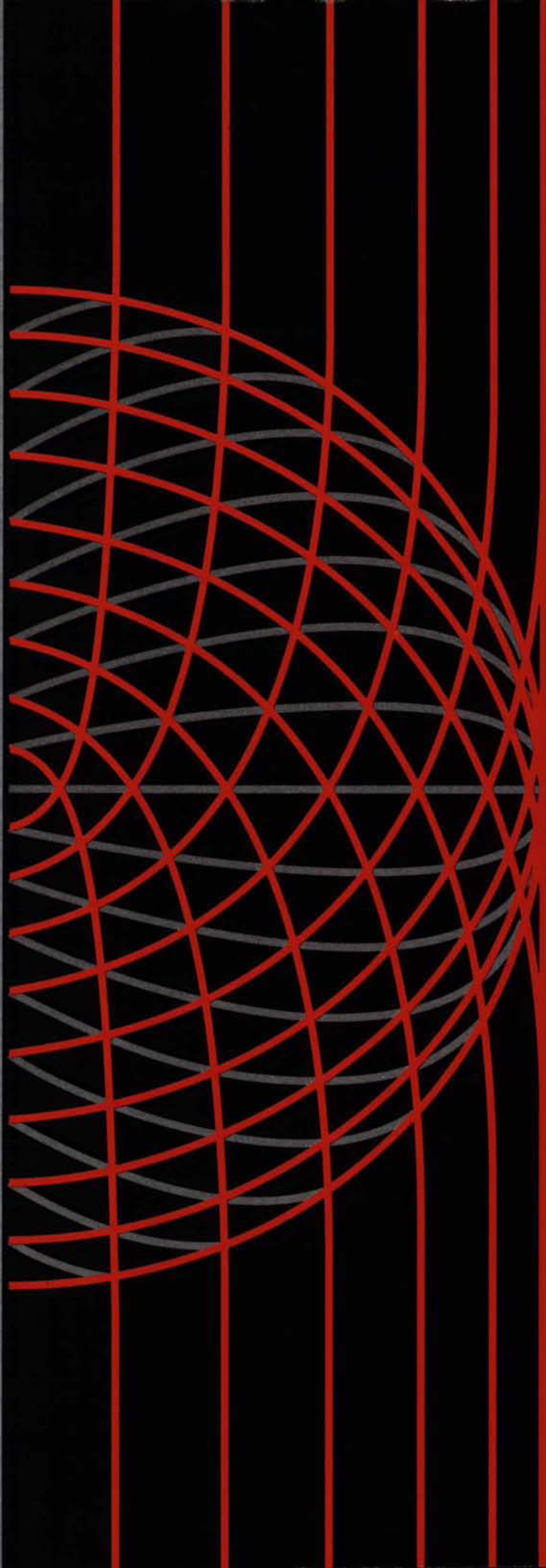


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Fluids-Handling and Mechanical Power-Transmission Equipment

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FLUIDS-HANDLING AND MECHANICAL POWER-TRANSMISSION EQUIPMENT

FOREWORD

In a rapidly changing global trade environment, the international competitiveness of Canadian industry is the key to growth and prosperity. Promoting improved performance by Canadian firms in the global marketplace is a central element of the mandates of Industry, Science and Technology Canada and International Trade Canada. This Industry Profile is one of a series of papers in which Industry, Science and Technology Canada assesses, in a summary form, the current competitiveness of Canada's industrial sectors, taking into account technological, human resource and other critical factors. Industry, Science and Technology Canada and International Trade Canada assess the most recent changes in access to markets, including the implications of the Canada-U.S. Free Trade Agreement. Industry participants were consulted in the preparation of the profiles.

Ensuring that Canada remains prosperous over the next decade and into the next century is a challenge that affects us all. These profiles are intended to be informative and to serve as a basis for discussion of industrial prospects, strategic directions and the need for new approaches. This 1990-1991 series represents an updating and revision of the series published in 1988-1989. The Government will continue to update the series on a regular basis.

Michael H. Wilson
Minister of Industry, Science and Technology
and Minister for International Trade

Structure and Performance

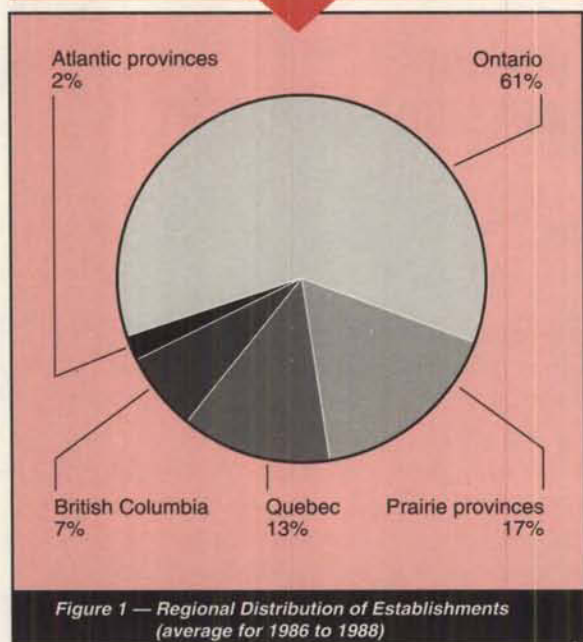
Structure

The fluids-handling and mechanical power-transmission equipment industry comprises approximately 160 manufacturers and is divided into two major product areas, fluids-handling and mechanical power-transmission. Fluids-handling equipment includes fluid-transfer pumps, compressors, fans and blowers, metal valves and accessories. Mechanical power-transmission equipment includes gears and gearboxes, clutches, couplings, hydraulic systems including pumps and motors, and cylinders. Because of its basic nature, the equipment is used in virtually every industrial sector.

The products vary widely in size and value. Valves, for example, are manufactured in sizes varying from 12 millimetres to more than 4.5 metres in diameter. Compressors (measured in terms of the energy required to operate them) range from

0.21 kilowatt (kW) standard portables to custom-designed 30 000 kW units. Pumps vary from inexpensive, low-energy (often found in homes) sump pumps to 2 600 kW reciprocating slurry pumps.

Manufacturers are located primarily in Ontario, the Prairie provinces and Quebec (Figure 1) and employed about 7 800 people in 1991. Measured in constant 1988 dollars, shipments peaked in 1990 at \$1 276.0 million, with exports accounting for \$404.5 million (Figure 2). Imports were valued at \$1 420.2 million in 1990 and captured 62 percent of the Canadian market valued at \$2 291.7 million. The Canadian market is estimated to have fallen to \$2 181.4 million (constant 1988 dollars) in 1991 or \$2 431.7 million in current dollars. By that year, shipments had fallen to \$1 180.8 million in constant 1988 dollar terms, with a drop in net deficit in trade of \$15.1 million from 1990. During 1990, the United States supplied 75 percent of the sector imports and received 77 percent of the exports.

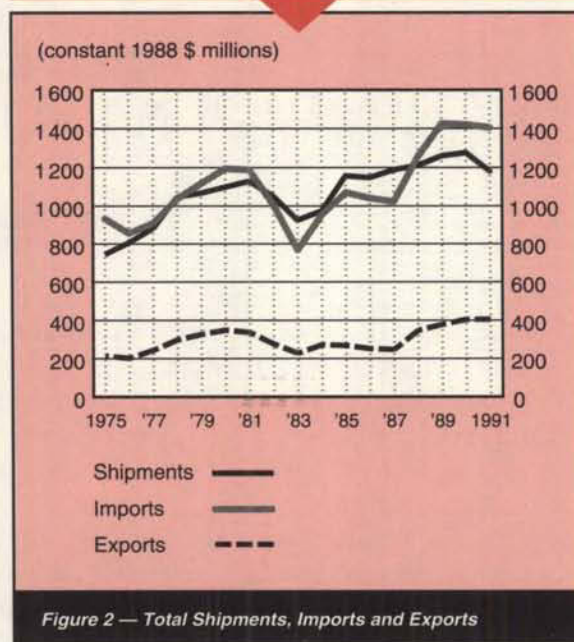


Fluids-Handling Equipment

This group of products is manufactured by approximately 125 companies with some 5 600 employees. Shipments of fluids-handling equipment in 1991 totalled \$1 024.8 million, with exports of \$368.3 million and imports of \$1 235.6 million. The Canadian market was worth \$1 892.1 million in 1991 in current dollars (Figure 3).

Figure 4 indicates that fluids-handling equipment constitutes by far the larger part of this industry relative to mechanical power-transmission equipment. In 1991, the fluids-handling equipment subsector shipped over three-quarters (77.7 percent) of the industry's shipments with 71.8 percent of the industry's labour force. The dominant position of the fluids-handling equipment subsector has been waning, however, over the years. In 1983, it constituted 85.8 percent of the industry's shipments and although it is still the largest segment of the industry, shipments of fluid-handling equipment have been growing at a slower rate than the mechanical power-transmission equipment subsector.

About 14 manufacturers have more than 100 employees and account for over half the industry's shipments. Nine of these larger firms are subsidiaries of foreign firms that manufacture different sizes and types of standard and specialty equipment for a wide variety of uses. The smaller firms are generally Canadian-owned and are more active in the production of specialty-engineered equipment to satisfy specific end-use requirements in various industries.



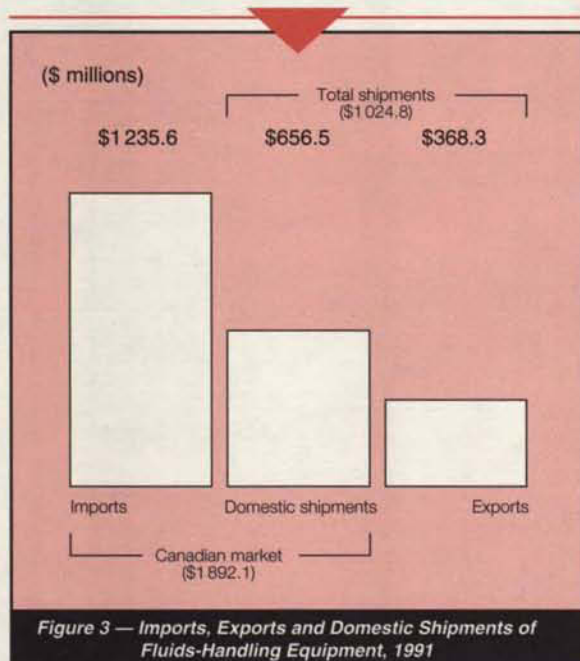
Product rationalization and specialization over the past two years, resulting from the economic conditions in Canada, the implementation of the Canada-U.S. Free Trade Agreement (FTA), the proposed economic union of Europe after 1992 and the need to adjust to increased competition in both domestic and international markets, has meant that a reduced range of products is now being manufactured in Canada. Import penetration is high and competition strong, especially from major manufacturers in the United States, Europe and Japan.

This subsector draws upon a wide range of suppliers for engineering services, basic steel and alloys, castings, forgings, instrumentation, controls, bearings and seals. Most of the equipment and services are of Canadian origin; however, some alloys, forgings, bearings and seals are not available in Canada and are therefore imported.

The natural resource and process industries, pipelines, and service and maintenance companies make up most of the subsector's market.

Mechanical Power-Transmission Equipment

There are some 35 companies with 2 200 employees manufacturing this group of products. Most companies in this subsector are small, with fewer than 100 employees. Approximately 40 percent are foreign-owned, mainly by major U.S. manufacturers. Shipments of mechanical power-transmission equipment in 1991 totalled \$294.0 million, with exports of \$91.9 million and imports of \$337.5 million



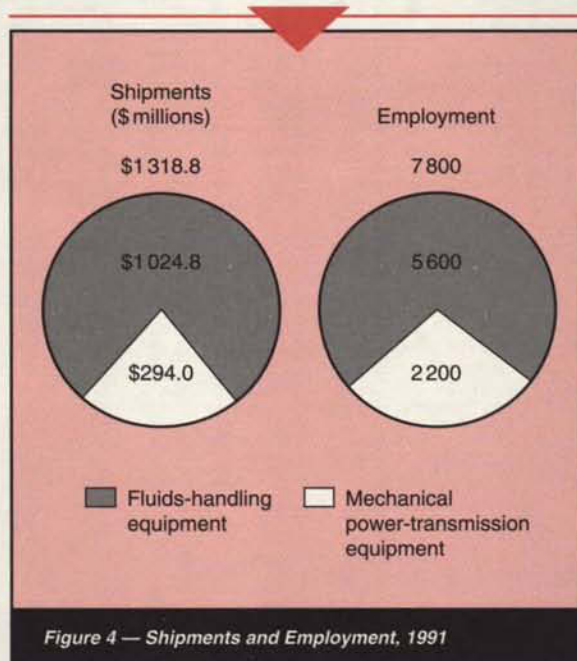
(Figure 5). Subsector shipments grew slightly from 1988 to 1990 in constant 1988 dollars. However, shipments dropped in 1991 by \$58.0 million in constant 1988 dollar terms.

Mechanical power-transmission equipment manufactured by Canadian-owned companies is limited solely to custom-engineered and specialty products and to the assembly and packaging of imported components. Mass-produced standard products, such as gearboxes, gear motors, hydraulic motors and pumps are, for the most part, imported by Canadian subsidiaries from their parent companies either as fully machined individual components or as subassemblies for custom systems. Import competition in both specialty and standard products comes from major manufacturers in the United States, Europe and Japan.

Manufacturers of this equipment are purchasers of basic steel, forgings, castings, electric motors, lubrication systems and finished components. More than half of these parts and this equipment is of Canadian origin. Mechanical power-transmission equipment is sold to a wide range of manufacturers as a component in other industrial machinery and equipment.

Performance

The fluids-handling and mechanical power-transmission equipment industry is mature. Demand for its products closely follows overall industrial activities in Canada. From 1983 to 1989, profit levels remained at low levels, with plant capacity



utilization generally in the range of 60 to 70 percent. Since 1990, shipments have declined due to the recent recession.

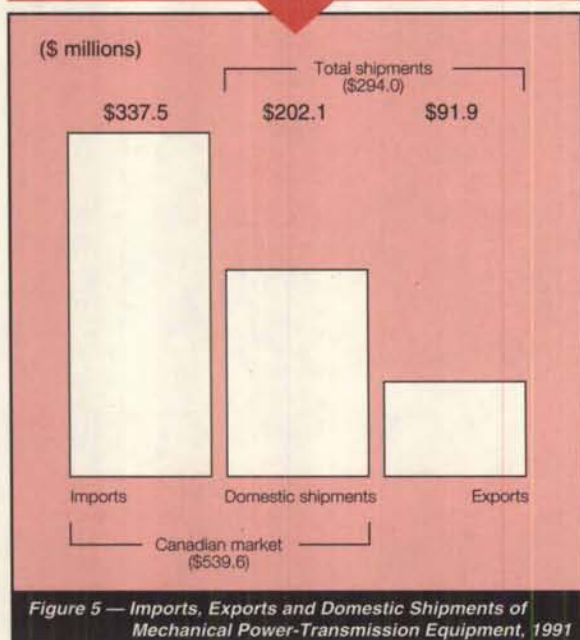
Different performances, including growth rates, of the two major subsectors from 1983 to 1991 require separate discussions to clearly depict trends in the industry.

Fluids-Handling Equipment

As illustrated in Figure 6, shipments of fluids-handling equipment, in constant 1988 dollars, lagged following the 1981–1982 recession, but entered the current recession at the same time as the rest of the economy. Subsector shipments dropped from \$894.0 million (constant 1988 dollars) in 1982 to \$791.6 million in 1983 and increased marginally to \$802.1 million in 1984. By 1985, shipments had recovered sharply to \$912.9 million and peaked in 1989 at \$960.0 million before they slipped back to \$915.9 million (constant 1988 dollars) in 1991.

Modest growth in shipments was exceeded by more rapid growth in the Canadian market, which went from a low in 1983 to the peak in 1989. While shipments grew at annual rates of 3.3 percent, the Canadian market grew at 8.0 percent. This increase arose because imports more than doubled while exports grew by 43 percent over the period. Since 1989, with greater access to each others markets under the FTA, both imports and exports have increased.

Over the past two years, several foreign-owned companies have rationalized their production across North American and

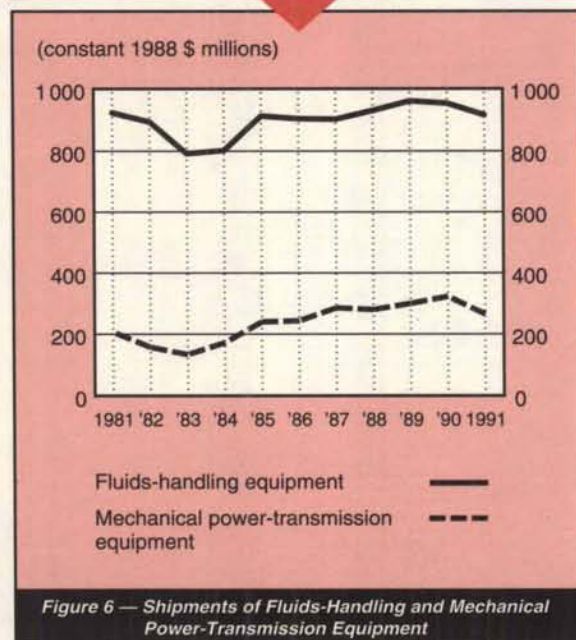


world markets. Some other companies have rationalized production in their U.S. operations. The impact of the recession has been to force all companies either to reduce employment and automate or to subcontract work to automated shops in order to reduce product costs and improve international competitiveness.

Mechanical Power-Transmission Equipment

The shipments cycle for mechanical power-transmission equipment closely followed the trend for fluids-handling equipment, ranging from a low of \$132.8 million in 1983 to a peak of \$322.9 million (constant 1988 dollars) in 1990. However, in contrast with annual growth rates of 3.3 percent for shipments of fluids-handling equipment to its peak year, the annual growth rate for shipments of mechanical power-transmission equipment was 13.5 percent — more than four times larger. The estimated rate of decline from their respective peak year through to 1991 has been faster for mechanical power-transmission equipment — 18.0 percent annually compared with 2.3 percent for fluids-handling equipment.

Exports of mechanical power-transmission equipment have been stable since 1988. Exports ranged from a high of \$87.9 million (constant 1988 dollars) in 1990 to a low of \$82.8 million in 1991. Reflecting the greater volatility of the mechanical power-transmission equipment subsector, imports showed a somewhat greater decline from \$339.1 million (constant 1988 dollars) in 1989 to \$304.0 million in 1991.



The rates of change in the Canadian market for mechanical power-transmission equipment mirror its volatility with annual growth rates of 7.0 percent from 1983 to 1990 followed by a decline of 17.1 percent in 1991. This decline contrasts with Canadian market annual growth rates for fluids-handling equipment of 8.1 percent from 1983 to its peak in 1989 of \$1 755.5 million followed by a decline of 2.8 percent annually from 1989 to 1991.

Strengths and Weaknesses

Structural Factors

The competitiveness of this industry, with its large proportion of high value-added products, is dependent on the availability of high-quality materials, skilled labour and advanced manufacturing technologies.

Fluids-Handling Equipment

The key elements essential to a strong and internationally competitive industry are product reliability, available after-sales service, competitive manufacturing costs, state-of-the-art technology, continuing research and development (R&D) and a sound financial position.

The fluids-handling equipment subsector is technologically strong as a result of technology transfer and licensing with foreign firms. However, this arrangement tends to limit



the Canadian company's ability to export. Canadian companies are well perceived in the areas of product reliability and after-sales servicing. The resource sector and processing industries are some of the main end-users of fluids-handling equipment and to them, product reliability and after-sales service are more important than price.

Canadian companies are less able to compete on price, since labour and material costs per unit of production are high in relation to those of major international competitors. This situation stems from the smaller economies of scale and the lower levels of automation that prevail in Canadian plants. Only a small fraction of Canadian companies have made large investments in sophisticated design and production equipment, such as computer-aided design/computer-aided manufacturing (CAD/CAM), to significantly increase their competitive position.

The majority of Canadian-owned companies are relatively small and undercapitalized; consequently, they often lack the financial and human resources needed to carry out extensive research for new product development.

Foreign ownership of the major firms has had mixed effects on the industry. Some firms are restricted to selling in the Canadian market. In an industry that already has a problem with overcapacity, such a restriction makes it vulnerable to closure during an economic downturn. Slow market conditions cause parent companies to rationalize operations in an effort to maintain profitability. Some firms have benefited from foreign ownership because product mandates have enabled the Canadian plants to achieve competitive sales volumes from automated facilities. Being part of a larger international corporation provides these companies with access to markets and technical and financial resources, which smaller Canadian companies do not enjoy.

Mechanical Power-Transmission Equipment

This subsector has good technology for a few niche products, such as telescopic cylinders and hydraulic systems. However, there are a number of products that are not produced in Canada, such as hydraulic pumps and motors, and variable speed drives. Gears and gearboxes are also imported, except for certain custom-designed gears that are usually manufactured by one of two companies in Canada.

The companies manufacturing mechanical power-transmission equipment in Canada are involved in two types of production — specialty-engineered products and product assembly.

The first type of production is the manufacture of a range of specialty-engineered products such as gear reducers, couplings and hydraulic cylinders. Companies involved in these products are strong in the engineering and precise

manufacturing of component parts for finished machines. The companies tend to be small and Canadian-owned. Historically, they have been unable to justify heavy investments in advanced, high-volume production machinery and, with high labour and material costs, they do not have the economies of scale of their major international competitors. Because of these circumstances, they have competed on the basis of their specialized services rather than on price.

The second type of production is the assembly of equipment and systems using imported finished components such as gears and hydraulic pumps. Companies involved in this kind of production are, for the most part, subsidiaries of major U.S. or offshore manufacturers. They tend to have larger plants and larger sales volumes and are able to respond promptly to requests for the supply of product within their range.

In general, the mechanical power-transmission equipment subsector, with its thorough knowledge of equipment service requirements, skilled personnel and, in the case of subsidiary operations, access to parent-company design information, is on a par in technological competence with that of the United States and other industrialized countries.

Trade-Related Factors

The Most Favoured Nation (MFN) tariff rate on most products in this industry is 9.2 percent. In practice, however, most pay much lower rates. Duty remission may be granted for products that are not available from Canadian manufacturers. Further, 75 percent of Canada's imports come under the FTA, which has become increasingly effective since its implementation on 1 January 1989. The FTA duty in 1992 on most goods of U.S. origin that were not already free was 1.8 percent and reached zero on 1 January 1993, in line with the five-step phase-in of the FTA. Canada-U.S. content rules also need to be met. On the few remaining dutiable items in 1993 entering from the United States, the duty will be eliminated completely on 1 January 1998. Therefore, Canadian manufacturers have been preparing themselves to compete internationally in the face of stronger domestic price competition as duties are being reduced.

Tariffs on fluids-handling and mechanical power-transmission equipment shipped to the United States, which accounted for 77 percent of sector exports in 1990, vary from 2 to 9 percent and are being reduced in line with the FTA. Falling U.S. tariffs have eased entry of Canadian products into the U.S. market. Tariffs on Canadian exports to the European Community (EC), Canada's second-largest market, range from 4 to 5 percent. Shipments to Japan face tariff levels of between 3.6 and 6.0 percent.

Another factor affecting Canadian manufacturers is the availability of preferential financing for domestic and



international projects. These manufacturers have to compete with foreign producers who are granted preferential financing for major projects in Canada. These projects are particularly important to the domestic manufacturers for financing capital investment in plant equipment and R&D.

Technological Factors

Canadian fluids-handling and mechanical power-transmission equipment manufacturers possess a high level of technological competence. This capability is due to both indigenous R&D as well as affiliations with foreign-parent organizations that have developed most of the technologically advanced machinery products. Canadian-owned firms tend to specialize in areas where technological requirements are related to improvements in performance characteristics of the equipment or in the use of equipment for specific process applications as opposed to new-product development. Some Canadian companies do have in-house R&D programs dealing with product modification and performance improvement.

While some manufacturers utilize modern computer numerically controlled (CNC) machinery and CAD equipment in their manufacturing operations, there is room to upgrade productivity with additional automation. Availability of skilled labour is currently not a problem with respect to the skills traditionally utilized in the industry.

Evolving Environment

Demand for fluids-handling and mechanical power-transmission equipment is tied to investments in capital stock. With the current slowdown of the Canadian economy, the medium-term outlook calls for the industry to continue to market intensively in international markets where it faces strong competition. There is still worldwide overcapacity in the industry, and it is likely that there will be continuing product rationalization and plant closures as the major manufacturers struggle to maintain their competitive positions. Radical changes in product technology are not expected, but companies are continuing to make improvements in their production processes in order to reduce costs and to remain competitive.

Canadian-owned manufacturers that produce niche-market products, as well as companies operating assembly-warehouse-sale facilities, are not expected to experience significant difficulties as a result of the FTA with the United States. On the other hand, manufacturers of more standard products, in which productivity is related to economies of scale, will need to modernize their capital-intensive facilities in order to penetrate U.S. markets quickly and meet

strong competition from U.S.-based companies at home and abroad.

On 12 August 1992, Canada, Mexico and the United States completed the negotiation of a North American Free Trade Agreement (NAFTA). The Agreement, when ratified by each country, will come into force on 1 January 1994. The NAFTA will phase out tariffs on virtually all Canadian exports to Mexico over 10 years, with a small number being eliminated over 15 years. The NAFTA will also eliminate most Mexican import licensing requirements and open up major government procurement opportunities in Mexico. It will also streamline customs procedures, and make them more certain and less subject to unilateral interpretation. Further, it will liberalize Mexico's investment policies, thus providing opportunities for Canadian investors.

Additional clauses in the NAFTA will liberalize trade in a number of areas including land transportation and other service sectors. The NAFTA is the first trade agreement to contain provisions for the protection of intellectual property rights. The NAFTA also clarifies North American content rules and obliges U.S. and Canadian energy regulators to avoid disruption of contractual arrangements. It improves the dispute settlement mechanisms contained in the FTA and reduces the scope for using standards as barriers to trade. The NAFTA extends Canada's duty drawback provisions for two years, beyond the elimination provided for in the FTA, to 1996 and then replaces duty drawback with a permanent duty refund system.

After public consultation, the federal government recently published Canada's Green Plan for a healthy environment. Environmental laws will require additional capital investment by many companies for processes or systems to maintain and enhance environmental quality. The fluids-handling equipment subsector will be a beneficiary under Canada's Green Plan, since it provides many of the systems and processes required for the enhancement of environmental quality.

Competitiveness Assessment

The competitive position of Canadian manufacturers in this industry is sensitive to international pricing. Some companies have developed niche markets with specialized products for the resource sector and processing and manufacturing industries. These companies have been successful in gaining economies of scale and selling their products in both U.S. and overseas markets. Companies producing standard products will experience difficulty in competing against larger companies unless they position themselves to benefit from the FTA.



A combination of the FTA, price competition and over-capacity in this industry has resulted in product and plant rationalization. It is expected that this trend will continue in the medium term. Those Canadian-owned firms that have not already done so will be forced by competitive pressures to update their manufacturing by investing in CAD/CAM systems, CNC machines and robotics. On the other hand, companies with world product mandates have demonstrated their ability to withstand competition from both domestic and foreign manufacturers.

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PRINCIPAL STATISTICS^a

	1973 ^b	1983	1984	1985	1986	1987	1988	1989	1990	1991
Shipments — Industry Total (\$ millions)	246.9	764.2	837.6	1 030.9	1 065.8	1 149.7	1 210.5	1 295.4	1 358.7	1 318.8
(constant 1988 \$ millions)	775.4	924.4	973.8	1 152.9	1 148.0	1 188.1	1 210.5	1 260.2	1 276.0	1 180.8
Shipments — Fluids-Handling Equipment (\$ millions)	214.9	655.6	690.9	819.3	839.6	872.7	930.2	983.2	1 013.1	1 024.8
(constant 1988 \$ millions)	675.1	791.6	802.1	912.9	904.3	902.6	930.2	960.0	953.1	915.9
Shipments — Mechanical Power-Transmission Equipment (\$ millions)	32.0	108.6	146.7	211.6	226.2	277.0	280.3	312.2	345.6	294.0
(constant 1988 \$ millions)	100.3	132.8	171.7	240.0	243.7	285.5	280.3	300.2	322.9	264.9

^aISTC estimates. Changes to SIC classifications cause some discontinuities in these data.

^bData for this year are not strictly comparable with data for other years shown, due to changes in the definition of the industry that were introduced in the revised edition of *Standard Industrial Classification, 1980*, Statistics Canada Catalogue No. 12-501.

TRADE STATISTICS

	1973 ^a	1983	1984	1985	1986	1987	1988 ^e	1989 ^e	1990 ^e	1991 ^e
Industry Total										
Exports ^b (\$ millions)	68.7	187.9	235.2	240.6	234.4	239.4	347.1	389.0	431.8	460.2
(constant 1988 \$ millions)	214.3	227.1	272.9	268.3	251.9	247.2	347.1	378.1	404.5	404.6
Domestic shipments ^c (\$ millions)	178.2	576.3	602.4	790.3	831.4	910.3	863.4	906.4	926.9	858.6
(constant 1988 \$ millions)	561.1	697.3	700.9	884.6	896.1	940.9	863.4	882.1	871.5	776.2
Imports ^d (\$ millions)	278.2	632.4	821.9	956.3	966.7	989.3	1 254.5	1 465.8	1 513.3	1 573.1
(constant 1988 \$ millions)	871.6	767.3	951.4	1 070.5	1 041.2	1 022.7	1 254.5	1 425.3	1 420.2	1 405.2
Canadian market ^e (\$ millions)	456.4	1 208.7	1 424.3	1 746.6	1 798.1	1 899.6	2 117.9	2 372.2	2 440.2	2 431.7
(constant 1988 \$ millions)	1 432.7	1 464.6	1 652.3	1 955.1	1 937.3	1 963.6	2 117.9	2 307.4	2 291.7	2 181.4



TRADE STATISTICS (continued)

	1973 ^a	1983	1984	1985	1986	1987	1988 ^e	1989 ^e	1990 ^e	1991 ^e
Fluids-Handling Equipment										
Exports ^b										
(\$ millions)	63.7	168.4	211.7	214.0	208.7	208.0	263.4	298.0	337.8	368.3
(constant 1988 \$ millions)	198.6	203.2	245.4	238.1	224.2	214.8	263.4	290.6	316.6	321.8
Domestic shipments ^c										
(\$ millions)	151.2	487.2	479.2	605.3	630.9	664.7	666.8	685.2	675.3	656.5
(constant 1988 \$ millions)	476.4	588.5	556.8	674.8	680.0	687.8	666.8	669.4	636.5	594.1
Imports ^d										
(\$ millions)	169.2	423.8	532.0	660.6	650.7	668.5	939.3	1 113.1	1 137.2	1 235.6
(constant 1988 \$ millions)	529.9	512.1	617.9	735.2	700.8	692.0	939.3	1 086.1	1 068.7	1 101.1
Canadian market ^c										
(\$ millions)	320.4	911.0	1 011.2	1 265.9	1 281.6	1 333.2	1 606.1	1 798.3	1 812.6	1 892.1
(constant 1988 \$ millions)	1 006.3	1 100.4	1 174.6	1 410.0	1 380.8	1 379.8	1 606.1	1 755.5	1 705.2	1 695.2
Mechanical Power-Transmission Equipment										
Exports ^b										
(\$ millions)	5.0	19.5	23.5	26.6	25.7	31.4	83.7	91.0	94.0	91.9
(constant 1988 \$ millions)	15.7	23.9	27.5	30.2	27.7	32.4	83.7	87.5	87.9	82.8
Domestic shipments ^c										
(\$ millions)	27.0	89.1	123.2	185.0	200.5	245.6	196.6	221.2	251.6	202.1
(constant 1988 \$ millions)	84.6	109.0	144.2	209.8	216.0	253.2	196.6	212.7	235.0	182.1
Imports ^d										
(\$ millions)	109.0	208.6	284.9	295.7	316.0	320.8	315.2	352.7	376.1	337.5
(constant 1988 \$ millions)	341.7	255.2	333.5	335.3	340.4	330.7	315.2	339.1	351.5	304.0
Canadian market ^c										
(\$ millions)	136.0	297.7	408.1	480.7	516.5	566.4	511.8	573.9	627.7	539.6
(constant 1988 \$ millions)	426.3	364.2	477.8	545.1	556.5	583.9	511.8	551.8	586.5	486.1

^aData for this year are not strictly comparable with data for other years shown, due to changes in the definition of the industry that were introduced in the revised edition of *Standard Industrial Classification, 1980*, Statistics Canada Catalogue No. 12-501.

^bSee *Exports by Commodity*, Statistics Canada Catalogue No. 65-004, monthly.

^cISTC estimates.

^dSee *Imports by Commodity*, Statistics Canada Catalogue No. 65-007, monthly.

^eIt is important to note that data for 1988 and after are based on the Harmonized Commodity Description and Coding System (HS). Prior to 1988, the shipments, exports and imports data were classified using the Industrial Commodity Classification (ICC), the Export Commodity Classification (XCC) and the Canadian International Trade Classification (CITC), respectively. Although the data are shown as a continuous historical series, users are reminded that HS and previous classifications are not fully compatible. Therefore, changes in the levels for 1988 and after reflect not only changes in shipment, export and import trends, but also changes in the classification systems. It is impossible to assess with any degree of precision the respective contribution of each of these two factors to the total reported changes in these levels.



SOURCES OF IMPORTS^a (% of total value)

	1983	1984	1985	1986	1987	1988 ^b	1989 ^b	1990 ^b
United States	82	82	80	77	77	71	80	75
European Community	10	10	12	14	15	11	9	11
Asia	5	5	5	6	6	11	4	5
Other	3	3	3	3	2	7	7	9

^aSee *Imports by Commodity*, Statistics Canada Catalogue No. 65-007, monthly.

^bAlthough the data are shown as a continuous historical series, users are reminded that HS and previous classifications are not fully compatible. Therefore, changes in the levels for 1988 and after reflect not only changes in import trends, but also changes in the classification systems.

DESTINATIONS OF EXPORTS^a (% of total value)

	1983	1984	1985	1986	1987	1988 ^b	1989 ^b	1990 ^b
United States	57	69	70	70	73	79	76	77
European Community	11	12	12	15	13	7	12	13
Asia	2	4	4	3	5	5	8	7
Other	30	15	14	12	9	9	4	3

^aSee *Exports by Commodity*, Statistics Canada Catalogue No. 65-004, monthly.

^bAlthough the data are shown as a continuous historical series, users are reminded that HS and previous classifications are not fully compatible. Therefore, changes in the levels for 1988 and after reflect not only changes in export trends, but also changes in the classification systems.

REGIONAL DISTRIBUTION^a (average over the period 1986 to 1988)

	Atlantic	Quebec	Ontario	Prairies	British Columbia
Establishments (% of total)	2	13	61	17	7
Employment (% of total)	2	18	60	15	5
Shipments (% of total)	3	20	55	15	7

^aISTC estimates.



MAJOR FIRMS

Name	Country of ownership	Location of major firms
Armstrong Darling Inc.	Canada	Dorval, Quebec
S.A. Armstrong Limited	Canada	Scarborough, Ontario
Canadian Blower/Canada Pump Ltd.	United States	Kitchener, Ontario
Cherco-Barber Ltd.	United States	Calgary, Alberta
Enerflex Systems Ltd.	Canada	Calgary, Alberta
H. Fontaine Ltd.	Canada	Magog, Quebec
Monarch Industries Limited	Canada	Winnipeg, Manitoba
Quebec Gear Works Ltd.	Canada	Montreal, Quebec
Sulzer-Bingham Pumps Inc.	United States	Burnaby, British Columbia
Velan Inc.	Canada	Granby, Quebec

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