

NUMBER 67 • DECEMBER 2001

AN EXAMINATION OF ALBERTA'S EXPORTS OF
MANUFACTURED PRODUCTS
1995 TO 2000

By Ronald A. Volpi

*Western Centre for Economic Research
School of Business, University of Alberta
Edmonton, Canada T6G 2R6
www.bus.ualberta.ca/CIBS-WCER*

National Library of Canada Cataloguing in Publication Data

Volpi, Ronald a. (Ronald Andre) 1970-
Alberta's manufacturing exports to NAFTA and FTA countries.

(Information bulletin ; no. 67
Includes bibliographical references
ISBN 1-55195-074-X

1. Exports--Alberta. I. University of Alberta, Western Centre for
Economic Research. II. Title. III. Series: Information bulletin
(University of Alberta. Western Centre for Economic Research); no. 67.

HF1769.A4V642 2001 382'.6'097123 C200-911626-8

INTRODUCTION

This study is based on data of exports of manufactured products from Alberta to the United States after the implementation of the North American Free Trade in 1994. Its purpose is to assist in the identification of products or types of manufacturing industries that show substantial increase in the level of exports to the United States.

The United States is the major destination for the exports of manufactured products from Alberta, representing more than 80% of all such exports, or \$6,057 million in 2000. These figures take into account Chapters 84 through 96 of the Harmonized Tariff Coding System, and confirm the importance of the United States as a trading partner. This study also compares the export values to the United States with the sum of exports to other non-FTA countries, that is, nations with which Canada does not have a Free Trade Agreement.

Those countries with which Canada has a Free Trade Agreement are Chile, Costa Rica, Israel, Mexico and the United States.

FORMAT OF THIS REPORT

The products are classified according to the Harmonized Tariff Coding System (HS Codes). There is no specific threshold value of exports for this study. Products were selected according to their relative relevance within the HS Chapters.

HS Chapters divide the study, and the product description is detailed at the 4-digit level in the HS coding system. Further breakdown is shown when the value of exports at 4-digit level was relatively substantial, and a few 6-digit level products could be identified as the most important within the group. These 6-digit level items were than presented.

Using graphs, this paper compares the exports to the United States with the sum of exports to other non-FTA nations. Additional comments regarding specific products and industries are presented when judged as relevant.

OUTLOOK OF ALBERTA EXPORTS TO THE US

Exports from Alberta accounted for almost \$55 billion in 2000. The United States is the primary destination of Alberta products, and the FTA nations all together account for more than 92% of total exports. Although small in relative numbers (7.6%), non-FTA nations imported a total of \$1.36 billion from Alberta in 2000.

Specifically the United States accounted for 88% of Alberta exports in 2000, but only 12% of all US bound exports were manufactured products. Manufactured items (HS Chapters 84 to 96) to the US represented \$6,057 million, or 85% of total manufacturing exports from Alberta. Table 1 shows the value of exports of the HS Chapters in this study, from Alberta to the US for the 1995-2000 period.

Table 1. Alberta Exports of Manufactured Products to the United States and Non-FTA Countries, 1995 to 2000, \$million

HS Code	Description	Destination	Exports to USA and Non-FTA Countries (\$millions)					
			1995	1996	1997	1998	1999	2000
84	Machinery and Parts	USA	329.049	450.430	480.225	686.870	639.916	873.904
		Non-FTA Countries	226.403	285.610	269.927	404.484	284.278	409.260
85	Electrical Machinery, Equipment and Parts	USA	701.078	1,038.551	1,050.444	1,381.066	1,903.452	4,277.129
		Non-FTA Countries	110.953	117.093	140.737	136.084	210.319	328.344
86	Railway or Tramway Stock; Traffic Signal Equipment	USA	1.908	6.636	6.139	2.160	23.525	6.034
		Non-FTA Countries	0.024	0.043	1.165	0.243	0.340	0.325
87	Vehicles, not Railway	USA	76.380	91.486	82.229	156.886	229.760	288.591
		Non-FTA Countries	22.702	32.840	37.347	15.644	19.622	23.872
88	Aircrafts and Spacecrafts	USA	36.117	34.650	37.798	28.973	20.018	20.523
		Non-FTA Countries	13.400	176.254	66.543	78.109	12.625	52.108
89	Ships and Boats	USA	1.107	1.007	0.881	1.315	1.966	2.132
		Non-FTA Countries	0.102	0.123	0.107	0.071	0.070	0.236
90	Optical, Photo and Precision Instruments	USA	64.868	75.341	83.254	111.190	96.794	137.454
		Non-FTA Countries	102.360	114.736	128.563	111.906	109.377	121.000
91	Clocks and Watches	USA	0.248	0.279	0.244	0.213	0.098	0.081
		Non-FTA Countries	1.667	0.965	0.398	0.232	0.122	0.180
92	Musical Instruments	USA	0.044	0.109	0.188	0.269	0.229	0.493
		Non-FTA Countries	0.005	0.013	0.039	0.033	0.263	0.044
93	Arms and Ammunition	USA	1.819	0.810	0.845	2.030	1.317	2.044
		Non-FTA Countries	0.189	0.069	0.124	0.275	0.223	0.161

HS Code	Description	Destination	Exports to USA and Non-FTA Countries (\$millions)					
			1995	1996	1997	1998	1999	2000
94	Furniture, Bedding; Prefabricated Buildings	USA	118.074	191.559	260.065	313.028	356.292	425.766
		Non-FTA Countries	16.408	38.261	37.097	24.973	21.044	26.906
95	Toys and Sports Equipment	USA	10.698	25.694	16.574	16.172	16.362	21.449
		Non-FTA Countries	1.222	1.463	2.022	2.249	1.873	8.239
96	Miscellaneous Manufactured Products	USA	0.650	0.468	0.594	1.061	1.400	1.816
		Non-FTA Countries	0.039	0.084	0.198	0.060	0.220	0.037
TOTAL		USA	1,342.040	1,917.021	2,019.480	2,701.231	3,291.130	6,057.418
		Non-FTA Countries	495.475	767.553	684.265	774.364	660.376	970.713

The value of exports from Alberta has grown substantially in the period of the study (1995 to 2000). The pattern of growth, however, varies considerably across products. Due to the lack of relevance of exports in some product groups, this study is focused on the following HS Chapters: 84, 85, 87, 88, 90 and 94.

In some cases the level of exports fluctuated in the period of the study, with large variations between years, sometimes up, sometimes down, following no specific trend. Such fluctuation might be caused by a wide variety of factors, such as opportunistic one-time sales, special orders for customized products, or even cyclical demand from certain types of industries, as in the case of some machinery or precision instruments with specific applications.

One should not disregard the fact that the Canadian Dollar has fluctuated over a wide range during the period (see Figure 1). Thus, another cause for variation might be a momentary relative price advantage for Canadian products due to the floating exchange rate.

**Figure 1. Average Monthly Exchange Rate, Noon Spot, Unadjusted.
Canadian Dollars per US Dollar.**



Other products showed a rapid increase of export levels since the early years of NAFTA (1996 and 1997). These might be examples of how the agreement facilitated the sales expansion of products that were already being traded on a continuous base.

A third common profile encountered is of products that show a recent boom in exports, typically in the last two years (1999 and 2000). This late boost in exports to the US might be due to several, somewhat interacting factors. One possibility is that the continuous efforts of exporters to enter the American market was finally harvested as their products gained consumer confidence and demand grew. Also, it might be a consequence of the booming economy in the US in the same period, when the expectations of continuously increasing consumer expenditures were driving up investments. This makes sense since many of the manufactured products in this study are items which could be called "capital investment", such as machinery, electrical equipment, instruments and furniture.

Alberta exports of Machinery, Equipment and Parts (HS Chapter 84) to the United States accounted for almost \$874 million in 2000. This is an increase of 165% since 1995. Chapter 84 encompasses a very wide variety of products, ranging from bearings to bulldozers to more sophisticated equipment such as digital controllers and processors. Alberta exports are represented across the whole chapter, with no individual product dominating a large share of the export value. This suggests the presence of a very diversified industry of machinery, equipment and parts in the province.

With a few exceptions, most of the selected HS 4 and 6-digit products in this study show a significant increase in the level of exports to the US.

Two products show a substantial increase of exports in the last year: HS 841940 (Distilling and Rectifying Plants) jumped from small values to over \$23 million in exports to the US in 2000. It is noteworthy that exports to non-FTA countries also soared in the same year, reaching over \$12 million.

The second product is HS 847150 (Digital Processing Units, nes.). Exports to the US increased by more than 8 times to over \$53 million in 2000. No significant increase, though, was registered in the non-FTA market.

Exports of HS 841121 (Turbo propellers <= 1100 KW) have accelerated in the past two years, reaching a level of \$85 million to the US in 2000. Shipments to non-FTA countries also increased considerably in the last two years.

Although unimpressive in the early years of NAFTA, HS 841582 (Air Conditioning Machines Incorporating a Refrigeration Unit, nes.) exports to the US increased in 1997 and have grown since then, reaching \$25 million in the last year. Shipments to non-FTA countries are low.

HS 842119 (Centrifuges, nes.) exports to the US have taken off in the last two years, reaching almost \$6 million in 2000. Sales to non-FTA countries increased to \$1.5 million in the same year.

Sales of HS 843149 (Parts and Attachments for Derricks, nes.) to the US fluctuate a little, but show an upward trend during the period of the study. Shipments to non-FTA countries are much less impressive.

HS 8479 (Machines Having Individual Functions, nes.) exports to the US have more than doubled since 1995, reaching \$42 million in 2000. Sales to non-FTA nations in the same period show an almost three-fold increase to \$91 million in 2000.

HS 8480 (Moulding Boxes for Metal Foundry) exports to the US have increased substantially, reaching a peak of \$19 million in 1999, then decreasing to just under \$10 million in 2000. Shipments to non-FTA nations are negligible.

The most important destinations of Chapter 84 exports in the US in 2000 were Texas, Kansas, Wyoming, California, New York and Illinois.

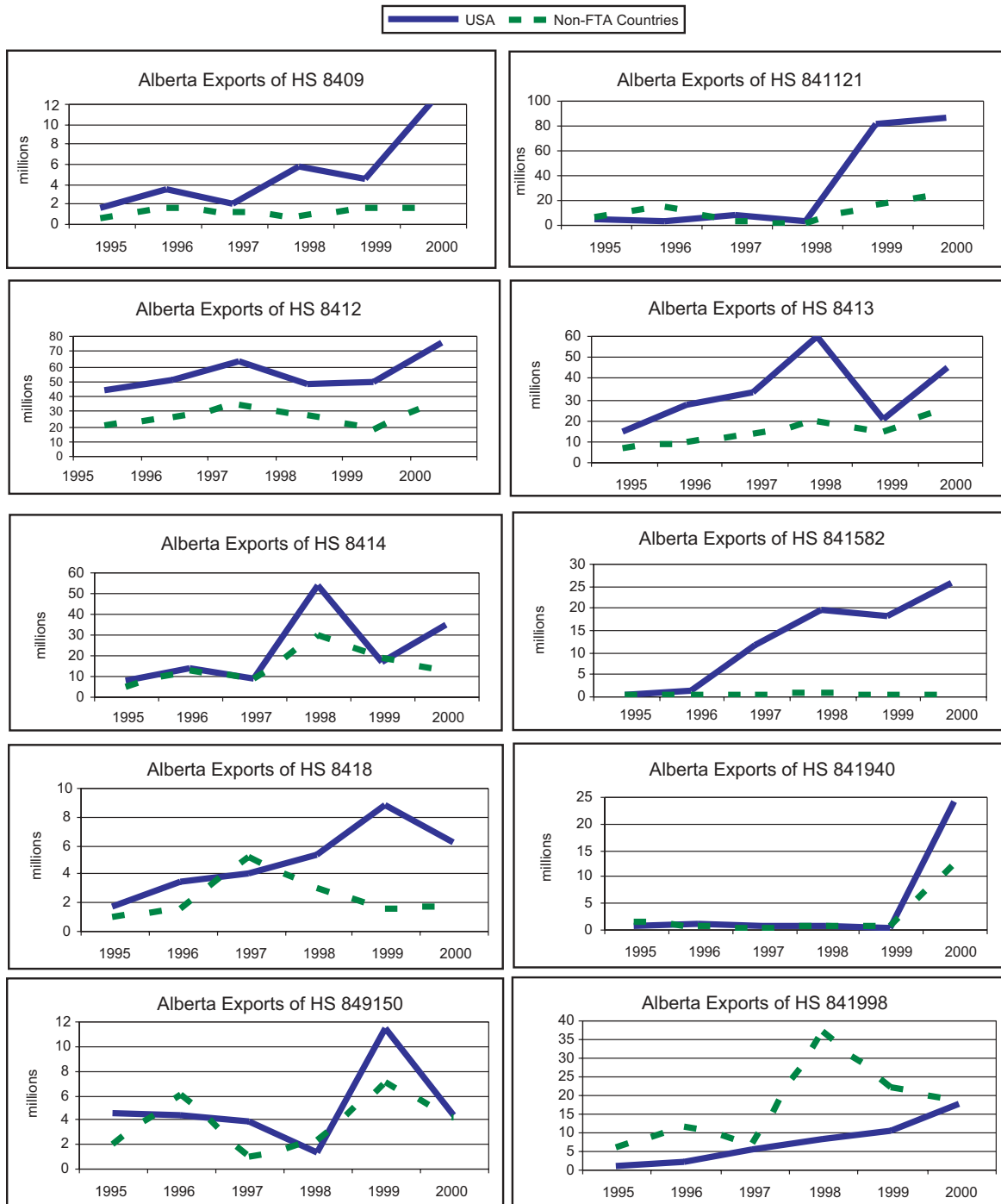
Detailed information regarding export values of these and other selected Chapter 84 products are shown in Table 2 and Figure 2 below.

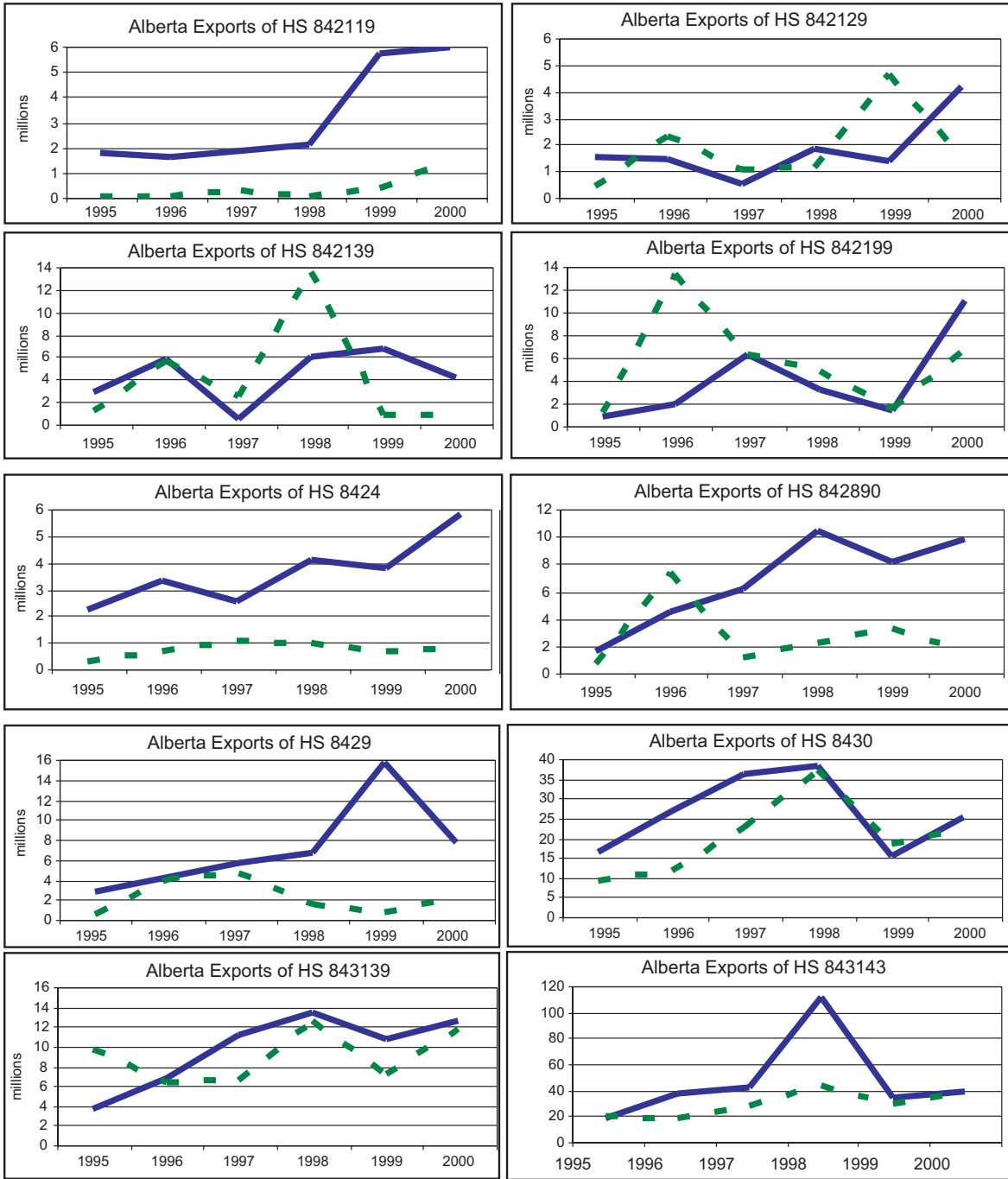
Table 2. Alberta Exports of Machinery, Equipment and Parts (HS Chapter 84) to the United States and to Non-FTA Countries, 1995 to 2000, (\$millions)

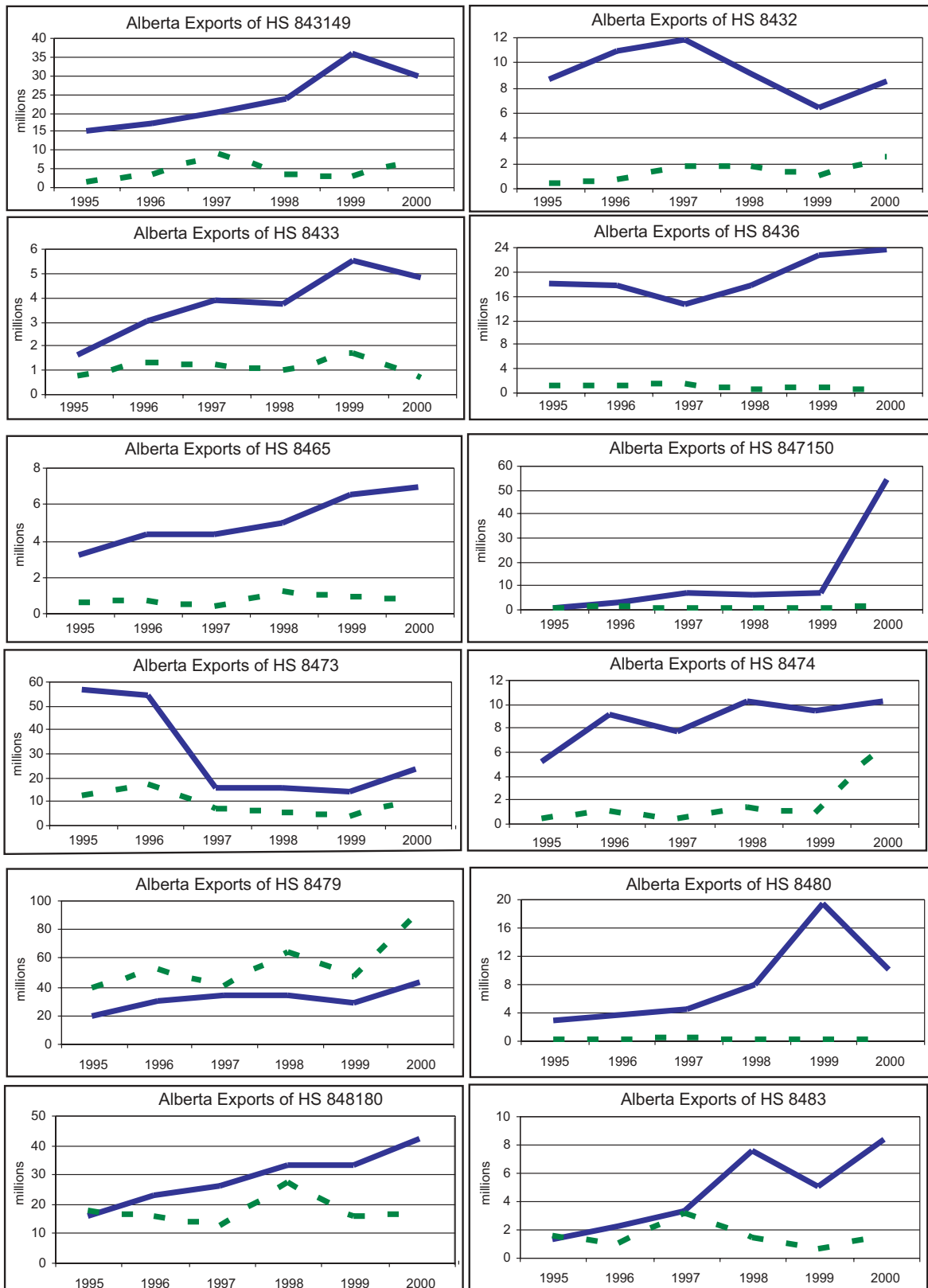
HS Code	Description	Destination	Exports (\$millions)					
			1995	1996	1997	1998	1999	2000
84	Machinery and Parts	USA	329.049	450.430	480.225	686.870	639.916	873.904
		Non-FTA Countries	226.403	285.610	269.927	404.484	284.278	409.260
8409	Parts for Engines 8407-08	USA	1.486	3.391	1.795	5.668	4.257	11.975
		Non-FTA Countries	0.510	1.380	0.969	0.576	1.389	1.346
8411	Turbojets, Turbo-propellers and Other Gas Turbines; Parts	USA	7.171	17.510	16.613	21.395	86.786	99.428
841121	<i>Turbo propellers <= 1100 KW</i>	USA	3.591	2.440	6.311	2.465	80.231	85.102
		Non-FTA Countries	5.043	13.057	2.457	-	15.685	23.208
8412	Other Engines and Motors, nes.; and Parts	USA	42.074	49.633	61.794	46.990	48.211	74.895
		Non-FTA Countries	19.048	24.719	32.901	25.641	15.955	37.040
8413	Pumps for Liquids, Liquid Elevators and Parts	USA	14.020	26.659	32.083	58.851	19.589	44.398
		Non-FTA Countries	5.898	8.817	12.636	18.462	13.570	26.094
8414	Air or Vacuum Pumps, Compressors and Fans; Parts	USA	7.030	12.647	8.314	52.670	15.775	33.546
		Non-FTA Countries	3.701	12.474	7.953	28.775	17.957	11.101
8415	Air Conditioning Machines and Parts	USA	3.519	3.292	15.972	22.549	20.028	27.737
841582	<i>Air Conditioning Machines Incorporating a Refrigeration Unit, nes.</i>	USA	0.020	0.750	11.427	19.337	17.841	25.421
		Non-FTA Countries	-	0.095	-	0.345	0.057	-
8416	Furnace Burner, Mechanical Stokers and Parts	USA	0.799	4.785	0.663	1.393	1.337	1.714
		Non-FTA Countries	0.006	0.037	0.090	0.238	0.365	0.553
8418	Refrigerators, Freezers, Heat Pumps, nes.; Parts	USA	1.662	3.399	3.867	5.174	8.694	6.104
		Non-FTA Countries	0.820	1.384	5.110	2.883	1.483	1.763
8419	Machinery for Temperature Changing Treatment; Parts	USA	12.356	15.072	18.612	20.872	30.095	50.140
841940	<i>Distilling and Rectifying Plants</i>	USA	0.244	0.595	0.376	0.261	0.131	23.803
		Non-FTA Countries	1.347	0.286	0.035	0.442	0.343	12.179
841950	<i>Industrial Type Heat Exchange Units</i>	USA	4.457	4.145	3.675	1.208	11.256	4.282
		Non-FTA Countries	1.810	5.838	0.887	2.165	6.944	4.069
841990	<i>Parts for 8419</i>	USA	0.515	1.795	4.818	7.745	9.955	17.157
		Non-FTA Countries	5.314	11.307	6.694	36.452	21.428	17.844

HS Code	Description	Destination	Exports (\$millions)					
			1995	1996	1997	1998	1999	2000
8421	Centrifuges and Filters for Liquids and Gases; Parts	USA	6.968	11.269	9.835	15.712	19.928	35.897
842119	<i>Centrifuges, nes.</i>	USA	1.717	1.551	1.797	2.052	5.638	5.932
		Non-FTA Countries	-	0.025	0.216	0.027	0.368	1.478
842129	<i>Filter/Purifying Machine & Apparatus for Liquids, nes.</i>	USA	1.505	1.429	0.470	1.768	1.305	4.108
		Non-FTA Countries	0.414	2.297	0.993	1.097	4.632	1.597
842139	<i>Filter/Purifying Machine & Apparatus for Gases, nes.</i>	USA	2.846	5.762	0.419	5.845	6.721	4.045
		Non-FTA Countries	1.123	5.470	2.462	13.485	0.674	0.710
842199	<i>Parts for Filter/Purifying Machine & Apparatus</i>	USA	0.716	1.797	6.106	3.026	1.354	10.818
		Non-FTA Countries	1.086	13.307	6.149	4.688	1.502	6.683
8424	Mechanical Appliances to Disperse Liquids and Sand	USA	2.217	3.247	2.499	4.045	3.756	5.787
		Non-FTA Countries	0.229	0.649	1.050	0.931	0.662	0.719
8428	Lifting, Handling and Loading Machines, nes; Parts	USA	3.940	7.512	10.111	14.041	13.399	15.155
842820	<i>Pneumatic Elevators & Conveyors</i>	USA	0.760	0.763	1.654	2.008	1.566	2.189
		Non-FTA Countries	-	0.005	0.186	0.059	-	-
842839	<i>Elevators/Conveyors for Goods or Materials</i>	USA	0.947	1.917	2.182	0.436	1.206	1.334
		Non-FTA Countries	0.062	0.008	0.349	0.280	-	0.437
8473	Parts for Typewriters and Other Office Machines	USA	56.229	53.840	15.128	14.987	13.139	23.142
		Non-FTA Countries	11.870	16.538	5.994	4.408	3.450	10.231
8474	Machines for Sorting and Screening Minerals	USA	5.106	9.004	7.506	10.064	9.358	10.094
		Non-FTA Countries	0.395	0.995	0.374	1.317	0.724	6.606
8479	Machines Having Individual Functions, nes.	USA	17.915	29.294	33.226	33.432	27.973	42.448
		Non-FTA Countries	37.613	51.679	39.225	63.646	45.662	91.486
8480	Molding Boxes for Metal Foundry	USA	2.721	3.495	4.298	7.722	19.068	9.748
		Non-FTA Countries	0.029	-	0.329	0.124	0.011	0.005
8481	Pipe Taps, Cocks and Valves	USA	23.232	31.114	39.594	47.212	46.681	60.846
848180	<i>Pipe Taps, Cocks and Valves, nes.</i>	USA	15.368	22.140	25.479	33.009	32.898	41.387
		Non-FTA Countries	17.081	15.296	12.316	26.954	15.471	16.833
8483	Transmission Shafts, Bearings, Gears; Parts	USA	1.228	2.082	3.249	7.462	4.927	8.300
		Non-FTA Countries	1.458	0.990	3.000	1.272	0.583	1.646

Figure 2. Alberta Exports of Machinery, Equipment and Parts (HS Chapter 84) to the United States and to Non-FTA Countries, 1995 to 2000, (\$millions) – selected products







Exports of Electrical Machinery, Equipment and Parts (HS Chapter 85) from Alberta to the United States accounted for more than \$4,277 million in 2000. It is an increase of more than 510% since 1995. Most of this increase occurred in 2000. This chapter encompasses a wide variety of products, ranging from wiring and electric motors to electric and electronic circuits. More sophisticated equipment for telecommunications is classified in this Chapter as well. As is demonstrated below, much of the large increase in sales to the US in this Chapter is attributed to this type of equipment.

With a few exceptions, most of the selected HS 4 and 6-digit products show a significant increase in the level of exports to the US during the six-year period of the study.

HS 8501 (Electric Motors and Generators) sales to the US have grown steadily for the period. Interestingly, shipments to non-FTA countries soared in 2000 to \$13 million, double the volume of sales to the US.

Exports of HS 850440 (Static Converters, ADP Power Supplies) to the US have risen notably during the period, reaching their peak last year, at \$18 million. Sales to third countries are of smaller value.

HS 851730 (Telephonic Switching Apparatus) is the second most important product in this chapter, in terms of total sales to the US in 2000, with sales reaching \$1,435 million. Also, it is the product showing the greatest overall annual increase in sales, as sales soared from \$63 million in 1999. Shipments to non-FTA nations increased as well, but are relatively small when compared to the new level of sales to the US.

HS 851750 (Telecommunications Apparatus, Carrier & Digital Systems, nes.) exports to the US grew from zero in 1995 to almost \$132 million in 2000. A non-FTA market also developed but is of smaller value.

Shipments of HS 851790 (Parts of Electric Apparatus for Line Telephony) to the US also trebled in the six-year period, reaching almost \$265 million in 2000. Exports to non-FTA destinations also improved significantly, totalling \$98 million in 2000.

The largest value of exports in 2000 to the US in this Chapter is in HS 852520 (Transmission Apparatus Incorporating Reception Apparatus). Sales went up by 460% during the six-year period, reaching \$1,770 million in 2000. Sales to other countries also grew but, in relative values, are not important. There are many other products in this Chapter with significant increases in sales during the period of study. Detailed information regarding export values of these electrical equipment and parts are shown below Table 3 and Figure 3.

The states that received the most significant values of Chapter 85 exports in 2000 were New York and California, followed by Texas and Tennessee.

Again it is important to mention the very impressive increase in the volume of exports of equipment for telecommunications to the United States in 1999 and 2000.

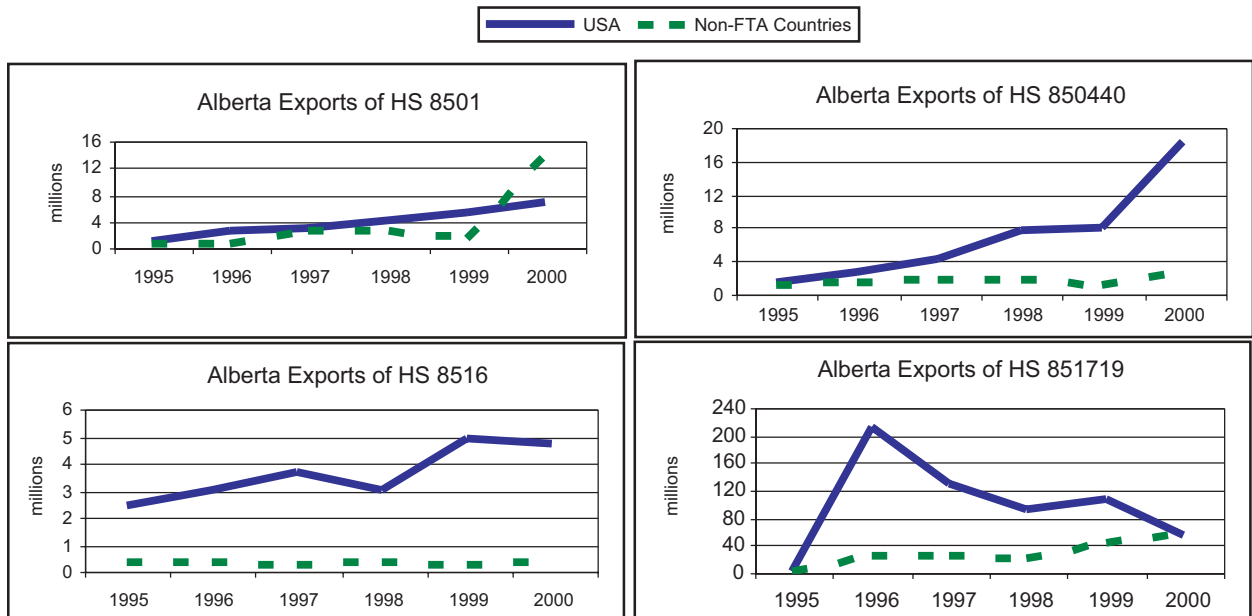
Table 3. Alberta Exports of Electrical Machinery, Equipment and Parts (HS Chapter 85) to the United States and to Non-FTA Countries, 1995 to 2000, (\$millions)

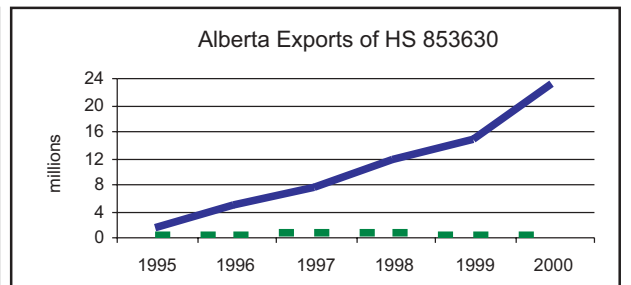
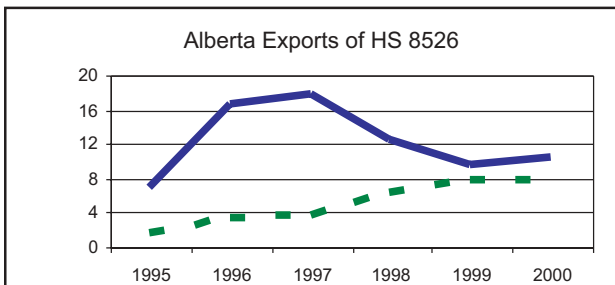
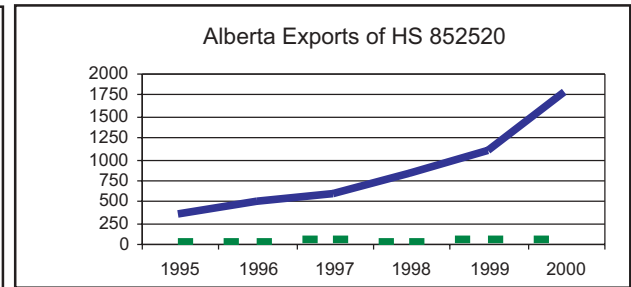
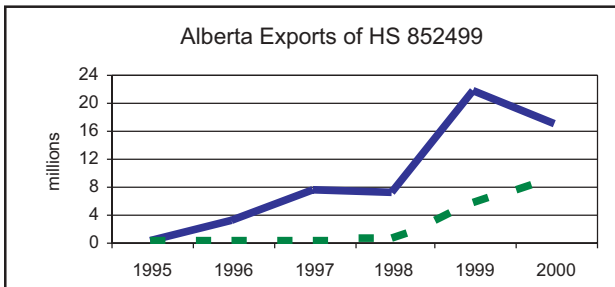
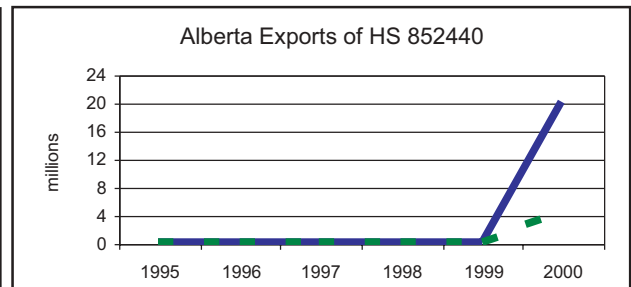
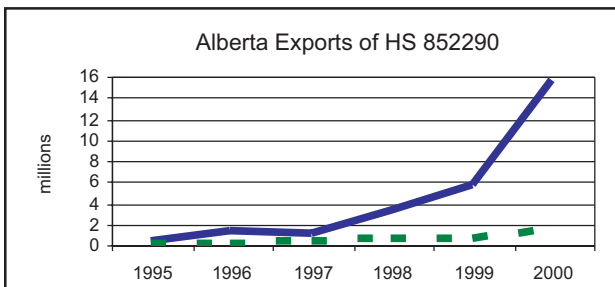
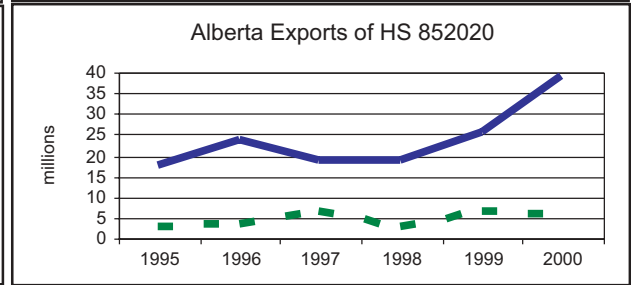
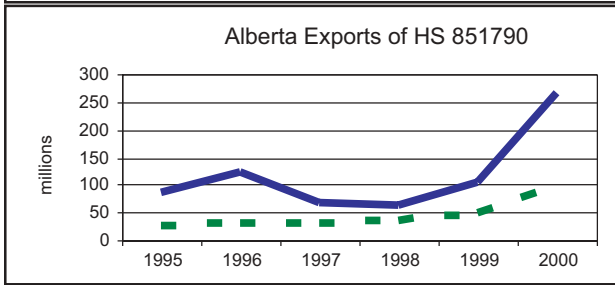
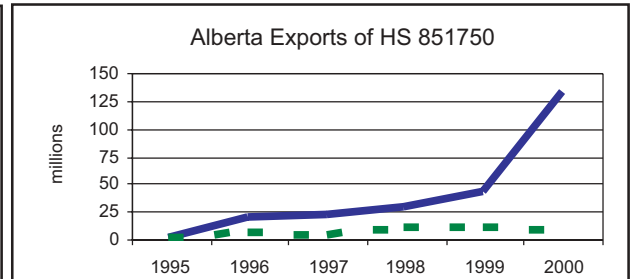
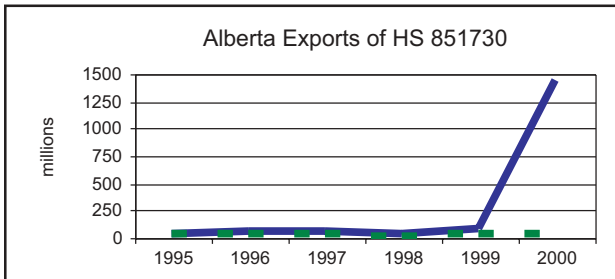
HS Code	Description	Destination	Exports (\$millions)					
			1995	1996	1997	1998	1999	2000
85	Electrical Machinery, Equipment and Parts	USA	701.078	1,038.551	1,050.444	1,381.066	1,903.452	4,277.129
		Non-FTA Countries	110.953	117.093	140.737	136.084	210.319	328.344
8501	Electric Motors and Generators	USA	0.693	2.267	2.878	3.926	5.029	6.685
		Non-FTA Countries	0.263	0.505	2.184	2.301	1.340	13.484
8504	ADP Power Supplies, Electric Transformers and Converters; Parts	USA	2.184	3.457	4.969	10.285	12.099	23.529
850421	<i>Liquid Dielectric Transformers <= 650 KVA</i>	USA	-	0.015	0.024	0.376	0.949	2.021
		Non-FTA Countries	0.016	0.083	0.153	0.244	0.008	0.012
850440	<i>Static Converters; ADP Power Supplies</i>	USA	1.174	2.469	4.040	7.517	7.952	18.141
		Non-FTA Countries	1.010	1.121	1.512	1.680	0.834	2.554
8516	Home Appliances Using Heat	USA	2.362	2.984	3.590	2.938	4.875	4.711
		Non-FTA Countries	0.288	0.313	0.172	0.244	0.153	0.318
8517	Line Telephony Electric Apparatus; Parts	USA	263.771	388.177	263.801	226.315	357.709	1,888.144
851719	<i>Videophones & Other Telephone Sets, nes.</i>	USA	-	208.934	129.073	88.472	104.909	52.582
		Non-FTA Countries	-	20.823	23.229	20.137	42.572	57.106
851730	<i>Telephonic or Telegraphic Switching Apparatus</i>	USA	33.323	42.024	36.399	34.213	63.096	1,435.428
		Non-FTA Countries	18.994	13.746	15.038	9.670	21.557	24.900
851750	<i>Telecomm Apparatus; Carrier & Digital Systems, nes.</i>	USA	-	18.224	21.215	27.922	41.968	131.993
		Non-FTA Countries	-	4.503	3.348	9.377	9.383	7.356
851790	<i>Parts of Electric Apparatus for Line Telephony or Telegraphy</i>	USA	82.790	117.864	66.503	59.197	100.840	264.551
		Non-FTA Countries	22.375	26.948	28.811	32.852	46.333	98.574
8520	Magnetic Tape and Other Sound Recorders	USA	17.319	23.782	18.452	18.854	25.715	38.917
852020	<i>Telephone Answering Machines</i>	USA	17.160	23.663	18.354	18.581	25.290	38.605
		Non-FTA Countries	2.190	3.319	6.000	2.526	6.075	5.765
8522	Parts and Accessories for 8519-21	USA	0.204	1.100	1.010	3.249	5.468	15.483
852290	<i>Parts and Accessories for Sound/Video Reproducing /Recording Apparatus</i>	USA	0.204	1.100	1.010	3.249	5.468	15.483
		Non-FTA Countries	0.028	0.042	0.145	0.573	0.493	1.553

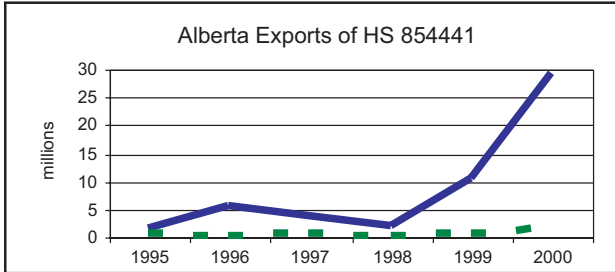
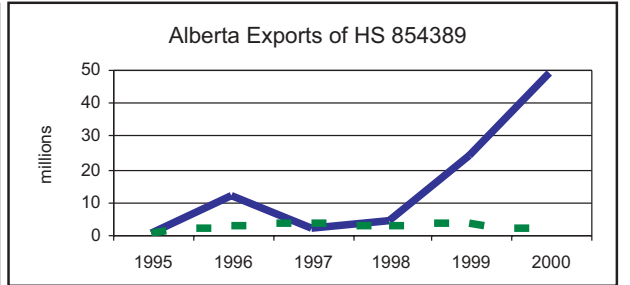
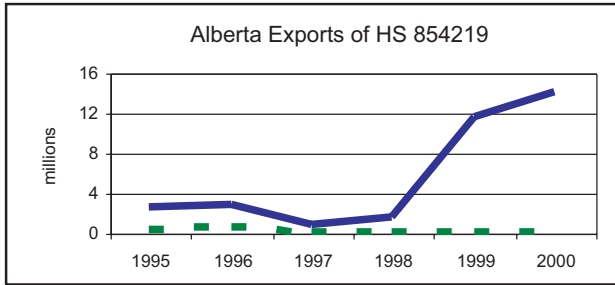
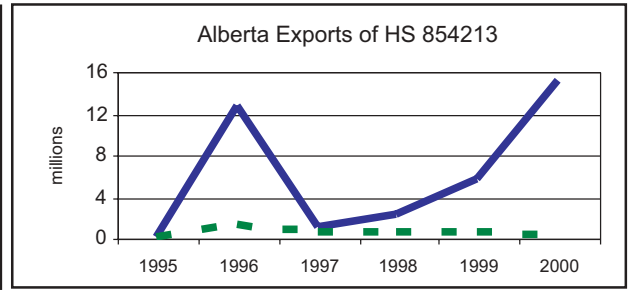
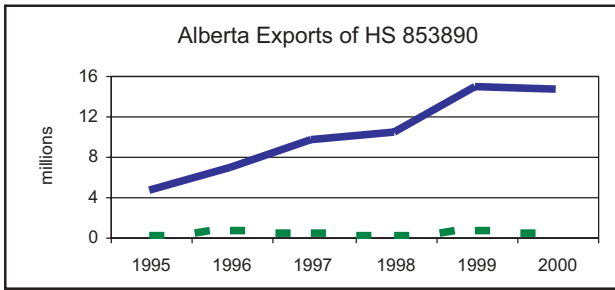
HS Code	Description	Destination	Exports (\$millions)					
			1995	1996	1997	1998	1999	2000
8524	Recorded Sound Media	USA	9.900	10.968	17.362	14.462	29.962	44.682
852440	<i>Magnetic Tapes for Reproducing Other than Sound/Image</i>	USA	-	0.039	0.018	0.084	0.091	20.075
		Non-FTA Countries	-	0.091	-	-	-	4.858
852499	<i>Recorded Media for. Reproducing Sound/Image, nes</i>	USA	-	2.752	7.439	6.941	21.573	16.551
		Non-FTA Countries	-	0.167	0.111	0.500	5.331	8.629
8525	Transmission Apparatus for Radio or TV	USA	315.148	473.365	578.661	820.736	1,088.361	1,780.575
852520	<i>Transmission Apparatus Incorporating Reception Apparatus</i>	USA	314.831	471.543	577.056	817.132	1,083.322	1,770.624
		Non-FTA Countries	7.632	11.181	15.462	4.069	15.091	39.281
8526	Radar and Navigation Aid Apparatus	USA	6.628	16.454	17.577	12.493	9.304	10.316
		Non-FTA Countries	1.330	3.363	3.463	6.145	7.639	7.597
8527	Radiotelephony Reception Apparatus	USA	0.319	0.194	0.247	1.985	2.553	4.959
		Non-FTA Countries	0.077	0.191	0.149	0.991	0.488	0.062
8531	Sound and Visual Signaling Apparatus	USA	1.576	3.088	3.940	6.538	8.017	8.780
853110	<i>Burglar or Fire Alarms</i>	USA	0.579	0.685	1.137	2.540	2.458	2.917
		Non-FTA Countries	0.447	0.035	0.115	0.077	0.016	0.519
853180	<i>Electric Sound or. Visual Apparatus, nes</i>	USA	0.265	0.362	0.893	2.989	4.271	4.267
		Non-FTA Countries	0.013	0.101	0.021	0.011	0.011	0.238
8534	Printed Circuits	USA	1.316	0.431	0.386	1.662	1.995	3.438
		Non-FTA Countries	0.024	0.025	0.369	0.268	0.666	1.422
8536	Switches <= 1000 V	USA	5.726	6.698	9.266	13.443	16.474	27.672
853630	<i>Other Apparatus for Protecting Electric Circuits <= 1000 V</i>	USA	0.975	4.698	7.184	11.516	14.371	22.919
		Non-FTA Countries	0.065	0.116	0.469	0.229	0.018	0.173
8538	Parts for 8535-37	USA	4.589	6.834	9.457	10.278	15.043	14.761
853890	<i>Parts for Electric Apparatus, Electric Circuits, Electric Control, nes.</i>	USA	4.496	6.802	9.392	10.205	14.629	14.501
		Non-FTA Countries	0.099	0.470	0.315	0.054	0.469	0.246
8542	Integrated Circuits	USA	14.657	21.435	8.373	5.364	19.917	31.875
854213	<i>Metal Oxide Semiconductors (MOS), Mono Digital Integrated</i>	USA	-	12.493	0.864	2.295	5.692	15.056
		Non-FTA Countries	-	1.311	0.595	0.495	0.573	0.250
854219	<i>Monolithic Integrated. Circuits, Digital, nes</i>	USA	2.540	2.826	0.853	1.397	11.527	14.097
		Non-FTA Countries	0.133	0.445	0.056	0.049	0.099	0.072

HS Code	Description	Destination	Exports (\$millions)					
			1995	1996	1997	1998	1999	2000
8543	Electrical Machinery with Individual Functions, nes.	USA	12.763	11.634	1.999	3.920	23.865	49.492
854389	<i>Electrical Machinery and Apparatus Having Individual Functions, nes</i>	USA	-	11.469	1.742	3.716	23.455	48.141
		Non-FTA Countries	-	2.274	3.088	2.107	3.271	0.617
8544	Insulated Cables and Wires	USA	12.265	31.867	74.704	135.956	208.341	227.066
854441	<i>Insulated Electric Conductors <= 80 V, with Connectors</i>	USA	1.239	5.372	3.501	1.977	10.256	28.973
		Non-FTA Countries	0.301	0.208	0.469	0.196	0.417	1.442
8548	Battery Waste and Scrap, Electrical Parts of Machinery nes	USA	0.169	0.101	0.324	0.187	1.200	3.724
		Non-FTA Countries	0.080	0.101	0.117	0.146	0.004	0.040

Figure 3. Alberta Exports of Electrical Machinery, Equipment and Parts (HS Chapter 85) to the United States and to Non-FTA Countries, 1995 to 2000, (\$millions) – selected products







CHAPTER 87

Shipments of Vehicles and Parts (HS Chapter 87) from Alberta to the United States exceeded \$288 million in 2000. This is an increase of 277% since 1995. Alberta does not have a large automotive industry or assembly lines. There are, however, some firms producing specialty and heavy equipment, such as trailers and recreational vehicles.

Passenger Vehicles with engines > 3,000 cc (HS 870324), Diesel Trucks > 20 MT (HS 870423) and Trucks < 5 MT (HS 870431) are products in this chapter that show a substantial increase in the value of shipments to the US. Sales to other countries are of much less value.

Specialty purpose vehicles such as in HS 8705 are examples of products also gaining importance in the latter years of this study.

Washington, California and Idaho were the primary destination of Chapter 87 exports to the US in 2000.

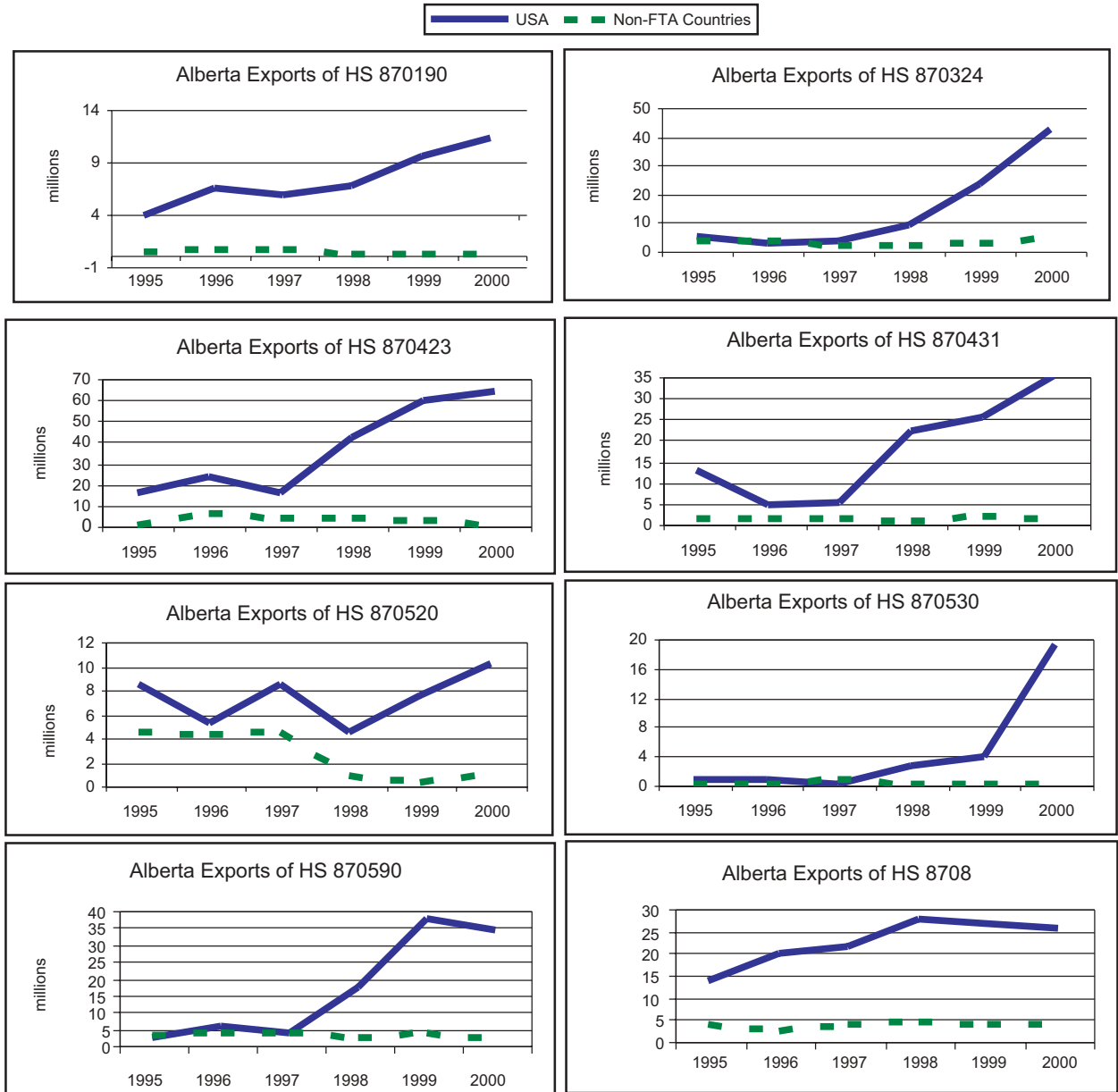
Detailed information regarding export values of these vehicles and parts are shown below in Table 4 and Figure 4.

Table 4. Alberta Exports of Vehicles and Parts (HS Chapter 87) to the United States and to Non-FTA Countries, 1995 to 2000, \$millions

HS Code	Description	Destination	Exports (\$millions)					
			1995	1996	1997	1998	1999	2000
87	Vehicles, not Railway	USA	76.380	91.486	82.229	156.886	229.760	288.591
		Non-FTA Countries	22.702	32.840	37.347	15.644	19.622	23.872
8701	Tractors, not in 8709	USA	5.870	8.737	6.676	9.855	14.622	14.294
870190	<i>Tractors, nes.</i>	USA	3.850	6.476	5.637	6.632	9.431	11.191
		Non-FTA Countries	0.412	0.557	0.446	0.106	0.019	0.156
8703	Passenger Motor Cars and Vehicles	USA	7.249	5.591	5.708	10.723	25.574	50.145
870324	<i>Passenger Vehicles, Spark Ignition, Engines > 3000 cc</i>	USA	4.508	2.490	2.987	8.815	23.321	41.846
		Non-FTA Countries	3.419	3.489	1.670	1.935	2.736	4.018
8704	Motor Trucks for Transporting Goods	USA	30.542	36.192	24.776	66.849	89.143	100.847
870423	<i>Trucks, Diesel Engines, GVW > 20 MT</i>	USA	15.328	23.037	15.275	41.357	59.453	63.877
		Non-FTA Countries	0.211	5.268	3.362	2.815	1.757	-
870431	<i>Trucks for Transporting Goods, Spark Ignition, GVW <= 5 MT</i>	USA	12.709	4.473	5.190	21.874	25.335	34.763
		Non-FTA Countries	1.227	1.167	1.041	0.617	1.500	1.053

HS Code	Description	Destination	Exports (\$millions)					
			1995	1996	1997	1998	1999	2000
8705	Other Special Purpose Motor Vehicles, nes.	USA	11.979	12.041	12.353	24.467	53.199	68.218
870520	Mobile Drilling Derricks	USA	8.334	5.058	8.353	4.433	7.429	10.164
		Non-FTA Countries	4.348	4.195	4.330	0.758	0.109	1.006
870530	Fire Fighting Vehicles	USA	0.480	0.505	0.025	2.446	3.784	18.992
		Non-FTA Countries	-	-	0.613	-	0.148	-
870590	Special Purpose Vehicles, nes.	USA	1.773	5.663	3.534	16.645	37.142	33.704
		Non-FTA Countries	2.999	3.680	3.266	2.187	3.082	1.034
8707	Motor Vehicles Bodies	USA	0.313	1.052	0.792	0.554	1.916	6.685
870790	Bodies for Road Tractors & Motor Vehicles	USA	0.313	1.048	0.766	0.545	1.871	6.104
		Non-FTA Countries	-	-	-	0.021	0.227	-
8708	Parts and Accessories for 8701-5	USA	13.431	19.892	21.336	27.588	26.372	25.489
		Non-FTA Countries	3.444	2.218	3.854	4.374	3.589	3.393
8714	Parts and Accessories for 8711-13	USA	2.722	2.596	2.491	4.513	6.119	9.000
871419	Parts of Motorcycles, nes.	USA	2.373	2.194	2.336	4.436	6.079	8.899
		Non-FTA Countries	0.324	0.456	0.241	0.065	0.020	0.018
8716	Trailers, not Mechanically Propelled	USA	0.980	2.384	3.873	9.644	9.714	10.442
871640	Trailers & Semi-trailers, nes.	USA	0.121	1.113	1.174	2.539	1.838	0.741
		Non-FTA Countries	-	-	0.041	0.304	1.424	7.058
871680	Vehicles not Mechanically Propelled, nes.	USA	0.127	0.393	0.980	2.230	2.858	3.451
		Non-FTA Countries	0.036	0.043	0.024	0.192	0.796	0.882

Figure 4. Alberta Exports of Vehicles and Parts (HS Chapter 87) to the United States and to Non-FTA Countries, 1995 to 2000, (\$millions) – selected products



Exports of Aircrafts, Spacecrafts and Parts (HS Chapter 88) from Alberta to the United States fell during the six-year period of the study. Exports consist mainly of small and mid-sized used airplanes, which are resold across the border. There is no manufacturing of aircrafts in the province. The second important product in this chapter is aircraft parts. Sales to the US slightly varied during the period, but show a small upward trend.

Chapter 88 sales to non-FTA nations varied significantly across the six-year period. Used planes are the most important product, with export values that varied greatly, and appear to be much more significant than sales to the US.

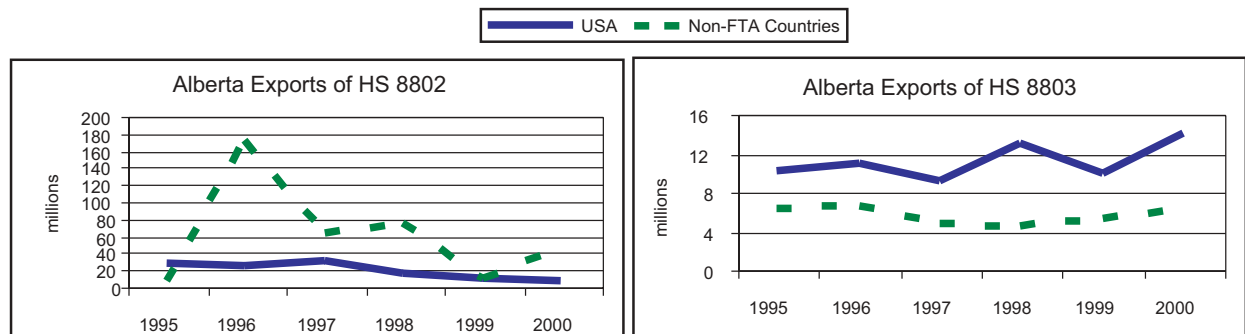
The most important destinations of Chapter 88 exports in the US in 2000 were Nevada, Texas, Washington, California and Arizona.

Detailed information regarding sales values of aircrafts and parts for the 1995 to 2000 period are shown below in Table 5 and Figure 5.

Table 5. Alberta Exports of Aircrafts, Spacecrafts and Parts (HS Chapter 88) to the United States and to Non-FTA Countries, 1995 to 2000, (\$millions)

HS Code	Description	Destination	Exports (\$millions)					
			1995	1996	1997	1998	1999	2000
88	Aircrafts and Spacecrafts	USA	36.117	34.650	37.798	28.973	20.018	20.523
		Non-FTA Countries	13.400	176.254	66.543	78.109	12.625	52.108
8802	Powered Aircrafts, Spacecrafts and Launch Vehicles	USA	26.029	23.876	28.844	15.961	10.080	6.641
		Non-FTA Countries	7.093	169.895	61.755	73.785	7.458	45.977
8803	Parts	USA	10.080	10.766	8.933	13.000	9.925	13.872
		Non-FTA Countries	6.259	6.358	4.767	4.324	5.115	6.131

Figure 5. Alberta Exports of Aircrafts, Spacecrafts and Parts (HS Chapter 88) to the United States and to Non-FTA Countries, 1995 to 2000, (\$millions) – selected products



Sales of Optical, Photo and Precision Instruments (HS Chapter 90) to the United States accounted for more than \$137 million in 2000. This is an increase of 110% over the six-year period. There was a significant drop in value of shipments in 1999, however.

This chapter encompasses a large variety of products, from photocopiers to various measuring and analysis apparatus to navigational instruments. Exports are somewhat spread across the Chapter, with no specific item dominating. In the case of shipments to non-FTA nations, Other Artificial Body Parts (HS 902130) is a very important product. Sales of the product into the US are very limited.

In general terms, most of the selected products in this study had significant increases in the volume of sales to the US. Also, sales to non-FTA countries were typically below those to the US for every product.

Surveying Equipments, Accessories and Parts (HS 901580 and 901590) are important products in this chapter. Sales increased sharply in the early years of the study, peaking in 1998 and levelling in 1999 and 2000 at around \$26 million per year.

Mechanical Therapy and Massage Equipment (HS 9019) is an example of a product which was insignificant in exports during the early years of the study. Sales to the US took off in 1998, reaching almost \$5 million in 2000.

Products in the HS 9026 code (Instruments for Measuring Flow and Level) are also of importance in this Chapter. Sales to the US went up by 260% during the six-year period, reaching almost \$19 million in 2000.

Another relevant group of products are under the HS 9027 codes (Instruments for Physical Analysis), such as spectrophotometers and gas analysers. Shipments to the US went up by 180% from 1995 to 2000, topping \$24 million in 2000.

Exports of the two latter groups to other countries are present, but vary considerably across the years and are of lower value than those to the US.

Oscilloscopes and Spectrum Analysers (HS 9030) are an example of products, where sales have significantly decreased during the period of the study. One possible explanation might be that newer, technologically superior instruments, classified under a different code, are substitutes for these products.

Texas, California and Washington were the primary destinations of Chapter 84 exports to the US in 2000.

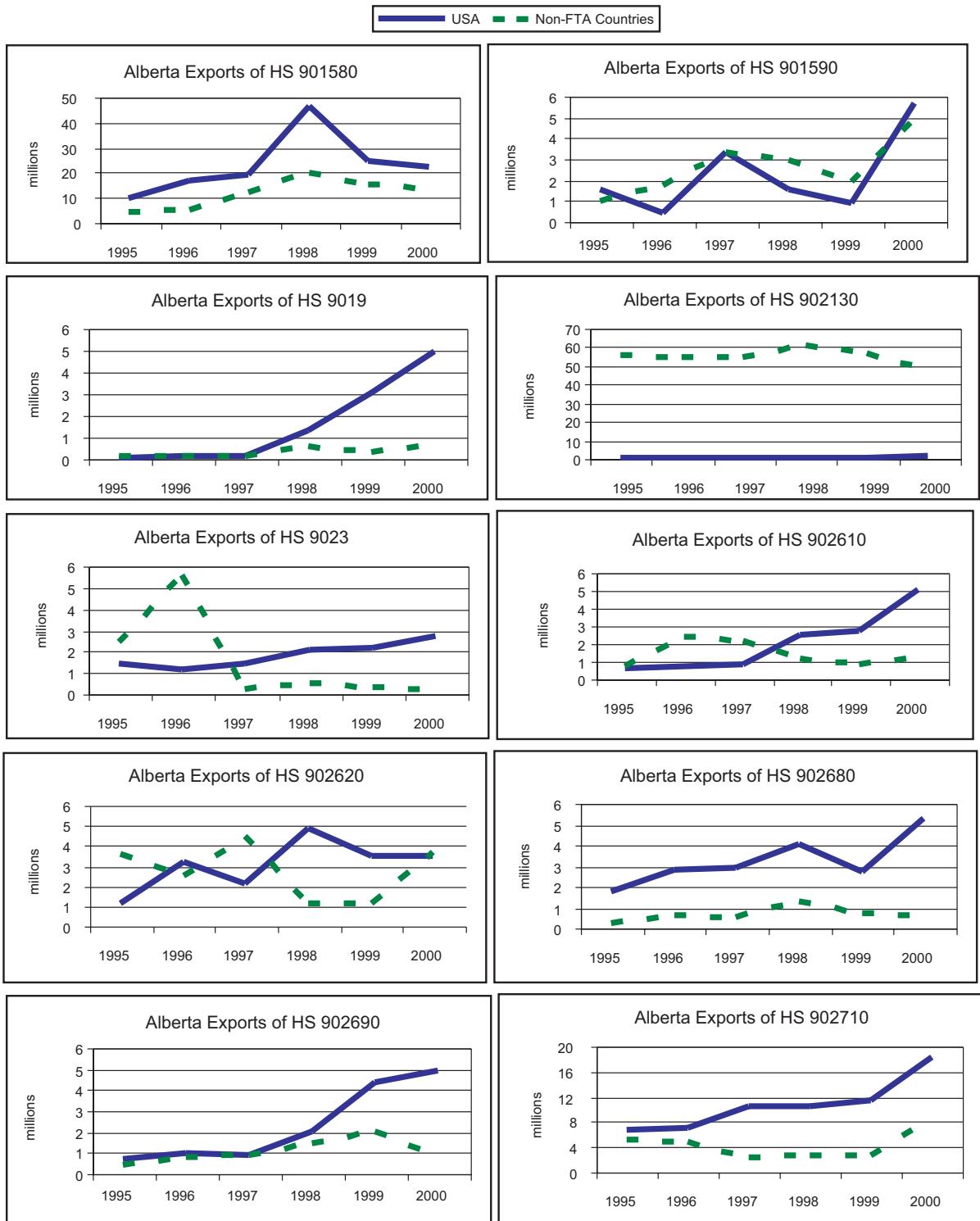
Information regarding export values of these precision instruments and equipment are detailed below in Table 6 and Figure 6.

Table 6. Alberta Exports of Optical, Photo and Precision Instruments (HS Chapter 90) to the United States and to Non-FTA Countries, 1995 to 2000, (\$millions)

HS Code	Description	Destination	Exports (\$millions)					
			1995	1996	1997	1998	1999	2000
90	Optical, Photo and Precision Instruments	USA	64.868	75.341	83.254	111.190	96.794	137.454
		Non-FTA Countries	102.360	114.736	128.563	111.906	109.377	121.000
9009	Photocopiers	USA	0.574	1.489	1.327	0.944	2.294	2.443
		Non-FTA Countries	0.036	0.040	0.060	0.017	-	0.010
9013	Other Liquid Crystal Device, nes.; Lasers	USA	0.179	0.169	0.211	0.715	0.620	1.066
		Non-FTA Countries	0.073	0.031	0.309	0.173	0.125	0.181
9014	Directional Finding Compasses and Navigational Instruments	USA	2.023	1.593	0.622	1.937	1.758	1.587
		Non-FTA Countries	2.333	0.725	0.094	0.074	0.510	0.418
9015	Surveying Instruments	USA	11.392	17.076	22.185	47.684	25.267	27.329
901580	<i>Surveying Instruments & Appliances, nes.</i>	USA	9.660	16.616	18.909	45.987	24.293	21.586
		Non-FTA Countries	3.789	4.529	12.084	19.663	14.787	12.965
901590	<i>Parts & Accessories for Surveying Instruments, nes.</i>	USA	1.499	0.350	3.246	1.487	0.860	5.621
		Non-FTA Countries	0.940	1.721	3.258	2.876	1.909	4.921
9018	Not Electric Medical, Dental or Vet. Instruments	USA	0.312	0.524	0.820	0.825	1.239	2.325
		Non-FTA Countries	0.423	0.541	1.726	0.699	0.886	2.535
9019	Mechanical Therapy and Massage Equipment	USA	0.033	0.074	0.099	1.228	2.960	4.954
		Non-FTA Countries	0.114	0.080	0.061	0.550	0.243	0.610
9021	Orthopaedic Appliances, Artificial Body Parts, Hear Aids	USA	0.091	0.104	0.208	0.703	1.994	7.238
902130	<i>Other Artificial Parts of the Body, Parts and Accessories</i>	USA	0.052	0.089	0.128	0.046	0.038	1.543
		Non-FTA Countries	54.704	53.643	53.913	60.038	56.526	48.109
9023	Instruments, Apparatus and Models for Demonstrational Use	USA	1.423	1.063	1.372	2.006	2.104	2.638
		Non-FTA Countries	2.395	5.537	0.177	0.445	0.247	0.144
9025	Hydrometers, Thermometers and Pyrometers; Parts	USA	0.211	0.310	0.127	0.839	1.490	2.384
		Non-FTA Countries	0.159	0.688	0.173	0.136	0.868	0.866
9026	Instruments for Measuring Flow and Level	USA	4.012	7.446	6.520	13.212	12.972	18.650

HS Code	Description	Destination	Exports (\$millions)					
			1995	1996	1997	1998	1999	2000
902610	<i>Instruments & Appliances for Checking/Measuring Flow and Level of Liquids</i>	USA	0.534	0.680	0.725	2.465	2.648	5.054
		Non-FTA Countries	0.640	2.355	2.088	1.143	0.759	1.222
902620	<i>Instruments & Appliances for Checking/Measuring Pressure</i>	USA	1.090	3.115	2.085	4.787	3.403	3.449
		Non-FTA Countries	3.587	2.421	4.417	1.118	1.038	3.668
902680	<i>Instruments & Appliances for Checking/Measuring Variable of Liquids/Gases, nes.</i>	USA	1.705	2.742	2.878	4.017	2.635	5.273
		Non-FTA Countries	0.183	0.538	0.471	1.240	0.655	0.608
902690	<i>Parts of Instruments for Measuring Flow and Level</i>	USA	0.682	0.908	0.832	1.942	4.286	4.875
		Non-FTA Countries	0.397	0.747	0.826	1.369	1.978	0.761
9027	Instruments for Physical Analysis	USA	8.562	9.244	13.872	17.045	15.024	24.493
902710	<i>Gas or Smoke Analysis Apparatus</i>	USA	6.594	6.789	10.197	10.173	11.291	18.020
		Non-FTA Countries	5.102	4.655	2.146	2.579	2.647	8.501
902730	<i>Spectrometers/Spectrophotometers using Optical Radiations</i>	USA	0.005	0.765	0.085	0.587	0.520	0.801
		Non-FTA Countries	0.444	-	1.427	1.371	2.421	1.683
902780	<i>Other Physical/Chemical Instruments for Measuring Viscosity & Heat, nes.</i>	USA	0.290	0.593	2.093	1.987	1.318	2.262
		Non-FTA Countries	0.818	1.070	0.609	1.843	1.837	5.015
902790	<i>Parts of Instruments for Physical Analysis</i>	USA	1.505	0.806	1.167	1.188	1.396	2.753
		Non-FTA Countries	0.776	0.848	0.483	0.305	0.461	1.326
9028	Gas, Liquid and Electrical Meters	USA	0.292	0.548	0.873	0.275	0.536	0.852
		Non-FTA Countries	0.089	0.016	2.635	0.100	0.072	0.149
9030	Oscilloscopes and Spectrum Analyzers	USA	14.560	17.758	15.713	6.395	4.581	5.680
		Non-FTA Countries	3.085	19.362	18.686	1.268	0.830	1.169
9031	Other Machines, nes.	USA	9.775	7.715	7.720	4.998	8.978	17.101
903180	<i>Measuring/Checking Instruments, Appliances and Machines, nes.</i>	USA	8.243	6.228	5.794	4.082	7.472	9.350
		Non-FTA Countries	11.840	3.383	12.633	1.837	2.808	5.609
903190	<i>Parts of Machines nes. in this Chapter</i>	USA	1.260	1.448	1.717	0.357	1.120	6.555
		Non-FTA Countries	2.868	1.203	0.627	0.584	0.459	1.065
9032	Automatic or Regulating Control Instruments and Parts	USA	9.390	6.433	8.741	8.048	10.854	12.768
		Non-FTA Countries	0.885	2.480	2.194	2.559	10.557	14.177

Figure 6. Alberta Exports of Optical, Photo and Precision Instruments (HS Chapter 90) to the United States and to Non-FTA Countries, 1995 to 2000, (\$millions) – selected products



CHAPTER 94

Exports of Furniture, Bedding and Prefabricated Buildings (HS Chapter 94) to the United States have risen 260% from 1995 to 2000. In 2000, the total value of shipments to the United States was \$425 million.

Sales to non-FTA nations are relatively modest, with prefabricated buildings being the most important product. Volumes of exports to other countries have oscillated between 1995 and 1997, levelling at the \$12 million per year for the 1998-2000 period.

Almost 85% of the sales to the US in this chapter are under the HS 9403 code. Metal Office Furniture (HS 940310) sales trebled during the period, reaching over \$48 million in 2000.

Wooden Office Furniture (HS 940330) is the most important product in this chapter, for sales to the US. Shipment value increased 430% over the six-year period, topping \$210 million in 2000.

Illinois, New York, California and Texas were the states receiving the most significant value of exports of Chapter 94.

Information regarding export values of these goods is detailed below in Table 7 and Figure 7.

Table 7. Alberta Exports of Furniture, Bedding and Prefabricated Buildings (HS Chapter 94) to the United States and to Non-FTA Countries, 1995 to 2000, (\$millions)

HS Code	Description	Destination	Exports (\$millions)					
			1995	1996	1997	1998	1999	2000
94	Furniture, Bedding; Prefabricated Buildings	USA	118.074	191.559	260.065	313.028	356.292	425.766
		Non-FTA Countries	0.189	0.069	0.124	0.275	0.223	0.161
9401	Seats, (except Dental, Barber, etc.) and Parts	USA	4.924	8.361	12.453	21.394	20.894	31.819
940161	<i>Seats with Wooden Frames, Upholstered, nes.</i>	USA	2.295	4.993	8.761	10.602	13.280	18.904
		Non-FTA Countries	0.024	0.129	0.084	-	0.047	-
9403	Other Furniture, not Seat; and Parts	USA	102.508	163.837	223.617	267.990	304.965	359.498
940310	<i>Metal Office Furniture</i>	USA	15.255	27.080	30.222	26.626	31.128	48.240
		Non-FTA Countries	1.229	2.412	0.940	4.122	2.421	5.196
940330	<i>Wooden Office Furniture</i>	USA	39.523	74.217	117.115	158.218	188.206	210.202
		Non-FTA Countries	0.815	5.380	4.645	3.000	2.063	4.729
940350	<i>Wooden Bedroom Furniture</i>	USA	33.457	40.317	50.435	51.573	48.817	57.100
		Non-FTA Countries	0.121	0.081	0.087	0.033	-	0.002
9404	Articles of Bedding, Mattress Supports	USA	3.067	4.865	5.478	6.412	6.047	3.649
		Non-FTA Countries	0.015	0.042	0.064	0.030	-	0.475
9405	Lamps, Lighting Fittings, nes. and Parts	USA	1.149	1.361	2.233	2.857	3.058	3.316
		Non-FTA Countries	0.132	0.300	0.190	0.593	0.209	0.800
9406	Prefabricated Buildings	USA	6.427	13.131	16.247	14.352	21.321	27.353
940600	Prefabricated Buildings	USA	6.427	13.131	16.247	14.352	21.321	27.353
		Non-FTA Countries	11.192	22.984	23.437	13.004	12.556	11.939

Figure 7. Alberta Exports of Furniture, Bedding and Prefabricated Buildings (HS Chapter 94) to the United States and to Non-FTA Countries, 1995 to 2000, (\$millions) – selected products

