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Expansion industrielle
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Regional Industrial
Expansion

Canada

**SOME INDICATORS OF CANADA'S
TRADE PERFORMANCE AND
COMPETITIVENESS**



**SOME INDICATORS OF CANADA'S
TRADE PERFORMANCE AND
COMPETITIVENESS**

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Statistical Analysis
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INTRODUCTORY REMARKS

The ability of the Canadian economy and industry to compete in the world market has emerged as a central issue and concern of government, business and labour. However, to the best of our knowledge, there is no single, readily available source of information focused on major aspects of Canada's international competitiveness.

This document attempts to fill this gap. It presents statistical information on some commonly used indicators of Canada's trade performance and competitiveness in comparison with its major trading partners and competitors, in easily readable tables and charts. However, it does not address other related issues such as the determinants of Canadian competitiveness, the most effective ways to improve competitiveness or the issue of competitiveness in relation to other social and economic goals.

The economic and business information assembled and presented herein, along with the commentary on each table and graph, will provide useful background information to those both in the private and public sectors who are concerned with industrial development in Canada and with the international competitiveness of Canada's industry and economy.

It should be noted from the outset that there is no single generally accepted indicator of competitiveness. Competitiveness can, in fact, be examined and analyzed from several perspectives. Accordingly, this report consists of five sections, each one focusing on a different aspect of this issue. To set the stage for the subsequent sections, Section 1 presents information on key indicators of Canada's economic performance in aggregate terms.

A nation's competitiveness is frequently measured by its ability to compete in the international market place, that is, on its ability to produce and sell in the world market while earning increasing returns on its resources. Section 2, therefore, deals with several measures of Canada's relative trade performance.

Whether a country does well in international trade depends to a large extent on how its goods and services are priced in the world market. This in turn depends on a country's relative cost structure. Accordingly, Section 3 provides information on the relative cost and price competitiveness of the Canadian economy.

A healthy and growing manufacturing sector is considered to be of fundamental importance as the engine of sustained economic growth and a major source of job creation and wealth generation. It is, therefore, fitting to devote Section 4 to examine the performance of the manufacturing sector in more detail.

INTRODUCTORY REMARKS

Finally, Section 5 deals with technological aspects of Canada's competitiveness, in recognition of technology's importance in affecting the productivity of a country's industry and the quality of its products.

To provide perspective, the overall performance of the Canadian economy and industry is compared not only with the achievements of Canada's key competitors but also with past Canadian accomplishments. Accordingly, the statistical tables and charts in this report contain comparable data for major competitors (especially the G-7 countries) as well as historical data on the performance of the Canadian economy. The Newly Industrialized Countries (NICs) are also becoming increasingly competitive and likely to become even stronger competitors in the future. This report attempts, therefore, to present relevant information on their performance, although comparable and reliable data for these countries are not always available.

Unless otherwise stated, all monetary figures in the statistical tables are in current dollars. The section on trade refers to merchandise trade only.

The following are some of the highlights of this report:

Economic Performance

- Over the last fifteen years, Canada has enjoyed an impressive rate of economic growth, second only to Japan in comparison to other major industrial countries.
- Although Canada experienced the worst decline among the major industrial countries in the 1981-82 recession, it has maintained one of the best performances in the post-recession period.
- While the current expansion is primarily fueled by personal consumption, there are strong indications that investment performance is turning around and will become the engine of growth.
- The proportion of Canadian GDP devoted to investment in recent years has been comparable to such ratios in other industrialized countries, with the exception of Japan. In Japan, it has been significantly higher (though declining over time) than in other major OECD countries.

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- The most notable feature of the current economic upswing in Canada is the substantial rate of job creation, the highest among the major industrialized countries.
- However, the Canadian unemployment rate, which reached double digit levels in the 1981-82 recession, has declined rather slowly, especially when compared to decreases in the U.S. rate. This is largely due to strong growth in the Canadian labour force.

Trade Performance

- Canada's recent success story may be linked to its ability to compete in the international market place. In recent years, Canada has enjoyed a merchandise trade surplus each year, though its magnitude has been declining over time. This is in contrast to most of the other major OECD countries which have suffered trade deficits, except Japan and Germany. In the case of the latter two countries, trade surpluses have increased substantially over time.
- Even in the face of increasingly stiff competition from abroad, particularly Japan, Germany, and the newly industrialized countries in the Far East, Canada has been able to maintain its market share in exports, both for manufactured goods and other products.
- Of particular importance to Canada's favourable trade performance has been its steadily increasing ability to penetrate the U.S. market. Over the 1976-1986 period, the proportion of total Canadian exports shipped to the U.S. has increased from 66% to about 77%, whereas the share of total Canadian imports supplied by the U.S. has remained stable at about 69 percent.
- Natural resources and raw materials, agricultural products, and crude petroleum and gas still continue to be among the most important commodities for Canada's international trade.
- By comparison, Canada continues to suffer from a recurring deficit in its trade in manufactured products. It has recorded increasingly larger annual trade surpluses in semi-processed goods, but generally they have been more than offset by deficits in trade in final products.

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- In terms of trade by sector, transportation equipment continues to account for the largest share of both Canada's exports and imports.
- Since 1978, export orientation (i.e., exports of goods and services as a proportion of GDP) in Canada has been increasing steadily. This suggests that Canadian industry is becoming increasingly more competitive in the world market.
- Simultaneously increasing import penetration (i.e., imports of goods and services as a percentage of GDP), often in the same industrial sectors in which export orientation has been rising, suggests that Canadian industry is undergoing a process of rationalization.

Cost and Price Competitiveness

- On a national currency basis, Canada's rate of growth in unit labour costs has not been competitive vis-a-vis the rate in the U.S. and Japan, due to its weaker performance both in productivity growth and wage increases.
- On a U.S. currency basis, however, the cost structure of Canadian manufacturing has become one of the most competitive among the major industrialized countries, due to the depreciation (up to 1985) of the Canadian dollar in terms of the U.S. currency, and the recent devaluation of both the Canadian and the U.S. dollars against the major European currencies.
- In terms of changes in trade-weighted unit labour costs, Canada has performed even better. Over the 1976-86 period, unit labour costs in Canada recorded a marginal decline, whereas they went up in almost every other major OECD country.
- In terms of unit labour costs (in U.S. dollars), most Canadian manufacturing industries are generally competitive with their U.S. counterparts. In 1986, out of the 13 industries reported in Table 3-4, only five had a cost disadvantage of more than 10%. Another five were fully competitive and three had cost disadvantage of less than 10%.
- Among the major OECD countries, Canada registered by far the most substantial decline in relative unit export values for manufactured goods.

INTRODUCTORY REMARKS

Manufacturing Performance

- While the manufacturing sector's share of Canadian employment has declined since 1971, its contribution to Canada's trade, particularly exports, has increased significantly.
- In comparison to other major industrialized countries, manufacturing in Canada continues to play a less significant role in the economy. In this country, the level of both manufacturing output as a percentage of GDP and manufacturing employment as a proportion of non-agricultural total employment is smaller than in other industrialized countries.
- Manufacturing employment as a percentage of total non-agricultural employment in Canada has been declining steadily, while manufacturing output as a percentage of GDP has remained relatively stable.

Technology Aspects of Competitiveness

- Compared to other major industrial countries, Canada ranks among the lowest in terms of gross expenditure on R & D as a percentage of GDP, as well as in terms of the proportion of R & D personnel and research scientists and engineers in its labour force.
- R & D in Canada, as measured by the ratio of R & D expenditures to sales, is concentrated in a few industries.
- Canada has a large and growing deficit in trade in high technology products, registering an increase of more than 10% in 1986.

SECTION 1

ECONOMIC PERFORMANCE

ECONOMIC PERFORMANCE

TABLE 1-1
Gross Domestic Product at Constant Prices, Selected Countries, 1970 to 1986
(Annual Rates of Change)

Country	1970-81	1982	1983	1984	1985	1986
United States	2.4	-2.5	3.7	6.6	3.0	2.7
Japan	5.0	3.1	3.2	5.1	4.7	2.5
CANADA*	4.2	-3.5	3.6	5.3	4.0	3.7
France	3.7	2.5	0.7	1.4	1.7	2.1
Germany	2.9	-0.6	1.5	2.7	2.6	2.5
United Kingdom	1.7	1.0	3.7	2.2	3.7	2.3
Italy	3.2	0.2	0.5	3.5	2.7	2.7
Brazil	7.1	0.9	-2.5	5.7	8.3	-
Korea	8.6	5.7	10.9	8.6	5.4	11.9
Malaysia**	-	5.9	6.3	7.8	-1.0	1.0
Mexico	6.8	-0.6	-5.3	3.7	2.7	-
Singapore	9.6	6.3	7.9	8.3	-1.8	1.9

* Canadian series adjusted to permit international comparisons.

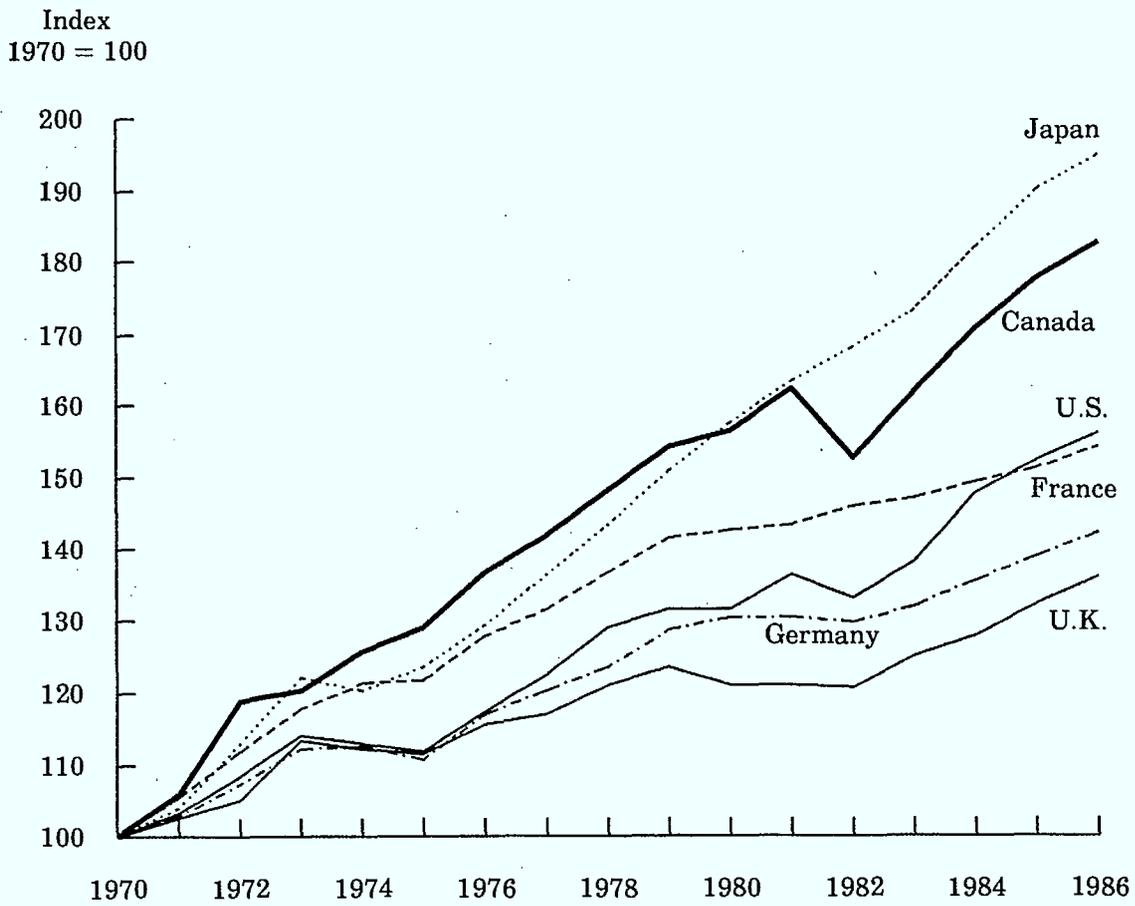
** Due to change in methodology comparable 1970-81 data are not available.

Source: IMF, International Financial Statistics, 1987

- Compared to other major industrial countries, Canada recorded one of the highest average annual real growth rates in economic activity, second only to Japan, over the 1970-81 period. Although it experienced the worst decline during the 1981-82 recession, Canada achieved one of the best performances in the post-recession period.
- Looking at growth of GDP in industrialized countries over a somewhat longer period (1970-86), Canada's performance again has been second only to that of Japan (Chart 1-1).
- Compared to the major OECD countries, the newly industrialized countries (NICs) enjoyed higher growth rates in GDP during the seventies. With the exceptions of Korea and Brazil, however, their growth rates have slowed down in recent years.

ECONOMIC PERFORMANCE

CHART 1-1
Gross Domestic Product Index, Selected Countries,
(in constant U.S. 1980 Dollars)
1970 to 1986



ECONOMIC PERFORMANCE

TABLE 1-2
Gross Domestic Product per Capita at Constant Prices,
Selected Countries, 1970 to 1986
(Annual Rates of Change)

Country	Average 1970-81	1982	1983	1984	1985	1986
United States	1.6	-3.5	2.8	5.7	1.9	1.7
Japan	3.4	2.2	2.5	4.4	3.8	1.9
CANADA	3.3	-4.5	2.1	4.5	3.0	2.2
France	2.7	1.2	0.3	1.1	0.7	1.6
Germany	2.3	-0.6	1.9	3.1	2.9	2.4
United Kingdom	1.5	1.0	3.7	2.0	3.5	2.4
Italy	2.5	0.0	0.1	3.3	2.5	2.6
Brazil	4.7	-1.3	-4.7	3.4	5.9	-
Korea	6.5	4.0	9.3	7.1	4.0	10.5
Malaysia*	-	3.3	3.7	5.1	-4.1	-1.7
Mexico	3.5	-3.1	-7.6	1.2	0.4	-
Singapore	7.6	5.1	6.6	7.4	-3.4	0.7

* Due to change in methodology comparable 1970-81 data are not available.

Source: IMF, International Financial Statistics, 1987

- It is sometimes argued that growth in per capita GDP is a better measure of economic development in a country than growth in total output.
- In terms of GDP per capita, growth in the Canadian economy in the 1970's and 1980's, relative to the major OECD countries and the newly industrialized countries, has been similar to that indicated by changes in total GDP.

ECONOMIC PERFORMANCE

TABLE 1-3
Income and Expenditure Distribution of Gross Domestic Product,
Canada, 1981 and 1986

Income	<u>% of total</u>		Expenditure	<u>% of total</u>	
	1981	1986		1981	1986
Agriculture	4.2	4.1	Personal Consumption	55.1	58.6
Mining	5.5	5.3	Government Consumption	19.3	19.8
Manufacturing	19.3	18.5	Fixed Investment	24.2	20.0
Construction	7.9	6.9	Exports	27.2	27.1
Transport & Communications	10.7	10.4	Imports	-26.1	-25.9
Wholesale & Retail Trade	11.0	11.4	Stockbuilding	0.3	0.7
Finance & Insurance	13.9	14.9	Statistical Discrepancy	<u>-0.0</u>	<u>-0.3</u>
Other services	<u>27.5</u>	<u>27.8</u>	GDP at market prices	100.0	100.0
GDP	100.0	100.0			

Source: Statistics Canada. System of National Accounts.

- The contribution of the service producing industries (i.e. sectors other than agriculture, mining, manufacturing and construction) to Gross Domestic Product had increased from 63% in 1981 to 65% in 1986, while that of the goods producing industries had declined.
- While the share of personal consumption in the economy had increased from 55% to 59% over the same period, that of fixed investment had declined from 24% to 20%.
- The current expansion, therefore, has been fueled more by personal consumption than by investment.
- As will be shown in Table 1-5, however, there are strong indications that investment performance is turning around and should become a significant factor in the continuation of the current economic upswing.

ECONOMIC PERFORMANCE

TABLE 1-4
Investment as a Percentage of GDP, Selected Countries, 1975 to 1986

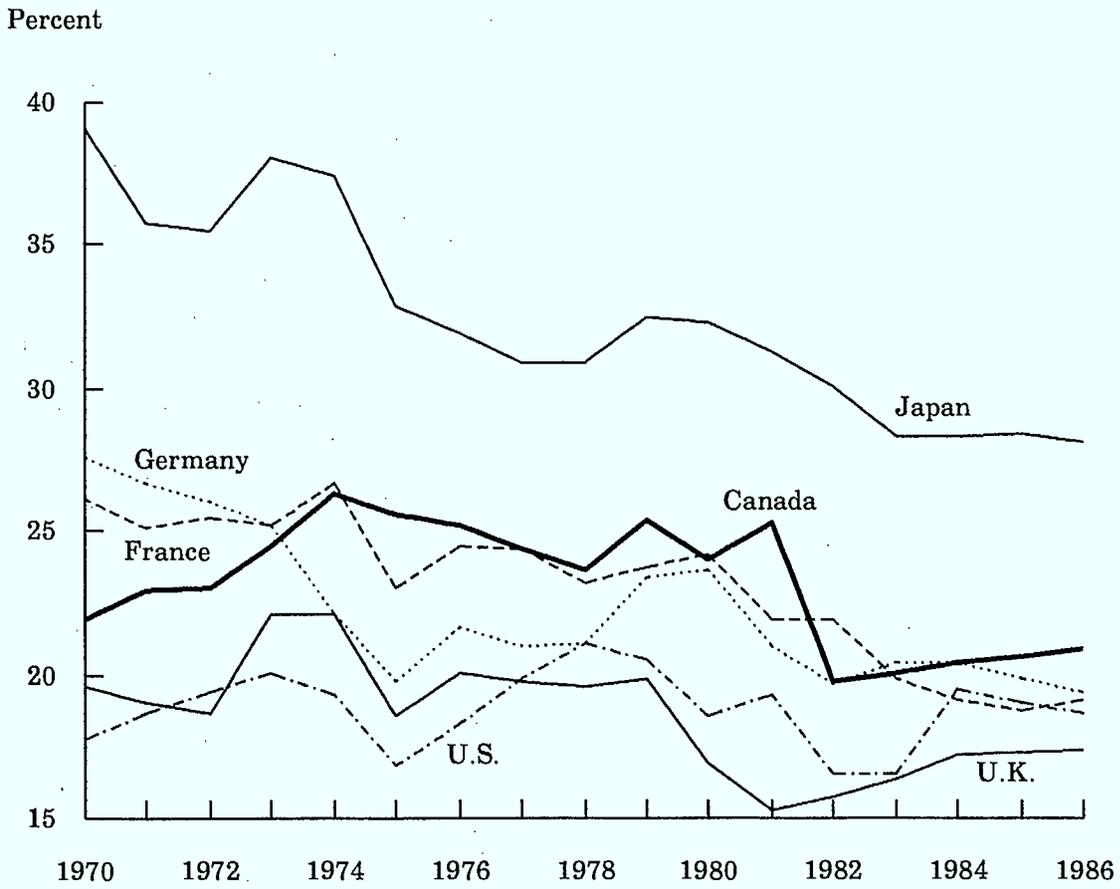
Country	1975	1980	1982	1986
United States	16.8	18.6	16.6	18.7
Japan	32.8	32.3	30.1	28.1
CANADA	25.6	24.0	19.8	20.9
France	23.0	24.2	21.9	19.1
Germany	19.8	23.6	19.7	19.4
United Kingdom	18.6	16.9	15.7	17.4
Italy	20.3	26.8	23.5	21.2
Brazil	26.9	22.4	20.2	-
Korea	27.1	31.1	27.4	29.2
Malaysia	25.5	30.4	37.3	25.7
Mexico	23.7	28.1	21.2	-
Singapore	37.6	46.3	47.9	40.0
Industrial Countries	21.7	22.8	20.4	20.5
Developing Countries	25.7	26.0	24.5	-
World	22.7	23.6	21.4	-

Source: IMF, International Financial Statistics, 1987

- Investment as a percentage of GDP in Canada declined from about 26% in 1975 to some 21% in 1986.
- Among the industrial countries, Japan recorded the highest figure (about 30%), while the U.K., the lowest.
- As shown in chart 1-2, investment in Japan as a percentage of GDP has been declining over time.
- The share of GDP devoted to investment in industrial countries has been generally lower than the share in the developing countries, particularly for the NIC's in the Far East.

ECONOMIC PERFORMANCE

CHART 1-2
Investment as a Percentage of GDP, Selected Countries
1970 to 1986



ECONOMIC PERFORMANCE

TABLE 1-5

Capital Investment Intentions of Manufacturing Industries, Canada, 1987
(Millions of Dollars)

Industries	DRIE Capital Investment Intentions Survey* October 1987		Stats Canada Private and Public Investment Intentions Survey July 1987	
	<u>Outlay</u> 1987	<u>% Change</u> 1987/1986	<u>Outlay</u> 1987	<u>% Change</u> 1987/1986
Food and Beverage	609.4	31.0	1,319.2	27.4
Forest Products	2,120.8	20.4	3,275.2	41.2
Primary Metal and Metal Fabricating	1,162.3	5.8	2,175.8	-8.0
Chemicals and Chemical Products	465.1	-3.3	1,142.0	-6.2
Transportation Equipment	1,742.2	-3.5	2,890.5	11.7
Electrical Products and Machinery	980.3	17.3	1,095.1	26.8
Non-Metallic Minerals	245.2	27.9	339.9	12.7
Other Manufacturing	335.5	22.8	3,698.6	14.9
Total Manufacturing	7,660.8	12.2	15,936.3**	14.6

* Large firms only.

** Includes capital items charged to operating expenses.

Source: DRIE and Statistics Canada.

- Both the DRIE and the Statistics Canada Surveys suggest a substantial increase in manufacturing investment in 1987 over the 1986 level, especially in food and beverage, forest products and machinery sectors.

ECONOMIC PERFORMANCE

TABLE 1-6
Unemployment Rates*, Selected Countries, 1980 to 1986
(Percent of Labour Force)

Country	1980	1982	1983	1985	1986
United States	7.0	9.5	9.5	7.1	6.9
Japan	2.0	2.4	2.6	2.6	2.8
CANADA	7.4	10.9	11.8	10.4	9.5
France	6.3	8.1	8.3	10.1	10.3
Germany	3.0	6.1	8.0	7.2	6.9
Italy	7.4	9.0	9.8	10.5	-
United Kingdom	7.0	11.4	12.5	11.2	11.1
Netherlands	4.7	11.4	13.7	10.6	9.9
Sweden	2.0	3.1	3.5	2.8	2.7

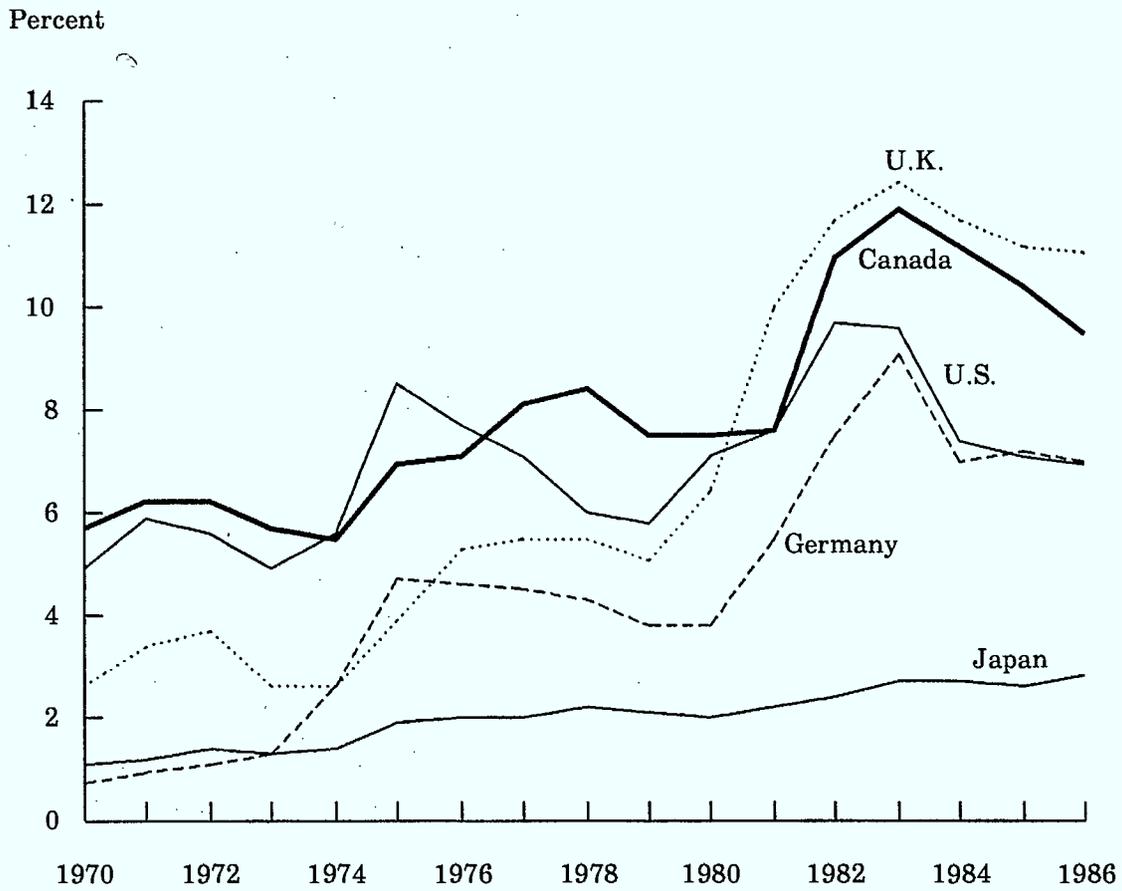
* Standardized to permit international comparisons.

Source: OECD Main Economic Indicators, December 1986.

- As was the case in most other industrial countries, the unemployment rate in Canada increased substantially as a result of the 1981-82 recession, from 7.4% in 1980 to 11.8% in 1983. Subsequent to economic recovery, it experienced a modest but sustained decline, dipping to 9.5% in 1986. This trend gathered momentum in 1987 and the unemployment rate declined to 8.1 percent in December 1987. It decreased further to 7.8 percent in February 1988, the lowest since August 1981.
- Japan and Sweden have enjoyed the lowest rates of unemployment among the major OECD countries. As shown in chart 1-3, the unemployment rate in Japan, while rising slowly over the last 25 years, was generally lower and much less volatile than in other major industrialized countries.

ECONOMIC PERFORMANCE

CHART 1-3
Unemployment Rates, Selected Countries
(Percent of Labour Force)
1970 to 1986



ECONOMIC PERFORMANCE

TABLE 1-7
Rates of Job Creation, Selected Countries, 1973 to 1986
(Annual Rates of Change)

Country	1973-75	1975-79	1979-83	1984	1985	1986
United States	0.4	3.5	0.5	4.1	2.0	2.2
Japan	-0.3	1.2	1.1	0.6	0.7	0.8
CANADA	2.9	2.8	0.8	2.5	2.8	2.8
Germany	-2.1	0.2	-0.7	0.1	0.7	1.0
France	0.0	0.5	-0.2	-0.9	-0.4	0.3
Italy	1.1	0.7	0.4	0.5	0.4	0.6
United Kingdom	0.0	0.4	-1.8	2.0	1.4	0.6
Sweden	2.3	0.7	0.3	0.7	1.0	-0.7

Source: OECD Employment Outlook, September 1987.

- Matching the strong expansion in Gross Domestic Product, Canada has also experienced particularly strong employment growth in recent years. In both 1985 and 1986, it reported the highest rate of job creation among the major OECD countries, including Japan and the U.S.
- Both the United States and Canada have outperformed the major Western European countries in terms of job creation rates since 1984.

SECTION 2

TRADE PERFORMANCE

TRADE PERFORMANCE

TABLE 2-1
World Trade Matrix, 1986
(Billions of U.S. Dollars)

Exports to:	EEC	U.S.	Japan	CANADA	Indus. Count.	Oil exp. Count.	Non-oil devel. Count.	NICs	World
<u>Exports from:</u>									
EEC	451.3	74.0	11.3	8.9	625.7	34.6	109.7	17.6	796.5
U.S.	53.2	-	26.9	45.3	137.4	10.4	62.4	27.9	217.3
Japan	31.1	81.9	-	5.6	130.2	11.7	56.5	27.4	210.8
CANADA	5.7	67.2	4.2	-	78.3	1.0	5.3	1.9	89.7
<u>Groups of Countries:</u>									
Industrial	608.6	236.4	51.8	61.6	1083.8	62.8	256.4	81.4	1462.7
Oil-export	33.5	16.3	23.1	0.9	74.3	2.4	28.5	9.3	111.7
Non-oil dev.	89.5	82.1	31.0	5.4	220.2	16.5	96.3	35.6	377.6
6 NICs*	22.3	50.1	14.7	3.1	95.4	6.2	41.5	14.2	148.5
World**	752.1	354.7	112.6	69.3	1433.1	84.3	411.6	133.7	1991.6

* Brazil, Hong Kong, Korea, Malaysia, Mexico, Singapore.

** Includes Soviet Union and Eastern Europe

Source: IMF, Direction of Trade Statistics, 1987

- In 1986, 73% of world exports and 72% of world imports were accounted for by the industrialized countries.
- The EEC was the leading exporter in the world, supplying about 40% of world exports. It was followed by Japan and the U.S., each sharing 11% of total world exports. The trade data for EEC includes intra-EEC trade.

TRADE PERFORMANCE

- The EEC also led the world in imports, providing a market for about 38% of total world imports. Compared to exports, the share of world imports accounted for by the U.S. (18%) was considerably higher than the share of imports destined to Japan.
- Canada's share of the world exports was about 5%, of which three-quarters was shipped to the U.S. By comparison, Canada received some 4% of world imports, of which 65% was supplied by the U.S.
- The newly industrialized countries (NICs) accounted for about 7% of both the world imports and exports. While the U.S. was their major export market, receiving close to two-thirds of their exports, the non-oil developing countries were their most important suppliers, providing the NICs with over one-third of their imports.

TRADE PERFORMANCE

TABLE 2-2
Trade Balances, Selected Countries
1982 to 1986
(Billions of U.S. Dollars)

	Trade Balance				
	1982	1983	1984	1985	1986
United States	-42.6	-69.3	-123.3	-148.5	-169.8
Japan	6.9	20.5	33.5	46.7	83.1
CANADA	13.1	11.7	12.3	9.7	3.8
France	-19.0	-10.4	-6.8	-6.2	-4.5
Germany, Fed. Rep.	21.1	16.5	18.7	25.4	52.3
Italy	-12.7	-7.7	-10.9	-12.1	-
United Kingdom	-2.7	-8.4	-10.8	-7.7	-19.2

Source: IMF Survey, April 1987.

- The trade deficits for the U.S. and to a lesser extent for the U.K., have deteriorated considerably during the eighties. By comparison, the trade surpluses enjoyed by both Japan and Germany have grown substantially.
- Although Canada still maintains a surplus in its merchandise trade balance, it has been reduced considerably from \$13.1 billion in 1982 to \$3.8 billion in 1986.
- Over the same period, the trade deficit in France has diminished while Italy's deficit has remained relatively steady.

TRADE PERFORMANCE

TABLE 2-3
Share of World Exports, Selected Countries, 1960 to 1986
(Based on Trade in U.S. Dollars)

Country	1960	1970	1973	1976	1980	1982	1985	1986
European Economic Community	-	39.8	40.6	36.4	36.5	35.8	35.9	40.0
United States	11.2	15.3	13.6	12.7	11.6	12.3	11.8	10.9
Japan	3.0	7.0	7.1	7.4	6.9	8.1	9.8	10.6
CANADA	4.1	5.9	5.0	4.5	3.6	4.1	5.0	4.5
France	4.4	6.4	7.0	6.3	6.1	5.6	5.6	6.3
Germany	7.2	12.1	12.9	11.3	10.2	10.3	10.2	12.2
Italy	3.6	4.7	4.2	4.1	4.1	4.3	4.4	4.9
United Kingdom	9.2	6.8	5.9	5.2	5.8	5.6	5.6	5.4
Oil-exporting developing countries	2.9	6.1	7.5	14.4	15.9	12.6	8.7	5.6
Brazil	-	1.0	1.2	1.1	1.1	1.2	1.4	1.2
Mexico	-	0.5	0.4	0.4	0.8	1.2	1.2	0.8
Korea	-	0.7	0.6	0.9	0.9	1.3	1.7	1.8
Malaysia	-	0.4	0.6	0.6	0.7	0.7	0.9	0.7
Singapore	-	0.8	0.7	0.7	1.0	1.2	1.3	1.1

Sources: IMF, Direction of Trade Statistics, 1987.

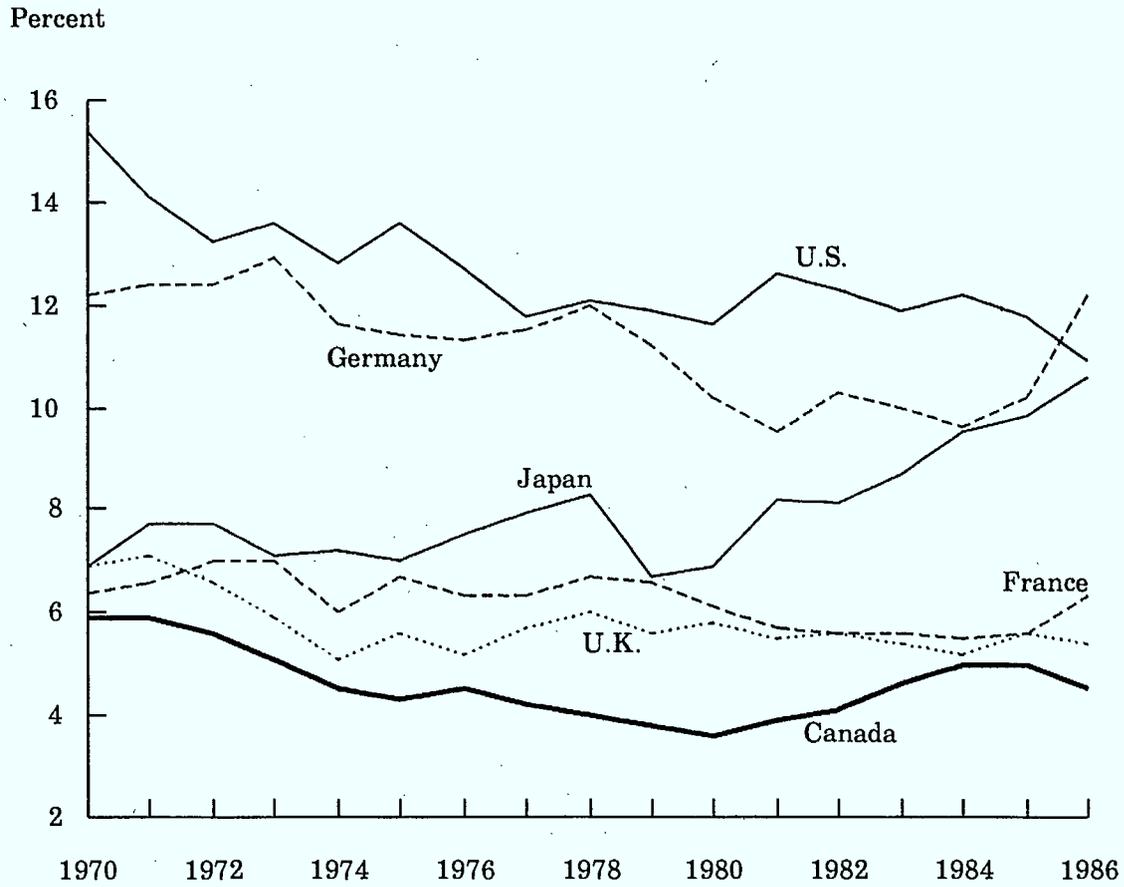
- Canada's share of world exports has varied between 4% and 5% over the last quarter of a century. In recent years, its peak was recorded in 1970 (5.9%) and the trough in 1980 (3.6%). (Chart 2-1)
- Similar to Canada, the shares of world exports accounted for by most other industrial countries have remained relatively stable. The most notable exception is Japan, which has recorded the best performance with its share rising from 3% in 1960 to about 11% in 1986.

TRADE PERFORMANCE

- As a result of the huge increases in oil prices during the 1970's, the share of world exports accounted for by the oil-exporting developing countries increased substantially from 6.1% in 1970 to 15.9% in 1980. However, due to the recent collapse of the oil market, their share of world exports had plummeted back to under 6% in 1986.
- The share of world exports accounted for by NICs is still relatively small compared to the share supplied by industrialized countries. However, some of the newly industrialized countries (e.g. Korea and Singapore) have almost doubled their shares over the 1970 to 1986 period.

TRADE PERFORMANCE

CHART 2-1
Share of World Exports, Selected Countries
(Based on Trade in U.S. Dollars)
1970 to 1986



TRADE PERFORMANCE

TABLE 2-4
Share of Total Manufacturing Exports among the Developed Market Economies,*
Selected Countries, 1970 to 1986

Country	1970	1980	1984	1985	1986
United States	17.4	15.5	15.8	15.2	12.9
Japan	10.7	13.4	18.2	17.9	17.6
CANADA	5.7	3.7	5.7	5.6	4.9
France	7.9	9.0	7.8	7.7	8.0
Germany	18.1	18.0	16.4	16.9	18.8
Italy	6.6	7.1	7.0	7.1	7.5
United Kingdom	9.7	9.3	6.9	7.1	6.9

Source: U.N., Monthly Bulletin Statistics, June 1987.

* Developed Market Economies include: Canada, U.S., EEC and other Western European countries, as well as Japan, Australia, New Zealand, Israel and South Africa.

- Canada's share of manufacturing exports to the developed market economies has remained relatively stable at around 5% (1980 was an exception).
- Japan's share increased very significantly from 10.7% in 1970 to 17.6% in 1986. By comparison, both the U.S. and the U.K. reported declines in their shares.

TRADE PERFORMANCE

TABLE 2-5
Canada's Trade with Principal Trading Areas, 1986
(Millions of Dollars)

	United States	Japan	United Kingdom	Other EEC	Other OECD	Other Countries	Total
Exports from Canada	92,570	5,612	2,654	5,228	1,847	12,554	120,495
Imports to Canada	77,325	7,626	3,721	9,082	2,792	12,132	112,678
Trade Surplus or Deficit (-)	15,245	-2,014	-1,037	-3,854	-945	422	7,817

Source: DRIE, Trade by Industrial Sector, Historical Summary, 1987.

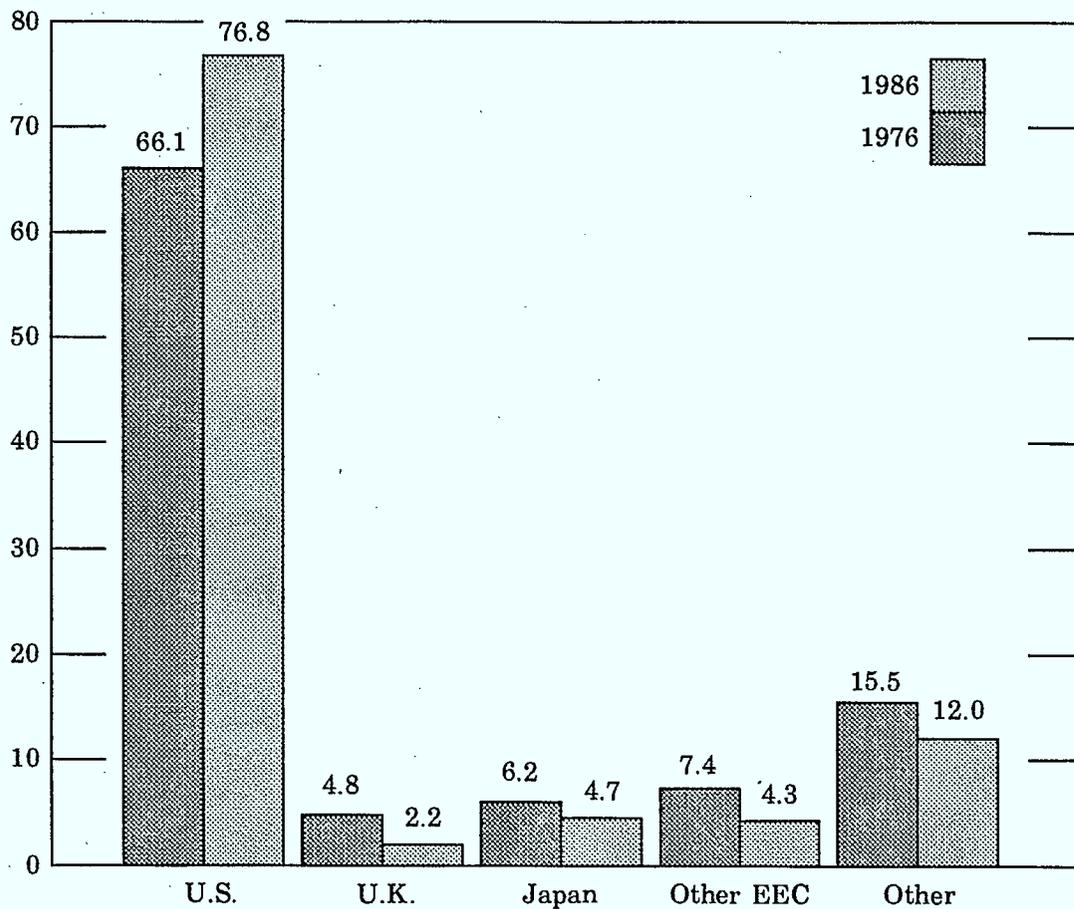
- In 1986, the U.S. continued to be Canada's most important trading partner. Some 77% of Canada's total exports were shipped to the U.S., and in return the U.S. supplied 69% of the total Canadian imports.
- The other leading trading partners of Canada were Japan, the U.K. and other OECD countries. Japan accounted for 7% of Canada's merchandise imports while it received 5% of Canada's exports.
- With the exception of the U.S., Canada recorded a trade deficit with its major trading partners.

TRADE PERFORMANCE

CHART 2-2
Share of Canadian Exports by Destination, 1976 and 1986

- Between 1976 and 1986, the U.S. share of Canadian exports grew from 66.1% to 76.8%.
- With the increase in the dominance of the U.S. as Canada's principal trading partner, the market shares of all other major trading partners declined, the largest decline being in exports to the EEC countries, especially the U.K.

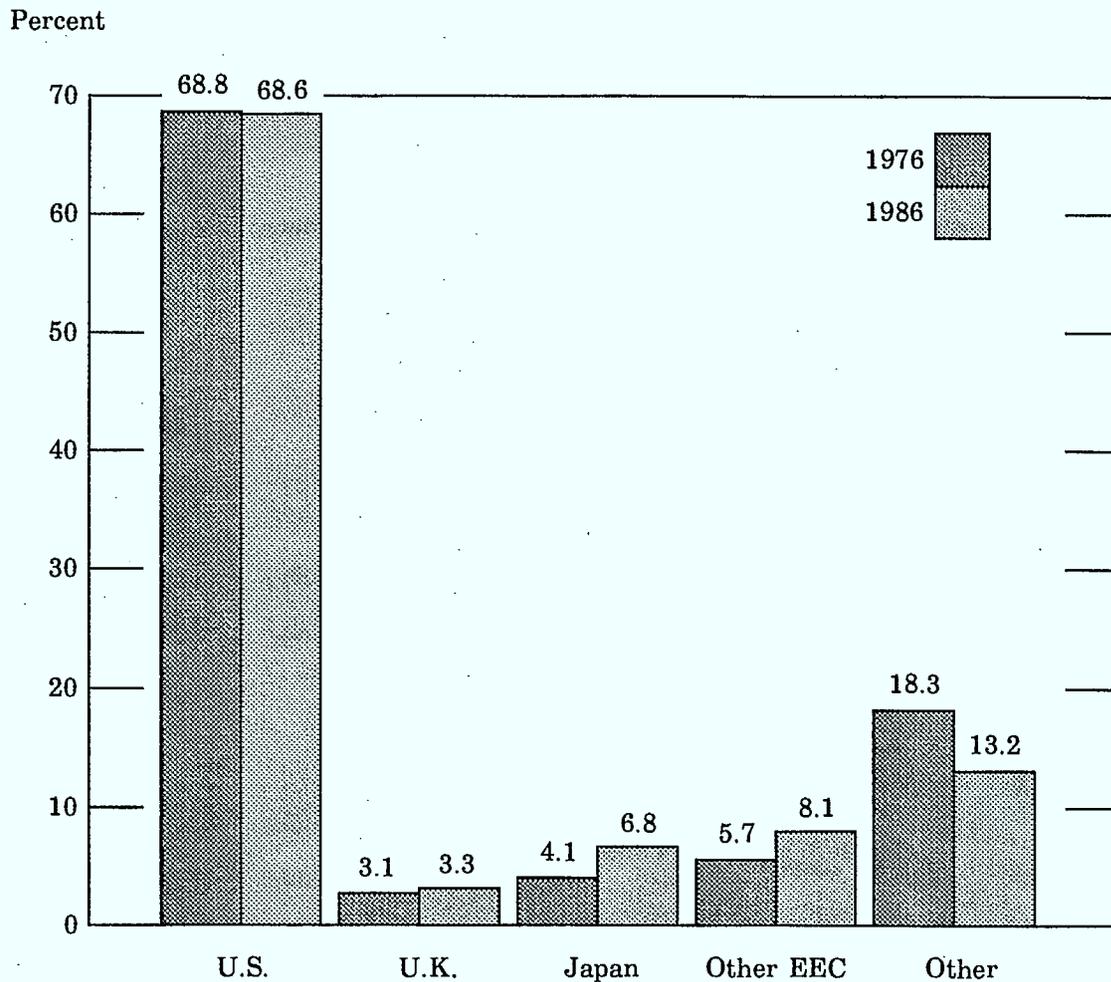
Percent



TRADE PERFORMANCE

CHART 2-3
Share of Canadian Imports by Origin, 1976 and 1986

- Between 1976 and 1986, the U.S. share of the Canadian import market has remained stable at about 69%.
- The major changes have been the growing importance of Japanese imports, from 4% of the market in 1976 to 7% in 1986 and an increase in imports from the E.E.C. (including the U.K.) from 9% to 11%.



TRADE PERFORMANCE

TABLE 2-6
Trade Balances*, Canada, 1966 to 1986
(Billions of Dollars)

Year	Foods, Feeds, Beverages, Tobacco Live Animals	Crude Materials Inedible	Fabricated Materials Inedible	End Products Inedible	Total	Total Manu- facturing
1966	1.1	0.9	1.8	-3.2	0.4	-1.3
1970	0.8	1.9	3.1	-2.8	2.9	0.2
1975	1.5	2.9	4.1	-9.7	-1.4	-6.8
1980	3.5	3.4	16.6	-17.8	5.2	-2.2
1986	3.2	8.0	18.4	-24.6	3.5	-3.9

Source: Statistics Canada, Summary of Canadian International Trade, December 1986.

* Trade balance is defined as total exports minus total imports.

- Over the past twenty years, Canada has enjoyed trade surpluses in raw materials and agricultural products.
- For manufacturing products, Canada has recorded trade surpluses in semi-processed goods (or fabricated materials inedible), and deficits in final products (or end products inedible).
- Overall, Canada's balance of trade has usually been in surplus, with its deficits in manufacturing products being more than offset by its surpluses in raw materials and agricultural products.

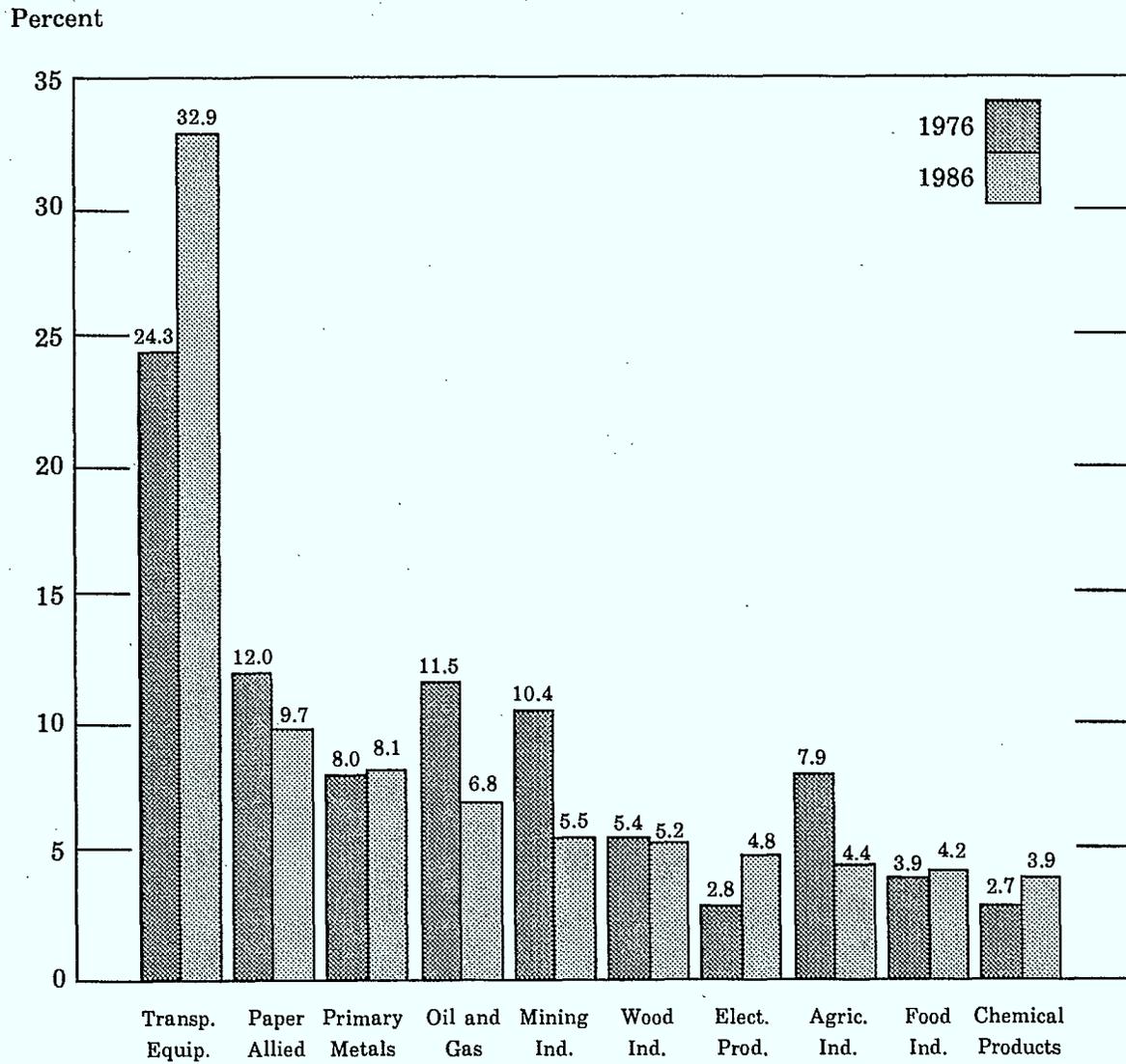
TRADE PERFORMANCE

CHART 2-4 Share of Canadian Exports by Sector, 1976 and 1986

- Transportation equipment continued to account for the largest share of Canada's exports, increasing from 24% in 1976 to 33% in 1986.
- Except for small increases in the shares of total exports accounted for by the electrical and chemical products sectors, other major sectors have seen their shares remain constant or decline over the 1976-86 period.
- Primary industries (such as oil and gas, mining, and agriculture) have experienced a decline in terms of their shares of Canadian exports. Exports of manufactured products have grown in importance.

TRADE PERFORMANCE

CHART 2-4
Share of Canadian Exports by Sector, 1976 and 1986
(Top Ten Sectors in 1986)



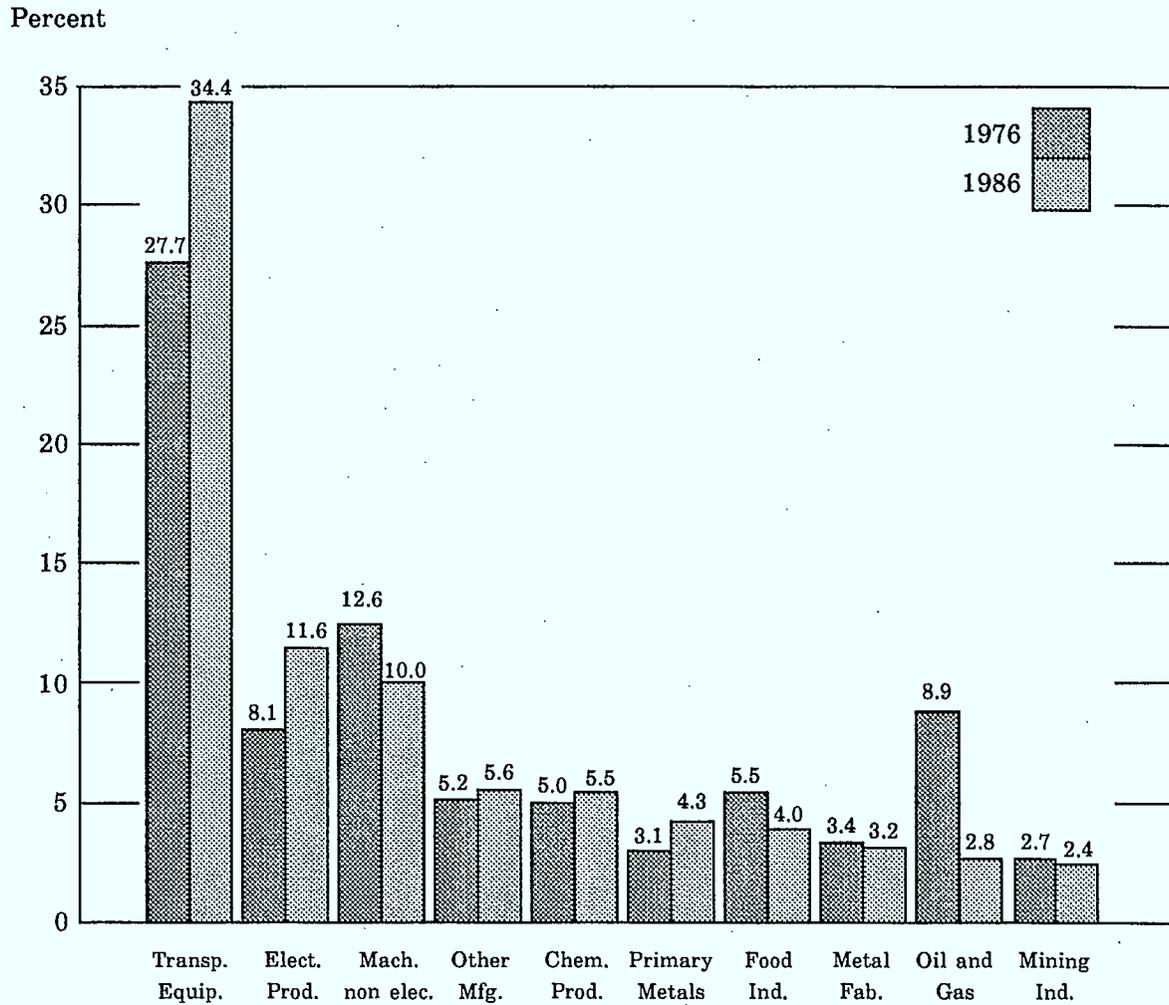
TRADE PERFORMANCE

CHART 2-5
Share of Canadian Imports by Sector, 1976 and 1986

- Transportation equipment accounted for the largest share of Canada's imports also, increasing from 28% in 1976 to 34% in 1986.
- Imports of electrical products have grown in importance over the 1976-86 period and accounted for the second largest share of Canadian imports (12% in 1986).
- Although its share has declined, non-electrical machinery accounted for a further 10% (in 1986) of the Canadian import market.
- Of all the sectors, oil and gas reported the largest decrease in the share of Canadian import market from 9% in 1976 to 3% in 1986.

TRADE PERFORMANCE

CHART 2-5
Share of Canadian Imports by Sector, 1976 and 1986
(Top Ten Sectors in 1986)

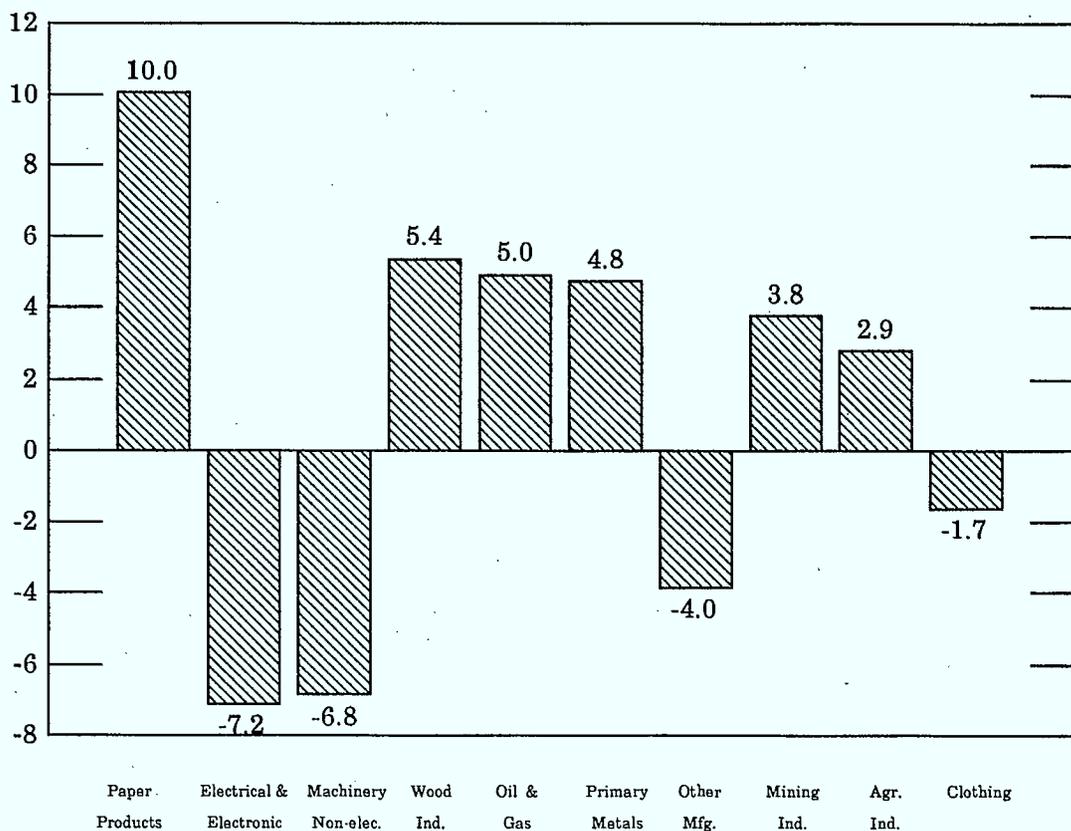


TRADE PERFORMANCE

Chart 2-6
Trade Balances for Selected Sectors, Canada, 1986
(Billions of Dollars)

- Paper products was the sector where Canada enjoyed the largest surplus in its trade in 1986, followed by other resource based sectors: wood products, oil and gas, primary metals, mining and agriculture.
- Electrical products and machinery were the two sectors where Canada reported the largest deficits in trade in 1986.

Billions of Dollars



TRADE PERFORMANCE

TABLE 2-7
Trade and Shipments of Major Manufacturing Groups* Canada, 1986
(Billions of Dollars)

Industry	Exports	Imports	Trade Balance	Shipments
Food Industries	5.0	4.3	0.6	33.9
Wood Industries	6.1	0.7	5.4	11.8
Paper & Allied Products	11.5	1.3	10.1	19.6
Primary Metals	9.5	4.8	4.8	16.8
Fabricated Metal Products	2.9	3.4	-0.5	14.2
Machinery (Non-Electrical)	3.7	10.6	-6.8	7.6
Transportation Equipment	37.2	36.3	0.9	43.8
Electrical & Electronic Prod.	5.0	12.1	-7.2	12.7
Chemicals & Chemical Prod.	4.5	5.9	-1.5	18.0
Other Manufacturing	8.6	18.4	-9.8	71.6
Total Manufacturing	94.0	97.9	-3.9	250.0

* Based on the 1980 Standard Industrial Classifications. These nine sectors have the highest values of total trade (exports plus imports) among major groups in manufacturing.

Source: DRIE Trade Databank, 1987.

- Of the nine sectors which in 1986 had the highest value of total trade (exports plus imports) among the major groups in manufacturing, transportation equipment reported by far the highest value of exports, followed by paper & allied products, and primary metals.
- Transportation equipment also led substantially all major manufacturing groups in the value of imports, followed by electrical and electronic products, and non-electrical machinery.
- Canada recorded a trade deficit in manufacturing as a whole. However, it had substantial trade surpluses in paper & allied products, wood industries and primary metals. The groups with large deficits were electrical and electronic products, and machinery (non-electrical). Surplus in transportation equipment (mostly motor vehicles and parts) was minimal.

TRADE PERFORMANCE

CHART 2-7

Trends in Export Orientation and Import Penetration in Manufacturing, Canada
1970-1986

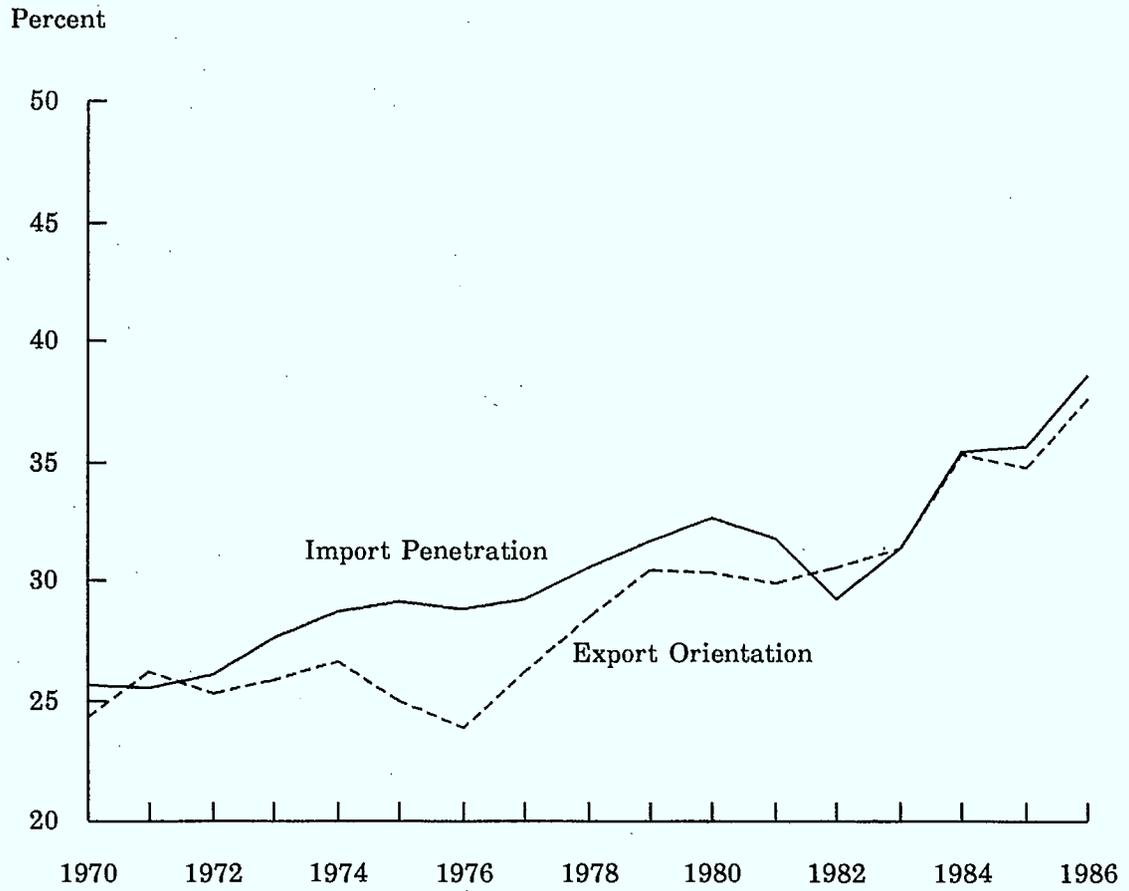
TABLE 2-8

Export Orientation and Import Penetration in Manufacturing by Sector, Canada
1976 and 1986

- Both export orientation (the ratio of domestic exports to shipments) and import penetration (the ratio of imports to domestic market, the latter is defined as shipment plus imports minus exports) in Canadian manufacturing have shown a steady increase since 1970, particularly after the 1981-82 recession (Chart 2-7).
- The increase in export orientation suggests that Canadian manufactured goods have become more internationally competitive, while the increase in import penetration in some sectors indicates that they were losing their competitive edge.
- In sectors where import penetration increased simultaneously with export orientation, it could mean that Canadian industry was undergoing a process of rationalization in response to the recent reductions in trade barriers.
- All manufacturing industries reported an increase in export orientation. The largest increases were reported by electrical and electronic products, transportation equipment, furniture and fixtures.
- Almost all industries (except wood industries and printing and publishing) recorded increased import penetration, with the largest gains reported by electrical and electronic products, primary metals and other manufacturing.
- Table 2-8 shows also that transportation equipment had both the highest export orientation and import penetration in 1986 (85.1% and 84.8%, respectively), reflecting the impact of the Auto Pact.
- Other sectors which exported over 50% of their production in 1986 were paper products (58.4%), primary metals (56.6%), and wood industries (51.5%).
- Sectors with a high degree of import penetration included machinery (73.3%) and electrical and electronic products (61.0%).

TRADE PERFORMANCE

CHART 2-7
Trends in Export Orientation and Import Penetration in Manufacturing,
Canada, 1970 to 1986



TRADE PERFORMANCE

TABLE 2-8
Export Orientation and Import Penetration
in Manufacturing by Sector, Canada,
1976 and 1986

	<u>EXPORT ORIENTATION</u>			<u>IMPORT PENETRATION</u>		
	(Exports / Shipments)			(Imports / Can. Market)		
	1976	1986	Change 1976-1986	1976	1986	Change 1976-1986
Food & Beverage	9.5	14.1	4.6	9.4	12.6	3.2
Tobacco Products	0.5	6.7	6.2	1.5	2.0	0.5
Rubber & Plastic Products	10.1	23.5	13.4	21.0	27.8	6.8
Leather & Allied Products	7.5	9.5	2.0	34.6	45.5	10.9
Textiles	4.3	9.3	5.0	29.1	31.7	2.6
Clothing	4.0	6.5	2.5	13.9	27.3	13.4
Wood Industries	41.5	51.5	10.0	11.7	10.7	-1.0
Furniture & Fixtures	4.5	22.2	17.7	12.1	15.6	3.5
Paper & Allied Products	55.2	58.4	3.2	11.2	14.1	2.9
Printing & Publishing	2.8	5.9	3.1	13.4	13.3	-0.1
Primary Metals	45.3	56.6	11.3	21.9	39.5	17.6
Fabricated Metal Products	5.1	20.2	15.1	14.6	22.8	8.2
Machinery (Non-Electrical)	44.9	49.2	4.3	71.2	73.3	2.1
Transportation Equipment	68.6	85.1	16.5	70.7	84.8	14.1
Electrical & Electronic Products	14.3	39.0	24.7	34.5	61.0	26.5
Non-Metallic Mineral Products	7.1	12.5	5.4	16.2	19.0	2.8
Refined Petroleum & Coal Products		3.1	6.9	3.8	2.9	7.0 4.1
Chemicals & Chemical Products	17.9	24.9	7.0	29.2	30.5	1.3
Other Manufacturing	16.8	38.3	21.5	51.6	66.6	15.0
Total Manufacturing	26.2	37.6	11.4	29.2	38.6	9.4

Source: DRIE, Manufacturing Trade and Measures, 1987.

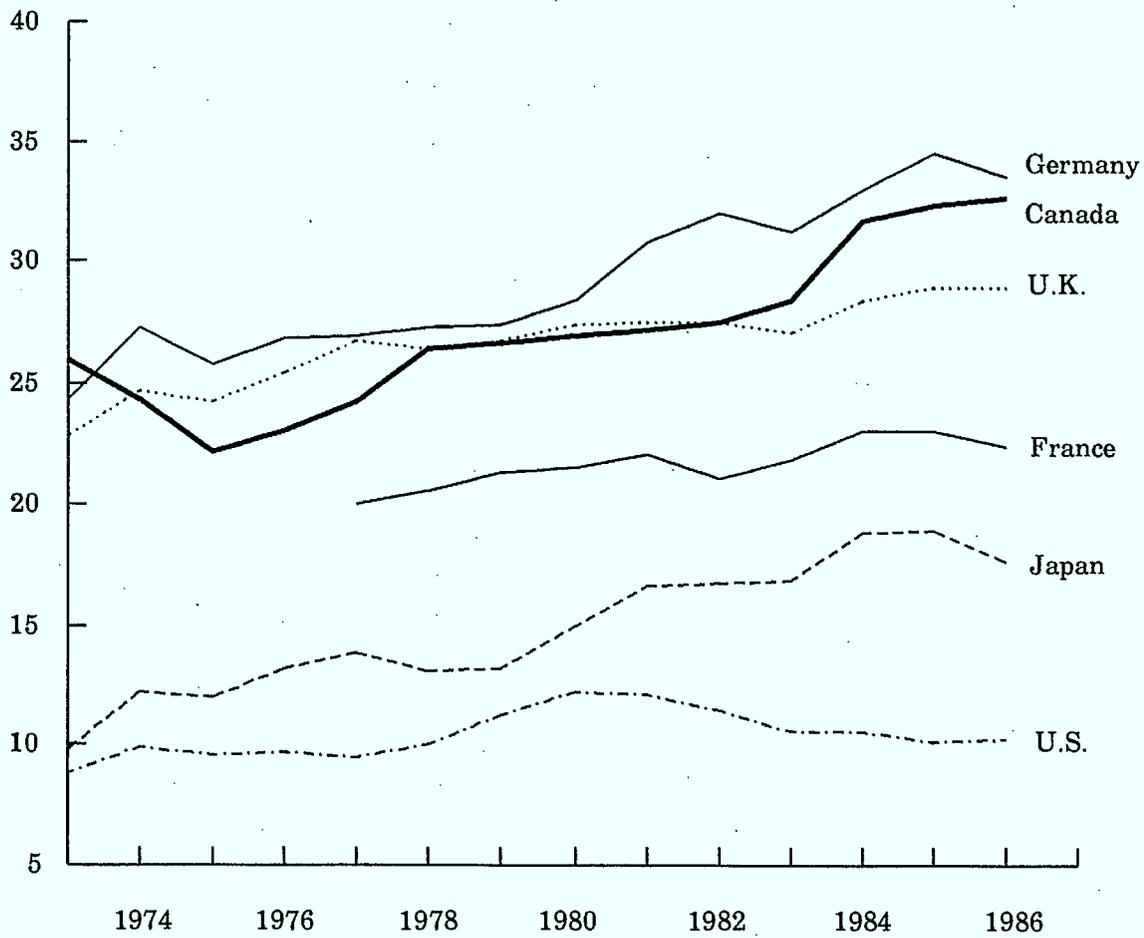
CHARTS 2-8 and 2-9 Export of Goods and Services as a Percentage of GDP

- For the aggregate economy, export of goods and services as a proportion of Gross Domestic Product (GDP) is used here as a proxy for export orientation, which is usually defined as the share of total shipments that are exported.
- Canada is one of the most open economies among the major OECD countries and has the highest export orientation with the exception of West Germany. Exports as a percentage of the Canadian GDP have tended to be higher than in other major industrial nations. This ratio has risen steadily since 1978 particularly after the 1981-82 recession, suggesting that Canada has become increasingly competitive in the world market.
- Among industrialized countries, the U.S. reported the lowest value of exports in relation to its GDP. Even with significant growth since the mid-seventies, the value of exports in Japan, as a percentage of its GDP, remained the second lowest among the major OECD countries. It should be noted that both the U.S. and Japan have considerably larger domestic markets than Canada or other OECD countries.
- Exports play a more significant role in the economies of the newly industrialized countries in the Far East than has been the case for the industrialized countries.

TRADE PERFORMANCE

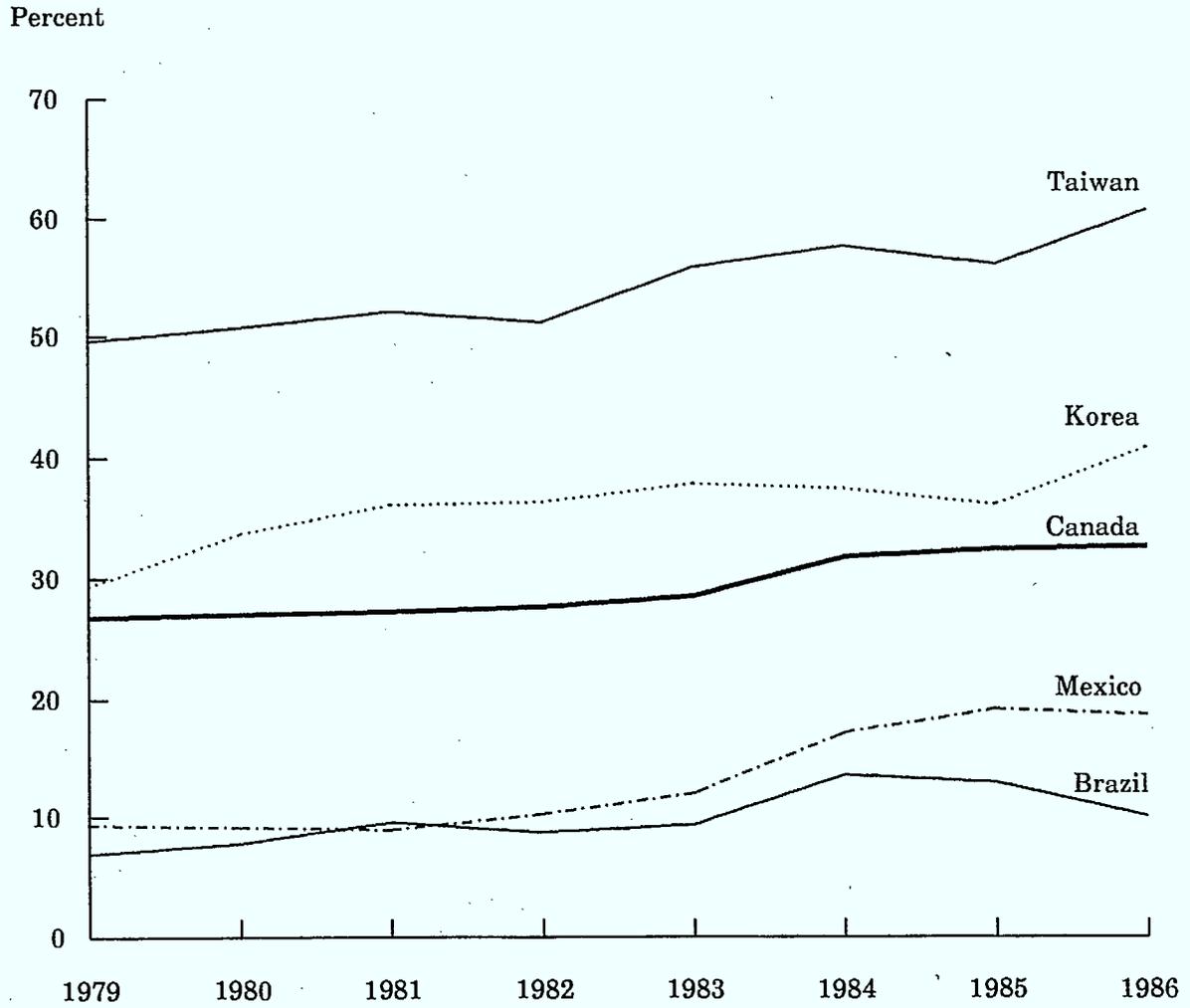
CHART 2-8
Export of Goods and Services as a Percentage of GDP, Selected OECD Countries, 1973 to 1986

Percent



TRADE PERFORMANCE

CHART 2-9
Export of Goods and Services as a Percentage of GDP,
Selected Newly Industrialized Countries,
1979 to 1986



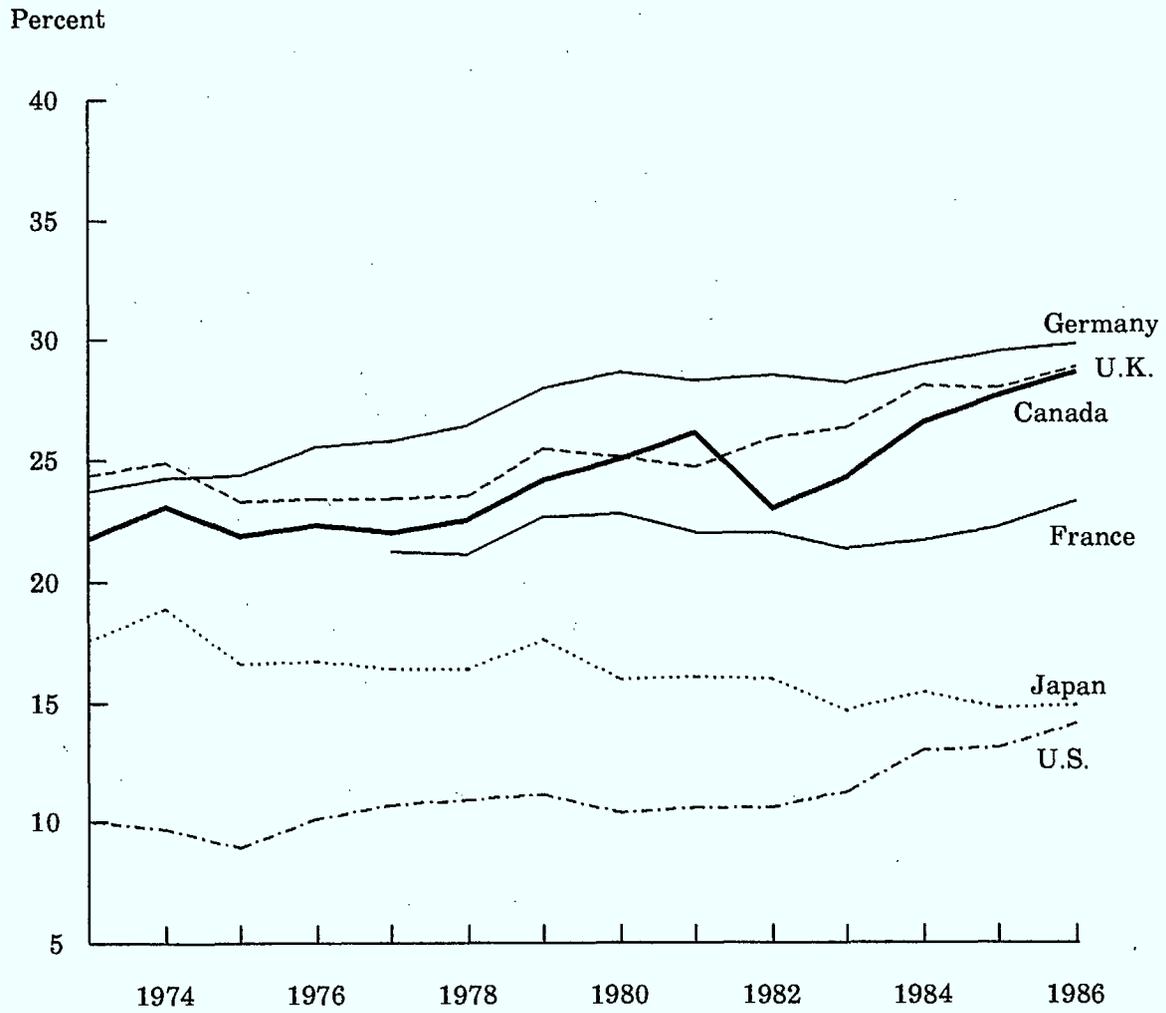
TRADE PERFORMANCE

CHARTS 2-10 and 2-11 Import of Goods and Services as a Percentage of GDP

- In terms of the aggregate economy, import of goods and services expressed as a percentage of Gross Domestic Product (GDP) is used here as a proxy for import penetration which usually measures the proportion of the total domestic market (shipment plus imports minus exports) supplied by imports.
- As was the case for exports, imports also played an increasingly more pivotal role in the Canadian economy than in most other major OECD countries. The Canadian economy, as indicated earlier, is very open, with both imports and exports of vital importance.
- While the value of total U.S. imports has risen substantially, in particular since the 1981-1982 recession, as a percentage of its GDP they remain the lowest among the major industrialized countries. Looked at from this perspective, the U.S. has one of the most closed economies among the major industrialized countries.
- In contrast to its increasing export orientation, the value of imports in Japan, relative to its GDP, was not only among the lowest among the major OECD countries, but has also declined steadily since the early seventies.
- Contrary to the case in most industrialized countries, import penetration in NICs (especially Taiwan and Korea) has been declining steadily in recent years.

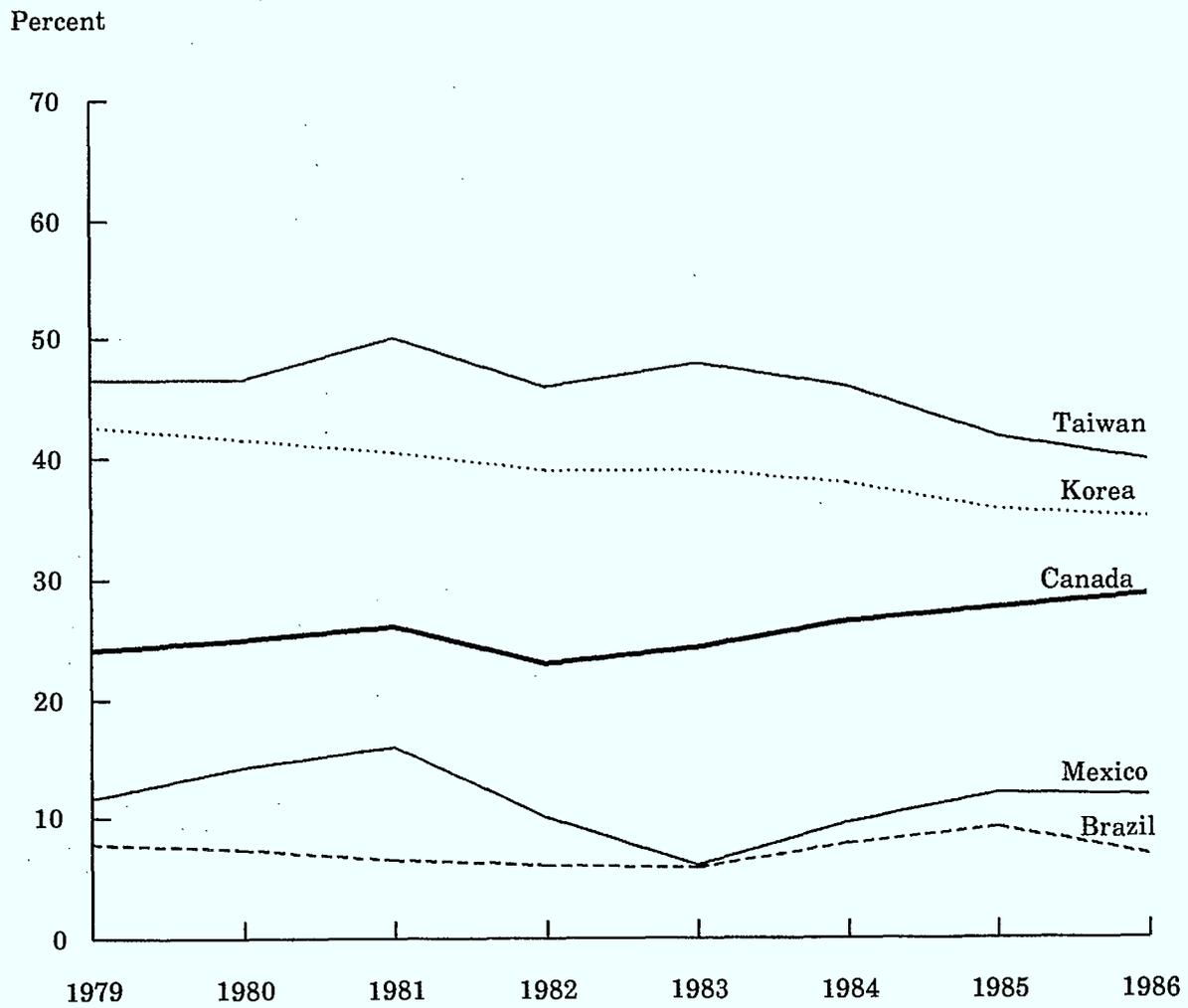
TRADE PERFORMANCE

CHART 2-10
Import of Goods and Services as a Percentage of GDP, Selected OECD Countries,
1973 to 1986



TRADE PERFORMANCE

Chart 2-11
Import of Goods and Services as a Percentage of GDP,
Selected Newly Industrialized Countries,
1979 to 1986



SECTION 3

**COST AND PRICE
COMPETITIVENESS**

COST AND PRICE COMPETITIVENESS

TABLE 3-1
Unit Labour Costs, Productivity and Hourly Compensation in Manufacturing,
Selected Countries, 1973 to 1986
(Annual Rates of Change)

Year	United States	Japan	CANADA	France	Germany	Italy	United Kingdom	Sweden
Unit labour costs, national currency basis:								
1973-86	5.2	2.7	7.5	9.5	3.9	13.3	11.1	8.6
1973-79	8.0	6.9	9.8	10.8	4.9	16.7	17.9	11.2
1979-86	2.8	-0.8	5.5	8.4	3.0	10.4	5.6	6.4
1985	0.2	-2.3	2.4	4.8	1.8	8.8	2.8	7.8
1986	-0.4	0.7	4.1	2.5	3.1	3.0	3.7	7.2
Unit labour costs, U.S. dollars basis:								
1973-86	5.2	6.5	4.8	5.8	5.5	5.4	6.8	4.6
1973-79	8.0	10.8	6.9	11.5	11.6	10.0	15.2	11.5
1979-86	2.8	3.0	3.0	1.1	0.6	1.6	0.2	-1.1
1985	0.2	-2.7	-2.9	2.0	-1.5	0.1	-0.2	3.7
1986	-0.4	42.6	2.4	32.9	39.8	31.9	17.4	29.3

Source: U.S. Department of Labour, Bureau of Labour Statistics, December 1987.

- In 1986, only Sweden reported a greater increase in unit labour costs (7.2%), on a national currency basis, than Canada (4.1%).
- The United States reported a decline in unit labour costs (-0.4%) while Japan recorded only a slight increase (0.7%).
- Over the period 1973-1986, the rate of increase in Canada's unit labour costs (as in other countries) has declined. It increased by an average annual rate of 5.5 percent in 1979-86 compared to 9.8 percent in 1973-79.

COST AND PRICE COMPETITIVENESS

- Unit labour costs expressed in a common currency (U.S. dollars) is a better measure of the international cost competitiveness of a country than costs expressed on a national currency basis.
- Using this measure, there were significant increases in unit labour costs in Japan and Europe in 1986, as a result of the appreciation (since 1985) of their currencies against the U.S. dollar.
- Canada, on the other hand, experienced only a marginal increase in unit labour cost in 1986. On the basis of this measure, Canada's unit labour costs over the 1973-86 period increased at a slower rate than costs in all other G-7 countries.
- International labour cost competitiveness is significantly affected by the changes in the exchange rates of currencies. It should be noted that much of the Canadian advantage in unit labour costs in the recent past (up to 1985) is largely attributable to the depreciation of the Canadian dollar in terms of the U.S. currency.

COST AND PRICE COMPETITIVENESS

Table 3-1 (cont'd)
Unit Labour Costs, Productivity and Hourly Compensation in Manufacturing,
Selected Countries, 1973 to 1986
(Annual Rates of Change)

Year	United States	Japan	CANADA	France	Germany	Italy	United Kingdom	Sweden
Output per hour, national currency basis:								
1973-86	2.5	5.6	2.2	3.9	3.5	3.8	3.0	2.8
1973-79	1.4	5.5	2.1	4.9	4.3	3.3	1.2	2.6
1979-86	3.5	5.6	2.3	3.1	2.7	4.3	4.5	3.0
1985	5.1	7.3	2.5	3.1	4.1	1.5	3.8	3.8
1986	3.7	2.8	-0.2	1.9	1.5	1.2	3.5	0.2
Compensation per hour, national currency basis:								
1973-86	7.8	8.4	9.8	13.8	7.5	17.7	14.4	11.7
1973-79	9.5	12.8	12.0	16.2	9.5	20.6	19.4	14.2
1979-86	6.4	4.8	7.9	11.7	5.8	15.2	10.3	9.6
1985	5.3	4.9	5.0	8.1	6.0	10.4	6.6	12.0
1986	3.3	3.5	3.9	4.5	4.7	4.3	7.4	7.4

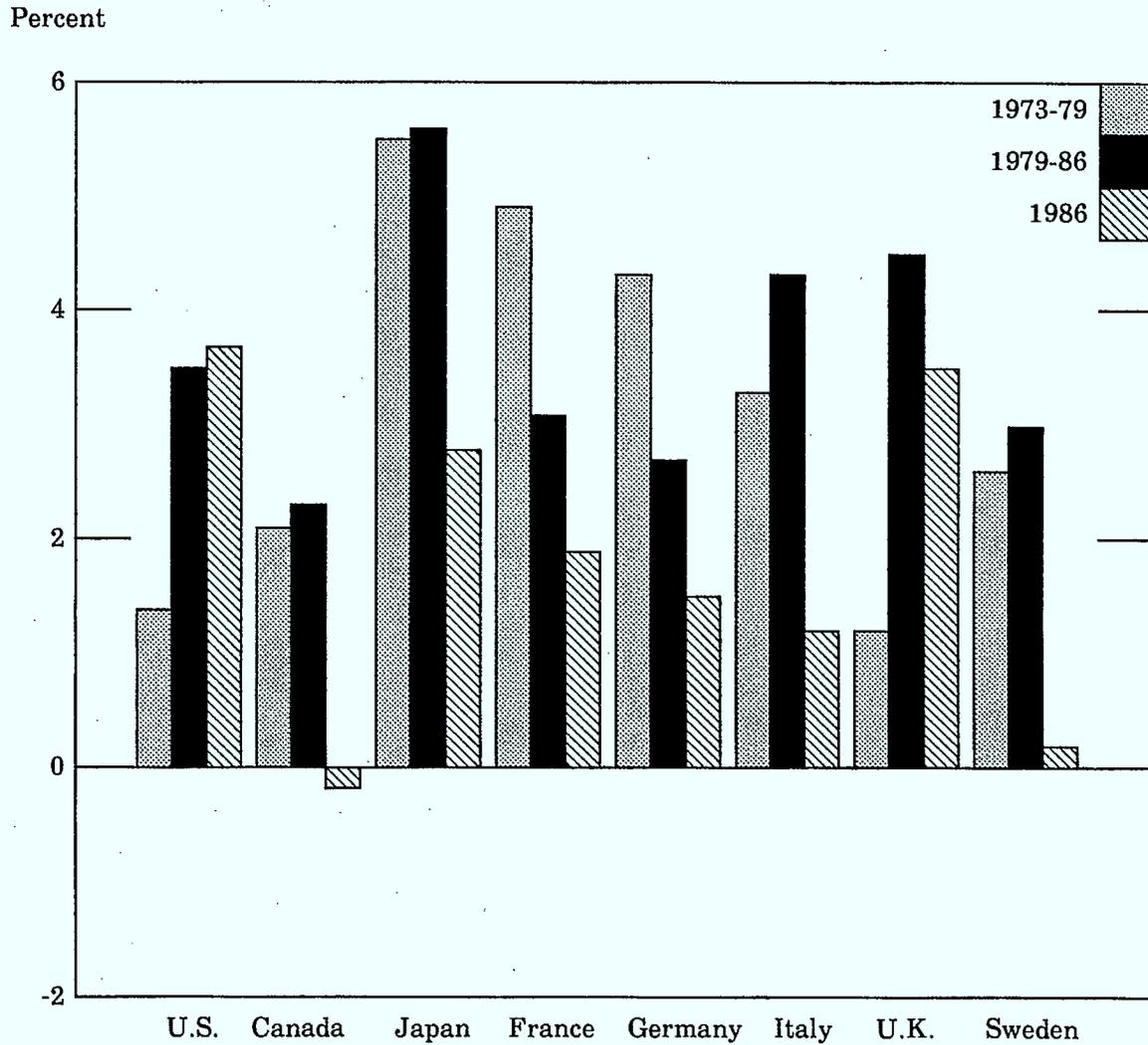
- Unit labour cost consists of two components, output per hour (productivity) and compensation per hour.
- In terms of output per hour, on average over the 1973-86 period, Canada reported the lowest productivity growth among all the major OECD countries. Over the initial 1973-79 period, however, Canada did report stronger growth than either the U.K. or the U.S. (Chart 3-1).
- Between 1985 and 1986 productivity growth slowed in all countries, and in some cases quite substantially. Canada was the only country, however, to report an actual decline (-0.2%) in 1986. The United States recorded the highest rate of increase.

COST AND PRICE COMPETITIVENESS

- Growth in compensation per hour also moderated in 1986, in all countries with the exception of the U.K.
- Canada reported the third lowest rate of growth in wages and salaries (3.9%) after the U.S. (3.3%) and Japan (3.5%). This relatively modest growth in wages and salaries helped keep Canada's unit labour costs, on a national currency basis, more competitive with other OECD countries in spite of our poor performance with respect to productivity growth.
- Except in the most recent years, Canada's rate of growth in compensation has usually been higher, at times quite substantially, than the U.S. rate.

COST AND PRICE COMPETITIVENESS

CHART 3-1
Changes in Manufacturing Productivity, Selected Countries and Selected Periods,
1973 to 1986
(Average Annual Rates of Change)



COST AND PRICE COMPETITIVENESS

TABLE 3-2
Unit Labour Costs (Trade-Weighted) in Manufacturing,
Selected Countries, 1976 to 1986
(Annual Rates of Change)

Year	United States	Japan	CANADA	France	Germany	Italy	United Kingdom	Sweden
1976-86	0.7	2.0	-0.5	-0.7	1.0	-0.1	1.9	-1.7
1976-81	1.2	0.0	-1.2	-1.0	0.2	-2.7	7.1	-0.3
1981-86	0.1	4.4	0.3	-0.3	2.0	2.9	-4.3	-3.3
1985	2.4	-2.1	-3.6	1.2	-2.8	1.0	1.3	3.6
1986	-22.4	26.0	-6.6	2.2	10.7	2.3	-5.8	-2.2

Source: IMF, International Financial Statistics, 1987

- Countries differ greatly in terms of the importance of trade to their manufacturing sectors. Consequently, data on trade-weighted unit labour costs may present a better picture of a country's cost competitiveness.
- The above table is derived from the IMF indexes of trade-weighted relative unit labour costs. The trade-weights used are based on the 1986 disaggregated trade data for manufactured goods for 17 countries which the IMF uses to calculate these indexes. Trade-weights used take into account both bilateral trade and the relative importance of the "third country" markets.
- Compared to its three major trading partners, (U.S., Japan and the U.K.), Canada has shown the best performance in terms of growth in unit labour costs in manufacturing over the last ten years. It has recorded a marginal decline, while the other three countries have reported a slight increase over the 1976-1986 period.
- Canada's unit labour costs performance was in fact one of the best among the major OECD countries. The recent changes in exchange rates caused a substantial improvement in both the United States' and Canada's unit labour cost performance in 1986 with declines of -22.4% and -6.6%, respectively.

COST AND PRICE COMPETITIVENESS

TABLE 3-3
Exchange Rate Index,* Selected Countries, 1970 to 1986

Country	1970	1975	1980	1982	1983	1984	1985	1986
Japan	63.1	76.1	100.0	91.0	95.1	95.2	95.4	134.8
CANADA	112.0	115.0	100.0	94.8	94.9	90.3	85.6	84.1
France	76.3	98.6	100.0	64.6	55.6	48.4	47.4	61.0
West Germany	49.8	73.9	100.0	74.9	71.2	64.0	62.1	83.9
Italy	136.3	131.1	100.0	63.4	56.5	48.8	44.9	57.6
United Kingdom	103.0	95.5	100.0	75.2	65.2	57.4	55.7	63.1
Netherlands	54.9	78.7	100.0	74.4	69.7	62.1	60.3	81.4
Sweden	81.5	102.1	100.0	67.9	55.2	51.2	49.4	59.4

* U.S. dollars per unit of national currency.

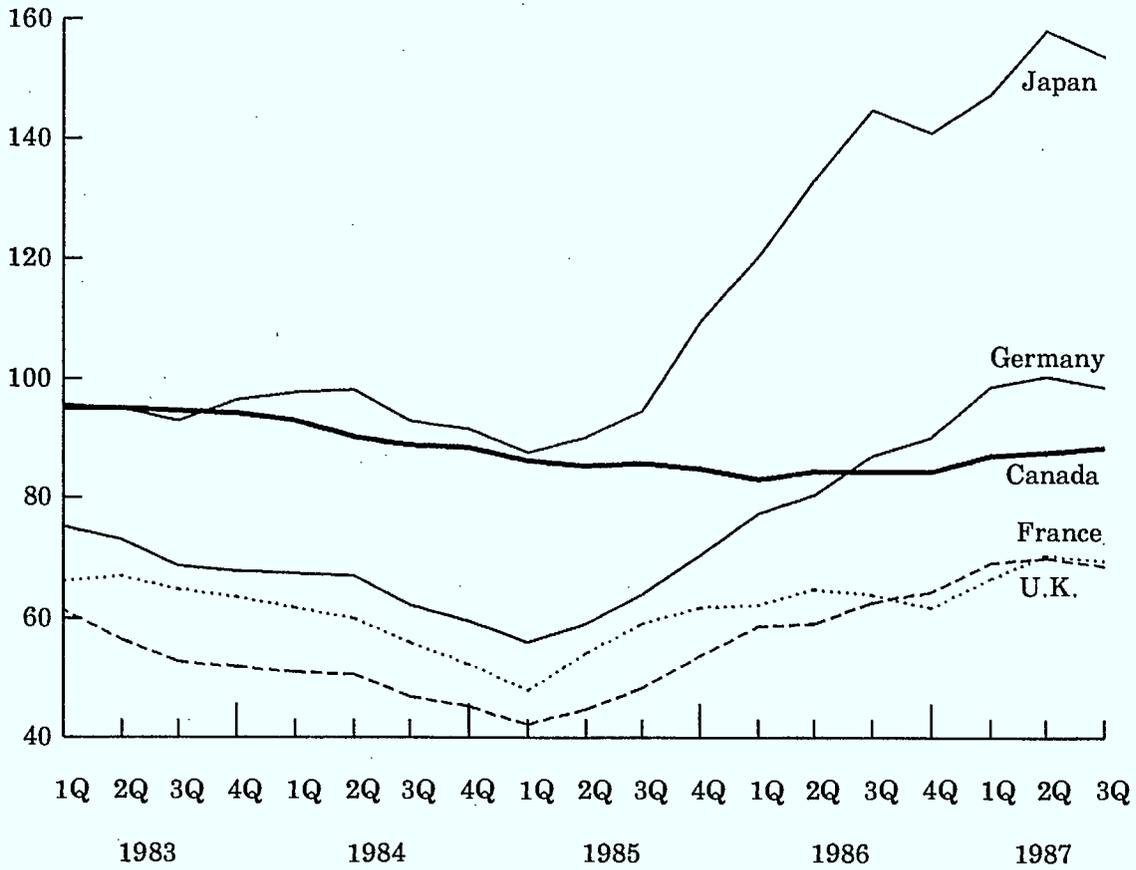
Source: IMF, International Financial Statistics, 1987.

- The exchange rate differential between the U.S. and Canadian dollars remains a critical factor in maintaining Canada's competitive position in the North American market.
- The value of the Canadian dollar has remained relatively stable over the 1985-86 period, while the value of the other seven major OECD currencies have shown a substantial increase with respect to the U.S. dollar.
- The value of the Japanese yen has shown the most dramatic rise, followed by the German mark. (Chart 3-2)
- With the further devaluation of the Canadian and the U.S. dollar in 1987 in terms of the Japanese and major European currencies, the competitive positions of both the Canadian and U.S. economies were enhanced further.

COST AND PRICE COMPETITIVENESS

CHART 3-2
Exchange Rate Index, Selected Countries,
1st Quarter 1983 to 3rd Quarter 1987
(U.S. Dollars Per Unit of National Currency)

Indexes
1980 = 100



COST AND PRICE COMPETITIVENESS

TABLE 3-4
Productivity and Unit Labour Costs (ULC) in Manufacturing Industries,
Canada relative to U.S., 1980 to 1986
(Percent of U.S. Level)

Industry	Relative Productivity		Relative ULC Ratio			
	1980	1986	\$ Canadian		\$ US	
			1980	1986	1980	1986
Food, Beverages	74	70	119	150	122	129
Plastics, Rubber	88	84	99	121	102	105
Textiles, Clothing	93	92	106	116	108	100
Wood Products	79	87	131	135	135	117
Pulp, Paper	113	101	91	112	93	97
Printing, Publishing	90	84	103	122	106	105
Primary Metals	83	81	98	131	100	113
Metal Fabricating	71	78	129	124	132	107
Machinery	78	62	118	154	121	133
Transportation Equipment	66	95	124	96	127	83
Electrical Products	120	110	73	89	75	76
Concrete, Cement Products	105	95	93	113	95	97
Chemical Products	86	68	97	130	100	112
Total Manufacturing	84	80	107	128	110	110

Source: DRI, The Manufacturers' Analyst, Summer 1987.

- Canada's productivity relative to the U.S. had improved in only three manufacturing sectors between 1980 and 1986: transportation equipment, wood products and metal fabricating.
- Electrical products and pulp and paper were the only sectors where Canada enjoyed a productivity advantage in 1986, and only for the former was there a significant advantage in unit labour costs in Canada's favour.

COST AND PRICE COMPETITIVENESS

- Machinery and chemical products were the two sectors where Canada suffered the worst disadvantage, with their respective output per hour at 62% and 68% of the U.S. levels.
- Between 1980-86 while Canada's relative unit labour cost position with respect to the U.S. for total manufacturing worsened on a national currency basis, on a U.S. dollar basis there was no change.
- When compared on a U.S. dollar basis for 1986, electrical products and transportation equipment were the only sectors where Canada enjoyed a significant advantage, in terms of unit labour costs. In fact, Canada is more competitive than the U.S. in these two sectors even when unit labour costs are measured in national currencies. Pulp and paper and concrete and cement products were the other two sectors where our costs were somewhat less than their respective levels in the U.S.
- In 1986, machinery, and food and beverages were the two sectors where Canada's performance was the worst, with unit labour costs being respectively 33% and 29% higher respectively than in the U.S.

COST AND PRICE COMPETITIVENESS

TABLE 3-5
Relative Export Unit Values* in Manufacturing, Selected Countries, 1970 to 1986
(Annual Rates of Change)

	Average 1970-86	1984	1985	1986
U.S.	0.6	4.3	2.5	-12.7
Japan	0.0	2.6	-2.5	6.4
CANADA	-3.3	-0.1	-5.4	-12.0
France	0.4	3.2	2.6	2.9
Germany	-0.1	-6.8	0.5	10.7
Italy	-0.5	0.5	-1.6	-0.9
U.K.	0.5	-2.2	1.7	-2.5
Netherlands	-0.4	0.3	-2.4	-6.6
Sweden	-0.1	2.9	0.8	2.0

* Export unit values serve as a proxy for data on final product prices for traded goods.

Source: IMF, International Financial Statistics, 1987.

- In addition to unit labour cost indicators, price measures are also used to gauge a country's relative competitiveness. Usually, relative export unit values are used to measure changes in export prices and the consumer price indexes to ascertain changes in domestic prices.
- The above rates are calculated from the IMF series of data on relative indexes of export unit values for 17 industrial countries. A relative indicator compares an index for a particular country with a composite index for 16 other industrial countries.
- The prices of both Canadian and U.S. exports showed a significant decline in 1986, and in the case of the U.S. this represented a major turnaround from the increases reported in the previous years.

COST AND PRICE COMPETITIVENESS

- The rise in the value of the German and Japanese currencies in terms of the U.S. dollar is reflected in the significant increase in their export prices in 1986 (10.7% and 6.4%, respectively).
- Over the period 1970-86, Canada experienced the largest average annual rate of decrease in relative export unit values and the U.S., the largest increase. Canadian exports in the world market, therefore, have become more price competitive.

COST AND PRICE COMPETITIVENESS

TABLE 3-6
Consumer Price Index, Selected Countries, 1971 to 1986
(Annual Rates of Change)

Country	Average 1971-1981	1982	1983	1984	1985	1986
United States	8.1	6.2	3.2	4.3	3.6	1.9
Japan	8.7	2.7	1.9	2.3	2.0	0.6
CANADA	8.5	10.8	5.8	4.3	4.0	4.2
France	10.0	11.8	9.6	7.4	5.8	2.5
Germany	5.2	5.3	3.3	2.4	2.2	-0.2
Italy	14.6	16.5	14.6	10.8	9.2	5.9
United Kingdom	13.6	8.6	4.6	5.0	6.1	3.5
Netherlands	7.3	5.9	2.8	3.3	2.2	0.2
Sweden	9.5	8.6	8.9	8.0	7.4	4.2
Brazil	42.9	97.8	142.1	197.0	226.9	145.2
Hong Kong	9.1	10.6	9.9	8.5	3.4	3.2
Korea	16.9	7.3	3.4	2.3	2.5	2.3
Malaysia	6.3	5.8	3.7	3.9	0.3	0.7
Mexico	17.8	58.9	101.8	65.5	57.7	86.2
Singapore	6.9	3.9	1.2	2.6	0.5	-1.4

Source: IMF, International Financial Statistics, 1987.

- Over the 1971-81 period, among major industrial countries only Germany, Netherlands and the U.S. reported lower average annual rates of inflation (as measured by consumer price indices) than Canada.
- Similar to the experience of other industrial countries, Canada has enjoyed significant reductions in inflation since the early 1980's, with the annual rates of change in the Consumer Price Index declining from 10.8% in 1982 to 4.2% in 1986.
- The recent trend in inflation reduction was also shared by most of the newly industrialized countries in the Far East. Mexico and Brazil, on the other hand, recorded a rapid rise in inflation.

SECTION 4

**MANUFACTURING
PERFORMANCE**

MANUFACTURING PERFORMANCE

TABLE 4-1
Size and Share of the Manufacturing Sector*,
Canada, 1966 to 1986

Year	<u>Size of Manufacturing Sector**</u>				<u>Share of Economy (Percent)</u>			
	Real GDP	Employment	Exports	Imports	Real GDP	Employment	Exports	Imports
1966	39,563	-	7,267	8,527	20.8	-	68.6	84.7
1971	45,938	1,766	13,101	13,827	19.6	21.8	73.5	88.5
1976	55,983	1,921	26,428	31,214	19.6	20.3	68.7	83.3
1981	61,648	2,122	59,391	64,703	19.3	19.3	70.9	81.4
1982	53,702	1,930	59,916	56,573	17.4	18.1	71.4	83.4
1984	65,924	1,968	84,118	84,331	19.6	17.9	75.1	88.3
1985	69,534	1,981	89,347	92,776	19.7	17.5	76.0	89.3
1986	71,122	2,015	97,819	101,712	19.5	17.3	81.2	90.3

* Manufacturing Sector is defined here according to SIC (1980) definitions and includes resource processing sectors.

** In millions of dollars. Employment in thousands.

Source: DRIE Trade Databank and Statistics Canada.

- While the manufacturing sector's share of total employment in the economy has declined steadily since 1971, its share of the total value of exports and imports of goods has increased over this period. In particular, its share of exports has grown from 73.5% in 1971 to 81.2% in 1986.
- The fact that the manufacturing sector's share of GDP has remained relatively stable over the 1971-86 period, while its share of employment has declined is indicative of the improvement in the relative productivity of this sector.

MANUFACTURING PERFORMANCE

TABLE 4-2
Selected Data for Durable Manufacturing Industries, Canada,
1971 to 1986

Industries	<u>Real Domestic Product</u> Annual Rates of Change				<u>Employment</u> (thousands)	<u>Shipments</u> (Bill. of \$)
	1971-80	1981-82	1983-86	1986	1986	1986
Durables	3.1	-16.0	10.9	1.7	832	121.6
Wood	4.5	-19.1	7.4	-2.2	95	11.8
Furniture & Fixtures	1.4	-23.7	8.1	6.5	58	3.6
Primary Metals	0.1	-24.9	9.3	-0.7	100	16.8
Metal Fabricating	2.6	-15.0	6.4	2.0	149	14.2
Machinery	6.2	-25.5	10.6	2.1	82	7.6
Transportation						
Equipment	2.4	-8.4	12.8	0.4	187	43.8
Electrical Products	6.3	-7.7	18.9	5.4	112	12.7
Non-Metallic						
Mineral Products	1.5	-23.4	9.2	6.7	49	6.4
Miscellaneous	2.5	-7.0	6.4	-0.8	-	4.7
Total Manufacturing	3.0	-12.9	7.7	2.3	1739	249.9

Source: Statistics Canada and The Conference Board of Canada.

- Real domestic product (RDP) in manufacturing showed weaker growth in 1986 (2.3%) than its average annual rate of change over the 1983-86 period (7.7%). This was particularly true for the durable goods sector where the annual rate of growth declined from 10.9% over the 1983-86 period to 1.7% in 1986, with all industries reporting a lower rate of expansion in 1986.
- Wood industries and primary metals, in particular, experienced a downturn in 1986, and reported declines of 2.2%, and 0.7%, respectively.

MANUFACTURING PERFORMANCE

TABLE 4-3
Selected Data for Non-Durable Manufacturing Industries, Canada,
1971 to 1986

Industries	<u>Real Domestic Product</u> Annual Rates of Change				<u>Employment</u> (thousands)	<u>Shipments</u> (Bill. of \$)
	1971-80	1981-82	1983-86	1986	1986	1986
Non-Durables	3.2	-9.4	4.3	3.0	906	126.3
Food, Beverages	1.6	-1.9	3.4	2.0	220	39.1
Rubber & Plastics	6.6	-10.6	8.2	2.0	67	6.6
Leather Products	1.6	-12.9	3.0	1.0	21	1.1
Textiles	5.0	-22.4	2.0	3.8	62	5.6
Clothing	3.6	-11.2	4.2	3.8	89	5.8
Paper & Allied Products	1.9	-14.3	4.5	6.0	121	19.6
Printing & Publishing	5.5	-8.3	6.5	6.7	-	10.2
Chemical Products	4.2	-11.1	5.0	0.2	92	18.0
Petroleum & Coal Products	3.1	-7.3	1.7	-0.3	22	20.3
Total Manufacturing	3.0	-12.9	7.7	2.3	1739	249.9

Source: Statistics Canada and The Conference Board of Canada.

- Since real domestic product (RDP) in the non-durable goods sector is generally less cyclically sensitive, the 1986 slow down in its growth was less than that experienced by the durable goods sector. Overall, RDP in non-durable goods grew at an annual rate of 3.0% in 1986 compared to 4.3% over the 1983-86 period.
- Printing and publishing, paper and allied products, and textiles industries reported stronger growth in 1986 than the average annual rate of growth over the 1983-86 period. Of those industries which reported weaker growth, rubber and plastics, and chemical products saw the greatest decline, falling from 8.2% to 2.0% and from 5.0% to 0.2%, respectively. Petroleum and coal products was the only industry which reported an actual decline in RDP in 1986 (-0.3%).

MANUFACTURING PERFORMANCE

TABLE 4-4
Manufacturing Output, Selected Countries, 1975 to 1986
(Annual Rates of Change)

Country	1975-1984	1982	1983	1984	1985	1986
United States	4.5	-7.4	7.8	12.3	2.1	2.1
Japan	5.5	0.4	3.5	11.2	4.5	-0.3
CANADA	1.9	-12.1	6.3	7.3	4.8	1.7
France	1.5	-1.0	0.0	2.1	0.0	1.0
Germany	1.8	-3.0	0.9	3.3	5.6	2.4
United Kingdom*	1.3	1.9	3.6	1.3	4.8	-
Netherlands	2.1	-2.0	1.0	6.1	1.9	3.7
Sweden	0.7	-1.0	5.2	4.9	1.9	0.9
Brazil	1.5	0.0	-6.3	6.7	-	-
Korea	14.9	5.3	16.8	15.8	-	-
Malaysia	9.0	5.8	6.4	12.1	-	-
Mexico	4.0	-2.8	-7.7	5.2	-	-
Singapore	8.2	-5.8	1.9	9.4	-	-
World Total	3.5	-2.0	4.1	5.9	-	-

* Includes mining and gas, etc.

Source: OECD Main Economic Indicators, OECD Quarterly National Accounts and U.N. Industrial Statistics Yearbook.

- Of all countries shown in the above table, Canada suffered the worst decline in manufacturing output in 1982 (-12.1%), as a result of the 1981-82 recession. Among major OECD countries, Canada experienced the second strongest recovery (after the U.S.) in 1983.
- In recent years, the growth of manufacturing has slowed in most of the industrial countries. Japan, in fact, reported a decline in output in 1986 (-0.3%).

MANUFACTURING PERFORMANCE

TABLE 4-5
Manufacturing Output as a Percentage of GDP
Selected Countries, 1975 to 1985

Country	1975	1981	1982	1983	1985
United States	23	22	21	21	20
Japan	30	30	31	29	30
CANADA	19	18	16	18	20
France	27	25	25	25	-
Germany	34	32	32	31	32
United Kingdom	26	21	21	22	23
Netherlands	27	17	17	17	-
Sweden	26	20	20	21	21
Brazil	24	25	24	-	-
Hong Kong	25	22	22	20	-
Korea	26	28	27	27	-
Mexico	23	22	21	23	-
Singapore	24	29	26	25	-

Source: U.N. Statistical Yearbook and OECD National Accounts

- Manufacturing output as a share of GDP has been quite stable in the major OECD countries since 1981. It was only over the 1975-1981 period that a significant decline was noted in a few countries: the U.K., the Netherlands and Sweden.
- The move to more service based economies in the 1980's has thus yet to result in a significant reduction in the Manufacturing Sector's share of GDP. This trend is more evident, however, in terms of employment data (Table 4-7).

MANUFACTURING PERFORMANCE

TABLE 4-6
Employment in Manufacturing, Selected Countries, 1979 to 1986

Country	Average Annual Rates of Change		Number (in thousands)	
	1979-82	1982-86	Change 1982-86	Level 1986
United States	-3.7	0.3	213	18,994
Japan	1.3	1.7	780	12,290
CANADA	-2.3	1.1	85	2,015
France	-2.4	-2.5	-485	4,506
Germany	-1.9	-0.6	-200	7,716
Italy	-1.3	-	-	-
United Kingdom	-6.7	-2.3	-517	5,380
Netherlands	-3.5	1.8	6	87
Sweden	-4.5	0.5	10	539
Hong Kong	-0.9	0.6	19	866
Korea	-0.9	-	-	-
Mexico	3.4	-	-	-

Source: U.N. Monthly Bulletin of Statistics, October 1987 and Statistics Canada.

- Japan is the only major OECD country where employment in manufacturing increased over both the 1979-82 and 1982-86 periods.
- In the other major OECD countries, employment in manufacturing declined over the 1979-82 period as a result of the recession. All except France, the U.K., and Germany reported some recovery in the 1982-86 period.

MANUFACTURING PERFORMANCE

TABLE 4-7
Manufacturing Employment as a Percentage of Non-agricultural Employment,
Selected Countries, 1960 to 1985

Year	U.S.	Japan	CANADA	France	Germany	U.K.	Korea
1960	28	31	28	37	40	39	-
1965	29	32	27	35	40	36	23
1970	28	33	24	33	41	36	27*
1975	24	30	21	31	38	32	34
1980	22	23	21	29	35	29	26
1984	21	23	19	27	32	24	27
1985	20	23	18	-	32	24	27

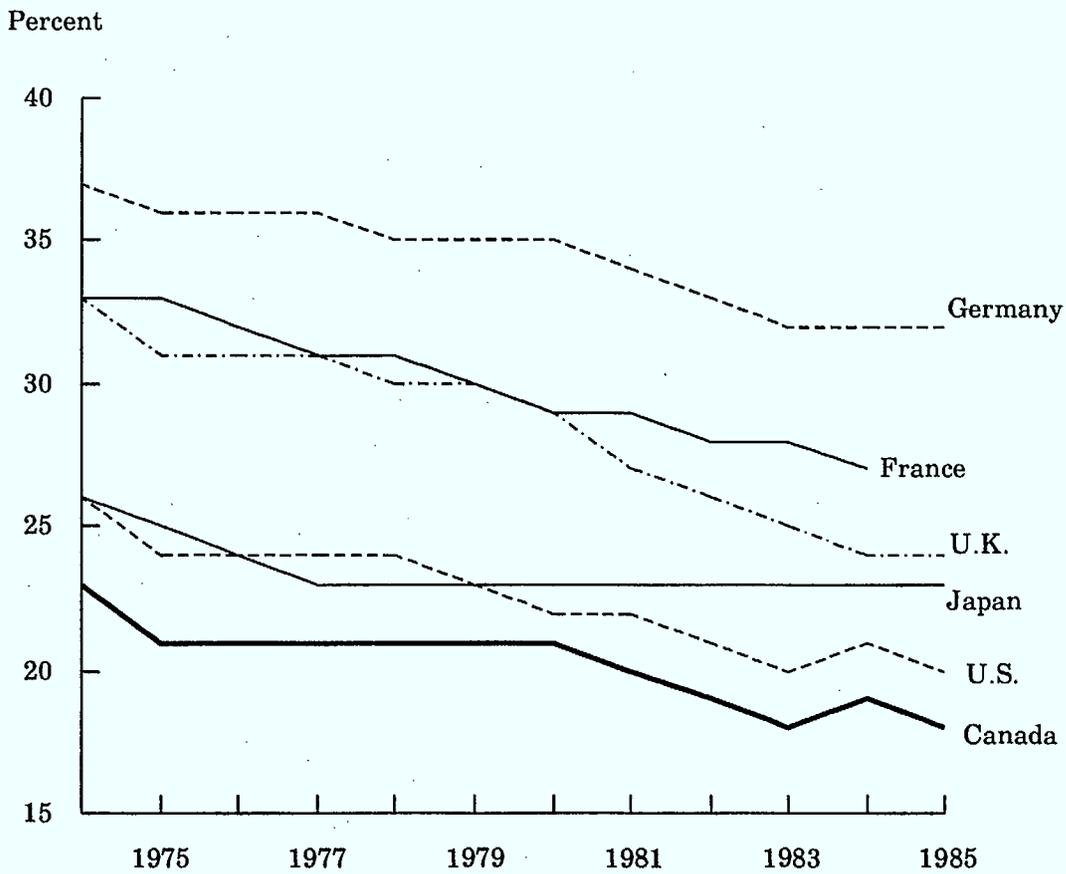
* 1969 data

Source: U.S. Bureau of Labour Statistics Yearbook and ILO Yearbook.

- Of all the major industrial countries identified in the above table, Germany reported the highest proportion of its non-agriculture employment in manufacturing, while Canada recorded the lowest share.
- All of these industrial countries have seen their manufacturing employment as a percentage of total non-agricultural employment decline over time. Over the 1960-1980 period, the U.K. experienced the greatest decline (15 percentage points). The decrease in the case of Canada was 10 percentage points.
- As shown in Chart 4-1, Japan's share has been stable at about 23% since 1977.
- Korea, on the other hand, has shown a rise of 4 percentage points, from 23% in 1965 to 27% in 1985.

MANUFACTURING PERFORMANCE

CHART 4-1
Manufacturing Employment as a Percentage of Non-Agricultural Employment,
Selected Countries,
1974 to 1985



SECTION 5

**TECHNOLOGY ASPECTS OF
COMPETITIVENESS**

TECHNOLOGY ASPECTS OF COMPETITIVENESS

TABLE 5-1
Current Research and Development Expenditures and Sales by Industry, Canada,
1985

Industries	Sales by R & D		
	<u>R & D</u> (millions of dollars)	<u>Performers</u> (billions of dollars)	<u>R & D / Sales</u> (percentage)
TOTAL MINING AND OIL WELLS	99	12.4	0.8
MANUFACTURING			
Food, beverages and tobacco	69	18.4	0.4
Rubber and plastic products	15	2.2	0.8
Textiles	13	1.1	1.2
Wood	18	0.1	1.4
Pulp and paper	63	12.8	0.3
Primary metals (ferrous)	23	6.9	0.3
Primary metals (non-ferrous)	89	6.8	1.3
Metal fabricating	23	2.1	1.0
Machinery	53	2.5	2.0
Aircraft and parts	312	2.0	15.8
Other transportation equipment	82	29.5	0.3
Telecommunication equipment	504	3.5	14.3
Electronic parts and components	63	0.7	8.3
Other electronic equipment	153	1.1	14.3
Business machines	157	5.3	3.0
Other electrical products	66	4.3	1.6
Non-metallic mineral products	14	2.7	0.5
Refined Petroleum and coal products	136	30.4	0.4
Drugs and medicines	62	1.5	3.9
Other chemical products	148	11.5	1.2
Scientific and professional equipment	33	1.2	2.8
Other manufacturing industries	18	1.1	1.5
TOTAL MANUFACTURING	2,114	147.9	1.4

TECHNOLOGY ASPECTS OF COMPETITIVENESS

TABLE 5-1 (cont'd)
Current Research and Development Expenditures and Sales by Industry, Canada, 1985

Industries	Sales by R & D		
	<u>R & D</u> (millions of dollars)	<u>Performers</u> (billions of dollars)	<u>R & D / Sales</u> (percentage)
SERVICES			
Transportation and other utilities	109	24.3	0.4
Electrical power	143	13.5	1.1
Computer services	94	1.1	8.5
Engineering and scientific services	178	1.0	17.6
Other non-manufacturing industries	64	5.7	1.1
TOTAL SERVICES	588	45.5	1.2
TOTAL ALL INDUSTRIES	2,802	205.8	1.3

Source: MOSST, Science and Technology Resource Allocation Statistics, 1987

- As measured by the ratio of R & D expenditures to sales, R & D in Canada is concentrated in a few industries, most notably: aircraft and parts, telecommunication, and electronics.
- In the service sector, it is mainly concentrated in engineering and scientific services.

TECHNOLOGY ASPECTS OF COMPETITIVENESS

TABLE 5-2
Gross Expenditure on Research and Development (GERD) as a Percentage of GDP,
Selected Countries, 1981 to 1986

Country	1981	1982	1983	1984	1985	1986
United States	2.4	2.6	2.6	2.7	2.8	2.9
Japan	2.1	2.2	2.4	2.5	2.6	-
CANADA	1.2	1.4	1.3	1.4	1.4	1.4
France	2.0	2.1	2.1	2.3	2.3	2.4
Germany	2.4	2.5	2.5	-	2.7	-
Italy	1.0	1.0	1.1	1.2	1.3	1.5
United Kingdom	2.4	-	2.3	-	2.3	-

Source: OECD Selected Science and Technology Indicators, 1979-1987.

- Of the major OECD countries, Canada's Gross Expenditure on Research and Development (GERD) as a percentage of GDP is among the lowest. It has also remained relatively stable over the 1981-1986 period.
- The U.S. has the highest GERD/GDP ratio among the major industrialized countries. It has also been rising slowly but steadily, a trend shared by most other major OECD countries.

TECHNOLOGY ASPECTS OF COMPETITIVENESS

TABLE 5-3
Total Research and Development Personnel and
Research Scientists and Engineers (RSE)
per Thousand Labour Force, Selected Countries, 1983

Industries	<u>R&D Personnel</u> (per thousand labour force)	<u>RSE</u>	<u>Change in RSE from 1979</u> (percentage)
Germany	13.5	4.8	7
Japan	12.1	7.4	14
Switzerland ('79)	11.8	3.4	--
France	11.0	3.9	26
Sweden	10.5	3.9	39
Netherlands	9.9	3.7	6
Norway	7.9	4.1	11
Finland	7.9	3.7	23
CANADA	5.9	2.7	17
Austria ('81)	5.6	2.0	--
Italy	4.9	2.7	29
United States	--	6.4	21

Note: RSE in some countries consists of all university graduates in science and engineering.

Source: MOSST, Science and Technology Resource Allocation Statistics, 1987.

This source in turn uses OECD, Recent Results, 1979-1986. The OECD notes that the Japanese data are likely over-estimated. No data are available for the U.K.

- Relative to other major OECD countries, Canada ranks among the lowest in terms of both R&D personnel and research scientists and engineers per thousand of labour force. Japan and the U.S. are substantially ahead of the other countries in terms of the ratio of RSE to labour force.
- In recent years, however, Canada has made some progress in improving its ratio of research scientists and engineers to labour force.

TECHNOLOGY ASPECTS OF COMPETITIVENESS

TABLE 5-4
Trade in High Technology Products, Canada, 1978 to 1986
(Millions of Dollars)

	Exports	Imports	Balance
1978	4,175	7,165	-2,990
1980	5,911	10,522	-4,611
1982	7,723	11,955	-4,232
1984	11,222	17,604	-6,382
1985	12,059	18,427	-6,368
1986	12,874	19,885	-7,011

Source: MOSST, Science and Technology Resource Allocation Statistics, 1987.

- Canada has a large and growing deficit in trade in High Technology Products. Although the deficit declined slightly in 1985, it increased more than 10% in 1986.

TECHNOLOGY ASPECTS OF COMPETITIVENESS

TABLE 5-5
High-Technology Trade Deficit by Product Group, Canada, 1986

Product Group	Total		With the U.S.	
	(millions of dollars)	(percent)	(millions of dollars)	(percent)
Aerospace	- 288*	-3	241	4
Computers and related equipment	2,381	34	2,128	39
Electronic equipment	863	12	722	13
Telecommunications equipment	67	1	- 177*	- 3
Scientific instruments	1,410	20	842	15
Electrical machinery	629	9	429	8
Non-electrical machinery	1,803	26	1,131	21
Chemicals (including drugs)	87	1	136	2
Total	7,011	100	5,452	100

* Positive trade balance

Note: Totals may not add-up due to rounding.

Source: MOSST, Science and Technology Resource Allocation Statistics, 1987.

- As shown in Table 5-4, in 1986, Canada had a large deficit in trade in High Technology Products.
- Proportionally, the largest contributor to this deficit was trade in computers and related equipment followed by trade in non-electrical machinery, scientific instruments, as well as electronic equipment and electrical machinery.

