and Wire
Products

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INDUSTRY PROFILE

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Canada

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I N D U S T R Y P R O F I L E

1990–1991

WIRE AND WIRE PRODUCTS

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 wire and wire products industry includes establishments primarily engaged in drawing wire from rods, then manufacturing nuts, bolts, washers, screws, rivets, nails, spikes, staples, welded cloth, wire fencing, barbed wire, screening, coil chain, welding wire, uninsulated wire rope and cable, springs, paper clips and other wire products. Most of these products are manufactured from carbon steel. Some are made from aluminum, brass, copper and other non-ferrous metals as well as alloy and stainless steels. Zinc-coated steel products are also available. Wire and wire products are used to control and transmit physical force between objects, to assemble components, to reinforce concrete and to control access to property, among other functions. For other wire products that are not described in this profile, see the separate industry profiles on

- *Electrical Wire and Cable*
- *Electrical Lighting and Wiring Products.*

In 1989, the wire and wire products industry had shipments of $1 866 million, of which approximately 33 percent ($615 million) were exported (Figure 1). These exports went predominantly to the United States. Imports were worth $1 095 million and accounted for approximately 47 percent of the Canadian market. While 67 percent of imports came from the United States, 16 percent came from Asia, 11 percent from the European Community (EC) and 6 percent from other countries. Most Asian imports were from newly industrialized countries (NICs) and less developed countries (LDCs).

In 1989, the wire and wire products industry consisted of some 325 establishments employing 15 077 people. Although manufacturers are found in all provinces except Prince Edward Island and Saskatchewan, the industry is concentrated in Central Canada. Ontario accounts for 59.8 percent of employment and 59.1 percent of shipments,

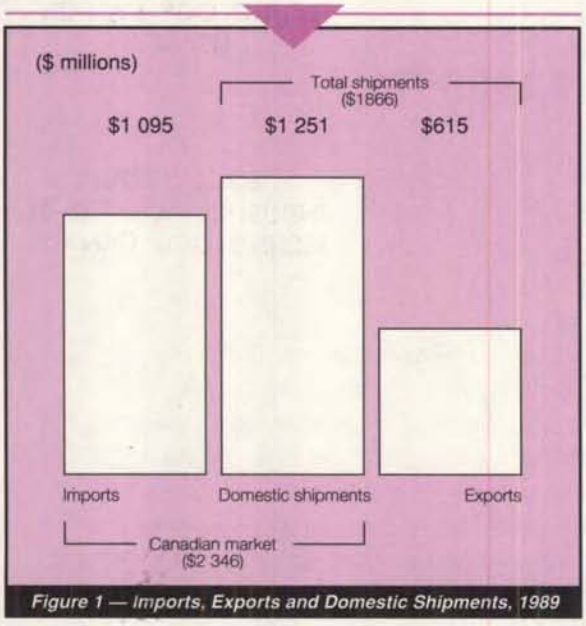

Figure 1 — Imports, Exports and Domestic Shipments, 1989

while Quebec accounts for 28.7 percent of employment and 28.1 percent of shipments.

Early estimates by Industry, Science and Technology Canada based on monthly information for 1990 indicate considerable shrinkage in the industry at the outset of the recession. In constant 1988 dollars, the Canadian market fell by $379 million in one year to $1 858 million. In response to reduced demand, imports declined by $93 million below 1989 levels and shipments fell by $223 million. Ownership is highly concentrated. Stelco, Sidbec-Dosco and Ivaco account for almost half of all manufacturing activity in this industry. These firms are primary steel producers that also make wire rod, which is further processed into wire products. While these three companies supply many non-integrated producers with wire rod and wire, imported wire rod is also an important factor in the Canadian market. Most other manufacturing plants are small. In 1989, those with fewer than 100 employees represented 89 percent of establishments and 40 percent of shipments, while plants with 100 to 1 000 employees represented 11 percent of establishments and 60 percent of shipments. Plants tend to specialize, and there are often as few as two or three manufacturers of any given product.

Based on Statistics Canada data for 1987,[1] Canadian-owned firms account for 83 percent of the industry's assets and 68 percent of sales. Apart from Sidbec-Dosco, a wholly owned subsidiary of Sidbec, which is in turn owned by the Quebec government, the industry is privately owned or publicly traded.

Wire and wire-related products are used in manufacturing, construction and resource industries. Consequently, activity in the wire industry tends to mirror overall economic growth. While sales to the agricultural industry early in the 20th century were a significant factor in the demand for wire products, less than 3 percent of the industry's shipments are now related to agriculture. Today, shipments of wire and wire products are closely tied to the demand for consumer durables such as appliances and automobiles and to the level of activity in the construction industry.

Since most wire and wire-based products are basic commodities used universally, almost all countries with a primary steel industry manufacture them. Typically, rod rolling and wire drawing are the first steps in the forward integration of a newly developing steel industry. For example, the rapid post-war growth of the Japanese steel industry was accompanied by vigorous export marketing of such standard wire products as industrial fasteners, common sizes of wire rope and the most widely used grades of wire. The burgeoning steel industries of the Republic of Korea, Brazil, China and Taiwan have followed the same export strategies in competing for a share of the world market for conventional wire products. In addition, countries in need of hard currency encourage the export of common wire items. In the mid-1980s, exports of Polish nails and barbed wire contributed to depressed prices for these products in North America.

Performance

Although employment increased between 1983 and 1985, it has declined somewhat since then (Figure 2). Canadian manufacturers are generally not able to compete profitably against offshore producers of mass-produced wire products such as common fasteners, which are typically sourced from producers in Asia. Canadian firms have closed some establishments that produce wire rope, nails, wire shelving and trays, chain, chain-link fence and reinforcing wire mesh. Increasingly, Canadian firms are tending to specialize in the production of technically complex, high-value products such as specialized automotive fasteners, which are often manufactured in lower volumes and which require complex tooling. Meanwhile, shipments rose between 1982 and 1986 to $1 953 million in constant 1988 dollars before declining to an estimated $1 556 million in 1990.

Whereas imports accounted for almost 22.5 percent of the total Canadian market in 1973, they more than doubled their

[1]Latest available data; see *Annual Report of the Minister of Supply and Services Canada under the Corporations and Labour Union Returns Act. Part 1, Corporations*, Statistics Canada Catalogue No. 61-210, annual.

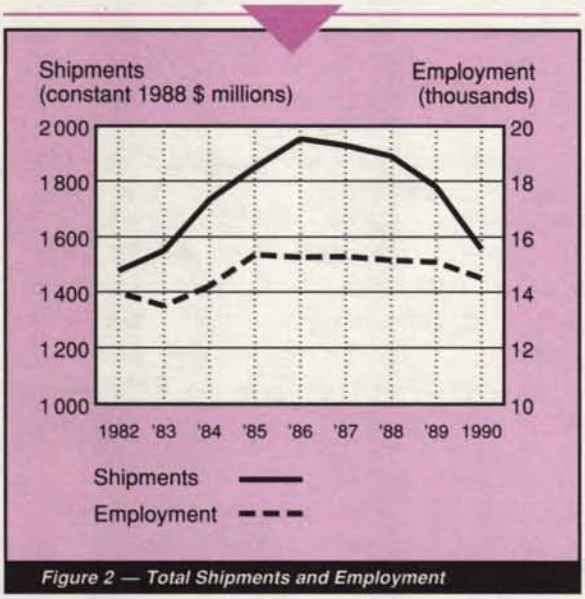

Figure 2 — Total Shipments and Employment

share to 51.2 percent by 1990. Similarly, exports increased from a level of 12.7 percent of total Canadian shipments in 1973 to 41.7 percent in 1990. The increase in both imports and exports is indicative of more specialization and of reductions in the output of non-competitive products.

Information available from Statistics Canada shows that over the 10-year period ending in 1987, the industry's annual after-tax profit averaged 5.2 percent of total income, with a high of 12.9 percent in 1978 and a low of 1.3 percent in 1982. By comparison, the average annual after-tax profit for all metal-fabricating industries over the same period was 4.3 percent, while the rate for all manufacturing industries was 3.7 percent.

Although the value of shipments of wire and wire products in 1989 was more than two-and-a-half times that in 1973, capital investment did not grow as quickly. The lagging pace of investment has been principally due to the fact that the three integrated producers have preferred to place new investment in other areas of their businesses.

Strengths and Weaknesses

Structural Factors

Because wire and wire products are generally basic, widely produced commodities, competitiveness is strongly influenced by labour and raw material costs as well as by the scale of production. In Canada, employees at the wire operations of Stelco, Sidbec-Dosco and Ivaco receive compensation similar to that paid to workers in the steel-making operations. As of mid-1990, this was about C$25 per hour, including fringe benefits. In the United States, by contrast, at least 70 percent of the wire mills accounting for the bulk of U.S. output, are independent of steel producers, and average hourly compensation in those facilities ranged from C$9 to C$15, including fringe benefits.

Independent wire producers in Canada and the United States who buy wire rod at competitive prices from domestic or offshore sources have a substantial labour cost advantage in transforming it into finished products. Wire rod costs $440 per tonne. Transforming the wire rod into wire costs about $220 per tonne for Canada's major producers, about half of which ($110) is labour cost. In contrast, independent producers have labour costs of $66 per tonne to do the same work, based on compensation of $15 per hour.

In general, the price of Canadian-produced steel is comparable with that produced in other member countries of the Organization for Economic Co-operation and Development (OECD). This situation improves for domestic producers when freight and duty are added to the price. However, Canadian-produced steel is more expensive than that from low-wage countries.

While Canadian products are generally competitive in price relative to U.S. products, maintaining this position is becoming more difficult, because domestic producers are often not cost-competitive compared with their U.S. counterparts. Also, the North American market is open to competition from NICs.

In such an environment, Canadian manufacturers of wire and wire products are abandoning the production of common, mass-produced items in favour of more complex products with higher value-added. To the purchasers of these products, quality, prompt and dependable delivery as well as customer service are often as important as price. The ability to satisfy these demanding requirements is the major strength of the Canadian industry. Indeed, those Canadian manufacturers who are not able to consistently meet such customer requirements are not likely to survive during the next five to seven years. For example, North American automotive manufacturers are increasing their purchases from fewer suppliers, who must meet high quality levels and work closely with those manufacturers in making further product improvements. Furthermore, automotive manufacturers insist on a level of service that cannot be provided by a fastener producer located offshore. However, the increasing production of Japanese automobiles in North America and the establishment of new factories by Japanese suppliers to sell to such manufacturers mean that existing Canadian producers of automotive fasteners could be facing greater competition in the future.

Trade-Related Factors

Since most of Canada's trade in this industry involves the United States, the Canada-U.S. Free Trade Agreement (FTA), implemented on 1 January 1989, is a key factor. While most tariffs between Canada and the United States for wire and wire products are being phased out in 10 annual steps ending 1 January 1998, the recent slowing of the North American economies has already increased competition as firms in both countries look for export opportunities.

U.S. tariffs are generally lower than Canadian tariffs. In 1991, Canada's Most Favoured Nation (MFN) tariff rates for wire products ranged from zero to 17.5 percent, with most goods bearing about a 5 percent tariff. Canada's FTA rates for these goods ranged from zero to 12.2 percent, with most goods bearing about a 3.5 percent tariff. At the same time, the U.S. General Tariff rates for these goods, which are comparable with Canada's MFN rates, ranged from zero to 12.5 percent, with most goods bearing about a 4 percent tariff. The U.S. FTA rates for these goods ranged from zero to 8.8 percent, with most goods bearing about a 2.8 percent tariff. Japan and the EC had similar rates of duty, which ranged from zero to 9 percent.

The Canada-U.S. Automotive Products Trade Agreement (Auto Pact) has played an important part in bilateral wire-related trade. Those Canadian manufacturers who sell parts to be incorporated into a new vehicle are unaffected by the FTA since such parts were already crossing the border duty-free. Other U.S. agreements, specifications and regulations also act in Canada's favour regarding offshore suppliers. These include the Canada-U.S. Defence Production Sharing Arrangement, which has encouraged Canadian wire-related companies to compete for U.S. defence contracts, and the U.S. Retention of Critical Domestic Manufacturing Capability Program, which maintains the supply capability of U.S. and Canadian plants for products considered strategic.

Since 95 percent of Canadian exports of wire and wire products go to the United States, the trade environment there is important. The existence or application of a number of non-tariff barriers (NTBs) or contingency protection measures can impede export sales to the U.S. market. There have been reports over the past few years that U.S. producers were threatening antidumping action against Canadian producers. Although no cases have been initiated, Canadian producers continue to exercise care with their pricing in both Canada and the United States.

The *Buy American Act* of 1954, the *Surface Transportation and Uniform Relocation Assistance Act* (STURAA) of 1987 and numerous state and local government practices require compulsory U.S. sourcing of products. The *Buy American Act* applies to contracts for supplies and services involving the construction, alteration or repair of public buildings or public works in the United States. The "Buy America" provisions of STURAA apply to the procurement of steel bridges, buses, rolling stock and other manufactured products used in federally funded highway and mass transit projects.

These provisions require the use of domestically produced items, often stipulating that these products must be made from steel melted and poured in the United States. Under the *Buy American Act*, purchases of U.S.$25 000 or less are reserved for small or minority-owned U.S. businesses. A significant volume of purchases of fasteners by the U.S. Department of Defense falls into the small-value category.

A related issue is that since U.S. suppliers wishing to bid on such government contracts must be able to certify that the products supplied are of U.S. origin, they are effectively discouraged from purchasing any foreign-sourced product. It is not practical for these suppliers to maintain separate inventories of domestic and imported materials.

The "Buy America" provisions have affected the sale of Canadian-made wire rope and strand and heavy construction bolts for highway applications in the United States. This situation is not improving for Canadian producers of wire and wire products.

Technological Factors

New technology in this industry originates with the machine builders who design and supply equipment to manufacturing firms. Therefore, the latest technology is readily available to a wire product manufacturer through the purchase of the appropriate machinery and equipment. However, major changes in equipment evolve slowly and the machines used in the industry typically have a long production life (up to 30 years). While wire producers will update their machines in a major overhaul, the purchasing of new equipment to replace old machines is relatively infrequent. As a result, technological change is gradual.

Although no figures are available concerning the industry's expenditure on research and development (R&D), it is considered to be quite low. However, integrated steel producers do spend significant amounts on R&D in their steel-making operations, which benefits their wire and wire product groups. These R&D expenditures are manifest in better-quality and lower-cost wire rod. There is a recognition by some in the industry that there is not enough spending on R&D for wire products. This situation is clearly evident in a comparison of Canadian wire producers with major European producers such as Bekaert Group NV of Belgium and Usinor Sacilor SA of France. More R&D will be required as Canadian firms move to higher value-added products and become more specialized.

There is also a significant amount of proprietary technology now in the industry related to such functions as quality

assurance, inventory control, order processing and similar management-related activities. Canadian producers, like their competitors worldwide, have adopted new technologies to varying degrees and most Canadian facilities are as technically advanced as most others in this field.

Other Factors

Environmental issues are a consideration for the industry, which has been working to reduce its disposal of noxious materials. In particular, the major wire manufacturers are now recycling the acid used to clean wire prior to galvanizing it. The by-products obtained in recycling the acid are solidified and sold as a powder. In other instances, pickle liquor, which is an acid bath no longer capable of cleaning steel, is sold to firms that recover the iron salts. The recovered salts are used by municipal authorities to treat wastes in sewage treatment facilities. Oil and lubricants are also recycled, either in-house or through sale to recyclers.

The industry has expressed concern about the relatively higher value of the Canadian dollar in recent periods vis-à-vis the American dollar (Figure 3). On the other hand, under certain economic conditions, it is widely recognized that a significantly lower value is likely to be inflationary. The resulting higher domestic costs and prices can erode, over time, the short-term competitive gains of such a lower-valued dollar.

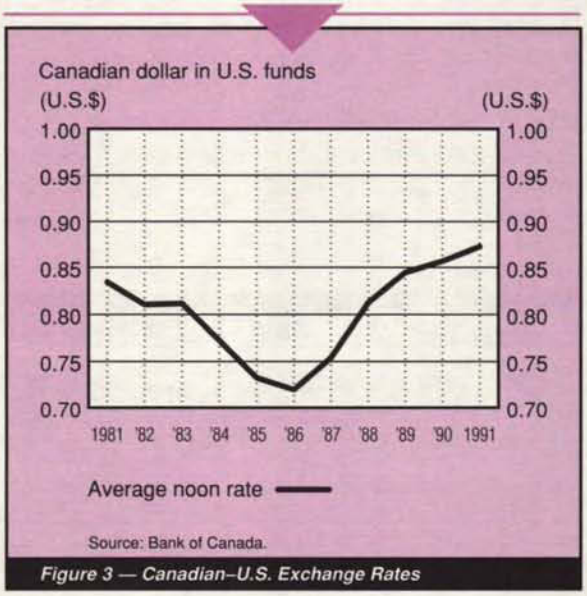

Figure 3 — Canadian–U.S. Exchange Rates

Evolving Environment

The demand for wire and wire products is not expected to increase substantially in Canada or the United States. Partial monthly data for 1991 suggest a further decline from 1990. By contrast, demand for such products in developing countries is expected to increase rapidly. Since Canadian firms generally cannot compete against offshore producers of mass-produced wire products, they will not benefit from the rapid growth in those countries.

The gradual worldwide shift in the production of simple wire products such as nails and standard industrial fasteners to NICs and LDCs is expected to continue. Accordingly, no significant new opportunities are expected to arise in offshore markets for Canadian wire producers. Domestically, manufacturers are expected to continue concentrating on more complex, higher value-added products. While some manufacturers will be successful in reducing costs to remain competitive in those wire products facing import competition from the NICs and LDCs, most may cease production of many such items.

Since the Canadian industry's major export market is the United States, the negotiations to reduce tariffs multilaterally under the General Agreement on Tariffs and Trade (GATT) are likely to result in increased global competition. The formation of a single European market after 1992 will have little impact on the industry.

The gradual phasing out of all duties on wire and wire products with the United States under the FTA by 1 January 1998 is forcing the industry to adapt. This adjustment will be difficult, since many firms are already facing increased competition from U.S. manufacturers in the Canadian market. Manufacturers who do not seek export opportunities or do not target specific markets with specialized products face the prospect of being overwhelmed by the competition.

Canadian manufacturers who do adapt can use their geographical proximity to major U.S. markets, their high-quality products and their ability to provide good customer service and prompt, just-in-time delivery in order to compete with similar products from U.S. manufacturers and offshore suppliers.

The industry is also concerned that as environmental regulations are tightened in Canada and the United States, North American manufacturers will be put at a cost disadvantage relative to producers in NICs and LDCs who are not required to meet similar regulations. NTBs such as "Buy America" legislation continue to be major impediments to sales to federal, state and municipal governments or government-funded projects in the United States. If such legislation is not modified or repealed, there is little reason to believe Canadian manufacturers can successfully compete for these projects, unless they establish production facilities in the United States.

Sales to the United States will continue to be positively affected by the FTA. However, Canadian wire drawers who

utilize imported wire rod will face an increasing disadvantage in sales to the U.S. market because of the requirement that the wire must be drawn from wire rod of North American origin in order to qualify for FTA duty rates. In addition, as of 1 January 1994, such Canadian wire drawers will no longer receive the drawback of the Canadian duty paid on imported wire rod when they export finished products to the U.S. market.

Competitiveness Assessment

The competitiveness of the simpler wire products made in Canada has been undermined by the growing presence of imports from NICs, principally in the Pacific Rim. Canadian and U.S. manufacturers will continue to have difficulty in competing against offshore-produced, low-technology, mass-demand products such as nails, common screws, nuts and bolts, barbed wire and the lower grades of wire rope and chain.

The Canadian wire industry is expected to remain competitive in the North American market for specialized, high-quality products. This competitive edge will continue to be based on a close relationship between supplier and user, coupled with the ability of Canadian producers to provide fast, reliable delivery of high-quality, custom-designed items.

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PRINCIPAL STATISTICS[a]

	1982	1983	1984	1985	1986	1987	1988	1989	1990
Establishments	312	309	303	314	331	302	318	325	310[b]
Employment	13 969	13 493	14 212	15 354	15 262	15 284	15 154	15 077	14 500[b]
Shipments ($ millions)	1 268	1 336	1 581	1 722	1 833	1 836	1 890	1 866	1 654[c]
(constant 1988 $ millions)	1 476	1 550	1 732	1 848	1 953	1 929	1 890	1 779	1 556
GDP[d] (constant 1986 $ millions)	466.6	507.9	583.2	692.1	723.1	690.4	673.0	610.4	535.2
Investment[e] ($ millions)	30.2	34.6	33.3	50.3	55.5	60.7	58.7	51.8	46.2
Profits after tax[f] ($ millions)	13.7	34.3	51.0	114.3	70.2	63.0	N/A	N/A	N/A

[a]For establishments, employment and shipments, see *Fabricated Metal Products Industries*, Statistics Canada Catalogue No. 41-251, annual (industry group 305, wire and wire products industries).

[b]ISTC estimates.

[c]See *Monthly Survey of Manufacturing*, Statistics Canada Catalogue No. 31-001, monthly.

[d]See *Gross Domestic Product by Industry*, Statistics Canada Catalogue No. 15-001, monthly.

[e]Capital expenditures only; see *Capital and Repair Expenditures, Manufacturing Subindustries, Intentions*, Statistics Canada Catalogue No. 61-214, annual.

[f] See *Corporation Financial Statistics*, Statistics Canada Catalogue No. 61-207, annual.

N/A: not available

TRADE STATISTICS

	1982	1983	1984	1985	1986	1987	1988[a]	1989[a]	1990[a]
Exports[b] ($ millions)	281	332	419	452	521	490	695	615	690
(constant 1988 $ millions)	327	385	459	485	555	515	695	586	649
Domestic shipments ($ millions)	987	1 004	1 162	1 270	1 312	1 346	1 195	1 251	964
(constant 1988 $ millions)	1 149	1 165	1 273	1 363	1 398	1 414	1 195	1 193	907
Imports[c] ($ millions)	368	413	556	614	645	653	1 076	1 095	1 011
(constant 1988 $ millions)	429	479	609	659	687	686	1 076	1 044	951
Canadian market ($ millions)	1 355	1 417	1 718	1 884	1 957	1 999	2 271	2 346	1 975
(constant 1988 $ millions)	1 578	1 644	1 882	2 022	2 085	2 100	2 271	2 237	1 858
Exports (% of shipments)	22.2	24.9	26.5	26.2	28.4	26.7	36.8	33.0	41.7
Imports (% of Canadian market)	27.2	29.1	32.4	32.6	33.0	32.7	47.4	46.7	51.2

[a]It 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.

[b]See *Exports by Commodity*, Statistics Canada Catalogue No. 65-004, monthly.

[c]See *Imports by Commodity*, Statistics Canada Catalogue No. 65-007, monthly.

SOURCES OF IMPORTS[a] (% of total value)

	1984	1985	1986	1987	1988	1989
United States	68	68	67	64	67	67
European Community	12	11	12	11	11	11
Asia	16	16	18	21	15	16
Other	4	5	3	4	7	6

[a]See *Imports by Commodity*, Statistics Canada Catalogue No. 65-007, monthly.

DESTINATIONS OF EXPORTS[a] (% of total value)

	1984	1985	1986	1987	1988	1989
United States	95	96	96	96	95	95
European Community	1	–	1	1	1	1
Asia	1	1	1	–	1	–
Other	3	3	2	3	3	4

[a]See *Exports by Commodity*, Statistics Canada Catalogue No. 65-004, monthly.

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

	Atlantic	Quebec	Ontario	Prairies	British Columbia
Establishments (% of total)	3.3	23.2	60.1	5.3	8.1
Employment (% of total)	X	28.7	59.8	X	X
Shipments (% of total)	X	28.1	59.1	X	X

[a]See *Fabricated Metal Products Industries*, Statistics Canada Catalogue No. 41-251, annual (industry group 305, wire and wire products industries).
X: confidential

MAJOR FIRMS

Name	Country of ownership	Location of major plants
Ivaco Inc.	Canada	Marieville, Quebec Mississauga, Ontario
Sidbec-Dosco Inc.	Canada	Montreal, Quebec Rexdale, Ontario
Stelco Inc.	Canada	Hamilton, Ontario Brantford, Ontario Lachine, Quebec

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