INDUSTRY PROFILE

Industry, Science and Technology Canada
Industrie, Sciences et Technologie Canada

Non-ferrous Semi-Fabricated Products

Canada

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NON-FERROUS SEMI-FABRICATED PRODUCTS

1988

FOREWORD

In a rapidly changing global trade environment, the international competitiveness of Canadian industry is the key to survival and growth. This Industry Profile is one of a series of papers which assess, in a summary form, the current competitiveness of Canada's industrial sectors, taking into account technological and other key factors, and changes anticipated under the Canada-U.S. Free Trade Agreement. Industry participants were consulted in the preparation of the papers.

The series is being published as steps are being taken to create the new Department of Industry, Science and Technology from the consolidation of the Department of Regional Industrial Expansion and the Ministry of State for Science and Technology. It is my intention that the series will be updated on a regular basis and continue to be a product of the new department. I sincerely hope that these profiles will be informative to those interested in Canadian industrial development and serve as a basis for discussion of industrial trends, prospects and strategic directions.

Minister

Canada

1. Structure and Performance

Structure

The non-ferrous semi-fabricating industry is engaged in the manufacture of rolled, extruded, and cast products from aluminum, copper, zinc, lead, nickel and their alloys. Products include sheets, strips, bars, rods, powders, cast shapes, pipes, tubes and other extrusions. Rolled and extruded products are generally intermediate products which are further processed by other manufacturers.

Rolling is the major semi-fabricating activity. It requires costly capital-intensive installations which, in general, only the larger corporations can afford. Both extruding and casting, which are less capital-intensive, can be done competitively by either large or small firms. A common characteristic of the industry is that most products tend to be high-volume, low-profit-margin items.

In 1986, industry shipments were valued at $2.3 billion. The industry employed about 14 400 people in 205 establishments. Seventy-seven percent of the enterprises are small, with fewer than 100 employees. Plants are located near market areas, mainly in Ontario and Quebec. In 1986, Canada's imports of $919 million exceeded its exports of $558 million. The United States purchased 86 percent of Canadian exports and supplied 80 percent of Canada's imports.

Companies specialize in three distinct sub-sectors: *aluminum rolling and extruding* (50 percent of industry shipments); *copper and copper alloy rolling and extruding* (19 percent), and *other rolled, cast and extruded non-ferrous metal products* (31 percent).

In the *aluminum rolling and extruding sub-sector,* the major firms are Alcan Aluminum Ltd. and Reynolds Aluminum Company of Canada, a division of Canadian Reynolds Metals Co., Limited, two multinationals with strong forward and backward linkages. These firms roll a wide range of semi-fabricated products for both internal use and sale to other manufacturers. Products include can sheet for beverage cans, sheet for eavestroughing, and slit products such as foils for decorative labelling and for household food wrap. Alcan, Reynolds and other firms in Canada extrude a variety of shapes such as profiles for window manufacturers, tubes for shower curtain rod manufacturers, very close tolerance (drawn) tube for refrigerators and extrusions of trim for automobile manufacturers. These are distinctly different products; thus there is a tendency for extruders to specialize their production to specific market-niches.

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The *copper rolling and extruding sub-sector* comprises four major companies: Noranda Metals Industries Limited (part of a multinational company), Arrowhead Metals Limited, Wolverine Tube (Canada) Inc., and Ratcliffs (Canada) Limited. Much like producers in aluminum rolling and extruding, firms in this sub-sector roll and extrude copper metal into semi-fabricated products including copper which is used by roof flashing manufacturers, copper alloy strip which is used in cable wrapping, and copper water tube which is used by building contractors for hot-water tubing in homes and commercial building sprinkler systems. Noranda and Arrowhead produce a wide range of copper and copper alloy semi-fabricated products, whereas Wolverine produces only tubing and Ratcliffs produces strip, the bulk of which is used to manufacture car radiators.

In the *other rolled, cast and extruded non-ferrous metal products sub-sector*, the main products are sand castings and die castings. The largest firms are CAE Accurcast Die Casting Ltd., Burlington Die Castings Co. Ltd. and Amcan Castings Limited.

Unlike the foregoing two sub-sectors, most of the output of this last sub-sector is not sold as a product that requires further processing but rather is cast directly as a part that is incorporated in the final product. Castings vary widely in size, alloy composition, complexity of shape and tolerance. They range from sophisticated aerospace components to drawer handles. Recycled metal, primarily aluminum, is the chief material used and the major market is the automotive industry. Other materials in this sub-sector include zinc, lead, magnesium, nickel and their alloys.

Corporate concentration in this latter sub-sector is not as high as the preceeding two sub-sectors. In *aluminum*, the top four firms account for 84 percent of shipments; in *copper*, 80 percent; in *other rolled, cast and extruded non-ferrous metal products*, 31 percent.

Overall, the industry is about 80 percent Canadian-owned. Foreign ownership does not vary significantly from one sub-sector to another.

Performance

The industry is considered relatively mature and has exhibited stable to moderate growth over the past ten years. Closely tied to the performance of the automotive, construction, and consumer products sectors, the industry is sensitive to the business cycle. The substitution of some metals by other metals and non-metals is a factor affecting most parts of this industry. For example, aluminum is replacing copper in applications such as automobile radiators and replacing steel in beverage can applications. Plastics, in turn, are continuing to take markets away from aluminum, copper and zinc.

Spurred by the 1982 recession, the industry has undertaken measures that have significantly improved labour productivity. While some outdated plants have been closed, investments in new plants and equipment have taken place. In the *aluminum rolling and extruding sub-sector*, Alcan shut down its foil, plate and extrusion operations in Kingston, Ontario, and its foil products operation in Bracebridge, Ontario. At the same time, it modernized its remaining Kingston facilities and built a new modern extrusion facility at Pickering, Ontario. In the *copper rolling and extruding sub-sector*, Noranda has centralized copper and copper alloy strip production and modernized its Montréal East tube plant. In the *castings sub-sector*, important investments in modernization and plant expansions have taken place.

In 1987, the industry operated at about 85 percent of capacity, a high level for this industry. The industry's financial health has significantly improved since 1982, as evidenced by the growth in employment and shipments due to the increased demand from the construction, automotive and consumer products sectors.

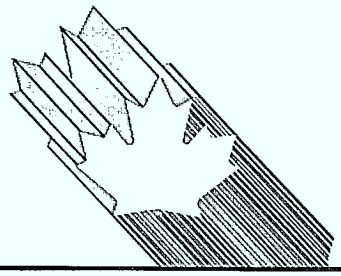
2. Strengths and Weaknesses

Structural Factors

The Canadian industry, with the exception of specific products such as aluminum sheet, uses relatively short production runs to manufacture a multitude of products for the small domestic market. Canada's main competitors are U.S. plants which are usually larger, more specialized and more efficient, with longer production runs scaled to the larger U.S. market. The Canadian industry's strength lies with companies which produce high-quality, competitive products for selected market-niches. While these firms are relatively small, they are able to effect quicker line changes and respond to orders on very short notice. Some of these firms are diversifying into new product lines; others are entering or expanding into the export markets.

While portions of the industry (rolling mills in particular) are fairly capital-intensive, approximately half of the industry is not. On average, labour costs represent between 15 and 25 percent of production costs. As a result, the industry is vulnerable to low-wage imports and competition which is beginning to emerge from Pacific Rim sources and state-trading nations.

Transportation costs do act as an effective barrier to these competitors, however. Non-ferrous semi-fabricated products tend to have a relatively low value per unit weight, so that shipping costs can be a significant factor in the delivered cost of the product. Thus the most economic plant location is generally the one closest to the major market. In North America, as well, plants can compete only within a limited economic radius of the major market.



NON-FERROUS SEMI-FABRICATED PRODUCTS

Production costs in Canada vary widely from sub-sector to sub-sector and from plant to plant according to production techniques used and the age of plant equipment.

Raw materials (metals) account for between 50 and 65 percent of total production costs, but are available in all world markets at approximately the same price when expressed in the same currency. Energy costs are about five to ten percent of production costs and are generally lower in Canada than in the United States.

In the *aluminum rolling and extruding sub-sector*, most of the manufacturing capacity in Canada (with the exception of Alcan's Kingston sheet rolling mills) is on a smaller scale than in the United States. The largest firms in this sub-sector, i.e., Alcan, Reynolds, Indalex and Kawneer, are multinational enterprises with corresponding technical, financial, and managerial strengths. A number of extruders are small firms with the strengths and weaknesses typical of small firms, that is, task-oriented management with high flexibility in product manufacture. Nevertheless, the sub-sector is considered to be in position to exploit new opportunities because of the flexibility and responsiveness of its production.

In the *copper rolling and extruding sub-sector*, plant and equipment is generally old. Due to the minimal growth experienced in this sub-sector, very little new investment has been undertaken, although modernization of some product lines is taking place. A significant portion of the U.S. industry has recently shut down and the remaining operations are being modernized. Many Canadian products such as copper sheet, strip, bars and standard-sized tubes are considered to be competitive with U.S. products.

The major strength of the Canadian *other rolled, cast and extruded sub-sector* is the ability of firms to respond to cyclical market niches on a cost-competitive basis (e.g., aluminum die-castings for the North American automotive industry). Its main weakness is that a large portion of the sub-sector is made up of small firms, with limited resources, geared to a short-term demand which necessitates frequent set-up changes. Overall, this sub-sector competes successfully in the northern United States. Competing imports of die-castings, although irregular, have been entering from low-wage countries.

Trade-related Factors

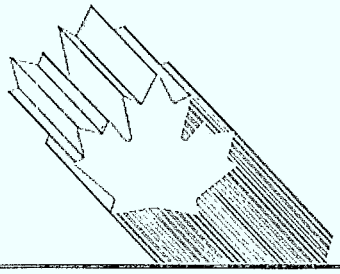
Most products in the non-ferrous semi-fabricating industry are subject to the following range of rates:

1987 GATT BOUND RATES

Canada	U.S.	Years to Zero Rate Under FTA	E.C.	Japan
Aluminum				
Bars, rods, profiles				
Free-10.3%	Free-5.8%	5	10%	Free-12.8%
sheet and strip		5-10		
tube and pipe		10		
Copper				
Sheets, tubes and pipes bars, rods,* powders and shapes*				
4% & 10%	1.0-6.2%	10	5.0-6.5%	5.8-8.2%
Other Non-ferrous Semi-fabricated Products				
Nickel and alloy bars, plate, sheet, strip and foil				
Free-10.2%	Free-3.9%	5	4.4-8.0%	5.8-7.2%
Lead-fabricated materials		10		
Castings, die-castings (Non-original equipment manufacture)				
10.3%	5.5%	10	4.6-7.0%	5.5%

The products noted with an asterisk in the table above could be affected by the application of the Rules of Origin for Goods. If third-country scrap is combined with Canadian scrap, concentrates (or both) in the production of primary copper, the semi-fabricated products will not meet the current definition of Canadian origin as contained in the FTA.

Imports from most developing countries are accorded preferential treatment.



Most of the United States' Most Favoured Nation (MFN) tariffs on imported non-ferrous semi-fabricated products are below five percent. Canadian duties on most non-ferrous semi-fabricated products are higher than U.S. rates.

The other major markets — Japan and the European Community (E.C.) — have tariffs which range from zero to 13 percent. However, these markets present few opportunities for Canadian firms, even without the tariffs, because of the importance of shipping costs.

Most castings are traded under the tariff item of the end product for which they are made. Most of these items are traded duty-free as original equipment under the Canada-U.S. Auto Pact. Castings for defence items and agricultural equipment are also traded duty-free between Canada and the United States. About 37 percent of U.S. imports into Canada are duty-free.

Non-tariff barriers have not been a significant problem in trade with the United States, European Community (E.C.) and Japan. The U.S. requirement for country-of-origin marking on imported goods is a minor irritant.

Anti-dumping duties on brass sheet and strip, which were assessed in August 1986 by the United States in accordance with existing legislation, have added an extra cost to Canadian semi-fabricated strip producers. These duties may be reviewed by the U.S. International Trade Commission.

Under the Canada-U.S. Free Trade Agreement (FTA), about one-half of the industry's tariffs will be reduced in five years and the remaining portion in ten years. The auto-related rules of origin of the FTA require a higher North American value in assembled vehicles, for which FTA treatment is claimed.

The revised dispute settlement provisions of the FTA, and the possibility of exemption from safeguard actions taken by the United States, will give Canada more secure access to the American market. Set-asides remain in place for defence items, as do restrictions for reasons of national security.

Technological Factors

Generally, the pace of technological change in this relatively mature industry is modest. Innovations have concentrated on the upgrading of current technologies through the use of automation, computerization, robotics and computer-assisted design and manufacturing systems. In general, although the Canadian industry has smaller-scale plants and shorter runs, it is technologically on a par with the United States. Alcan does a significant amount of R&D at its Kingston, Ontario, and Jonquière, Quebec, laboratories.

Other Factors

While the major portion of production costs are accounted for by raw materials which are priced internationally, the industry is nonetheless sensitive, to a degree, to the exchange rate of the Canadian dollar vis-à-vis the U.S. dollar.

3. Evolving Environment

Demand in this industry will continue to grow at a moderate pace, but it will vary by sub-sector.

In the *aluminum rolling and extruding sub-sector*, demand is expected to grow at a more moderate rate than in the past, reflecting both a maturing in overall market demand and an increasing use of substitute materials. Canada is competitive with the United States in a range of aluminum flat-rolled products. However, this sub-sector's integrated producers have found it increasingly difficult to compete with offshore producers which are often subsidized.

Under the FTA, it is anticipated that the industry's dominant firms, with plants on both sides of the border, will continue to rationalize production at their most efficient facilities. Many of these are located in the United States. It is anticipated, however, that domestic expansion and investment in this sub-sector will more than offset any output lost because of rationalization. There will likely be an expansion of a few lines which are internationally competitive. There will be investment in more difficult-to-produce alloys and higher-value products which are more competitive with low-cost imports. A number of extruders with old equipment may be adversely affected under the FTA; however, industry sources indicate that specialization and investment in state-of-the-art plants will also take place.

In the *copper rolling and extruding sub-sector*, demand is expected to remain flat. Products will continue to encounter increasing competition from aluminum and plastics in areas such as plumbing products and auto radiators. The industry will also continue to encounter increasing competition from low-wage countries.

Some product lines will have problems competing in the United States under the FTA. It is anticipated, however, that during the ten-year phase-in period, a number of adjustments, including modernization and specialization, will moderate this effect.

In the *other rolled, cast and extruded non-ferrous metal products sub-sector*, aluminum castings will continue to find increasing applications in automobiles in the next few years. Nevertheless, it is anticipated that Canadian die casters could lose markets if further shutdowns of North-American-owned auto plants occur. This effect would be mitigated if die casters capture some markets represented by the newly established Japanese plants, or if the increased North American value-added requirement of the FTA causes the Japanese to increase sourcing of mechanical and electrical components containing die castings in North America. Most Canadian firms, however, are competitive; therefore the net impact of the FTA on this sub-sector is expected to be positive.

4. Competitiveness Assessment

While Canadian producers are competitive with U.S. producers in a range of aluminum flat-rolled products, they have found it increasingly difficult to compete with off-shore producers which are often subsidized. Similarly, while many Canadian rolled and extruded copper products are competitive with U.S. products, imports from low-wage countries present increasing competition. Canadian producers of the rolled, cast and extruded non-ferrous metal products are generally competitive with U.S. producers in border areas.

In the U.S. market, customer service and the ability to supply products of consistent quality on short notice in nearby states assist Canadian producers to compete successfully.

Because of transportation costs, the Canadian non-ferrous semi-fabricating industry is generally not able to penetrate offshore markets, except for a small number of products which include specialized items such as miniature die castings. On the other hand, products from low-wage countries have presented increasing competition in the Canadian market.

The net impact of the FTA on the competitiveness of the non-ferrous semi-fabricating industry is expected to be slightly positive. The prospect of the FTA is encouraging Canadian manufacturers to specialize and modernize more quickly. Currently, a half dozen expansions are under way and others are being planned as firms position themselves to maintain their market share and to take advantage of expanded opportunities arising from free trade.

For further information concerning the subject matter contained in this profile, contact:

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PRINCIPAL STATISTICS*

SIC(s) COVERED: 296, 297, 2999 (1980)

	1973	1982	1983	1984	1985	1986[e]
Establishments	190	205	200	209	205	205
Employment ('000)	14.8	13.5	13.9	14.9	14.8	14.4
Shipments ($ millions)	937	1 333	1 636	2 092	2 167	2 285
Gross domestic product (constant 1981 $ millions)		401.0	447.7	591.3	601.5	625.5
Investment ($ millions)	55.2	107	105	139	155	168
Profits after tax ($ millions)	N/A	11.4	37.9	52.6	N/A	N/A
(% of income)	N/A	0.8	2.3	2.5	N/A	N/A

TRADE STATISTICS

	1973	1982	1983	1984	1985	1986
Exports ($ millions)	325	362	435	639	555	558
Domestic shipments ($ millions)	612	971	1 202	1 453	1 611	1 727
Imports ($ millions)	153	518	587	856	843	919
Canadian market ($ millions)	765	1 489	1 789	2 309	2 454	2 646
Exports as % of shipments	34.7	27.2	26.5	30.1	25.6	24.4
Imports as % of domestic market	20.0	34.8	32.7	37.0	34.3	34.7
Canadian share of international market			not significant			

Source of imports (% of total value)		U.S.	E.C.	Japan	Others
	1982	80.8	13.9	1.5	3.8
	1983	80.6	13.8	2.4	3.2
	1984	75.7	19.2	2.2	2.9
	1985	77.2	15.6	2.6	4.6
	1986	80.5	11.7	2.5	5.3

Destination of exports (% of total value)		U.S.	E.C.	Japan	Others
	1982	80.1	7.4	0.7	11.8
	1983	83.7	5.5	0.4	10.3
	1984	84.7	3.5	0.4	11.4
	1985	82.0	4.0	2.0	12.0
	1986	86.2	4.7	0.5	8.6

(continued)

REGIONAL DISTRIBUTION — Average over the last 3 years

	Atlantic	Quebec	Ontario	Prairies	B.C.
Establishments – % of total	1.3	21.3	57.8	9.1	10.5
Employment – % of total	N/A	N/A	N/A	N/A	N/A
Shipments – % of total	N/A	N/A	N/A	N/A	N/A

MAJOR FIRMS

Name	Ownership	Location of Major Plants
Alcan Aluminum Limited	Canadian	Kingston, Ontario Jonquière, Quebec
Reynolds Aluminum Co. of Canada	American	Cap-de-la-Madeleine, Quebec
Indalex Division of Indal Limited	U.K.-Canadian	Toronto, Ontario
Noranda Metal Industries Limited	Canadian	Montréal East, Quebec
Arrowhead Metals Ltd.	Canadian	Toronto, Ontario
Wolverine Tube (Canada) Inc.	Canadian	London, Ontario
CAE Accurcast Die Casting Limited	Canadian	Wallaceburg, Ontario
Burlington Die Castings Co. Ltd.	Canadian	Burlington, Ontario
Amcan Castings Limited	Canadian	Hamilton, Ontario

e Estimated
* Statistics Canada: The statistics for 1982 to date are based on 1980 Standard Industry Classifications. (The value of Export Item 452-04, Copper Refinery Shapes, has been subtracted from both the export and shipment figures.) The import value figure is overstated because of inter-company transfers.

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