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RESTRUCTURING IN THE NORTH AMERICAN MOTOR VEHICLE INDUSTRY

1980 - 1991

Industry Study
Business and Trade
Analysis and Integration
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INTRODUCTION

The Canadian motor vehicle industry underwent a major restructuring from 1980 to 1991. Among North American producers, sales declines of the early 1980's had a much greater impact in the United States than in Canada.

The industry was also affected by overseas assemblers locating in North America. Although the early transplants located in the United States, by the end of 1991, Canada had attracted four overseas assemblers to join Volvo in assembling motor vehicles in Canada.

The North American sales market saw a shift to light trucks. This proved beneficial to Canada, which accounted for a relatively large share of North American truck production and resulted in expanded Canadian production over this period.

Canadian assembly plants for passenger cars and light trucks operated close to capacity during the 1980's, avoiding plant closures that were common in the United States automotive industry.

With the increase in vehicle production in Canada there was an accompanying increase in employment. Responding to the increase in Canadian assembly, Canada's parts and accessories industries also expanded dramatically.

Canada's exports of motor vehicles and parts are almost exclusively to the United States. While the majority of Canada's imports are from the United States, Japan and more recently Mexico have substantially increased their share of automotive imports into Canada.

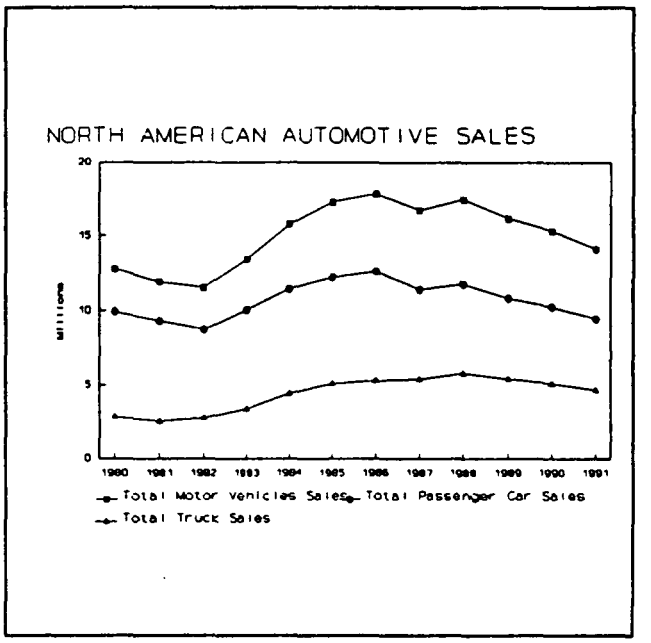
Canadian motor vehicle manufacturers Canada assembled 1,993,950 passenger automobiles and trucks in 1989. The value of production amounted to $29,245 million, and generated employment of 43,890.

Supporting this assembly activity were numerous parts and accessories manufacturers generating employment of 82,162, and production of original equipment and replacement parts amounting to $16,656 million.

This report on the operation the Canadian motor vehicle industry is in five parts: (A) Motor Vehicle Sales and Production, (B) Capacity and Capacity Utilization Rates, (C) A Comparison of the United States and Canadian Industries by Production, Employment, Earnings and Labour Productivity Rates, (D) International Trade, and (E) A detailed analysis of the automotive parts and accessories industry in Canada.

A. MOTOR VEHICLE SALES

The year 1980 saw 12.7 million passenger cars and trucks sold in North America. The softening demand in 1981 and 1982 resulted in a 10% decline in motor vehicle sales to 11.45 million units. After 1982 there was a steady growth in unit sales up to 1986, peaking at 17.4 million units, a 37% increase from 1980. Following 1988, sales declined almost 1 million units each year to 1991 with 14 million units sold, only 10.7% over the 1980 level. (Graph A1).

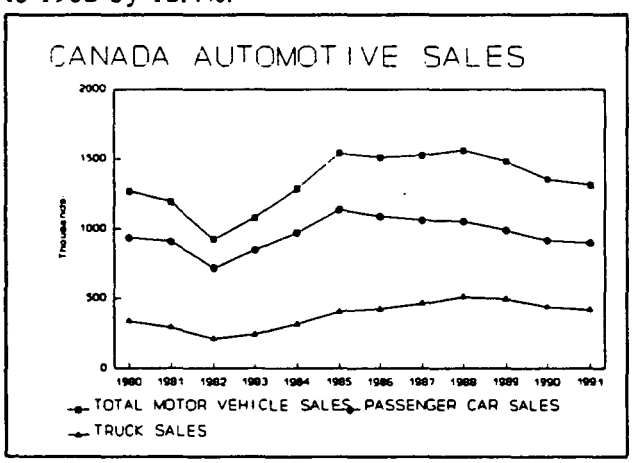


Graph A1

During this period there was a large shift in the share of total sales achieved by trucks. The popularity of vans, pick-ups and sport utility vehicles resulted in a 10% increase in the market share secured by trucks compared to passenger cars, from 1980 to 1991.

In 1980 the 2.8 million units of trucks sold accounted for 22% of the motor vehicle market compared to 78% achieved by the sale of 9.9 million passenger cars. By 1991, truck's share of the market had risen 10% at the expense of passenger cars.

Truck sales declined from 1980 to 1981 by 9.7%, while passenger cars declined from 1980 to 1982 by 12.4%.



Graph A2

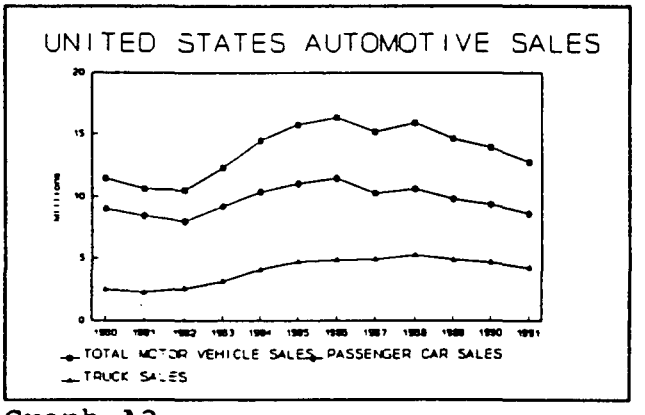
Recovery was strong for both, with a steady increase in sales of passenger cars, peaking in 1986 at 12.7 million units, 26.6% higher than 1980. The strong growth in truck sales continued until 1988 reaching a high for the time period of 5.76 million units sold, more than double the 1980 unit truck sales.

From their respective highs for the decade both truck and car sales declined to 1991, when truck sales of 4.64 million units were 1.8 million greater than 1980 (64% increase) and passenger cars were 459 thousand units lower (4.6% decrease).

Separately Canada and the United States have similar patterns of motor vehicle sales. Both markets experienced a shift to trucks from passenger cars. Canada's truck sales rose from a 26.4% share in 1980 to a 31.9% share in 1991. In the United States the increase was from 21.7% in 1980 to 33% in 1991.

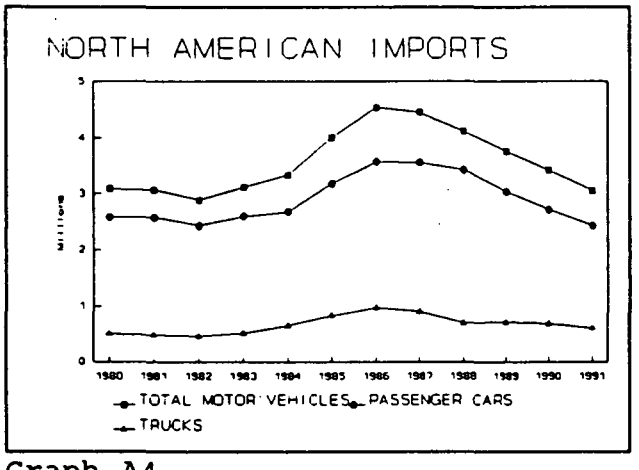
Both the truck and passenger car markets in each country experienced low sales volumes in 1982 and recovered with steady growth into the mid 1980's, and thereafter declined through to 1991. In Canada passenger cars sales declined 23.5% from 1980 to 1982, increased to 1985 when 1.13 million passenger cars were sold (22% increase from 1980), then declined by 1991 to 890 thousands units, 4.4% below 1980's level of sales. (Graph A2). The market for trucks was much stronger, increasing to 508 thousand units by 1988, 52.3% higher than 1980. Truck sales declined from their 1988 high to 416 thousand units in 1991, 24.8% over the 1980 unit sales.

Passenger car and truck sales in the United States were similar to Canada, with cars declining from 1980 to 1982 (11.2% decrease) and peaking in 1986 at 11.5 million units, 27.7% higher than 1980. Sales of passenger cars declined from 1986, losing 2.9 million in annual sales falling to 8.6 million in 1991, 4.7% lower than 1980. Trucks experienced strong growth after a low in 1981 of 2.3 million units sold. Seven years of strong growth resulted in a more than doubling of unit sales by 1988 over 1980 at almost 5.3 million units. Truck sales declined from 1988 to 4.2 million units in 1991, still an impressive 69.7% increase from 1980. (Graph A3).



Graph A3

IMPORTS



Graph A4

Imports are a major factor in the North American motor vehicle sales market. They comprised almost 2.6 million imported passenger cars and 500 thousand imported trucks in 1980. (Graph A4). Just as domestically produced sales declined in the early 1980's, so did imports, falling in 1982 to 6.8% below the 1980 level to 2.9 million units sold. Similar to the recovery of domestic sales import sales grew to 4.5 million units by 1986, a 47% increase over 1980. A significant decline in the sales of imported passenger cars after 1986 resulted in total import sales (cars and trucks) of approximately 3 million units in 1991, 1.7% less than 1980.

IMPORTED PASSENGER CARS DECLINE MORE THAN TRUCKS

Imported passenger cars from 1980 to 1991 were sold in almost identical number of units, while imported trucks finished 1991 with a sales increase of 20.6 % over their 1980 level.

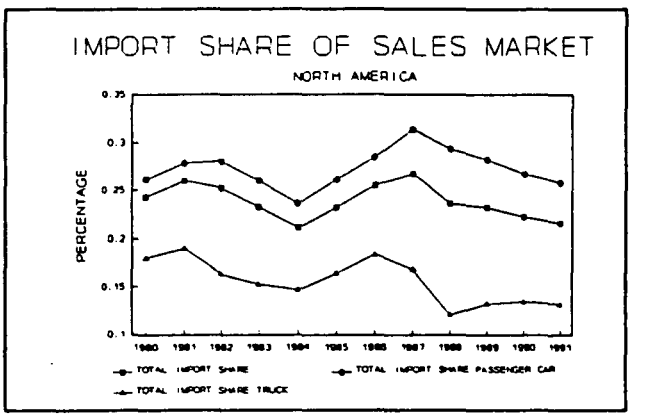
Imported passenger cars had 2.5 million units in sales in 1980, declining 6% in 1982 and then increasing to 3.6 million units by 1986 (37.9% increase over 1980). From 1986 imported car sales declined to 2.4 million units by 1991, matching the low for the time period, in the 1982 recession.

Imported trucks had a stronger sales performance in this time period. From a low of 450 thousand units in 1982 (10.9% lower than 1980), strong growth resulted in 970 thousand units sold in 1986, a 91.7% increase over 1980. Similar to the overall motor vehicle sales market, sales of imported trucks declined to 610 thousand units by 1991, 20.6% greater than 1980.

IMPORT MARKET SHARE

The market share secured by imported cars and trucks is characterized by a decrease in the early 1980's, an increasing share in the middle years of the 1980's, and a decline in the later years of the decade and into 1990-1991. (Graph A5)

Imported passenger cars held 26.1% of the total North American car market in 1980. This decreased to 23.6% by 1984, then with 3.5 million imports sold in 1987, the share had risen to 31.4%. A steady decline in import share, due to a larger decrease in import car sales compared to the decline in domestic car sales, resulted in a market share of 25.8% in 1991, lower than the import share in 1980.



Graph A5

ALTERNATIVE VIEW OF IMPORTS

The import share for both cars and trucks have been declining since 1987 and both are now below the share they obtained in 1980. However this could be a misleading view of the North American market. During the middle years of the 1980's the increasing share of the market secured by imports was limited by voluntary export constraints of Japanese manufacturers. At that time, the appreciation of the yen against both the American and Canadian dollars was pushing up the price of imports and making the prospect of assembling motor vehicle in North America more attractive to Japanese manufacturers. Thus foreign controlled firms began establishing assembly operations in North America. The transplants initially built facilities in the United States in the middle of the 1980's and Canada was successful in attracting transplants in the later years of the decade.

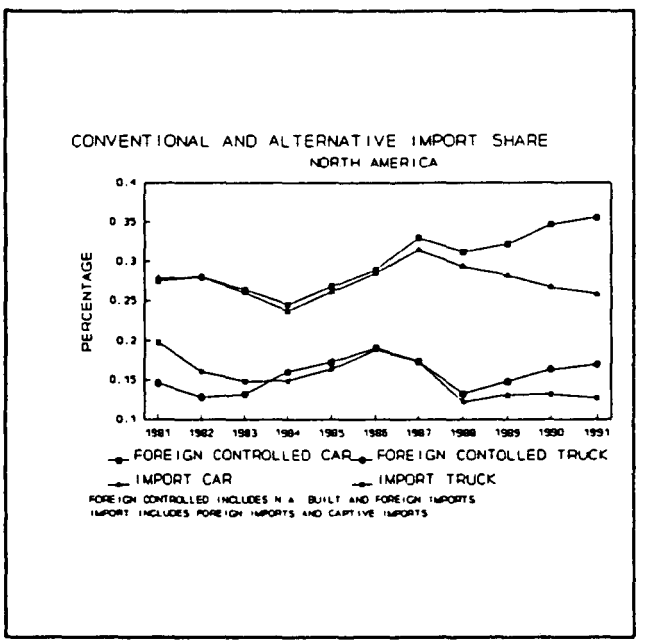
Since motor vehicles could now be assembled in North America by foreign controlled manufacturers, or imported, an alternative view of the North American sales market would be by foreign controlled and North American owned, rather than imports and domestically produced. The North American owned firms also have the option of manufacturing in North America or importing vehicles to sell under their own nameplates (captive imports).

The alternative view would look at a foreign controlled share, which would include pure imports (excluding imports of North American manufacturers) plus the production of foreign controlled North American assemblers.

Sales of passenger cars and trucks for both the United States and Canada are contained in the Statistical Annex "A". A classification of sales of trucks in Canada for N.A. built domestic, N.A. built foreign, captive import and pure import is not available. Only the United States truck sales are used to produce the N.A. share by foreign controlled manufacturers of trucks.

Using only the United States truck sales for North America sales assumes that the Canadian marketing and distribution of trucks is the same as the United States.

Contrasting the previous conventional import share with the alternative view of foreign controlled sales results in different market shares (Graph A6).



Graph A6

For passenger cars, until 1987, conventional imports or foreign controlled shares were almost the same. This was because transplants had not yet achieved high production levels in North America. Truck shares demonstrate a similar pattern.

In 1981 the total of pure imports and N.A. foreign built passenger cars was almost exclusively pure imports. By 1991 pure imports had actual declined 12.2%, while foreign controlled sales of passenger cars increased 29.1% to 3.4 million units. Of this total 1.23 million (36.8%) were North American produced. This alternative view of imports contrasts with the conventional definition of imports by increasing from a 32.9% market share in 1988 to 35.5% in 1991, where the import share conventionally defined declined from 1988 to 1991 from 31.4% to 25.8%.

Trucks experienced a similar result. Conventionally defined import sales produced a decline in market share from 19.0% in 1981 to 13.2 % in 1991. The alternative share increased from 14.6% in 1981 to 17.0% in 1991. Like passenger cars the primary difference is after 1987, when the conventional share is decreasing while the foreign controlled share is increasing.

The decision to produce in North America or to import motor vehicles was not

exclusive to foreign controlled firms. Although captive imports are not a large portion of domestic manufacturers sales, from 1981 to 1991, captive imports of passenger cars have increased 89.2% to over 300 thousand units.

In summary, the North American motor vehicle sales market experienced a downturn in the recession of the early 1980's and again at the end of the decade. During this period there had been a shift to a greater share of trucks (vans, pick-ups, and sport utility vehicles) in the motor vehicle sales market. Although import shares have declined after 1986, they have been more than offset by foreign controlled production in North America.

PRODUCTION

The demand for motor vehicles in North America, the changes in the truck/car ratio and the demand for foreign and domestic products are mirrored in North American production.

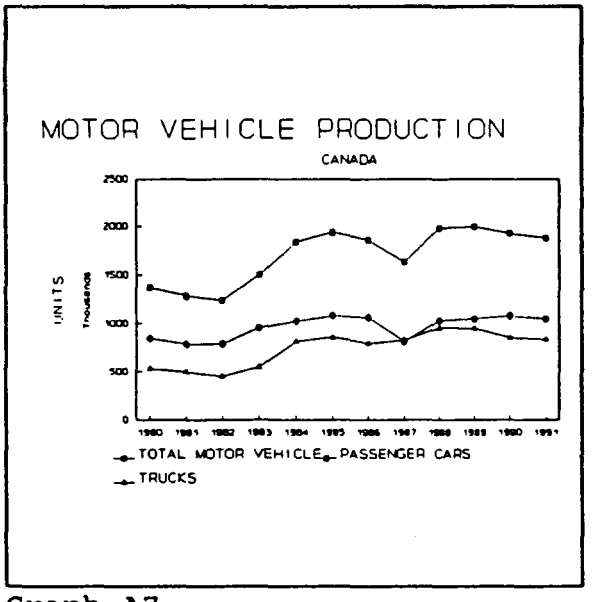
Overall North American motor vehicle production in 1980 was 9.38 million units. The low for the period occurred in 1982 when 8.2 million units were produced, 12% lower than 1980. Production expanded with the sales recovery after 1982 until 1985 when 13.6 million motor vehicles were manufactured in North America. This was a 44.7% increase over 1980 production levels. With falling North American sales after 1986, production declined to 10.6 million units for 1991, 13.7% higher than 1980.

The shift in demand towards trucks resulted in a large change in the North American production mix of passenger cars and trucks. Total North American production of passenger cars actually declined 10.3% from 1980 to 1991, with 1991 production of 6.5 million units. Truck production on the other hand soared. From 2.2 million units produced in 1980, there was a steady increase to over 5 million by 1988. A slight decline followed to 4.2 million units produced in 1991, still an impressive 93.9% higher than 1980.

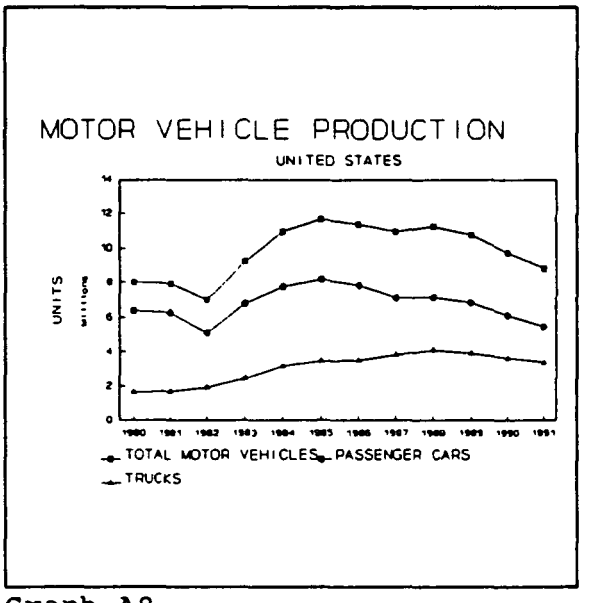
Examined separately, Canadian production of passenger cars increased over the period (Graph A7) compared to a decline in car production in the United States. (Graph A8). Both countries enjoyed substantial increases in truck production. Production levels for Canada and the United States are contained in the Statistical Annex "A".

Canadian passenger car production increased 23.3% from 1980 to 1991 with production going from 846 thousand units in 1980 to 1.04 million in 1991. The United States output declined almost 1 million units from 6.4 million in 1980 to 5.4 million in 1991, a 14.7% decrease.

Canadian truck production increased from 520 thousand units in 1980 to 830 thousand in 1991 a 58.1% growth in annual production levels. United States more than doubled production in this period from 1.6 million in 1980 to almost 3.4 million in 1991.



Graph A7



Graph A8

If production is further classified by domestic (N.A. owned) and transplant production, then domestic car production has declined in both countries.

Domestic car production in Canada has declined 9.6% from 1980 to 756 thousand units by 1991. United States domestic assemblers were producing 2 million less units in 1991 than 1980. The 6.2 million cars produced in 1980 had fallen to 4.1 million by 1991, a 33.9% decline.

Transplant truck production is a relatively small proportion of total truck production in each country and the increases in truck output were mostly secured by the domestic producers.

SUMMARY

The North American sales market has seen a large shift towards light trucks and vans, with the share of trucks sales increasing from 23% of total sales in 1980 to 33% in 1991.

The recession of the early 1980's affected imports as well as domestically produced sales and combined with voluntary export restraint programs on Japanese automobiles, the import share of the motor vehicle sales market declined in the early 1980's. The mid years of the 1980's (1984 to 1986) were a period of increasing import share, then with the introduction of transplant assemblers, the appreciating yen, and more stringent export restraints, a decline in import share occurred from 1986 to 1991. This declining import share is however, mainly a result of foreign controlled assemblers decisions to manufacturer in North America. If foreign controlled sales are compared to North American controlled sales, the share secured by foreign firms, which includes both their imports and their North American production is still increasing and in 1991 accounted for 35.5% of passenger car sales in North America and 17% of truck sales. This compares with a conventionally defined import share for passenger cars of 25.8% and for trucks 13.2%.

The production declines experienced by North American domestic passenger car manufacturers primarily occurred in the United States, with over 2 million less passenger cars produced in 1991 compared to 1980. Canadian production of passenger cars, on the other hand, fell relatively slightly and was more than compensated for by transplant production of passenger cars in Canada by 1991.

The increasing demand for trucks in this time period resulted in large increases in truck production in both Canada and the United States.

STATISTICAL ANNEX "A"
PASSENGER CAR SALES

CANADA PASSENGER CARS SALES - UNITS

	DOMESTIC N.A. BUILT	FOREIGN N.A. BUILT	CAPTIVE IMPORT	PURE IMPORT	TOTAL IMPORT	TOTAL N.A. BUILT	GRAND TOTAL
1980	N/A	N/A	N/A	N/A	191,000	741,000	932,000
1981	629,205	19,469	20,905	234,627	255,532	648,674	904,206
1982	427,237	17,545	23,612	195,588	219,200	493,782	712,982
1983	603,075	20,004	10,674	208,166	218,840	623,099	841,939
1984	N/A	N/A	N/A	N/A	246,000	725,000	971,000
1985	759,025	35,929	15,347	326,934	342,281	794,954	1,137,235
1986	746,227	16,296	16,824	309,538	326,362	762,523	1,088,885
1987	681,387	19,887	48,805	312,376	361,181	701,204	1,062,385
1988	702,427	24,681	47,138	279,830	326,968	727,108	1,054,076
1989	620,141	41,569	59,177	266,953	326,130	661,710	987,840
1990	512,947	84,579	52,461	262,191	314,652	597,526	912,178
1991	487,608	90,381	55,163	257,734	312,897	577,989	890,886

UNITED STATES PASSENGER CAR SALES - UNITS

	DOMESTIC N.A. BUILT	FOREIGN N.A. BUILT	CAPTIVE IMPORT	PURE IMPORT	TOTAL IMPORT	TOTAL N.A. BUILT	GRAND TOTAL
1980	6,401,168	177,084	N/A	N/A	2,398,000	6,578,252	8,976,252
1981	6,043,851	162,005	143,796	2,183,483	2,327,279	6,205,856	8,371,130
1982	5,665,494	91,164	102,227	2,112,056	2,214,283	5,756,658	7,970,941
1983	6,659,855	135,444	103,569	2,282,044	2,385,613	6,795,299	9,180,912
1984	7,744,078	207,445	104,722	2,334,120	2,438,842	7,951,523	10,390,365
1985	7,941,235	263,307	199,047	2,638,526	2,837,573	8,204,542	11,042,115
1986	7,845,617	369,271	310,206	2,934,415	3,244,621	8,214,888	11,459,509
1987	6,537,378	543,480	334,163	2,861,538	3,195,701	7,080,858	10,270,544
1988	6,909,570	629,764	393,412	2,706,054	3,099,466	7,539,334	10,634,358
1989	6,294,220	783,952	340,425	2,369,515	2,709,940	7,078,172	9,788,112
1990	5,816,642	1,080,246	296,778	2,112,912	2,409,690	6,896,888	9,306,570
1991	5,293,456	1,143,363	256,495	1,864,321	2,120,816	6,436,819	8,557,635

Source: Ward's Automotive Yearbook (1980-1991)
Statistics Canada, New Motor Vehicle Sales (63-007)

TRUCK SALES

CANADA SALES TRUCKS - UNITS

	DOMESTIC N.A. BUILT	FOREIGN N.A. BUILT	CAPTIVE IMPORT	PURE IMPORT	TOTAL IMPORT	TOTAL N.A. BUILT	GRAND TOTAL
1980	N/A	N/A	N/A	N/A	22,000	312,000	334,000
1981	N/A	N/A	N/A	N/A	36,000	251,000	287,000
1982	N/A	N/A	N/A	N/A	40,435	166,986	207,421
1983	N/A	N/A	N/A	N/A	49,888	188,113	238,001
1984	N/A	N/A	N/A	N/A	39,000	274,000	313,000
1985	N/A	N/A	N/A	N/A	62,637	341,518	404,155
1986	N/A	N/A	N/A	N/A	54,337	368,000	422,337
1987	N/A	N/A	3,757	47,822	51,579	411,809	463,388
1988	N/A	N/A	7,042	46,981	54,023	454,571	508,594
1989	N/A	N/A	13,791	57,202	70,993	422,000	492,993
1990	N/A	N/A	13,624	59,198	72,822	365,822	438,644
1991	N/A	N/A	11,720	63,934	75,654	341,270	416,924

UNITED STATES SALES TRUCK - UNITS

	DOMESTIC N.A. BUILT	FOREIGN N.A. BUILT	CAPTIVE IMPORT	PURE IMPORT	TOTAL IMPORT	TOTAL N.A. BUILT	GRAND TOTAL
1980	N/A	N/A	N/A	N/A	484,000	2,002,000	2,486,000
1981	1,778,946	33,804	150,823	296,752	447,575	1,812,750	2,260,325
1982	2,136,775	12,769	95,277	315,060	410,337	2,149,544	2,559,881
1983	2,661,094	4,867	55,143	408,370	463,513	2,665,961	3,129,474
1984	3,382,731	100,511	52,894	554,864	607,758	3,483,242	4,091,000
1985	3,802,850	110,346	70,317	698,185	768,502	3,913,196	4,681,698
1986	3,852,711	96,827	83,474	832,082	915,556	3,949,538	4,865,094
1987	3,931,330	78,678	85,132	764,709	849,841	4,060,008	4,909,849
1988	4,491,091	116,717	63,289	577,616	640,905	4,607,808	5,248,713
1989	4,111,065	131,210	46,221	591,093	637,314	4,242,275	4,879,589
1990	3,869,090	162,389	14,381	595,541	609,922	4,031,479	4,641,401
1991	3,497,719	187,423	6,165	528,334	534,499	3,685,142	4,219,641

Source: Ward's Automotive Yearbook (1980-1991)
Statistics Canada, New Motor Vehicle Sales (63-007)

PRODUCTION

CANADA PRODUCTION - UNITS

	DOMESTIC		TRANSPLANT		TOTAL		
Year	CAR	TRUCK	CAR	TRUCK	CAR	TRUCK	TOTAL MOTOR VEHICLE
1980	836,813	527,522	9,964	0	846,777	527,522	1,374,299
1981	775,083	496,822	8,594	0	783,677	496,822	1,280,499
1982	777,683	447,820	10,165	0	787,848	447,820	1,235,668
1983	945,120	546,827	10,378	0	955,498	546,827	1,502,325
1984	1,012,919	811,722	10,438	0	1,023,357	811,722	1,835,079
1985	1,067,854	856,178	10,078	0	1,077,932	856,178	1,934,110
1986	1,050,905	792,680	10,833	0	1,061,738	792,680	1,854,418
1987	785,610	825,333	24,208	0	809,818	825,333	1,635,151
1988	970,491	949,203	57,202	0	1,027,693	949,203	1,976,896
1989	905,048	948,452	140,450	0	1,045,498	948,452	1,993,950
1990	830,666	810,601	245,453	39,703	1,076,119	850,304	1,926,423
1991	756,885	791,221	287,611	42,690	1,044,496	833,911	1,878,407

UNITED STATES PRODUCTION - UNITS

	DOMESTIC		TRANSPLANT		TOTAL		
Year	CAR	TRUCK	CAR	TRUCK	CAR	TRUCK	TOTAL MOTOR VEHICLE
1980	6,175,198	1,609,869	197,106	28,390	6,372,304	1,638,259	8,010,563
1981	6,083,248	1,652,386	167,755	37,392	6,251,003	1,689,778	7,940,781
1982	4,987,468	1,904,013	85,746	8,086	5,073,214	1,912,099	6,985,313
1983	6,628,472	2,421,579	153,544	22,058	6,782,061	2,443,637	9,225,698
1984	7,559,985	3,065,206	213,357	100,510	7,773,342	3,165,716	10,939,058
1985	7,835,827	3,360,500	350,207	107,422	8,186,034	3,467,922	11,653,956
1986	7,235,751	3,397,944	593,498	108,048	7,829,249	3,505,992	11,335,241
1987	6,400,157	3,723,058	699,672	102,718	7,099,829	3,825,776	10,925,605
1988	6,307,028	4,004,631	830,369	95,919	7,137,397	4,100,550	11,237,947
1989	5,693,778	3,788,192	1,130,180	123,056	6,823,958	3,911,248	10,735,206
1990	4,757,208	3,448,817	1,341,822	173,893	6,099,030	3,622,710	9,721,740
1991	4,079,716	3,174,750	1,353,580	189,915	5,433,296	3,364,665	8,797,961

Source: Ward's Automotive Yearbook (1980-1991)
Motor Vehicle Manufacturers Association of Canada

B. CAPACITY AND CAPACITY UTILIZATION RATES

The slumping sales and high import share of the North American automotive market in the early 1980's signalled the restructuring of the North American production of motor vehicles. Later in the 1980's, the location of foreign based assemblers in North America required another response from the domestic assemblers. The following discussion on capacity[1] that deals with trucks, includes only light trucks (GVW < 6000 lbs.). Domestic manufacturers refer to North American owned assemblers.

PASSENGER CARS

Capacity utilization rates[2] for domestic passenger cars in both the U.S. and Canada improved from the early years of the 1980's, peaked in the mid 1980's, at over 80% usage, and experienced a decline in the late 1980's. (The capacity utilization rates are given in Table B1).

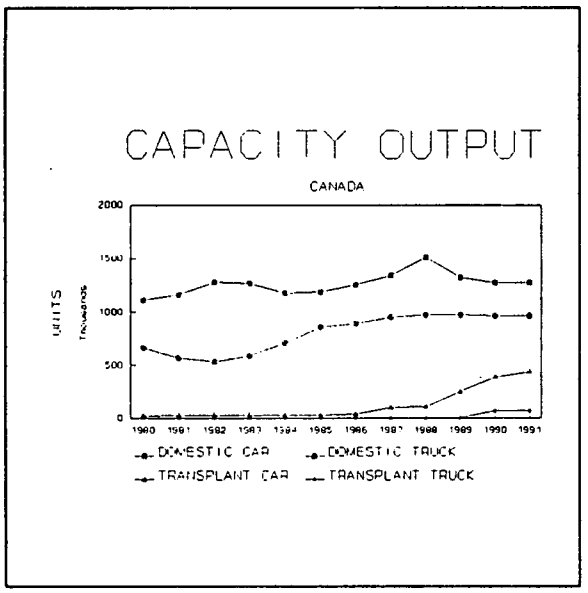
TABLE B1. CAPACITY UTILIZATION RATES ASSEMBLERS

	PASSENGER CAR			LIGHT TRUCK		
	CANADA	UNITED STATES		CANADA	UNITED STATES	
YEAR	DOMESTIC	DOMESTIC	TRANSPLANT	DOMESTIC	DOMESTIC	TRANSPLANT
1980	.75	.62	.76	.77	.48	.59
1981	.67	.62	.71	.85	.54	.54
1982	.61	.54	.40	.82	.57	.51
1983	.75	.74	.69	.92	.78	.68
1984	.86	.85	.52	1.12	.95	.90
1985	.90	.87	.40	.97	.96	.90
1986	.84	.76	.70	.86	.96	.89
1987	.59	.67	.75	.84	.90	.83
1988	.64	.73	.66	.95	.95	.97
1989	.67	.74	.73	.95	.92	.99
1990	.65	.69	.80	.82	.83	.88
1991	.60	.60	.76	.81	.75	.75

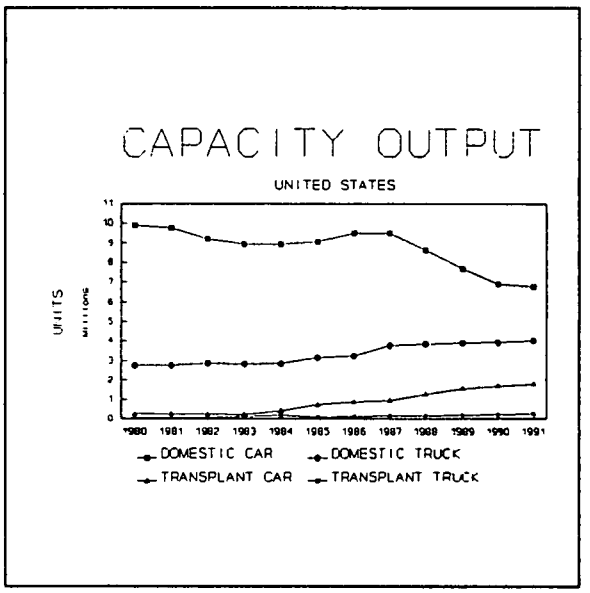
Canadian transplant rates not included, only recently in operation

Although the rates for both countries follow a similar pattern they were achieved by dramatically different responses. The capacity of domestic manufacturers of passenger cars in the United States (Graph B2) is characterized by capacity utilization rates at their highest in the middle years of the 1980's and lower in the first and last years of the decade and into the 1990-1991 time period. The domestic producers of passenger cars were able to assemble 9.8 million automobiles in 1980. (Statistical Annex "B" Table B1). Through a combination

of closing some assembly facilities and converting others to truck assembly the potential output of domestic passenger car assemblers has declined to slightly less than 6.8 million units by 1991. This 31.3% decline in potential output of American assemblers of passenger cars contrast with a 13.8% increase in domestic passenger car capacity in Canada. Table B2 shows that Canada has added an additional domestic assembly plant by the 1991 model year, compared with a net reduction of 16 domestic assembly plants (passenger cars and light trucks) in the United Sates.

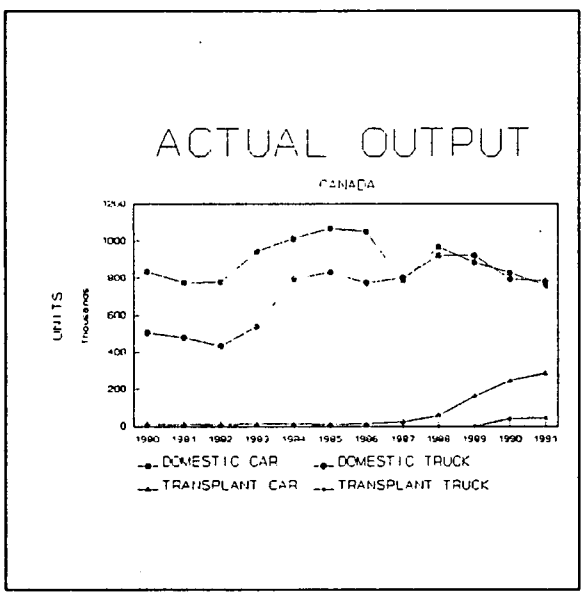


Graph B1

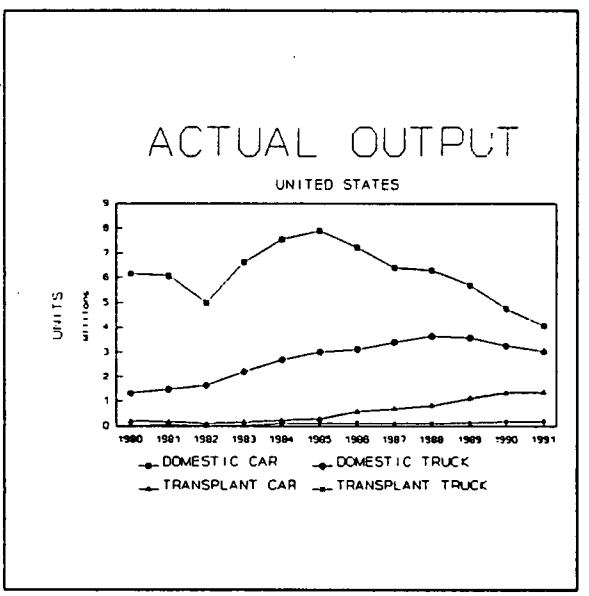


Graph B2

The potential output is only half the story for the similar pattern of capacity utilization for the domestic passenger car producers in both countries. The actual output (Statistical Annex Table B3) divided by the capacity produces the utilization rates.



Graph B3



Graph B4

In the United States actual production of domestic passenger cars increased from the 1982 year slump (1981-82 recession) of 4.9 million units to over 7.9 million units in the middle years of the 1980's. A sharp decline in output in the latter part of the 1980's resulted in a little more than 4 million domestic passenger cars assembled in the United States by 1991. This represents a 33.9% decline in output from the start of the decade. With capacity output experiencing a slightly smaller decline (31.3%) the capacity utilization rate is almost the same as the early years of the 1980's. Again this contrast with the Canadian situation where actual output in 1991 was 9.6% lower than 1980, but capacity had risen 13.8%, resulting in capacity utilization rates that have declined from the early years of the 1980's.

TABLE B2. NUMBER OF ASSEMBLY PLANTS IN NORTH AMERICA

	CANADA		UNITED STATES	
Year	Domestic	Transplant	Domestic	Transplant
1980	11	1	67	1
1981	11	1	61	1
1982	11	1	60	1
1983	11	1	57	2
1984	11	1	56	2
1985	11	1	60	4
1986	11	1	59	4
1987	11	1	61	4
1988	12	2	58	5
1989	12	3	55	5
1990	12	5	52	7
1991	12	5	51	7

LIGHT TRUCKS

The difference in the manner capacity utilization rates changed in Canada and the United States for the domestic passenger car assemblers is not the same in the production of light trucks.

The capacity utilization rates for domestic Canadian producers, in the first four model years of the 1980's were significantly higher than domestic American truck manufacturers (Table B1). The remaining years of the decade found both American and Canadian truck plant operating at high capacity utilization rates. Unlike the situation for passenger cars, the domestic American producers were able to increase their utilization rate by dramatically increasing actual output, taking advantage of the idle capacity. In 1980, American domestic truck production had the capacity to manufacture 2.8 million units, increasing to over 4 million units by 1991. (Graph B2). This represents an additional 45.3% of potential

output from 1980 to 1991 production. From 1985 to 1991 most of this capacity was utilized with actual production more than 130% greater than 1980. (Graph B4).

Canadian assemblers had just as spectacular increases in production and since they were already operating at high capacity utilization rates, also had dramatic increases in capacity to accommodate the production increases.

In 1980 Canadian domestic producers had the ability to assemble 661,000 light trucks. An almost 46% increase in production capacity by 1991 over 1980 would allow domestic Canadian truck producers to assemble over 965 thousands units. (Graph B2). Similar to the American producers, Canadian manufacturers increased actual production to take almost full advantage of their production capability. By 1988 production of trucks was 82.3% greater than actual production in 1980. (Graph B3). Truck production in Canada had expanded to the point in 1989 that it surpassed passenger car production.

TRANSPLANTS

Along with the increase in import sales in the North American market, the locating of foreign based assembly plants in North America was another challenge to the domestic producers.

Canada and the United States had each one foreign based assembler in 1980. In Canada, only Volvo Canada Ltd. was producing passenger cars and in a relatively small quantity. Volkswagen of America Inc. was situated in Pennsylvania and produced passenger cars and pick up trucks.

The number of transplant assembly facilities is given in Table B2. Starting in 1984 foreign based assemblers began locating in the United States, while additional transplant facilities were not established in Canada until the 1988 model. The transplant producers operating in Canada and the United States in 1991 are listed in Table B3.

TABLE B3. TRANSPLANT ASSEMBLERS IN NORTH AMERICA

Model Year	CANADA	UNITED SATES
1980	Volvo Canada Ltd.	Volkswagen of America Inc.
1991	Volvo Canada Ltd. Honda Canada Mfg. Inc. Toyota Motor Mfg. Canada Inc. Hyundia Auto Canada Inc. Cami Automotive Inc.	Honda Motor Co. Nissan Motor Mfg. Corp. New United Motor Mfg. Corp (NUMMI) Mazda Motor Mfg. Toyota Motor Mfg.USA Inc. Diamond-Star Motor Corp. Subaru-Isuzus Automotive Inc.

The appreciating yen, voluntary export quotas in Canada and the United States, loans and grants from various governments of Canada, along with import duty rebates on parts and production exported to the United States all assisted Canada in attracting foreign producers to locate in Canada. By 1991 Canada had 5 transplant to the 7 operating in the United States.

It would not be appropriate to compare the capacity utilization rates of the

transplants in Canada with those in the United States, since the Canadian plants have just begun production and will require two to three years to gradually build production levels that reflect the capabilities of the particular facilities. The capacity and actual output of the transplants (Statistical Annex "B" Table B3 & B4) can be compared between the two countries and with the domestic producers where they are located.

In 1991, assembly of passenger cars by transplants were more important than light truck. Canada has only one transplant capable of truck assembly and although initial capacity is calculated to be 65 thousand units, which would be 6.8% of the domestic truck manufacturers potential, actual production was only 5.5% that of the domestic assemblers, amounting to 42 thousand units.

In the United States, in 1991, assembly of light trucks by transplants had the capability to assemble almost 5.6% of what the domestic producers could, and actual production by transplants was 6.3% of what was achieved by American domestic producers.

In 1991, in the United States transplants were capable of supplying 20.8% of the passenger cars and actual production equalled 24.9%. Transplants in Canada could supply 17% of the production of passenger cars and actually accounted for 27.5% of production.

Chart B1 summarizes Canada's share of production, sales, and capcity. Canada's share of passenger car sales have averaged 9% of total North American passenger car sales, from 1980 to 1991 and Canada's trucks sales averaged 8.7% of total North American truck sales in this time period.

CHART B1 CANADIAN SHARE (%) OF NORTH AMERICAN PRODUCTION, SALES, AND CAPACITY

Year	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
PRODUCTION												
Total Car	11.7	11.1	13.4	12.3	11.6	11.6	11.9	10.2	12.6	13.3	15.0	16.1
Total Truck	27.3	24.1	20.8	19.4	22.1	21.1	19.3	18.6	19.8	19.9	19.6	20.3
Domestic Car	11.9	11.3	13.5	12.5	11.8	11.9	12.7	10.9	13.3	13.5	14.9	15.6
Domestic Truck	27.7	24.5	20.9	19.6	22.7	21.7	19.8	19.1	20.2	20.5	19.6	20.5
Transplant Car	4.8	4.9	10.6	6.3	4.7	3.4	1.8	3.3	6.4	12.3	15.5	17.5
Transplant Truck	-	-	-	-	-	-	-	-	-	-	18.6	18.4
SALES												
Car	9.4	9.7	8.2	8.4	8.5	9.3	8.7	9.4	9.0	9.2	8.9	9.4
Truck	11.8	11.3	7.5	7.1	7.1	7.9	8.0	8.6	8.8	9.2	8.6	9.0
CAPACITY OUTPUT												
Domestic Car	10.1	10.6	12.1	12.4	11.6	11.5	11.6	12.3	14.8	14.7	15.5	15.7
Domestic Truck	19.3	17.1	15.7	17.1	19.9	21.5	21.7	20.2	20.2	20.0	19.7	19.4
Transplant Car	7.5	9.5	9.7	10.1	5.7	3.4	4.0	9.3	7.8	13.7	18.7	19.7
Transplant Truck	-	-	-	-	-	-	-	-	-	-	25.2	22.6

Canada's share of passenger car production has been in excess of it's sales in each of the years from 1980 to 1991, and has been increasing since a low of 10.2% in 1987, and in 1991 passenger car production in Canada was 16.1% of the total North American production of passenger cars. Canada's share of truck production has been more than double it's share of North American trucks sales over this time period.

Although transplants were later in establishing facilities in Canada than in the United States, Canada's share of transplant production by 1990-91 was approximately double it's share of North American sales of passenger cars and trucks.

As well, in 1991 Canada had 15.7% and 19.4% of domestic North American passsenger car and light truck manufacturing capacity and 19.7% and 22.6% of the production capabilities of transplants to produce passenger cars and light trucks in North America.

SUMMARY

The domestic assembly facilities in Canada had higher capacity utilization rates for both passenger automobile assembly and light truck assembly until 1985, compared to domestic assemblers located in the United States. The capacity utilization rates for passenger cars in the United States improved with a decrease in production capability resulting from a closing of some assembly plants and a conversion to truck assembly for others. The Canadian rate declined when the increase in output did not quite match the increase in capacity. The greater capacity rates achieved in Canada for light truck assembly in the early 1980's became approximately equal to the rate in the United States when output and capacity increased dramatically in the latter part of the decade.

From 1980 to 1991 assemblers in Canada, both domestic and transplants achieved production shares and capacity shares that were in excess of Canada's share of North American sales of passenger cars and trucks.

STATISTICAL ANNEX "B"

CAPACITY AND ACTUAL OUTPUT DOMESTIC PRODUCERS

Table B1. North America Domestic Capacity Output (Units)

	Canada		United States	
Year	Car	Truck	Car	Truck
1980	1,114,880	661,440	9,886,080	2,761,600
1981	1,160,640	565,760	9,762,400	2,747,440
1982	1,272,960	532,480	9,210,080	2,862,080
1983	1,266,720	584,480	8,946,560	2,832,960
1984	1,173,120	707,200	8,945,440	2,842,240
1985	1,185,600	860,800	9,085,120	3,151,680
1986	1,252,160	894,400	9,513,920	3,236,640
1987	1,334,720	952,640	9,504,800	3,773,440
1988	1,510,080	973,440	8,658,880	3,852,160
1989	1,318,720	973,440	7,654,400	3,895,840
1990	1,268,800	965,120	6,911,040	3,923,360
1991	1,268,800	965,120	6,792,320	4,012,960

Table B2. North America Domestic Actual Output (Units)

	Canada		United States	
Year	Car	Truck	Car	Truck
1980	836,813	506,274	6,175,198	1,319,559
1981	775,083	480,172	6,083,248	1,476,789
1982	777,683	434,138	4,987,468	1,640,232
1983	945,120	538,205	6,628,517	2,213,427
1984	1,012,919	793,873	7,559,985	2,699,803
1985	1,067,854	834,467	7,835,827	3,010,425
1986	1,050,905	771,102	7,235,751	3,119,617
1987	785,610	802,189	6,400,157	3,405,432
1988	970,491	922,711	6,307,020	3,647,989
1989	905,048	924,519	5,693,778	3,588,299
1990	830,666	793,670	4,757,208	3,252,846
1991	756,885	779,434	4,079,716	3,028,701

Source: Ward's Automotive Yearbook (1980-1991)

CAPACITY AND ACTUAL OUTPUT TRANSPLANT PRODUCERS

Table B3. North America Transplant Capacity Output (Units)

	Canada		United States	
Year	Car	Truck	Car	Truck
1980	20,800	0	257,920	37,440
1981	24,960	0	237,120	37,440
1982	24,960	0	232,320	33,280
1983	24,960	0	222,400	105,280
1984	24,960	0	413,120	178,880
1985	24,960	0	715,840	87,360
1986	35,840	0	852,800	104,000
1987	95,680	0	931,840	128,960
1988	105,280	0	1,249,600	141,440
1989	246,720	0	1,555,680	162,080
1990	386,880	65,520	1,684,800	194,560
1991	436,800	65,520	1,780,480	224,960

Table B4. North America Transplant Actual Output (Units)

	Canada		United States	
Year	Car	Truck	Car	Truck
1980	9,964	0	197,106	28,390
1981	8,594	0	167,755	37,392
1982	10,165	0	85,746	8,086
1983	10,378	0	153,544	22,058
1984	10,438	0	213,357	100,511
1985	10,078	0	350,207	107,442
1986	10,833	0	593,498	108,048
1987	24,208	0	699,672	102,718
1988	57,202	0	830,369	95,919
1989	140,450	0	1,130,180	123,056
1990	245,453	39,703	1,341,822	173,903
1991	287,611	42,690	1,353,580	189,915

Source: Ward's Automotive Yearbook (1980-1991)

NOTES

1. Capacity is calculated from the individual plant level, reporting production capability for all North American assemblers (Domestic and Transplant). Each plant has a reported line rate stated in units per hour and the start and stop dates for each model year. From the start/stop dates the available weeks of production are calculated. All plants are assumed capable of operating two shifts (two shifts are the norm for the assembly industry). To calculate the potential output for an individual plant will require multiplying the available weeks of production by 80 (2 shifts x 40hrs/week) x the line rate. The calculated capacities of each plant, for passenger car and truck, are then totalled by domestic and transplant assemblers in Canada and the United States.

This approach implicitly assumes technology is fixed at the start of the production year. If the plant is idle due to insufficient demand, or due to retooling for a new model, the capacity to produce is still calculated as if the plant was in full operation.

2. The capacity utilization rate is the ratio of actual production to capacity production.

C. CANADIAN AND UNITED STATES MOTOR VEHICLE INDUSTRIES - A COMPARISON

The previous section examined the effect of imports and transplants on domestic North American manufacturers. The analysis was restricted to assemblers of passenger cars and light trucks and the measurement was in physical units. The following analysis defines the motor vehicle industry by the Standard Industrial Classifications of Canada and the United States and, along with the assembly of passenger automobiles and trucks of all sizes, includes the production of truck and bus bodies, commercial and non-commercial trailers, mobile and motor homes, which are all identified as the trailer industry. Motor vehicle parts and accessories are also include as part of the motor vehicle industry and are defined as the parts sector. Parts production includes production for both automotive assemblers and the components destined for the replacement market. The previous section examined the time period from 1980 to 1991. This section is from 1981 to 1989 and relies on the data from the Annual Survey of Manufactures, produced by the U.S. Department of Commerce, Bureau of the Census and the principle statistics from the Transportation Equipment Industries produced by Statistics Canada, Industry Division.

CONCORDANCE BETWEEN CANADA SIC 1980 AND UNITED STATES SIC 1987

Canadian and United States Standard Industrial Classifications are used to define the motor vehicle industries in their respective countries. The 1980 SIC is the classification used for Canada and the 1987 SIC is used for the United States.

To compare the motor vehicle industries for each country, it will be necessary to establish a concordance between the two countries classification systems.

Using the "Concordance between the Standard Industrial Classifications of Canada and the United States" (Stats Can Cat. 12-574), the industries classified by SIC United States 1987 can be matched with the Canadian SIC 1980, motor vehicle industries at the four digit level.

When an industry is fully comparable to the Canadian classification, it is included as equivalent to the Canadian classification. If only part of an United States classified industry corresponds with the Canadian definition it has not been included. The only exception to this is United States (SIC 1987) 3714, which is partially related to seven of the eight Canadian motor vehicle parts and accessories industries.

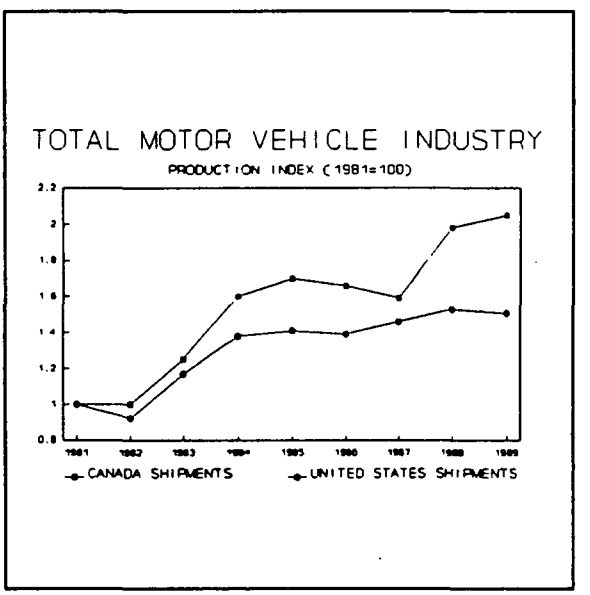
The motor vehicle industry is divided into three main components: assembly, trailer and parts. Table C1 provides the Canadian SIC industry for each of these three areas and the corresponding United States SIC industry.

Table C1. Concordances Canadian SIC (1980) and United States SIC (1987)

	Canadian SIC 1980	United States SIC 1987
Assembly	3231 Motor Vehicle Industry	3711 Motor Vehicles and Car Bodies
Trailer	3241 Truck and Bus Body Industry 3242 Commercial Trailer Ind. 3243 Non-Commercial Trailer Ind. 3244 Mobile Home Ind.	3713 Truck and Bus Bodies 3715 Truck Trailers 3716 Motor Homes 3792 Travel Trailers and Campers 2451 Mobile Homes
Parts	3251 Motor Vehicle Engine and Engine Parts Ind. 3252 Motor Vehicle Wiring Assemblies Ind. 3253 Motor Vehicle Stampings Ind. 3254 Motor Vehicle Steering and Suspension Ind. 3255 Motor Vehicle Wheel and Brake Ind. 3256 Motor Vehicle Plastic Parts Ind. 3257 Motor Vehicle Fabric Accessories Ind. 3259 Other Motor Vehicle Accessories and Parts	3714 Motor Vehicle Parts and Accessories 3592 Carburetors, Pistons, Rings, Valves 3647 Vehicular Lighting Equipment 3465 Automotive Stamping

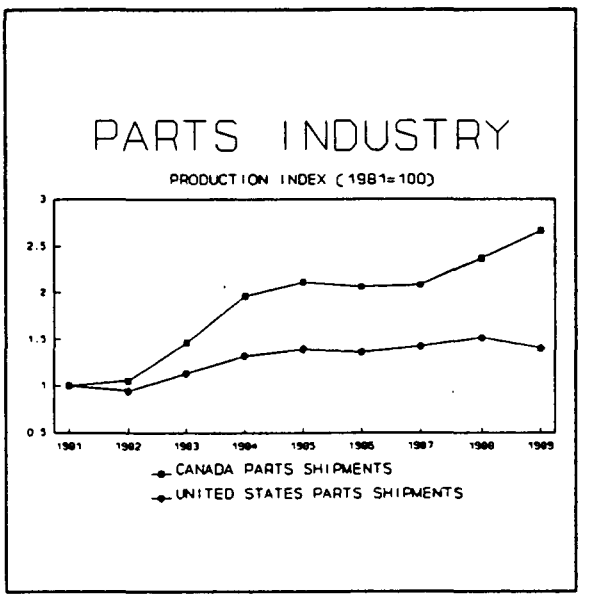
PRODUCTION

The production of motor vehicles industries in Canada and the United States is given in the Statistical Annex "C". The value of shipments, measured in 1986$ in each country, has increased. (Graph C1). Total Canadian motor vehicle shipments of $47.6 billion in 1989 were more than double the level achieved in 1981. This compares with the value of United States shipments of $235 billion, a 50% increase from 1981.



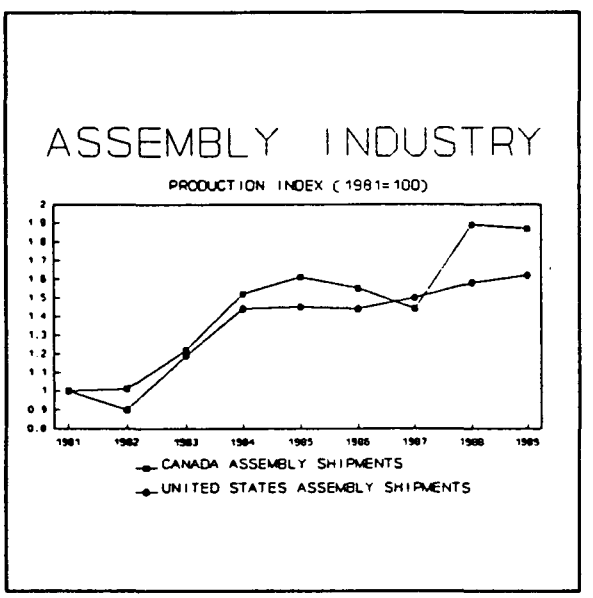
GRAPH C1

The growth in Canadian production has been most dramatic in the parts sector (Graph C2), where production in 1989 was over 2.5 times that of 1981, compared to a 40% increase in the United States.

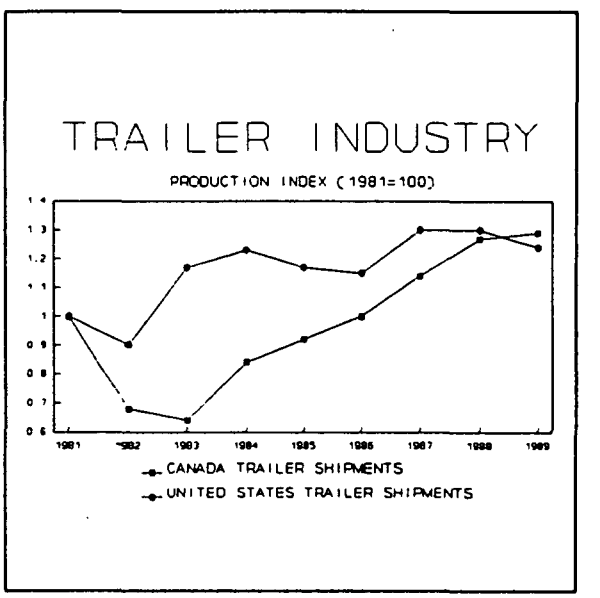


GRAPH C2

Similarly the Canadian increase in production, from 1981 to 1989, in the assembly industry (Graph C3) was 25 percentage points higher than the United States. The Canadian increase was 87% and the United States was 62%. The trailer industry growth rates were the most parallel, with shipments having increased 29% from 1981 to 1989 in Canada and shipments in the United States having increased 24% over the same period. (Graph C4). Canada however, experienced a severe decline in output of the trailer industry from 1981 to 1982 (36%), which was not regained until 1986.



GRAPH C3



GRAPH C4

Shifting Production Shares

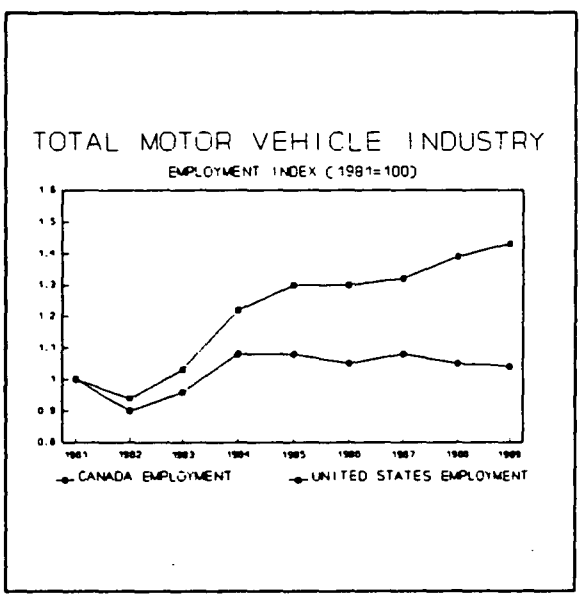
The Canadian and United States motor vehicle industries experienced different shifts in the shares the assembly, trailer and parts sectors contributed to the total motor vehicle industry shipments.

In 1981, the United States assembly industry accounted for 56% of the value of shipments compared to 68% in Canada. By 1989, both the United States and Canadian assembly industries shares were nearly equal, 61% in Canada and 60% in the United States. The trailer industries' share in each country declined slightly, from 7.7% to 6.4% in the United States and from 5.6% to 3.5% in Canada. The dramatic growth in the parts industry in Canada from 1981 to 1989 resulted in an eight percentage point increase in it's share of total motor vehicle shipments, from 27% to 35%. This is in contrast to the parts industry in the United States which lost almost three percentage points, falling from a 36.3% share to 33.6% in 1989.

EMPLOYMENT

The doubling of shipments over this period in Canada compared to a 50% increase in the United States, resulted in a large increase in employment in the motor vehicle industry in Canada and modest growth in the United States.

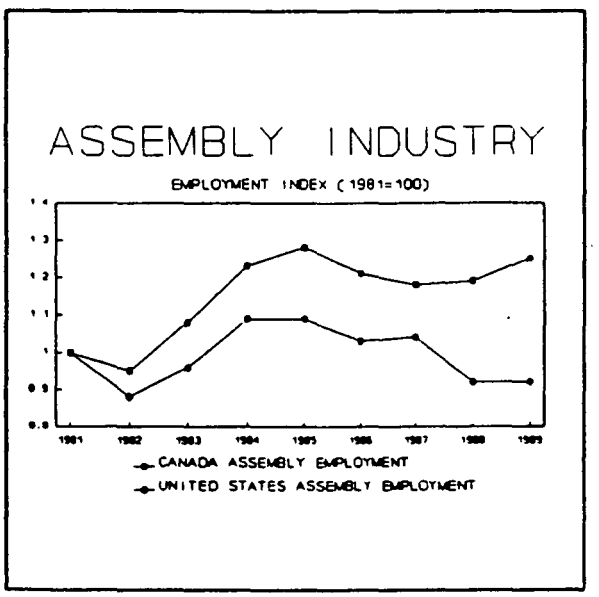
Total employment in the United States increased by 32,800 from 1981 to 931,500 employees in 1989, a 3.5% increase. Even though Canada's motor vehicle industry is only a fraction of the United States industry, the actual increase in employment of 50,635 employees exceeded that in the United States and represents a 43% increase from 1981 to 1989. Employment in the Canadian motor vehicle industry reached 167,670 persons by 1989. (Graph C5). Employment levels by assembly, trailer and parts industries are provided in the Statistical Annex.



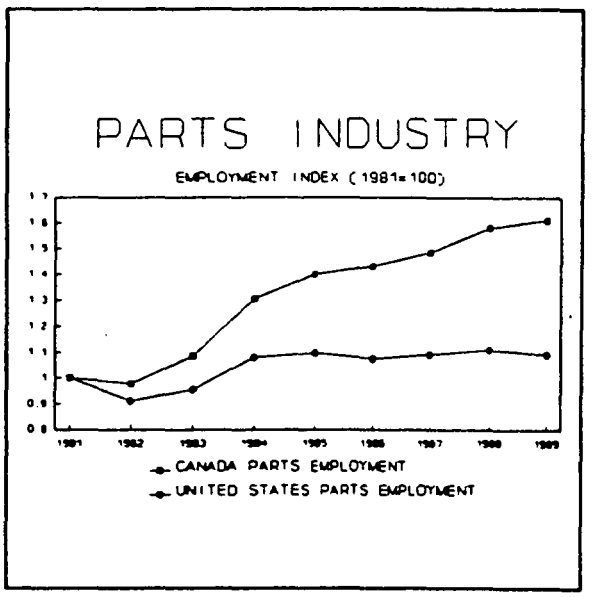
GRAPH C5

Although assembly accounted for 60% of shipments by 1989, the parts industry in each country accounted for over 55% of the total employment in the motor vehicle industry. The assembly industry in the United States accounted for 30% of the employment in the motor vehicle industry, with 14% of employment coming from the trailer industry. Canada's distribution was higher for the assembly industry, averaging 36% of the total employment in the motor vehicle industry. The trailer industry in Canada supplied the remaining 9% of the employment.

The 3.5% increase in total employment in the United States resulted from a 8% decline in employment in the assembly industry (Graph C6), countered by a 7% and 9% growth in employment in the trailer and parts (Graph C7) industries. Canada enjoyed large growth in employment from 1981 to 1989 in each of the three sectors, with increases of 25%, 23% and 61% for the assembly, trailer and parts industries.



GRAPH C6



GRAPH C7

Composition of Employees

Employees are normally classified as production workers and salaried employees. The Canadian and United States industries display some differences in the composition of administrative (salary) and production workers (hourly) in 1981, and experienced different changes in employee composition through the 1980's.

The overall ratio of administrative personnel to production employees is approximately one in five. An analysis by the three sectors reveals that one in five and a half employees were administrative personnel in the assembly sector of the United States industry compared to one in four in the Canadian assembly industry in 1981. The proportion of salaried employees in each country declined with one in six and a half salaried personnel in the United States assembly industry and one in five in Canada by 1989.

The ratio of administrative employees in the United States trailer industry fell slightly from one in four and a half to almost one in five. In Canada, in 1981, one in four employees was in an administrative function. By 1989 the ratio was one in five.

The parts industry had the largest change in employee composition in Canada, with nearly one in five employees being administrative personnel in 1981, and declining to one in seven in 1989. The ratio in the United States remained fairly constant with one in five employee in an administrative role.

Canadian Production Workers Gain the Most

Examining the changes in employment levels from 1981 to 1989 by administrative and production personnel indicates that production workers benefited greatly from the increase in production and all three sectors of the Canadian motor vehicle had significant increases in employment levels. (Table C2). The expansion in the parts industry in Canada also resulted in significant growth in employment for salaried personnel in this industry.

TABLE C2. CHANGE IN EMPLOYMENT, 1981-1989.

	United States			Canada		
	1981	1989	Change	1981	1989	Change
Administrative Personnel						
Assembly	48,500	37,400	-22.9%	11,398	11,502	0.9%
Trailer	27,500	27,600	0.4%	3,111	2,913	-6.3%
Parts	99,900	105,800	5.9%	11,303	13,928	23.2%
Production Workers						
Assembly	223,400	212,500	-4.9%	32,869	43,890	33.5%
Trailer	98,600	107,500	9.0%	10,001	13,275	32.7%
Parts	400,800	440,700	10.0%	48,353	82,162	69.9%

The United States assembly industry has suffered employment declines for both administrative and production workers. The number of administrative employees in the trailer industry is the only decline experienced in the Canadian motor vehicle industry.

WAGE RATES AND SALARY LEVELS

The rankings of the production and salary levels of the motor vehicle industry in each country are very similar. The average hourly wage rates and average annual salary levels for the assembly, trailer and parts industries are contained in the Statistical Annex "C". The Canadian production wage rates for assembly workers ranged from 8% to 19% over the average wage rate for the motor vehicle industry from 1981 to 1989. The trailer industry, which has the lowest average wage rate of the three sectors, ranges from 77% to 81% of the average wage for the motor vehicle industry. The wage received by the production workers

in the parts industry is almost equal to the motor vehicle industry average wage rate, ranging from 91% to 97% of the motor vehicle industry rate.

In the United States the average wage rate for the production workers in the assembly industry from 1981 to 1989 ranged from 13% to 23% higher than the motor vehicle average. The trailer industry was from 59% to 63% and the parts industry range was from 97% to 100% of the motor vehicle industry average.

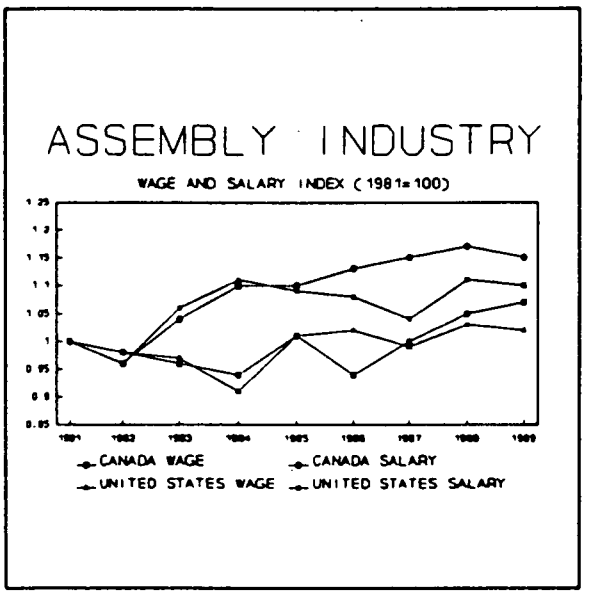
Salaries Improved More Than Hourly Wage Rates

The salaried employees in the assembly, trailer and parts industries in each country all recorded increases in salary levels from 1981 to 1989. Only the production workers of the assembly industries had improvements in their hourly average wage rate in the same period. (Table C3).

TABLE C3. WAGE AND SALARY CHANGE. 1981-1989

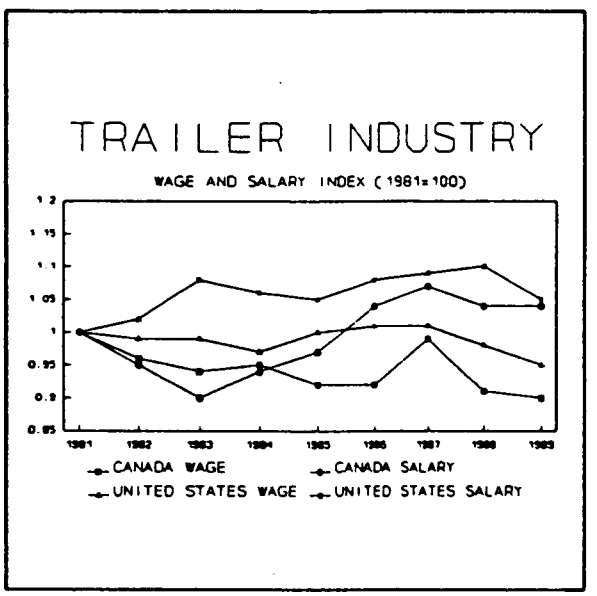
	Canada			United States		
	1981 (1986$ Can)	1989 (1986$ Can)	Change	1981 (1986$ U.S.)	1989 (1986$ U.S.)	Change
	Annual Average			Annual Average		
Administrative Personnel						
Assembly	$37,743	$43,482	15.2%	$39,603	$43,728	10.4%
Trailer	29,306	30,474	4.0%	26,524	27,864	5.0%
Parts	35,518	36,712	3.4%	34,587	34,709	0.4%
	Hourly Average			Hourly Average		
Production Workers						
Assembly	$14.90	$15.91	6.8%	$18.82	$17.16	2.0%
Trailer	11.44	10.28	-10.1%	8.68	8.20	-5.5%
Parts	12.98	12.20	-6.1%	13.99	13.57	-3.0%

The average hourly wage rates of the assembly industries in Canada and the United States each demonstrated a downward trend until 1984. (Graph C8). The remaining years of the period produced increases in wage levels, with production workers in the Canadian assembly industry receiving an average wage rate 7% greater than the 1981 rate. The production workers of the assembly industry in the United States achieved a 2% increase in average wages over their 1981 level.

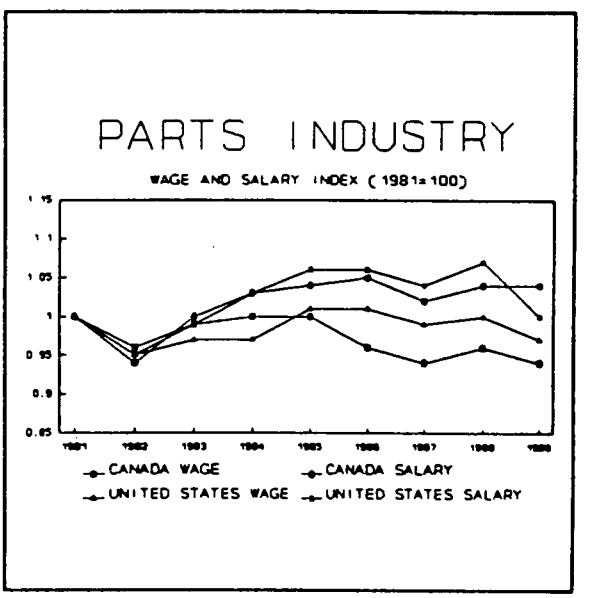


GRAPH C8

The production workers in the trailer (Graph C9) and parts (Graph C10) industries of each country have suffered decreases in average wage rates from 1981 to 1989.



GRAPH C9



GRAPH C10

The salary levels for administrative personnel in the assembly industries of each country declined 4% from 1981 to 1982, after which the Canadian assembly industry was characterized by steady growth for the remainder of the time period and finished 1989 with a 15% increase in average salary levels compared to 1981.

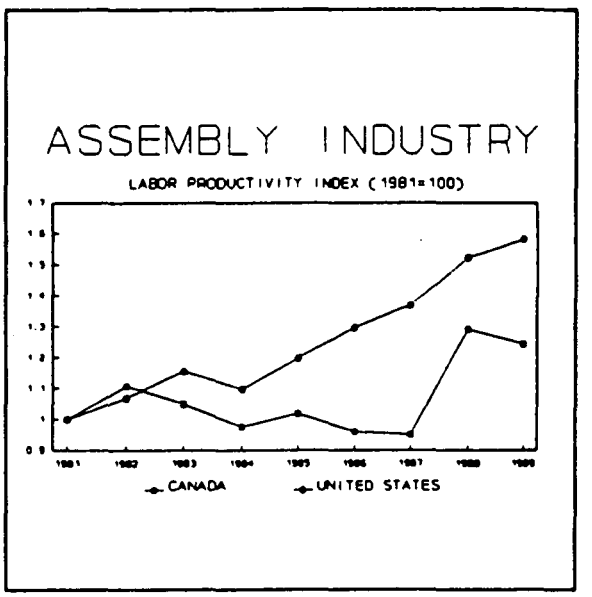
The administrative personnel in the United States assembly industry also experienced a growth in salary level, reaching an average annual salary level in 1989 that was 10% greater than in 1981. The administrative employees in the trailer and parts industries of each country also had modest improvements in salary levels.

LABOUR PRODUCTIVITY

The value of shipments were deflated by the appropriate producer price index (rebased to 1986) for the assembly, trailer and parts industry, then divided by the number of labour hours paid to produce a labour productivity measure. The output\hour calculations for the assembly, trailer and parts industries of each country are listed in the Statistical Annex "C".

The largest gains in output per hour were achieved in the United States assembly industry. (Graph C11). With the exception of 1984, labour productivity had a steady improvement each year. In 1981 one hour of production worker input was needed for each $203 (1986$ U.S.) of output. By 1989, $321 worth of output resulted from each hour of production worker input. This represents a 58% increase in output per hour of labour.

The improvement in Canadian output/hour was most pronounced in the 1988-89 years. One production worker hour was consumed in the production of $285 (1986$ Can) in 1989, which was a 24% improvement over the $229/hour produced in 1981. The six years between 1981 and 1988, produced mixed results in labour productivity gains, with three achieving a output/hour measure in excess of 1981, and three of the years lower than 1981's measure.

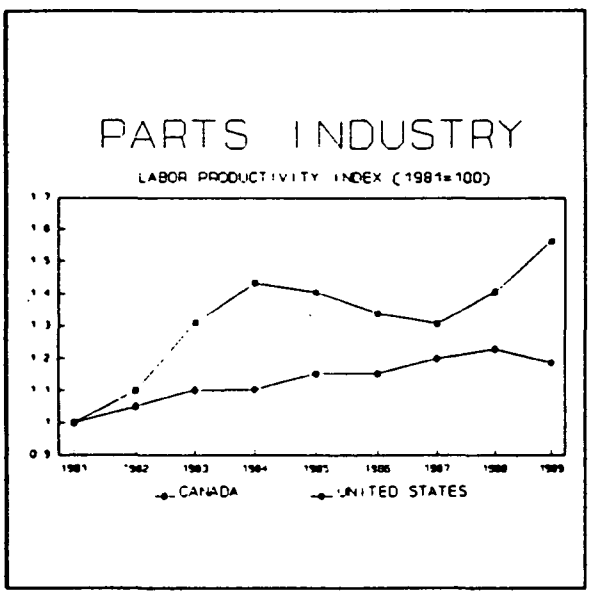


GRAPH C11

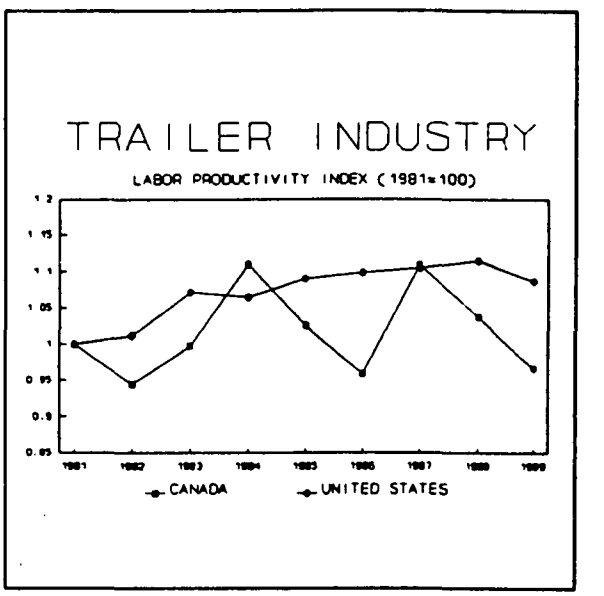
The parts industries (Graph C12) in the two countries were almost the reverse of the assembly industries. The Canadian parts industry is characterized by a 56% increase in output/hour, compared to an increase in the United States parts industry of 18%. Like the United States assembly industry, the parts industry experienced a steady improvement in the output per production hour. For the parts industry the only exception was 1989 when output/hour declined about 3% from 1988.

The trailer industry in Canada followed a more erratic pattern than the assembly and parts industries, with output/hour 5% below 1981, in 1982 and 1986 and about 10% above the 1981 level in 1984 and 1987. The trailer industry in Canada finished 1989 with output/hour 3.4% below that of 1981. (Graph C13).

The trailer industry in the United States followed the pattern set by the assembly and parts industries and had a almost continuous improvement in the output obtained from one hour of labour input.



GRAPH C12



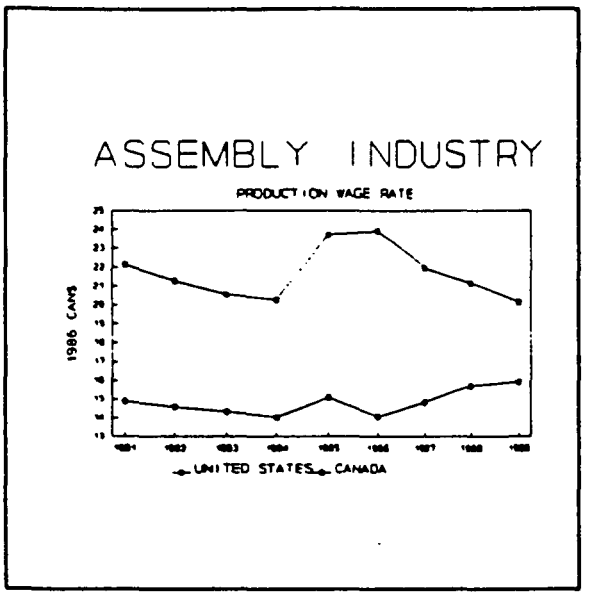
GRAPH C13

Labour Productivity and Wages

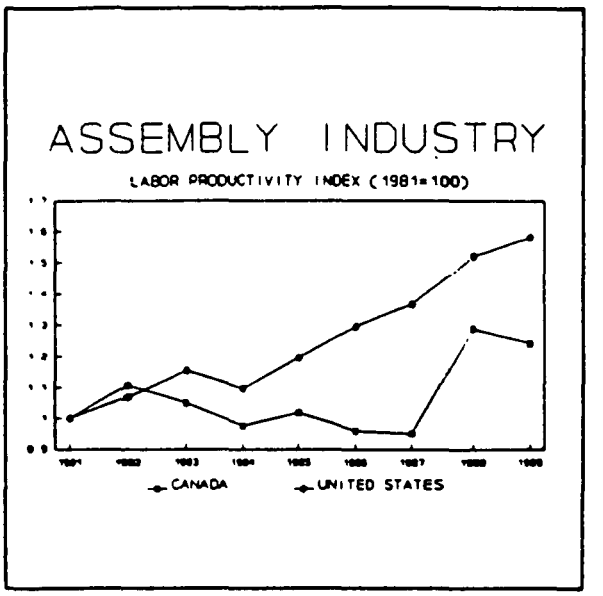
The assembly of motor vehicles and the manufacturing of parts and accessories is performed in an integrated North American production market. Because of this about 80% of assembled vehicles produced in Canada are shipped to the United States and approximately 65% of automotive parts. The output of the trailer industry in Canada is mainly for domestic consumption.

The motor vehicle industry in North America is dominated by American and foreign based, mostly Japanese, producers. Two important considerations in the decision to locate or retain assembly or parts facilities in the United States or Canada are labour productivity and the cost of labour.

The United States assembly industry enjoyed greater labour productivity gains compared to Canada, while the parts industry in Canada had the larger improvement in labour productivity. To compare the average wage rates in the assembly and parts industries, the current dollar United States rates are converted to Canadian dollars and deflated using the Canadian CPI. The wage rates for the assembly industry (Graph C14) of Canada and the United States are almost the reverse of a comparison of the labour productivity index. (Graph C15). The relative lower Canadian wage rate counters the higher growth rates in United States productivity.

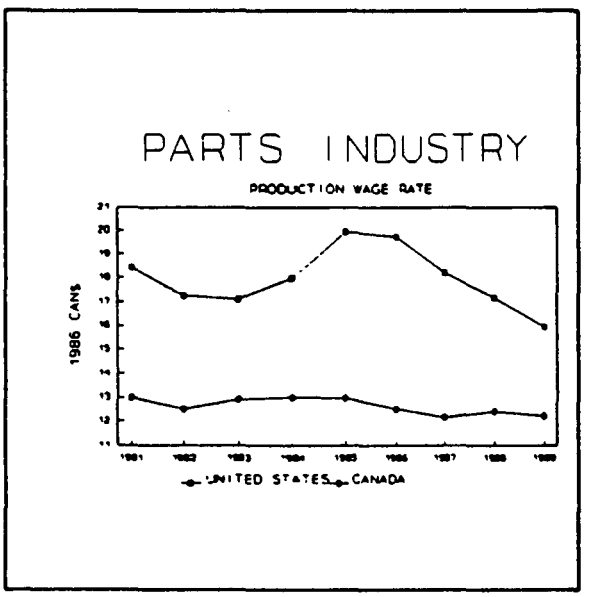


GRAPH C14

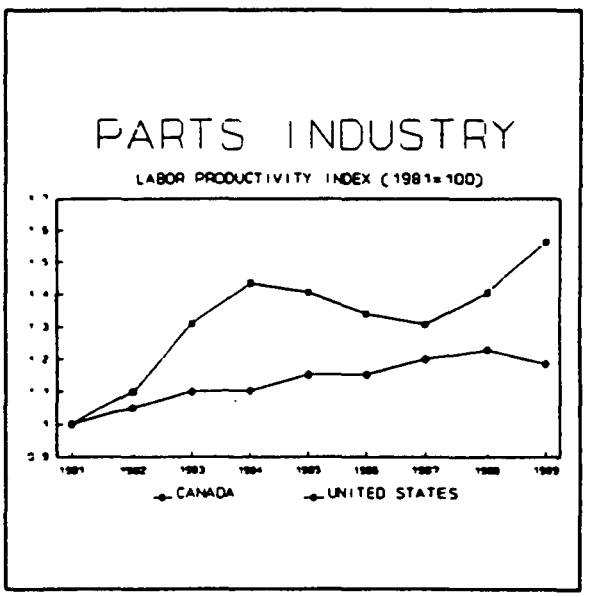


GRAPH C15

The wage rate comparison for the parts industry (Graph C16) reinforces the higher labour productivity advantage in the Canadian parts industry. (Graph C17).



GRAPH C16



GRAPH C17

SUMMARY

The growth in output of the Canadian motor vehicle industry has exceeded the growth rate achieved in the United States from 1981 to 1989, with both the assembly and parts industries in Canada registering large gains.

Significant increases in employment resulted from the growth in production of the Canadian assembly and parts industries. Only the administrative personnel in the Canadian trailer industry experienced a decrease in employment in this time period.

Administrative personnel in the assembly, trailer and parts sector in both Canada and the United States saw increases in their salary levels, while only the production workers in the assembly industry in each country had an increase in their average hourly wage rate.

The assembly industry in the United States achieved a higher growth rate in output per hour than their Canadian equivalent, but at a higher wage level, The parts sector in Canada however, had a greater improvement in labour productivity and the advantage of a lower average wage rate.

STATISTICAL ANNEX "C"

PRODUCTION

CANADA (1986 CAN$ MILLION)

	1981	1982	1983	1984	1985	1986	1987	1988	1989
Assembly	$15,620	$15,785	$19,060	$23,802	$25,077	$24,287	$22,443	$29,531	$29,245
Trailer	1,303	891	832	1,092	1,199	1,302	1,487	1,656	1,680
Parts	6,264	6,570	9,163	12,256	13,204	12,922	13,036	14,818	16,656

UNITED STATES (1986 U.S.$ MILLIONS)

	1981	1982	1983	1984	1985	1986	1987	1988	1989
Assembly	$87,277	$78,863	$104,273	$125,336	$126,633	$125,870	$130,988	$138,190	$141,130
Trailer	12,016	10,854	14,043	14,746	14,049	13,766	15,565	15,677	14,949
Parts	56,654	53,435	63,879	74,928	78,993	76,768	80,415	85,372	79,096

EMPLOYMENT

CANADA EMPLOYMENT

	1981	1982	1983	1984	1985	1986	1987	1988	1989
Production Workers									
Assembly	32,869	30,914	36,226	41,732	44,358	41,607	40,638	41,351	43,890
Trailer	10,001	7,189	6,409	7,733	9,083	10,732	11,076	12,582	13,275
Parts	48,353	46,875	53,308	65,313	71,128	72,359	75,250	80,307	82,162
Administrative Personnel									
Assembly	11,398	11,254	11,413	12,553	12,513	11,937	11,396	11,330	11,502
Trailer	3,111	2,488	2,163	2,381	2,339	2,247	2,343	2,647	2,913
Parts	11,303	11,389	11,402	12,522	13,246	12,882	13,300	14,028	13,928

UNITED STATES EMPLOYMENT

	1981	1982	1983	1984	1985	1986	1987	1988	1989
Production Workers									
Assembly	223,400	193,500	216,500	247,600	249,700	233,800	235,500	213600	212500
Trailer	98,600	86,600	10,100	108,800	101,200	97,500	108,500	109300	107500
Parts	400,800	359,200	382,300	438,000	443,800	430,700	438,100	448900	440700
Administrative Personnel									
Assembly	48,500	46,600	44,200	48,600	46,100	46,700	47,600	36,700	37,400
Trailer	27,500	24,100	26,300	26,600	26,900	27,300	29,000	28,300	27,600
Parts	99,900	96,800	96,000	102,400	105,200	107,100	108,500	106,600	105,800

Source: Statistics Canada, Census of Manufactures, Transportation Equipment Industries (42-251)
U.S. Department of Commerce, Bureau of the Census, Annual Survey of Manufactures (AS-1)

WAGES AND SALARIES

CANADA WAGES AND SALARIES (1986 CAN$)

	1981	1982	1983	1984	1985	1986	1987	1988	1989
	Hourly Average								
Production Workers									
Assembly	$14.90	$14.59	$14.33	$14.01	$15.08	$14.06	$15.50	$17.05	$18.14
Trailer	11.44	10.96	10.71	10.84	10.55	10.52	11.32	11.31	11.72
Parts	12.98	12.50	12.91	13.00	12.97	12.49	12.16	12.40	12.20
	Annual Average								
Administrative Personnel									
Assembly	$37,743	$36,273	$39,288	$41,692	$41,599	$42,775	$43,552	$44,328	$43,483
Trailer	29,307	27,850	26,337	27,541	28,363	30,543	31,406	30,354	30,474
Parts	35,518	33,465	35,368	36,466	36,920	37,144	36,274	36,854	36,712

UNITED STATES WAGES AND SALARIES (1986 U.S.$)

	1981	1982	1983	1984	1985	1986	1987	1988	1989
	Hourly Average								
Production Workers									
Assembly	$16.82	$16.42	$16.23	$15.25	$17.01	$17.22	$16.73	$17.31	$17.16
Trailer	8.68	8.63	8.57	8.43	8.67	8.73	8.76	8.48	8.21
Parts	13.99	13.29	13.51	13.53	14.12	14.18	13.82	14.04	13.57
	Annual Average								
Administrative Personnel									
Assembly	$39,603	$38,051	$41,889	$44,117	$42,991	$42,925	$40,991	$44,132	$43,729
Trailer	26,525	27,094	28,753	28,152	27,945	28,516	28,894	29,186	27,864
Parts	34,587	32,726	34,351	35,518	36,677	36,558	36,047	36,902	34,709

LABOUR PRODUCTIVITY

	1981	1982	1983	1984	1985	1986	1987	1988	1989
	Shipments/Hour (1986 Can$)								
Canada									
Assembly	$229	$253	$240	$223	$233	$220	$218	$296	$285
Trailer	63	60	63	70	65	60	70	65	61
Parts	61	67	79	87	85	81	79	85	95
	Shipments/Hour (1986 U.S.$)								
United States									
Assembly	$203	$217	$234	$222	$242	$263	$277	$308	$321
Trailer	66	67	71	71	72	73	73	74	72
Parts	74	77	81	81	85	85	88	90	87

Source: Statistics Canada, Census of Manufactures,
Transportation Equipment Industries (42-251)
U.S. Department of Commerce,
Bureau of the Census, Annual Survey of Manufactures (AS-1)

D. INTERNATIONAL TRADE - MOTOR VEHICLES AND PARTS

Canada's trade in motor vehicles and parts is a major component of its merchandise trade. Canada's total merchandise trade ranged from $163 billion in 1981 to $280 billion in 1991. Only in 1981 (17%) did the percentage of total trade accounted for by motor vehicles and parts fall below 20%, and in 1986 was as high as 29%.

The United States is Canada's foremost trading partner accounting for 70% of Canada's total merchandise trade from 1981 to 1991, with trade in motor vehicles and parts averaging over 30% of this trade between the two countries.

The highly integrated North American production of motor vehicles and parts is the primary reason for the movement of large volumes of assembled passenger cars and trucks and motor vehicles parts and accessories across the Canadian-American border.

CANADA-ALL COUNTRIES TRADE - MOTOR VEHICLES AND PARTS

Canada achieved an overall surplus in trade of motor vehicles and parts, with the exception of 1981 and 1987. The $3 billion deficit in 1981 was related to the slumping sales for motor vehicles in Canada and the United States, which resulted in lower exports due to a decrease in Canadian production. The 1987 deficit in Canada's trade with all countries was primarily due to the reduction in the production of passenger cars in Canada, with assembly plants down for extensive retooling for new models. (Statistical Annex "D" Canada-All Countries Trade - Motor Vehicles and Parts).

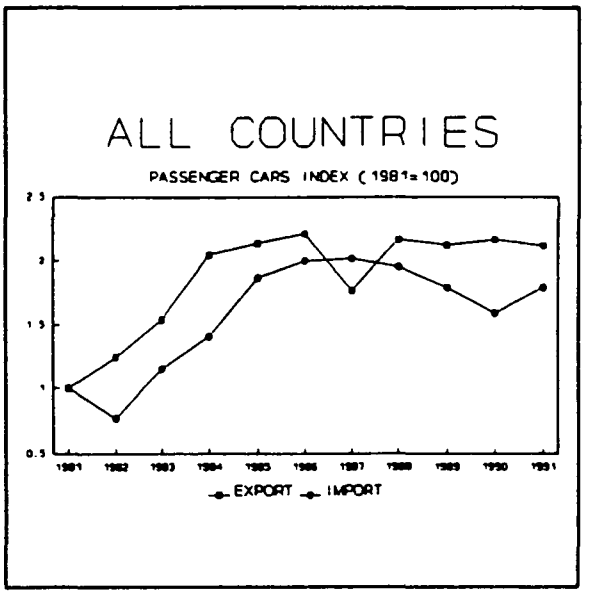
The decline recorded in truck exports in 1986 was also a result of an interruption in production for retooling for truck assembly.

Canada's trade in motor vehicles and parts is characterized by a surplus for passenger cars and trucks, countered by a deficit in parts and accessories. This results from the terms of the Auto Pact signed in 1965, which required a production to sales ratio of approximately 1:1, while the Canadian content of this production, including labour inputs, was only required to be approximately 60%. The established assembly plants in Canada in 1965, combined with the terms of the Auto Pact thus laid the foundation for a preference for assembly of motor vehicles over parts manufacturing.

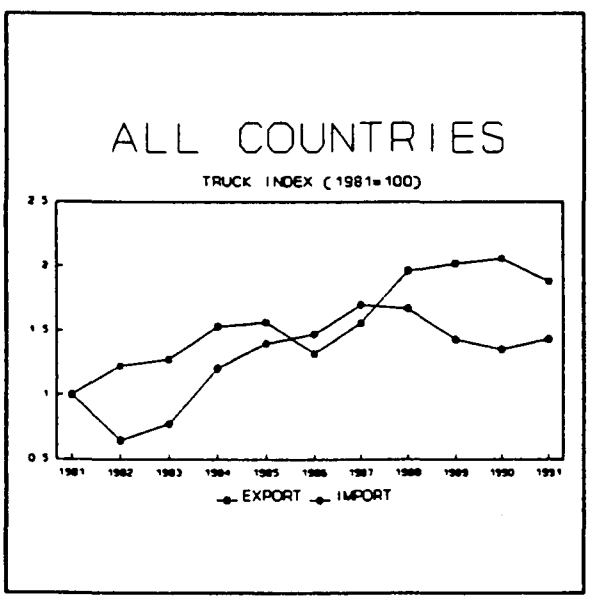
From 1981 to 1991 Canada was able to retain an overall surplus in motor vehicle trade due to higher growth rate of passenger automobiles (Graph D1), trucks (Graph D2) and parts (Graph D3) exported compared to the growth in imports. The indices presented in the graphs were constructed by deflating the current dollar value by the Paasche current weight index for the appropriate import or export category (1981$) and indexed with 1981=100.

Canadian motor vehicle and parts trade with All Countries presents a balanced portrait of Canada's trade position. If the United States, and All Countries except the United States, are considered separately a different picture emerges.

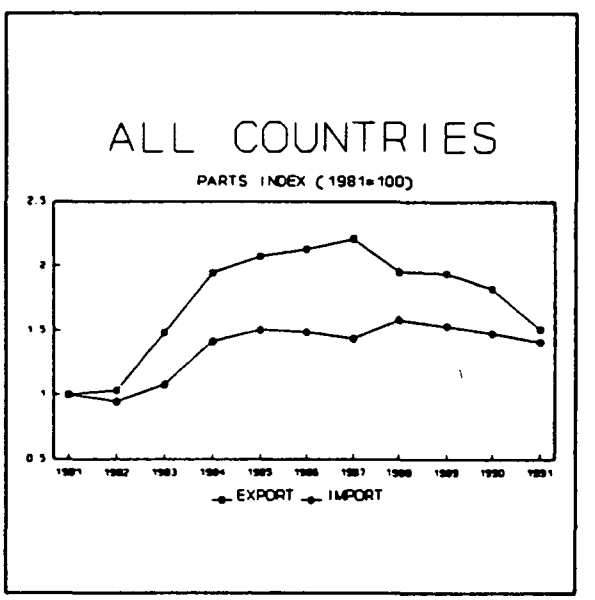
Canada-United States trade is characterized by increasing assembled vehicles and parts in both the export and import sectors. This contrasts with the All Countries except the United States trade, represented by relatively small export shares, declining from 1981 to 1991 in the passenger car, truck and parts areas and increasing imports of the three categories.



GRAPH D1



GRAPH D2



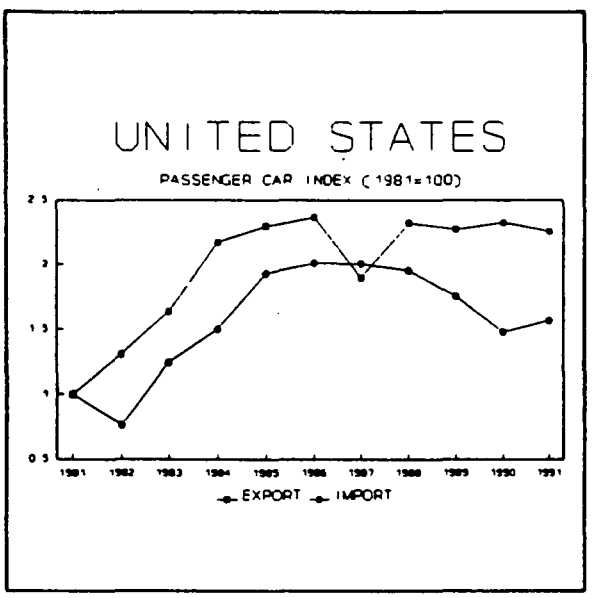
GRAPH D3

CANADA-UNITED STATES TRADE MOTOR VEHICLES AND PARTS

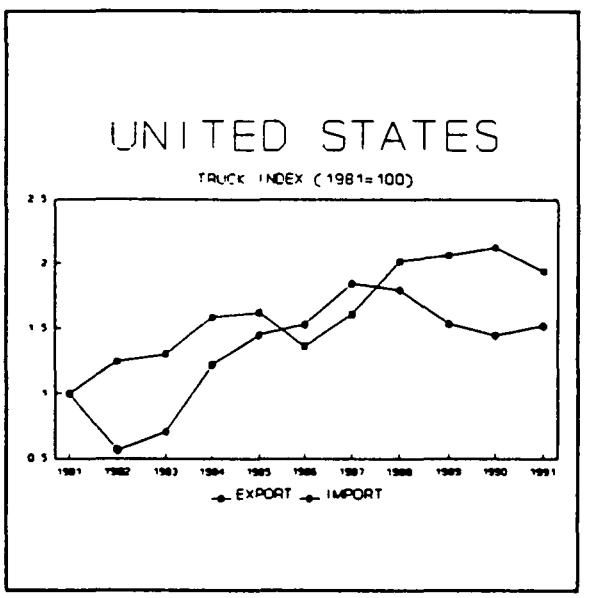
Canada's trade in motor vehicles and parts with the United States registered a deficit only in 1981, then generally achieved a large overall surplus in the motor vehicle balance. There was a decline in the motor vehicle balance, from 1990 to 1991, primarily due to a decline in the exports of trucks and part. (Statistical Annex "D" Canada-United States Trade - Motor Vehicles and Parts).

A surplus or deficit in Canada-United States trade, with the signing of the Auto Pact in 1965, to 1981, depended largely on the volume of parts imported into Canada for use in the assembly of passenger cars and trucks. An increase in Canadian exports of motor vehicles was almost automatically countered by an increase in imported parts, and for most of the 1960's and 1970's Canada had a deficit in motor vehicles and parts trade with the United States.

The shift to a greater share of trucks in the production of motor vehicles in North America as well as Canada's increasing share of North American production of passenger cars and trucks lead to an increase in exports of assembled motor vehicles, which normally would lead to an increase in imported parts used in their assebmly. This increase in production however, was not accompanied by a large increase in imported parts. The parts deficit was fairly stable at the $5 billion level for most of the time period, while passenger car (Graph D4) and truck (Graph D5) exports were increasing more than imports, resulting in a growing motor vehicle and parts surplus for this period.

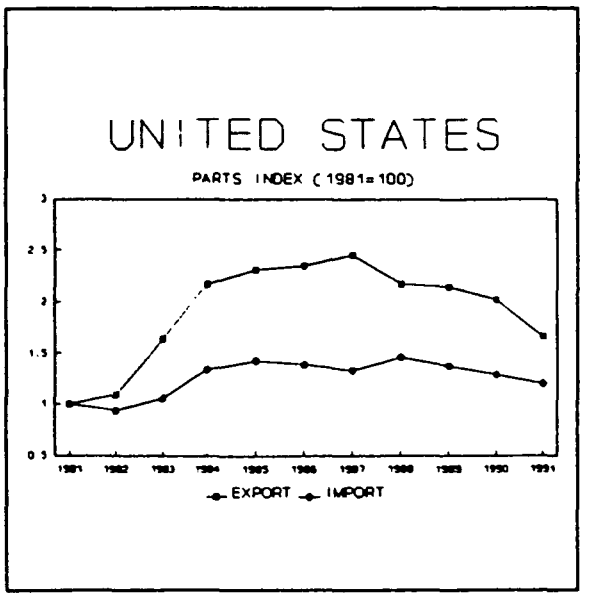


GRAPH D4



GRAPH D5

Parts production in Canada had increased dramatically in this period, allowing Canada an increase in actual exports to match the increase in parts imported (Graph D6), leaving the balance for parts constant.



GRAPH D6

One reason for Canada's increased parts production is attributed to duty remission on exported parts. Transplant manufacturers in Canada were remitted duties paid on vehicles or parts imported into Canada, depending on the exportation of parts, including parts to the United States. The 1989 Free Trade Agreement with the United States no longer allows export-based duty remissions on parts to the United States, and a decline in parts exported is recorded after 1989.

The transplants that are located in Canada also export large percentages of their production to the United States, similar to the domestic manufacturers, adding to the increase in the export of passenger cars and trucks.

The $2.2 billion deficit of 1981 resulted from a passenger car surplus of $1.4 billion and a surplus of $1.6 billion for trucks being more than negated by a $5.2 billion deficit in parts. By 1991 the passenger car surplus was $9.3 billion, the truck surplus was $4.6 billion, while the parts deficit was almost identical to 1981 at $5.3 billion, resulting in a trade surplus in motor vehicles and parts of $8.7 billion.

CANADA-ALL COUNTRIES EXCEPT UNITED STATES TRADE IN MOTOR VEHICLES AND PARTS

Of Canada's total merchandise trade, 30% is with countries other than the United States and has grown from $54 billion in 1981 to $85 billion in 1991.

The proportion accounted for by motor vehicles and parts has increased from $3 billion (5%) to $8 billion (10%) in 1991, representing 10% and 14% of Canada's total trade in motor vehicles and parts.

Unlike Canada-United States trade, having large export and import flows, Canada's trade with other countries in motor vehicles and parts is dominated by imports, primarily passenger cars and parts. (Statistical Annex "D" Canada-All countries Except United States Trade - Motor Vehicles and Parts).

Canada's exports have actually fallen from $1.1 billion in 1981, representing 8.3% of Canada's total exports of motor vehicles and parts, to $480 million, 1.3 % of Canada's exports.

Imports from countries other than United States have risen sharply from 1981 when $1.9 billion of imports represented 12% of Canada's total of imported motor vehicles and parts to $7.85 billion, a 26.1 % share.

The relatively small export share and increasing imports of motor vehicles and parts have produced a deficit for Countries other than the United States that has continuously increased from $820 million in 1981 to $7.4 billion in 1991.

Japan and Mexico are examined separately, Japan because of it's dominant role in the global automotive market, and Mexico as an emerging producer of motor vehicle products in North America.

CANADA-JAPAN TRADE - MOTOR VEHICLES AND PARTS

Canada's deficit with Japan in motor vehicles and parts trade is the most extreme of the import dominated trade flows. (Statistical Annex "D" Canada-Japan Trade - Motor Vehicles and Parts)

The deficit has increased from $1.3 billion in 1981 to $4.4 billion in 1991. This increase is attributed to the growth in passenger cars and parts imported from Japan, while exports of motor vehicles and parts of $6 million in 1981 and $42 million in 1991 represent a negligible portion of motor vehicle exports. Exports of motor vehicles and parts to Japan never accounted for more than 1/5 of 1% of Canada's total exports of motor vehicles and parts.

Imports from Japan accounted for 8% of Canada's total imports of motor vehicles and parts in 1981, amounting to $1.3 billion. This figure was comprised of $1 billion of passenger automobiles, $200 million of trucks and $100 million of parts. The importation of passenger cars and parts increased to 1991, resulting in a total of $4.4 billion - $3 billion in passenger cars, $1.2 billion in parts and $240 million in trucks. The $4.4 billion worth of motor vehicles and parts from Japan represented 14.7% of the total value of motor vehicles and parts imported into Canada.

CANADA-MEXICO TRADE - MOTOR VEHICLES AND PARTS

Similar to Japan, imports of motor vehicles and parts from Mexico dominated over exports from Canada. Exports of motor vehicles and parts to Mexico were $56 million in 1981, less than 1/2 of 1% of Canada's automotive exports and they changed very little by 1991, measuring $81 million, representing about 1/4 of 1% of Canada's total export of motor vehicles and parts.

As imports of passenger cars and parts increased from Japan, a similar pattern is followed for Mexico, although at a lower volume. Imported parts from Mexico were only $18 million in 1981 but demonstrated rapid growth and accounted for over $500 million worth of parts by 1984, growing to almost $900 million by 1991. In 1991 this accounted for 5.7% of parts imported by Canada and was comparable to the 7.3% share secured by parts imported from Japan.

Mexico started to produce motor vehicles in large volumes in the mid 1980's and in 1986 Canada imported $18 million worth of passenger cars. These imports grow to $672 million by 1991, accounting for 5.8% of all passenger cars imported into Canada.

SUMMARY IMPORT/EXPORT SHARES

Canada's exports of motor vehicles and parts are almost exclusively to the United States; over 99% for passenger cars since 1985, never below 96% for trucks from 1981 to 1991, and over 96% for parts from 1983 to 1991.

Imports of passenger cars from the United States steadily declined from a 78.6% share in 1983 to 59.9% in 1991. Japan and Mexico both improved their import passenger car share from 19.6% in 1981 for Japan to 26.1% in 1991. Imports of passenger cars from Mexico did not exist in 1981, were only 1.1% in 1990 and soared to 5.8% in 1991.

Truck imports from the United States increased from 84.7% to 89.3% from 1981 to 1991. This was mostly at the expense of imports from Japan which declined from a 14.7% share in 1981 to 8.8% in 1991. Mexico truck imports had a 1.5% share in 1991.

The share of parts imported from the United States has declined steadily from a high of 96.6% in 1981 to 81.6% in 1991. The vast majority of this decline went to parts imported from Japan and Mexico. Japanese parts import share was 1% in 1981 and 7.3% by 1991. The Mexican share increased from less than 1/5 of 1% to 5.7%.

STATISTICAL ANNEX "D"

CANADA-ALL COUNTRIES TRADE - MOTOR VEHCILES AND PARTS ($ 000's)

	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
EXPORTS											
PASSENGER AUTO	5,499,953	7,357,848	9,613,194	13,771,804	15,920,810	17,615,472	14,092,245	16,504,213	15,883,383	16,162,276	16,456,401
TRUCKS	2,926,621	3,937,626	4,218,310	5,386,876	5,818,172	5,084,615	6,009,716	7,223,019	7,281,913	7,512,806	7,164,939
PARTS	4,274,738	4,852,432	7,128,657	9,756,078	10,919,092	11,086,536	11,535,223	10,034,538	9,909,581	9,366,814	7,788,206
TOTAL	12,701,312	16,147,906	20,960,161	28,914,758	32,658,074	33,786,623	31,637,184	33,761,770	33,074,877	33,041,896	31,409,546
IMPORTS											
PASSENGER AUTO	5,066,071	4,042,987	6,207,942	7,890,037	10,774,206	12,061,732	12,346,159	12,239,533	11,833,890	10,713,801	11,660,348
TRUCKS	1,385,512	934,810	1,169,822	2,035,889	2,558,617	2,947,239	3,292,861	3,033,717	2,607,710	2,535,413	2,758,245
PARTS	9,275,343	9,700,871	11,291,416	15,579,430	17,617,380	17,950,299	16,956,183	17,675,141	16,834,895	16,455,567	15,707,392
TOTAL	15,726,926	14,678,668	18,669,180	25,505,356	30,950,203	32,959,270	32,595,203	32,948,391	31,276,495	29,704,781	30,125,985
BALANCE											
PASSENGER AUTO	433,882	3,314,861	3,405,252	5,881,767	5,146,604	5,553,740	1,746,086	4,264,680	4,049,493	5,448,475	4,796,053
TRUCKS	1,541,109	3,002,816	3,048,488	3,350,987	3,259,555	2,137,376	2,716,855	4,189,302	4,674,203	4,977,393	4,406,694
PARTS	-5,000,605	-4,848,439	-4,162,759	-5,823,352	-6,698,288	-6,863,763	-5,420,960	-7,640,603	-6,925,314	-7,088,753	-7,919,186
TOTAL	-3,025,614	1,469,238	2,290,981	3,409,402	1,707,871	827,353	-958,019	813,379	1,798,382	3,337,115	1,283,561

Source: Statistics Canada: Merchandize Imports from all Countries Cansim Matrix 3888
Merchandize Exports to all Countries Cansim Matrix 3688

CANADA-UNITED STATES TRADE - MOTOR VEHICLES AND PARTS ($ 000'S)

	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
EXPORTS											
PASSENGER AUTO	5,097,023	7,149,481	9,474,192	13,552,500	15,844,022	17,549,938	14,021,173	16,349,001	15,771,632	16,103,729	16,331,344
TRUCKS	2,814,408	3,829,820	4,125,447	5,333,659	5,751,608	5,031,529	5,963,371	7,131,857	7,183,616	7,450,562	7,108,602
PARTS	3,726,075	4,460,351	6,882,220	9,482,907	10,623,039	10,674,146	11,162,825	9,732,945	9,588,273	9,027,390	7,489,756
TOTAL	11,637,506	15,439,652	20,481,859	28,369,066	32,218,669	33,255,613	31,147,369	33,213,803	32,543,521	32,581,681	30,929,702
IMPORTS											
PASSENGER AUTO	3,715,519	2,873,588	4,876,872	6,083,295	8,045,572	8,622,443	8,685,638	8,597,295	8,188,835	6,885,947	6,987,497
TRUCKS	1,173,149	737,726	963,626	1,822,641	2,317,708	2,589,209	2,982,240	2,707,440	2,342,499	2,278,854	2,462,194
PARTS	8,957,380	9,337,558	10,726,216	14,335,714	16,223,328	16,187,774	15,125,918	15,685,421	14,623,152	13,790,203	12,822,351
TOTAL	13,846,048	12,948,872	16,566,714	22,241,650	26,586,608	27,399,426	26,793,796	26,990,156	25,154,486	22,955,004	22,272,042
BALANCE											
PASSENGER AUTO	1,381,504	4,275,893	4,597,320	7,469,205	7,798,450	8,927,495	5,335,535	7,751,706	7,582,797	9,217,782	9,343,847
TRUCKS	1,641,259	3,092,094	3,161,821	3,511,018	3,433,900	2,442,320	2,981,131	4,424,417	4,841,117	5,171,708	4,646,408
PARTS	-5,231,305	-4,877,207	-3,843,996	-4,852,807	-5,600,289	-5,513,628	-3,963,093	-5,952,476	-5,034,879	-4,762,813	-5,332,595
TOTAL	-2,208,542	2,490,780	3,915,145	6,127,416	5,632,061	5,856,187	4,353,573	6,223,647	7,389,035	9,626,677	8,657,660

Source: Statistics Canada: Merchandize Imports from U.S.A. Cansim Matrix 3913
Merchandize Exports to U.S.A. Cansim Matrix 3713

CANADA-ALL COUNTRIES EXCEPT UNITED STATES TRADE - MOTOR VEHCILES AND PARTS ($ 000's)

	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
EXPORTS											
PASSENGER AUTO	402,930	208,367	139,002	219,304	76,788	65,534	71,072	155,212	111,751	58,547	125,057
TRUCKS	112,213	107,806	92,863	53,217	66,564	53,086	46,345	91,162	98,297	621,244	56,337
PARTS	548,663	392,081	246,437	273,171	296,053	412,390	372,398	301,593	321,308	339,1424	298,450
TOTAL	1,063,806	708,254	478,302	545,692	439,405	531,010	489,815	547,967	531,356	460,215	479,844
IMPORTS											
PASSENGER AUTO	1,350,552	1,169,399	1,331,070	1,806,742	2,728,634	3,439,289	3,660,521	3,642,238	3,645,055	3,827,854	4,672,851
TRUCKS	212,363	197,084	206,196	213,248	240,909	358,030	310,621	326,277	265,211	256,559	296,051
PARTS	317,963	363,313	565,200	1,243,716	1,394,052	1,762,525	1,830,265	1,989,720	2,211,743	2,665,364	2,885,041
TOTAL	1,880,878	1,729,796	2,102,466	3,263,706	4,363,595	5,559,844	5,801,407	5,958,235	6,122,009	6,749,777	7,853,943
BALANCE											
PASSENGER AUTO	-947,622	-961,032	-1,192,068	-1,587,438	-2,651,846	-3,373,755	-3,589,449	-3,487,026	-3,533,304	-3,769,307	-4,547,794
TRUCKS	-100,150	-89,278	-113,333	-160,031	-174,345	-304,944	-264,276	-235,115	-166,914	-194,315	-239,714
PARTS	230,700	28,768	-318,763	-970,545	-1,097,999	-1,350,135	-1,457,867	-1,688,127	-1,890,435	-2,325,940	-2,586,591
TOTAL	-817,072	-1,021,542	-1,624,164	-2,718,014	-3,924,190	-5,028,834	-5,311,592	-5,410,268	-5,590,653	-6,289,562	-7,374,099

CANADA-JAPAN TRADE - MOTOR VEHCILES AND PARTS ($ 000's)

	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
EXPORTS											
PASSENGER AUTO	36	184	2,652	4,631	2,572	2,218	2,064	2,028	4,652	3,577	1,458
TRUCKS	36	19	28	14	8	0	0	94	163	86	0
PARTS	6,637	9,617	6,258	9,888	9,676	25,375	28,831	22,606	30,991	45,398	40,641
TOTAL	6,709	9,820	8,938	14,533	12,256	27,593	30,895	24,728	35,806	49,061	42,099
IMPORTS											
PASSENGER AUTO	994,787	829,884	975,257	1,164,907	1,483,742	2,048,006	2,361,562	2,486,791	2,668,719	2,726,967	3,048,498
TRUCKS	203,522	180,742	203,126	203,464	233,895	324,987	288,465	296,092	240,104	226,797	241,263
PARTS	97,339	121,653	156,850	324,427	414,177	601,344	709,586	551,612	716,656	1,057,335	1,146,062
TOTAL	1,295,648	1,132,279	1,335,233	1,692,798	2,131,814	2,974,337	3,359,613	3,334,495	3,625,479	4,011,099	4,435,823
BALANCE											
PASSENGER AUTO	-994,751	-829,700	-972,605	-1,160,276	-1,481,170	-2,045,788	-2,359,498	-2,484,763	-2,664,067	-2,723,390	-3,047,040
TRUCKS	-203,486	-180,723	-203,098	-203,450	-233,887	-324,987	-288,465	-295,998	-239,941	-226,711	-241,263
PARTS	-90,702	-112,036	-150,592	-314,539	-404,501	-575,969	-680,755	-529,006	-685,665	-1,011,937	-1,105,421
TOTAL	-1,288,939	-1,122,459	-1,326,295	-1,678,265	-2,119,558	-2,946,744	-3,328,718	-3,309,767	-3,589,673	-3,962,038	-4,393,724

Source: Statistics Canada: Merchandize Imports from Japan Cansim Matrix 3907
Merchandize Exports to Japan Cansim Matrix 3704

CANADA-MEXICO TRADE - MOTOR VEHCILES AND PARTS ($ 000's)

	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
EXPORTS											
PASSENGER AUTO	5,635	1,130	13	0	14	0	0	60	0	0	0
TRUCKS	322	2,286	17	82	13	0	108	162	161	0	906
PARTS	50,138	33,264	35,259	47,858	69,138	60,429	63,259	67,897	93,202	82,937	80,542
TOTAL	56,095	36,680	35,289	47,940	69,165	60,429	63,367	68,119	93,363	82,937	81,448
IMPORTS											
PASSENGER AUTO	0	8	16	8	755	18,642	61,473	10,116	73,279	117,395	672,856
TRUCKS	0	221	63	77	152	260	638	833	977	14,798	42,650
PARTS	18,279	47,704	197,381	560,448	532,032	635,077	532,193	544,717	597,014	701,178	898,388
TOTAL	18,279	47,933	197,460	560,533	532,939	653,979	594,304	555,666	671,270	833,371	1,613,894
BALANCE											
PASSENGER AUTO	5,635	1,122	-3	-8	-741	-18,642	-61,473	-10,056	-73,279	-117,395	-672,856
TRUCKS	322	2,065	-46	5	-139	-260	-530	-671	-816	-14,798	-41,744
PARTS	31,859	-14,440	-162,122	-512,590	-462,894	-574,648	-468,934	-476,820	-503,812	-618,241	-817,846
TOTAL	37,816	-11,253	-162,171	-512,593	-463,774	-593,550	-530,937	-487,547	-577,907	-750,434	-1,532,446

Source: Statistics Canada: Merchandize Imports from Mexico Cansim Matrix 3912
Merchandize Exports to Mexico Cansin Matrix 3711

E. MOTOR VEHICLE PARTS AND ACCESSORIES INDUSTRIES

Of the total shipments of $47.6 billion (1986$) for the Motor Vehicle Industry in 1989, $16.6 billion (35%) was accounted for by the Parts and Accessories Industries. Table E1 list the Parts and Accessories Industries with their respective four digit SIC identifier.

TABLE E1. INDUSTRY TITLES AND SIC NUMBER.

INDUSTRY TITLE	SIC
Motor Vehicle Engine and Engine Parts Industry	3251
Motor Vehicle Wiring Assemblies Industry	3252
Motor Vehicle Stamping Industry	3253
Motor Vehicle Steering and Suspension Parts Industry	3254
Motor Vehicle Wheel and Brake Industry	3255
Plastic Parts and Accessories for Motor Vehicle Industry	3256
Motor Vehicle Fabric Accessories Industry	3257
Other Motor Vehicle Accessories Parts and Assemblies Industries	3259

These industries employed 96,090 individuals in production and administrative functions in 1989, representing 57% of the employment of the total Motor Vehicle Industry.

Production and Employment

With the exception of the Other Motor Vehicle Accessories. Parts and Assemblies Industry (SIC 3259), the Motor Engine and Engine Parts Industry (SIC 3251) is the most important of all the Parts and Accessories Industries, accounting for over 25% of production (Table E2) and, with more than 15,000 employees, is responsible for 16% of the total employment. (Table E3).

TABLE E2. PRODUCTION (MILLIONS 1986$) BY PARTS INDUSTRIES

INDUSTRY	1981	1982	1983	1984	1985	1986	1987	1988	1989
SIC 3251	$1593	$1905	$2728	$3807	$3931	$3364	$3340	$3712	$4026
SIC 3252	181	184	212	278	286	398	386	386	517
SIC 3253	845	974	1346	1745	1984	2103	2137	2366	2277
SIC 3254	395	376	465	654	678	663	656	845	867
SIC 3255	718	655	835	1027	994	925	1055	1117	1161
SIC 3256	358	348	492	695	1024	1264	1241	1389	1486
SIC 3257	642	536	720	875	886	959	883	1053	1187
SIC 3259	1447	1591	2365	3176	3420	3247	3337	3950	5135

The Engine and Engine Parts Industry is followed by the Motor Vehicle Stamping Industry in importance, with $2.3 billion in manufacturing shipments, comprising 14% of the parts industries total, and 12% of the total employment, at 11,800 personnel.

The Plastic Parts and Accessories for Motor Vehicle Industry is the next important member of the parts industries with $1.4 billion in shipments (9%) and employment of 12,915 (13%) in 1989.

TABLE E3. EMPLOYMENT IN PARTS INDUSTRIES.

INDUSTRY	1981	1982	1983	1984	1985	1986	1987	1988	1989
SIC 3251	13,458	12,814	13,177	14,549	15,450	15,566	15,992	15,121	15,458
SIC 3252	2,649	2,747	2,864	3,802	4,105	5,645	5,120	4,906	5,441
SIC 3253	6,450	8,018	8,300	10,031	11,633	12,098	12,652	12,008	11,804
SIC 3254	3,986	3,503	4,010	5,601	5,606	5,069	5,376	6,574	6,963
SIC 3255	6,266	5,652	6,003	6,865	7,029	6,647	7,339	8,116	7,786
SIC 3256	4,258	4,247	5,379	7,739	9,530	11,202	12,309	12,971	12,915
SIC 3257	6,383	5,552	6,424	6,888	6,423	6,483	6,389	6,903	7,487
SIC 3259	16,206	15,731	18,553	22,360	24,598	22,531	23,373	27,736	28,236

These three industries account for almost half of the shipments of the parts industries and approximately a third of the employment.

WAGES AND SALARIES

The average production worker wage (1986$) for the assembly industry has risen from $14.90 in 1981 to $18.14 by 1989. The average production worker wage in the parts industries fell slightly from 12.98 in 1981 to $12.20 in 1989. Of the eight industries that comprise the parts sector, four had an average wage greater than $12.20 (Table E4) and four had an average wage less than $12.20. The only wage rate comparable to the assembly industry is the $15.33 average for the Motor Vehicle Engine and Engine Parts Industry in 1989. The remaining seven industries had wage rates that varied from less than half the assembly rate in 1989, for the Wiring Assemblies Industry (SIC 3252), to $4.22 below the assembly industry rate for the Plastic Parts and Accessories Industry (SIC 3257).

TABLE E4. AVERAGE HOURLY WAGE RATE IN PARTS INDUSTRIES. PRODUCTION WORKERS.

INDUSTRY	1981	1982	1983	1984	1985	1986	1987	1988	1989
SIC 3251	$15.43	$15.42	$16.36	$16.60	$16.97	$15.78	$14.84	$15.77	$15.33
SIC 3252	9.70	8.95	8.78	8.76	8.59	8.47	8.36	8.20	9.00
SIC 3253	13.47	12.63	12.17	12.55	12.23	12.47	12.22	12.86	12.96
SIC 3254	12.98	13.09	13.40	13.19	13.71	12.86	12.86	12.11	11.44
SIC 3255	11.85	11.96	13.05	13.60	12.94	12.22	11.95	12.40	12.33
SIC 3256	9.15	8.86	9.46	9.20	9.26	9.24	9.12	9.31	9.51
SIC 3257	12.38	11.93	11.93	12.68	13.69	13.36	12.82	13.92	13.01
SIC 3259	12.72	11.79	12.35	12.45	12.33	12.37	12.15	11.80	11.74

For the administrative personnel only the M.V. Engine and Engine Parts (SIC 3251) and the M.V. Fabric Accessories (SIC 3257) industries had average salary levels in 1989 greater than the $36,712 average for all the parts industries. (Table E5). The average salary levels of $45,499 for the Engine and Engine Parts Industry and $43,927 for the Fabric Accessories Industry actually exceeded the salary average for the assembly industry. The remaining parts industries were approximately $7,000 to $11,000 below the assembly average salary level in 1989.

TABLE E5. AVERAGE ANNUAL SALARY IN PARTS INDUSTRIES. ADMINISTRATIVE WORKERS.

INDUSTRY	1981	1982	1983	1984	1985	1986	1987	1988	1989
SIC 3251	$42881	$37075	$44859	$46804	$47582	$45671	$42351	$44161	$45500
SIC 3252	29976	23204	29395	30191	25389	32476	31886	31428	32304
SIC 3253	37753	37609	33033	37661	41683	37962	37292	39326	33804
SIC 3254	33684	38806	37363	35970	37026	39469	40513	39132	36376
SIC 3255	33120	32631	34302	35171	34676	35462	34547	35800	36501
SIC 3256	27747	28792	32143	31147	28487	30793	31657	33475	34365
SIC 3257	31186	31361	32518	36503	36591	35823	35675	40711	43927
SIC 3259	34039	31456	32616	33281	34791	35717	35042	34057	35108

Production Increases by Parts Industries

The overall parts industry experienced rapid growth , with output of $6.3 billion (1986$) in 1981, increasing by more than 2 1/2 times to $16.7 billion in 1989.

The growth for the individual industries that comprise the parts sector reflect this dramatic increase in production. Only the Wheel and Brake Industry (SIC 3255) and the Fabric Accessories Industry (SIC 3257) had increases, from 1981 to 1989 that were less than a doubling in output. (Table E2). The Other M.V. Parts Industry (SIC 3259) had output in 1989 that was 3 1/2 times that of 1981 and the Plastic Parts Industry (SIC 3256) had a more than quadrupled output from 1981 to 1989.

Employment Changes by Parts Industries

The overall growth in employment, from 59,656 employees in 1981 to 96,090 in 1989, that accompanied the increase in output was not evenly distributed across the eight industries that form the parts sector. (Table E3).

The largest increase in employment occurred in the Plastic Parts Industry (SIC 3256) where employment grew by more than a threefold, increasing from 4,258 employees in 1981 to 12,915 in 1989 and accounted for almost 24% of the total increase in employment in the parts industries. Two other notable changes occurred in the Wiring Assemblies Industry (SIC 3252), which doubled employment from 2,649 to 5,441 personnel and the Engine and Engine Parts Industry (SIC 3251), where output had increased more than 2 1/2 times from 1981 to 1989, while employment had risen only 15%.

Labour Productivity

The increases in output relative to the employment changes are reflected in a labour productivity measure for each of the parts industries. The production expressed in 1986$ divided by the production hours paid were used to produce a labour productivity measure. (Table E6).

TABLE E6. LABOUR PRODUCTIVITY IN PARTS INDUSTRIES (1986$).

INDUSTRY	1981	1982	1983	1984	1985	1986	1987	1988	1989
SIC 3251	$64	$84	$106	$131	$128	$111	$103	$118	$131
SIC 3252	40	42	43	44	44	42	47	50	55
SIC 3253	74	70	94	101	93	91	91	110	108
SIC 3254	60	67	69	66	73	73	69	73	70
SIC 3255	70	72	84	90	81	80	82	79	89
SIC 3256	52	47	53	51	58	61	55	61	64
SIC 3257	59	56	60	65	70	75	69	74	79
SIC 3259	52	61	72	80	77	78	78	78	101

The Motor Vehicle Engine and Engine Parts Industry had the largest improvement in productivity, doubling output per hour of $64 in 1981 to $131/hour in 1989. This was achieved by an increase in output in 1989 2 1/2 times that of 1981, with only a 15% increase in

employment in the same time period. This contrasts with the Plastic Parts Industry, which quadrupled output from 1981 to 1989, but also had an accompanying tripling in employment, with the result that labour productivity had risen by only 22% from 1981 to 1989, the second lowest of the eight parts industries.

COUNTRY OF CONTROL

The Manufacturing and Capital Longitudinal Analysis File[1] for 1984 and 1989 was used in the following analysis. This file contains a matching of any parts producers that are controlled by parent motor vehicle assemblers, allowing a classification of parts and accessories manufacturers as inhouse (controlled by an automotive assembler) or independent.

By means of a country of control identifier, also matched to this file, the analysis can be further expanded to measure Canadian owned control of the parts industry and any changes that have occurred from 1984 to 1989.

The overall shares that the assembly, trailer, and parts industries accounted for by manufacturers shipments are unchanged from 1984 to 1989. The assembly industry accounted for 62% of the total value of shipments of the motor vehicle industry in both 1984 and 1989. The trailer industry went from 3% to a 4% share and the parts and accessories industry represented 35% of shipments in 1984 and 34% in 1989.

Since the file allows a classification by country of control, some changes are evident in the motor vehicle industry when this criteria is used to identify shipments. (Table E7).

TABLE E7. SHIPMENTS BY COUNTRY OF CONTROL AND BY INDUSTRY

COUNTRY OF CONTROL		SHIPMENTS ($ 000'S)		INDUSTRY PERCENTAGE	
		1984	1989	1984	1989
CANADA	ASSEMBLY	$203,643	$269,147	0.98	0.98
	TRAILER	558,046	1,072,385	58.84	67.37
	PARTS	2,414,511	4,437,962	20.96	29.52
	TOTAL	3,176,200	5,779,494	9.56	13.09
UNITED STATES	ASSEMBLY	$20,236,778	$25,759,098	97.49	93.60
	TRAILER	239,244	405,543	25.22	25.48
	PARTS	8,623,516	9,742,385	74.85	64.80
	TOTAL	29,099,538	35,907,026	87.58	81.84
OTHER	ASSEMBLY	$317,015	$1,490,944	1.53	5.42
	TRAILER	151,182	113,887	15.94	7.15
	PARTS	482,801	853,361	4.19	5.68
	TOTAL	950,998	2,458,192	2.86	5.57

The assembly industry is dominated by American owned corporations, with 97.5% of the shipments of the assembly industry. From 1984 to 1989 transplant automotive assemblers started to establish facilities in Canada. The share of assembly accounted for by American controlled firms has declined to 93.6%, while assemblers with country of control other than the United States or Canada, has grown from 1.5% in 1984 to 5.4% in 1989.

The relatively small trailer industry has a strong Canadian ownership and increased from 59% in 1984 to 67.4% in 1989. This increase was at the expense of non - North American producers, who's share declined from 16% to 7%. American controlled companies were responsible for 1/4 of the manufacturing activity in the trailer industry.

Canadian controlled companies secured 57.6% of the $3.5 billion increase in the parts sector from 1984 to 1989, resulting in a 30% share of the parts industry in 1989, compared to a 21% share in 1984. Canadian owned and Other country owned corporations generally improved their share of the motor vehicle industry at the expense of American controlled firms.

INHOUSE AND INDEPENDENT SUPPLIERS

Parts manufacturers can be further classified as inhouse, when they are owned by a motor vehicle assembler, or independent. From 1984 to 1989 there has been a decrease of inhouse parts manufacturing from 48% to 40%, and these inhouse producers in Canada were all controlled by American owned assemblers. This is evidence of North American motor vehicle assemblers desire for less integration in the manufacturing process and an expanded role for independent automotive parts and accessories suppliers. (Table 2).

TABLE E8.
SHIPMENTS BY TYPE OF PARTS PRODUCER AND COUNTRY OF CONTROL.

	CANADA		UNITED STATES		OTHER		TOTAL	
	1984	1989	1984	1989	1984	1989	1984	1989
SHIPMENTS ($ 000'S)								
INHOUSE	0	0	5,505,721	5,974,954	0	28,782	5,505,721	6,003,736
INDEPENDENT	2,414,511	4,437,962	3,117,795	3,767,431	482,801	824,579	6,015,107	9,029,972
TOTAL	2,414,511	4,437,962	8,623,516	9,742,385	482,801	853,361	11,520,828	15,033,708
PERCENTAGE								
INHOUSE	-	-	100	99.52	-	0.48	47.79	39.94
INDEPENDENT	40.14	49.15	51.83	41.72	8.03	9.13	52.21	60.06
TOTAL	20.96	29.52	74.85	64.80	4.19	5.68	100	100

The remaining $9 billion of parts production (60%) in 1989 was supplied by independent parts manufacturers and represents an 8 percentage point increase from 1984.

The 60% of manufacturing of motor vehicle parts from independents in 1989 was distributed as follows; 49% from Canadian controlled firms, 42% from American controlled firms and 9% for Other country of control. If combined inhouse and independent parts production is considered the industry is still dominated by American controlled firms in Canada, although the percentage of their shipments has declined from 75% to 65% from 1984 to 1989.

EXPORTS

Statistical Annex "E" contains shipments and exports for the parts producing industries by Canada, United States and Other Country of contol , defined by inhouse and independent manufacturers.

Overall Canadian controlled independent parts manufacturers increased output from 1984 to 1989 from $2.4 billion to $4.4 billion, a 83.4% improvement. Exports by independent Canadian owned firm increased by 72%, less than the growth in production, resulting in the percentage of shipments for export declining slightly from 58% to 54%. (Table E9).

The lower growth rates in production of parts by American controllled firms and only a 4% increase in exports of parts by independent American firms and a 14% decline in exports of inhouse parts produced by American firms, highlight the improvement Canadian independent parts and accessories manufacturers have achieved in supplying the motor vehicle assemblers in both Canada and the United States.

TABLE E9. CHANGES IN SHIPMENTS AND EXPORTS. 1984 - 1989.

		Percentage Change From 1984 to 1989		Percentage of Shipments for Export	
		Shipments	Exports	1984	1989
Canada	Inhouse	-	-	-	-
	Independent	83.80%	71.86%	57.77%	54.01%
United States	Inhouse	8.5%	-14.40%	72.06%	56.84%
	Independent	20.84%	3.92%	64.79%	55.72%
Other	Inhouse	-	-	-	91.08%
	Independent	70.79%	75.82%	71.92	70.86%
Total	Inhouse	9.05%	-13.73%	72.06	57.00%
	Independent	50.12%	10.00%	62.54	56.26%

CANADIAN INDEPENDENTS IMPROVE PRODUCTION SHARE

Canadian and American parts manufacturers accounted for over 90% of the motor vehicle parts produced in Canada.

The inhouse manufacturers were 100% American controlled in 1984 and just under 100% in 1989. The inhouse manufacturers were responsible for 48% of the value of shipments in 1984 declining to 40% in 1989.

Of the $5.5 billion of inhouse motor vehicle parts, $3.3 billion (60%) was from inhouse American controlled firms in the Engine and Engine Parts Industry.

If only the Canadian and American independent parts manufacturers are considered an improvement in the Canadian controlled share of production is achieved in six of the eight parts industry. (Table E10).

TABLE E10. PERCENTAGE OF SHIPMENTS BY INDUSTRY
INDEPENDENT PARTS PRODUCERS.

	COUNTRY OF CONTROL			
	CANADA		UNITED STATES	
INDUSTRY	1984	1989	1984	1989
M.V. ENGINE AND ENGINE PARTS INDUSTRY SIC 3251	2.63%	0.04%	3.14%	4.00%
M.V. WIRING AND ASSEMBLIES INDUSTRY SIC 3252	48.44%	60.53%	44.48%	35.89%
M.V. STAMPING INDUSTRY SIC 3253	50.37%	57.84%	11.72%	7.43%
M.V. STEERING AND SUSPENSION PARTS INDUSTRY SIC 3254	17.63%	26.10%	82.37%	73.90%
M.V.WHEEL AND BRAKE INDUSTRY SIC 3255	13.24%	24.80%	83.59%	69.27%
PLASTIC PARTS AND ACCESSORIES FOR M.V. INDUSTRY SIC 3256	58.20%	60.61%	34.27%	31.71%
M.V. FABRIC ACCESSORIES INDUSTRY SIC 3257	7.11%	5.20%	14.77%	18.91%
OTHER M.V. ACCESSORIES PARTS AND ASSEMBLIES INDUSTRY SIC 3259	25.00%	33.60%	30.18%	31.97%
TOTAL M.V. PARTS AND ACCESSORIES INDUSTRY SIC 325	20.96%	29.52%	27.06%	25.06%

In three of the parts industries in 1989, Canadian controlled companies accounted for over half of the value of production; Wiring Assemblies Industry (60.5%), Stamping Industry (57.8%), and Plastic Parts and Accessories Industry (60.6%)

These three industry represented over $4 billion in production in 1989, $2.4 billion the output of Canadian controlled firms.

SUMMARY

The parts and accessories industries have experienced large increases in output from 1981 to 1989, with an accompanying increase in employment levels. None of the eight parts industries have an average hourly wage rate comparable to the rate in the assembly industry.

For salaried personnel, the M.V. Engine and Engine Parts and M.V. Fabric Accessories industries had average salary levels greater than those of the assembly industry, while the remaining parts industries salary levels were significantly lower than the average for the parts industry.

The M.V. Engine and Engine Parts and the Plastic Parts industries increased output 2 1/2 and 4 times respectively, from 1981 to 1989. All parts industries had increases in employment, led by the 8,657 increase for the Plastic Parts Industry.

The Engine and Engine Parts Industry achieved the largest gain in productivity, while the Plastic Parts Industry was the second lowest in improvement in labour productivity.

The assembly industry is almost completely controlled by American owned firms, while Canadian owned firms are responsible for the majority of shipments in the trailer industry. American owned firms also dominant the parts industries, however if only independent parts manufacturers are considered, then in 1989 Canadian firms produced a greater share of output (49%) than American controlled firms (42%), and in six of the eight parts industries, the share accounted for by Canadian controlled firms has increased from 1984 to 1989.

NOTE

1. A subset of the Manufacturing and Capital Longitudinal Analysis File, for the Motor Vehicle and Parts Industries was obtained from J. McVey (BTAI, Business and Trade Field), under whose direction the file was created.

STATISTICAL ANNEX "E"

CANADIAN CONTROLLED PARTS PRODUCERS - SHIPMENTS AND EXPORTS

INDUSTRY		SHIPMENTS ($ 000'S)		EXPORTS ($ 000'S)	
		1984	1989	1984	1989
Motor Vehicle Engine and Engine Parts Industry SIC 3251	INHOUSE	0	0	0	0
	INDEPENDENT	94,349	165,733	75,031	99,493
	TOTAL	94,349	165,733	75,031	99,493
Motor Vehicle Wiring Assemblies Industry SIC 3252	INHOUSE	0	0	0	0
	INDEPENDENT	143,162	283,181	75,875	169,139
	TOTAL	143,162	283,181	75,875	169,139
Motor Vehicle Stamping Industry SIC 3253	INHOUSE	0	0	0	0
	INDEPENDENT	707,772	1,281,747	453,915	639,028
	TOTAL	707,772	1,281,747	453,915	639,028
Motor Vehicle Steering and Suspension Parts Industry SIC 3254	INHOUSE	0	0	0	0
	INDEPENDENT	130,138	224,371	88,246	135,378
	TOTAL	130,138	224,371	88,246	135,378
Motor Vehicle Wheel and Brake Industry SIC 3255	INHOUSE	0	0	0	0
	INDEPENDENT	132,623	263,355	40,665	131,285
	TOTAL	132,623	263,355	40,665	131,285
Plastic Parts and Accessories for Motor Vehicle Industry SIC 3256	INHOUSE	0	0	0	0
	INDEPENDENT	390,704	839,515	190,958	443,558
	TOTAL	390,704	839,515	190,958	443,558
Motor Vehicle Fabric Accessories Industry SIC 3257	INHOUSE	0	0	0	0
	INDEPENDENT	56,138	56,032	24,286	23,127
	TOTAL	56,138	56,032	24,286	23,127
Other Motor Vehicle Accessories Parts and Assemblies Industry SIC 3259	INHOUSE	0	0	0	0
	INDEPENDENT	759,445	1,324,028	445,770	756,046
	TOTAL	759,445	1,324,028	445,770	756,046
Total Motor Vehicle Parts and Accessories Industry SIC 325	INHOUSE	0	0	0	0
	INDEPENDENT	2,414,511	4,437,962	1,394,746	2,397,054
	TOTAL	2,414,511	4,437,962	1,394,746	2,397,054

Source: Statistics Canada: Manufacturing and Capital Longitudinal Analysis File, BTAI, Business and Trade Field

UNITED STATES CONTROLLED PARTS PRODUCERS SHIPMENTS AND EXPORTS

INDUSTRY		SHIPMENTS ($ 000'S)		EXPORTS ($ 000'S)	
		1984	1989	1984	1989
Motor Vehicle Engine and Engine Parts Industry SIC 3251	INHOUSE	3,370,921	3,695,575	2,279114	1,938,773
	INDEPENDENT	112,514	161,146	80,793	124,317
	TOTAL	3,483,435	3,856,721	2,359,907	2,063,090
Motor Vehicle Wiring Assemblies Industry SIC 3252	INHOUSE	0	0	0	0
	INDEPENDENT	131,453	167,907	75,354	107,931
	TOTAL	131,453	167,907	75,354	107,931
Motor Vehicle Stamping Industry SIC 3253	INHOUSE	475,306	610,862	318,455	238,236
	INDEPENDENT	164,676	164,689	94,114	83,068
	TOTAL	639,982	775,551	412,569	321,304
Motor Vehicle Steering and Suspension Parts Industry SIC 3254	INHOUSE	0	0	0	0
	INDEPENDENT	224,371	608,074	410,679	394,430
	TOTAL	224,371	608,074	410,679	394,430
Motor Vehicle Wheel and Brake Industry SIC 3255	INHOUSE	0	0	0	0
	INDEPENDENT	837,384	735,524	662,709	527,257
	TOTAL	837,384	735,524	662,709	527,257
Plastic Parts and Accessories for Motor Vehicle Industry SIC 3256	INHOUSE	0	0	0	0
	INDEPENDENT	230,049	439,265	104,397	181,946
	TOTAL	230,049	439,265	104,397	181,946
Motor Vehicle Fabric Accessories Industry SIC 3257	INHOUSE	616,738	817,873	483,288	551,002
	INDEPENDENT	116,656	203,769	75,463	114,303
	TOTAL	733,394	1,021,642	558,751	665,305
Other Motor Vehicle Accessories Parts and Assemblies Industry SIC 3259	INHOUSE	1,042,756	850,644	886,343	668,177
	INDEPENDENT	916,989	1,259,714	516,414	565,806
	TOTAL	1,959,745	2,110,358	1,402,757	1,233,983
Total Motor Vehicle Parts and Accessories Industry SIC 325	INHOUSE	5,505,721	5,974,954	3,967,200	3,396,188
	INDEPENDENT	3,117,795	3,767,431	2,019,923	2,099,058
	TOTAL	8,623,516	9,742,385	5,987,123	5,495,246

Source: Statistics Canada: Manufacturing and Capital Longitudinal Analysis File, BTAI, Business and Trade Field

OTHER COUNTRY CONTROLLED PARTS PRODUCERS SHIPMENTS AND EXPORTS

INDUSTRY		SHIPMENTS ($ 000'S)		EXPORTS ($ 000'S)	
		1984	1989	1984	1989
Motor Vehicle Engine and Engine Parts Industry SIC 3251	INHOUSE	0	0	0	0
	INDEPENDENT	3,406	2,665	3,078	2,665
	TOTAL	3,406	2,665	3,078	2,665
Motor Vehicle Wiring Assemblies Industry SIC 3252	INHOUSE	0	0	0	0
	INDEPENDENT	20,908	16,771	10,471	7,379
	TOTAL	20,908	16,771	10,471	7,379
Motor Vehicle Stamping Industry SIC 3253	INHOUSE	0	0	0	0
	INDEPENDENT	57,258	158,644	29,601	92,316
	TOTAL	57,258	158,644	29,601	92,316
Motor Vehicle Steering and Suspension Parts Industry SIC 3254	INHOUSE	0	0	0	0
	INDEPENDENT	0	0	0	0
	TOTAL	0	0	0	0
Motor Vehicle Wheel and Brake Industry SIC 3255	INHOUSE	0	28,782	0	26,216
	INDEPENDENT	31,823	34,138	7,036	12,352
	TOTAL	31,823	62,920	38,568	38,568
Plastic Parts and Accessories for Motor Vehicle Industry SIC 3256	INHOUSE	0	0	0	0
	INDEPENDENT	50,565	106,319	27,347	63,016
	TOTAL	50,565	106,319	27,347	63,016
Motor Vehicle Fabric Accessories Industry SIC 3257	INHOUSE	0	0	0	0
	INDEPENDENT	0	0	0	0
	TOTAL	0	0	0	0
Other Motor Vehicle Accessories Parts and Assemblies Industry SIC 3259	INHOUSE	0	0	0	0
	INDEPENDENT	318,841	506,042	269,696	406,548
	TOTAL	318,841	506,042	269,696	406,548
Total Motor Vehicle Parts and Accessories Industry SIC 325	INHOUSE	0	28,782	0	26,216
	INDEPENDENT	482,801	824,579	347,229	584,276
	TOTAL	482,801	853,361	347,229	610,492

Source: Statistics Canada: Manufacturing and Capital Longitudinal Analysis File, BTAI, Business and Trade Field