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ALBERTA'S EXPORT EXPERIENCE UNDER FREE TRADE AGREEMENTS: 1988 - 2007

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- In 2007 Alberta's global merchandise exports amounted to just under \$83 billion, 87% of which were destined for the FTA-partners (United States, Mexico, Chile, Israel, and Costa Rica). As usual, the United States accounted for the largest share of Alberta's exports, absorbing 86% of the total. The other FTA partners accounted for 1% of Alberta's exports and non FTA countries accounted for 13%.
- Since the inception of the Canada-US Free Trade Agreement, Alberta's exports to the United States have grown 674%, and the growth rate of exports to Mexico since the conclusion of the NAFTA in 1993 was 802%. Non-FTA exports grew more moderately, by 166%, since 1988. In terms of growth rates and dollar value, therefore, exports to the free trade partners were the most important.
- In terms of dollar value, energy products were the largest export category (\$56.5 billion). Constituting 68% of Alberta's exports in 2007, energy products also accounted for 69% of the growth in all of Alberta's exports since 1993.
- Non-energy exports to FTA-partners also grew significantly, from \$2.9 billion in 1988 to \$16.5 billion in 2007 (468%). Growth of non-energy exports to non-FTA destinations was 196%.
- Among the fast-growing major non-energy exports, "Boring or Sinking Machinery and Parts" and "Air/Gas Compressors, Pumps, and Parts" stand out. They advanced from \$61 million and \$17 million in 1995 to, respectively, \$865 million and \$361 million export sales in 2007.
- The high nominal growth in Alberta's exports is further reflected in a near-doubling of their share in Canada's total merchandise exports: to 18.4% in 2007 from 9.6% in 1988.
- In terms of export value per employee, the province now leads the nation with \$42,344 compared to the national average of \$26,707. In 1988, both were at the same level of roughly \$10,900.
- Not least due to favorable oil price developments, Alberta's exports in 2007 have again increased their share of the total value of US merchandise imports.
- The year 2007 saw Alberta's exports of Machinery surpass Plastics as the #2 export category. Machinery exports grew significantly, and the report identifies Boring and Drilling Machinery, and Lifting, Handling, and Loading Machinery among the fastest growing export products, achieving values, respectively, of close to \$1 billion and \$100 million.
- Very fast growth in export revenues characterizes a number of energy sector related products that involve manufacturing. This may reflect, at least in part, the supply chain of Canadian energy companies active abroad in the provision of services or engaging in Foreign Direct Investment (FDI).
- Fast-growing manufacturing exports are suggestive of the (natural) development of an internationally competitive energy-related cluster in Alberta. This promises diversification, yet retains the link to the fate of the global energy industry.

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The international involvement of Alberta-based businesses covers trade in goods, trade in services, and Foreign Direct Investment (FDI), both inward and outward. Increasingly FDI is linked to trade in goods and services. Indeed, the export of services like consulting or construction engineering tends to involve the setting up of supporting facilities abroad (outward FDI), and exports of goods frequently necessitate the provision of maintenance services in their wake, either across the border or through an office abroad. Data on outward FDI by Alberta-based firms are not available, nor are data on exports of services by province of origin. Therefore an analysis of what has been happening to Alberta's international commercial relations is of necessity limited to merchandise trade.

This report focuses on the export performance of Alberta since the entry into force of the Canada-US Free Trade Agreement (FTA) in 1989, the North American Free Trade Agreement (NAFTA) in 1994, and free trade agreements with Chile, Israel and Costa Rica in 1997, 1997 and 2002, respectively. These agreements were negotiated to improve the market access for Canadian producers, and it is the purpose of this report to pursue the extent to which these trade agreements have achieved their objective for Alberta-based exporters. Exports are valued in Canadian dollars unless stated otherwise and are classified using the Harmonized System (HS), the internationally standardized product categorization developed by the World Customs Organization (WCO). The data sources are the World Trade Atlas, compiled by Global Trade Information Services Inc., the Trade Information Enquiry Retrieval System (TIERS) of Statistics Canada, and Statistics Canada's population and employment figures.

As many Alberta firms are participants in supply chains that cross international borders, exports of goods may well contain imported components. It is not possible to determine where the constituent components of an export are source because data are based on customs forms that capture only the total value of the shipment. For that reason, this report focuses on the value of total merchandise exports from Alberta. It gives a partial, but given the data constraints, the best possible picture of the international activities of Alberta-based companies.

1. Alberta's Global Export Performance

Table 1.1, below, presents Alberta's total exports to NAFTA and other FTA countries since the inception of these agreements as well as to non-FTA countries. Since 1988, Alberta's total merchandise export value has increased 525%, which implies a compounded annual growth rate of 9.6%. Over the same period, exports to FTA countries – though some of the agreements became effective after 1988 - have increased by 683% with a compounded annual growth rate of almost 11%, and this growth accounted for most of the growth in the value of total exports. Among NAFTA countries, exports to the US have increased by 674% since 1988, and exports to Mexico have increased by 802% since 1993.

Exports to other FTA partners have increased by 50% since 1996, a relatively small growth rate compared to those destined to NAFTA partners. Exports to Israel and Costa Rica have increased by 179% and 582%, respectively, accounting for most of the total increase in exports to the other FTA partners. By contrast, exports to Chile have stagnated.

Table 1.1: Total Export Values to all FTA Partners and Non-FTA Countries from the Inception of the FTA Agreement to 2007 (\$ million)

Year	NAFTA			Other FTA				Total FTA, \$	Non-FTA, \$	Global Exports, \$
	US, \$	Mexico, \$	Total, \$	Israel, \$	Chile, \$	Costa Rica, \$	Total, \$			
1988	9,216	-	9,216	-	-	-	-	9,216	4,062	13,278
1989	10,037	-	10,037	-	-	-	-	10,037	3,617	13,654
1990	11,721	-	11,721	-	-	-	-	11,721	3,764	15,485
1991	12,163	-	12,163	-	-	-	-	12,163	4,254	16,417
1992	14,144	-	14,144	-	-	-	-	14,144	4,093	18,237
1993	16,398	85	16,483	-	-	-	-	16,483	3,685	20,168
1994	18,674	146	18,820	-	-	-	-	18,820	4,687	23,507
1995	21,528	177	21,705	-	-	-	-	21,705	6,075	27,780
1996	25,597	213	25,810	12	72	-	85	25,894	6,187	32,081
1997	27,093	224	27,317	17	55	-	73	27,390	6,296	33,686
1998	25,435	289	25,724	28	33	-	61	25,785	5,431	31,216
1999	29,366	250	29,616	17	77	-	94	29,710	9,187	38,897
2000	49,193	356	49,549	15	116	-	130	49,679	6,201	55,880
2001	51,130	484	51,614	13	62	1	76	51,690	5,846	57,536
2002	43,441	458	43,899	6	38	1	45	43,944	5,605	49,549
2003	51,526	383	51,909	7	25	5	37	51,946	5,694	57,640
2004	56,233	707	56,940	34	43	8	86	57,026	7,513	64,539
2005	68,670	547	69,217	30	64	9	104	69,321	8,098	77,419
2006	69,452	631	70,083	29	64	8	101	70,184	8,816	79,000
2007	71,297	767	72,064	35	83	10	127	72,191	10,802	82,993
% Growth*	674	802	682	179	14	582	50	683	166	525
% Compound Annual Growth Rate	10.8	15.8	10.8	9.3	1.2	38.9	3.4	10.8	5.0	9.6

* Since inception of FTA

A detailed comparison of export growth to FTA partners and Non-FTA countries is provided in Figures 1.1 and 1.2, below. It can be seen from Figure 1.1, exports to FTA countries have increased from \$9 billion in 1988 to \$72 billion in 2007, showing a compounded annual growth rate of 11%. Except for the periods of 1997-1998 and 2001-2002, exports to FTA partners grew consistently. Figure 1.1 and Table 1.1 show the much more moderate continued annual growth rate of 5% for exports to non-FTA destinations.

Figure 1.2 presents Alberta's exports excluding energy exports to FTA partners and Non-FTA countries. Agri-food, lumber, aerospace, communication and information technology equipment, household furniture and petrochemicals exports are examples of non-energy exports. Non-energy exports to FTA partners have increased from \$2.9 billion in 1988 to \$16.5 billion in 2007, a nominal growth of 468%. On the other hand, non-energy exports to Non-FTA countries have experienced nominal growth of 196%, from \$3.5 billion in 1988 to \$10.3 billion in 2007.

Figure 1.1: Alberta Exports to FTA Partners and Non-FTA Countries, 1988 – 2007

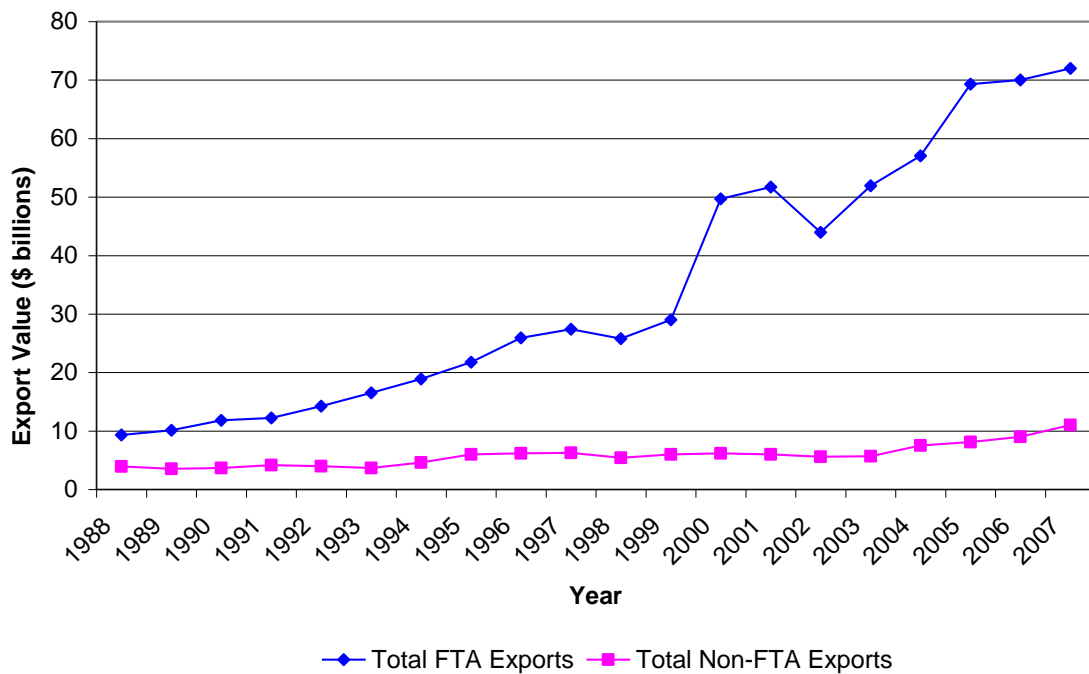
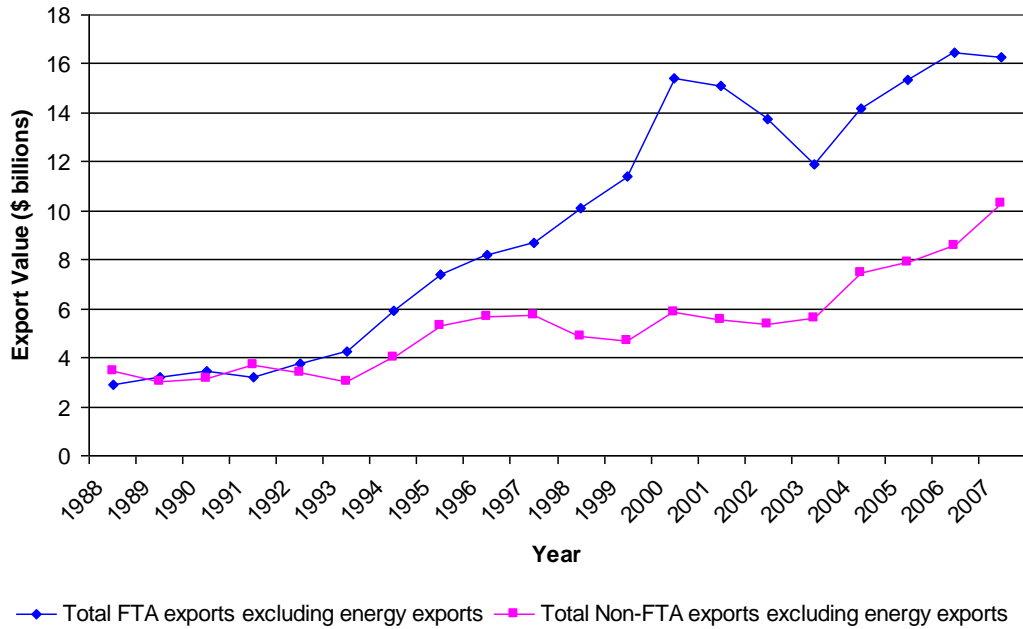


Figure 1.2: Alberta Exports to FTA Partners and Non-FTA Countries Excluding Energy Exports (HS 27), 1988 - 2007



1.1 Alberta's Exports to FTA Partners

Focusing specifically on the period since the inception of the NAFTA in 1994, Figure 1.3, below, presents Alberta's exports to FTA partners and to Non-FTA countries. Alberta's exports to FTA partners have increased by 324%, from \$17 billion in 1993 to \$72 billion in 2007. On the other hand, exports to Non-FTA countries have grown only by 175%, from \$4 billion in 1993 to \$11 billion in 2007. The share of exports to Non-FTA countries in the total exports has consequently declined from 18% in 1993 to 13% in 2007.

Figure 1.3: Alberta Exports to FTA Partners and Non-FTA Countries, 1993 – 2007

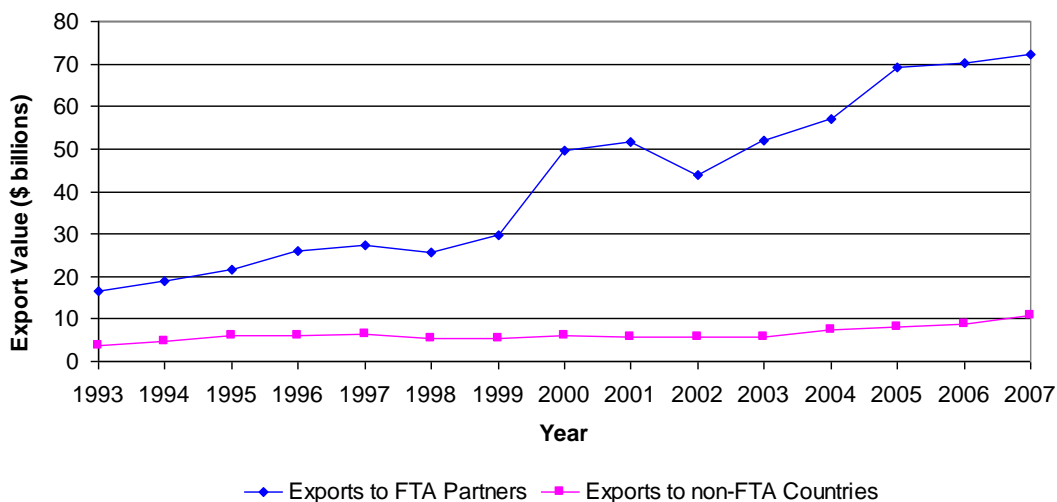
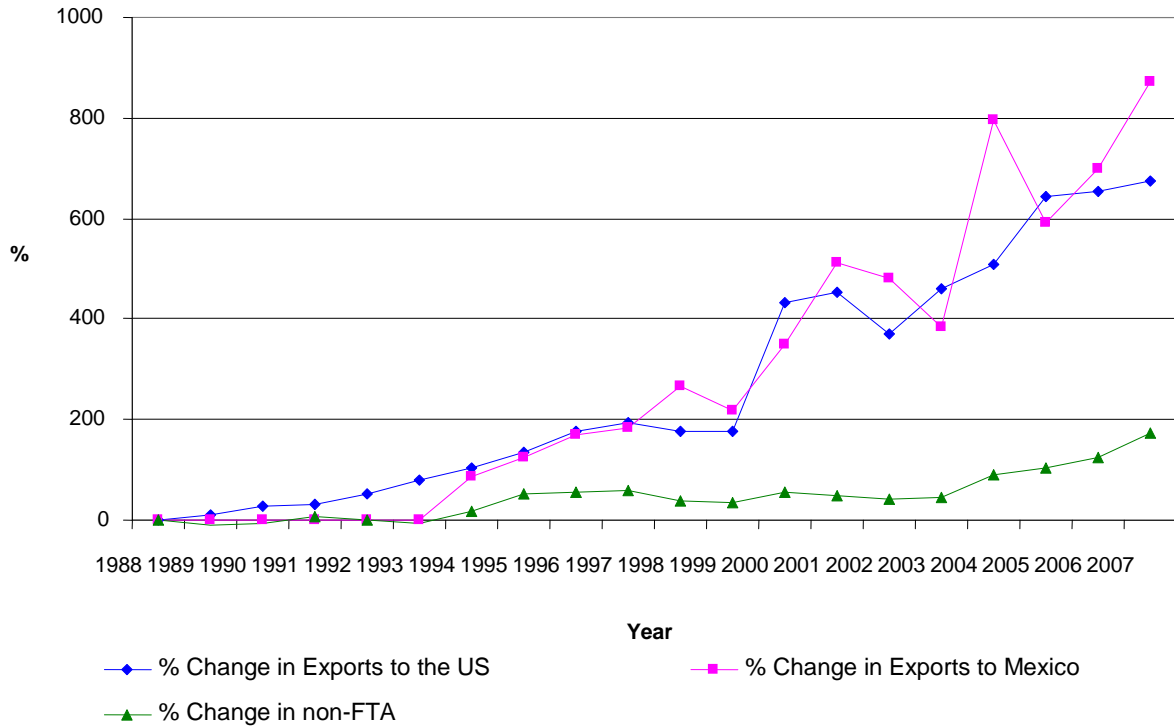


Figure 1.4, below, presents the percentage change in Alberta's exports to NAFTA partners and to Non-FTA countries. Since the inception of NAFTA in 1993, Alberta's exports to the US have grown by 335%, while exports to Mexico have grown by 681%. In contrast, exports to Non-FTA countries have grown by only 174% since 1988.

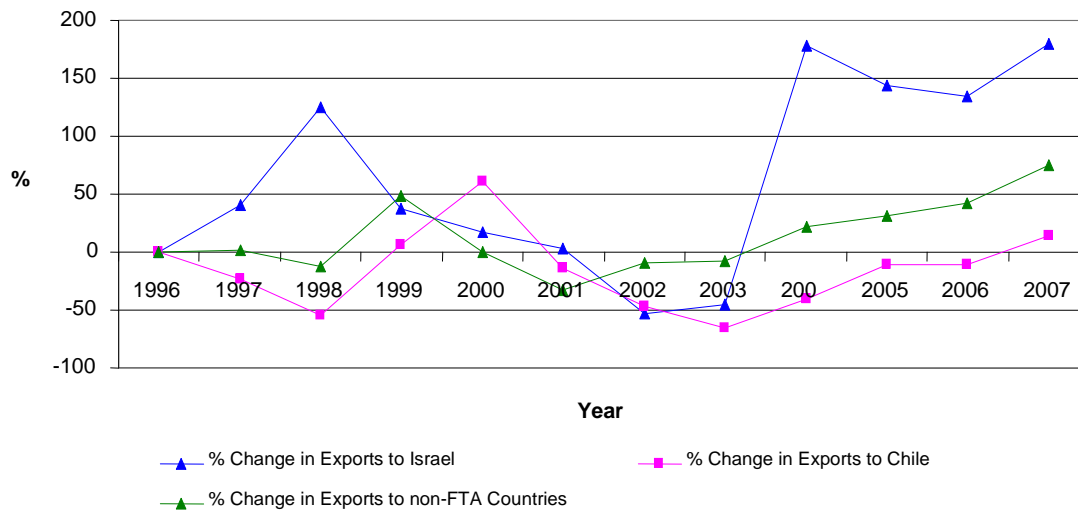
Figure 1.4: Change in Alberta Exports to NAFTA Partners and Non-FTA Countries, 1988 – 2007



1.2 Alberta's Exports to Israel and Chile

Figure 1.5, below, presents Alberta's cumulative export growth rates for FTA partners Israel and Chile and for non-FTA countries since 1996. Exports to Israel and Chile are still at low volumes that foster highly volatile growth rates. Since the inception of the agreements in 1996, exports to Israel have increased by 179% while exports to Chile have increased by only 14%. On the other hand, over the same period Alberta's exports to Non-FTA countries have grown by 117%.

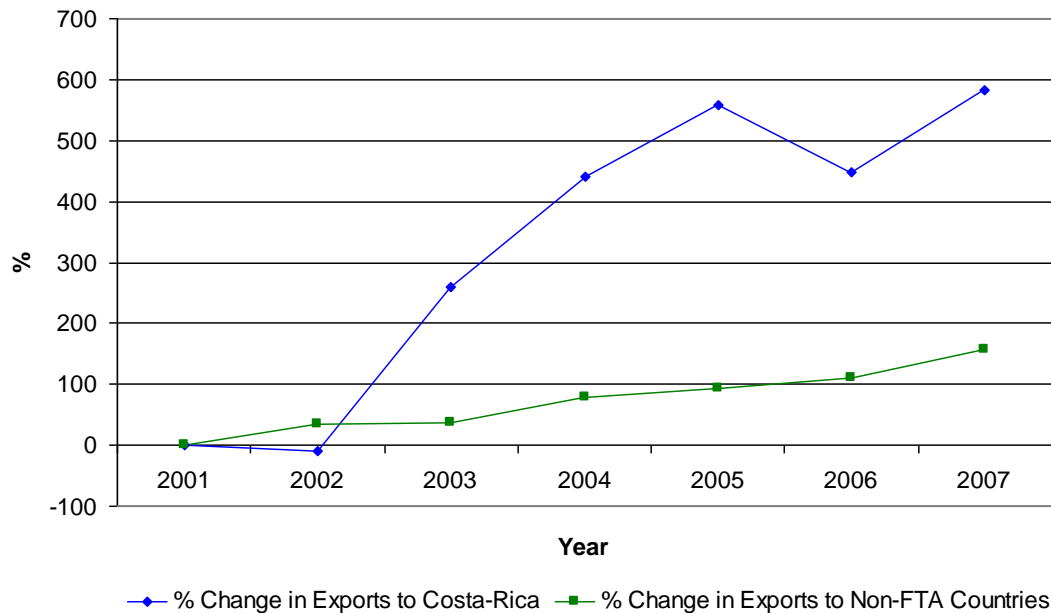
Figure 1.5: Change in Alberta Exports to Israel, Chile and Non-FTA Countries, 1996 – 2007



1.3 Alberta's Exports to Costa Rica

The FTA with Costa Rica entered into force in late 2002. Figure 1.6, below, presents Alberta's cumulative export growth rates for Costa Rica and non-FTA countries since 2001. Exports to Costa Rica grew consistently, except for the 2005-2006 period. Overall, there was a 582% growth in exports to Costa Rica, though from a small base. Over the same time period exports to non-FTA countries have grown by 158%.

Figure 1.6: Change in Alberta Exports to Costa Rica and Non-FTA Countries, 2001 – 2007



1.4 NAFTA and Other FTA Exports: Summing Up

On the basis of Figures 1.4 – 1.6 and the data in Table 1.1, it is evident that the values of Alberta's exports to NAFTA and other FTA partners show growth rates that are at least twice as high as those for exports to other trading partners during the period the FTA agreements were in effect. While the NAFTA partners are also geographically closer to Alberta, so that exports face lower transportation costs than exports to trading partners further afield, the effects of the free trade agreements appear to be reflected in the dramatically higher growth rates of exports observable where free trade agreements exist. The one exception to this observation is the exports to Chile.

2. Alberta's Top Exports: HS Categories

2.1 Alberta's Top 20 Exports to the World

Table 2.1, below, presents Alberta's top 20 HS 2-digit export categories in 2007 with the corresponding export values of the same categories in 1993. Since 1993, Alberta's total exports have grown 311.5% with an average annual (nominal) growth rate of 22%. Of this growth in exports, nearly 70% is attributable to energy exports.

The top 20 exports accounted for almost 96% of total exports in 2007. Most of the growth in total exports is due to growth in oil, machinery, plastics and organic chemicals exports. Particularly noteworthy is that machinery has become the second most important export for Alberta, surpassing plastics which had held that position in 2006. As machinery exports typically involve a higher degree of differentiation than processed materials like plastics, this suggests that Alberta is becoming more diversified in its industrial structure.

Table 2.1: Alberta's Top Twenty HS 2-Digit Export Categories in 2007 Compared to 1993, Total Exports (\$ million)

HS	Product Description	2007		1993		Export Growth (%) (1993-2007)	Contribution to Total Export Growth (%) (1993-2007)	NAFTA Share (%)	
		Export Value, \$	% of Total	Export Value, \$	% of Total			2007	1993
27	Energy	56,453	68.0	12,891	63.9	337.9	69.3	99.0	94.9
84	Machinery	3,545	4.3	482	2.4	635.8	4.9	59.2	35.2
39	Plastics	3,446	4.2	524	2.6	557.2	4.7	85.3	80.0
29	Organic Chemicals	2,697	3.2	721	3.6	274.1	3.1	57.0	54.4
10	Cereals	1,748	2.1	885	4.4	97.5	1.4	19.1	17.3
75	Nickel and Articles thereof	1,319	1.6	57	0.3	2222.6	2.0	2.4	15.5
02	Meat	1,300	1.6	444	2.2	192.9	1.4	72.0	82.3
47	Wood Pulp	1,211	1.5	413	2.0	193.4	1.3	58.4	31.4
12	Oil Seeds	1,135	1.4	336	1.7	237.8	1.3	31.8	20.0
85	Electrical/Electronic Machinery	1,036	1.2	373	1.8	177.9	1.1	65.7	70.9
73	Iron/Steel Products	943	1.1	78	0.4	1115.5	1.4	87.4	59.0
44	Wood and Articles thereof	823	1.0	315	1.6	161.1	0.8	94.9	80.5
01	Live Animals	798	1.0	552	2.7	44.6	0.4	97.4	100.0
90	Precision Instruments	728	0.9	137	0.7	431.5	0.9	60.9	38.6
31	Fertilizers	505	0.6	219	1.1	130.8	0.5	95.4	92.7
15	Fats And Oils	499	0.6	82	0.4	505.5	0.7	30.8	89.4
25	Sulfur	498	0.6	172	0.9	190.5	0.5	16.6	45.3
28	Inorganic Chemicals	459	0.6	136	0.7	236.5	0.5	85.5	83.2
87	Vehicles, Not Railways	353	0.4	76	0.4	367.2	0.4	66.0	44.8
81	Other Base Metals	272	0.3	27	0.1	899.9	0.4	1.8	0.8
	Total Top 20	79,766	96.1	18,892	93.7	322.2	96.9	87.4	82.6
	Total Exports	82,993	100	20,168	100	311.5	100.0	86.8	81.7

Still, as the price of energy products rose and energy exports increased in volume, so did energy's share in total exports, from 64% in 1993 to 68% in 2007. Energy exports to NAFTA countries accounted for 99% of all of Alberta's energy exports. The share of NAFTA-destined exports from Alberta has also increased from 82% in 1993 to 87% in 2007. There was a significant increase in the export values of most of the top twenty export categories, although cereals and live animals show relatively smaller growth.

2.2 Alberta's Top 20 Exports to the US

Table 2.2, below, compares Alberta's top 20 HS 4-digit exports to the US for 2007 with their 1988 values. Total exports to the US have increased by almost 675%, from \$9,216 million in 1988 to \$71,297 million in 2007. There was a several-fold increase in almost all of these twenty product categories. Iron and steel pipe, acyclic hydrocarbons, machinery parts, pumps and beef cuts have shown particularly dramatic growth.

Table 2.2: Alberta's Top 20 HS 4-Digit Level Exports to the US in 2007 Compared to 1988 (\$ million)

HS	Description	2007	1988	Growth %
2709	Crude Oil	28,099	3,077	813
2711	Natural Gas and Liquefied Petroleum	26,571	3,229	723
3901	Ethylene Polymers In Primary Forms	2,544	359	608
2710	Refined Oil	857	94	812
0102	Live Cows	712	219	225
4703	Chemical Wood Pulp	621	362	71
0201	Beef, Fresh Or Chilled	608	37	1552
2901	Acyclic Hydrocarbons	594	13	4320
2902	Cyclic Hydrocarbons	582	122	378
3102	Nitrogenous Fertilizer	476	118	302
7305	Large Diameter Iron Or Steel Pipes	419	2	26216
4407	Softwood Lumber	404	133	203
8431	Machinery Parts	376	18	2006
2814	Ammonia	339	70	384
8517	Telephones And Electronic Transmission Equipment	276	31	804
8413	Pumps	269	3	9330
4410	Particle Board Of Wood	254	65	290
2905	Alcohols And Derivatives	218	168	30
8414	Air Pumps, Compressors and Fans	201	4	5638
9015	Survey Instruments	184	4	4195
	Total Top 20	64,604	8,127	695
	Total Exports	71,297	9,216	674

2.3 Alberta's Top 20 Exports to Mexico

Trade between Alberta and Mexico has grown significantly since the signing of the NAFTA in 1993. Table 2.3 shows a detailed breakdown of the top 20 exports to Mexico at the HS 4-digit level of detail. The main export categories to Mexico were canola seeds, ethylene polymers (plastics) and beef.

In 1993, there was very limited trade in most of the categories. With the inception of the NAFTA most of the categories experienced significant growth rates which suggests the development of new export markets in Mexico. The largest increase in the value of exports was in the "Taps, Cocks, Valves and Similar Appliances for Pipes, Boiler Shells, Tanks, Vats and the Like" category which was followed by the growth in the "Ethylene Polymers in Primary Forms" category.

The top 20 exports in the HS 4-digit categories to Mexico grew more than ten-fold, from \$60 million in 1993 to \$687 million in 2007. Overall, total exports to Mexico grew by 800%, from \$85 million in 1993 to \$767 million in 2007.

Table 2.3: Alberta's Top 20 HS 4-Digit Level Exports to Mexico in 2007 Compared to 1993, (\$ million)

HS	Descriptions	2007	1993	Growth %
1205	Canola Seeds	185.74	22.26	735
3901	Ethylene Polymers in Primary Form	122.38	0.08	150,986
0201	Beef, Fresh or Chilled	116.26	0.19	62,405
1001	Wheat	82.87	22.14	274
8517	Telephone Sets	32.50	4.73	587
8431	Misc. Machinery Parts	23.71	0.13	17,861
0206	Edible Offal, Chilled or Frozen	20.78	1.91	991
4703	Chemical Wood Pulp	15.61	2.63	493
8430	Earth Moving Machinery	11.53	0.10	11,668
0203	Fresh or Chilled Pork	11.35	2.26	403
4705	Semi-Chemical Wood Pulp	10.47	2.06	408
9015	Scientific Instruments	9.40	0.22	4,253
8481	Valves and Other Parts for Pipes	8.13	0.00	203,075
8716	Vehicle Trailers	6.02	-	-
0504	Animal Parts	5.96	-	-
1701	Sugar	5.83	-	-
2004	Frozen Potatoes and Vegetables	5.35	0.01	44,483
1003	Barley	4.51	1.19	278
2503	Sulfur	4.37	-	-
8544	Insulated Cable and Optical Fibers	4.26	0.18	2,318
	Total of Top 20	687.02	60.08	1,043
	Total Exports	766.71	85.43	798

2.4 Alberta's Top 10 Exports to Israel

The Canada-Israel FTA became effective in 1997. Table 2.4, below, shows the top 10 exports to Israel at the HS 4-digit level. Prior to the free trade agreement between Canada and Israel, there was no trade in most of the top 10 categories. Ethylene Polymers in Primary Forms, Products from Coal, and Lumber were the three main products exported to Israel.

The top 10 exports to Israel grew from \$1million in 1996 to \$33 million in 2007. In the eleven years since the inception of the free trade agreement, total exports to Israel nearly tripled from \$12 million to \$35 million.

Table 2.4: Alberta's Top 10 HS 4-Digit Level Exports to Israel in 2007 Compared to 1996, (\$ million)

HS	Descriptions	2007	1996	Growth %
3901	Ethylene Polymers in Primary Forms	17.27	0.42	4,000
2701	Products from Coal	9.94	-	-
4407	Softwood Lumber	2.16	-	-
8526	Radar/Radio Navigational Apparatus/Remote Control	1.06	-	-
0713	Legumes - Dried and Shelled	0.78	0.04	1,927
8543	Misc. Electrical Machinery	0.63	-	-
8471	Magnetic and Optical Readers, Data Transfer Equipment	0.33	-	-
8517	Telephone Sets	0.24	0.10	133
2803	Carbon	0.20	0.20	-2
2309	Pet Food	0.19	-	-
	Total of Top 10	32.78	0.77	4,175
	Total Exports	34.58	12.38	179

2.5 Alberta's Top 10 Exports to Chile

In contrast to the results of the previous section, the free trade agreement between Canada and Chile does not appear to have boosted Alberta's exports. There was even a decline in "Wheat" and "Sulfur" exports. But thanks to a significant increase in "Other Moving, Grading, and Leveling Machinery" exports, total exports grew by 14%, from \$72 million to \$83 million. The top 10 exports also followed the same trend and increased by 12% in nominal value, from \$63 million in 1996 to \$70 million in 2007.

Table 2.5: Alberta's Top 10 HS 4-Digit Level Exports to Chile in 2007 Compared to 1996, (\$ million)

HS	Descriptions	2007	1996	Growth %
2701	Coal	17.73	1.21	1,366
8430	Earth Moving Machinery	13.73	0.63	2,086
1001	Wheat	11.90	50.70	-77
2503	Sulfur	8.92	8.98	-1
3901	Ethylene Polymers in Primary Forms	7.81	0.39	1,911
8431	Misc. Machinery Parts	4.29	0.56	665
8411	Turbo Jets, - Propellers and - Turbines	1.89	-	-
8802	Helicopters, Airplanes and Spacecraft	1.31	-	-
1107	Malt	1.27	-	-
0713	Legumes Dried and Shelled	1.18	0.10	1,061
	Total of Top 10	70.03	62.56	12
	Total Exports	82.67	72.23	14

2.6 Alberta's Top 10 Exports to Costa Rica

The inception in 2002 of a free trade agreement created new export markets in Costa Rica. Prior to 2002 there was no trade in most of the top 10 product categories that were exported in 2007. The top 10 export categories to Costa Rica have experienced a huge increase in its value, from \$0.24 million in 2001 to \$8 million in 2007. Most of this increase was due to growth in exports of "Frozen Potatoes and Other Vegetables". The main categories of export are "Malt", "Frozen Potatoes and Other Vegetables", and "Ethylene Polymers in Primary Forms", accounting for \$6.41 million in 2007.

Table 2.6: Alberta's Top 10 HS 4-Digit Level Exports to Costa Rica in 2007 Compared to 2001
(\$ million)

HS	Descriptions	2007	2001	Growth %
1107	Malt	3.34	-	-
2004	Potatoes and Other Vegetables - Frozen	1.76	0.01	13,481
3901	Ethylene Polymers in Primary Forms	1.31	0.07	1,860
3102	Fertilizer - Nitrogenous	0.46	-	-
8517	Telephone Sets	0.36	0.17	115
8436	Misc. Agricultural Machinery	0.23	-	-
4907	Forms, Banknotes, Certificates	0.22	-	-
8523	Sound Recording Materials	0.12	-	-
9406	Prefabricated Buildings	0.12	-	-
1901	Food Preparations of Cereals, Flour, Starch, Malt or Milk	0.11	-	-
	Total of Top 10	8.01	0.24	3,171
	Total Exports	9.74	1.43	582

3. Alberta's Export Performance in the Canadian Context

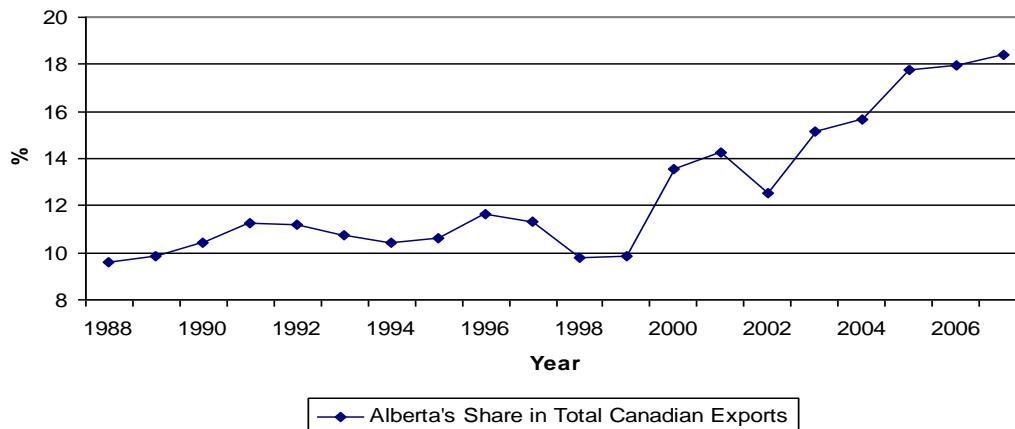
While Alberta's exports contain significant proportions of local natural resources, they also contain inputs that are sourced Canada-wide as well as imported, and this is of increasing importance as supply chains expand across regions and even straddle national borders. Thus the documented growth in Alberta's exports also results in spin-off effects for other provinces, so that Canada as a whole benefits from Alberta's export success and the win-win feature of international trade entails a domestic multiplier effect. Exports generally reflect the competitive advantages of the region's or country's firms. A later section will focus on the specific products that have shown strong export growth.

There are, however, three additional dimensions to Alberta's exports that will be addressed in this section. The first is how Alberta's exports have developed relative to Canada's total; the second is how Alberta's exports have evolved relative to the growth in the population and labour force of the province; and the third is how Alberta's exports have fared, relatively, in the most important and competitive market, the US.

3.1 Alberta's Exports in the Canadian Context

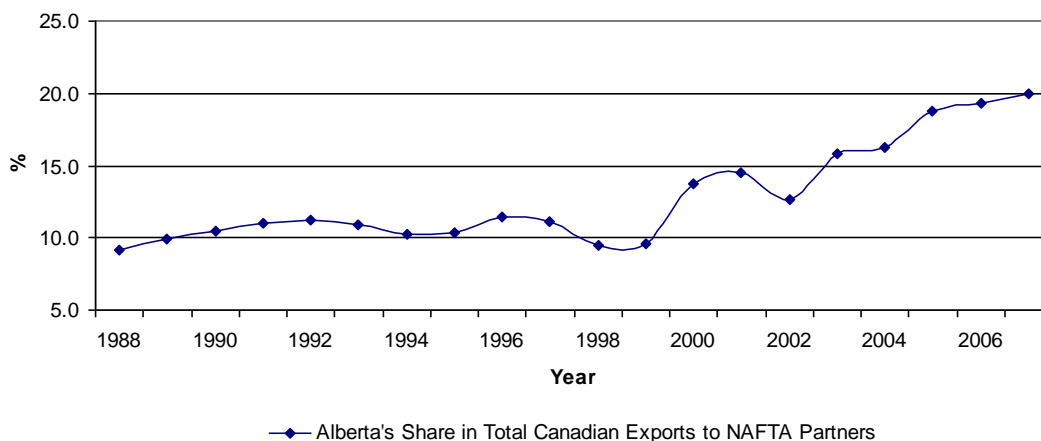
As a proportion of Canada's total exports, Alberta's exports have shown a growing trend as is illustrated in Figure 3.1

Figure 3.1: Alberta's Share in Total Canadian Exports, 1988 - 2007



During the period 1988 to 2007, Alberta's share in total Canadian exports has risen from 9.6% to 18.4%, i.e. it has nearly doubled. The picture is similar for Alberta's importance in exports to NAFTA partners as shown in Figure 3.2.

Figure 3.2: Alberta's Share in Total Canadian Exports to NAFTA Partners, 1988 – 2007



In general, Alberta's and Western Canada's total exports to the two NAFTA partners have grown much faster than those to other free trade partners and to non-FTA partners, so that the NAFTA has been of particular benefit to Western Canada. In 1988 52.4% of Western Canadian exports were destined to NAFTA countries, whereas by 2007 the figure was 76.6%, rising intermittently to over 80% when the Canadian dollar was weak. By contrast, the share of Eastern Canada's exports destined for Mexico and the US increased from 81.6% in 1988, reaching 90.8% in 2000 as the Canadian dollar weakened, only to return to 81.8% in 2007 when the Canadian dollar rose to parity with the US dollar.

Table 3.1: Comparison of Western and Eastern Canada's Export Performances, 1988 – 2007 (\$ million)

Year	Western Canada		Eastern Canada		Western Canada	Eastern Canada	Western Canada	Eastern Canada	Western Canada	Eastern Canada
	Export Value	% of CDN Total	Export Value	% of CDN Total	NAFTA Destinations % of Region Total		Other FTA Destinations % of Region Total		Non-FTA Destinations % of Region Total	
1988	39,841	28.8	98,657	71.2	52.44	81.56	0.25	0.21	47.31	18.23
1989	39,235	28.3	99,467	71.7	55.51	80.88	0.26	0.17	44.22	18.95
1990	41,338	27.7	107,641	72.3	57.49	82.17	0.34	0.22	42.17	17.61
1991	41,247	28.3	104,759	71.7	57.76	82.53	0.30	0.18	41.94	17.29
1992	45,383	27.9	117,444	72.1	61.62	83.88	0.25	0.17	38.13	15.95
1993	50,007	26.7	137,508	73.3	67.00	85.80	0.32	0.18	32.67	14.03
1994	59,953	26.6	165,726	73.4	66.34	87.26	0.40	0.17	33.26	12.57
1995	70,800	27.0	191,467	73.0	63.47	85.64	0.35	0.22	36.18	14.14
1996	74,366	27.0	201,453	73.0	67.37	86.54	0.41	0.20	32.22	13.26
1997	79,339	26.6	218,733	73.4	68.12	87.38	0.35	0.20	31.53	12.42
1998	76,195	23.9	242,249	76.1	71.94	89.40	0.25	0.18	27.81	10.43
1999	83,052	23.4	272,368	76.6	75.15	90.79	0.31	0.17	24.54	9.04
2000	113,672	27.5	299,543	72.5	78.51	90.83	0.29	0.18	21.20	8.99
2001	111,884	27.7	292,201	72.3	80.13	90.64	0.22	0.18	19.65	9.17
2002	100,466	25.3	295,915	74.7	79.39	90.58	0.20	0.19	20.42	9.24
2003	106,692	28.0	274,379	72.0	80.29	88.65	0.16	0.17	19.55	11.18
2004	119,699	29.0	292,591	71.0	79.04	87.71	0.21	0.19	20.76	12.09
2005	137,316	31.5	298,942	68.5	80.39	86.57	0.20	0.22	19.41	13.21
2006	140,716	32.0	299,551	68.0	78.83	84.36	0.21	0.23	20.95	15.41
2007	147,087	32.6	303,463	67.4	76.63	81.77	0.23	0.31	23.14	17.92
% Growth	269.2	-	207.6	-	46.13	0.26	-8.63	47.56	-51.08	-1.71

3.2 Alberta's Exports in the Context of Growth in Population and Employment

The population of Alberta grew during the period under observation as did that of Canada. In 1988 Alberta was home to 2.5 million of Canada's 26.8 million residents. By 2008, Alberta's population had reached 3.5 million, an increase from 9.1% to 10.5% of Canada's then total of 33.1 million residents. Along with this increase in population went an increase in the labour force of the province and in total employment. Employment grew from 1.22 to 1.96 million, an increase of nearly 61%. It is therefore of interest to analyze how Alberta's exports per employee have developed in comparison with those for the country as a whole.

As Table 3.2 shows, the value of Canadian exports per employee averaged \$10,987 in 1988. By 2007 that figure was \$26,707, evidencing nominal growth of 143%, i.e. including inflation. For Alberta the corresponding figures are \$10,863 (almost identical to that for Canada) and \$42,344, for nominal growth of 290%.

Table 3.2: Albertan and Canadian Exports per Employee, 1988 – 2007

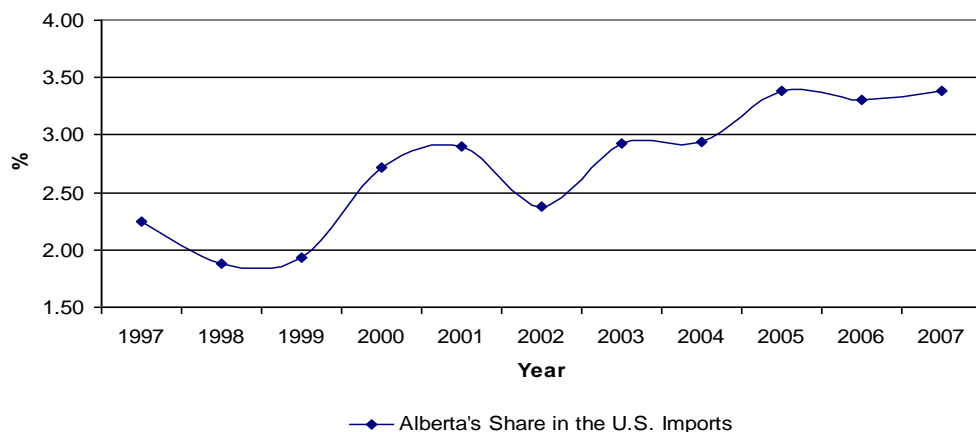
Year	Alberta			Canada		
	Export Value \$ billion	Employment	Export Value per Employee \$	Export Value \$ billion	Employment	Export Value per Employee \$
1988	13,278	1.22	10,863	138,498	12.71	10,897
1989	13,654	1.25	10,912	138,702	13.00	10,673
1990	15,485	1.28	12,128	148,979	13.09	11,384
1991	16,417	1.28	12,782	146,006	12.86	11,356
1992	18,237	1.28	14,247	162,828	12.73	12,790
1993	20,168	1.29	15,650	187,515	12.79	14,658
1994	23,507	1.32	17,748	225,679	13.06	17,282
1995	27,780	1.36	20,353	262,267	13.30	19,726
1996	32,081	1.41	22,832	275,819	13.42	20,551
1997	33,686	1.45	23,209	298,072	13.71	21,748
1998	31,216	1.51	20,674	318,444	14.05	22,671
1999	34,966	1.54	22,646	355,420	14.41	24,670
2000	55,880	1.58	35,278	413,215	14.76	27,988
2001	57,536	1.63	35,278	404,085	14.95	27,036
2002	49,549	1.67	29,656	396,381	15.31	25,890
2003	57,640	1.72	33,576	381,071	15.67	24,315
2004	64,539	1.76	36,722	412,290	15.95	25,854
2005	77,419	1.78	43,387	436,257	16.17	26,980
2006	79,000	1.87	42,230	440,266	16.48	26,708
2007	82,993	1.96	42,344	450,550	16.87	26,707

The comparisons of sections 3.1 and 3.2 show that Alberta's exporters generally, and those shipping to the NAFTA partners in particular, were highly successful. Measured in terms of export value per employee, this performance exceeded, by a considerable margin, that of the 'average' Canadian exporter. Of course, it has to be acknowledged that higher commodity prices, and especially energy prices, played a significant role in this success.

3.3 The Share of Alberta's Exports in the US Market

One of the questions that might be raised in the context of the success in the US market of emerging export powers like China is whether Alberta's exporters have maintained or even improved their relative position among total imports to the US.

Figure 3.2: Alberta's Share of Total U.S. Imports, 1997 - 2007



As energy prices have given Alberta's exports to the US a boost, particularly in the last two years, Figure 3.2 shows that during the decade since 1997 Alberta's exports have somewhat increased their overall position in the US. While not shown here, the Western provinces as a group have roughly maintained their market share in the US at 7% during that period, with Alberta's export performance ensuring that result.

4. Alberta Export Success and the Relationship to the Energy Sector

Another question that observers of Alberta's export success may pose is to what extent the natural resources of the province, in particular its endowments with oil and gas, have contributed to the development of manufacturing and processing expertise that has resulted in value-added exports. This question has some policy relevance: evidence of 'spin-off exports' that derive from the activities of the energy sector document an inherent dynamic process leading to a competitive advantage which can be levered internationally. Evidence of such a natural process would make it less necessary for policy makers to pick future 'winners'. Instead it would serve as a guide to infrastructure development that fosters these competitive strengths.

But once the question is posed, it proves difficult to answer. Nevertheless, an attempt is made here to identify specific products that have been exported successfully since the onset of the NAFTA, and to determine whether or not these 'good news' stories have a connection to the energy sector. In this context, the focus is on exports to all destinations, not just the free trade partners.

Three steps led to some insights into this issue. The first step was to identify product classes that can be said a priori to have a connection to the energy sector. The second step was to use the 6-digit level of detail in the HS classification of exported

products and find those products that exhibited significant and high growth export activity since 1995. 1995 was chosen as base year because it is the first year of a comprehensive and accessible data base on Alberta's exports (World Trade Atlas) and closely matches the start-up of NAFTA. The third and final step in the process consisted of an analysis of how the successful export products were related to the energy sector. This was done by an interpretation of their technical description.

Therefore our chosen criteria for the successful export products are that they:

- exhibit high growth in export value;
- account for more than \$10 million in value in 2007; and
- are at the 6-digit level of detail and belong to HS Chapters with a likely connection to Alberta's oil and gas industry.

4.1 The Likely Suspects: Export Spinoffs from the Oil and Gas Industry

As likely offshoots from Alberta's energy sector we selected Sulfur (HS 25), Organic Chemicals (HS 29), Fertilizers (HS 31), Plastics (HS 39), Articles from Iron and Steel (HS 73), Machinery and Parts (HS 84), Electrical Machinery, Equipment and Parts (HS 85), Vehicles and Parts (HS 87), and Precision Instruments (HS 90) for closer scrutiny of their export success. For these product classes a connection to the oil and gas sectors can be readily made: the petro-chemical industry derives feed-stocks from natural gas; exploration for and production of gas and oil require appropriate mechanical and electrical machinery; oil sands production relies on specialized vehicles and cold climate construction techniques; transportation of oil and gas products involves pipelines, compressors, pumps, as well as measuring and monitoring devices; and geological surveys require appropriate precision instruments. When expertise is acquired that has a wider appeal, exports of products embodying this skill can be expected. Thus, exports fulfilling the above criteria were compiled from the World Trade Atlas data base and divided into size classes regarding the value of their 2007 exports, namely \$10-100 million, and greater than \$100 million. Tables 4.1 and 4.2 show the results.

Table 4.1 Fast Growing Export Products (>\$100 million in 2007)

Product Description	HS-Classification	Amount \$ million	1995-2007 Growth %
Polymers Of Ethylene, In Primary Forms	390190	1,747.2	1,825
Polyethylene Having A Specific Gravity Of 0.94 Or More	390120	1,031.8	539
Parts For Boring Or Sinking Machinery	843143	560.1	1,365
Sulfur Of All Kinds, Not Sublimed, Precipitated, Or Colloidal	250300	466.8	-*
Line Pipe Of A Kind Used For Oil Or Gas Pipelines	730511	414.4	-*
Saturated Acyclic Hydrocarbons	290110	319.4	1,645
Non Self-Propelled Boring Or Sinking Machinery	843049	305.4	1,224
Unsaturated Acyclic Hydrocarbons	290129	269.5	-*
Surveying Instruments And Appliances	901580	245.5	1,443
Equipment Parts For Transmission Of Voice Or Images	851770	245.1	-*
Air/Gas Pumps, Compressors And Fans	841480	235.0	5,718
Other Valves And Appliances for Pipes, Tanks, Vats	848180	204.2	519
Turbopropellers Of A Power Not Exceeding 1,100 Kw	841121	186.7	2,062
Parts Of Pumps For Liquids	841391	145.7	1,051
Reciprocating Positive Displacement Pumps	841350	127.3	5,259
Special Purpose Vehicles Such As Trailers, Tankers, Or Other	870590	121.7	2,419

Table 4.2 Fast Growing Export Products (\$10.0-\$100 million in 2007)

Product Description	HS-Classification	Amount \$ million	1995-2007 Growth %
Lifting, Handling, Loading & Unloading Machinery	842890	93.3	4,315
Propyl And Isopropyl Alcohol	290512	72.6	4,222
Parts And Accessories For Surveying	901590	64.8	2,199
Gas Turbines Of A Power Exceeding 5000 Kw	841182	56.9	-*
Trailers and Semi-Trailers	871640	49.1	-*
Rotary Positive Displacement Pumps	841360	44.9	2,154
Distilling Or Rectifying Plant	841940	43.7	2,649
Other Polyethers	390720	43.5	-*
Pumps For Liquids	841381	42.8	2,115
Air/Gas Pump, Compressor And Fan Parts	841490	36.9	1,373
Other Trailers And Semi-Trailers For the Transport Of Goods	871639	34.4	4,774
Safety Or Relief Valves	848140	29.2	2,057
Electric Pulley Tackle and Hoists	842511	28.1	-*
Unsaturated Monohydric Alcohols	290529	27.7	-*
Diesel-Powered Generators (Output >375 Kva)	850213	25.8	-*
Centrifuges	842119	25.5	1,386
Check Valves	848130	22.6	991
Other Line Pipe For Oil And Gas Pipelines	730512	21.0	*-
Tubes, Pipes & Hoses, Rigid Of Polymers Or Ethylene	391721	20.6	2,872
Benzene	290220	19.6	3,501
Acrylic Polymers In Primary Forms	390690	18.8	-*
Instrument Parts To Measure Or Check Liquids Or Gases	902690	17.5	1,519
Tubes Not Reinforced, Without Fittings	391732	15.8	1,021
Mechanical Appliance For Projecting Liquids	842489	15.3	7,256
Parts For Transmission Shafts, Gears Speed Changers	848390	15.2	2,394

*Products with greater than 8,000% export growth due to small base of exports in 1995

4.2 Alberta Export Successes: An Interpretation at the Product Level

An interpretation of these export success stories would ideally take into account their growth pattern over time. Given the number of products involved, however, this is not possible in a summary report such as this.

Still, several points can be made about the data in the above tables. First, among the high dollar value export success stories of Table 4.1 we find an emerging cluster of Alberta producers of boring and drilling machinery and parts, as well as significant values of exports of oil and gas pumps, compressors, and pumping equipment. Also, surveying instruments and appliances of nearly a quarter billion dollars were exported in 2007, whereas such exports amounted to only \$16 million in 1995. It is possible that Canadian companies active abroad make use of such equipment as it has worked well for them at home. Case studies might therefore unearth evidence of an emerging international supply chain.

Noteworthy are also the considerable exports of special purpose vehicles. Not surprising are the strong exports of processed petrochemicals, such as the various plastic materials derived from natural gas feed stocks. Of the fifteen major export success stories, nine involve manufactured products in HS Chapters 84, 85, 87, and 90.

Second, in the layer of export growth that involves amounts of \$10 to \$100 million (Table 4.2), we again find a heavy preponderance (17/25) of manufactured products (HS 84, 85, 87, and 90). Together, the export successes documented in Tables 4.1 and 4.2 go a long way towards explaining why manufactured products have become Alberta's #2 export industry after oil and gas, placing the petrochemical industry into the #3 position among export heavy-weights.

Lifting, handling, and loading machinery, surveying instrument accessories, gas turbines, and specialized trailers and parts are likely all related to the exploration, construction, production, and transportation needs of the energy sector.

Thus our snapshot of successful export products in Tables 4.1 and 4.2 shows Alberta's economy as diversifying horizontally into manufactured products that are internationally competitive. The development of such an export industry may shield the province to some extent in a local downturn. However, given their energy-related nature, the export of these products remains vulnerable to the global fortunes of the energy sector.

5. Conclusion

Alberta's exports of merchandise have grown particularly fast to the countries that are partners in free trade agreements. With the exception of Chile, the free trade partners have proven to be the fastest growing export markets for Alberta.

While overall exports grew by 525% in nominal terms between 1988 and 2007, most of this growth was accounted for by markets with which Canada has free trade agreements. During that period, the compound annual growth rate of exports to FTA-destinations was 10.8% compared to 5% for non-FTA destinations.

A consequence of this higher growth of exports to the free trade partners is that they have become even more important to Alberta. In 2007 they constituted 87% of all export destinations, compared to 82% in 1988.

The US is still far and away Alberta's most important export market, and most of the energy exports from Alberta go to the two NAFTA partners. Despite the high increases in the value of oil exports, non-energy exports to the NAFTA-partners still increased by 468% between 1988 and 2007.

In 2007, the manufacturing sector provided Alberta's second most important export products, with energy sector-related manufactured products becoming significant export earners. The sizeable exports of scientific instruments, covered in Chapter 90 of the HS classification, in all likelihood can also be linked to the energy industry of the province.

In 2007 Alberta's exporters have again increased their market share in the all important US market, the stronger price for oil in 2007 obviously contributing to this result.

The increased importance of Alberta as an exporter is reflected in the fact that the province now accounts for 18.4% of total Canadian exports. In 1988, Alberta's share was 9.6%. On the basis of export value per employee the province leads the country.