.3
Manitoba	113	81.7	92.8	94.7
Saskatchewan	103	90.2	92.8	95.3
Alberta	77	137.0	128.4	125.9
British Columbia	95	104.5	98.0	99.9

Source:

Tax effort indices have been calculated by David Perry of the Canadian Tax Foundation, based on data provided by the Department of Finance in april 1989. Fiscal Capacity Indices are from "Historical Summary of Provincial Indices of Fiscal Capacity, 1972-73 to 1988-89" (Ottawa: Department of Finance, March 31, 1989), mimeo.

TABLE 12:

Economic Specialization - Results of Poll

Question:

Some claim that economic specialization in Alberta ***is desirable*** because it is efficient and leads to higher income. Others argue that specialization in Alberta is ***not desirable*** because incomes and employment, while higher on average, are less stable.

Which view do you agree with?

Response:	**Is desirable**	**Is not desirable**
Economic specialization in Alberta	26.48%	73.52%

Notes:

1. There were 1145 responses in total.
2. 143 "undecided" responses were not included above.