NAFTA AND THE ECONOMIC IMPACT ON WESTERN CANADA

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This paper is about economic transitions in the four western Canadian provinces since the Free Trade Agreement (FTA) came into effect. It begins with a brief introductory comment on western Canada's international links. The second section provides an overview of changes that have occurred in the economies of the four western provinces during the period of the FTA using 1988 as a benchmark for evaluating these transitions. This section relies heavily on estimates of industry real gross domestic product at factor cost, employment, and average hourly earnings. The emphasis is on the goods producing sector with special reference to the developments that have taken place in the production and marketing of manufactures. The service sector is considered only in a limited manner by reference to business services. The final section of the paper uses monthly labour force survey data to compare employment variability for three of the western provinces before and after the FTA.

INTRODUCTION

The Free Trade Agreement with the United States was one of the most significant economic events of the twentieth century for western Canada. There is now a decade of experience with the FTA, a period of sufficient length to consider the evolution of the four provincial economies in western Canada. We know that over the decade the international export sector of the west as a whole has increased in size and relative importance, and this increase coincided with the rise in shipments to the US market. For western Canada as a whole, the share of merchandise exports going to the US increased from some 51% to 72%, in other words from about one-half to three fourths of shipments. All four provinces participated in this spatial redirection of exports.

The redirection of output and the increase in exports were not the only factors determining economic performance in the decade. To establish a causal relationship between the FTA and economic change we would have to know what the provincial economies, including the policy environment, would have been like in the absence of the FTA. Since there is no generally accepted hypothetical model, we cannot know the alternative. Accordingly, the findings of the paper do not infer a simple causal relationship between the FTA and economic performance.

SOME BACKGROUND TO THE TRANSITIONS OF THE PAST DECADE

The western Canadian economy, and that of each of the four provinces, have from the earliest stages of their development enjoyed significant commodity, finance and human resource links with the broader international economy. Starting with the fur trade, the international economy provided markets for natural resource based products; settlement occurred primarily through international migration; and inflows of capital made possible, in large degree, not only specific resource projects, but also the infrastructure necessary to move bulky commodities to market. The international perception of the entire region for most of 100 years has been that of a purveyor of materials: grain, forest

products, minerals, and—in the last half of the century—crude oil and natural gas.

Close ties to the international economy in the twentieth century yielded some major shocks. Many of these underscored and reinforced the perception of the region as commodity based. These range from the immigration waves of the 1900-1913 period; the devastating impact of the Great Depression of the 'thirties on agriculture, mining and forest products; impacts exacerbated by drought conditions; the discovery of large oil deposits in the decade following World War II; and the commodity price inflation in the 'seventies and the subsequent collapse in the 'eighties.

As an export based and relatively wealthy economy in a sparsely settled country, the prevailing western Canadian sentiment has almost always supported a policy of multilateral open trading arrangements. Links with Europe—an important market for grains and forest products and an important source of capital and human resources through much of the century—have been maintained. In the last three decades, links with Asian countries in terms of markets for resource commodities, capital inflows, and migration, have expanded greatly. Yet western Canadians remained well aware that proximity in space is a prime determinant of international trading relationships. Hence, the importance to them of what might be termed 'good access' to the American market.

For primary industries in western Canada, the meaning of access to the US market is situational. In the case of crude oil and natural gas, the northern border states are not major energy producers, and even more importantly, the depletion of US reserves have led to the adoption of a continental energy policy and unfettered access. For agricultural products, the situation is entirely different, not only because grain and livestock are important products in contiguous western states, but also because agricultural support programs in Canada and the US differ in their composition. Conflicts over subsidies and their potential impact are endemic. For forest products, access problems centre not on pulpwood or paper, but on softwood lumber, a conflict that sprang from US mill owner hostility in the first few years of the century to the failed US-Canada Reciprocity Treaty of 1911, and in the fact that a number of western states are significant softwood producers.

For producers of higher value added goods and of services, access has largely been a matter of tariffs, of standards, of mutual recognition agreements, and of searching for appropriate networks through which the exchange of differentiated products can be facilitated. That is why the FTA was so important to western Canada: it provided substantially greater assurance of a much more open American market just next door. Yet, for many, the FTA remains controversial, based in part on the continuing historic difficulties over access for primary products and for commodity grade wood products and, in part, for non-economic reasons rooted in the doubts that Canadians have traditionally had about becoming too closely tied to a superpower neighbour.

SECTOR CHANGES IN WESTERN CANADIAN ECONOMIES

PROVINCIAL PROFILES

A profile of provincial economic, demographic, output, and labour force changes in the four provinces, compared with the national experience, is reported in Table 1.

The four provinces contained 30.0% of the national population in 1998 compared with 28.7% in 1988. Of the western total, 76.2% resided in Alberta and British Columbia compared with 72.3% in 1988. Demographic experience in the four provinces differed dramatically. British Columbia and Alberta population growth exceeded national growth by a substantial margin, while Manitoba and Saskatchewan growth was substantially less. During the late 'eighties and early 'nineties, Saskatchewan's population actually declined but has since recovered and slightly exceeds its 1988 level. Much of British Columbia's growth resulted from domestic migration, particularly of those in age cohorts over 45, and the fact that the lower mainland area accommodated substantial international immigration.

Rates of population growth during the decade are reflected in the strength of the labour demand measured by full time employment with annual growth rates of 2.10% in British Columbia and 1.68% for Alberta. The employment rate (those 15 and older in employment as a percent of the population 15 and older) is about one tenth higher in Alberta than in the other western provinces and the national average. This is attributable to the fact that the median age in Alberta is lower than in any other province, a fact driving both the employment rate and the labour force participation rate. A slightly different pattern is apparent in output growth with the two provinces furthest to the west but also Saskatchewan—despite almost zero population growth—exceeding the national.

In sum, the table suggests that the experience of the four provinces was far from uniform during these years. However, the variance reported is not unique to the decade but represents the continuation of a trend over the last quarter century enhancing the relative position of British Columbia and Alberta.

Table 1: Selected indicators: 4 provinces and Canada

Indicator	AB	BC	MN	SK	National
Rate of Population Growth (%)	1.61	2.64	0.37	0.05	1.20
Rate of GDP Growth (%)	3.10	2.63	1.17	2.36	1.97
Average Employment Rate (%)	66.7	60.1	61.0	61.8	59.7
Rate of Full Time Employment Growth (%)	1.68	2.10	0.59	0.50	0.66

Source: CANSIM and Western Centre for Economic Research

THE GOODS SECTOR AND EXPORT SHARES IN OUTPUT

The first column of Tables 2(a) through 2(d) identifies the relative importance of the goods producing sector of the four economies. There are measurable differences between the provinces. In British Columbia and Manitoba, for example, the goods sector accounted for a considerably smaller share of GDP at factor cost than in either Alberta or Saskatchewan. In British Columbia, the goods sector also declined in relative importance in the post-1988 period from 31.4% to 25.1% of output during the decade, while in Manitoba the share in the goods

sector displayed no evident trend. In Saskatchewan and Alberta the goods producing sector was larger at the beginning of the period than the other two, and both provinces displayed an increasing trend over the post-1988 decade. In Alberta, the sector share rose from an average of 40.5% in the first three years of the period to an average of 43.7% in the last three years. In Saskatchewan the share was unduly low in 1988 and 1989 because of farm sector failures. Ignoring 1988 and 1989, the goods share displayed only farm based fluctuations around its average of 38%.

Table 2(a): Goods producing industries, international and inter-provincial exports as a share of Alberta output, 1981-998

Year	Share (%) of goods in GDP	Share (%) of international exports GDP	Share (%) of inter-provincial exports in GDP
1988	41.0	19.9	20.8
1989	39.8	19.9	20.8
1990	40.3	22.0	20.0
1991	40.8	22.0	17.4
1992	40.6	25.0	18.3
1993	42.0	25.5	18.5
1994	43.4	27.5	19.3
1995	4.39	30.6	18.6
1996	44.2	34.1	19.8
1997	44.8	33.6	18.7
1998	42.2	34.5	18.0

Source: CANSIM matrices 02631 and 09023 and Western Centre for Economic Research

Table 2(b): Goods producing industries, international and inter-provincial exports as a share of British Columbia output, 1988-1998

Year	Share (%) of goods in GDP	Share (%) of international exports GDP	Share (%) of inter-provincial exports in GDP
1988	31.4	23.7	7.1
1989	31.1	20.6	6.9
1990	29.8	18.1	5.9
1991	28.8	16.0	5.2
1992	27.9	15.8	5.8
1993	27.4	16.8	4.9
1994	27.0	18.1	5.1
1995	26.6	19.5	4.8
1996	26.3	18.3	4.8
1997	25.6	18.3	5.4
1998	25.1	16.7	4.9

Source: CANSIM matrices 6950, 7473, 7913, 9024 and Western Centre for Economic Research (1986=100)

Table 2(c): Goods producing industries, international and inter-provincial exports as a share of Manitoba output, 1988-1998

Year	Share (%) of goods in GDP	Share (%) of international exports GDP	Share (%) of inter-provincial exports in GDP
1988	27.4	18.2	18.7
1989	27.7	15.4	17.6
1990	29.0	14.6	15.7
1991	27.3	13.5	13.4
1992	27.0	13.5	13.8
1993	26.0	14.6	13.3
1994	26.6	16.0	12.9
1995	26.8	17.6	13.1
1996	27.0	19.0	13.4
1997	27.7	20.4	14.0
1998	24.2	18.8	16.9

Source: CANSIM matrices 2629, 7910, 7470, 9021 and Western Centre for Economic Research (1986=100)

Table 2(d): Goods producing industries, international and inter-provincial exports as a share of Saskatchewan output, 1988-1998

Year	Share (%) of goods in GDP	Share (%) of international exports GDP	Share (%) of inter-provincial exports in GDP
1988	32.7	25.5	16.2
1989	35.8	18.9	15.5
1990	39.0	19.9	13.7
1991	38.6	19.0	12.2
1992	35.7	20.9	11.9
1993	37.6	20.0	11.3
1994	39.2	24.6	12.4
1995	38.7	24.9	12.3
1996	40.2	25.9	12.4
1997	40.7	28.6	12.1
1998	38.8	27.3	10.7

Source: CANSIM matrices 2630, 7911, 7411, 9022 and Western Centre for Economic Research (1986=100)

Table 2 also reports the share of GDP accounted for by international and inter-provincial exports of the goods producing industries. Considering the 1988-98 period, the international export share relative to GDP was greatest for Alberta followed by Saskatchewan. In both provinces the export sector was at least half again larger than in British Columbia and Manitoba. Looking at the entire period, it is also clear that the international export sector increased substantially in both Alberta and Saskatchewan, and also increased in the case of Manitoba. However, little change is evident in British Columbia.

Some observers of the FTA have suggested that expansion in the international export sector has been offset by a decline in the relative importance of inter-provincial trade. The data for the each of the four provinces do suggest some decline in the relative importance of cross province trade during 1988-90, but in each case during the decade of the 'nineties this trade appears to have grown hand in hand with output.

The goods producing export sector is dominated by agricultural and non-agricultural primary producers and by manufacturing. Table 3 reveals the provincial share of manufacturing in the sector over the 1988-98 period. Visual inspection of the data suggests that Alberta and Manitoba recorded an increase in the relative share of manufacturing in goods sector real GDP. A linear trend line fitted to the data estimates increased annual share in both provinces of 0.37%. This contrasts with British Columbia where there is some evidence—albeit less strong— of a decline in the position of manufacturing. A linear trend fitted to the data estimates a decline in share at 0.36% per annum. The data for Saskatchewan suggest little change.

Table 3: Percentage shares of manufacturing in GDP at factor cost

	AB	BC	MN	SK
1988	7.55	12.96	12.25	5.36
1989	7.73	12.65	12.19	5.38
1990	8.25	11.57	11.77	5.48
1991	8.18	10.80	10.78	5.06
1992	7.94	10.70	11.00	5.30
1993	8.39	10.58	10.87	5.29
1994	9.18	10.25	11.12	5.66
1995	9.42	10.27	11.89	5.65
1996	9.60	10.06	11.68	5.81
1997	10.08	9.95	12.25	5.99
1998	9.47	9.44	13.34	6.30

Source: CANSIM matrices 8424-8427 and Western Centre for Economic Research

PROVINCIAL MANUFACTURING SECTORS

Table 3 reveals that the manufacturing sectors are approximately twice as large relative to output in Alberta, Manitoba and British Columbia than in Saskatchewan, both at the beginning and at the end of the FTA decade. However, the most notable feature of this table is the rising importance of manufacturing in Alberta, its declining relative importance in British Columbia, and its relative stability in Manitoba and Saskatchewan.

Further evidence from the manufacturing sector is presented in Table 4 which contains the durable/nondurable composition in 1997 and log trends in output growth over the 1988-97 years. The durable manufacturing sector is larger in British Columbia and Manitoba. In the former, the primacy of durable manufacturing reflects the continued dominance of the forest products industry (wood products and paper and allied products) which, though it declined both relatively and absolutely during the decade, still accounted for 35% of manufacturing GDP in 1997. In Manitoba, machinery and transportation equipment pretty well drive the durable sector. In both Alberta and Saskatchewan, durable sector output grew rapidly. With respect to nondurables, significant growth occurred only in Alberta. There durable sector output grew even more rapidly. Growth in Saskatchewan was very strong in the durable sector but relatively stagnant in nondurables. Manitoba recorded slow growth in both, while British Columbia experienced declining growth in the durable while the nondurable sector remained stagnant.

Table 4: Nondurable and durable shares in manufacturing and rates of growth in output 1988-97

	AB	BC	MN	SK
Nondurable share (%) in MFG in 1997	51.1	42.6	46.0	47.3
Durable share (%) in MFG in 1997	48.9	57.4	54.0	52.7
Rate of growth (%) in nondurable output 1988-97	5.72	-0.82	0.85	0.40
Rate of growth (%) in durable output 1988-97	6.71	0.25	1.30	6.94

Source CANSIM matrices 8424-27 and Western Centre for Economic Research

A more micro view of provincial manufacturing sectors is shown in Tables 5(a) through 5(d). The table ranks components by the size of their real GDP in 1988, shows trend rates of output from 1999-98, and reports output in 1998. More detail on the manufacturing sector allows a better understanding of how well these sectors have responded to the dual challenges of the FTA: namely, taking advantage of open access to a market ten times the size of the domestic market, and restructuring the sector to secure resource rationalisation.

The results for Alberta in Table 5(a) show that nine sectors recorded annual rates of growth in real output in excess of 6%. These sectors were plastics, furniture, electrical/communications equipment, paper and allied products, machinery, metal fabricated products, food products, chemicals, and nonmetallic mineral products. These nine sectors together with a number of others recording moderate expansion indicate both the breadth and depth of what has occurred in the Alberta manufacturing sector.

Table 5(b) reveals the remarkably different record of British Columbia. There was negative growth in five sectors including the major industries. Only the electrical equipment growth rate exceeded 6%, and

only modest positive growth occurred in others. The results show the great difficulty the province has had in weaning itself from a forest product focus where the supply and environmental constraints to further timber exploitation are well documented. The role of public policy and the absence of entrepreneurial initiative in bringing about necessary transitions within manufacturing merit full debate.

Manitoba, shown in Table 5(c), is the province with the most diversified manufacturing base; transportation equipment, food industries, and printing and publishing continue to dominate. There were three sectors—chemical products, furniture and wood products—where growth rates exceeded 6%. In contrast to the situation in other provinces, the electrical equipment industry virtually deserted the province. The relatively important transport equipment industry grew slowly. Measuring growth over the 1988-98 period may give an imprecise view of what has occurred in Manitoba. The FTA forced on Manitoba, more so than on other provinces, restructuring and rationalisation with the result that the period from 1989 to 1993 was an arduous and difficult time— exacerbated by the stagnation of the Canadian and American economies. These difficulties are reflected in the

decade growth rate. However, in the post 1993 period, the growth in Manitoba manufacturing has been strong with output rising at a rate exceeding 6%, and the doubling of export values coincided with a sharp increase in shipments to the US market.

Table 5(a): Alberta manufacturing sector

Manufacturing Sector	1988 GDP at Factor Cost*	Annual Trend Rate of Growth: 1988-1998 %	1998 GDP at Factor Cost**
Chemical Products	769.7	6.57	1527.5
Food Industries	667.4	7.07	1164.7
Printing and Publishing	518.6	-2.45	421.3
Machinery	406.8	9.33	706.5
Metal Fabricated Products	379.2	7.70	765.9
Wood Products	378.0	5.57	622.7
Nonmetallic Mineral Products	257.3	6.05	460.4
Primary Metals	227.8	5.01	276.3
Beverages	197.6	1.58	241.8
Electrical/Communications Equipment	179.0	11.72	496.3
Paper and Allied Products	161.1	10.28	372.5
Refined Petroleum and Coal Products	155.3	4.45***	n.a.
Transportation Equipment	155.3	5.01	222.9
Other Manufactured Products	115.7	7.34	234.3
Plastics	100.2	13.57	269.1
Furniture	99.2	12.82	271.0
Clothing	75.4	0.40	78.2
*GDP at factor cost in millions of 1992$			
**Manufacturing share of goods sector GDP in 1998 equalled 22.4%.			
**Share of manufacturing in goods GDP grew by 2.01% annually.			
***Annual growth rate for the period 1988-1997.			

Source: CANISM and Western Centre for Economic Research

Table 5(b): British Columbia manufacturing sector

Manufacturing Sector	1988 GDP at Factor Cost*	Annual Trend Rate of Growth: 1988-1998 %	1998 GDP at Factor Cost**
Wood Products	2536.0	-3.52	1729.2
Paper and Allied Products	1374.9	-3.35	894.2
Food Industries	1019.5	-1.58	823.4
Metal Fabricated Products	546.9	2.38	708.3
Printing and Publishing	639.6	-0.77	608.7
Transportation Equipment	375.1	3.91	519.0
Electrical/Communications Equipment	164.8	13.44	510.4
Machinery	491.6	0.31	477.7
Chemical Products	334.1	1.76	369.1
Nonmetallic Mineral Products	264.7	0.42	323.1
Primary Metals	293.0	2.23***	282.3
Other Manufactured Products	135.5	6.65	247.7
Beverages	181.7	2.90	242.3
Plastics	169.1	3.01	239.2
Clothing	114.5	0.05	130.5
Furniture	90.1	1.42	119.2
Refined Petroleum and Coal Products	117.7	-0.36**	n.a.

*GDP at factor cost in millions of 1992$

**Manufacturing share of goods sector GDP in 1998 equalled 37.6%.

**Share of manufacturing in goods GDP reduced by -0.1% annually.

***Annual growth rate for the period 1988-1997.

Source: CANISM and Western Centre for Economic Research

Table 5(c): Manitoba manufacturing sector

Manufacturing Sector	1988 GDP at Factor Cost*	Annual Trend Rate of Growth: 1988-1998 %	1998 GDP at Factor Cost**
Transportation Equipment	439.2	1.66	549.5
Food Industries	416.1	3.41	545.3
Printing and Publishing	319.3	-1.13	315.7
Machinery	202.0	5.55	271.0
Metal Fabricated Products	164.4	2.65	216.0
Chemical Products	88.1	10.84	211.0
Clothing	176.1	1.30	207.3
Wood Products	74.2	6.51	127.2
Furniture	58.7	9.93	120.4
Plastics	81.7	3.18	104.5
Paper and Allied Products	89.1	1.99	98.9
Electrical/Communications Equipment	159.7	-10.07	90.7
Nonmetallic Mineral Products	71.4	0.04	72.2
Other Manufactured Products	41.6	2.37	51.7
Beverages	75.0	-5.91	43.6
Primary Metals	197.6	0.96***	n.a.

**Manufacturing share of goods sector GDP in 1998 equalled 45.72%.

**Share of manufacturing in goods GDP grew by 0.86% annually.

*GDP at factor cost in millions of 1992$

***Annual growth rate for the period 1988-1997.

Source: CANISM and Western Centre for Economic Research

Table 5(d): Saskatchewan manufacturing sector

Manufacturing Sector	1988 GDP at Factor Cost*	Annual Trend Rate of Growth: 1988-1998 %	1998 GDP at Factor Cost**
Food Industries	247.2	0.48	274.8
Machinery	88.5	11.47	197.1
Chemical Products	45.6	15.08	161.8
Electrical/Communications Equipment	44.7	9.40	144.0
Printing and Publishing	149.8	-1.10	137.8
Metal Fabricated Products	52.5	5.59	108.4
Wood Products	64.9	2.88	76.5
Transportation Equipment	31.5	7.55	55.8
Beverages	80.7	-5.95	50.8
Nonmetallic Mineral Products	46.5	-5.70	33.1
Plastics	15.7	5.77	20.3
Other Manufactured Products	17	0.73	17.5
Clothing	6.9	7.90	10.8
Furniture	4.8	1.7	4.7
Primary Metals	n.a.	n.a.	n.a.
Paper and Allied Products	n.a.	n.a.	n.a.

*GDP at factor cost in millions of 1992$

**Manufacturing share of goods sector GDP in 1998 equalled 16.25%.

**Share of manufacturing in goods GDP grew by 0.71% annually.

Source: CANISM and Western Centre for Economic Research

Table 5(d) reveals that the most notable feature of Saskatchewan's quite limited manufacturing is the strong growth in machinery, chemicals, electrical and transport equipment. Clothing also grew rapidly but from a very limited base. Respectable growth rates were also apparent in fabricated metal products and plastics. In particular, the growth in machinery represents the expansion of SMEs producing a variety of farm equipment and parts. That also implies that the durable sector is becoming more closely tied to farm based investment decisions. What has occurred in Saskatchewan, as in Manitoba, is restructuring of the manufacturing sector resulting in substantial reorganisation in the early 'nineties. However, since 1993, expansion in the real output of the sector has also exceeded 6% annually.

MANUFACTURING AND EXPORT MARKETS

The importance of exports to the primary sectors in western Canada is well known. The fact that data on industry employs SIC codes, while that on international merchandise trade uses the Harmonised System, poses a difficulty in interpreting the role of exports in manufacturing activity. Under ideal circumstances, when assessing the impact of the FTA on manufacturing, one would like to have data for each firm on the portion of shipments and employment attributable to exports to the US market, together with the changes in wages and firm profitability for those exporting classified by HS chapter. Then the set of export records would be tied directly to the value added, employment, and earnings performance of firms within a single classification system. The ideal does not exist, therefore, differences in subsets rooted in alternative classification systems temper conclusions about the linkage between export performance and indicators of industry growth.

The evidence — with due acknowledgement of its less than perfect nature—suggests that in the case of merchandise trade, Alberta has a stronger linkage to the international economy. This is best expressed by the rise in the share of manufacturing output marketed internationally from 21% in 1988 to more than 35% in 1996. In large part this increase resulted from taking advantage of market opportunities presented by the FTA. In the case of Manitoba and Saskatchewan, this linkage becomes evident after the difficulties of 1989-92/3. In Manitoba, the share of manufactured products marketed internationally rose from 32% to more than 45% during this period, accelerating rapidly after 1992. Similarly in Saskatchewan, the share of international shipments in total manufacturing output rose from 30% in 1988 to

42% in 1996, with the share also increasing rapidly after 1992. At the other extreme is British Columbia where the manufacturing industry has failed to either restructure or to seize effectively the opportunities of US market access. While the international share of manufacturing shipments rose from 48% in 1988 to 53% in 1996, this was more than accounted for by shipments of softwood lumber alone.

BUSINESS SERVICES

Data for this important sector are classified by SIC. Unfortunately, there are no HS data. As its importance is underlined by the fact that it contains highly trained and technically competent groups of professionals such as engineers, market research analysts, software writers and computer analysts, accountants, lawyers, and a variety of industry specialists.

In three provinces—British Columbia, Alberta and Manitoba—the measured output of this sector has increased its relative share of GDP. Further, the share of output in the sector that is marketed internationally has approximately doubled. Despite the fact that the business service sector showed no increase in its share of Saskatchewan GDP, the share of the industry's output marketed internationally also more than doubled over the period.

We can only speculate about the importance of the FTA to the more international outlook of this sector. Hard evidence is lacking. However, the FTA does cover services and investment, not simply goods. Those in business services can move back and forth across the border and this movement increases the opportunity for the network linkages that dominate this sector. There is considerable anecdotal evidence of western Canadian firms either acquiring or being acquired by US business service firms, and of joint venturing and strategic alliance with US firms in the pursuit and execution of international contracts. Certainly, there is little

doubt that business services became a part of the tradable sector over these years.

EARNINGS AND EMPLOYMENT

Tables 6(a) through 6(d) contain rates of growth in earnings and employment for each province from 1988-98 for a number of manufacturing sectors, including the nondurable and durable sectors as a whole, as well as for a number of non-agricultural primary industries and business services. In each table the data, which cover establishments of all sizes, are ranked in descending order by the trend rate of growth in average weekly earnings (including overtime). Each table also reports the trend in inflation measured by the CPI to identify those SIC sectors experiencing increased real earnings. The sector composition of the tables differs somewhat from province to province depending on the availability of data. Cautious interpretation of this set of tables is required. The influences on wage change are very complex. Historical experience, changes in skill mix, shifts in industry derived demand for labour, changes in productivity, and bargaining conditions all play a role.

One generalisation from the table set reflecting the complexity of wage setting arrangements is the absence of any strong relationship between earnings performance and employment. There are some other similarities across the provinces. Average weekly earnings in the oil and gas primary sector in three provinces (British Columbia, Alberta and Saskatchewan) and in business service (Alberta, Saskatchewan and Manitoba) are among the sectors with high rates of real earnings growth. Electrical equipment earnings also are high on the list in those provinces where the industry has expanded but not in Manitoba where the industry declined. Average earnings from printing and publishing are also near the top of the list in each of the four provinces despite the declining relative and absolute position of the industry.

An important conclusion is that wage growth reflects the performance of the goods sector in each province. In Alberta, employees in the great majority of manufacturing sectors, and in the nondurable and durable sectors as a whole, experienced an increase in real earnings. In British Columbia, real wage growth was recorded in the durable sector but real wages declined in the nondurable. Individual sectors recording declining real wages are much more numerous. In Manitoba and Saskatchewan there was minimal positive real growth in earnings in both the durable and nondurable sectors.

Trends in employment growth in the provinces generally coincide with trends previously discussed in the tables containing GDP at factor cost. These include the strength in the Alberta, and weakness in the British Columbia durable and nondurable sectors, the comparative strength in the primary resource and durable manufacturing sectors in Saskatchewan, and the adjustments in Manitoba manufacturing.

Table 6(a): The growth trend in average weekly earnings and employment for selected Alberta sectors 1988-98 (including a comparison with the CPI)

SECTOR	Trend rate of growth in average weekly earnings including overtime 1988-1998 (% per year)	Trend rate of growth in employment (% per year)
Other Manufacturing	6.9	-1.3
Business Services	**5.1**	**7.7**
Services Incidental to Oil and Gas	4.9	1.3
Logging and Forestry	4.5	-3.0
Printing and Publishing	4.3	0.5
Electrical/Communication Equipment	4.0	1.6
Chemicals	3.8	0.9
Paper and Allied Products	3.8	4.9
Wood Products	3.8	4.5
Clothing	3.7	-2.2
Durable Manufacturing -- entire sector	**3.6**	**2.0**
Machinery	3.3	4.7
Non-durable Manufacturing--entire sector	**3.2**	**1.1**
Plastics	3.1	4.8
Primary Metals	3.1	-0.1
Crude Oil and Natural Gas	3.1	-2.1
Nonmetallic Minerals	3.0	1.9
Fabricated Metals	3.0	1.1
Transportation Equipment	2.8	3.2
Alberta CPI Index	**2.6**	—
Furniture	2.5	5.7
Refinery Products	2.4	0.7
Meat and Poultry	2.1	1.9
Other Food Products	1.8	6.4
Beverages	1.7	-0.5

Source: CANISM and Western Centre for Economic Research

Table 6(b): The growth trend in average weekly earnings and employment for selected British Columbia sectors, 1988-1998 (including a comparison with the CPI)

SECTOR	Trend rate of growth in average weekly earnings including overtime 1988-1998 (% per year)	Trend rate of growth in employment (% per year)
Electrical/Communication Equipment	5.8	-2.0
Services Incidental to Oil and Gas	5.4	-2.2
Services Incidental to Forestry	5.3	4.1
Furniture	5.2	-5.3
Primary Metals	4.6	-2.9
Printing and Publishing	4.5	1.4
Fabricated Metals	4.1	0.1
Machinery	3.7	1.9
Durable Manufacturing --entire sector	**3.6**	**-0.8**
Wood Products	3.4	-0.4
Business Services	**3.1**	**5.9**
Nonmetallic Minerals	3.0	n.a.
Paper and Allied Products	2.9	-3.9
Logging and Forestry	2.8	2.1
British Columbia CPI Index	**2.7**	—
Chemicals	2.6	-3.9
Meat and Poultry	2.5	-0.9
Other Manufacturing	2.1	-8.7
Non-durable Manufacturing--entire sector	**2.1**	**-1.5**
Plastics	2.0	4.4
Transportation Equipment	2.0	4.2
Other Food Products	1.2	1.6
Clothing	1.0	-3.0
Beverages	0.5	-0.3

Source: CANISM and Western Centre for Economic Research

Table 6(c): The growth trend in average weekly earnings and employment for selected Manitoba sectors, 1988-1998 (including a comparison with the CPI)

SECTOR	Trend rate of growth in average weekly earnings including overtime 1988-1998 (% per year)	Trend rate of growth in employment (% per year)
Paper and Allied Products	5.6	-11.8
Chemicals	4.9	5.2
Business Services	**4.3**	**5.0**
Printing and Publishing	4.2	-0.1
Machinery	4.2	4.2
Meat and Poultry	3.6	-8.4
Clothing	3.5	-5.0
Primary Metals	3.5	7.4
Wood Products	2.9	8.9
Non-durable Manufacturing--entire sector	**2.9**	**-2.6**
Transportation Equipment	2.9	2.8
Durable Manufacturing --entire sector	**2.7**	**1.3**
Plastics	2.7	3.9
Manitoba CPI Index	**2.6**	—
Logging and Forestry	2.3	-6.0
Nonmetallic Minerals	2.2	-0.5
Fabricated Metals	2.2	-1.3
Other Manufacturing	2.1	-3.7
Furniture	2.1	0.7
Other Food Products	1.2	2.1
Electrical/Communication Equipment	0.6	-12.3
Beverages	-0.2	-2.6

Source: CANISM and Western Centre for Economic Research

Table 6(d): The growth trend in average weekly earnings and employment for selected Saskatchewan sectors, 1988-1998 (including a comparison with the CPI)

SECTOR	Trend rate of growth in average weekly earnings including overtime 1988-1998 (% per year)	Trend rate of growth in employment (% per year)
Nonmetallic Minerals	7.6	-2.5
Services Incidental to Oil and Gas	6.6	10.6
Chemicals	5.3	4.5
Business Services	**4.5**	**3.5**
Wood Products	4.5	4.8
Crude Oil and Natural Gas	4.0	2.6
Machinery	3.4	7.3
Services Incidental to Mining	2.7	-11.6
Non-durable Manufacturing--entire sector	**2.7**	**-0.8**
Durable Manufacturing --entire sector	**2.6**	**2.6**
Saskatchewan CPI Index	**2.5**	—
Printing and Publishing	2.2	-4.0
Fabricated Metals	2.2	1.0
Other Manufacturing	1.8	-4.4
Logging and Forestry	1.4	5.8
Primary Metals	0.6	5.0
Meat and Poultry	0.3	1.3

Source: CANISM and Western Centre for Economic Research

Has provincial economic variability changed?

An obvious question is whether the transitions outlined above have altered the economic variability that has long characterised the three western most provinces. Alberta, British Columbia and Saskatchewan are frequently described, not only in Canada but also internationally, as examples of regional 'boom-bust' economies.

Manitoba, in contrast, has for many years displayed neither more nor less variability than the national economy. The evaluation in this section of the paper focuses on the other three provinces.

Employment, the variable evaluated here, as a primary determinant of economic welfare and social status is arguably the single most important economic policy variable. A number of recent studies have found that over the past

quarter century national employment stability both in Canada and the United States was as high in the early 1990s as at any time in the prior two decades [Green and Riddell 1996; Diebold, Neumark and Polsky 1994; Heisz 1996]. A further study reported in *Canadian Economic Observer* based upon national data from the Labour Force Survey (LFS) and the Longitudinal Worker File (LWF), assessed the extent to which an ongoing shift of jobs to the service sector altered aggregate job stability [Heitz and Cote 1998]. A study of national labour market conditions answers some questions, but it is doubtful that those findings can easily be extrapolated to the experience of individual provinces.

Studies have found substantial variation in the stability of employment, income, and population growth between the provinces and, therefore, in the deviation of provincial conditions from the national [Chambers and Percy 1992, Mansell and Percy 1990]. These economic measures demonstrated that the three western most provinces were far and away the least stable. Therefore, though there is evidence of increased national job stability, how does the evidence play in those provinces with the highest historical levels of volatility?

Though, as we have seen, transitions are occurring, Alberta, British Columbia and Saskatchewan have economies still relatively dependent on energy, forest, and agricultural products, respectively. The recent roller coaster in commodity prices, the slack demand for western Canadian exports following on the Asian economic turmoil, the environmental pressures on the forest industry, and curtailed American market access for forest products naturally provoke interest in the stability of these three provinces.

The degree of volatility is not a trivial question for either the provincial public or private sectors. In the public sector, for example, it means more stable flows of tax revenues and less risk when making budget estimates. In the private sector, it means a generally more stable environment for human resources management. Effectively, reduced volatility means a lower level of uncertainty for all parts of the economy.

Since a number of these recent studies have linked greater job stability to growth in the service sector, it is appropriate to point out not only that the sector differs in importance from one province to another, but also that the three provinces do not share the same pattern of relative growth. In terms of employment (monthly labour force survey data of Statistics Canada), the service sector is relatively the largest in British Columbia accounting for 69.9% of employment in 1976, increasing gradually and almost continuously to an average of 76.4% in the later 1990s. Saskatchewan has had the smallest service sector. In 1976 it accounted for just over 60% of employment. Relative growth was steady, rising to some 65% in the mid-eighties, and to an average of just over 69% in recent years. In Alberta, the service sector was 63% of provincial employment in 1976, rose to 72% in the mid-eighties, and has remained in the 71-72% range since that time. Thus, two of the provinces, British Columbia and Saskatchewan, have displayed sustained growth in the sector, while the increased relative importance of the sector in Alberta really occurred between the mid-seventies to the mid-eighties.

METHODOLOGY

The literature offers no universally accepted method of measuring instability. Some approaches fit trend lines to employment in the respective industrial sectors, taking deviations of observed values from either fitted values or the series mean [Brewer and Moomaw 1985; Conroy 1975; Gruben and Phillips 1989]. Other studies employ stationary time series models to distinguish expected from unexpected variability. Instability is then represented by squared deviations of observed from anticipated changes [Mansell and Percy 1990].

The portfolio variance model applied here measures regional employment variability based on industrial structure. Portfolio variance, a concept widely used by financial analysts, has two basic parts: variance and covariance. When employment in a given industrial sector fluctuates a good deal, the sector has high employment variance. In common parlance, it is a 'boom-bust' sector. Other things equal, the higher employment variance in the industrial sectors making up a provincial economy, the higher the variability in provincial employment.

Provincial employment variability is also determined by whether employment changes in the sectors move in the same or in opposite directions, i.e. by covariance. Should changes in industrial sector employment move in the same direction, the net result is to lower employment stability. Should these changes move in opposite directions, the net effect is to make provincial employment more stable. In sum, lower levels of variance, and greater evidence of negative covariance (rates of industry sector employment change moving on average in opposite directions) indicates greater stability in provincial employment.

The data use the monthly labour force survey of Statistics Canada covering the period from the first quarter of 1976 (1976:Q1) to the second quarter of 1998 (1998:Q2). This national survey is the best available continuous record at the provincial level of labour force and employment behaviour. Published monthly estimates are available for eleven industry sectors: agriculture; non-agricultural primary; utilities; manufacturing; construction; transport, storage and communication; wholesale and retail trade; finance, insurance and real estate (FIRE); community services (health and education); business and personal services; and public administration.

Following Gruben and Phillips [1989], employment portfolio variance was estimated for quarterly natural log differences standardized by the mean quarterly change in each of the 11 sectors. That is, each of the 121 elements of this matrix consists of a relative covariance of the following type:

$$\sigma_{ij} = \{1/(n\text{-}2)\} \, [(u_{it} - \hat{u}_i/\hat{u}_i] \, [(u_{jt} - \hat{u}_j/\hat{u}_j]$$

where n is the number of observations. The variables u_{it} and u_{jt} are the observed quarterly rates of change in sectors i and j respectively during quarter t. The variables $\hat{u}_i$ and $\hat{u}_j$ are the mean rates of change.

The 121 individual components are summed to derive the total employment portfolio variance as follows:

$$\sigma_P = \Sigma_j \omega_j \overset{2}{\sigma} \; + \; \Sigma_{i \neq j} \Sigma_{j \neq i} \, \omega_i \, \omega_j \, \sigma_{ij}$$

where $\overset{2}{\sigma}$ represents the employment variance of sector j; σ_{ij} is the covariance of employment between sector i and sector j; and ω_i and ω_j are

weights that are equal to the average share of each sector's employment in total employment. Each sector contributes to provincial employment portfolio variance through its own weighted variance and covariance with other sectors. A sector's weight is its share of total employment.

The model makes no attempt to decompose log differences in industry sector quarterly employment into anticipated as opposed to unanticipated change, nor does it require the selection of trend values for each of the eleven sectors.

RESULTS

A first question is whether the portfolio variance approach yields results about job stability consistent with those reported in *Canadian Economic Observer.* Table 7 reports estimated national portfolio variance covering two sub-periods: the first era is from the first quarter of 1976 (1976:Q1) to the fourth quarter of 1987 (1987:Q4) and the second from the first quarter of 1988 (1988:Q1) to the second quarter of 1998 (1998:Q2). National portfolio variance

of quarterly employment change in natural log differences (converted to percentages) declined in the second period by approximately 23%, or from 0.03679 to 0.02845. The analysis revealed that the decline in weighted variance was almost equal in the goods and service producing sectors. The results using the methodology adopted here appear consistent with those reported by Statistics Canada in their study of LWF data.

Table 7: Portfolio variance of national quarterly employment change for two eras: 1976:Q1 to 1987:Q4 and 1988:Q1 to 1998:Q2

Canada	Portfolio Variance
Era I :1976:Q1to 1987:Q4	0.03679
Era 2: 1988:Q1 to 1988:Q2	0.02845
Era 2 variance as % of Era 1	77.3

Source: Basic data from the Monthly Labour Force Survey

Table 8 reports portfolio variance derived from natural log differences of quarterly employment change in the two periods for each of the three western provinces. Data are converted to percentages. Alberta, in the earlier period, recorded the highest level of employment variability followed in order by Saskatchewan and British Columbia. Levels of portfolio variance in all three provinces substantially exceeded the national, ranging from 6.5 times for Alberta (.2377/.03679) to 5.2 times for British Columbia (.1926/.03679).

In the second period, portfolio variance for two of the provinces changed only slightly. Variance in British Columbia was very nearly the same, while in Saskatchewan there was a decline of about 5%. In British Columbia, variance actually increased while net weighted covariance changed from positive to negative. In Saskatchewan, weighted variance declined slightly while net covariance became somewhat more negative. Effectively, stability in these two provinces was little changed.

Table 8: Portfolio variance of quarterly percent changes in employment: Alberta, British Columbia and Saskatchewan for each of two eras: 1976:Q1 to 1987:Q4 and 1988:Q1 to 1998:Q2

ERA 1: 1976:Q1 to 1987:Q4	Alberta		British Columbia		Saskatchewan	
SECTOR*	**Variance**	**Covariance**	**Variance**	**Covariance**	**Variance**	**Covariance**
Agriculture	0.5046	-0.0394	0.7523	-0.0773	0.1245	-0.3508
Non-ag Primary	0.4989	0.2555	0.5378	-0.3001	0.9821	0.3017
Utilities	1.1006	0.0363	1.4387	-0.0745	2.8530	0.1375
Manufacturing	0.2489	0.2355	0.1581	-0.0183	0.2812	0.1125
Construction	0.4023	0.2458	0.2623	0.0582	0.2699	-0.2608
Transport, Storage, Comm.	0.1806	0.0220	0.1323	-0.0089	0.4202	-0.1611
Trade	0.0887	0.0251	0.0909	-0.0459	0.1061	0.1914
FIRE	0.3076	-0.2439	0.3465	-0.1075	0.3881	-0.0909
Community Services	0.1251	0.0083	0.1188	0.1923	0.0961	-0.0744
Business and Personal Serv.	0.1348	0.1219	0.1023	0.0317	0.1511	-0.0482
Public Administration	0.1517	-0.0431	0.1484	0.0387	0.1506	-0.1079
Portfolio (weighted) Variance/Covariance	**0.2377**		**0.1926**		**0.2091**	

ERA 2: 1988:Q1 to 1998:Q2	Alberta		British Columbia		Saskatchewan	
SECTOR*	**Variance**	**Covariance**	**Variance**	**Covariance**	**Variance**	**Covariance**
Agriculture	0.1854	-0.1406	0.8093	-0.4227	0.2738	-0.5164
Non-ag Primary	0.2046	-0.0888	0.4155	-0.1183	0.5671	-0.2444
Utilities	2.0644	-0.4254	2.0223	-0.2605	1.7740	0.2194
Manufacturing	0.1817	-0.0766	0.1459	-0.0273	0.2925	0.3108
Construction	0.1625	-0.0616	0.2432	-0.1689	0.5531	0.0405
Transport, Storage, Comm.	0.2241	0.0103	0.2605	0.0754	0.2735	-0.0714
Trade	0.0593	0.0333	0.1204	-0.0568	0.0726	-0.3547
FIRE	0.2377	0.0617	0.3356	-0.2426	0.3669	0.2812
Community Services	0.0661	-0.1128	0.1082	-0.2422	0.0354	-0.1619
Business and Personal Serv.	0.0590	-0.1290	0.1077	-0.0870	0.1380	-0.1080
Public Administration	0.2106	-0.2963	0.3961	-0.0523	0.1429	0.1119
Portfolio (weighted) Variance/Covariance	**0.1364**		**0.1934**		**0.1933**	

*Sector variance and covariance are unweighted by shares in total employment.

Alberta results are markedly different. Portfolio variance declined both absolutely and relatively so that Alberta moved from the least to the most stable of the western provinces over the course of the two eras. The absolute decline amounted to 42% and the ratio of Alberta to national portfolio variance fell from 6.5 to 4.8. Table 8 indicates that eight of eleven sectors, accounting for some 85% of aggregate employment in Alberta, experienced reduced variance. By far the largest share of the decline in portfolio variance was attributable to lower variance but a small amount occurred because covariance moved from net positive to net negative in the second era. In fact, nine of eleven sectors displayed negative covariance compared with only two sectors exclusive of agriculture in the first era.

Sectors where Alberta variance exceeded British Columbia's in the earlier period—manufacturing, construction, FIRE, community services, business and personal services, and public administration—were actually lower in the second. These are sectors that account for a substantial majority of total employment in both provinces. In Saskatchewan, variance in the second era was larger in agriculture, manufacturing and construction.

Table 9 reports the contribution of the goods and service sectors to changes in portfolio variance between the two periods. In Alberta, weighted variance/covariance in both sectors declined corresponding to the national experience. In the goods sector, variance fell by one-half and service sector variance by some 30%. In the first period, variance in the goods sector accounted for just under 60% of total variance, while in the second, each sector contributed in almost equal shares to a substantially lower portfolio variance.

In British Columbia, the fall in the weighted variance/covariance of the goods sector was offset by an increase in the service sector. In Saskatchewan, goods sector variance/covariance rose but this was more than offset by the fall in the service sector variability.

Table 9: Contribution of the goods and service sectors to the xhange in portfolio variance between the two eras: Alberta, British Columbia and Saskatchewan

	1976:Q1-1987:Q4 weighted variance and covariance	1988:Q1-1998:Q2 weighted variance and covariance	% change
Alberta Goods Sector Service Sector Total Variance	0.1387 0.0990 0.2377	0.0678 0.0686 0.1364	-51.2 -30.7
British Columbia Goods Sector Service Sector Total Variance	0.0951 0.0975 0.1926	0.0750 0.1184 0.1934	-21.2 +21.5
Saskatchewan Goods Sector Service Sector Total Variance	0.1057 0.1034 0.2091	0.1158 0.0775 0.1933	+9.6 -25.1

RESULTS WITH FIXED VS. VARIABLE WEIGHTS

In this portfolio variance model the results can be influenced by changes in industrial structure. The weights used in the analysis reported in Table 7 through Table 9 are the quarterly average composition of employment in the respective provinces in each of the two eras. However, it is helpful to see how changes in variability may be the result of changes in industrial structure. Table 10 reports portfolio variance results when the composition of employment in the second era is assumed to be the same as in the earlier period.

Table 10 reveals that using fixed weights in the calculation of portfolio variance changed the results very little in the case of Canada and Alberta but were more important for British Columbia and Saskatchewan. Weight changes accounted for 16.9% of the decline in variability in the case of Canada and 7.1% for Alberta. The situation in British Columbia and in Saskatchewan is rather different. In British Columbia, the change in the structure of employment is entirely responsible for holding portfolio variance at approximately the same level in the later period. In Saskatchewan, about one-half of the modest decline in variability resulted from a changing industrial structure.

Table 10: Difference in portfolio variance percentage with fixed vs. actual employment composition weights in Era 2

	Portfolio variance Era 2 with fixed weights (2)	Portfolio variance Era 2 with actual weights (3)	Difference (2)-(3)	Difference as a % of the inter-period change in variance
Canada	0.02986	0.02845	.00141	16.9%
Alberta	0.1436	0.1364	.0072	7.1%
British Columbia	0.2105	0.1934	.0171	**
Saskatchewan	0.2018	0.1933	.0085	53.8%

** Since British Columbia portfolio variance rose very slightly in the second period compared with first, the approximate equality in portfolio variance levels is attributable to changes in the industrial composition of employment.

BETA MEASURES OF VOLATILITY

Table 11 reports indexes of variance, covariance and the contribution of the eleven sectors to Alberta, British Columbia and Saskatchewan employment variability during the two eras. The first set of columns contains measures of variance, the second set shows two measures of covariance, and the third set contains a measure of a sector's contribution to total employment variability. The variance and covariance indexes express, in ratio form, each sector's variance and covariance respectively to aggregate weighted average variance and covariance. In the

variance column, for example, the index ratio of 4.73 for the Alberta utilities sector in the first era means that the sector is 4.73 times more volatile than the weighted employment variance of all sectors combined. The covariance index measures the covariance of that sector relative to absolute covariance weighted average for the all sectors. The two beta columns report a weighted average of the variance and covariance measures and indicate the overall contribution of each sector to total employment variability. If beta is equal to 1.0 then the sector is neutral in its effect on total employment, i.e., it neither raises nor lowers the variance of total employment. A beta greater than 1.0 means that the sector raises total employment variability, while a beta less than 1.0 means that the sector reduces overall variance.

Table 11 reveals that high variance in a sector is not, in itself, a contributor to increased volatility. High variance may be offset by strong negative covariance. For example, in the second era in Alberta, a non-agricultural primary industry variance index in excess of 2.00 is offset by negative covariance with the effect of reducing the beta value to below unity. In Saskatchewan,

very high negative covariance in the agricultural sector in the second era yields a negative beta. Notable in the case of Alberta are beta values less than 1.0 for both the agriculture and non-agricultural primary sectors in the second era. Similarly betas less than 1.0 appear in manufacturing and construction for Alberta and British Columbia in the later era as a result of negative covariance levels. As might be expected, service sectors in all three provinces generally have the lower betas. There are exceptions: the transportation, storage and communication sector in Alberta and British Columbia in the second era, and in Saskatchewan in both periods; FIRE was a contributor to volatility in Saskatchewan in both periods, in British Columbia in the first and in Alberta in the second.

In sum, the above analyses show British Columbia and Saskatchewan recorded little decline in portfolio variance; the decline in Alberta employment variability was large and apparent in both the goods and services sectors. Alberta moved from the most volatile of the three provinces in the first era to the least volatile in the second. Alberta also recorded a decline in volatility relative to national experience.

Table 11: Indexes of variance, covariance and beta values for the three provinces

Employment Sector	Index of Variance Era 1: 1976:Q1 to 1987:Q4								
	AB	BC	SK	AB	BC	SK	AB	BC	SK
Agriculture	2.17	3.99	0.57	-3.11	-1.04	-1.95	0.46	3.50	1.08
Nonag. Primary	2.14	2.85	4.48	2.02	-4.05	1.68	3.17	1.23	6.14
Utilities	4.73	7.63	13.01	0.29	-1.01	0.76	4.78	7.08	14.30
Manufacturing	1.07	0.84	1.28	1.84	-0.25	0.63	2.03	0.73	1.88
Construction	1.73	1.39	1.23	1.94	0.79	-1.45	2.73	1.66	0.04
Transport, Storage, Comm.	0.78	0.70	1.92	0.17	-0.12	-0.90	0.85	0.64	1.24
Trade	0.38	0.48	0.48	0.20	-0.62	1.06	0.48	0.23	1.42
FIRE	1.32	1.84	1.77	-1.93	-1.45	-0.51	0.27	1.24	1.42
Community Services	0.54	0.63	0.44	0.07	2.60	-0.41	0.56	1.61	0.10
Business and Personal Services	0.58	0.54	0.69	0.96	0.43	-0.27	1.08	0.70	0.49
Public Administration	0.65	0.79	0.69	-0.34	0.52	-0.60	0.46	0.93	0.49

Employment Sector	Index of Variance Era 1: 1976:Q1 to 1987:Q4								
	AB	BC	SK	AB	BC	SK	AB	BC	SK
Agriculture	1.29	3.68	1.31	-1.36	-3.58	-2.07	0.33	1.84	-1.26
Nonag. Primary	1.43	1.89	2.71	-0.86	-1.00	-0.98	0.85	1.41	1.67
Utilities	14.41	9.20	8.49	-4.10	-2.20	0.88	12.01	8.37	10.31
Manufacturing	1.27	0.66	1.40	-0.74	-0.23	1.24	0.77	0.56	3.12
Construction	1.13	1.11	2.65	-0.59	-1.43	0.16	0.74	0.35	3.07
Transport, Storage, Comm.	1.56	1.18	1.31	0.10	0.64	-0.29	1.72	1.60	1.05
Trade	0.41	0.55	0.35	-0.32	-0.48	-1.42	0.19	0.30	-1.46
FIRE	1.66	1.53	1.76	0.59	-2.05	1.13	2.19	0.44	3.35
Community Services	0.46	0.49	0.17	-1.09	-2.05	-0.65	-0.34	-0.64	-0.65
Business and Personal Services	0.41	0.49	0.66	-1.24	-0.74	-0.43	-0.51	0.10	0.16
Public Administration	1.47	1.80	0.68	-2.86	-0.44	0.45	-0.63	1.63	1.32

CONCLUDING OBSERVATIONS

The paper has attempted to summarise a number of developments in the goods producing sectors of the four western Canadian provinces over the era of the FTA. There is also a measure of changes in employment variability in the three provinces most sensitive historically to commodity price swings. The theme of the paper is that the FTA is essential to understanding the changes that have occurred but it should not be understood as attributing observed changes in the political economy over the past decade exclusively to the FTA. It is obvious that a strictly correct measure of the FTA impact requires a weighing of a factual condition against a hypothetical one. Changes would have occurred in the structure and in the export markets of these economies absent the FTA. To construct a dynamic model of what these provincial economies would have been like without the FTA—including private sector and public policy responses— would be extremely difficult and highly controversial.

The general lesson from the paper is that policy is important. That can be seen first from the differing provincial stances to the FTA. Because constitutionally provincial governments possess substantial economic responsibilities, positions on trade policy can shape private sector attitudes and plans. They significantly influence the environment within which private sector decisions are taken. The evidence clearly shows in western Canada there was when the FTA was under debate a considerable differences in the trade policy stances of provincial governments ranging all the way from enthusiasm, through indifference, to opposition. The position of the Alberta Government toward the FTA clearly stands out. It has been extremely supportive of the free trade arrangement, not only after the Treaty was signed, but equally important, during the initial stages of public discussion and policy formation. Alberta favoured free trade with the United States, and government representatives argued strongly for the Agreement. The fact that the open trade orientation of the provincial government was in place, and strongly espoused, long before the Treaty was signed provided the basis for discussion with the business community about the free trade agreement and its potential benefits. The private sector was encouraged and given every opportunity to consider and assess the market opportunities that an agreement would offer. Such clear focus was not present in the other provinces.

The FTA created a new range of market opportunities for western Canadian enterprises. It presented to businesses in many sectors a relatively benign environment for acquiring knowledge and experience as exporters—even for an initial venture into exporting. It is clear that the private sector in some provinces did better than in others in taking advantage of this extraordinarily significant change in trade policy.

Alberta stands out from the other provinces in a positive way. It was also the province that enunciated a diversification policy in the early eighties, a policy that involved selective use of the accumulated oil and gas royalties in the provincially owned and administered Heritage Trust Fund. That policy involved, to some degree, 'picking winners'. It has in recent years been subjected to harsh criticisms, including criticism from successor governments. Part of the criticism is pure ideology, but much of it

relates to the fact that there were losers as well as winners. It is perhaps the time to evaluate this diversification policy with the advantage of perspective to consider the extent of its contribution to change.

British Columbia stands out in a negative way. Despite rapid population and employment growth, the performance of the value added goods sector was very disappointing. Provincial public policy for many years considered Asia a more important export market than the US despite the proximity and market potential of the continental neighbour. However, one must also be puzzled by the enigma of private sector failure in securing necessary realignment of the goods producing sector.

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