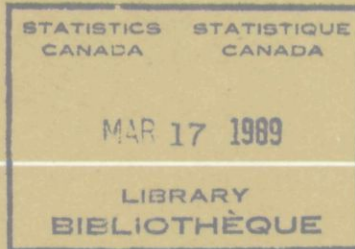




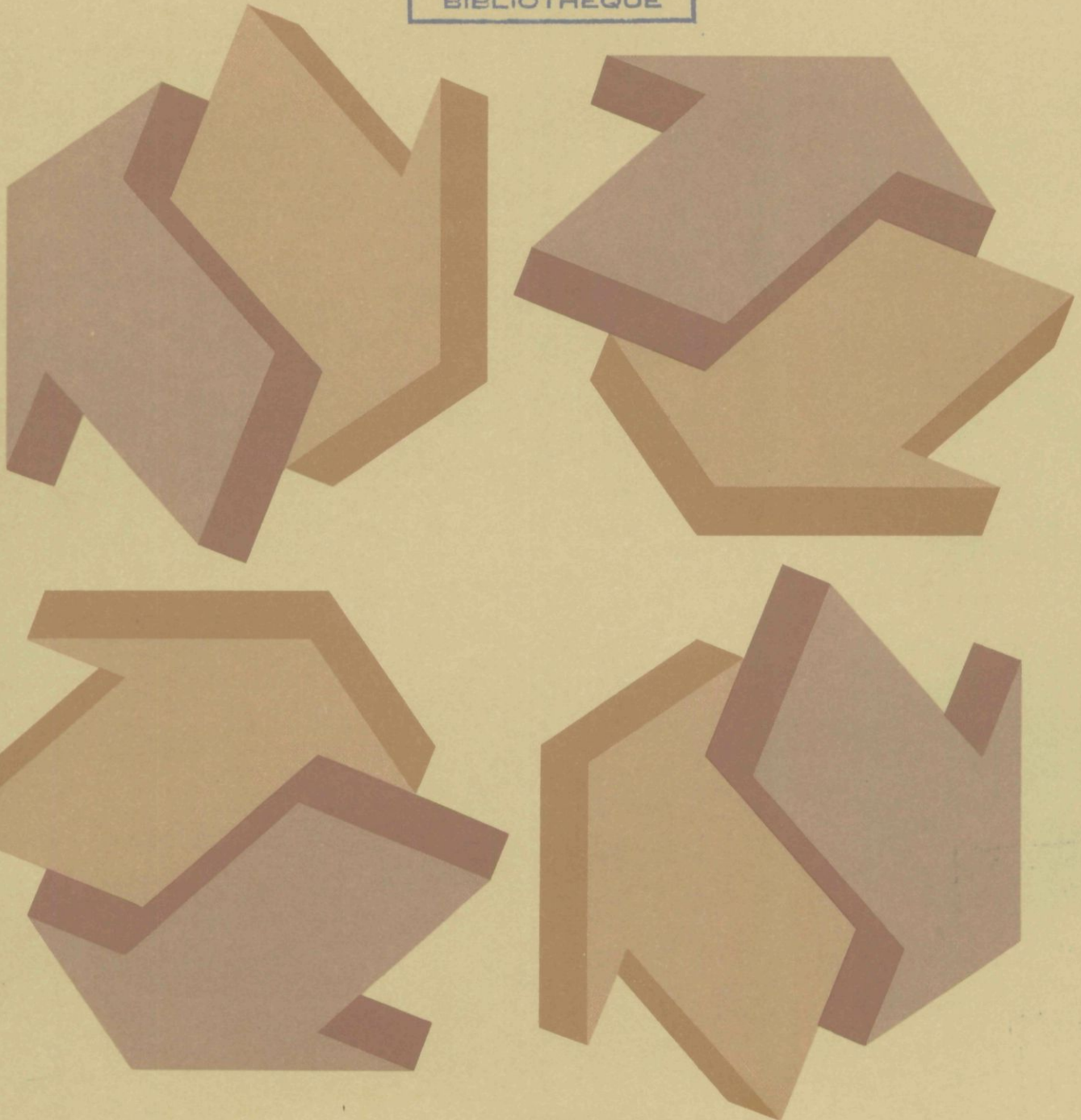
Preliminary Statement of Canadian International Trade

(H.S. Based)

January 1989



Not for release before 7 a.m. E.S.T.
Friday, March 17, 1989



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Statistics Canada
International Trade Division

Preliminary Statement of Canadian International Trade (H.S. Based)

January 1989

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for Science and Technology

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HIGHLIGHTS:

- **Canadian exports totalled \$11.9 billion in January 1989, an increase of over \$0.5 billion from the December level.**
- **Imports totalled \$11.0 billion, up \$312 million from the previous month.**
- **Canada's trade surplus rose \$241 million in January to total \$882 million.**
- **The revised short-term trend for exports continued to be up for the fourth straight month in December, while the trend for imports posted its sixth consecutive increase.**
- **The automotive products sector was the largest contributor to the increase in international merchandise trade in January.**
- **Exports of forestry products declined sharply, falling more than \$100 million from the December level.**
- **Exports to the United States increased \$314 million to \$8.8 billion, while imports were up \$252 million to total \$7.7 billion.**

Monthly Summary

A surge in the trade of automotive products, particularly passenger automobiles, boosted Canada's merchandise exports in January 1989 to a seasonally-adjusted level of \$11.9 billion. This represents an increase of more than \$0.5 billion over the revised level reported for December 1988, more than offsetting the \$416 million decline observed in December 1988 and pushing total exports over the \$11 billion mark for the sixth consecutive month.

Higher production of motor vehicles following a slowdown of more than a month, contributed to the increase in exports. The upward trend in the prices of certain metals including copper and zinc also resulted in significant gains in the exports of industrial goods.

The recent drop in forestry product prices, on the other hand, has exerted downward pressure on exports of wood pulp, newsprint and other wood products.

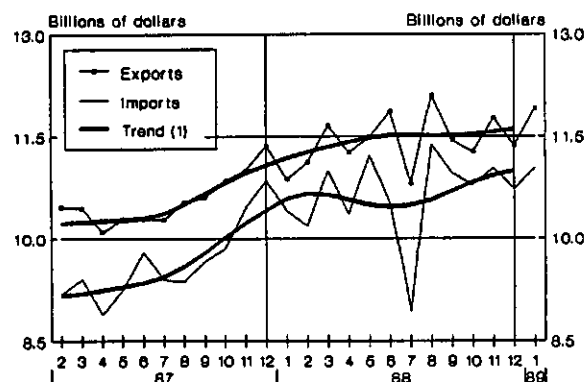
Trade with the United States (where a number of indicators pointed to continued economic growth in January) accounted for the largest share of this increase in Canadian exports.

Imports were up \$312 million from the revised total for December to \$11.0 billion, regaining lost ground in the previous month. Imports had dropped \$308 million in December from the November level.

Imports of motor vehicle parts, in particular, were up substantially in January, coinciding with the increase in production of passenger automobiles.

Imports of industrial goods also rose sharply, contributing to the overall increase in imports.

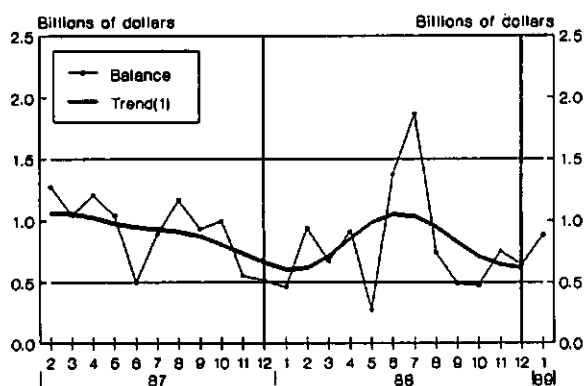
Merchandise Trade



(1) The short-term trend represents a weighted average of the data.

As a result, Canada's trade surplus rose sharply in January to \$882 million, an increase of \$241 million over the December level, with exports rising faster than imports. The December 1988 surplus totalled \$641 million in Canada's favour, a decrease of \$107 million from the November 1988 level. Canada's surplus with its trading partners fell below the \$500 million mark in September and October 1988, but has since regained lost ground.

Trade balance



(1) The short-term trend represents a weighted average of the data.

Short-Term Trend

(excluding current month)

The short-term trend is the result of a weighted moving average of thirteen terms, and it is therefore possible that the trend of the seasonally adjusted values may not point in the same direction as the short-term trend. In addition, the trend for the last month is not analysed since it frequently undergoes extensive change with the inclusion of data for subsequent months.

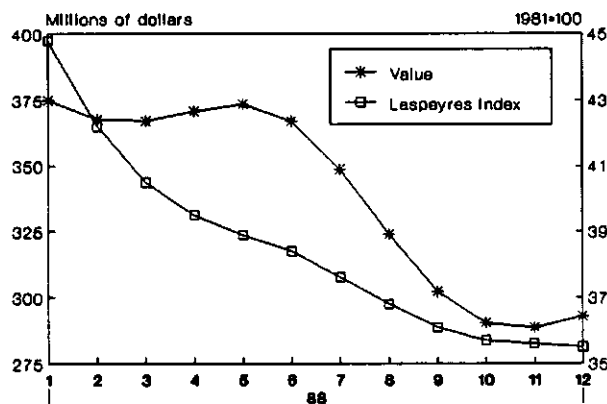
Exports

Revised data indicate that the short-term trend for exports rose 0.4% in December, the fourth consecutive increase and a slight acceleration in the rate of growth compared to the November level (0.3%).

- The trend for exports of finished products, including automotive products, continued to be up for the fifth straight month, advancing 0.5%.
- Since August 1988, the trend for exports of automotive products has continued to be up, gaining 0.5% in October, November and December. Although the trend for exports of trucks (+4.4%) and motor vehicle parts (+3.6%) was up sharply, the trend for exports of passenger automobiles, on the other hand, was down (-4.1%).
- After six consecutive months of decreases, the trend for exports of crude petroleum reversed in December to post an increase of 1.5%, reflecting a modest recovery in this sector due to higher crude petroleum prices on world markets.

Crude Petroleum Exports

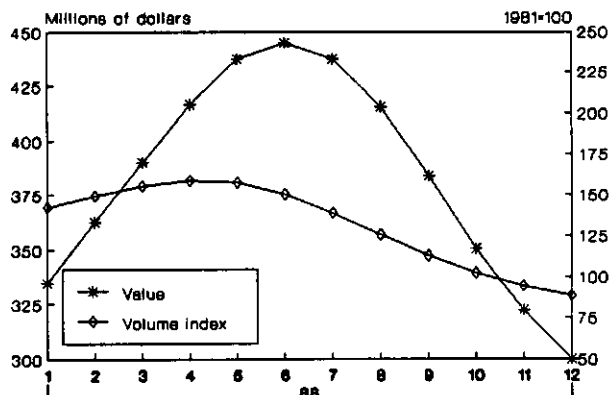
Trend



- The short-term trend for wheat exports continued to fall, posting its sixth straight decline, reflecting the effects of the drought in Western Canada.

Exports of Wheat

Trend



Imports

The revised short-term trend for imports recorded its sixth consecutive increase. However, the rate of growth slowed slightly from 0.9% in November to 0.6% in December.

- Imports of crude materials contributed the most to the increase in the overall trend. The trend for imports of crude petroleum rose 6.9% in December, following increases of 1.4% and 5.6% in October and November 1988.
- Imports of passenger automobiles were also up substantially in December (2.0%). Since July 1988, the short-term trend for imports of automobiles has continued to rise.
- The trend for imports of machinery and equipment rose 0.6% in December 1988. Since April 1987, imports of machinery and equipment have displayed an upward trend, with average increases of 1.4% per month.
- The sharpest declines, on the other hand, were recorded for imports of motor vehicle parts, with a 2.6% drop in the trend in December compared to a 1.4% decline in November.

Detailed Analysis by Commodities and Trading Partners

Commodities

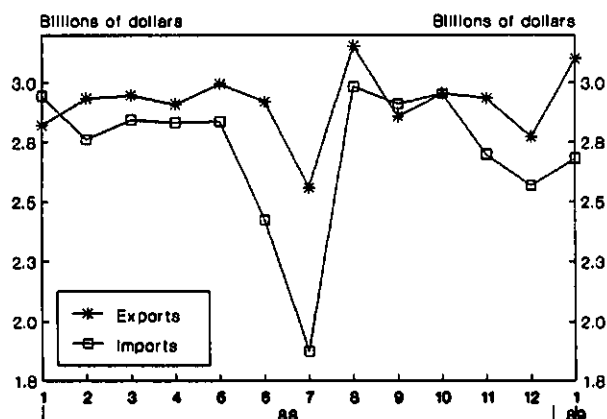
The strength of exports in January (+4.9%) was reflected primarily in the automotive products sector, which posted an increase of more than \$300 million.

Exports of passenger automobiles alone increased \$253 million in January, to total \$1.3 billion. While this is an increase from the previous month, it is still \$90 million less than the monthly average for this category in 1988.

Imports in the automotive products sector, particularly motor vehicle parts, contributed largely to the 2.9% overall increase of the total.

Trade in automotive products alone represented 26.4% of Canada's total exports of products in January. In addition, the surplus in this sector vis-à-vis Canada's trade partners more than doubled in January to total \$419 million.

Trade in Automotive Products



Exports of metals and alloys rebounded \$117 million to reach a total of \$1.1 billion. The prices of a number of metals, notably copper and zinc, rose substantially in 1988, contributing to the increase in Canadian exports of industrial goods.

Exports of machinery and equipment have almost completely regained lost ground in December, when they fell \$116 million, advancing \$86 million in January.

Total exports of forestry products declined substantially, dropping \$100 million from the December level. Exports of newsprint and other papers fell \$56 million, while exports of wood pulp and wood products were down \$22 million and \$21 million respectively.

After falling by more than \$385 million between October and December 1988, imports of automotive products rose \$114 million in January. This reversal was almost entirely attributable to imports of motor vehicle parts, which increased \$193 million to \$1.3 billion. Imports of passenger automobiles, on the other hand, were down \$104 million to \$1.1 billion. The January decline was due primarily to lower imports of automobiles from the United States and the E.E.C.

Imports of industrial goods, a series which has hovered around the \$2 billion mark since August 1988, posted a substantial increase of \$158 million, owing primarily to a \$98 million increase in imports of chemicals and plastics.

Imports of machinery and equipment, which demonstrated considerable vitality throughout 1988, remained stable at \$3.5 billion in January 1989.

Trading Partners

Exports to the United States totalled \$8.8 billion, up \$314 million from December.

Exports to E.E.C. countries totalled \$991 million, an increase of more than \$80 million compared to December.

Exports to Japan totalled \$706 million, down slightly from the December figure of \$720 million. Exports to Japan represented almost 6% of total Canadian exports in January.

Imports from the United States totalled \$7.7 billion, an increase of \$252 million over December. Canadian imports from the United States were concentrated primarily in the automotive products sector, which accounted for more than a third of Canada's trade with this major trading partner.

Imports from "Other O.E.C.D. countries" and "Other countries" posted increases, while declines of imports were noted from the E.E.C. and Japan.

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Table 1
Merchandise Trade of Canada
 January 1989
 Balance of Payments Basis

	Exports (1)	Imports (1)	Exports Raw	Imports Raw	Exports S.A.(3)	Imports S.A.(3)	Balance S.A.(3)	Period-to-period change(2)		
								Exports S.A.(3)	Imports S.A.(3)	Balance S.A.(3)
	\$ millions							%	%	\$ millions
1983	90,613	75,520	90,556	73,098	90,556	73,098	17,457	7.3	9.5	-197
1984	112,384	95,460	111,330	91,493	111,330	91,492	19,838	22.9	25.2	2,381
1985	119,474	104,355	119,070	102,669	119,070	102,669	16,400	7.0	12.2	-3,437
1986	120,670	112,511	119,889	110,079	119,889	110,079	9,811	0.7	7.2	-6,590
1987	125,087	116,239	126,125	115,149	126,125	115,149	10,976	5.2	4.6	1,166
1988	137,695	131,554	137,106	127,513	137,106	127,513	9,594	8.7	10.7	-1,382
1987										
First quarter	29,714	27,776	30,278	27,346	30,833	27,662	3,171	1.4	-0.1	457
Second quarter	31,687	29,578	31,832	29,326	30,668	27,915	2,752	-0.5	0.9	-418
Third quarter	29,628	27,814	30,071	27,472	31,407	28,419	2,988	2.4	1.8	236
Fourth quarter	34,057	31,071	33,944	31,005	33,217	31,153	2,065	5.8	9.6	-924
1988										
First quarter	34,066	35,333	33,359	32,518	33,665	31,593	2,072	1.3	1.4	7
Second quarter	36,366	33,720	36,175	32,970	34,645	32,088	2,557	2.9	1.6	485
Third quarter	32,142	30,504	32,413	30,031	34,377	31,278	3,099	-0.8	-2.5	542
Fourth quarter	35,121	31,996	35,159	31,994	34,419	32,553	1,866	0.1	4.1	-1,234
1988										
January	10,307	12,498	10,183	10,119	10,874	10,412	461	-4.3	-4.0	-56
February	11,259	10,530	10,911	10,303	11,123	10,185	938	2.3	-2.2	477
March	12,500	12,306	12,265	12,096	11,668	10,996	672	4.9	8.0	-266
April	11,452	10,685	11,398	10,442	11,262	10,355	908	-3.5	-5.8	235
May	12,078	11,712	12,035	11,458	11,500	11,224	276	2.1	8.4	-632
June	12,836	11,323	12,742	11,069	11,883	10,510	1,373	3.3	-6.4	1,098
July	9,641	8,896	9,829	8,846	10,803	8,936	1,867	-9.1	-15.0	494
August	10,857	10,747	10,928	10,500	12,123	11,382	741	12.2	27.4	-1,126
September	11,644	10,862	11,656	10,685	11,451	10,960	491	-5.5	-3.7	-250
October	11,905	10,979	11,745	10,889	11,274	10,796	477	-1.5	-1.5	-14
November	12,254	11,239	12,269	11,204	11,781	11,033	748	4.5	2.2	271
December	10,962	9,779	11,144	9,901	11,365	10,724	641	-3.5	-2.8	-107
1989										
January	11,105	10,565	11,319	10,487	11,918	11,037	882	4.9	2.9	241
Year-to-date										
1988	10,307	12,498	10,183	10,119	10,874	10,412	461	9.6	14.7	-389
1989	11,105	10,565	11,319	10,487	11,918	11,037	882	9.6	6.0	420

(1) Customs Basis

(2) Change over previous period

(3) Seasonally Adjusted.

Note: Due to rounding monthly data may not add up to quarterly data and quarterly data may not add up to annual data.

Table 2
Merchandise Trade by Principal Trading Areas
 January 1989
 Seasonally Adjusted, Balance of Payments Basis

	Dec.	Jan.	Period-to-period change				Year-to-date Total	Change over previous year	
			Dec.	Jan.	Dec.	Jan.		%	\$ millions
	\$ millions		%	%	\$ millions		\$ millions	%	\$ millions
Exports to:									
United States	8,461.1	8,775.1	-2.2	3.7	-189.6	314.0	8,775.1	8.0	651.4
United Kingdom	279.0	308.2	-5.0	10.5	-14.7	29.2	308.2	8.6	24.3
E.E.C. 86 excl. U.K.	628.2	682.6	-14.3	8.7	-104.8	54.4	682.6	19.6	112.0
Japan	719.6	705.8	-2.0	-1.9	-14.7	-13.8	705.8	15.1	92.8
Other O.E.C.D. 86 *	231.0	248.2	-24.5	7.5	-74.9	17.2	248.2	4.4	10.6
Other countries	1,046.0	1,198.4	-1.6	14.6	-16.8	152.4	1,198.4	14.7	153.5
Total	11,365.0	11,918.3	-3.5	4.9	-415.6	553.4	11,918.3	9.6	1,044.6
Imports from:									
United States	7,459.4	7,711.1	-0.8	3.4	-61.5	251.7	7,711.1	7.5	538.2
United Kingdom	435.9	381.7	21.9	-12.4	78.3	-54.3	381.7	-2.0	-7.9
E.E.C. 86 excl. U.K.	852.9	804.3	-6.8	-5.7	-62.4	-48.6	804.3	-10.1	-89.9
Japan	670.9	633.1	-5.2	-5.6	-36.5	-37.8	633.1	2.5	15.6
Other O.E.C.D. 86 *	295.1	314.0	-26.8	6.4	-107.9	18.9	314.0	-2.8	-8.9
Other countries	1,010.2	1,192.4	-10.5	18.0	-118.3	182.2	1,192.4	17.5	177.2
Total	10,724.4	11,036.5	-2.8	2.9	-308.2	312.2	11,036.5	6.0	624.2
Balance with:									
United States	1,001.7	1,064.1			-128.1	62.4	1,064.1		113.2
United Kingdom	-156.9	-73.5			-93.0	83.4	-73.5		32.3
E.E.C. 86 excl. U.K.	-224.6	-121.7			-42.5	102.9	-121.7		201.9
Japan	48.7	72.6			21.8	23.9	72.6		77.2
Other O.E.C.D. 86 *	-64.1	-65.8			33.0	-1.7	-65.8		19.4
Other countries	35.9	6.0			101.5	-29.8	6.0		-23.7
Total	640.6	881.8			-107.3	241.2	881.8		420.4

*Series with no seasonality. Note: Portugal and Spain are included in the E.E.C.

Imports for January 1989 by country of origin from the United States (including Puerto Rico and the U.S. Virgin Islands) amounted to \$6,874.1 million. This represents the starting figure from which the Canada/United States reconciliation takes place.

Table 3
Exports by Commodity Groupings
 January 1989
 Balance of Payments Basis

	Seasonally adjusted					Raw values		
	Nov.	Dec.	Jan.	Year-to-date		Percentage change		
				Value	% change	Jan. '89/ Jan. '88	Jan. '88/ Jan. '87	Jan. '87/ Jan. '86
	\$ millions							
AGRICULTURAL AND FISHING PRODUCTS	1,023.4	1,047.3	1,099.2	1,099.2	7.2	13.2	8.5	-5.5
Wheat	293.9	305.3	305.8	305.8	-8.2	-4.3	28.9	-19.7
Other agricultural and fishing products	729.5	742.0	793.4	793.4	14.6	20.2	2.2	-0.0
ENERGY PRODUCTS	917.1	917.4	1,000.7	1,000.7	-8.6	-5.3	21.2	-35.2
Crude petroleum *	238.0	324.1	342.8	342.8	-10.4	-10.4	19.1	-38.9
Natural gas	295.5	251.1	241.5	241.5	1.4	1.3	24.0	-32.1
Other energy products	383.6	342.2	416.4	416.4	-12.1	-5.7	21.2	-33.9
FORESTRY PRODUCTS	1,894.0	1,881.7	1,782.1	1,782.1	8.3	10.4	6.7	16.5
Lumber and sawmill products	603.9	610.1	589.0	589.0	3.9	5.9	3.3	-1.3
Woodpulp and other wood products	592.1	578.4	556.2	556.2	18.3	19.4	16.3	59.8
Newsprint and other paper and paperboard	698.0	693.2	636.8	636.8	4.7	7.2	3.0	12.8
INDUSTRIAL GOODS AND MATERIAL	2,539.2	2,472.2	2,554.0	2,554.0	15.0	15.9	15.5	-6.3
Metal ores	423.3	381.8	394.2	394.2	-7.2	-7.0	4.2	11.8
Chemicals, plastics and fertilizers	631.2	567.4	549.6	549.6	6.0	5.8	37.3	-15.1
Metals and alloys	977.5	1,028.8	1,145.4	1,145.4	42.8	44.2	8.4	-8.1
Other industrial goods and materials	507.1	494.2	464.8	464.8	-2.4	-1.9	18.6	-8.0
MACHINERY AND EQUIPMENT	1,872.8	1,757.1	1,842.8	1,842.8	6.1	7.1	13.7	3.2
Industrial and agricultural machinery	452.8	414.2	437.3	437.3	8.0	8.5	28.5	-12.1
Aircraft and other transportation equipment	361.8	396.9	411.6	411.6	28.6	26.9	-17.3	9.0
Other machinery and equipment	1,058.3	946.0	993.8	993.8	-1.7	0.8	21.1	8.0
AUTOMOTIVE PRODUCTS	2,985.3	2,823.2	3,150.9	3,150.9	9.8	9.9	8.9	-14.3
Passenger autos and chassis	1,214.1	1,044.9	1,297.8	1,297.8	-3.8	-4.3	13.2	-10.7
Trucks and other motor vehicles	759.1	767.5	845.8	845.8	32.4	32.9	71.6	-43.6
Motor vehicle parts	1,012.0	1,010.8	1,007.3	1,007.3	14.0	16.5	-15.8	-2.7
OTHER CONSUMER GOODS	221.7	228.2	236.9	236.9	0.2	0.4	12.5	5.9
SPECIAL TRANSACTIONS TRADE *	65.7	64.5	65.3	65.3	15.4	15.4	130.5	9.9
UNALLOCATED BOP ADJUSTMENTS *	261.2	173.4	186.3	186.3	-1531.2	-1531.2	-104.7	28.5
TOTAL	11,780.5	11,365.0	11,918.3	11,918.3	9.6	11.2	8.9	-7.7

*Series has no seasonality.

Table 4
Imports by Commodity Groupings
 January 1989
 Balance of Payments Basis

	Seasonally adjusted					Raw values		
	Nov.	Dec.	Jan.	Year-to-date Value	% change	Jan. '89/ Jan. '88	Jan. '88/ Jan. '87	Jan. '87/ Jan. '86
	\$ millions							
AGRICULTURAL AND FISHING PRODUCTS	689.7	663.7	654.3	654.3	14.7	13.4	-7.1	10.0
Fruits and vegetables	233.9	224.7	223.9	223.9	8.2	6.0	2.4	6.0
Other agricultural and fishing products	455.8	439.1	430.4	430.4	18.3	17.9	-12.1	12.3
ENERGY PRODUCTS	449.0	461.7	458.3	458.3	6.2	17.7	-5.6	-32.3
Crude petroleum	243.1	249.2	270.4	270.4	1.9	0.2	6.7	-26.2
Other energy products	205.9	212.4	187.9	187.9	13.2	68.5	-29.4	-41.5
FORESTRY PRODUCTS	105.7	106.4	115.6	115.6	14.8	9.9	-2.0	30.5
INDUSTRIAL GOODS AND MATERIALS	2,170.3	2,087.4	2,245.4	2,245.4	20.7	15.4	13.4	-9.9
Metals and metal ores	648.9	717.9	709.3	709.3	28.9	24.4	6.6	-28.3
Chemicals and plastics	631.5	559.5	657.6	657.6	25.7	20.2	7.5	1.9
Other industrial goods and materials	889.8	810.0	878.5	878.5	11.6	6.8	22.5	-1.1
MACHINERY AND EQUIPMENT	3,521.4	3,469.9	3,483.0	3,483.0	6.6	5.3	26.9	3.2
Industrial and agricultural machinery	1,149.6	1,079.5	1,076.2	1,076.2	9.6	8.3	4.4	4.0
Aircraft and other transportation equipment	448.5	587.2	553.0	553.0	-7.6	-6.9	79.1	8.9
Office machines and equipment	490.2	521.5	500.1	500.1	21.4	22.9	-0.8	5.6
Other machinery and equipment	1,433.1	1,281.7	1,353.6	1,353.6	6.3	3.7	41.3	-0.5
AUTOMOTIVE PRODUCTS	2,748.7	2,617.9	2,732.2	2,732.2	-8.7	-12.4	32.7	-16.6
Passenger autos and chassis	1,101.3	1,191.1	1,086.7	1,086.7	30.7	29.4	2.3	-25.1
Trucks and other motor vehicles	313.4	278.3	304.3	304.3	-5.7	-5.9	-1.5	21.2
Motor vehicle parts	1,334.1	1,148.6	1,341.2	1,341.2	-27.0	-26.8	55.5	-17.8
OTHER CONSUMER GOODS	1,187.3	1,163.3	1,216.7	1,216.7	15.8	10.5	4.6	6.1
Apparel and footwear	254.2	260.0	286.4	286.4	12.5	4.0	5.4	11.8
Miscellaneous consumer goods	933.1	903.3	930.3	930.3	16.8	13.0	4.3	4.0
SPECIAL TRANSACTIONS TRADE *	241.3	223.7	205.7	205.7	-1.7	-1.7	48.9	0.9
UNALLOCATED BOP ADJUSTEMENTS *	-80.8	-69.7	-74.6	-74.6	6.2	6.2	10.8	-3.6
TOTAL	11,032.6	10,724.4	11,036.5	11,036.5	6.0	3.6	19.2	-6.5

(*)Series has no seasonality.

Table 5
Merchandise Trade of Canada
 Constant Dollars and Laspeyres Price Indexes
 December 1989
 Seasonally adjusted, Balance of Payments Basis

	Constant dollars (1981) (1)				Laspeyres price index (2)			
	Exports		Imports		1981 = 100.0		Period-to-period change (3)	
	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports
	\$ millions		%				%	
1983	90,194	71,526	7.4	11.1	100.8	103.7	0.0	-0.6
1984	106,931	85,581	18.6	19.7	105.0	109.6	4.2	5.7
1985	113,829	94,123	8.5	10.0	106.0	113.4	1.0	3.5
1986	118,111	101,545	3.8	7.9	104.0	112.8	-2.0	-0.5
1987	126,027	109,825	6.7	8.2	105.1	112.3	1.1	-0.4
1988	137,732	125,079	9.3	13.9	107.8	110.6	2.6	-1.6
1988								
First quarter	29,106	25,282	-0.7	4.2	105.1	116.2	-0.8	1.0
Second quarter	29,050	24,805	-0.2	-1.9	103.8	112.2	-1.2	-3.4
Third quarter	29,640	25,630	2.0	3.3	103.5	112.2	-0.3	-0.0
Fourth quarter	30,314	25,829	2.3	0.8	103.9	112.7	0.4	0.5
1987								
First quarter	31,049	26,177	2.4	1.3	102.8	111.6	-1.0	-1.0
Second quarter	30,829	26,688	-0.7	2.0	104.9	112.3	2.0	0.6
Third quarter	31,340	27,267	1.7	2.2	105.8	112.7	0.9	0.4
Fourth quarter	32,809	29,693	4.7	8.9	106.8	113.4	0.9	0.6
1988								
First quarter	34,095	30,544	3.9	2.9	106.3	111.3	-0.5	-1.9
Second quarter	35,287	31,634	3.5	3.6	106.5	110.2	0.2	-1.0
Third quarter	34,381	30,903	-2.6	-2.3	108.7	110.2	2.1	0.0
Fourth quarter	33,969	31,998	-1.2	3.5	109.9	110.7	1.1	0.5
1988								
January	10,914	9,777	-1.3	-6.0	106.5	112.5	-1.0	-0.9
February	11,164	9,882	2.3	1.1	106.6	111.2	0.1	-1.2
March	12,017	10,885	7.6	10.1	105.9	110.5	-0.6	-0.6
April	11,490	10,222	-4.4	-6.1	106.2	110.3	0.3	-0.2
May	11,752	10,975	2.3	7.4	106.3	110.4	0.2	0.1
June	12,045	10,436	2.5	-4.9	107.0	109.9	0.7	-0.5
July	11,046	9,045	-8.3	-13.3	107.7	109.5	0.6	-0.4
August	11,964	11,086	8.3	22.6	109.0	110.3	1.2	0.8
September	11,371	10,772	-5.0	-2.8	109.4	110.9	0.4	0.5
October	11,133	10,540	-2.1	-2.2	109.3	109.9	-0.1	-0.9
November	11,617	10,820	4.4	2.7	110.5	111.2	1.1	1.1
December	11,219	10,638	-3.4	-1.7	109.9	111.0	-0.6	-0.2
1989								
January	11,593	10,825	3.3	1.8	110.8	110.5	0.9	-0.5
Year-to-date								
1988	10,914	9,777	8.4	14.3				
1989	11,593	10,825	6.2	10.7				

(1) The Paasche current weighted price index used to calculate constant dollars can be derived by dividing current values by the constant dollars above.

(2) The Laspeyres price index uses fixed weights based on 1981 trade and therefore reflects changes in price only.

(3) Change over previous period.

Note: Due to rounding monthly data may not add up to quarterly data and quarterly data may not add up to annual data.

PRICE INDEXES ADJUSTED FOR EXCHANGE RATE (D. Pilon)

In order to facilitate the analysis of price trends in international trade, Statistics Canada introduced in March 1988 a series of monthly indexes which include, for both imports and exports: 1) weighted exchange rate indexes; and 2) price indexes expressed in foreign currencies.

In light of the major fluctuations in the external value of the Canadian dollar in recent years, the information contributed by an analysis of the behaviour of import and export price indexes expressed in foreign currencies will be helpful to evaluate the competitiveness of Canadian businesses both on international and Canadian markets.

For example, the import price index expressed in foreign currencies could be used to monitor trends in the export revenue of foreign producers on the Canadian market, while the export price index expressed in foreign currencies would indicate price movements of Canadian exports as perceived by the foreign purchaser.

WEIGHTED EXCHANGE RATE INDEXES

Because of the wide swings in the value of the American dollar relative to overseas currencies, it is becoming increasingly important to monitor the behaviour of the Canadian dollar, not only in relation to the American dollar, but also in relation to all the currencies of Canada's main overseas trading partners.

To accomplish this, a weighted exchange rate index must be constructed. The Bank of Canada produces such an index, using as weights the market shares of Canada's main trading partners in our bilateral trade.

$$\sum_{i=1}^n \left(\left[\frac{(X_i + M_i)}{\sum_i (X_i + M_i)} \right] * E_i \right)$$

where:

X_i = Canadian exports to country i

M_i = Canadian imports from country i

E_i = the exchange rate of the Canadian dollar relative to the currency of country i

This index, although widely used, is not a panacea, since it makes no distinction between the structure of exports and imports. A number of other alternatives may be considered for constructing a weighted exchange rate index and will be briefly described in the following paragraphs.

SELECTION OF WEIGHTING METHOD

Analysing the variations of a currency in relation to the currencies of its main trading partners requires that individual exchange rates be weighted. The two main weighting schemes are based, respectively, on the use of bilateral and multilateral weights.

Bilateral Weights

Bilateral weights reflect each country's share of Canada's total exports or imports.

$$BW_i^x = \frac{X_i}{\sum_i X_i} \quad \text{and} \quad BW_i^m = \frac{M_i}{\sum_i M_i}$$

where:

X_i = exports of a given country to country i

M_i = imports from a given country to country i

BW_i^x = bilateral weight for exports

BW_i^m = bilateral weight for imports

Multilateral Weights

Multilateral weights correspond to each country's share of exports and imports of all countries included in the index.

$$MW_i^x = \frac{X_{ij}}{\sum_{j=1}^n X_{ij}} \quad \text{and} \quad MW_i^m = \frac{M_{ij}}{\sum_{j=1}^n M_{ij}}$$

where:

X_{ij} = exports of country i to country j

M_{ij} = imports from country i to country j

MW_i^x = multilateral weight for exports

MW_i^m = multilateral weight for imports

These weights reflect each country's role as a competitor on the world market. They represent an attempt to capture the effects of competition on external markets, although at the same time this approach excludes competition from domestic producers. Furthermore, these weights fail to take into account markets where such competition occurs, with the result that if these countries trade in very different markets, the multilateral weights will not reflect these competitive trends.

In practice, each weighting method has its advantages and disadvantages. The weighting pattern based on bilateral weights provides precise information if domestic producers are the competitors in the targeted export market.

On the other hand, if third country exporters are the main competitors in the targeted export market, then multilateral weights are a better choice. The major difference between the use of bilateral and multilateral weights involves the contribution of third countries competing with Canada in external markets, and particularly in the American market.

For example, on the basis of a bilateral weighting scheme, West Germany absorbed in 1986 only 1.2% of Canadian exports to all the countries selected. While on the basis of a multilateral weighting scheme its export share accounted for 18.6% of all selected countries' total exports.

Ideal Theoretical Weighting

In the event that both domestic producers and competing exporters are major competitors, the weights used must meet the following criteria:

Export Weights:

Export weights must reflect the relative shares of:
1) domestic producers in the targeted export market (Wa); and 2) competing exporters in the same market (Wb).

After completing this exercise for each of the targeted markets, an aggregation is made, using as

a weight the relative share of each market in total exports (Wc).

$$\sum_{i=1}^n Wc \left\{ Wa (E_{ij}) + Wb \left[\sum_{k=1}^n \left(\frac{X_{kj}}{\sum_{k=1}^n X_{kj}} \times E_{ik} \right) \right] \right\}$$

where:

$$Wa = \frac{S_i}{S_i + M_{ik}}$$

Wa represents the domestic market's degree of self-supply and Si the domestic shipments.

$$Wb = 1 - Wa$$

Wb represents the domestic market's degree of openness to foreign exporters.

$$Wc = \frac{X_{ij}}{\sum_{j=1}^n X_{ij}}$$

Wc represents the relative importance of export market i with respect to all export markets.

Import Weights:

Import weights must reflect the relative shares of exporters in the import market.

These weighting schemes appear to accurately represent the relative shares of various competitors. It should be noted, incidentally, that it is assumed that domestic producers carry out all their transactions in the local currency and, more importantly, that exports are denominated in the currency of the exporting country. These two assumptions simplify the reality since the exporter could also choose to denominate transactions in the currency of the importing country or in another currency, in most cases the American dollar.

SELECTION OF THE AGGREGATION METHOD

Once the weighting method has been determined, the method of aggregating the components of the index, i.e. exchange rates and weights, must be chosen.

In this respect, the arithmetic mean has the major advantage of being widely understood. However,

this type of mean attributes greater importance to the currencies which vary more than the others.

The geometric mean, while not correcting the bias of the arithmetic mean, nonetheless minimizes the variations due to extreme values.

The two formulas for calculating the value of the index at time t may be written as follows:

Arithmetic mean

$$\frac{\sum_{i=1}^n (W_i \times E_{it})}{n}$$

Geometric mean

$$100 \exp \left(\frac{\sum_{i=1}^n (W_i \times \log E_{it})}{n} \right)$$

where:

W_i = relative weights of country i in the index

E_{it} = exchange rate relative to the currency of country i at time t

The arithmetic mean is simply a weighted sum of n individual exchange rates E_i . On the other hand, the geometric mean is an average of the percentage variations of the individual exchange rates, which determines the percentage variation of the index. The geometric mean is used in the majority of weighted exchange rate indexes.

SELECTION OF NOMINAL OR REAL INDEXES

Weighted exchange rates may be expressed in nominal or real terms. In the latter case, the nominal series are deflated using appropriate price indexes. Consumer prices indexes are generally used for this purpose.

The impact of this procedure is considerable if the currencies of countries suffering from chronic inflation, such as Mexico or Brazil, are included in the basket of selected currencies. On the other hand, if the choice is limited to the currencies of the major industrialized countries, there will not be a large discrepancy between the real and nominal indexes.

While from a theoretical point of view the ideal index should be constructed so as to take into account exchanges with all trading partners, in practice there is a limit to the number of currencies selected. For this reason it may be decided to exclude, for example, 1) currencies tied to other currencies (the Franc zone, etc.); 2) currencies of countries suffering from excessively high rates of inflation (Mexico, Brazil, etc.); and 3) currencies of centrally-planned economy countries (China, Cuba, U.S.S.R., etc.).

SELECTION OF THE BASE PERIOD

In the trade-weighted exchange rate index constructed by the International Trade Division of Statistics Canada, the weighting is based on bilateral weights while the arithmetic mean is used for aggregation. This is a nominal index using 1981 as base period, with the result that the weights do not take into account the structural changes in Canada's international trade which have taken place since then. Moreover, this index is derived from the merchandise trade of Canada with the following nine trading partners: Belgium, Denmark, France, Germany (F.R.), Italy, Japan, Netherlands, United Kingdom and United States.

INTERPRETATION OF WEIGHTED EXCHANGE RATES

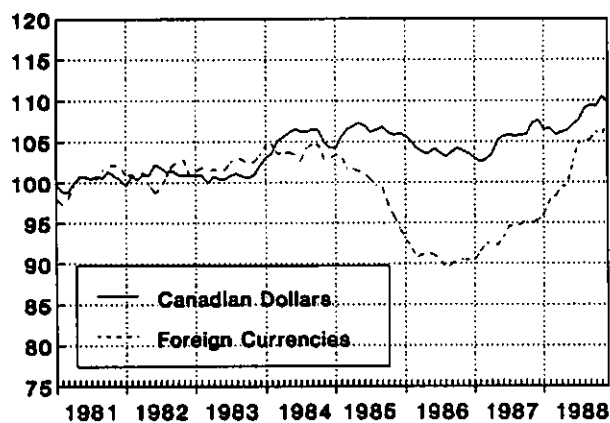
The level of the weighted exchange rate index is meaningless unless compared to the levels recorded in previous periods. Thus, an increase in the index reflects a rise or appreciation in the external value of the Canadian dollar.

The two following graphs illustrate the movements of the price indexes expressed in Canadian dollars and in foreign currencies.

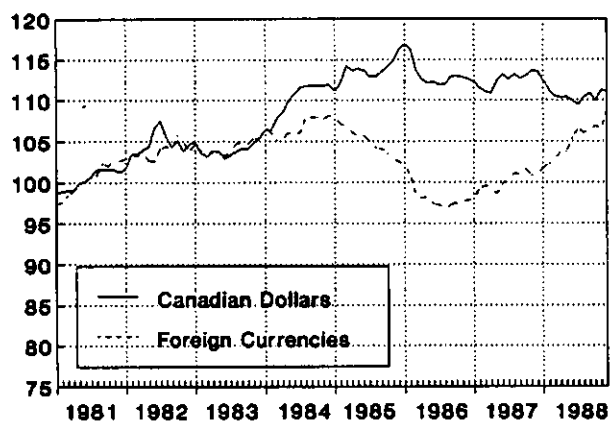
It can be noted that the movements of the two price series are very close from 1981 to 1985, but that beginning in 1985 the discrepancy between them increases as a result of a marked decline in prices expressed in foreign currencies. However, prices expressed in Canadian dollars remain practically unchanged. During the January 1985 to August 1986 period, the price index expressed in foreign currencies fell from 103.4 to 89.4, making Canadian exports more competitive in the eyes of foreign purchasers.

**Fixed-Weighted Price Indexes
Seasonally Adjusted, 1981 = 100**

Exports



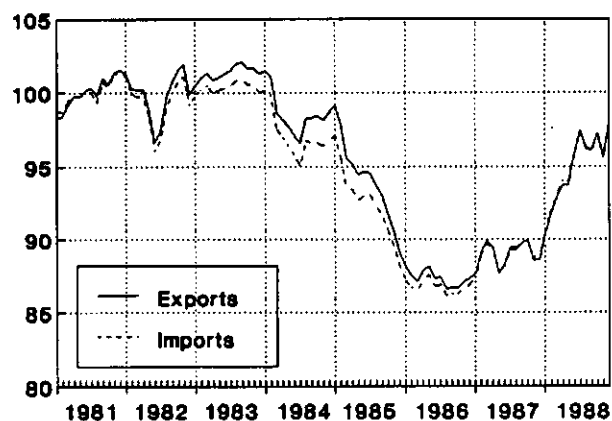
Imports



Source: Summary of Canadian International Trade (Monthly - Catalogue 65-001)

The following graph illustrates the sharp drop, from September 1983 to July 1986, in the external value of the Canadian dollar relative to the currencies of our main trading partners. However, the recovery of the Canadian dollar, which began in mid-1986, eroded the gains made in price competitiveness by inflating prices expressed in foreign currencies.

**Trade-Weighted Exchange Rate Indexes
1981 = 100**



Source: Summary of Canadian International Trade (Monthly - Catalogue 65-001)

PRICE INDEXES EXPRESSED IN FOREIGN CURRENCIES

To obtain the price indexes expressed in foreign currencies, the fixed weight (Laspeyres) index expressed in Canadian dollars is multiplied by the appropriate weighted exchange rate, which has been indexed on the basis of 1981 = 1.0. The result is a Laspeyres index expressed in foreign currencies.

These indexes are published on a monthly basis in the "Summary of Canadian International Trade" (catalogue no. 65-001).

METHODOLOGY NOTES

In May of 1978, the monthly bulletin "Preliminary Statement of Canadian International Trade" (Catalogue no. 65-001P) was introduced to disseminate preliminary statistics on Canadian international trade. In 1984, a major redesign of the bulletin followed the decision to publish Canada's international trade figures in accordance with Balance of Payments concepts (as opposed to Customs concepts). As a result, a new publication with the same title was introduced in March 1985. The new "Preliminary Statement of Canadian International Trade" contains seasonally adjusted and aggregated international trade data on a Balance of Payments (BOP) basis, by industrial sectors and by major trading partners. Graphs illustrating levels and short-term trends for exports (domestic exports¹ + re-exports)², imports and principal trading areas provide users with a view of Canada's international trade performance. The "Preliminary Statement of Canadian International Trade" is available 45 days after the end of the month under review.

SOURCES

Canadian international trade data, for the most part, are derived from administrative records of Revenue Canada, Customs and Excise. Detailed notes on Customs concepts and collection methods are available in the "Summary of Canadian International Trade" (Catalogue no. 65-001). Other sources are the National Energy Board for trade data on electricity and the Industry Division of Statistics Canada for data on exports of crude petroleum and natural gas (by pipeline). The balance of payments adjustments are derived by the International Trade Division and the International and Financial Economics Division of Statistics Canada from surveys on different organizations across Canada such as banks, refiners etc...

COMMODITY CLASSIFICATION

Aggregation - Level I

On January 1, 1988 Canada adopted the Harmonized Commodity Description and Coding System (Harmonized System or H.S.). Prior to 1988, exports were classified using the Export Commodity Classification (XCC) and imports using the Canadian International Trade Classification (CITC) and aggregated into the Import Commodity Classification (MCC). Published international trade data were available at the XCC and MCC levels.

In the "Summary of Canadian International Trade" the XCC was aggregated to the Summary Export Groupings (SEG - 150 commodity categories) and the MCC to the Summary Import Groupings (SIG - 213 commodity categories). An official

concordance from the H.S. to SEG and SIG has been established in order to preserve historical continuity.

Aggregation - Level II

The SEG and SIG levels are aggregated to the Major Export Groups (62) and the Major Import Groups (61) respectively which are classified under the following five sections:

- 1) Live animals;
- 2) Food, feed, beverages and tobacco;
- 3) Crude materials, inedible;
- 4) Fabricated materials, inedible;
- 5) End products, inedible.

Major Groups represent the level of aggregation at which the Customs based data are transformed to the BOP basis and subsequently adjusted for seasonality. BOP based price indexes are constructed for each Major Group.

Aggregation - Level III

The Major Export and Import Groups are aggregated into 19 and 17 sub-totals respectively, classified under the following sectors of activity in the economy:

- 1) Agricultural and fishing products;
- 2) Energy products;
- 3) Forestry products;
- 4) Industrial goods and materials;
- 5) Machinery and equipment;
- 6) Automotive products;
- 7) Other consumer goods.

The "Preliminary Statement of Canadian International Trade" presents international trade data at the industrial sectors level of commodity groupings along with some detail at the Major Group level.

BALANCE OF PAYMENTS (BOP) ADJUSTMENTS

Customs and BOP based data differ for a variety of reasons which include attribution of merchandise transactions to residents and non-residents, timing of transactions, etc. The BOP adjustments modify Customs based data for conceptual differences. Monthly adjustments are categorized under the following headings:

- 1) Valuation;
- 2) Coverage;
- 3) Timing;
- 4) Others.

Whenever possible, the adjustments are made at the Major Group level. The adjustments which do not provide the level of detail needed to be assigned to a specific Major Group are

1. Domestic exports include goods grown, extracted or manufactured in Canada, including goods of foreign origin which have been materially transformed in Canada.
2. Re-exports are exports of goods of foreign origin which have not been materially transformed in Canada, including foreign goods withdrawn for exports from bonded Customs warehouse.

aggregated under the heading "Unallocated BOP adjustments". For example, transportation costs are deducted from the Major Export Groups. These deductions are applied directly to six of the Major Export Groups, while transportation costs for the other 56 are deducted globally. Such adjustments are shown under the heading "Unallocated BOP adjustments".

In addition to the adjustment categories listed above, another difference between Customs and BOP based data consists in compiling import data on a country of export³ basis data instead of a country of origin⁴ basis as in the case of Customs imports data. Both fields of information are available on Customs documents.

Another major adjustment applied monthly to the Customs based data results from the reconciliation program between Canada and the United States. This program consists in an attempt to eliminate the differences between statistics published by Canada and the United States on the merchandise trade flows between the two countries. Canadian import data from the United States represent the basis under which the United States' export data are adjusted (northbound reconciliation). This task is the responsibility of Statistics Canada. Reciprocally, the United States' import data from Canada are the basis under which Canadian's export data are adjusted (southbound reconciliation). The United States Bureau of Census is responsible for the southbound reconciliation. The principle underlying the reconciliation process is that quality of documentation for imports is better than that of exports because the levying of Customs duties is associated with correct identification and speedy clearance of imported goods. In 1987, exports as published by Statistics Canada prior to reconciliation were 1.5% lower than the final reconciled figure officially recognized by both statistical agencies. The major adjustments are related to the non-receipt of export documents, differences in commodity classification, trade definition, valuation and timing. The corrections resulting from the reconciliation are substantial and the "Preliminary Statement of Canadian International Trade" presents the details in the March, June, September, and December issues. On a monthly basis, the reconciliation results are included under "Unallocated BOP Adjustments". Furthermore, with the exception of the above mentioned months, reconciled data are produced too late to be included in the current "Preliminary Statement of Canadian International Trade". Consequently, the current month adjustments are estimated.

Occasionally the heading "Unallocated BOP adjustments" also includes some corrections that essentially reflect obvious irregularities in the Customs based data.

More detail on the BOP adjustments can be found in "The Canadian Balance of International Payments and International Investment Position; description of sources and methods" (catalogue no. 67-506E).

STATISTICAL PERIOD

Imports

The reference period is the calendar month and the calendar year. The recording of imports is based on the date the merchandise is released by Customs.

Prior to January 1988, the recording of imports was based on the Customs-stamp date.⁵ Because merchandise is usually released several days before Customs documents are filled out and stamped, the new procedure generated a substantial irregularity in the Customs data for January 1988. In fact, merchandise released in the last days of December 1987 for which Customs documents were filled and stamped in January 1988 belonged to December under the new procedure and to January under the old. On a Customs basis, these documents are included in January's 1988 statistics. This resulted in an unusual increase of approximately \$2.4 billion.

On a BOP basis, imported merchandise released in December and Customs-stamped in January are excluded from the statistics. Thus, December and January represent regular statistical periods according to the old and new procedures respectively.

Exports

The reference period is the calendar month and the calendar year. The recording of exports is based on the Customs-stamp which generally coincides with the date of release of the merchandise.

SEASONAL ADJUSTMENT

When, in a time series, the pattern of peaks and troughs during a year is repetitive from year to year, the series is deemed to fluctuate seasonally. These fluctuations are due to various economic, natural and institutional factors such as changes in the weather, statutory holidays and other events which occur at regular intervals and may have a significant albeit foreseeable impact on the rate of economic activity. The seasonal adjustment process removes these fluctuations from the time series.

Statistics Canada used the X-11-ARIMA (Dagum, 1975 and 1979) method to remove seasonal fluctuations from time series. This method consists in extending a raw time series at both ends using an ARIMA⁶ model fitted to the original time

3. Country of export: country from which goods are last shipped to the importing country. Also referred to as country of last shipment.
4. Country of origin: country in which the goods have been grown, produced or manufactured.
5. Prior to August 1979, the recording of imports was based on the date of receipt of Customs documents at the International Trade Division.
6. ARIMA: Auto-regressive models with integrated moving averages of the Box and Jenkins (1970) type.

series and adjusting the extended series with the Method II-X-11.⁷ Detailed information on the X-11-ARIMA method is available in the Statistics Canada publication "The X-11-ARIMA Seasonal Adjustment Method" (Catalogue no. 12-564E Occasional).

Since 1984, two different approaches to the seasonal adjustment method, direct and indirect, are used to adjust international trade time series⁸. Prior to this, the seasonal adjustment was done exclusively using the direct approach. The following paragraphs explain the difference between the two approaches.

Direct Seasonal Adjustment

The direct approach consists in using a set of adjustment factors provided by the X-11-ARIMA method to adjust raw international trade time series, when seasonality is detected. Furthermore, a set of twelve projected factors, also provided by the X-11-ARIMA adjustment method, are used to adjust twelve subsequent periods as opposed to running the X-11-ARIMA programs monthly and readjusting the series every time new information is added to it (concurrent seasonal adjustment).

Readjustment of time series takes place during the months of April and May when revisions to the BOP adjustments for the previous year and often, for some years back, are applied. These revisions are applied to the appropriate time series along with Customs based revisions. Afterwards, the 373 time series, listed in Table 1, are tested for seasonality using the X-11-ARIMA method.

Time series with no detectable seasonal movements are flagged with a "*" in the publications and remain unchanged. When the presence of seasonality is detected, projected factors are used to adjust the next twelve months of data. Moreover, the new seasonal factors for previous months are

used to revise historical data adjusted previously. First, the new factors replace the projected factors used during the previous year. Next and depending on how many years of BOP adjustments are revised, the new factors are used to up-date historical seasonally adjusted time series. This process can go back two, three and sometimes several years back, depending on the impact of the revisions on the raw time series.

Indirect Seasonal Adjustment

The indirect seasonal adjustment approach for the value time series involves the summation or subtraction of seasonally adjusted time series by the direct method. For the Laspeyres volume indexes and constant dollars series at the Major Group level, the indirect approach consists of dividing seasonally adjusted time series.

Table 2 presents the time series adjusted using the indirect approach.

Since 1984, the indirect approach has been widely used to adjust sub-total and total international trade time series. However, the indirect approach is not without its drawbacks. For instance, the time series for total exports and imports generated by the summation of Major Groups in one case and by the summation of Principal Trading Areas in the other are not identical (see Table 2). Therefore, the totals generated by the summation of Major Groups are retained as such and represent the benchmarks to adjust the totals generated by the summation of the Principal Trading Areas. The differences are distributed among the seasonally adjusted Principal Trading Areas, according to their share in total imports or exports.

7. Method II-X-11: Method of seasonal adjustment which uses moving averages techniques or linear smoothing procedures.
8. Beginning with 1984 data, all seasonally adjusted time series published by the International Trade division are on a BOP basis. Seasonally adjusted time series on a Customs basis are available upon request.

TABLE 1 Value and Price Index Time Series Tested for Seasonality, Direct Seasonal Adjustment

	Value Time Series (8 years of data)	Price Index Time Series (7 years of data)
Major Export Groups	62 Major Export Groups	60 Paasche Price Indexes* 60 Laspeyres Price Indexes*
Major Import Groups	61 Major Import Groups	59 Paasche Price Indexes* 59 Laspeyres Price Indexes*
Principal Trading Areas, Exports and Imports	12 Time Series: - United States - United Kingdom - Japan - E.E.C. '86 - Other O.E.C.D. '86 - Other Countries	N/A
Total	135 Time Series	238 Time Series

* Price indexes are not calculated for the Major Groups "Unallocated BOP adjustments" and "Special transactions, trade". Price indexes at the total level are used for these commodity groupings.

TABLE 2 Indirect Seasonal Adjustment

Indirect Method of Seasonal Adjustment	Time Series
Summation of S.A. Major Groups	Section Totals - Exports Section Totals - Imports Total - Exports Total - Imports Industrial Sectors - Exports Industrial Sectors - Imports
Subtraction of S.A. Totals	Trade Balance (Exports minus Imports)
Summation of S.A. Principal Trading Areas	Total - Exports Total - Imports
Subtraction of S.A. Principal Trading Areas	Trade Balance between Canada and Principal Trading Areas
Ratio of S.A. Value Index to S.A. Paasche Price Index	Laspeyres Volume Indexes for the Major Groups, Sections and Totals
Ratio of S.A. Current Value to S.A. Paasche Price Index	Total Exports and Imports in Constant Dollars

If the time series for the total of imports (or exports) was adjusted directly, the result would be unique, but the summation of the seasonally adjusted Major Groups or the summation of the seasonally adjusted Principal Trading Areas could differ from the seasonally adjusted total and in order to preserve additivity, the differences would have to be distributed among the components.

PRICE AND VOLUME INDEXES

International trade price and volume indexes for all countries and for the United States are constructed for exports and imports separately. In the case of exports, price indexes are computed for domestic exports only because re-exports as a percentage of total exports are very small.

Fixed (Laspeyres) and current (Paasche) weighted price indexes are calculated monthly, quarterly and annually.

The Laspeyres weights of the price relative are fixed at the base period. They are generated using annual values for the base year. Monthly, quarterly and annual Laspeyres price indexes are calculated using this unique set of weights. In general, the weights change only when the base year changes.

In the Paasche price index, the weights are current and therefore change regularly. New Paasche weights are calculated monthly, quarterly and annually using current values.

The price relatives needed to calculate the price indexes originate from two sources: 1) the unit values derived from the Customs based data (70%); and 2) the specification price indexes taken from Canadian and foreign sources (30%). As a general rule, unit values are retained for relatively homogeneous commodities such as primary and semi-manufactured goods and proxies are used for

heterogeneous commodities, particularly manufactured goods ready for final use.

Price Relatives Based on Unit Values

Prior to 1988, the unit values were determined for 400 XCC and 700 MCC commodities (not all commodities are selected as inputs to the price index calculations). Following the adoption of the Harmonized System in January 1988, a concordance from H.S. to 400 XCC, and 700 MCC was developed in order to preserve the historical continuity in the production of price indexes. However, this concordance is used solely to generate the unit values needed in the calculation of the price indexes and should not be confused with the official concordance H.S. to SEG, SIG mentioned in "Aggregation - Level I" on page i.

The values for the 400 XCC's and 700 MCC's are divided by their respective quantities, thus supplying the unit values. The price relatives are derived from the ratio of the current period unit value to the base period unit value.

Price Relatives Based on Specification Price Indexes

On a regular basis, several organizations provide the International Trade Division with proxies which are used as price relatives in the calculation of the Laspeyres and Paasche price indexes. Table 3 lists these organizations.

Price indexes are constructed at the following levels of aggregation:

Imports:

- 1) 213 SIG;
- 2) 61 Major Import Groups;
- 3) 5 Sections;
- 4) 1 Total;
- 5) 10 S.I.T.C. (Standard International Trade Classification) Sections.

Domestic Exports:

- 1) 150 SEG;
- 2) 62 Major Export Groups;
- 3) 5 Sections;
- 4) 1 total;
- 5) 10 S.I.T.C. Sections.

Each of the above levels of aggregation is associated with a set of XCC or MCC commodities for which price relatives have been determined. Using the Paasche and Laspeyres weights, the price indexes are calculated.

The volume indexes, which are also available at the levels of aggregation listed above, are obtained by dividing a value index by the corresponding Paasche price index. Volume indexes derived as such are of the Laspeyres type (fixed weights).

Customs based price indexes for Major Groups constitute the main input in the calculation of BOP based price and volume indexes. The BOP based indexes are calculated for:

Imports:

- 1) 61 Major Import Groups;
- 2) 5 Sections
- 3) 1 total

Domestic Exports:

- 1) 62 Major Export Groups;
- 2) 5 Sections;
- 3) 1 Total.

With the exception of minor corrections to the Paasche indexes of the five Major Groups (exports and imports of crude

petroleum, of office machinery and exports of natural gas), the Customs based price indexes (Laspeyres and Paasche) are identical to the BOP based price indexes at that level of aggregation. Therefore, most of the BOP adjustments are not reflected in the BOP based price indexes at the Major Group level.

The BOP based Paasche price indexes for the sections and the total are calculated implicitly. First, the BOP based current values for the Major Groups are deflated using the BOP based Paasche price indexes to generate constant values. The current and constant values are then aggregated to the sections and total. The Paasche price indexes are derived by dividing current by constant values.

The BOP based Laspeyres price indexes for the sections and the total are generated by applying the Laspeyres formula directly, using as inputs the Laspeyres price indexes and the base period values on the BOP basis at the Major Group level.

To calculate the BOP volume indexes for the Major Groups, sections and total, the BOP Paasche price indexes and the BOP values are used. Consequently, the BOP adjustments are reflected to a great extent in the volume indexes.

Further details on the price indexes of Canada's international trade are available in "The 1971-based Price and Volume Indexes of Canada's External Trade" (Catalogue no.: 65-001 supplement). Price indexes at the Major Group level are published in the "Summary of Canadian International Trade". In the "Preliminary Statement of Canadian International

TABLE 3 Organizations and Proxies

Organizations and Proxies	Commodity Category
1. U.S. Bureau of Labour Statistics - Wholesale Price Indexes - Export Price Indexes	End Products - Imports from the United States
2. Prices Division of Statistics Canada - Industrial Producers Price Indexes - Consumer Price Indexes	End Products - Exports and Imports
3. Bank of Japan - Export Price Indexes	Transportation Products, Electronic and Communication Equipment, Cameras, Microwave Ovens - Imports from Japan
4. Energy and Mining Journal - Market Quotations	Metals - Imports
5. U.K. Monthly Digest of Statistics - Wholesale Price Indexes	Medical and Surgical Goods, Toiletries, Pottery, Glassware and Hardware - Imports
6. National Accounts Branch of Statistics Canada - Price indexes for computers	Office Machinery - Exports and Imports
7. Major Corporations - Retail Prices	Aircraft Engines, Aluminium and Coal - Exports and Imports

Trade", Laspeyres price indexes for total exports and imports are presented as well as the value of total exports and imports in constant dollars.

SHORT TERM TRENDS

The trends presented in the "Preliminary Statement of Canadian International Trade" and the "Summary of Canadian International Trade" are generated from the 13-term weighted moving average (Henderson-13). This moving average is designed to remove significant very short term fluctuations while not affecting the underlying cycles that occur during a longer period. The result is identified as "Short Term Trends".

On a monthly basis, the "Preliminary Statement of Canadian International Trade" and the "Summary of Canadian International Trade" present graphically the short term trend of the following economic indicators:

- 1) Total of Exports and Imports;
- 2) Exports and Imports for Section Totals;
- 3) Trade Balance;
- 4) Export and Import Value Indexes;⁹
- 5) Exports and Imports for Principal Trading Areas.

COUNTRY CLASSIFICATION

The Customs based data at the H.S. level are distributed between Canada's major trading partners. These are:

- 1) the United States;
- 2) Japan;
- 3) the E.E.C.'86;¹⁰

- 4) Other O.E.C.D.'86;¹¹
- 5) Other countries.

The Customs based data by major trading partner at the H.S. level are aggregated to the SEG and SIG levels and then, to the Major Export Groups and Major Import Groups. At this point, the BOP adjustments are assigned to the trading partners at the Major Group level. As a result, international trade data on a BOP basis is available by major trading partner and at the Major Group level. International trade data by trading partners are seasonally adjusted at the total level only.

REVISIONS

Customs Data

Monthly data for the current year (calendar year) are subject to revisions until the preliminary release of January data for the following year. They remain unchanged for the next twelve months after which they are subject to a final revision process. Under normal circumstances, Customs based data are revised at the most two years back.

BOP Data

Monthly data for the current year (calendar year) are subject to revisions until the preliminary release of December data. They remain unchanged for the following three months after which three or four years of historical monthly data are revised in light of revisions to BOP adjustments and seasonal factors. This usually coincides with the first quarter National Accounts release. Therefore, BOP based data are revised historically once a year and up-dated figures (which include the final revisions to the Customs based data) are published in the preliminary release of April data of the following year.

9. The monthly import and export value indexes are calculated according to the formula $\frac{\sum p^i q^t}{\sum p^i q^0}$. In other words, the monthly current values are divided by the base period values. The latter is defined as the monthly average of the base year. The value indexes are generated for the total of exports and imports in addition to exports and imports to the U.S., to Japan and to other countries. The trends of these indexes, back to January 1986, are presented in a single graph.
10. The E.E.C.'86 includes Belgium, Denmark, France, Germany (F.R.), Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain and the United Kingdom.
11. The Other O.E.C.D.'86 includes Austria, Finland, Iceland, Norway, Sweden, Switzerland, Turkey, Australia and New Zealand.

