Government of Canada
Regional Industrial Expansion

Gouvernement du Canada
Expansion industrielle régionale

Competitiveness Profiles

Canada

NOTE

The attached draft Competitiveness Profiles were developed in 1985/86 by the Department of Regional Industrial Expansion as a preliminary assessment of the current competitive position of various industries covered by the activities of the Department. They will be revised, updated, and augmented, in terms of sectors covered, on the basis of on-going consultations with industry.

TABLE OF CONTENTS

VOLUME II

DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

DRAFT - PROJET

COMPETITIVENESS PROFILE

CONVERTED PAPER PRODUCTS INDUSTRY

1. STRUCTURE AND PERFORMANCE

a) Structure

The converted paper products industry comprises companies whose prime raw material input is paper. However, products manufactured by the printing, publishing, graphic arts, stationery and business forms manufacturers are excluded from this profile. The industry is diverse in terms of products, organizational types, markets, and competitive environments. To facilitate analysis, the industry has been broken down into five major subsectors as follows:

(1) **Packaging** - The range of paper-based products used to package products for sale, distribution, and shipping. e.g. multiwall bags, grocery or check-stand bags, flexible laminated products, polyethylene, silicon or wax coated papers, molded pulp products.

(2) **Consumer Disposables** - Single use or disposable consumer products. e.g. napkins, towels, bibs, facial and toilet tissue, diapers.

(3) **Specialty Institutional Paper Products** - Products used by the service industry, i.e., hotels, restaurants, fast food chains, and institutions. e.g. place mats, doilies, plates, cups, tray covers, sandwich bags, waxed interleafing paper, filters.

(4) **Specialty Commercial Paper Products** - Products for use in an office or commercial setting, often in conjunction with office machines or recording instruments. e.g. telex rolls, adding machine rolls, drafting papers, gummed papers and tapes, charts, pressure sensitive label stock.

(5) **Wallpaper** - Decorating products sold primarily in the do-it-yourself market. e.g. prepasted, dry strippable, often vinyl coated wallcoverings.

Because of the variety of products, the statistics for the industry are highly disaggregated and miscellaneous categories represent major portions of the data. Nonetheless, the table below represents the estimated 1985 results by the major subsectors.

TABLE I

Converted Paper Products Industry

Estimated 1985 Results

	Shipments ($ Millions)	% Shipments	Exports ($ Millions)	% of Shipments Exported	Employees
Packaging	685	34.3	21	3.1	6 800
Consumer Disposables	645	32.3	48	7.4	4 300
Institutional	330	16.5	32	9.7	3 000
Commercial	215	10.8	22	10.2	2 600
Wallpaper	121	6.1	75	62.0	1 150
	1 996	100.0	198	9.9	17 850

The whole range of factors, both positive and negative, that affect Canadian industry in general, is evident in this industry because of the diversity of products and markets. There are areas of growth potential,

international cost competitiveness, marketing capability, state-of-the-art facilities, and rapid technological development. Conversely, there are areas of product and market maturity, overcapacity, domestic orientation behind a tariff wall, import competition and decline due to substitute products.

The industry is primarily Canadian owned and while there are major players in all of the subsectors, each contains a significant number of smaller companies which minimizes domination by any one company. The **consumer disposables subsector** is the exception in that four companies account for the major share of the market. They produce brand-name products sold through a national distribution system. Other companies in the subsector specialize in either regional markets, industrial products, or in producing generic and private label products to be sold through retail chains. In addition, three of the major companies are part of multinational organizations with headquarters outside of Canada.

The industry comprises a full range of organizational types from the large multinational, multiplant, integrated organization, most often found in the **consumer disposables** and **packaging** subsector, to the single facility, owner/manager company which dominates the **commercial** and **institutional** subsectors. Overall, the extent of integration between converter and primary producer is much less than found among our international competitors. The small business component of the industry is significant, with in excess of 80 per cent of establishments employing fewer than 100 people. These establishments account for 55 per cent of total employment.

The industry, which is labour intensive, locates production facilities near the customer. Consequently, it is concentrated in urban areas. Thirty and forty-six per cent of the establishments are located in Quebec and Ontario respectively. British Columbia has 9 per cent with only a handful of establishments in the remaining provinces. As an illustration of its labour intensiveness, the paper converting industry employs 30.7 persons per thousand tonnes of paper consumed while the primary producers employ fewer than 8 persons per thousand tonnes of product.

The industry is domestically oriented. Exports represent less than 10 per cent of total shipments. Nonetheless, exports are important to certain subsectors and product lines within those subsectors. For example, the **wallpaper** subsector exports in excess of 60 per cent of its product. While 92 per cent of its exports are to the U.S., it also exports to major international markets including Australia, Europe, South Africa, Saudi Arabia and, in the future, Japan. In **flexible packaging** products, it is estimated that exports are now in excess of 25 per cent of shipments with the U.S. being the prime market. By contrast, exports of paper bags from the **packaging** subsector would account for less than 2 per cent of shipments.

b) Performance

Overall, the performance of this industry is closely related to that of the national economy, as the industry supplies product to all sectors. In addition, much of the industry's output is sold to or is used in support of sales to the consumer. However, the subsectors react differently to economic circumstances as their performance during the recent recession illustrates. The curtailment in consumer discretionary spending during the period most directly affected the **packaging, wallpaper,** and **commercial** subsectors. **Consumer disposables** performed well during the period, however, and projects to increase capacity, modernize equipment, and introduce new products were in evidence throughout. The **institutional** products subsector which relies heavily on the food service industry likewise performed well.

On an industry wide basis, the average annual real growth rate over the past ten years has been 5.0 per cent. Employment, on the other hand, has decreased during the last ten years from 20 000 in 1975 to an estimated level of 18 000 in 1985. The reduction in employment reflects modernization and the need to operate more efficiently. This factor became very apparent during the last recession.

Capacity utilization within the industry averages about 75 per cent. Considerable variation exists, however, between product lines and subsectors. For example, **paper bag** production capacity is excessive, and further industry adjustment is anticipated. By contrast, undercapacity exists in a number of **consumer disposable** products and new production facilities are currently being planned to address this situation and prepare for the projected strong future growth.

Despite variations between subsectors, product lines, and individual companies, the overall financial status of the industry can be described as reasonably healthy. Although raw material and labour costs have increased faster than selling prices, many segments of the industry have remained profitable with gross profits in the range of 15-25 per cent of sales and net profits of 5-10 per cent. The industry is generally conservative in its financial management with relatively high liquidity ratios and low debt to equity ratios. The major exception is the **paper bag** segment of packaging where companies have higher debt loads and reduced profit levels. For example, the debt to equity ratio in this sector averages 1.8:1 compared to an overall industry average of 0.6:1. The **paper bag** sector faces a declining market due largely to the substitution of plastics for paper and a trend towards bulk shipment which has affected the multi-wall bag segment. Many paper bag producers have had to diversify into plastic bag manufacturing and acquire new machinery and with it additional long term debt at a time when profit levels are depressed.

2. STRENGTHS AND WEAKNESSES

a) Structural Factors

The Canadian market is such that companies often must produce a broad range of products in various sizes for a single customer. This results in added down time, changeover and inventory carrying costs which affect the efficiency of operations. Canadian converters tend to operate with smaller plants and are less integrated than their major competitors. On the positive side, however, many companies have utilized their experience and ability to produce smaller runs with greater flexibility to service niche export markets.

Raw material costs (paper) account for 50 per cent or more of the cost of producing most converted paper products. An adequate supply of the many grades required at internationally competitive prices is a constant concern. Traditionally, paper prices in Canada have been higher than in the U.S. as the primary industry in Canada suffers from the same diseconomies of small scale as do the converters. In addition, many converters have limited buying power and have to pay more for small orders.

Labour costs, productivity, and international cost competitiveness is an issue of concern to the industry. Traditionally, labour rates in Canada have exceeded those of our major competitors (calculated on a common currency basis). No one factor can be used to explain this fact. However, wage increases in the primary segments of the industry have put pressure on wage rates in the converting industry by virtue of efforts to achieve parity and by the presence of integrated producers in most subsectors of the converting industry.

Most paper products have a very high volume to weight ratio. Consequently, transportation costs play an important part in pricing strategies and cost competitiveness. Relatively high transportation costs in this industry are aggravated by long distances to market in some cases and by higher Canadian trucking rates in others.

Corporate policies developed in headquarters outside Canada often prevent Canadian subsidiaries from exporting. This is most prevalent in **consumer disposables.**

b) Trade Related Factors

The industry is domestically oriented and many product lines were developed behind a tariff wall. This is particularly true with

consumer disposables where Canadian branch plants were built by multinational organizations to service the domestic market. The return on investment of Canadian plants could be justified because of the tariff against imported product. Canadian tariff rates for specific products range between 7 and 15 per cent whereas the U.S. rate for the same products is from 2.5 to 10 per cent.

c) Technological Factors

Generally, the industry is operating with modern equipment, utilizing the latest developments in technology and raw materials. Although much of the technology and processing equipment is imported, Canadian converters do keep abreast of the latest developments internationally. In **wallpaper** and certain product lines within **packaging**, Canadian firms have a technological lead in both product and process. As a result, the industry has a reputation for producing quality-competitive products. With respect to R&D, the bulk of the effort is devoted to product modification and product development to meet changing market demands.

d) Other Factors

Cost factors have resulted in many of the converted products not being cost competitive in international markets. Exchange rates play an even more significant role in cost competitiveness. A significant increase in the strength of the Canadian dollar vis-à-vis the U.S. dollar would severely hamper the ability of converters to export and would increase import pressure. The strength of the North American currencies (U.S. and Canadian dollars) vis-à-vis competitor countries, especially in Europe, places increased import pressure on domestic manufacturers. The **wallpaper** sector and certain product lines in the **commercial** sector continue to feel pressure from European imports and have seen an erosion of their traditional domestic markets.

3. FEDERAL AND PROVINCIAL PROGRAMS AND POLICIES

No specific government support programs are directed to the converted paper products industry. Selected firms have utilized both general industrial and market development programs available to all industry sectors. In addition, the industry uses the counselling services on industrial and market development and investment provided by the Department of Regional Industrial Expansion (DRIE). The Forest Sector Advisory Council (FSAC) Subcommittee on Converted Wood and Paper Products advises the government on issues with respect to these sectors. The focus is on international competitiveness and recommendations are drafted to address this objective.

4. EVOLVING ENVIRONMENT

The overall performance of the industry is linked to the performance of the economy and reacts particularly to trends in consumer spending and industrial shipments. Medium term growth, for the industry, is expected to average 2.8 per cent per annum. **Consumer disposables** should do better than average because of product substitution potential, and a growing untapped seniors market for a specific product line. The **wallpaper** sector, as well, is predicted to experience above average growth due to its stronger emphasis on export markets. **Institutional** and **commercial** products are expected to grow at about the industry average while **packaging** is expected to grow below average due primarily to inroads made by substitute products. Consequently, the industry will have to place more emphasis on export market development to achieve past growth rates. The prime opportunity is in the U.S. market. While no major product vacuums exist, there are niches of opportunity where Canadian companies can compete effectively.

5. COMPETITIVE ASSESSMENT

The bulk of the industry is not competitive with U.S. or European manufacturers. This includes most products in the **institutional** and **specialty commercial** categories. **Paper bag** products, in the **packaging** category, are particularly vulnerable to more competitive

U.S. products as well as plastic substitution. **Consumer disposables** present a mixed picture and while many companies and product lines are competitive, policies developed in foreign corporate headquarters often affect the ability of Canadian branch plants to export. Where these policies are not an issue, companies have been successful in selling to the U.S. and other markets as well.

Certain segments of the industry, notably **wallpaper** and **packaging,** are able to compete in certain product lines. These product lines are well positioned to take advantage of export opportunities, particularly in the U.S., due to proximity to the market and technological advantages in both products and processes.

Prepared by: Resource Processing Industries Branch
DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

Assistant Deputy Minister
Consumer Goods, Services and Resource Processing

Date: May 2, 1986

DRAFT - PROJET

DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

FACT SHEET

Converted Paper Products

SIC(s) - 2733, most of 279

1. Principal Statistics

	1980	1981	1982	1983	1985 (E)
Establishments	350	320	295	310	310
Employment *	19,000	20,000	17,000	18,000	18,000
Shipments($ million)	1,300	1,500	1,725	1,900	2,000
Exports ($ million)	150	155	150	160	198
Domestic Shipments ($ million)	1,150	1,345	1,575	1,740	1,802
Imports ($ million)	120	125	135	160	180
Canadian Market ($ million)	1,270	1,470	1,710	1,900	1,982
Exports - % of shipments	12	10	9	8	10
Imports - % of Domestic Market	9	9	8	8	9

* Also generates indirect employment especially in the distribution field.

2. Regional Distribution - 1983

	Atlantic	Quebec	Ontario	West
Establishments - % of total	4	30	46	20
Employment - % of total	2	27	65	6
Shipments - % of total	2	27	65	6

3. Foreign Trade

		U.S.	E.E.C	Asia	Others
Imports - % of total	1982	90	1	1	8
	1983	90	1	1	8
	1984	90	1	1	8
	1985(E)	90	2	1	7
Exports - % of total	1982	90	1	1	8
	1983	90	1	1	8
	1984	90	1	1	8
	1985(E)	90	1	2	7

4. Major Firms

Name	Ownership	Location of Major Plants
Packaging		
Aspamill Inc.	Canadian	Ville St. Laurent, Quebec
Bonar Packaging Ltd.	United Kingdom	Fredericton, New Brunswick/ St. Laurent, Quebec/ Burlington, Ontario/ Calgary, Alberta
DRG Packaging Inc.	United Kingdom	Toronto, Ontario
Twinpak Inc.	Canadian	Cap-de-la-Madeline, Quebec/ Dorval, Quebec/ Brantford, Ontario/ Calgary, Albert/ Vancouver, British Columbia
Consumer Disposables		
E.B. Eddy Forest Products Ltd.	Canadian	Hull, Quebec
Kimberley Clark Canada Ltd.	United States	St. John, New Brunswick/ St. Hyacinthe, Quebec/ Huntsville, Rexdale, Ontario
Scott Paper Ltd.	United States	Westminster, B.C./ Crabtree Mills, Quebec
Sancella Inc.	United States/ Sweden	Vancouver, B.C. Crabtre Mills, Quebec

Name	Ownership	Location of Major Plants
Institutional		
Dixie Canada Ltd.	United States	Brampton, Ontario/Quebec
Bondware Division Dover Industries Ltd.	Canadian	Toronto, Ontario
Perkins Paper Products Ltd.	Canadian	Laval, Quebec
J.H. McNairn Ltd.	Canadian	Whitby, Ontario
Commercial		
Appleton Paper Canada Limited	United States	Peterborough, Ontario
Cutting International Limited	Canadian	Toronto, Ontario
Eastern Coated papers Ltd.	United States	Dorval, Quebec
MacTac Canada Ltd.	United States	Brampton, Ontario
Wallpaper		
Berkley Wallcoverings Inc.	United States	Sherbrooke, Quebec
Sunworthy Division, Borden Chemical	United States	Bramalea, Ontario
International Wallcoverings Ltd.	Canadian	Brampton, Ontario
North American Decorative Products Ltd.	Canadian	Brampton, Ontario

COMPETITIVENESS PROFILE
CONVERTED WOOD PRODUCTS (REVISED)

PLEASE SUBSTITUTE FOR PREVIOUS DOCUMENT

October, 1986

DRAFT

DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

COMPETITIVENESS PROFILE

CONVERTED WOOD PRODUCTS

1. Structure and Performance

a) Structure

The industry includes companies which use or further process, as a major element of manufacturing, primary wood inputs such as lumber and panels to create a wide range of end products. Major products include kitchen cabinets, windows, doors, manufactured housing, mobile homes, and wood pallets. Other products include fencing, log homes, trusses and other structural housing components, boxes, turnings, furniture components, mouldings, flooring, cooperage, architectural millwork, laminated timbers, dimension stock and a variety of miscellaneous and specialty items.

In 1985, the industry had estimated shipments of $2.5 billion; employment of 31,000; exports of $350 million; imports of $164 million; and approximately 2,000 establishments. Statistics on the major products for 1985 are estimated as follows:

PRODUCT	SHIPMENTS ($ Millions)	EXPORTS ($ Millions)	IMPORTS ($ Millions)	EMPLOYMENT
Kitchen Cabinets	500	35	5	7400
Windows	440	10	29	4600
Doors	340	35	5	3500
Manufactured Housing	240	45	15	2200
Mobile Homes	100	-	5	600
Pallets and Boxes	180	10	10	1200
Total	1,800	135	69	19,500
OTHER	700	215	95	10,500
Total Converted Wood Products	2,500	350	164	30,000

Regionally the industry is concentrated in southern Ontario and Quebec which have respectively 35 and 26 per cent of the activity. British Columbia has 15 per cent. The remaining 25 per cent is spread across the Prairie and Atlantic provinces. With the exception of manufactured housing and mobile homes, which are sold largely in rural areas, plants are located mostly in or near urban population centres which provide the major markets.

Foreign ownership is rare. Vertical corporate integration exists but is limited to a few firms. Most companies are family owned. Companies are small to medium sized. About 50 per cent of firms have sales of less than one million dollars while only a few firms have sales exceeding $50 million and these are for the most part in the window and door sectors. The industry is generally labour intensive and has a domestic and even regional orientation.

There are no dominant export products but the most significant items are doors, manufactured housing, fencing, dimension stock, standard millwork such as flooring, panelling, mouldings, turnings, kitchen cabinets and doors, and specialty products. Imports are similarly spread across product lines with wood windows, wood brush blocks, dimension stock and miscellaneous millwork as the most notable. In contrast to primary forest product commodities, specific product marketing is an important factor in developing trade given the ranges in price, quality and style of many converted wood products.

The industry has evolved to the point where a few leading companies account for a significant share of industry production. This varies between sectors. For example, in the door sector, 4 of the 50 or more companies have roughly 50% of sales; in the window sector 7 of almost 400 firms have about 50% sales; in kitchen cabinets, 8 of about 400 companies have 25% of sales; and in manufactured housing 10 of about 90 companies have 30% of the sales.

b) Performance

Performance of this industry correlates with general economic growth trends, including the level of housing starts. In the decade to 1981, industry shipments grew at 2.2 per cent annually. The subsequent recession saw a decline in industry volume averaging 20 per cent, with the situation particularly severe in western Canada. The value of shipments in 1985 has returned to 1981 levels with southern Ontario showing the strongest recovery.

With the housing decline of the late 1970's and the recession of the early 1980's, the manufactured housing and mobile home sectors lost more than 75 per cent of earlier production levels, but major corporate failures occurred as well in the door, window and kitchen cabinet sectors. The outcome of this period was a leaner more competitive industry. Companies have reduced inventory and concentrated on improving efficiency. Some have pursued export markets, mostly in the U.S., to offset reduced domestic demand.

Exports, which are mostly to the U.S. have been one of the strongest components of growth. Since the mid 1970's exports have exceeded imports and now represent close to 14 per cent of total sales, twice the level of imports.

While the industry is small relative to the Canadian lumber and panel product sectors, it adds value to primary production and generates substantially more employment per unit of wood and per dollar of sales. Nonetheless, employment has declined significantly over the decade as a result of automation.

Historically, the industry has earned profit margins comparable to that of the manufacturing sector, and has had conservative debt to equity and working capital ratios. However, the recession has reduced the returns and liquidity of the industry, and increased its liabilities in relative terms. As a result, many of the companies would not be well positioned to respond to another economic and housing downturn.

2. Strengths and Weaknesses

a) Structural

Plant Scale: The most significant structural weakness generally throughout the industry is the relatively small scale of operations, which is partially a function of the dispersed Canadian market. This results in serious competitive disadvantages in productivity, cost performance and marketing capability. Small scale means less opportunity for mechanization and improvements to product flow; smaller discounts for large volume purchasing; and a disproportionate amount of time spent on product set-up and changeover as well as the marketing effort.

In the window, kitchen cabinet, manufactured housing, mobile home, pallet and moulding sectors, even the largest Canadian plants are dwarfed by those in the U.S., Japan and Europe. The largest U.S. window plant, for example, has the same volume of production as the entire Canadian window industry. In a few sectors such as doors, flooring and fencing, scale differences are not as significant.

Company Size: A large number of very small companies in this industry experience difficulties in addition to those caused by small scale of operation. They include limited management capability, marginal financial resources and very limited experience in marketing. Studies of Canadian window and door companies, for example, have shown that companies with less that $3 million of sales tend to show substantially lower profit levels.

Capacity Utilization: The capacity of many Canadian plants is seriously underutilized. This weakness is a result of the small and dispersed Canadian market and is exacerbated by fluctuations in housing demand. Canadian companies are currently averaging 75% capacity utilization but many companies were below 50% during the recession of 1982. The U.S. performance in this regard is superior and in addition U.S. plants have a tendency to work multiple shifts whereas single shift production is more common in Canada.

Input Costs: Despite a Canadian dollar exchange rate in the range of 70-75¢ U.S., some U.S. companies have an advantage in unit material costs, hourly labour wages and freight rates. This situation, however, varies substantially between regions and product sectors in both countries. Freight costs are adversely affected by the long distances in Canada between material source, plants, and dispersed markets. A number of Canadian products, e.g. fencing, doors, some windows and mouldings and manufactured housing, use indigenous Canadian wood products at competitive prices while other Canadian manufacturers require foreign wood materials at relatively higher costs.

Market Factors: Distribution and promotion of many of these products can be complex, costly and intensely competitive, often involving warehousing, distribution centres and product literature. Most Canadian companies are not highly developed in marketing and market planning. Nonetheless, a number of the leading and more progressive Canadian companies have established their products in the U.S., Europe, Japan and elsewhere. The Canadian manufactured housing sector, for example, particularly with its industrial camps, has been prominent in international markets over the last decade. Often, Canadian production facilities, which tend to be smaller and less specialized than foreign competitors, are well suited to respond to small orders both domestically and internationally. In addition, many Canadian companies have a solid reputation for competitive quality and service.

b) Trade Related Factors

Tariffs: Most Canadian wood products are protected by tariffs ranging from 9 to 15% whereas those in U.S., Western Europe, and Japan average 5 to 6%. The higher Canadian tariffs provide a measure of protection particularly for the small, locally owned Canadian company. The lower foreign tariffs, while a factor, are not major determinants in export success when placed in the context of other cost factors such as manufacturing, distribution, freight; the importance of product quality and service; and the potential variation in exchange rates.

Building Codes and Product Standards: Building codes can be complex and are generally legislated and administered by regional as opposed to federal governments. There are considerable differences in building codes between countries, which can restrict trade in manufactured housing, particularly modular units which include wiring and plumbing. Mobile homes are governed both in Canada and the U.S. by different product standards which to this point have severely limited trade between the two countries, whereas standards for kitchen cabinets, windows, doors, pallets etc. are less restrictive.

Others: Government procurement practices, import licensing and product testing have constrained exports of a few products to certain countries but are not major impediments to trade.

c) Technological Factors:

Product technology and design are critical factors in the marketing of most converted wood products. Products must meet the tastes of the consumer as well as being durable, functional and attractive. Requirements are constantly changing.

Many of the innovative ideas for housing are initiated in the U.S. while innovations in the window, door, and kitchen cabinet sectors originate mostly in continental Europe. Canadian companies, however, tend to be current in these developments and, in general, maintain their products at comparable levels of quality and design. In addition, they lead in product technology in such areas as energy conservation where Canadian requirements are very specific. Most product innovation is done in-house.

The productivity of plant equipment varies by sector and company but there have been recent trends to modernize Canadian production, including the use of new technologically advanced equipment. With the exception of very

large, highly automated foreign plants in such product areas as manufactured housing and kitchen cabinets, the application of technology to equipment and production flow in the larger and more progressive Canadian companies is nearly on par with foreign competition. While this technology is readily transferable, many of the smaller companies lack the capital, market volume, or management expertise to implement such change. On average, Canadian levels of automation and mechanization are still below those in the U.S.

Machinery and equipment R&D is done mostly by equipment suppliers, but is often adapted in-house to the specific needs of companies. Major suppliers of state-of-the-art equipment are located in West Germany, U.S., U.K. and Italy.

d) Other Factors

The industry is vulnerable to any major unfavourable shifts in the exchange rate relative to major trading currencies. This was demonstrated by the strengthening of the Canadian dollar vis-à-vis Western European currencies in 1980 which reduced the competitive position of a number of Canadian products, such as kitchen cabinet doors, already established in the Western European market.

Those Canadian companies which rely on the supply of U.S. lumber species, such as ponderosa pine for windows and mouldings, Douglas fir for laminating stock, and oak for flooring and kitchen cabinets are placed at a disadvantage by the weak Canadian dollar as raw materials can represent over 50% of total cost.

3. Federal and Provincial Programs and Policies

There are no specific government support programs directed to the converted wood products industry, although selected firms have and will continue to use general industrial and market support programs available to all industry sectors. Additionally, the industry does utilize the counselling services on industrial development and export opportunity provided by sector specialists in DRIE.

The Forest Sector Advisory Council (FSAC) Subcommittee on Converted Wood and Paper Products is in place to advise the government through FSAC on issues with respect to these sectors. The focus is on improved international cost competitiveness, and recommendations are intended to address this objective.

One segment of the industry, manufactured housing, is particularly influenced in domestic and international markets by government regulated building codes and related product standards.

4. Evolving Environment

The markets for most converted wood products depend on housing demand. New housing construction, until recently the largest single demand component, is projected to continue to decline over the next 15 years in response to changes in demographics such as population and net family formation. Some 100,000 units annually are anticipated in the late 1990's, compared to 250,000 during the peak years of the 1970's. This trend will exacerbate the chronic structural difficulties associated with small scale operation and underutilization of capacity.

Declines in new housing construction are being offset by continued growth in housing renovation, both contractual and do-it-yourself (DIY), which now exceeds in value the total expenditure on new housing and is growing at a faster rate than the economy as a whole. Housing renovation will not benefit the various categories of manufactured housing or mobile homes but will provide a growing market for windows, doors, kitchen cabinets, hardwood flooring, mouldings, etc.

Export markets should continue to provide growth opportunity for leading Canadian companies in such product areas as doors, manufactured housing,

cabinets, flooring, strip panelling, fencing and other specialty remanufactured items. Assuming exchange rates remain at approximately early 1986 levels, average growth of exports is anticipated at about 8% per annum. This compares to an overall industry growth rate over the next decade estimated at 2% per year.

The overall competitive environment as well as the demand scenario will continue to force change in virtually every sector of the industry. Required improvements in marketing and promotion, product transportation, cost performance and increased exposure to international competition will continue to force industry rationalization involving plant shutdowns, corporate restructuring, product specialization, increased average company size and mechanization. The manufactured housing and mobile home sectors are particular cases in point, having restructured drastically since the peak years of the mid-1970's. At this point, manufactured housing has a substantial growth opportunity vis-à-vis on-site construction.

Plastics, metals and other substitutes for wood used in these converted products are not expected to change significantly in the medium term, although there are some possible exceptions such as plastic framed windows.

5. Competitiveness Assessment

The industry has evolved to serve domestic markets and exists at present levels because of the protection offered by the tariff barriers of 10 to 15 percent and the advantageous exchange rate with the U.S. A significant shift in either of these two factors could adversely affect a large portion of the industry, including such key sectors as windows, kitchen cabinets and mobile homes.

Most firms are not competitive internationally with the larger scale U.S., European and Japanese manufacturers. The foreign companies, particularly those in the U.S., have, in most cases, cost advantages from economies of scale, higher levels of automation and larger production runs. They also tend to have lower unit costs for raw materials, labour and transportation. Many Canadian firms are comparatively weak in marketing skills and development and in their level of management expertise.

Despite this situation there are companies in the various sectors of this industry which have established particular product lines in export markets and could survive increased international competition. These companies have a more stable financial base and are relatively aggressive in export market development. These exporters compete on the basis of quality and service as well as price, and because of their flexibility of production, are often better able than their competitors to supply niche market opportunities. This is particularly the case in the rapidly expanding world market for renovation and do-it-yourself products.

Leading companies are taking necessary steps to improve cost and market performance. The trend toward industry rationalization and consolidation in such sectors as manufactured housing and kitchen cabinets is a positive reaction to market forces and a necessary adjustment for improved performance. Too many firms are pursuing shrinking or slow growth markets which limit their ability to achieve the required economies of scale and financial strength.

Prepared by: Resource Processing Industries Branch
DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

Assistant Deputy Minister
Consumer Goods, Services and Resource Processing

Date: OCT 31 1986

DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

FACT SHEET

NAME OF SECTOR: Converted Wood Products

SIC(s) - 2541, 2542, 2543, 2549, 2599, 2561, 3244

1. Principal Statistics

	1971	1980	1981	1982	1983	1984(E)	1985(E)
Establishments	900	1844	1859	1878	1965	1980	1980
Employment	16000	34876	34441	28770	29128	30000	31000
Shipments ($ millions)	377	2079	2400	1923	2062	2300	2500
(volume, e.g. tonne where applicable)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Gross Domestic Product (Constant 1971-$ millions)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Investment ($ millions)	30	20	22	20	21	21	21
Profits After Tax ($ millions)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
(% of income)	N/A	N/A	N/A	N/A	N/A	N/A	N/A

2. Trade Statistics

	1971	1980	1981	1982	1983	1984	1985
Exports ($ millions)	50	220	308	210	240	310	350
Domestic Shipments ($ millions)	327	1859	2092	1713	1822	1990(E)	2150(E)
Imports ($ millions)	51	135	167	123	170	160	164
Canadian Market ($ millions)	378	1994	2259	1836	1992	2150(E)	2314(E)
Exports as % of Shipments	13	10	13	11	12	13(E)	14(E)
Imports as % of Domestic Market	13	7	8	7	9	7(E)	7(E)
Canadian Share of International Market	negligible		negligible		negligible		

Source of imports (top 4)	U.S.	E.E.C.	ASIA	OTHERS
1981	78	6	10	6
1982	77	6	11	6
1983	78	6	10	6
1984	79	5	10	6
1985	77	5	11	7

Destination of exports (top 4)	U.S.	E.E.C.	ASIA	OTHERS (Middle East)
1981	52	13	5	30
1982	72	9	4	15
1983	86	6	3	5
1984	87	5	3	5
1985	92	4	1	3

3. Regional Distribution - Average over the last 3 years

	Atlantic	Québec	Ontario	Western Region
Establishments - % of total	6	39	25	30
Employment - % of total	8	31	31	30
Shipments - % of total	5	26	35	34

4. Major Firms

Name	Ownership	Location of Major Plants
Kitchen Cabinets		
Canac Kitchens Ltd.	Canadian	Toronto, Ontario
Citation Cabinets Ltd.	Canadian	Richmond, B.C.
Kitchencraft of Canada Ltd.	Canadian	Winnipeg, Manitoba

Name	Ownership	Location of Major Plants
Doors		
Sauder Industries Ltd.	Canadian	Vancouver, B.C.
Premium Forest Products Ltd.	Canadian	Scarborough, Ontario
Gunther Doors Ltd.	Canadian	Vancouver, B.C.
Windows		
Robert Hunt Corporation	Canadian	London, Ontario
Dashwood Industries Ltd.	Canadian	Centralia, Ontario
Mason Windows Ltd.	Canadian	Pickering, Ontario
Lockwood Ltd.	Canadian	Scoudouc, N.B.
Donat Flammand	Canadian	St. Appolinaire, Que.
Lowen Millwork	Canadian	Steinbach, Manitoba
Manufactured Housing		
Atco Ltd.	Canadian	Calgary, Alberta
Viceroy Homes Ltd.	Canadian	Scarborough, Ontario
Nelson Homes Ltd.	Canadian	Lloydminster, Alberta
Kent Homes	Canadian	Debert, Nova Scotia and Buchtouche, N.B.
Quebec Homes Inc.	Canadian	Abitibi, Quebec
Other Converted Wood Products		
John Lewis Industries Ltd.	Canadian	Montreal, Quebec

DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

DRAFT - PROJET

COMPETITIVENESS PROFILE
COPPER SMELTING AND REFINING

1. STRUCTURE AND PERFORMANCE

a) Structure

Copper is the third most widely used metal, after steel and aluminum, with current western world consumption of about 7.2 million tonnes per year. The principal use for copper is in electrical applications, which account for more than 50 percent of total requirements. It has many other uses, in pipes, tubes, radiators, castings, coinage and chemicals. Copper is also widely used in alloyed form, such as brass and bronze.

Smelting and refining are two separate operations. The raw material for the copper smelting operation is mineral concentrate ("copper concentrate") containing 25-35 percent copper; the end product is impure blister or anode copper (94-99 percent copper). This is upgraded to refined copper (over 99.9 percent) in a refinery, where precious metals are also recovered. The refined copper is largely sold to rod mills, brass mills and foundries, where it is processed into consumable forms.

The copper smelting and refining sector consists of five companies operating six smelters located in Quebec, Ontario and Manitoba and three refineries in Quebec and Ontario. All of the companies operate world-class facilities. Shipments amount to about one billion dollars annually. Employment is approximately 4,000.

The companies and their Canadian smelter locations are as follows:

Noranda Mines Ltd.	Rouyn-Noranda, Quebec and Murdochville, Quebec
Inco Ltd.	Sudbury, Ontario
*Kidd Creek Mines Ltd.	Timmins, Ontario
Hudson Bay Mining & Smelting	Flin Flon, Manitoba
Falconbridge Ltd.	Sudbury, Ontario

There are two general classes of smelters, those that are self-sufficient in mine production ("integrated") and those that must buy or toll mineral concentrates ("custom"). The Rouyn-Noranda smelter, to a large extent, and the Flin Flon one, to a lesser extent, are in the latter class. The Rouyn-Noranda smelter is also the largest copper smelter in Canada, accounting for 36 percent of plant capacity.

The three refineries, owned by Noranda, Inco and Kidd Creek, are located in Montreal, Sudbury and Timmins, respectively. The Montreal refinery receives the largest part of its feedstock from the Rouyn-Noranda smelter. Most of the rest comes from the company's other smelter in Murdochville and from Hudson Bay's Flin Flon smelter. Falconbridge does its refining in Norway.

All of the producers are vertically integrated to some degree, owning both mines and smelters; three own refineries. Inco and Noranda account for 68 percent of domestic smelter capacity and 86 percent of refinery capacity. Inco and Falconbridge have some foreign mining and metallurgical operations. Noranda is a widely diversified, resource-based company with extensive interests in oil, gas, forest products and manufacturing; while most operations are in Canada, it does have important American plants.

Noranda, Falconbridge and Kidd Creek have very high Canadian ownership, while Inco, a multi-national, is about 35 percent owned by Canadians. Hudson Bay is managed and controlled from the U.S. The Canadian industry is operated by publicly-traded companies. In the LDC's, a large proportion of copper production capacity is owned or controlled by governments.

*Kidd Creek was purchased by Falconbridge Ltd. early in 1986.

Present Canadian refined copper output amounts to 500,000 tonnes per year, about 6.9 percent of world production. Canada exports approximately 60 percent of its refined copper production, about 12 percent of the world's export trade. It is the world's third largest exporter, after Chile with 35 percent and Zambia with 24 percent. Canadian producers traditionally have supplied 90 percent, or 200,000 tonnes, of domestic consumption. Canada's main markets are the U.S. (49 percent of exports) and Europe (38 percent). Canadian producers find their most profitable sales in Canada, the USA and Europe.

In 1985, world production and consumption were in balance, at 7.2 million tonnes. Commercial stocks were at about normal levels. Prices are depressed below profitable levels for most producers, reflecting the excess of production capacity over demand.

The existence of a copper smelter in a district is of some strategic importance for regional industrial development, as it permits the exploitation of a number of small ore bodies in that district which would otherwise find no profitable market.

b) Performance

Over the last ten years the Canadian copper smelting sector has processed most of the concentrates that have been produced by mines in Canada east of the Manitoba/Saskatchewan border. Copper concentrates produced in British Columbia, in general, cannot be considered as an economic source of feedstock for eastern smelters, because of the cost of inland transportation and the higher prices offered by Japanese smelters. Some shipments from B.C. to Quebec are made, but these must be regarded as exceptional. There has not been an appreciable change in the rate of production of copper metal over this period.

As a result of the last recession, employment was reduced by 11.1 percent during the period 1983 to 1984, while production levels were maintained.

Companies operating smelting and refining facilities in this industry sector have shown losses since 1981. As these companies have other operations, information on the financial performance of the smelting and refining sector, itself, is not available; the companies report only on their overall operations.

2. STRENGTHS AND WEAKNESSES

a) Structural

Canadian operations are of world scale, the Sudbury, Rouyn-Noranda and Montreal operations being among the largest in the world.

The polymetallic ores of the Canadian Shield give the advantage to Canadian producers of providing a number of co-product values. The Sudbury ores offer nickel, copper and platinum metals, while other ores have copper, zinc, gold, silver and other metals. The sum of the revenues available from sales of all these metals is important in establishing the strong competitive standing of the Canadian companies operating mines, smelters and refineries. Another aspect of this polymetallic nature of ores, however, is the difficulty of separating one metal from another, requiring complex, high-cost processing and a strong R&D capability.

Published data indicate that average Canadian production costs for copper are towards the low end of the world cost spectrum. This applies to total costs, from mine to refinery, as cost data for smelters and refineries themselves are not available. The world's lowest cost producer is Chile, with costs at about 70 percent of the Canadian level, while copper production in Europe and the U.S. are at cost levels up to 50 percent higher than the Canadian average.

Canada was operating at some 80 percent of smelting and refining capacity in 1985.

The developing countries Chile, Peru, Zambia and the Philippines have increased their integrated mining, smelting and refining capacity over the last 15 years. These countries, for social reasons and because of the need for foreign currency, have not cut back mining or smelting operations in times of low demand even though losses have been incurred. During the same period, cutbacks were undertaken by North American producers as they are constrained to operate at a profit, at least in the medium and long term. Chile is an exception among the developing countries, as its expansion is based on rich, low cost ore bodies that generate profits even at depressed copper prices.

Because of low copper prices, some Canadian mines have closed and some copper deposits have been dropped from the ore classification. As a result of this, as well as the depletion of other ore bodies, the Rouyn-Noranda smelter is slowly depleting its domestic sources of supply and at present is importing some foreign copper concentrates, to maintain an economic level of production. Similarly, the Murdochville and Flin Flon smelters face diminishing ore reserves. A strong exploration program has been sustained by the companies for several years in eastern Canada, to improve the resource situation, but without a major copper find so far.

Copper concentrates are difficult to obtain at reasonable prices in world markets because of excess custom smelting capacity, mainly in Japan but also in Brazil, Korea and Taiwan.

Most copper minerals are sulphides and give rise during the smelting process to smelter fumes, i.e. sulphur dioxide, which constitutes a main component of acid rain. Conventional control consists of converting the sulphur dioxide to sulphuric acid in an acid plant. Such plants recover a portion of the gas from the operations of Kidd Creek, Inco, Falconbridge and Noranda (Murdochville), while sulphur dioxide is not recovered at the Rouyn-Noranda smelter or at Hudson Bay's Flin Flon smelter. New emission regulations have recently been published which will require a large increase in the production of sulphuric acid by smelters. This creates a difficult commercial situation, as the acid will probably have to be marketed as far away as Florida.

Since anode copper from the Rouyn-Noranda smelter provides the bulk of the feedstock for the Montreal refinery, any major decline in the smelter's output because of either lack of concentrates or stricter emission controls would have an important impact on the scale of operations of the refinery.

The vertical integration of Inco, Falconbridge and Kidd Creek is a vital strength of these companies. On the other hand, the degree to which Hudson Bay and Noranda must find other sources of concentrate is a weakness, as it may at times be difficult to maintain optimum production rates at a time when revenues are already under pressure from the low levels of internationally set smelter tolling charges.

b) Trade Related Factors

Canada and the EC do not have tariffs or other trade barriers restricting trade in copper concentrates or metal. The United States tariff on refined copper is one percent and has been considered as only a nuisance by both sellers and buyers. The main threat to Canadian copper exports is the possibility of an escape clause type of action being taken under Section 201 of the U.S. Trade Act, a measure that has in the past been resorted to by American producers during times of depressed markets. Defence against it is costly and time consuming.

While there are no tariffs imposed on concentrates, tariffs on metal are being used indirectly by some consuming countries to control world trade in concentrates. Japan, Brazil, Korea and Taiwan have erected high tariff barriers against the imports of refined metal to support a higher domestic price for refined copper. Custom smelters and refineries were built on that basis. The higher price allows these smelters to pay premium prices for copper concentrates. This situation has created a world surplus of custom smelting capacity and has put buying pressure on

the limited availability of exportable concentrates, providing strong competition for those smelters that do not control a source of concentrate and that are not assisted in this way by their governments. The companies most adversely affected by this situation seem to be Noranda and Norddeutsche Affinerie (FRG). On the other hand, B.C. copper mines benefit from the higher prices paid by the Japanese smelters for copper concentrates. Some developing countries, such as the Philippines, have placed export restrictions on concentrates, in response to this situation, to ensure that their smelters have adequate supplies.

c) Technological Factors

To a degree not often appreciated, the nonferrous metal smelting and refining industry is technology based. Research and development on smelter processes has been for many years of prime importance in Canada, because of the close combination of two or more metal values in a typical Canadian Shield ore body and the difficulty of separating these metals. The nickel-copper ores of the Sudbury basin were not exploitable for a decade after their discovery, until the development of smelting and refining processes.

The Inco development of the copper flash smelting process introduced a new era of effective, low-cost, environmentally acceptable smelting. The Noranda process for copper smelting has been a more recent major development, featuring high productivity and flexibility with respect to feed materials, and the possibility of controlling emissions. This process, along with the large scale of operations, has been essential to the survival of Noranda's Rouyn-Noranda smelter in the past few years, which is no longer resource-based.

The Canadian prominence in process development is not only of great importance to the survival and growth of the industry but is recognized world-wide. Canadian plant design has been used in other countries, usually under license, sometimes copied without compensation. There are no barriers to buying or selling technology.

The tightening of environmental controls today gives a strong incentive for the development of new smelting processes which would not emit sulphur dioxide. However, instead of doing this, a quicker response would be to build acid plants to convert sulphur dioxide emissions into sulphuric acid. This would require large capital expenditures and would increase operating costs significantly. The acid would have to be sold as far away as Florida, since the quantities of acid that would be produced, being enormous, could not be absorbed in the market of the north-eastern part of the continent.

d) Other Factors

The Canadian dollar is strong compared with most world currencies, resulting in a disadvantage to Canadian producers vis-à-vis their major LDC competitors. However, since Canadian currency recently dropped by about 30 percent against virtually all other currencies, this disadvantage has been somewhat lessened.

3. FEDERAL AND PROVINCIAL PROGRAMS AND POLICIES

In general the industry has not been dependent on government programs but has taken some advantage of them.

The federal income tax provision for flow-through of exploration expenses has resulted in a great deal of exploration activity. This activity not only is the basis for establishing new mines, but it is the most promising avenue for developing a long term economic base for the Rouyn-Noranda, Murdochville and Flin Flon smelters. The income tax system of depletion allowances also is an important incentive for investment in mines and smelters.

The federal and provincial Ministers of Environment agreed, in 1985, to a program of environmental control, including major reductions in emissions of sulphur dioxide gas from smelters by 1994. The participating provinces are Quebec, Ontario and Manitoba. The federal government has established a program of financial assistance for development of new smelter processes which would both improve productivity and reduce sulphur dioxide emissions.

4. EVOLVING ENVIRONMENT

Substitute materials such as glass fibre (fibre optics), plastics and aluminum have replaced copper to some degree in recent years. Technological trends towards downsizing and miniaturization of products have also decreased the amount of copper required. These impacts on copper demand may have largely run their course by now, but no new major uses for copper are being developed to offset them. The last recession and the above factors caused world consumption of copper to decrease by some eight percent in 1983 compared with 1979. However, it recovered in 1984 to within one percent of the 1979 level, reflecting improved world economic conditions.

The world's copper supply is expected to remain at an ample level for many years to come. There exists a large surplus in integrated mining, smelting and refining capacity, and, independent of this, a surplus of custom smelting and refining capacity. However Chile intends to install new capacity, based on its large, rich ore bodies (35 percent of the world's resource) and to gain a steadily increasing share of the world market.

5. COMPETITIVENESS ASSESSMENT

Canadian companies with fully integrated mines-smelters-refineries are world competitive in cost although, with some high-cost developing countries producing regardless of price, being cost-competitive does not guarantee profitability. These Canadian operations are expected to remain viable over the long term.

However, the next few years may prove difficult for the Rouyn-Noranda, Murdochville and Flin Flon smelters. For all three of these smelters, the most important problem is that future availability of locally-mined copper concentrates is in doubt. The Rouyn-Noranda smelter faces the additional disadvantage of requiring a large investment in emission control systems. This smelter, although it is said to be one of the world's lowest cost smelters, has little defence against the below-cost smelting charges arranged by the governments of Japan, Korea, Taiwan and Brazil, with which it competes for a small portion of its feed materials.

The future production level of the Montreal refinery is to a large degree dependent on the prospects for the Rouyn-Noranda smelter.

Prepared by: Resource Processing Industries Branch
DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

Assistant Deputy Minister
Consumer Goods, Services and Resource Processing

Date: 22.6.86

DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

FACT SHEET

NAME OF SECTOR: Copper Smelter and Refining **1980 SIC COVERED:** 2959 (part)

1. PRINCIPAL STATISTICS

	1971	1980	1981	1982	1983	1984	1985
Establishments	7	8	8	10	9	9	9
*Employment ('000)	N/A	N/A	N/A	N/A	4500	4000	N/A
**Gross Domestic Product (Constant 1971-$ millions)	507	568	568	488	540	606	N/A
**Investment ($ millions)	300	869	862	1,069	745	1,114	1,235
Shipments ($ million)	551	1,398	1,055	706	949	1,007	908
(volume, 000 tonne)	487	530	479	363	469	551	480
***Profit (loss) after Tax ($ millions)	N/A	812	(259)	(403)	(279)	(36)	N/A
(% of income)	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Obtained from company sources
**Relates to total SIC 2950 Smelting and Refining of Non-Ferrous Metals not specifically to copper.
***Relates to the overall operation of the companies, not just to their copper smelting and refining operations and is taken from companies' annual reports.

2. **TRADE STATISTICS** (refined copper)

	1971	1980	1981	1982	1983	1984	1985
Exports ($ million)	317	863	576	449	599	632	519
Domestic Shipments ($ millions)	234	505	479	257	350	375	389
Imports ($ millions)	22	23	34	46	56	49	39
Canadian Market ($ millions)	256	528	513	313	406	424	428
Exports as % of Shipments	57.5	61.7	54.5	63.5	63.1	62.7	57.1
Imports as % of Domestic Market	8.5	4.3	6.6	14.6	13.7	11.5	9.1
Canadian Share of International Market % (volume)	12	11	10	9	10	12	N/A

Source of imports %	U.S	E.E.C.	Asia	Others
1981	53.0	0.1	0.2	46.7
1982	32.6	1.9	-	65.5
1983	24.4	3.4	-	72.2
1984	20.4	2.0	-	77.6
1985	46.1	0.1	-	53.8

Destination of exports %	U.S.	E.E.C.	Asia	Others
1981	33.2	57.7	1.1	8.0
1982	37.9	56.9	0.2	5.0
1983	31.7	42.6	23.1	2.6
1984	53.7	28.3	13.8	4.2
1985	48.5	38.1	9.6	3.8

3. **REGIONAL DISTRIBUTION** - Average over the last 3 years

	Atlantic	Quebec	Ontario	Prairies	B.C.
Establishments - % Total	0	33.3	55.6	11.1	0
Employment - % Total (1983-84)	0	64.2	28.3	7.5	0
Shipments (refined copper) - % Total	0	62.5	37.5	0	0

4. MAJOR FIRMS

Name	Ownership	Location of Major Plants	Concentration (% of domestic production, 1984)	
			*(S)	*(R)
Noranda Inc.	Canadian 97%	Murdochville, Que.(S)*	6	
		Rouyn-Noranda, Que.(S)	36	
		Montreal, Que.(R)		62
Inco Ltd.	Multinational (Canadian, 35%)	Sudbury, Ont.(S) (R)	26	24
Kidd Creek Mines Ltd.	Canadian 99%	Timmins, Ont. (S) (R)	14	14
Hudson Bay Mining & Smelting	U.S.A 100% with South African control	Flin Flon, Man. (S)	13	
Falconbridge Ltd.	Canadian 96%	Sudbury, Ont. (S)	5	-

* (S) Smelter
* (R) Refinery

DRAFT - PROJET

DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

COMPETITIVENESS PROFILE

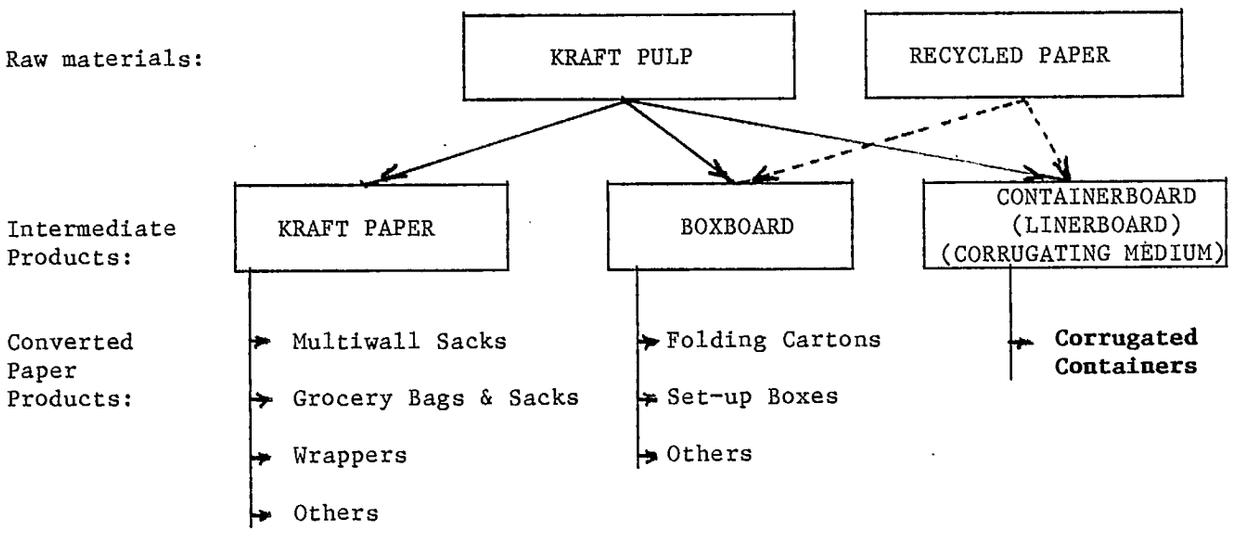
CORRUGATED CONTAINERS

1. Structure and Performance

a) Structure

Corrugated containers are the common shipping containers (for example beer cases) made of a fluted paper core laminated between rigid paper skins. In the manufacture of corrugated containers, a sheetstock is first produced by laminating linerboard (skin) to each side of a medium (core) after the medium has been fluted on a corrugating machine. The laminated sheetstock is then cut, creased and printed to produce the corrugated containers, folded flat for shipment. All these operations take place in a "corrugator" plant. A small percentage (6 to 8%) of sheetstock, however, is sold to "sheet" plants where they are separately converted into containers. The relationship between corrugated containers and the other paper-based packaging materials is shown below.

PAPER-BASED PACKAGING



The largest market for corrugated containers is the food and beverage industry which accounts for 50 percent of the Canadian demand. It is a very bulky product and, because of transportation costs, it can only be sold within approximately 200 kilometers of the production plant. There is thus no offshore trade in this sector and the Canada/U.S. trade would be limited to regional markets along the border. Under the current conditions even the latter trade is negligible.

Canadian shipments of corrugated containers in 1985 were estimated at 1.2 million tonnes, valued at $1.2 billion. Practically 100 percent of the production capacity is Canadian-owned with approximately 70 percent of the capacity controlled by three large companies.

The sector consists of 13 companies operating 61 corrugator plants and 48 companies operating 49 sheet plants. The sheet plants account for only 6 to 8 percent of the sector capacity and are all operated by small independent companies. The industry is concentrated in Ontario (60 plants) and Quebec (24 plants), but there are plants in each province except P.E.I. The total sector employment was estimated at 7,800 persons in 1985.

Corrugator plants are essentially all (corporately) integrated with the production of linerboard and corrugating medium. These materials account for 70 percent of the direct variable cost of manufacturing corrugated containers, ink and adhesives for 10 percent and labour 20 percent.

Imports of corrugated containers and sheetstock (by sheet plants) were estimated at $27 million in 1985 but accounted for only 2.2 percent of the domestic market. Exports are negligible.

b) **Performance**

Demand for corrugated containers grew very rapidly in the 1950s and 1960s when corrugated containers penetrated new markets and replaced other products, but the market is now mature and future growth will likely approximate that of the economy as a whole. The present real rate of growth (3 percent) is expected to be maintained in the long term.

In the last ten years, the number of plants manufacturing corrugated containers has increased markedly. Two new corrugator plants were built and some 30 sheet plants were added mostly in Ontario but also in Quebec and in Western Canada. A chronic overcapacity now exists in the sector.

The combined effect of overcapacity, modest real growth and threat of U.S. imports has maintained a fiercely competitive pricing climate. Price levels have been depressed and profit margins have been low. No separate financial data are available from the integrated companies operating in this sector, but it is estimated that earnings, especially among the larger companies, are of the order of 3 to 4 percent of net sales before taxes. This suggests that capital formation within the sector might not be sufficient to allow all producers to fund capital improvements required to improve efficiency. A few companies, nevertheless, are investing in a new generation of completely computer-controlled corrugators. While these machines are costly their output is twice that of the conventional corrugators and require only half as many operators. Investments in these new machines would, in the short term, exacerbate the overcapacity problem and reduce employment in the sector. Many U.S. producers have already invested in such equipment.

2. **Strengths and Weaknesses**

a) **Structural**

Because of high transportation costs the corrugated container market is inherently fragmented into relatively small geographic areas. In central Canada, the large number of corrugated container plants in any given market, coupled with the need to offer a full range of products, denies the producers the opportunity to attain economies of scale through specialization. Offering a wide range of products is particularly inefficient using a conventional corrugator. The new computerized machine, however, can economically produce a range of products and eliminate the need for plant specialization.

The principal cost elements in the production of corrugated containers are materials and labour. Canadian productivity in this sector is on average only approximately 60 percent of the U.S. productivity. This reflects in part the much higher efficiency of the 20 new generation corrugators already in operation in the U.S. and also the better industrial engineering applied to the conventinal corrugators in the U.S. Materials costs in Canada are approximately 30 percent higher than in the U.S. due to the more efficient containerboard production in U.S. world scale plants. With these materials and labour cost disadvantages the Canadian producers could only offer their products on the U.S. market at a price 20 to 25 percent higher than the U.S. producers.

The small, widely-dispersed sheet plants depend on the local corrugator plants for their supply of sheetstock and tend to meet special container needs in their regional markets. Among the sheet plants, the competitive scramble is no less severe than among the corrugator plants but service rather than price frequently is the critical factor.

b) **Trade Related Factors**

Effective January 1, 1987, the Canadian tariff on corrugated shipping containers will be 9.2 percent. The U.S. tariff will be 3.0 percent, the EEC, 12 percent and Japan, 5.4 percent.

c) **Technological Factors**

The U.S., Japan and Europe are the principal suppliers of corrugated container production equipment and their most recent technology is readily available to producers the world over. The new technology is costly and to date Canadian plants have made little investment in this area, in comparison with the U.S. producers

3. Federal/Provincial Programs and Policies

There are no federal or provincial programs specifically targetted to this sector.

4. Evolving Environment

For the long term, the average real growth in demand for corrugated containers is expected to be about 3 percent per year in Canada and in the U.S..

The corrugated shipping container is expected to retain its leading position as the efficient, effective low-cost packaging for distribution of goods. Some penetration of the market may be made by other materials, such as plastic, but this will not be significant.

Sustained improvement in profit margins in the Canadian corrugated container industry is unlikely while it still uses conventional equipment. The resulting low rates of capital formation in the sector continue to make it difficult for producers to pursue the modernization essential to compete in this sector.

While modernization of the Canadian corrugated container industry may reduce the current labor productivity imbalance, the U.S. will continue to enjoy a materials cost advantage. The resulting overall cost advantage may even increase if the price of containerboard increases faster in Canada than in U.S.

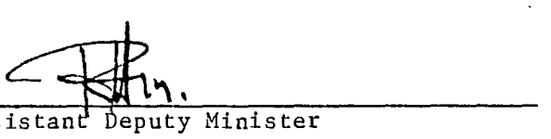
5. Competitiveness Assessment

In this sector, transportation costs limit sales to a small geographic region near the production plant. Canadian producers are only marginally competitive in the domestic market, despite the relatively high tariff and are not competitive in the U.S. even in border areas where transportation costs are not a factor.

The core of the Canadian disadvantage is material and labour costs coupled with lack of opportunity to attain economies of scale in the relatively small regional markets. The Canadian cost disadvantage amounts to about 20 to 25 percent of the selling price in the U.S..

The relatively poor financial situation of many Canadian producers has prevented them from undertaking the expensive modernization required to remain competitive.

Prepared by: Resource Processing Industries Branch
DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION



Assistant Deputy Minister
Consumer Goods, Services and Resource Processing

Date: JUL 30 1986

DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION July 1986

FACT SHEET

NAME OF SECTOR: CORRUGATED CONTAINERS SIC(s) COVERED: 2732 (1980) *

1. PRINCIPAL STATISTICS

	1973	1980	1981	1982	1983	1984	Estimate Partial 1985
Establishments	77	108	107	108	109	110	110(e)
Employment	8243	8787	8313	7174	7822	7700	7800(e)
Shipments ($ millions)	417	898	1050	1001	1146	1089	1189
('000 tonnes)	N/A	1087	1134	974	1055	1137	1207
Gross Domestic Product (Constant 1971-$ millions)	)						
Investment ($ millions)	) Not available - confidentiality in the						
Profits After Tax ($ millions)	) subgroups						
(% of income)	)						

2. TRADE STATISTICS

	1973	1980	1981	1982	1983	1984	1985
Export ($ millions) (e)	1	3.3	3.6	1.4	0.7	0.5	1.0
Domestic Shipments ($ millions)	416	895	1046	1000	1145	1089	1188
Imports ($ millions) (e)	5	20	21	59	28	25	27
Canadian Market ($ millions)	421	915	1067	1059	1173	1114	1215
Exports as % of Shipments (e)	0.2	0.4	0.3	0.1	0.1	0.1	0.1
Imports as % of Domestic Market	0.1	0.2	0.2	5.6	2.5	2.2	2.2
Canadian Share of International Market	----------N/A----------						

Source of imports	U.S.	OTHERS
1982	98	0.2
1983	96	0.4
1984	98	0.2
1985	98	0.2

Destination of exports

1982	100
1983	100
1984	100
1985	100

3. REGIONAL DISTRIBUTION - Average over the last 3 years

	Atlantic	Québec	Ontario	Prairies	B.C.
Establishments - % of total	4.5	22.5	55.9	11.6	5.5
Employment - % of total	4.3	28.8	49.2	11.8	5.3
Shipments - % of total	5.9	24.7	48.5	13.9	6.9

4. MAJOR FIRMS

Name	Ownership	Location of Major Plants
MacMillan-Bathurst Inc.	Canadian	(1)
Domtar Inc. (Packaging Div.)	Canadian	(2)
C.I.P. Inc.	Canadian	Ont./Que./Nfld.
Atlantic Packaging Ltd.	Canadian	Ont./Que.

e - denotes estimate
Neg. - denotes negligible
(1) - All provinces except P.E.I., N.S. and Nfld.
(2) - All provinces except P.E.I., N.S., Nfld. and Sask.

DRAFT - PROJET

DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

COMPETITIVENESS PROFILE

Dairy Products Industry

1. Structure and Performance

Structure

The dairy products industry, SIC 104, comprises establishments engaged in processing raw milk and cream. There are two major groupings of products in this sector, pasteurized fluid milk and creams, which utilize 36% of the national milk production volume, and industrial milk products which utilize the remaining 64% of milk production volume. This latter group includes natural and processed cheese, creamery butter, condensed and evaporated milk, milk powder, ice cream, yogurt, frozen desserts such as sherbert, and fruit and yogurt-based drinks.

Governments of all developed countries, including Canada, seek to protect their dairy farming community by regulatory measures which include some form of import controls to protect their dairy industry and some type of domestic price support system designed to provide a satisfactory return to their milk producers. These programs generally result in production of surplus products which must be sold on the international markets. Because of the artificial separation between domestic and international markets, world market prices are considerably below domestic prices in most countries. Potential exists for trade in industrial products but regulatory measures limit the Canadian industry largely to domestic markets. The regulatory measures aimed at the dairy farming community have an impact on the dairy products industry by setting the price of their key input, raw milk.

The Canadian dairy program is domestically oriented; the object being to supply the Canadian market and to provide an adequate return to milk producers. In practice, the dairy industry is subject to a managed milk supply with milk quotas divided on a provincial basis.

Restrictive provincial regulations in the fluid milk industry and the federal allocation of provincial quotas for industrial milk have resulted in an industry structure fragmented along provincial boundaries. Canada has the highest milk and dairy product prices in the world and thus the Canadian industry would be very vulnerable should the regulatory environment change drastically.

Canadian fluid milk marketing is under the control of provincial agencies or commissions who negotiate with the dairy firms the prices paid to dairy farmers for milk used for both fluid and manufacturing products. The Canadian Dairy Commission administers an "Offer-to-Purchase" program for butter and skim milk powder which influences wholesale prices for all dairy products in Canada. Individual provincial milk marketing agencies set different price levels for various uses of industrial milk using the federal support prices for skim milk powder and butter as a base. The program also tries to ensure plentiful supplies of fresh butter to consumers by the Commission's holding sufficient butter stocks for resale when needed, in particular during the winter months.

The Commission also purchases skim milk powder tendered in carload lots on a year-round basis and holds surplus stocks for export. It does not generally sell skim milk powder back into the domestic market as manufacturers are expected to service this trade from their normal inventories.

All provinces have programs aimed at the integration of industrial and fluid milk producers to allow industrial milk producers into the higher-priced fluid market. As these integration programs develop, the dairy sector is moving toward a situation where farmers who produce for both the fluid and industrial milk markets predominate. In 1979, 72 percent of all milk shipments came from integrated operations compared to 56 percent in 1975.

.../2

The dairy products industry is nationwide, fluid milk plants are located in or near the urban centres for which they provide fresh fluid milk and dairy products. Industrial dairy plants are in all provinces except Newfoundland, mostly in rural milk-producing areas where they process all milk and cream not utilized by the fluid milk trade. The number of industrial milk plants per province relates to provincial milk production figures, most plants being in Quebec and Ontario.

The Federal government establishes the industrial milk target price and provincial quotas for all provinces under the National Dairy Support Program. Provincial quotas, marketing and pricing arrangements for fluid milk are controlled by provincial milk commissions or similar agencies whose functions vary from province to province. All establish price controls at the producer level, setting the minimum price at which distributors may purchase milk from producers, and in some provinces milk commissions also control consumer prices.

In 1983 the Canadian dairy products industry had total sales of $5.62 billion and processed 75.52 million hectolitres of milk. Total cost of raw materials accounted for 85 percent of dollar sales. The profit on sales was 2.5 percent while the return on equity amounted to 20.4 percent. Total sales for 1984 are estimated at $6.03 billion.

Employment in 1983 was 25,306 a decrease of 12 percent from 1972 due to reductions in sales and administrative staffs, mainly from the elimination of many home delivery routes. In contrast, production employment increased in spite of industry consolidation into large central plants.

Approximately 50 percent of the dairy processing industry in Canada is owned by cooperatives, 35 percent by corporations and 15 percent by private firms. Industrial milk plants are operated mainly by cooperatives while the processing of fluid milk and the production of specialty cheeses and other products is done primarily by corporations and private firms. While foreign ownership plays only a minor role in the dairy industry, it is an important factor in introducing new technology and new products into Canada.

Canadian trade in dairy products generates a favourable balance for Canada, prior to 1980, $20 million annually, and since 1980, an average of $120 million yearly. Exports and imports of dairy products represent only about 5 percent and 2 percent respectively of the total domestic industry output. Surplus manufactured products are exported from time to time through the use of the support programs. Imports are mainly variety cheeses.

While the volume of international trade in dairy products has expanded modestly in recent years it is marginal in relation to the world's milk supply, accounting for only five percent of global production. Its growth and character are heavily influenced by the domestic support policies of the developed countries of Western Europe, North America and Japan, which include highly restrictive import regimes and the export of surplus products at less than domestic market prices.

While there is some diversification in international trade, the bulk involves the disposal of surplus skim milk powder. The principal markets for exports of both whole milk powder and evaporated milk are Algeria and Nigeria. Trade in dairy products among developed countries is mainly in cheese.

In respect to dairy product trade with the United States, exports and imports are relatively small with exports amounting to about $14 million and imports $16 million. Approximately 60 percent of Canada's exports of dairy products to the U.S.A. are cheese.

.../3

Performance

In the past 15 years the dairy processing industry has undergone a period of rationalization and restructuring, the number of plants dropping from 809 in 1971 to 400 in 1983 and an estimated further reduction to 370 in 1985. This process has resulted in the development of large scale capital intensive plants. Changes in demand patterns, demographics, industry technology, and economic factors such as increased energy costs, have all contributed to a trend toward multi-product plants with multiple functions to take full advantage of by-product recovery opportunities. Mergers and take-overs increased as companies fought for market share, increased industrial milk supplies and gross revenues. Some of the advantages in so doing include lower fixed, energy, and transportation costs.

Investment has increased steadily from $155 million in 1980 to $184 million in 1985. After tax profits were $122 million in 1980, rising to $138 million in 1983 and an estimated $183 million in 1985. As a percentage of income however profits have remained fairly constant between 2% and 3%. The dairy industry is currently strong and reasonably profitable as a result of its protected status against imports.

The per capita consumption of dairy products is declining, with the exception of variety cheese and, in some provinces, fluid milk.

Canadian exports of dairy products increased from $92 million in 1978 to $230 million in 1983. While this reflects increased prices, the major reason for the increase was the export of whole milk powder and evaporated milk. The actual volume of surplus skim milk powder has been reduced but is expected to continue to be the main product exported. There has been some product diversification in recent years, primarily to the form of concentrated milk products in retail-sized packs which seek to capitalize on the greater stability and improved returns for these products as opposed to trade in the traditional bulk commodities. Exports of whole milk powder packed in consumer-size tins increased from $1.4 million in 1978 to $22 million in 1983. Evaporated milk exports increased from $19 million in 1978 to $91 million in 1983.

During the past five years imports of dairy products have remained fairly constant increasing only from $70 million in 1978 to $96 million in 1983 the increase being accounted for mainly by increased cheese prices. Canada monitors imported cheese prices and has negotiated arrangements with the E.E.C. and Nordic countries to reduce or eliminate the subsidies paid on cheese exported to Canada so as not to undercut Canadian ex-factory prices of similar domestic produced cheeses.

2. Strengths and Weaknesses

(a) Structural

The Canadian dairy manufacturing industry is affected by the national dairy support program which has established raw milk prices well above those in other major milk producing countries such as Australia, New Zealand, the U.S. and the E.E.C. As a result, Canadian manufactured dairy products cannot be competitive on world markets without export subsidies for surplus production disposal, principally skim milk powder.

The problem, under a supply management program, is to determine over time what price level will ensure adequacy of returns to the producer without overpricing to the processing industry. This is due to the wide variability of producer's management abilities and the elimination of normal supply/demand relationships in price administration.

Market Sharing Quotas, when freely negotiable, take on a price which becomes an added cost of production. An alternative to free negotiability which allows adjustments in the production sector has not yet been found.

.../4

In spite of the serious difficulties and complexities associated with using marketing quotas to manage milk supplies the Canadian system has effectively reduced the level of milk overproduction. There have been some seasonal constraints on the processing industry when, due to lack of milk supply, some processing operations have had to close temporarily.

Marketing Boards and the supply management program raise barriers to inter-provincial trade in fluid milk products which prevent processors of fluid and ultra high temperature milk products from rationalizing their operations and developing national markets. The supply mangement program has fixed provincial milk production quotas. In consequence the entrepreneurial development of both provincial and national markets for specialty and brand name dairy products is almost impossible.

The Canadian dairy manufacturing industry is as fully automated as its international competitors for almost all dairy products and can achieve comparable economies of scale. The exeptions are such items as variety cheeses where the size of the domestic market has not warranted the installation of the necessary automated processing and packaging equipment.

(b) Trade Related Factors

In considering international trade it should be noted that all major developed countries' actions in support of their dairy industries have major effects on trade. These actions include subsidization and non-tariff barriers.

The federal government pays a direct subsidy to milk producers for all their industrial milk and cream shipments within their Market Sharing Quota. The subsidy lowers dairy product prices to Canadian consumers. Since April 1, 1975, the federal production subsidy has remained constant at $6.03 per hectolitre of milk.

In global terms, Canada is significant as an exporter of milk powders (some eight percent of total world exports in recent years) but marginal in importing terms.

Imports of all dairy products are subject to controls under the Export and Import Permits Act, in support of domestic stabilization actions under the Canadian Dairy Commission Act and the Agricultural Stabilization Act. The global cheese import quota was set at 22.6 thousand tonnes in 1975 and subsequently reduced to 20.4 thousand tonnes in 1978. Since its introduction, the quota has permitted all domestic cheese market growth to be channelled to the domestic processing industry, thus reducing cheese imports from some 15 percent of total domestic consumption in 1975 to 9 percent in 1982. This trend is continuing, and may prove to be a source of friction with EEC suppliers of cheese.

Both the E.E.C. and the U.S. limit the imports of all dairy products by the use of fixed quotas, many of them country-specific. In addition, the E.E.C. provides export restitution payments on dairy products and the U.S.A. has export financing arrangements.

The tariffs imposed on dairy products are as follows:

	Canada	U.S.A.	E.E.C.	Japan
Fluid Milk	17.5%	0.4¢/l	16% + levy*	free
Cream	17.5%	0.5¢/l	16% + levy*	free
Butter	24.6¢/kg	12.3¢/kg	23% + levy*	45%
Cheese	7.72¢/kg	10-16%	23% + levy*	35%
Milk Powder	7.72¢/kg	3.3¢/kg	18% + levy*	30%

All major dairy product producing countries have established internationally accepted standards for dairy products. These standards include fat and moisture contents, and products traded internationally must adhere to them.

../5

* Levies are usually considered as NTBs.

(c) Technological Factors

The dairy industry generally employs the latest technology for the processing and manufacturing of conventional dairy products and from this viewpoint is internationally competitive. The major Canadian dairies are constructing new superplants and installing computers to control every stage of production from raw milk receipt to the finished product packaging. Recently the Canadian dairy industry has developed the finest state-of-the-art ultra high temperature processing system. The industry is also employing a wide variety of packaging shapes and sizes to appeal to changing consumer requirements. This closely parallels changes taking place in the United States and European dairy markets.

3. Federal and Provincial Programs and Policies

In addition to the supply management program all provinces have a Vegetable Oils Act which regulates the production and marketing of margarine and, in consequence, the production of spreads incorporating butter. As butter blends are only permissible in Newfoundland, Nova Scotia, New Brunswick and Saskatchewan, this effectively limits the ability of the dairy products industry to compete with margarines.

4. Evolving Environment

Canadian consumers are ensured a sufficient supply of widely differentiated and high quality products, but, because of the price setting mechanisms of the support program, at extremely high prices compared to those of other developed nations. A a result, and also because of "health fads" and "diet-consciousness", per capita consumption of most dairy products is declining. The exceptions are variety cheeses and in some provinces, through extensive promotion, fluid milk. Amongst the other products, ice cream and yogurt appeared to reach a plateau during the past couple of years, all other dairy products showing steady decreases in consumption.

The development of new products has proceeded relatively slowly over the past decade but is now being given impetus by a Department of Regional Industrial Expansion endeavour to promote licensing of production of new products and joint ventures between Canadian and foreign firms. These new products will range from whey and yogourt based drinks, to butter blends (where permissible), to specialty ice creams, cheeses, etc. It is hoped that they will increase dairy product consumption and increase industrial activity and employment.

5. Competitive Assessment

The industry is fully cost competitive at the manufacturing level with its counterparts in other developed countries for most of its products. However, since Canadian raw milk prices are among the highest in the world, processed products are not internationally competitive.

With the elimination of quotas on cheese imports it is possible that Canadian production of variety cheeses would suffer.

Exports are limited because the Canadian raw milk price does not permit processed product sales on world markets at competitive prices without subsidization and also because dairy programs in developed countries have resulted in surplus disposal programs worldwide.

Prepared by: Food and Consumer Products Industries Branch
DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

Assistant Deputy Minister
Consumer Goods, Services and Resource Processing

Date: JUN 18 1986

CONFIDENTIAL
CONFIDENTIEL

DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

July 1986

FACT SHEET

NAME OF SECTOR: Dairy Products Sector **SIC(s) COVERED:** 104 *(1980)

1. PRINCIPAL STATISTICS

	1971	1980	1981	1982	1983	1984	1985
Establishments	809	456	416	402	400	380(E)	370(E)
Employment	29855	26026	26196	25796	25306	25800(E)	25,800(E)
Shipments ($ millions)	1,463	4,309	4,835	5,345	5,615	6,030(E)	6,250(E)
Gross Domestic Product (Constant 1971-$ millions)	341.5	364.0	362.2	370.3	374.8	372.6(E)	375.0(E)
Investment ($ millions)	49.7	155.3	161.3	138.0	129.4	176.7	184.3
Profits After Tax ($ millions)	34.4	122.1	139.8	149.9	138.3	181.0(E)	183.0(E)
(% of income)	2.2	2.52	2.50	2.43	2.28	2.87(E)	2.60(E)

2. TRADE STATISTICS

	1971	1980	1981	1982	1983	1984	1985
Export ($ millions)	62	160	209	285	239	241	217
Domestic Shipments ($ millions)	1401	4,149	4,626	5,060	5,376	5,789(E)	6,033(E)
Imports ($ millions)	24	81	89	97	97	100	104
Canadian Market ($ millions)	1425	4,230	4,715	5,157	5,473	5,889(E)	6,137(E)
Exports as % of Shipments	4.00	3.71	4.32	5.33	4.26	4.00(E)	3.42(E)
Imports as % of Domestic Market	2.00	1.95	1.89	1.88	1.77	1.70(E)	1.70(E)
Canadian Share of International Market	2.33	1.08	1.33	1.80	1.65	1.66	1.65(E)

Source of imports (% of total value)	U.S.	E.E.C.	ASIA	OTHERS
1981	11.27	83.29	0.05	5.39
1982	11.05	81.80	0.05	7.84
1983	10.31	81.43	0.08	8.18
1984	12.00	79.00	0.01	8.99
1985	14.42	78.85	0.09	6.64

Destination of exports (% of total value)	U.S.	E.E.C.	ASIA	OTHERS
1981	4.24	8.62	3.98	83.16
1982	4.21	6.53	10.87	78.39
1983	5.85	8.37	11.30	74.48
1984	5.81	6.22	5.39	82.58
1985	7.37	7.47	7.80	77.36

3. REGIONAL DISTRIBUTION – Average over the last 3 years

	Atlantic	Québec	Ontario	Prairies	B.C.
Establishments - % of total	10.9(E)	26.9	37.6	18.1(E)	6.2
Employment - % of total	11.6(E)	31.8	32.7	14.3(E)	9.6
Shipments - % of total	7.3(E)	40.5	32.9	11.4(E)	7.7

4. MAJOR FIRMS

Name	Ownership	Location of Major Plants	(% of domestic market)
Ault Foods Ltd.	Canadian	Ont., Que.	14%(E)
Agropur Cooperative	Canadian	Que.	12%(E)
Kraft Ltd.	U.S.A.	Ont., Que.	9%(E)
Beatrice Foods	U.S.A.	Ont. Man., Que.	7%(E)
Fraser Valley Milk Producers Cooperative	Canadian	B.C.	5%(E)
Palm Dairies	Canadian	Ont, BC, Sask. Alta.	4%(E)
Purdel Cooperative	Canadian	Que.	3%(E)

(E) Estimated figures.

COMPETITIVENESS PROFILE
EXTERIOR WOOD BASED PANEL PRODUCTS (CORRIGENDUM)

PLEASE SUBSTITUTE FOR PREVIOUS DOCUMENT

October, 1986

DRAFT

DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

COMPETITIVENESS PROFILE

ELECTRICAL PRODUCTS INDUSTRY

1. STRUCTURE AND PERFORMANCE

a) Structure

This industry sector covers a diverse range of products, including lighting fixtures, light bulbs, wiring devices, and conduit and fittings. It draws its raw materials from the steel, glass and metal fabricating industries. The majority of the products are sold to the construction industry, with the exception of light bulbs most of which are sold directly to consumers.

There are approximately 200 establishments, located for the most part in Ontario and Quebec, employing some 9,000 people. In 1985 the value of factory shipments was $851 million of which $180 million (21%) were exported (the U.S. being the major customer). Imports in 1985 were $276 million (32%) most of which came from the U.S.

TABLE I

	Lighting Fixtures 1985	**Light Bulbs** 1985	**Wiring Devices** 1985	**Conduit & Fittings** 1985	**Total** 1985
Export ($ million)	38	54	77	11	180
Domestic Shipments ($ million)	291	165	87	128	671
Imports ($ million)	106	38	113	19	276
Canadian Market ($ million)	397	203	200	147	947
Exports as % of shipments	12	25	47	5	21
Imports as % of domestic market	27	19	57	12	29

Lighting fixtures account for 43% of domestic shipments, light bulbs 25%, wiring devices 13% and conduit and fittings 19%. Wiring devices have the highest percentage of imports and exports due mainly to rationalization between the Canadian subsidiary and foreign parent operations; Conduit and fittings have the lowest, reflecting the local production of these low value, high weight products.

The sector is dominated by subsidiaries of foreign multinational corporations (mainly U.S. based) established in Canada to service the Canadian market which was protected from imports by high tariffs. Canadian owned companies have been established in all the product areas but they are usually small in size in comparison with the foreign subsidiaries and have usually been established to meet a specific market 'niche'.

Lighting fixtures are manufactured for industrial, commercial and residential use by a large number of subsidiaries of foreign owned multinationals (mostly U.S.) together with some smaller Canadian owned companies. About 25% of the fixtures are specialty items for the residential and commercial market and these are manufactured by small Canadian owned companies. Light bulbs are produced by four large subsidiaries of foreign owned multinationals for the consumer market. Wiring devices are manufactured for the construction industry by a large number of companies, the major ones being U.S. owned. Conduit and fittings are produced by small Canadian owned companies for the local construction industry.

In general, the products in this industry tend to be mass-produced, low cost items with very little product differentiation between manufacturers. Price then becomes the major competitive factor and the industry is continuously seeking ways in which to reduce production costs. Some companies are installing semi-automated equipment to improve the efficiency of their existing production lines while others are increasing the volume output of certain product lines by rationalizing production between the Canadian and U.S. facilities. In the latter case, the increased volume justifies the installation of more fully automated equipment, with a resulting reduction in unit cost.

In the production of light bulbs, the Canadian subsidiaries are employing used-equipment acquired from the plants of the foreign parent where it has been replaced with more modern equipment. The Canadian companies are therefore using older generation equipment with a lower rate of output and are operating at a lower level of efficiency than the parent facilities, but it should be noted that the Canadian market is not large enough to justify the installation of the latest equipment.

b) Performance

The growth of the sector except for light bulbs is directly related to the level of activity in the residential, commercial and industrial construction industry. Over the past five years there has been little increase in factory shipments because of the very modest levels of activity in domestic construction. The light bulb market is largely a consumer market, displaying a steady growth since light bulbs have a limited life and are constantly being replaced.

In constant dollar terms shipments have decreased from $858 million in 1973 to $802 million in 1985 and the domestic market has gone from $1082 million to $1153 million. In wiring devices, exports have increased from 18% of shipments in 1973 to 47% in 1985 and imports have risen from 41% of the domestic market to 57% reflecting some rationalization between the Canadian subsidiaries and their U.S. parents. In contrast, imports of light bulbs have gone from 10% of the domestic market to 19% in 1985 as a result of the loss of the Christmas tree bulb market to S.E. Asia competition. In lighting fixtures and conduit and fittings there have been only slight changes in export and import percentages over the same period.

2. STRENGTHS & WEAKNESSES

a) Structural

In all product areas, with the exception of specialty lighting fixtures and certain wiring devices, the industry is not price competitive with the U.S. manufacturers. Labour rates are comparable between Canada and U.S. when expressed in common currency but productivity is less in Canada because of the lower requirements of the Canadian market which limits the scale and thus the efficiency of the Canadian operations. Specialty lighting fixtures through design and style are unique items and are much less price sensitive than the standard items. In the wiring devices area certain product lines have been rationalized between the Canadian subsidiary and its parent and the resulting volume production makes them more competitive. Conduit and fittings are low volume, high weight products which are very sensitive to freight costs and are therefore usually manufactured locally.

b) Trade Related Factors

The Canadian tariff for most products in this industry will range from free to 13.5% with the majority at 13.5% on January 1, 1987. U.S. tariffs will range from free to 6.9% for most items with flashlight bulbs being an exception at 25%. E.E.C. will be between 4.1% and 7.2% and for Japan between 3.6% and 4.8%.

Canada and the U.S. have common electrical standards and no serious problems are encountered in trading these products between the two countries. However, outside of North America, trade is limited because of the differing electrical standards. Another limiting factor is the high freight costs for most of the products. For example, lighting fixtures and certain wiring devices are heavy and bulky, and lamp bulbs are large volume, low value items.

Trade is therefore predominantly with the United States with the exception of some light bulb exports to countries which previously enjoyed the Commonwealth preference tariff and some wiring devices to the Caribbean (some Caribbean countries also use North American electrical standards).

c) Technological Factors

The products are in general mature, low technology, low cost items and any R&D is normally associated with the production process rather than with the product. In specialty lighting fixtures, Canada has developed good design engineering capabilities. The use of computer controlled metal stamping equipment in the wiring devices industry is one example of the steps being taken to reduce the cost of production through automation.

3. FEDERAL AND PROVINCIAL PROGRAMS AND POLICIES

There are no specific programs for this industry but it benefits at the company level from the full range of government incentive programs for export promotion and industrial development.

4. EVOLVING ENVIRONMENT

This is an industry with mature products and any changes will come from improvement in production efficiencies. Demand in the construction industry is not expected to increase significantly in the short term and this in turn will limit growth in the sector. Exports are limited because the major companies in the sector are subsidiaries of foreign multinational corporations and do not have export mandates. Imports from S.E. Asia are beginning to penetrate the specialty light bulb market.

5. COMPETITIVENESS ASSESSMENT

This industry is characterized by mass-produced, low cost products with very little product differentiation by the manufacturers. The products are therefore very price sensitive and volume production is necessary to reduce unit cost. Because of the limited Canadian market, the Canadian companies cannot match the lower costs of the U.S. companies which have the advantage of a much larger domestic market. The industry is therefore very reliant on tariffs to protect it from U.S. competition. The only major exception to this is for specialty lighting fixtures where good design and style have produced a unique product which Canadian owned companies are exporting to the U.S. As a result of differing electrical standards tariffs and sensitivity to freight rates trade with countries outside of North America is limited.

Prepared by: Machinery and Electrical Equipment
Department of Regional Industrial Expansion

Assistant Deputy Minister
Capital and Industrial Goods

Date: [illegible]

DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

F A C T S H E E T

NAME OF SECTOR: Electrical Products Industry **SIC(s) COVERED: 3331, 3333 3392, 3399**

1. PRINCIPAL STATISTICS

	1973	1980	1981	1982	1983	1984	1985
Establishments	N/A	N/A	N/A	197	198	N/A	N/A
Employment	N/A	N/A	N/A	8690	8911	N/A	N/A
Shipments ($ Millions) (volume, e.g. tonnes where applicable)	295	658	744	680	696	787	851
Gross Domestic Product (Constant 1971-$ Millions)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Investment ($ Millions)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Profits after tax ($ Millions) (% of income)	N/A	N/A	N/A	N/A	N/A	N/A	N/A

2. TRADE STATISTICS

	1973	1980	1981	1982	1983	1984	1985
Exports ($ Millions)	40	100	94	90	111	159	180
Domestic Shipments ($ Millions)	255	658	650	590	585	628	671
Imports ($ Millions)	77	162	188	164	204	259	276
Canadian Market ($ Millions)	332	720	838	754	793	887	947
Exports as % of Shipments	13	12	11	12	15	19	21
Imports as % of Domestic Market	23	21	21	22	26	30	29
Canadian Share of International Market	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Source of imports (% of total)	U.S.	E.E.C.	ASIA	OTHERS
1981	80	11	8	1
1982	76	10	11	3
1983	79	10	8	3
1984	77	11	10	2

Destination of exports (% of total)	U.S.	E.E.C.	ASIA	OTHERS
1981	64	11	4	21
1982	69	9	5	17
1983	73	9	3	15
1984	76	7	4	14

3. REGIONAL DISTRIBUTION - Average over the last 3 years

	ATLANTIC	QUEBEC	ONTARIO	PRAIRIES	B.C.
Establishments - % of Total	0	25	60	8	7
Employment - % of Total	0	20	70	5	5
Shipments - % of Total (est.)	0	20	70	5	5

4. MAJOR FIRMS

NAME	OWNERSHIP	PRODUCTS	LOCATION OF MAJOR PLANTS
Crouse-Hinds Canada Ltd.	U.S.	Wiring Devices	Ontario
GTE Sylvania Canada Ltd.	U.S.	Lamp Bulbs	Quebec
Lightolier Canada Inc.	U.S.	Lighting Fixtures	Quebec
Smith & Stone (1982) Inc.	U.S.	Wiring Devices	Ontario
ITE Industries Ltd.	U.S.	Wiring Devices	Ontario
Canadian General Electric	U.S.	Lamp Bulbs	Ontario
Fleck Manufacturing Inc.	Cdn.	Wiring Devices	Ontario
Philips Electronics Ltd.	Holland	Lamp Bulbs	Quebec

DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION DRAFT

COMPETITIVENESS PROFILE

THE ELECTRICAL WIRE AND CABLE INDUSTRY

1. STRUCTURE AND PERFORMANCE

a) Structure

The electrical wire and cable industry includes the manufacturers of bare and insulated conductors for the transmission and distribution of electrical energy and manufacturers of telephone cables, coaxial cables and optical fibre cables for telecommunication applications. The industry in Canada consists of some twenty firms with 1984 combined production of approximately $1.2 billion, employing some 6000 persons. Three companies provide most types of wire and cable products used in the Canadian market while the remaining firms tend to specialize in particular product areas. The largest firm, Canada Wire and Cable, produces a wide range of products and has a dominant position in the market. It is wholly owned by Noranda Mines and provides a market channel for much of the copper produced by Noranda Mines. Another Canadian owned firm, Northern Telecom Ltd., dominates the communications cable segment of the market. It is owned by Bell Canada Enterprises which also owns Bell Canada, one of Northern Telecom's major customers. Some of the remaining firms are subsidiaries of foreign firms originally established in Canada to service the domestic market and to benefit from the then existing Commonwealth tariff preferences and relatively high Canadian tariffs. Many of the more recently established subsidiary firms have located in Canada to provide specialty products to the domestic market and to any export markets where supply from a Canadian plant is advantageous as in the case of CIDA or EDC financing.

There are three main segments in the electrical wire and cable market - the electrical utilities, the construction industry, and the telecommunications utilities, each with specific product requirements. Electrical utility purchases, which are about 40% of the domestic market, are conductors for overhead transmission and distribution lines, and high voltage power cables. The construction industry, representing 34% of the domestic market, purchases mainly building wire and construction cables, and the telecommunications firms accounting for 26% of the domestic market are the sole purchasers of telephone cables and coaxial cables.

The twenty companies which comprise the major part of the sector operate over forty plants located across the country; Ontario (22), Quebec (11), B.C. (4), Saskatchewan (3), Manitoba (2), Nova Scotia (2) and Alberta (1). Much of this dispersion is due to the use of buying decisions as a regional development tool by the provincially controlled electrical and communications utilities.

Wire drawing, insulating and stranding operations which comprise the greatest volume of work in wire and cable manufacture tend to be of a continuous flow nature. This sort of operation lends itself more readily to labour reduction and automation techniques than do most batch type manufacturing operations. Consequently the sector is capital intensive and work is frequently on a 3 shift basis.

The major inputs used in the industry are copper and aluminum, and rubber or plastic insulating compounds that are purchased from petrochemical producers.

The industry worldwide is generally oriented toward domestic markets. It is the combination of relatively low value and bulk weight of wire and cable products that tends to keep production facilities close to markets. In Canada, exports, increasing in recent years, still represent only about 12% of total industry shipments. Some 73% of these exports are to the USA and a further 24%

are to developing countries. Imports of wire and cable are largely of those types that are not made in Canada, such as new products of insufficient volume to justify the production equipment needed or the development of new process technology. Imports satisfied 15% of the domestic market in 1984. Some 68% of wire and cable imports are from the U.S.A. and 19% from the E.E.C.

In general the wire and cable market tends to be cyclical, reflecting the volatile nature of the construction industry and major utility projects.

b) Performance

In real terms, as measured by gross domestic production for the sector, there has been a decline in the output from $167.7 million (1971 constant dollars) in 1973 to an estimated $142.6 million in 1985. The employment drop from 9,830 persons in 1973 to an estimated 6,000 in 1985 reflects a trend to increased efficiency through labour reduction practices and automation techniques. However, the number of establishments in the sector has grown from 35 in 1973 to about 55 in 1985. Investment in the industry as a percentage of shipments averages about 5% and ranged between a low of 3.5% in 1980 and a high of 7.8% in 1982. In 1982 the comparable figure for the U.S. electrical wire and cable sector was 3.3%, up from a level of 2.1 to 2.3% a few years earlier. The profitability of the sector has been falling from 5.3% of shipments in 1973 to 3.3% by 1980 and a loss of (0.7%) at the depth of the recession in 1983. International trade has remained essentially in balance. In 1973 exports were $28 million and imports $31 million. By 1985 exports were $172 million and imports $148 million.

2. STRENGTHS AND WEAKNESSES

a) Structural Factors

The greatest structural weakness of the electrical wire and cable sector in Canada is its provincial fragmentation. To a very large extent the multi-plant structure of the industry has been induced by the procurement practices of provincial governments which have sought to provide provincial capability to satisfy the needs of their utilities. This has provided the wire and cable suppliers with an assured domestic market and a product mix sufficiently flexible to withstand cyclical fluctuations in demand but at the price of sub-optimal operating levels for the manufacture of many products. The companies most affected are the dominant ones that produce most of the larger volume, narrow margin products. These companies also tend to be the most active in export markets. Thus the inefficiencies of too many broad product line plants tends to limit export performance.

The average annual output per establishment in Canada in 1982 was $21 million and the comparable figure for U.S. producers was $23 million. However, the average number of employees per establishment was 163 in Canada and 153.5 in U.S.A. and the shipments per employee were $128,500 Cdn and $150,000 Cdn respectively. The value added per production worker hour was $31.37 in Canada and $36.50 in U.S.A. (The conversion factor used was 1.2340 $Cdn per $U.S.). Although the average annual output of Canadian electrical wire and cable plants is only slightly lower than their U.S. counterparts, their product range is much broader. This is felt to be a contributing factor to the lower productivity of the Canadian wire and cable workers. The U.S. plants have a narrower product range and longer runs that can justify more specialized and efficient machinery.

The dominant firms in the sector are Canadian-owned and can operate internationally without corporate restrictions of any sort.

b) Trade Related Factors

Export markets in most developed countries are effectively closed to foreign suppliers as governments dictate the purchasing practices of the national utilities and use them to support their own domestic manufacturing industry.

In some Canadian provinces the provincial buying preferences tend to have the same effect. In the U.S.A. much of the utility industry is privately owned and tends to support local manufacturers. In many developing country markets, lower technology wire and cable products are among the first of an electrical nature to be identified for local manufacture. These are generally supported by high tariff and non-tariff barriers. The only access to these markets is then through joint venture manufacturing relationships. The major exports of wire and cable products are those of higher technology and speciality types such as communications cables, power cables and specially shaped wires.

The main non-tariff barrier into the U.S. market are the Buy America provisions and similar purchasing preferences that are legislated in some of the states. Tariffs on wire and cable products entering the U.S. are about 5%.

Canadian tariff levels for bare copper wire will be 4.5% in 1987 and for insulated wire 10.2%. In addition, there exist a few duty free end use classifications for types of wire or cables not produced in Canada. Electrical wire and cable products entering Canada must meet the CSA electrical safety requirements.

Tariffs on bare and insulated electrical wire and cable products entering EEC countries are 6.5%. The tariff on bare aluminum wire and cable is 7.0%.

The Japanese have a GATT duty rate of 8.2% on imports of bare and insulated electrical wire and cable of copper. However, they are currently imposing a temporary rate of 5.8%. The GATT duty rate for bare aluminum wire and cable products is 9.2% and the temporary rate is 6.3%.

c) Technological Factors

The technology in the electrical wire and cable sector, in general, is mature. The industry looks to the application of improved materials and production techniques for most of its advances. An exception has been the introduction of glass fibre optics for telecommunications applications.

The level of technology used by the Canadian owned industry is generally comparable with that of its major competitors since domestic markets are just as demanding as foreign markets and imports are still relatively low. Both Canadian-owned and foreign controlled full line firms undertake development programs with the emphasis on product design and new manufacturing processes which allow the application of improved insulation materials and reduce production costs.

Foreign-owned subsidiaries, in addition to undertaking product development in Canada, often obtain technology under licence from their parents. The majority of specialty firms actively seek technology licences to remain competitive. It should be noted, however, that the relatively small domestic market in Canada implies a higher risk for Canadian firms to undertake development programs, since the results must be commercialized over a smaller base.

The development of fibre optics technology for application in telecommunications markets represents both a major potential opportunity and a significant challenge to wire and cable manufacturers. This new technology has the potential to replace many conventional telephone cables made with copper conductors by those with much higher signal capacity glass filaments. The major telephone cable producers, recognizing this fact, have moved quickly to establish a capability in this new product area. They appear to be equal with, or slightly ahead of, their U.S. competitors as the Canadian communications utilities are rapidly embracing this new technology and are providing the needed market base to support development. Electrical energy wire and cable, which constitutes 74% of the sector, will remain unaffected by the new technology as glass fibres cannot transmit electrical energy. The capital

intensity of the sector and the limited domestic market tend to inhibit rapid movement into basically new products. However, to maintain and advance the relatively balanced trade position in the longer term will require more fundamental product development and its early commercialization justified on foreign as well as domestic markets.

d) Other Factors

Exports, particularly to the U.S. market are very sensitive to the Canada/U.S. exchange rate. Any narrowing of the rates would reduce exports to the U.S. while a further widening of the exchange rate difference would increase wire and cable exports both to the U.S. and to developing countries because Canadian goods would tend to be more price competitive against European and Japanese suppliers. However, since about 65% of the selling price of wire and cable products is material cost and these products are generally priced internationally as commodities, the advantage of a widening Canada/U.S. exchange rate would tend to be limited.

3. FEDERAL AND PROVINCIAL PROGRAMS AND POLICIES

Provincial industrial development policies that are reflected in the procurement policies of provincially owned electrical and communications utilities are the most notable government influence in the electrical wire and and cable sector. Ontario, Quebec and B.C. have explicit preferences for provincial and Canadian content of goods purchased. The other provinces while not having explicit policies tend to favour provincially produced goods.

The provincial electrical inspection authorities who are usually associated with the provincial electrical utilties enforce the use of CSA approved electrical components, including wire and cable, in new building construction and equipment manufacture.

A full range of Federal and Provincial incentive programs for R&D, export development, and plant expansion is generally available to companies of the wire and cable sector.

4. EVOLVING ENVIRONMENT

The developed country markets in Europe and Japan are likely to remain essentially closed to Canadian wire and cable products. However, shipments to the U.S.A. which accounted for over 70% of total wire and cable exports during the past two years, will continue while the present Canada/U.S. dollar relationship exists. The largest growth of exports in the longer term is likely to be into the developing countries, both through direct sales of higher technology products from Canada and joint venture manufacturing of lower technology products in these countries.

In the domestic market the electrical utility sector will have a low growth for most of the next decade. The constuction sector will be somewhat more buoyant, depending on the level of industrial and residential construction activity. These same factors strongly influence the electrical equipment manufacturing sector's use of wire and cable products such as magnet wire. In the telecommunications sector the use of copper conductor based cable is projected to grow at 2% per year while the use of optical fibre based cables is expected to grow at 15% per year over the next several years. The impact on basic copper producers of the replacement of copper conductors in the manufacture of many types of communications cables will not be large because these cables only constitute 26% of the sector, and their copper content is lower in proportion than other types of cable.

The growing emphasis on export markets and the associated need for price competitiveness will do much to force the major wire and cable producers to rationalize their manufacturing operations inspite of the fragmenting influence of the provincial utility buying practices.

5. COMPETITIVE ASSESSMENT

The lower technology products of the sector, such as building wire, are not fully competitive internationally but continue to be produced in Canada because of the protection given by transportation costs and Canadian tariffs. Higher technology products such as power cables and telecommunications cables tend to be competitive internationally given current market practices. This is demonstrated by Canada Wire's recently completed underground HV cable project in Egypt and Pirelli Cables' ongoing sales of fibre optical cable to the U.S. market. The new capital investment being made by Canadian wire and cable producers on a continuing basis should maintain and improve the current productive efficiency of the sector.

Prepared by: Machinery and Electrical Equipment
Department of Regional Industrial Expansion

Assistant Deputy Minister
Capital and Industrial Goods

Date: JUL 11 1985

DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

F A C T S H E E T

NAME OF SECTOR: Electrical Wire and Cable **SIC COVERED: 3381***

1. PRINCIPAL STATISTICS

	1973	1980	1981	1982	1983	1984	1985e
Establishments	35	48	51	52	55	N/A	N/A
Employment	9830	5905	6129	5271	5077	N/A	N/A
Shipments ($ Millions)	527	1178.0	1308.0	1117.0	1031.0	1220.0e	1406.0
Gross Domestic Product - (Constant 1971 $ Millions)	167.7	145.5	164.6	121.2	118.9	129.1p	142.6
Investment ($ Millions)	26.2	41.7	77.2	87.6	72.1	68.5	70.6
Profits after tax ($ Millions)	28.0	39.5	48.1	6.4	(7.6)	N/A	N/A

2. TRADE STATISTICS

Exports ($ Millions)	28	102.0	110.0	105.0	119.0	162.0	172.0
Domestic Shipments ($ Millions)	499	1076.0	1198.0	1012.0	912.0	1058.0	1234.0
Imports ($ Millions)	31	91.0	113.0	170.0	202	191	148
Canadian Market ($ Millions)	530	1167.0	1311.0	1182.0	1114.0	1249.0e	1382.0
Exports - % of Shipment	5%	9%	8%	9%	12%	13%	12%
Imports - % of Market	6%	8%	9%	14%	18%	15%	11%
Canadian Share of International Market		←		N/A			→

Source of imports	U.S.		E.E.C.		ASIA		OTHERS	
1981	108.0	96%	2.9	3%	1.8	1%	0.3	
1982	94.2	55%	45.6	27%	1.2	1%	29.0	17%
1983	101.5	50%	27.9	14%	1.9	1%	70.7	35%
1984	129.6	68%	37.1	19%	1.9	1%	22.4	12%

Destination of exports	U.S.		E.E.C.		ASIA		OTHERS	
1981	61.8	56%	2.2	2%	7.2	7%	38.8	35%
1982	55.6	53%	1.5	1%	3.8	4%	44.1	42%
1983	85.1	72%	1.9	1%	2.8	1%	29.2	26%
1984	118.3	73%	1.6	1%	2.9	2%	39.2	24%

3. REGIONAL DISTRIBUTION

	ATLANTIC	QUEBEC	ONTARIO	PRAIRIES	B.C.
Establishments - % of Total	5	18	53	18	5
Employment - % of Total	N/A	25	58	N/A	N/A
Shipments - % of Total	N/A	26e	61e	N/A	N/A

4. MAJOR FIRMS

NAME	OWNERSHIP	LOCATION OF MAJOR PLANTS
Canada Wire and Cable Ltd.	Canadian	Ontario
Northern Telecom Ltd.	Canadian	Quebec & Sask.
Phillips Cables Ltd.	U.K.	Ontario
Pirelli Cables Inc.	Swiss (Italian)	Quebec, Ontario & B.C.

e - estimated
p - preliminary
* 1980 basis

DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

COMPETITIVENESS PROFILE

ENVIRONMENTAL EQUIPMENT

DRAFT

1. STRUCTURE AND PERFORMANCE

a) Structure

This industry consists of manufacturers of environmental equipment for industrial and institutional use, including

Potable and waste water treatment equipment, such as water purifiers, demineralizers, decanters, digesters, dewatering presses, clarifiers, filters and others;

Air pollution control equipment, such as desulphurization and denitrification systems, dust collectors, precipitators, filters scrubbers, fume collectors and others;

Solid waste handling equipment, such as mobile and stationary compactors, incinerators, and composting systems; and

Noise pollution abatement equipment, such as silencers, sound attenuators, vibration dampeners, hush houses, and others.

Environmental equipment for the consumer market (such as furnace and home air filters, and water softeners) are not included in this profile.

The environmental equipment manufacturing sector is not yet statistically well-defined[1]. As a result, activity levels are difficult to quantify. Based on published statistics and supplementary information, Canadian shipments of environmental equipment are estimated to have been about $300 million in 1985. The most important sub-sector is potable and waste water treatment equipment, which represents an estimated 68 percent of the total Canadian market, followed by solid waste handling equipment (14%), air pollution control equipment (13%) and noise abatement equipment (5%).

This industry has grown out of the concern in industrialized societies that an acceptable living environment be maintained. To a great extent, the demand for environmental equipment is derived directly from regulations enacted by various levels of governments. The industry is relatively new, and is (to some extent) an outgrowth of other machinery manufacturing sectors.

Initially, large-scale waste water treatment equipment evolved as a result of modifications made to resource processing machinery in industries such as mining and pulp and paper. Some manufacturers of resource processing equipment continue as major forces in the environmental equipment sector today. However, as public concern with a pollution-free environment has increased, the industry has grown by providing solutions to new problems of an increasingly complex scientific nature - where the research involved often falls well beyond the normal scope of industrial product development.

The manufacture of environmental equipment usually involves considerable custom engineering for each application, so that economies of scale in production are neither readily attainable nor of key competitive significance. Many recent entrants to the industry have been small researcher-managed firms created to exploit advances made at universities and research institutes. Specialized environmental equipment has been developed for a wide variety of applications, and, in Canada, many of these product developments have been made by small new Canadian-owned firms.

1. The statistics shown in the appendix provide partial information on potable and waste water equipment and some data on air pollution equipment but none on solid waste handling or noise abatement equipment. They probably represent less than 50% of the data pertaining to the sector.

There are about 200 firms in the industry, and the largest fifty account for 60 percent of total industry shipments. These larger firms, each of which has total sales of from $10 million to $35 million, tend to be most active in machinery sectors other than environmental equipment. Approximately three-quarters of the largest firms are foreign-owned, mainly by U.S. interests and to a lesser extent by Swedish and French multinationals. Geographically, 70% of the environmental equipment firms are located in Ontario, with the remainder distributed equally among Quebec, the Prairies and British Columbia.

The industry serves two types of market: the **public** segment, which consists mainly of equipment for municipal potable and waste water plants and for solid waste collection and disposal; and the **industrial** segment, which covers all aspects of environmental pollution and potable water, but is most active in the treatment of process water, both to make it suitable for the various industrial processes and to treat it afterwards. Within the industrial market segment, equipment for the treatment and handling of toxic solid and liquid waste is of growing importance. The noise abatement equipment sector is also growing, particularly in North America and Europe, where most countries have work environment regulations specifying that new plants must operate within certain noise levels and that older plants be updated with adequate noise protection equipment.

Although exports of environmental equipment are not separately reported in published statistics, exports are estimated to account for 20% of total Canadian shipments. Canadian-owned firms account for almost all exports by the Canadian industry. Potable and waste water treatment equipment accounts for about 60% of exports, solid waste handling equipment for 35%, and noise abatement equipment for 5%. Although 80 percent of exports are sold to the United States, other world markets are gradually developing and are increasingly being pursued.

The main target of Canadian exports has been the U.S. market for industrial water treatment equipment. Some firms are highly successful, exporting as much as 80 percent of their production. The larger Canadian-owned firms, especially those serving municipalities and public utilities, tend to establish U.S. offices to lessen the impact of American NTBs related to public funding.

Air pollution equipment involves a great deal of metal fabricating that is best done on site, so that export opportunities are usually limited to the provision of engineering services. Although they do export directly, **noise abatement equipment** manufacturers are less active as direct exporters because of the nature of many of their products, which are often components of other machinery assembled in Canada. Firms exporting **solid waste handling equipment** to the United States tend to deal through independent waste management contractors, who are less likely than municipalities to favour local or national manufacturers.

b) Performance

Over the last decade the environmental equipment market in North America is estimated to have grown at close to 10 percent annually in real terms. Production in Canada has kept pace with this rapid growth as a great number of new firms have entered the industry to serve special product niches. Since 1980 the import share of the Canadian market has been relatively stable at around 30 percent, and exports have consistently accounted for about 20 percent of all shipments by the Canadian industry. Eighty-five percent of imports into Canada originate in the United States.

2. STRENGTHS AND WEAKNESSES

a) Structural Factors

Generally, economies of scale in production are not an important factor in this industry. Some large firms have integrated manufacturing facilities (e.g. foundries, or extensive machining operations), although the trend in Canada appears to be toward more sub-contracting to machine shops and metal fabricators. This practice allows smaller firms in

particular to avoid making major investments in production equipment, so that they can maintain some flexibility in order to meet any provincial or local content requirements, and can conserve resources for financing research and development.

Most **foreign-owned firms** do not have an export mandate, except when Canadian concessional financing is involved. However, these subsidiaries are large, and bid successfully on many of the municipal turnkey projects within Canada which are beyond the scope of smaller Canadian-owned companies. As well, the Canadian market for environmental equipment includes a number of customer firms which are subsidiaries of foreign multinationals (such as automobile assemblers). Many of these customers tend to purchase (foreign-built) environmental equipment suggested by their head office. Both of these factors lead to the exclusion of small Canadian-owned manufacturers from important domestic market opportunities.

In general, Canadian-owned firms do not have sufficient resources to maintain adequate contact with international financing organizations and international consulting engineering firms. When bidding on major capital projects, established relationships with consulting engineers are essential, and strong local representatives can often make a difference. Although Canadian-owned manufacturers are able to maintain these contacts for projects in North America, they have been much less successful in other countries, where close contact with international financing institutions is also required. While Canadian manufacturers have secured a few contracts in Europe, they have not been very successful in penetrating the European and Japanese markets: most concentrate their resources on the U.S. market.

Canadian manufacturers of solid waste handling equipment have been innovative and successful as exporters, primarily by selling directly to waste management contractors rather than to municipal authorities.

b) Trade Related Factors

In Canada, imported environmental equipment is generally subject to an MFN tariff of 9.9 percent, to be reduced to 9.2 percent in January 1987. Manufacturers of environmental equipment benefit from the provisions of the Machinery Program, which ensures that the full duty is applied on imported equipment similar to that which is manufactured in Canada. Many of these firms are also assisted in rounding out their product line by receiving remission of duty on imported machinery and components not manufactured in Canada. Several Canadian provinces provide preferential treatment among bidders in order to maximize local content. There are no other significant non-tariff barriers employed in Canada.

U.S. tariffs range from 3 to 6 percent. Non-tariff barriers such as the Buy American Act, and the set-asides enabled under the Small Business Act can be a particularly effective deterrent to importers on projects where public funding is involved. High liability insurance cost is a constraint to exports into the U.S. because of the size of settlements in the last few years.

c) Technological Factors

Quite often, the key success factor in this industry is the ability to provide technologically advanced products to the market in a timely fashion. Canadian firms are keeping pace with the technological development of equipment, even though certain critical components for water treatment equipment (such as ultra-filtration and reverse osmosis membranes) and for air pollution abatement equipment (such as high efficiency particulate air filters), are not available from Canadian production. The diversity of the components that might be used in environmental equipment makes it unlikely that an industry the size of the Canadian one could produce all of the parts required for systems designed or sold in Canada.

Various research organizations and universities in Canada are developing new technologies, and small Canadian firms are taking advantage of this research. These firms, frequently spin-offs created by university researchers themselves, are often more advanced technically in narrow product ranges than foreign subsidiaries.

Some of these firms have successfully developed small systems for waste and potable water treatment which are sold to small communities and large farms in Canada but would have applications in many developing areas of the world. New air pollution systems are being developed by small Canadian companies and researchers, specifically to reduce pollutants which generate acid rain.

The Canadian industrial market for potable and waste water equipment usually requires smaller and simpler systems than municipal ones, but often on a turnkey basis. These requirements are well within the capability of many Canadian manufacturers.

Solid waste handling manufacturers and designers have been innovative in keeping up with the latest technological developments, such as half-pack mobile compactors and the neutralizing and disposing of toxic waste. This has helped them to succeed in the United States, and is opening up opportunities as far away as Singapore.

To date, CAD-CAM has not been used intensively by Canadian environmental equipment manufacturers. There is no doubt that the custom design aspect of the environmental equipment sector could benefit from computer applications. However, for the medium term, adoption of such new production technologies is not expected to be crucial to success, since speed of product development is not yet a major competitive necessity.

d) Other Factors

The present success of the Canadian manufacturers in the United States is due in part to the differential in exchange rate; should this differential be reduced significantly, it would certainly affect Canadian sales in that country.

3. FEDERAL AND PROVINCIAL PROGRAMS AND POLICIES

The main factor in this sector's growth is governmental legislation and its enforcement. Governments are active in the environmental field in Canada at all levels:

- the Federal government, through Environment Canada, which usually issues guidelines for other governments to use in drafting their own legislation, and through Health and Welfare Canada which issues guidelines regarding acceptable levels of noise and health standards in the work environment.

- the Provincial governments which have legislative power for the protection of air and natural bodies of water; and

- Municipal governments, which have the responsibility to provide potable water and which have jurisdiction over waste water being discharged into sewers within their municipality.

4. EVOLVING ENVIRONMENT

Both governmental and public pressure are forcing changes in the sector, especially in the type of equipment being used. The increasingly stringent requirements on certain industrial sectors have generated further demands for more effective solutions. For example, pulp and paper producers, who reduced pollutants in effluents by 32% between 1973 and 1982, are now required to achieve further substantial reductions. Furthermore, public interest groups are increasingly pressuring not only for corrective measures against pollution but also for preventive measures before an activity is started.

In the United States, there is a growing retro-fit market, where tendering is piecemeal as opposed to the turnkey contracting common for new installations. A recent study by the U.S. Environmental Protection Agency indicates that 1,712 of the waste water treatment plants serving large U.S. cities are not in compliance with the regulations for discharge of effluents. This should provide many opportunities for Canadian manufacturers (who are well positioned with their specialized equipment such as screw pumps, bar screens, and aerators) -- if they can get the local consulting engineers to either specify or accept their equipment as equivalent.

In the developing countries of the Far East, there is an awakening to the need for preventive measures to lessen the negative environmental impact of their accelerated industrialization, particularly since many of these countries have a high population density and lack basic infrastructure.

Governmental and public pressures are leading toward a philosophy of solid waste recycling and treatment (rather than burial). This means recuperation of energy, neutralization of toxic waste through specialized equipment, and generation of by-products from waste. Safer technologies are replacing older ones. For instance, water purification with chlorine is being replaced by ozonification, reverse osmosis or ultra violet treatment because of suspected cancer causing agents at a certain level of concentration of chlorine.

5. COMPETITIVENESS ASSESSMENT

Through extensive research and development activities, the Canadian industry has become internationally competitive in a number of product areas. For example, several firms can supply **small waste and potable water systems** to developing nations. The Canadian industry has also developed turnkey systems for industrial customers to treat both potable and waste water, especially toxic effluents. Because of the quality and reliability of this equipment, Canadian companies are developing a strong worldwide reputation in this area. The up-to-date designs and quality of Canadian solid waste handling equipment enable the sector to compete internationally.

While the industry does not have the capacity to undertake major municipal projects on a turnkey basis internationally, Canadian firms can participate as specialized equipment suppliers whenever they can establish close contact with the consulting engineers or can transfer technology and develop mutually-beneficial joint ventures. Certainly, firms do have to rely on imported components for some of these installations, but that is more a reflection of the diversity and complexity of the equipment involved than it is an indicator of a narrowly-based industry in Canada.

Environmental equipment can be considered a growth sector, far from maturity in terms of technology and demand. Governmental pressures and technological changes are continually generating additional opportunities. The present Canadian industry can supply all domestic equipment requirements, through the combined abilities of foreign branch plants and Canadian-owned firms, is competitive internationally in certain well-defined product niches, and continues to work closely with research organizations to bring to market new solutions to difficult environmental problems.

PREPARED BY : Machinery and Electrical Equipment Branch
DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

Assistant Deputy Minister
Capital and Industrial Goods

DATE : 3 October, 1986

F A C T S H E E T

NAME OF SECTOR: Environmental Equipment **SIC(s) Covered:** 315/3199

1. PRINCIPAL STATISTICS

	1980	1981	1982	1983	1984	1985
Establishments						200[e]
Employment						2,700[e]
Shipments ($millions)	89	119	122	105	124	144[e]

2. TRADE STATISTICS

	1980	1981	1982	1983	1984	1985
			($Millions)			
Exports	Exports are not separately identified					
Domestic Shipments	-	-	-	-	-	-
Imports	37	46	47	47	55	66
Canadian Market	-	-	-	-	-	-
Exports - % of Shipments	-	-	-	-	-	-
Imports - % of Market	-	-	-	-	-	-

	U.S.	E.E.C.	ASIA	OTHERS
Source of Imports				
1983	85.3%	13.4%	.3%	1.0%
1984	85.5%	6.2%	5.8%	2.5%

Destination of Exports - Data not tabulated by Statistics Canada.

3. REGIONAL DISTRIBUTION - Average over the last 3 years.

	ATLANTIC	QUEBEC	ONTARIO	PRAIRIES	B.C.
Establishments - % of Total	1%	10%	70%	9%	10%
Employment - % of Total	N/A				
Shipments - % of Total (est.)	N/A				

4. MAJOR FIRMS

NAME	OWNERSHIP	LOCATION OF MAJOR PLANTS
N.R. Murphy (air pollution)	Canadian	Cambridge, Ontario
Ducon-Mikropul (air pollution)	U.S.	Brampton, Ontario
Wheelabrator (air pollution)	U.S.	Milton, Ontario
Dorr-Oliver Canada (waste water)	U.S.	Orillia, Ontario
Eimco Process Equipment (potable and waste water)	U.S.	Mississauga, Ontario
Hankins Environmental (potable water and incinerator)	Canadian	Scarborough, Ontario
Gaco Systems Ltd. (potable and waste water)	U.S.	Brantford, Ontario
Farr Inc. (air pollution)	U.S.	Montreal, Quebec
3L Filters (air and oil filters)	Canadian	Cambridge, Ontario
Petwa Canada (turn-key waste water systems)	Canadian	Calgary, Alberta

[e] = Estimated by Machinery and Electrical Equipment Branch, DRIE.

Note: **The Statistics Canada data reported above reflects only some of the products which form part of this sector.** Included is partial information on potable and waste water treatment equipment, and some data on air pollution equipment, but none on solid waste handling or noise abatement equipment.

DRAFT - PROFILE

DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

COMPETITIVENESS PROFILE

EXTERIOR WOOD BASED PANEL PRODUCTS

1. Structure and Performance

a) Structure

The exterior wood based panel products sector includes two major subsectors: **softwood plywood** and **waferboard/oriented strandboard (OSB).** Softwood veneer, which is an intermediate product used in the manufacture of plywood, is produced by a number of specialized manufacturers. Therefore, any discussion of this product will be included in the softwood plywood subsector. Similiarly, OSB is a second generation waferboard with improved physical properties which is used in the same applications as waferboard. Softwood plywood and waferboard/OSB are substitutes in most end-use applications.

The majority of the products are sold as standard size sheet material used primarily in construction, packaging, and industrial uses. However, in some cases upgrading of softwood plywood (overlaid concrete form panels, etc.) is done at the manufacturing level. All products included in this sector are manufactured with waterproof adhesives and consequently, are suitable for exterior end-use applications.

In 1985, the value of shipments for both subsectors totaled $700 million which represented about 6.3% of the total Wood Products industry shipments. Direct employment in the sector is estimated at about 6500. Additional jobs in related forest harvesting operations provide other employment opportunities. Exports in 1985 were valued at $285 million.

The **softwood plywood** subsector is based on renewable resources which can be divided into 2 major species groups: Douglas Fir, which is found mainly on the B.C. coast and in the southern B.C. interior, and Spruce - Pine - Fir which is located in most other areas of Canada. Due to competition for these wood resources from the sawmill industry and the long rotation time required to grow suitable sized peeler logs, the available resource base is declining. **Waferboard/OSB,** on the other hand, is based almost entirely on abundant and rapidly growing aspen which grows in a wide belt across the country from northern BC to the Atlantic provinces.

The softwood plywood/veneer industry is currently the major subsector with 23 operating softwood plywood establishments, 9 softwood veneer producers, and 10 operating waferboard/OSB mills. There are 2 waferboard mills which are currently not producing but which could be reopened. Some 75% of the softwood plywood/veneer plants and 50% of the waferboard/OSB are owned by large integrated forest product companies. The remaining mills are operated by smaller independent owners, co-operatives and in one case by a provincial government.

While some 65% of total sector capacity is currently Canadian owned, foreign ownership is also significant, particularly in the plywood subsector. Seven of the softwood plywood mills are controlled by U.S. interests, three by interests from New Zealand, one is partly owned by a Japanese group. Three of the softwood veneer producers are owned by foreign interests. In the Canadian subsector two of the 12 Canadian waferboard/OSB plants are at least 50% controlled by U.S. interests.

The Canadian capacity of the waferboard/OSB and softwood plywood sector is currently estimated at about 4.2 billion square feet (BSF) (3/8" basis) compared with an estimated 26.7 BSF of similar products in the U.S. Canadian plants represent about 13% of world capacity, estimated at 33 BSF.

It is estimated that some 85% of softwood plywood capacity is concentrated in British Columbia with the remainder spread across the country. In terms of softwood veneer, about 90% of capacity is located in B.C. with the remainder in Alberta. Waferboard/OSB manufacturing capacity is located in the Prairies (28%), Ontario (39%), Quebec (23%) and the Maritimes (10%).

Canadian **softwood plywood** production represents about 10% of North American production. About 80% of Canadian production is consumed in the domestic market with the balance sold in Europe, Japan, and the Middle East where it competes with U.S. exports and locally produced hardwood and softwood plywoods. **Waferboard/OSB** has until recently been a North American product but several plants have recently been built in Europe. The Canadian waferboard/OSB industry represents about 35% of total North American capacity and 50% of domestic production is consumed in Canada with the remainder exported, principally to the U.S.

Exports, which are mostly waferboard to the U.S. and softwood plywood to the EEC and Japan, represented about 38% of all exterior panel product shipments in 1984. By comparison, imports represented only 4% of domestic demand and were limited to speciality items and some low grade plywoods.

b. Performance

Within the exterior panel sector, there has been a considerable degree of substitution with waferboard/OSB in most end-uses at the expense of softwood plywood. Between 1976 and 1985, the Canadian waferboard/OSB industry expanded rapidly from 12% to a current level of about 40% of total exterior panel production. On the other hand, softwood plywood's share of total sector output declined from 88% to 60% during the same period and at least 5 plants have closed. Average annual growth in plywood production during the period 1973-1978 was 3.5% which was followed by a period of decline (-5.5%) during the 1978-1984 period. Waferboard/OSB production grew at an average annual rate of 17.5% between 1978 and 1984. Presently, one new waferboard/OSB project is under construction in Alberta and several other mills, in other provinces, are under consideration. In 1985, Canadian mills operated at about 96% of capacity. By comparison, U.S. producers operated at about 85% of capacity reflecting the startup of some new mills.

Capital projects undertaken during the late 1970's by the wood products industry contributed to high debt to equity ratios and long term debt at high interest rates. The long term debt to equity ratio for wood industries, of which exterior structural panels producers are part, rose from 0.46 in 1980 to 1.16 in 1984 and was 0.91 in 1985.

The rapid increase in waferboard/OSB production led to some oversupply of exterior panels in the domestic market which resulted in depressed prices of both waferboard/OSB and softwood plywood. However, with the recent increase in residential building activity most plants in the sector are operating near capacity. While waferboard/OSB normally sells at a price level about 15% below softwood plywood, in recent months some isolated regional shortages in the U.S. market and the increased acceptance of waferboard/OSB by end-users has resulted in a narrowing of the price gap.

2. Strengths and Weaknesses

a) Structural

In terms of plant capacity, Canadian softwood plywood mills are generally similar to those in the U.S. Some existing Canadian **waferboard/OSB** mills are somewhat smaller than the largest mills currently producing or under construction in the U.S. New Canadian waferboard/OSB mills are generally large world scale plants built to take advantage of economies of scale. However, recent developments in the U.S. have demonstrated a shift by at least one major U.S. company to build smaller capacity waferboard/OSB mills designed to serve regional markets.

One of the most significant differences between the Canadian softwood plywood subsector and its U.S. counterpart is the level of output by grade. In the U.S., about 60% of the total softwood plywood production is in CDX which is a lower grade sheathing product not manufactured in Canada but which provides strong competition to Canadian sheathing plywood in offshore markets which are price sensitive. In general, the Canadian industry has not felt that the production of CDX grade would be commercially viable given the characteristics of the wood resource utilized in Canada.

The availability of suitable raw material for the softwood plywood subsector is declining and consequently, wood costs are rising. In the case of waferboard/OSB, which is manufactured principally from readily available aspen, wood costs are much lower than in the case of plywood. A 1984 analysis of the waferboard/OSB subsector indicated that Canadian wood and manufacturing costs are about 7% below the comparable costs in the U.S. in terms of U.S. dollars.

Proximity of production relative to major consuming regions is also an important factor. In this context, waferboard/OSB has an advantage over softwood plywood since many mills are situated near major Canadian markets in eastern Canada. In general, Canadian waferboard/OSB producers do not have a similar distance advantage where they compete with U.S. manufactured waferboard/OSB and plywood in the U.S. market.

b) Trade Related Factors

There is very little trade in **softwood plywood** between Canada and the U.S. with a Canadian tariff of 15% and a U.S. tariff of 20%. Certain softwood plywoods enter the EEC under an annual GATT bound duty-free global quota of 600,000 cubic metres. EEC imports, other than those under the quota are subject to a tariff of 10%. In Japan, a 15% tariff, a requirement that softwood plywood used in housing be regraded on arrival in Japan, and competition from hardwood plywood manufacturers are constraints to increasing Canadian exports. The decision by the Japanese government to reduce plywood import tariffs to 10% by April 1, 1988 should improve opportunities for Canadian exporters.

The principal export market for Canadian waferboard/OSB is the U.S. which historically has consumed about 50% of Canadian production. The acceptance of waferboard/OSB within U.S. residential building codes, a relatively low tariff (4% by 1987) and a rapidly expanding market are factors which have contributed to the industry's export performance. Exports to offshore markets, particularly to the EEC, have been limited by significant tariffs (10%), the lack of acceptance of waferboard within building codes and limited knowledge of the product. In Canada, the import duty is also declining to 4% in 1987.

c) Technological Factors

While technology in **softwood plywood** mills, located in the B.C. interior and the Prairies is generally up to date, a number of plants on the B.C. coast and in eastern Canada are older. Although some recent developments in plywood technology will significantly increase veneer recovery and reduce raw material and manufacturing costs, this equipment has not yet been installed in any Canadian mills.

Technology in the **waferboard/OSB** industry is generally modern with the exception of some older mills. Several Canadian mills have been modified and upgraded to produce an oriented waferboard in response to market preference. During the past two years most Canadian waferboard/OSB producers have initiated modernization programs targetted at lowering costs through reduced raw material and energy consumption, and improved efficiency through the use of electronic process controls. Development of new resin technology is ongoing and will be a benefit to both plywood and waferboard manufacturers.

Most technological development is carried out with the assistance and support of equipment manufacturers and suppliers located in Canada, West Germany, the U.S. and Scandinavia and consequently, is generally available to all sector producers. Recent technological developments, such as the spindleless lathe can be expected to contribute to improved competitiveness through improve fibre utilization. Technology related to the production of upgraded speciality plywood, such as overlaid panels for concrete forming, is well established in a number of major companies.

d) Other Factors

While the exterior panel products sector markets about 60% of its output in Canada, exports to the U.S. and the offshore are very important. The sector's export performance is affected to an important degree by currency exchange relationships. In addition, since one of the major end-uses for exterior panels is in residential and non-residential construction, the cyclical nature of construction has a significant impact on plywood and waferboard/OSB producers.

3. Federal and Provincial Programs and Policies

Federal financial assistance has been available to the panel products sector under a variety of programs such as IRDP, PEMD, COMDP, and FIRE.

The Cooperative Overseas Market Development Program (COMDP) was established several years ago to diversify the market base of the wood products industry of B.C. through the development of offshore markets. The COMDP is jointly funded by the federal and B.C. governments and the provincial wood products industry. Offshore market development is expected to continue to be an important industry thrust.

The Forest Sector Advisory Council (FSAC) provides the federal government with input to policy development on a range of issues. The Federal/Provincial Forest Industries Development Committee (FIDC) meets twice yearly to discuss forest industry related policy issues and programs at the federal and provincial government levels.

4. Evolving Environment

The sector is highly sensitive to domestic residential construction activity. Private sector forecasts indicate that housing starts in both the U.S. and Canada should remain strong through 1988. Forecasts beyond 1988 indicate a reduced demand for new housing due primarily to demographic factors. In Canada the renovation and do-it-yourself market is growing in volume terms and currently represents about 17% of total sector consumption.

Over the medium term, **waferboard/OSB** production is expected to continue to grow rapidly and penetrate end-use applications in housing, non-residential construction and industrial markets at the expense of softwood plywood. The softwood plywood industry will therefore be under increasing pressure to find alternative markets abroad or develop specialty products.

The much larger U.S. softwood plywood industry can also be expected to continue to intensify its marketing efforts in Europe and elsewhere as its domestic market is further eroded by waferboard. Canada's share of U.S. waferboard/OSB markets dropped to 28 per cent in 1984 and will continue to decline for the next few years due to the significant expansion in U.S. waferboard/OSB capacity. Nevertheless, the volume of exports to the U.S. should continue to enjoy healthy growth.

Offshore markets such as the EEC and Japan continue to be important markets for Canadian **softwood plywood**. However, continuing intense competition can be anticipated from U.S. produced CDX plywood and from Japanese and European produced plywoods. In Japan, opportunities for increased exports of Canadian plywood should improve following the implementation of the recently announced reduction in import tariffs from 15% to 10% by 1988. Currency exchange relationships between the U.S. and Canadian dollars continue to be an important factor in international trade of panel products. Accordingly, in the first half of 1986, the potential for increased offshore exports of softwood plywood has improved, particularly in EEC countries.

The application of emerging technology in the sector as a whole can be expected to enhance raw material utilization and productivity and to improve energy conservation. With regard to employment, while the current level is not likely to change to any significant degree in the medium term some shifts are likely to occur between the two subsectors as waferboard continues to increase its share of total sector output.

5. Competitiveness Assessment

The **softwood plywood** subsector continues to be competitive in the domestic and several offshore markets. In the domestic market, waferboard/OSB is being substituted for softwood plywood in residential sheathing applications, particularly in large housing developments. On the other hand, softwood plywood continues to be used by smaller custom builders outside of major urban centres and in the renovation and do-it-yourself markets. In addition, softwood plywood is frequently preferred for a number of industrial uses including packaging and concrete forming.

About 20% of Canadian softwood plywood is shipped to offshore markets such as the EEC and Japan and, while competition from U.S. producers continues to be strong, Canadian exporters should be able to take advantage of opportunities in Japan, the EEC and new offshore markets. The industry continues to place emphasis on development of offshore markets.

Canadian softwood plywood has a reputation of high quality in many offshore markets. While the availablity of high quality logs is becoming more limited, new technological developments will assist the industry in improving its yield from available raw material. However, on balance, total Canadian softwood plywood output is likely to remain fairly constant or decline marginally over the next several years.

The Canadian **waferboard/OSB** industry is currently competing in both the domestic and U.S. markets. In Canada, waferboard/OSB can be expected to continue to increase its penetration of residential sheathing markets and is gaining increasing acceptance in the growing renovation and do-it-yourself sectors. An abundant raw material supply provides the basis for continuing growth.

As far as the industry's position in the U.S. market is concerned, current forecasts suggest further growth in Canadian exports over the next several years but a reduced share of the U.S. waferboard/OSB market reflecting ongoing expansion in U.S. capacity. The relationship between the Canadian and U.S. dollars is a important factor in this trade. To date, offshore market opportunities have been limited and this situation is unlikely to improve in the short to medium term due to tariffs and limited knowledge and acceptance of the product outside of North America.

Prepared by: Resource Processing Industries Branch
DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

Leon P. Lamels

for Assistant Deputy Minister
Consumer Goods, Services and
Resource Processing

Date: June 10, 1986

DRAFT

FACT SHEET

NAME OF SECTOR: EXTERIOR WOOD BASED PANEL PRODUCTS **SIC(s) COVERED:** 2522,2593

1980 basis

1. PRINCIPAL STATISTICS

	1973	1980	1981	1982	1983	1984	1985
Establishments	28	42	43	45	45	44	44
Employment (e)	5000	6600	6600	6750	6700	6500	6500
Shipments ($ millions)	327	617	636	458	639	650	700
Gross Domestic Product (Constant 1971$ millions)	-	-	-	-	-	-	-
Investment ($ millions)	-	-	-	-	-	-	-
Profits after tax ($ millions)	-	-	-	-	-	-	-

2. TRADE STATISTICS

	1973	1980	1981	1982	1983	1984	1985
Exports ($ millions)	70	185	167	153	195	247	285
Domestic Shipments ($ millions)	257	432	469	305	444	403	415
Imports ($ millions)	24	12	42	12	14	18	19
Canadian Market ($ millions)	281	444	511	317	458	421	434
Exports as % of Shipments	21	30	26	33	30	38	41
Imports as % of Domestic Market	8.5	3	8	4	3	4	4
Canadian Share of International Market	7	12	10	9	10	13	13

Source of imports	U.S.	E.E.C.	Asia	Others
1981	99		1	
1982	99		1	
1983	99		1	
1984	99		1	
1985	99		1	

Destination of exports	U.S.	E.E.C.	Asia	Others
1981	34	62	3	1
1982	35	61	3	1
1983	39	55	4	2
1984	55	37	5	3
1985	64	32	3	1

3. REGIONAL DISTRIBUTION - Average over the last 3 years

	Atlantic	Québec	Ontario	Prairies	B.C.
Establishments - % of total	4	6	13	17	60
Employment - % of total	2	4	14	18	62
Shipments - % of total	1	12	21	21	45

4. MAJOR FIRMS

Name	Ownership	Location
1. Canadian Forest Products Limited, Vancouver, B.C.	Canadian/public	BC, Alberta
2. Evans Products Company Limited, Kamloops, B.C.	Foreign/public	BC
3. Crown Forest Industries Limited, Vancouver, B.C.	Foreign/public	BC
4. Noranda Forest Sales Inc. Toronto, Ontario	Foreign/public	BC
5. MacMillan Bloedel Limited, Vancouver, B.C.	Canadian/public	BC

DRAFT - PROJET DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

COMPETITIVENESS PROFILE
FEED INDUSTRY

1. STRUCTURE AND PERFORMANCE

a) Structure

The feed industry includes establishments primarily engaged in manufacturing complete feeds and premixes (composed of vitamins, minerals and sometimes medications) and feed supplements (composed of premixes and protein concentrates) but excludes dehydrated alfalfa and pet food. Animal feed manufacturing is the largest grains and oilseeds processing industry in Canada with total sales in the area of $2.5 billion. In 1985, the Canadian feed industry involved an estimated 565 establishments and 9,000 employees.

The feed industry is made up of companies that have annual sales ranging from less than $5 million to $100 million. There are at least 100 known feed manufacturers but not more than five operate in more than two provinces. Less than 10 organizations account for about 70% of the total production in the country. Besides individual firms, this number includes farm cooperatives which are very significant participants in this industry accounting for about 35% of total shipments. The industry is primarily Canadian controlled. However there are two major U.S. based firms which have subsidiaries in Canada mainly involved in the manufacture of supplements and complete feeds while four other multinationals are involved in premix production.

The industry purchases more than $1 billion worth of a wide variety of inputs, many of which are by-products from other industrial processes. By-products from the flour milling, malting and brewing industries as well as by-products from grain cleaning are included in animal feeds. The feed industry is the largest domestic purchaser of grain as well as being a major purchaser of items such as tallow, meat and bone meal from meat packers, fish meal from fish packers, and canola meal, linseed meal, and soybean meal from vegetable oil processors. Other important inputs include vitamins, minerals and animal health products. As a result vertical integration with oilseed processing, meat packing and grain handling interests is common, particularly among the larger firms.

Some integration of feed manufacturing and livestock and poultry raising is also taking place although this is not as far advanced in Canada as it is in the U.S. or elsewhere. As a result Canadian feed mills tend to produce a wider range of feed products than some of their foreign counterparts.

On a geographical basis 75% of the feed production is concentrated in eastern and central Canada while the west accounts for the remaining 25 percent. Most manufactured feeds are sold within a 100 kilometer radius of a plant although higher valued, specialty feeds and ingredients are traded over a much wider area. The regional distribution of feed milling tends to be similar to the locational patterns of livestock across the country. The industry is located primarily in Ontario, Quebec and Alberta although there are feed plants in every province of Canada. Production costs vary from one region to another and are lowest in the prairie region and Ontario where feed grain supplies, the principal ingredient of animal feeds, are most plentiful.

The feed industry is primarily domestically oriented. Exports of manufactured feeds and semi-processed ingredients combined were valued at $156 million and represent only 6% of shipments in 1985. Exports of manufactured feeds are largely confined to local cross border movements to neighbouring states due to their bulky nature. These shipments originate mainly from Quebec and were valued at $32 million in 1985. Small quantities, less than 10% of all exported manufactured feeds, are exported to Latin America and Pacific Rim countries. This contrasts with exports of semi-processed feed ingredients valued at $124 million which were shipped to a much wider range of geographically distant countries.

Total imports of both manufactured feeds and semi-processed ingredients were $213 million in 1985. Imports of manufactured feeds only were valued at $11 million in 1985. The industry imports significant amounts of semi-processed ingredients such as soybean meal as well as medications, vitamins, and trace minerals for premix production which were valued at $202 million in 1985. The United States was by far the major supplier of both feed industry inputs and manufactured feeds.

.../2

The world market for feed ingredients is increasingly becoming affected by government intervention; for example, E.E.C. subsidies have made that market self-sufficient and a major grain exporter, while the new U.S. farm bill is designed to lower American feed ingredient prices to improve the position of U.S. producers in an increasingly competitive marketplace.

b) Performance

The total number of plants has been declining steadily over the past twenty-five years, but with the adoption of many technical innovations individual plant capacities have increased dramatically. The number of plants has decreased from 789 in 1970 to about 565 currently while the value of shipments increased from $585 million to $2.5 billion during the same period. Production rose steadily throughout the last two decades as livestock populations increased.

This growth pattern changed in 1981, primarily because of static livestock populations, lower red meat consumption, more on-farm milling activity and improved feed conversion rates of animals. A fairly serious overcapacity situation now exists in all parts of the country, with many plants operating at about 60% of capacity.

The industry has a wide range of plant sizes with a wide disparity in the level of technology involved. Similarly cost structures and profitability vary significantly from plant to plant and firm to firm, but average net profit margins are low.

Employment is slowly declining as feed mills become increasingly automated. In 1985 the industry employed approximately 9,000 people with a total payroll valued at about $200 million compared to 9,683 people and a payroll of around $157 million in 1980.

Labour for the most part is not unionized. Productivity per worker compares very favourably with other industries in Canada. The industry also has one of the highest capital to labour ratios in the food and beverage sector and in the manufacturing sector generally.

2. STRENGTHS AND WEAKNESSES

a) Structural

The servicing of customer requirements and locational factors are primary considerations in the feed industry with the result that feed production and marketing in Canada and elsewhere is generally locally oriented. Due to the bulky nature of feed, production plants tend to be located close to rural sources of inputs, primarily grain and to livestock and poultry producers, their ultimate customers.

Raw materials are also a key factor affecting the competitiveness of this industry. The cost of raw materials account for 79% of total production costs. Overhead and energy costs represent 7% while wages make up only 4% of costs. Other operating expenses such as warehousing, promotion, and administration represent an additional 10% of total costs.

A distinction needs to be made between the grain surplus and grain deficient regions in Canada since the degree of availability of local grains and proteins dramatically affects production costs. Mills located in grain deficient regions such as British Columbia and the Maritimes can expect to pay $20 - $40 a tonne more for feed grains than those located in the prairies or Ontario, primarily due to transportation costs. This discrepancy in feed production costs between the grain surplus regions (i.e. prairies and Ontario) and the deficient regions (Maritimes, British Columbia and parts of Quebec) would be greater if it were not for the Feed Freight Assistance Program of the Livestock Feed Board which defrays some of the costs of moving feed grains from grain surplus regions to grain deficient regions.

Although economies of scale are important, they are not as critical as in some other industries. Given the largely local nature of the industry, the smaller scale of plants and firms in Canada, when compared to those in other developed countries and some developing countries, does not present a serious disadvantage. The quality of Canadian products and the level of technology is quite comparable.

Competition in the Canadian market comes primarily from the U.S. although some less bulky high valued micro premix imports do occur from western Europe. Although larger U.S. plants may have slightly lower fixed costs this advantage is offset by the superior locational advantages of Canadian plants and favourable exchange rates.

The increase in on-farm milling has led to a shift in demand towards premixes and feed concentrates, from which farmers can prepare their own complete feeds using their own grains. On-farm milling is predominant in areas where there is good grain production since grain makes up approximately 60%-70% of a complete ration. In grain deficient areas -- such as parts of British Columbia, Quebec and the Maritimes -- the demand for complete rations is stronger. The trend to on-farm milling is creating an excess capacity problem in the industry. In the longer-term increases in on-farm milling also reduces the opportunities for cross border trade in complete feeds in both Canada and the U.S.

Lower grain prices in the USA as a result of their new farm legislation will give U.S. feed manufacturers access to lower priced inputs. This will give them an advantage in this major cost area and reduce Canadian export potential if Canadian manufacturers do not have access to inputs at comparable prices.

b) Trade Related Factors

Most countries have their own feed manufacturing industries with the result that international trade is largely in feed ingredients rather than in finished products.

Canadian and U.S. customs duties on animal feeds and many ingredients for incorporation into such feeds are either free or carry a minimum rate usually not exceeding 5% ad valorem. In the case of Japan most feed ingredients may be imported duty free in contrast to the E.E.C. where customs duties, as high as 27% plus variable levies, and E.E.C. subsidy schemes protect community feedstuff production.

Production standards tend to discourage trade in manufactured feeds in that they vary from country to country and in the case of the U.S., even between states. Such standards normally set nutritional and safety requirements which must be met by both domestic and imported feeds. Similarly countries often have their own labelling requirements.

Likewise each country has its own regulatory process for clearing feed additive drugs and this results in some differences in requirements for the same types of drugs in terms of usage levels and withdrawal periods. As a result most exports of manufactured feeds are largely confined to non-medicated products.

Canadian federal legislation requiring import permits for wheat, barley and oats restricts imports of these items for use as feed ingredients. Such permits are granted on an individual basis only when the Canadian importer can provide evidence that similar items are not available in Canada and as a result are seldom granted. The permit system also applies to processed feed products containing 25% or more of wheat, oats and/or barley by weight.

.../4

On the export side, Canadian feed manufacturers must also meet Canadian Wheat Board (CWB) requirements if the ration produced contains more than 25% of wheat, oats or barley or any combination of these items. In such cases a CWB export permit must be obtained prior to shipment. These grains when exported, including that sold in animal feed rations, must be purchased from the CWB and not from the private trade. Western feed manufacturers depending more heavily on the grains under the jurisdiction of the CWB are disadvantaged because they cannot price feed in export markets as competitively as they can in domestic markets since they cannot "shop around" for their grain when selling in the export market.

c) Technological Factors

Diffusion of the latest feed plant manufacturing technology is well underway in Canada but there are still significant differences in the level of technology used. Plant operations have become increasingly capital intensive as a result of the following developments:

a) as farm sizes increase and farmers automate their feed handling systems, manufacturers are seeing an increase in demand for bulk feed over bagged products which is resulting in less requirements for labour both on the farm and at feed mills;

b) the development and acceptance of pelleting machines which allows for not only easier handling of feeds and results in faster animal weight gains, greater palatability and improved feed conversions; and

c) an increased use of computers by nutritionists in calculating least cost feed formulations, and by plant managers to control the operation of the mill itself which further reduces labour costs and allows for improved quality control during the manufacturing process.

There is no major difference in the rate of acceptance of new technology between Canadian and foreign firms operating in Canada. There are no significant barriers to obtaining new technology although much of it must be imported. While increased competitiveness is forcing the industry to look for ways to cut costs, low margins makes the process of introducing new technology difficult to finance. As a result firms are closing some of their smaller older facilities with a view towards centralizing their operations in fewer but larger facilities in areas most optimally located with respect to access to both ingredients and markets for finished products.

d) Other Factors

Favourable exchange rates with the United States have been an important element in assisting Canadian plants located near the U.S. border in participating in that market. The strong American dollar also makes U.S. feeds more expensive in the Canadian market as well.

3. FEDERAL AND PROVINCIAL PROGRAMS AND POLICIES

In accordance with the Canada Feeds Act and Regulations, administered by Agriculture Canada, firms manufacturing feeds must register each feed formulation offered for sale on a commercial basis. This legislation also requires manufacturers to disclose their ingredient contents through fairly stringent labelling requirements. Similarly the Health Protection Branch of the Department of Health and Welfare approves and regulates the use of drugs and medications in feeds. These latter requirements together with those of Canada Feeds Act and Regulations apply to both domestic and imported feeds.

.../5

Programs initiated to enhance the viability of animal agriculture also impact on the feed industry. For example, supply management and stabilization programs affect market demand for feed as well as the degree of vertical integration in the industry.

Some firms have received either federal or provincial government assistance for establishment, modernization or expansion related projects. Government programs such as the Canada-Alberta Nutritive Processing Assistance Agreement, IRDP and the Western Transportation Industrial Development Program have been used by the industry. Assistance has also been provided under the Promotional Projects Program and the Program for Export Market Development to realize export potential. Finally the Export Development Corporation recently extended medium term financing facilities to animal feed exports.

4. EVOLVING ENVIRONMENT

Consumer demand for milk, meat and eggs is currently static and future increases will be limited to human population growth which is expected to be considerably less than 2% annually in Canada. As a result total demand for animal feed in Canada is likely to remain relatively static and competition between firms will continue to be severe. With tight margins firms will have to maintain careful inventory and purchasing practises but some further rationalization of the industry can be expected.

The industry will have to continue to adjust its product lines and services as a result of on-farm milling. Further growth in on-farm milling will increase demand for premixes at the expense of complete feeds. The industry will become more advisory service oriented as the demand for nutrition consulting increases with on-farm milling.

Burdensome worldwide grain supplies are likely to result in low feed grain prices for the next two years - a benefit to both feed manufacturers and livestock raisers. On the other hand large export subsidies on feed ingredients by foreign competitors is likely to dull export prospects for most feedstuffs over this same period.

5. COMPETITIVENESS ASSESSMENT

Feed production and marketing is basically a locally oriented activity. The Canadian feed industry is competitive in the domestic market and has enjoyed some limited success in nearby export markets due to favourable exchange rates.

Raw material availability and locational considerations are the major factors affecting the competitiveness of the industry. Production facilities located in major grain growing areas such as those in Ontario and the prairie region benefit from lower production costs than other Canadian regions since feed grains represent the major input of finished products.

While tariff protection in this sector has not been a factor, two way trade between Canada and the United States is limited by product standards and Canadian Wheat Board requirements.

Off-shore export opportunities are limited due to high transportation costs for the bulk products and also to subsidized competition from other exporters e.g. the USA and the E.E.C. A recent initiative by the Export Development Corporation to expand its export financing facilities is a step towards meeting some of this competition.

Prepared by: Food and Consumer Products Branch
DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

Assistant Deputy Minister
Consumer Goods, Services and Resource Processing

Date: JUL 23 1986

DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

July 22, 1986

FACT SHEET

NAME OF SECTOR: FEED SIC(s) COVERED: 1053 (1980)

1. PRINCIPAL STATISTICS

	1971	1980	1981	1982	1983	1984	Total 1985
Establishments	786	609	601	570	568	565E	565E
Employment	8949	9646	9683	9330	9169	9000E	9000E
Shipments ($ millions)	605	2281	2524	2404	2505	2500E	2500E
Premixes, Supplements (000 M.T.)	803	1024	1113	1110	1108	1100E	1100E
Complete feeds (000 M.T.)	4380	6266	6540	6381	6259	6300E	6300E
Other (000 M.T.)	487	280	322	339	290	300E	300E
Gross Domestic Product (Constant 1971-$ millions)	132.8	157.4	157.0	161.3	154.4	150.0E	150.0E
Investment ($ millions)	23.4	93.4	83.7	86.9	72.6	75.0E	75.0E
Profits After Tax ($ millions)	20.4	71.4	70.0	90.6	114.8	110E	110E
(% of income)	2.1%	2.1%	1.8%	2.5%	3.1%	3.0%E	3.0%E

2. TRADE STATISTICS*

	1971	1980	1981	1982	1983	1984	1985
Export ($ millions)	66	197	219	187	215	234	156
Domestic Shipments ($ millions)	539	2084	2305	2217	2290	2266E	2344E
Imports ($ millions)	28	156	167	167	190	235	213
Canadian Market ($ millions)	567	2240	2472	2384	2480	2501E	2557E
Exports as % of Shipments	10.0%	8.0%	8.0%	8.0%	8.0%	7.0%E	6.0%E
Imports as % of Domestic Market	5.0%	7.0%	7.0%	8.0%	8.0%	9.0%E	9.0%E
Canadian Share of International Market							

Source of imports % of total	U.S.	E.E.C.	ASIA	OTHERS
1981	98	1	--	1
1982	98	1	--	1
1983	96	3	--	1
1984	89	4	2	5

Destination of exports % of total	U.S.	E.E.C.	ASIA	OTHERS
1981	44	34	18	4
1982	44	31	17	8
1983	48	28	20	4
1984	60	15	23	2

*includes semi-processed ingredients

3. REGIONAL DISTRIBUTION - Average over the last 3 years

	Atlantic	Québec	Ontario	Prairies	B.C.
Establishments - % of total	4.5	37.3	32.7	21.6	3.9
Employment - % of total	4.4	34.6	36.4	18.5	6.1
Shipments - % of total	5.0	39.7	31.3	17.6	6.4

4. MAJOR FIRMS

	Name	Ownership	Location of Major Plants
1.	Canada Packers-Shur Gain Div.	Canadian	All across Canada
2.	Parrish & Heimbecker	Canadian	All across Canada
3.	Maple Leaf Mills	Canadian	All across Canada
4.	United Grain Growers	Canadian	4 western provinces

DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

DRAFT - PROJET

COMPETITIVENESS PROFILE

FERROUS FOUNDRIES

1. STRUCTURE AND PERFORMANCE

a) Structure

The ferrous foundry sector is made up of iron and steel foundries. Ferrous foundries produce castings by a manufacturing process in which liquid metal is poured into a mold cavity, allowed to cool and solidify, and separated from the mold for finishing and use. Iron foundries use iron scrap and pig iron, coke and foundry sand while steel foundries utilize steel scrap, ferro-alloys and foundry sand as their main primary raw materials.

The sector in 1984 consisted of about 120 iron foundries and 29 steel foundries with 11,000 persons employed in iron foundries and 4,100 in steel foundries for a total of 15,100 persons. Shipments of iron and steel castings were about $750 million and $210 million respectively for a total of $960 million. Although there are ferrous foundries in every province, they are concentrated in Ontario (52 per cent) and Quebec (21 per cent). The majority of the firms in the industry are of medium or small size. Most of the foundries are Canadian-owned. However, about 50 per cent of production capacity is foreign-owned.

In 1984, it is estimated that about 60 per cent of iron castings and 25 per cent of steel castings were exported*, giving a weighted average export figure for all ferrous castings of about 50 per cent. About 98 per cent of exports were to the U.S. Slightly more than 25 per cent of the ferrous castings used in Canada are imported, mainly from the U.S., with a large percentage in the form of equipment spares and replacement parts.

The sector is a supplier to most other manufacturing industries. The main markets for iron castings produced in Canada are: automotive (65 per cent), construction (5 per cent), agricultural and mining equipment (5 per cent). The main markets for steel castings produced in Canada are: railways (52 per cent), mining (13 per cent) and machinery for a variety of other industries (9 per cent) including electrical and automotive. These forward linkages are sometimes paralleled by corporate relationships. For instance General Motors and Ford operate highly automated iron foundries producing castings, such as engine blocks, for their own internal use. In addition 2 steel companies, Algoma and Dofasco, operate ferrous foundries supplying castings for internal use and also for outside customers.

b) Performance

Over the period 1973 to 1984 the number of foundries has decreased from 200 to 149 and employment declined from 22,000 to 15,100 persons. Similar decreases have taken place in the U.S., Europe and Japan. The average

---

* Statistics Canada provides data on the import and export of raw castings. This does not give a complete picture of trade because a large percentage of imports and exports is in the form of machined castings and castings that are equipment components. These are classified elsewhere. Data on exports and imports used in this report, with the exception of raw castings, are estimates made since 1983 by the Canadian foundry industry.

weight of iron and steel castings produced by the Canadian foundry industry decreased by about 30 per cent during the five-year period 1979 to 1983 inclusive. The main causes have been product replacement by other materials, down-sizing in the auto industry and imported equipment gaining a larger share of the domestic market. Increased use of capital equipment and automation has raised productivity and output of the foundries remaining in business. The experience for the iron foundries and steel foundries has been approximately the same.

The Canadian steel foundry industry has operated on average at about 50-55 per cent of capacity in the period 1982-1985. The iron foundry industry has operated on average at 60-65 per cent of capacity during that period. Iron foundries supplying the automotive industry are currently operating close to full capacity.

Little information is available by which to measure the financial health of individual companies. Few of the major firms in Canada producing ferrous castings report financial information on foundry operations alone. Based on Statistics Canada information, iron foundries had an after tax profit, generally, in the range of 3.8 to 5.1 per cent on total sales in the period 1973 to 1984. In the 1973 to 1984 period, the average after tax profit on sales was 2.4 per cent for the manufacturing industry. Similar information on steel foundries is not available.

2. STRENGTHS AND WEAKNESSES

a) Structural

The Canadian ferrous foundry industry is as modern and efficient as the U.S. and European industries and its other competitors. Canadian ferrous foundries, especially the iron foundries active in the automotive market, have invested substantial funds to upgrade their production facilities during the past five years.

The methods of producing ferrous castings vary widely depending on the type and size of the product, and it is common for a foundry to have several production methods operating in the same building. Therefore economies of scale are not significant for all parts of the ferrous foundry sector. While iron castings for the automotive industry and many types of steel castings are produced on highly automated production lines and have a high capital cost and relatively low labour cost factor, large steel castings such as turbine rotors used in hydroelectric power plants are produced individually in large cavities in foundry floors and have a high labour and relatively low capital cost factor.

Labour costs for ferrous foundries in Canada represented about 35 per cent of production costs in January 1984. These costs were about 25 per cent lower in Ontario and Quebec than similar U.S. producers along the border, based on the same currencies. Productivity among the various segments of the iron foundries and steel foundries varies widely as it does between individual companies within each segment.

The main raw materials, iron and steel scrap, trade free of duty and prices in Canada and the U.S. are approximately equal, based on the same currency. Most foundry sand and coke are imported from the U.S., and although there is no duty on these items, their costs to Canadian foundries is generally greater than to the U.S. foundries because of the higher transportation costs.

Transportation costs generally tend to act as a natural barrier to the trade of ferrous castings because most products have a relatively low value per unit of weight. Generally, castings are shipped within a 800 kilometre radius from the Canadian producing plant. Canadian ferrous foundries compete successfully with their counterparts in the northern U.S.A.

DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

Since the early eighties there has been a significant flow of lower-priced imports of a wide variety of steel castings from European countries such as U.K., F.R. Germany, France, Portugal and Spain. This has been due mainly to favourable exchange rates enjoyed by most of these countries. This advantage has been so large that it has overcome the transportation barrier. Since late 1985 there have been indications of a decrease in imports from these countries and it is believed to be due to the large increase in value of their currencies relative to the Canadian currency since September, 1985.

Since the early eighties, there has also been a flow of standard size, high volume, iron and steel castings into Canada from such newly industrialized countries as Korea, Taiwan, Brazil and Mexico, and South Africa. Labour costs in these countries are much lower and some of their castings are being delivered in Canada at prices with which Canadian ferrous foundries cannot compete. Customer services, reliable quality and prompt delivery are factors which, todate, have enabled Canadian foundries to retain most of the market. The "just in time" delivery of castings is particularly important to the automotive and farm machinery companies and favours North American over offshore ferrous foundries.

b) Trade Related Factors

Approximately 80 per cent of all foundry products traded between Canada and its major trading partner, the U.S., are free of duty. Products that are traded as original equipment under the Auto Pact are duty free as is all agriculture machinery and defence related equipment. Most manufacturing machinery entering Canada, which is of a kind or class not made in Canada, also enters duty free. Most of this equipment contains iron and steel castings.

By 1987, remaining tariffs for ferrous castings will be as follows:

Country	Average Tariff Range - %
Canada	9.0 - 9.5
U.S.	4.0 - 5.0
Japan	5.0 - 5.5
EEC	5.0 - 6.0

U.S. tariffs are not a significant hindrance to the export of Canadian ferrous castings to the U.S. However, it is probable that the higher Canadian tariffs are a factor limiting access to the Canadian market by ferrous castings of U.S. origin.

In the U.S., the main non-tariff barriers (NTBs) are government procurement policies, such as the "Buy America Act", which restrict the imports of certain types of Canadian castings. There are no significant NTBs on imports of castings to the EEC and Japan. In Canada, there are no NTBs on the import of ferrous castings.

U.S. protectionist efforts are a continuing threat. An example is the recent Section 201 - escape clause - petition by the U.S. foundry industry, requesting the imposition of tariffs on imports of certain foundry products into the United States. The U.S. International Trade Commission, on May 9, 1986, ruled that these castings were not being imported into the U.S. in such increased quantities as to be a substantial cause of serious injury.

c) Technological Factors

The Canadian industry does very little research and development. However, technology is imported with equipment mainly from the United States but also from Europe and Japan. There has been no difficulty in acquiring state-of-the-art technology.

Recent technological changes in Canada, have featured labour reduction through new processes and process equipment, statistical quality control, and the use of computers in financial analysis, casting design and inventory and process control.

d) Other Factors

The competitive position of Canadian ferrous castings in the U.S. market is sensitive to Canada/U.S. currency exchange rates but it is believed that Canadian castings would still be competitive with an exchange rate of .85 ($ Canadian to $ U.S.) mainly because of our labour cost advantage.

3. FEDERAL AND PROVINCIAL PROGRAMS AND POLICIES

Federal and provincial programs over the last decade have provided a small amount of financial assistance to this sector. During the period 1979-1983 inclusive federal programs provided a total of $3.3 million to assist with R&D, modernization and expansion. During the same period the Province of Quebec provided productivity grants totalling $2.7 million and Ontario provided loans totalling $2.0 million. IRDP assistance was approximately $4.1 million.

The Canada-U.S. Auto Pact has been important to the ferrous casting industry. The Canadian content and duty-free access to the large U.S. market have enabled Canadian ferrous foundries in the automotive market to enjoy economies of scale.

4. EVOLVING ENVIRONMENT

A major problem facing the industry is the increasing importation into the North American market from newly industrialized, low-wage countries of items which contain iron and steel castings. They include fully machined and finished castings, automotive engine transaxles and running gear assemblies, farm and industrial tractors, and forklift trucks.

In the late 1980s, it is expected that the traditional North American automotive manufacturers will suffer a substantial decline in market and production levels due mainly to the large increase in automotive assembly investment in North America by Asian companies. This could result in a decrease in the market for Canadian ferrous castings for the North American auto industry if the Asian companies continue with their plans to import the majority of their ferrous casting requirements in the form of engine, power train and brake components from Japan and Korea.

Replacement of ferrous castings by such materials as aluminum, plastics, and ceramics is also forecast to reduce the demand in the automotive and agriculture and mining equipment market in North America.

These changes and further automation will probably result in a further decrease in the number of foundries and the number of employees in the industry.

The demand for iron castings will continue to depend on the automotive, construction, agriculture and mining industries. The demand from the automotive industry is expected to remain reasonably strong for about another year. The other industries however are now operating well below capacity and an upturn in the near future is not expected. The demand for steel castings will continue to depend mainly on the railway, mining and general plant equipment industries where no growth is expected in the near future.

New process development and process equipment development will continue with most of it being done outside of Canada as in the past. It is expected that Canadian foundries will have no difficulty in obtaining state-of-the-art technology. The application of computers in foundries for financial analysis, casting design, inventory control and process control is expected to continue at an accelerated rate. These will improve the productivity and product quality of Canadian ferrous foundries.

It is anticipated that in the future, retained earnings will be the major source of funding for the majority of Canadian foundries to purchase modern technology fast enough to remain competitive.

DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

5. COMPETITIVENESS ASSESSMENT

The Canadian ferrous foundry industry is generally competitive in the northern U.S. market with the U.S. ferrous foundry industry. About 50 per cent of total Canadian production is now exported to this area. Because most ferrous castings have a relatively low value per unit of weight, transportation costs greatly affect their competitiveness and most are sold within 800 kilometres of the producing plant. However, Canadian iron and steel castings are not competitive on a cost basis in the North American market with some of the castings from newly industrialized countries mainly because of the very low labor costs in those countries. Nonetheless the importance of customer service, reliable quality and prompt delivery has enabled Canadian ferrous foundries, in most cases, to compete successfully against the import of ferrous castings from those countries.

If the Canada/U.S. exchange rate remains favourable, it is expected that, in the future, Canadian ferrous castings will remain competitive with U.S. castings in the northern U.S. market.

The arrival of Asian auto assemblers in North America could reduce the market for both Canadian and U.S. ferrous castings if these firms continue with their plans to import automotive components incorporating ferrous castings.

Prepared by: Resource Processing Industries Branch
DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

pp Assistant Deputy Minister
Consumer Goods, Services and Resource Processing

Date: JUN JUIN 17 1986

FACT SHEET

NAME OF SECTOR: Ferrous Foundries 1980 SIC(s) COVERED: 294: Iron Foundries
2912: Steel Foundries

1. PRINCIPAL STATISTICS

	1973	1980	1981	1982	1983	1984	Estimate Partial 1985
*Establishments	200	185	174	166	157	149	149
**Employment	22.2	19.3	16.7	13.8	13.2	15.1	N/A
***Shipments ($ million)	535	783	793	745	835	960	850
(Tonnes, 000s)	1,442	1,264	1,197	896	1,093	1,309	1,140
Gross Domestic Product (Constant 1971-$ millions)	-	-	-	-	-	-	
Investment ($ millions)(1)	18.0	19.7	19.8	13.3	13.0	43.2	N/A
***Profits After Tax ($ millions)	12.4	27.2	13.1	-29.2	18.0	30.0	N/A
*** (% of sales)	4.0	3.8	1.6	- 4.2	3.3	5.1	N/A

2. TRADE STATISTICS

	1973	1980	1981	1982	1983	1984	1985
Exports ($ million)(2)	83.0	87.7	98.8	98.4	95.8	126.4	
Domestic Shipments ($ millions)	N/A	N/A	N/A	N/A	N/A	N/A	
Imports ($ millions)(2)	57.1	95.6	92.1	61.7	68.3	102.6	
Canadian Market ($ millions)	N/A	N/A	N/A	N/A	N/A	N/A	
*Exports as % of Shipments(3)	N/A	N/A	N/A	N/A	50.0	50.0	
Imports as % of Domestic Market	N/A	N/A	N/A	N/A	N/A	N/A	
Canadian Share of International Trade	N/A	N/A	N/A	N/A	N/A	N/A	

* DRIE Estimates
** Canadian Foundry Association
*** Statistics Canada

(1) Iron Foundries only
(2) Raw Castings only
(3) All Castings - raw, machined and in equipment.

Source of imports (top 4) (Raw castings only)	PERCENTAGE U.S.A.	E.E.C.	ASIA	OTHERS
1981	86.9	9.3	1.6	2.2
1982	86.7	10.7	2.1	0.4
1983	92.9	4.7	2.1	0.4
1984	90.5	5.0	3.6	0.9
1985	86.7	5.8	5.6	1.9

Destination of exports (top 4) (Raw castings only)	U.S.A.	E.E.C.	ASIA	OTHERS
1981	98.4	0.4	0.1	1.1
1982	93.6	0.5	0.2	5.7
1983	96.5	0.2	0.0	3.3
1984	99.3	0.0	0.1	0.5
1985	99.5	0.3	0.0	0.2

3. REGIONAL DISTRIBUTION - Average over the last 3 years

	Atlantic	Québec	Ontario	Prairies	B.C.
Establishments - % Total	7	21	52	11	9
Employment - % Total	5	23	55	9	8
Shipments - % Total	4	24	57	8	7

4. MAJOR FIRMS

Name	Ownership	Location of Major Plants	Type of Foundry
1. Hawker Siddeley Canada Inc., Canadian Steel Foundries Division	U.K.	Quebec	Steel
2. Dofasco Inc., Foundry Division	Canadian	Ontario	Steel
3. General Motors	U.S.	Ontario	Iron
4. Ford Motor Co. of Canada	U.S.	Ontario	Iron
5. Griffin Canada Inc.	U.S.	Quebec & Manitoba	Steel
6. Abex Industries Ltd.	U.S.	Quebec & Manitoba	Steel
7. Canron Inc.	Canadian	Ontario	Iron
8. Esco Ltd.	U.S.	B.C. & Ontario	Steel
9. Norcast Inc.	Canadian	Ontario & Quebec	Iron
10. Bibby, Ste-Croix	Canadian	Ontario & Quebec	Iron

DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

Competitiveness Profile

- Fertilizer Sector -

1. STRUCTURE AND PERFORMANCE

The fertilizer sector is comprised of the primary producers of materials containing one or more of the three nutrients essential to plant growth (nitrogen, phosphorus, and potassium), and the network of retail outlets known as the bulk blending industry.

There are 17 primary fertilizer producers in Canada. They operate 27 basic manufacturing establishments and employ approximately 8,800 people. They include multinational corporations, farmers' cooperatives and a provincial crown corporation. Some, like Cominco, participate in all four segments. Others, like Esso Chemical, and CIL are in three, (nitrogen, phosphorus and bulk blenders). The Potash Corporation of Saskatchewan, a provincial crown corporation, is only in the potash segment and owns 45% of capacity. As primary manufacturers, the farmers' cooperatives have three production facilities in Alberta. At the retail level Canadian cooperatives deliver nearly 30% of the fertilizer.

In 1984, approximately 17.6 million tonnes of fertilizer were produced in Canada. About 4.6 million tonnes of fertilizer are consumed in Canada, most of which is distributed by the 1,500 to 1,600 bulk blenders.

The output of the sector in 1984 was valued at more than $2 billion. Exports totalled $1.7 billion and imports $200 million. This resulted in a positive balance of trade of $1.5 billion. The **nitrogen** segment produced close to 5 million tonnes of fertilizer material and employed about 3,000 people. Shipments were valued at over $850 million, of which exports amounted to over $450 million. The **phosphate** segment produced 1.7 million tonnes of phosphate fertilizers. Approximately 1,200 people were employed. Shipments were valued at over $400 million, of which $67 million were exports. Canada is a net importer of phosphate fertilizers. The **potash** segment is the most significant exporter of the three. Over 11 million tonnes of potash were produced in 1984 and over 4,500 people were employed. Shipments were valued at close to $800 million, of which over $700 million represented exports.

Nitrogen

Natural gas is the raw material for the manufacture of ammonia which is the source of all nitrogen fertilizers. Ammonia can be used directly as a fertilizer or converted to ammonium nitrate, urea, ammonium phosphates, ammonium sulphate and nitrogen solutions. In 1984, Canada produced nitrogen products equivalent to approximately 3.8 million tonnes of ammonia.

Nitrogen fertilizer products are a world commodity. However, Canadian producers are oriented to the North American market. Nitrogen fertilizer manufacturing facilities are located in British Columbia, Alberta, Manitoba and Ontario. The eastern and western producers tend to function as separate entities because there is little trade from one side of the country to the other due to distance. However, they do compete in the northcentral U.S. market which they both serve. Currently, about 75% of Canadian capacity is located in Alberta, close to natural gas supplies. These establishments, plus those in British Columbia, serve the western Canadian market and export to markets in the northwestern and northcentral United States. A Manitoba facility supplies central prairie markets. Ontario nitrogen fertilizer producers serve the eastern Canadian market and export to the northeastern and northcentral United States. Close to 50% of Canadian nitrogen products are exported. Small quantities go to Pacific Rim markets but as a rule, Canadian nitrogen fertilizers are at a disadvantage in offshore export markets. Despite effective use of the efficient railway system in Canada, this disadvantage results from the costs of moving relatively low valued commodities long distances to ports for export.

There are plans for significant ammonia capacity increases in Canada; 900,000 tonnes per annum in Alberta and 180,000 tonnes in British Columbia. These facilities are scheduled to come on-stream between 1986 and 1988, although some of this new capacity may be deferred because of poor market conditions in the U.S.

The financial performance of Canadian nitrogen producers is directly affected by world economic conditions, farm income levels, weather and their raw material costs relative to competitors. While pre-1983 data are not available, the Canadian Fertilizer Institute compiled a survey of financial information on the industry for 1983 and 1984. The nitrogen segment showed a marked increase in return on investment, from 0.90% in 1983 to 7.80% in 1984, due largely to a general improvement in world economic conditions after the 1982 recession and strong export sales. The 1985 data are not yet available from the industry. However, early optimism in 1985 turned to disappointment as record U.S. harvests were followed by low commodity prices.

Phosphates

Phosphate fertilizers are produced by reacting phosphate rock with sulphuric acid. Presently, all the phosphate rock used in Canada is imported from the United States. Sulphuric acid is produced from elemental sulphur or smelter off-gases. Canada has major sources of both.

Phosphate fertilizer production is located in British Columbia, Alberta, and New Brunswick. Canada is a net importer of phosphate fertilizers. In eastern Canada, C.I.L. recently announced the closure of its phosphate plant as a result of low prices of imported phosphate fertilizer caused by international overcapacity. For similar reasons both Canadian Electrolytic Zinc and IMC closed plants in 1975 and 1985 respectively. In western Canada, lengthy shutdowns to control inventory are common and one small plant has been closed permanently.

The financial performance of the phosphate producers remains weak. According to date provided by the Canadian Fertilizer Institute, the ROI improved but remained negative, as it went from -7.82% in 1983 to -0.75% in 1984. This change was the result of the general recovery from the recession of 1982. While 1985 data are not yet available, weak demand and very low product prices in 1985 indicate a likely decline in the segment's financial performance.

Potash

Potassium bearing ore is generally shaft-mined from underground deposits. In one case it is solution-mined by pumping water into the ground to dissolve the minerals. Surface refineries purify the mine outputs into finished product which is the primary source of potassic fertilizer in the world.

Canada produced 11 million tonnes of potash in 1985. Potash produced in Canada is in the form of potassium chloride, also known as muriate of potash. Canada produces approximately 30% of the world's potash and exports close to 95% of its production.

The majority of Canadian production originates from the rich potash ore deposits in Saskatchewan. These deposits are very large, and are of very high quality, ensuring long-term viability in the international marketplace. In addition, viable ore deposits are now being mined in New Brunswick. There are currently discussions underway for development of potash deposits in Manitoba. These are an extension of the Saskatchewan formation.

The industry has never attained its potential profitability. In the early 1960s, because of the high quality of the newly discovered ore deposits, 10 mines were built. This caused serious overcapacity and resulted in provincially-imposed production limits and floor prices. In the late 1970s, as profitability was being realized, tax levels were increased and the industry became reluctant to expand. Saskatchewan purchased about 45%

of the mine capacity in order to initiate expansion which was required to maintain Canada's international market share. Canadian Fertilizer Institute data for 1983 and 1984 show an improvement in return on investment from 1.74% to 5.68%. While 1985 data are not yet available from the Institute, other sources suggest that returns were poor, due to weak prices and a significant decrease in world demand. Inventories are currently at high levels as mines have continued to operate in an effort to maintain employment. More recently, several operators have temporarily closed mines in order to reduce inventory levels.

Bulk Blending

The bulk blending segment is characterized by its diversity. While most of the approximately 1,500 establishments are small operations, some are vertically integrated with primary manufacturers, some are large cooperatives, some are owner-operated. Most bulk blenders serve small local markets, usually within a 50-mile radius. It is estimated that 5,000 people are employed on a permanent basis, with many temporary jobs being created during the three month fertilizer application period.

There are approximately 350 bulk blenders in eastern Canada and 1,200 in western Canada. These establishments blend fertilizer materials on a custom basis and deliver fertilizers to the local market. Bulk blenders provide a range of other services to the farmer, including credit, technical and agronomic advice, equipment rentals, and fertilizer application. Approximately 70% of fertilizer for the domestic market is sold in bulk. About 5% goes to the "Greenhouse and Home Garden" trade.

2. STRENGTHS AND WEAKNESSES

A. Structural

The key elements of the cost of manufacturing fertilizer materials for export are raw materials, energy, inland freight and capital cost. In general, the relationship is shown below. In the nitrogen segment, raw material and energy costs are extremely important. In both the nitrogen and potash segments, inland freight is a significant factor affecting competitiveness in offshore markets.

	Nitrogen (Urea)	Potash
Raw material & energy	30 - 35%	10%
Capital charges*	20 - 25%	40%
Inland freight to ocean port	28%	30%
Other	12%	20%

*Estimate based on new world-scale plant.

The international fertilizer market is cyclical in nature as a result of a number of factors such as drought, world economic conditions, farm incomes, government policies, (e.g. U.S. farm bills which result in acreage reductions) and world capacity. Since the Canadian nitrogen and potash segments of the industry are export oriented, they are seriously impacted by world market fluctuation.

Nitrogen

The economics of ammonia production determine the competitiveness of the nitrogen segment of the sector. Natural gas costs, capital cost of plants (estimated to be 20-25% higher in Canada than in the U.S.) and transportation costs to markets are the major factors affecting competitiveness.

The Canadian industry has a demonstrated ability to compete in U.S. markets when it has an advantage in feedstock (natural gas) costs over its U.S. competitors to compensate for higher capital costs and freight. Most Canadian ammonia capacity was established when natural gas costs were favourable. Prior to the late 1970s, Canadian gas was priced significantly lower than U.S. gas. The NEP, in its early stages, established Canadian oil at 85% of world price and Canadian natural gas at

65% of this; a situation which favoured Canadian ammonia producers. Just prior to the Western Accord, deregulated U.S. gas prices resulted in an improved competitive position for U.S. ammonia producers. The Western Accord proposed a market-oriented pricing regime and relaxed export controls. This limits, at least potentially, any advantage Canadian ammonia producers could achieve since Canadian gas suppliers would be unlikely to sell gas to Canadian users for less than they could achieve in U.S. markets, less the cost of freight. It should be noted that the costs of transporting ammonia and its derivatives to U.S. markets will always be greater than the cost of moving natural gas required to produce the equivalent amounts of ammonia and derivatives in the U.S.

Nitrogen fertilizer producers in eastern Canada have, in recent years, suffered a disadvantage due to a high natural gas cost, relative to their U.S. competitors. However, it is expected that the Western Accord, which permits industrial users to negotiate directly with gas producers, will help to improve the competitiveness of the eastern segment. Certain details, like common carrier agreements, remain to be worked out.

In western Canada, several petrochemical plans have by-product hydrogen which can be utilized in place of natural gas in the manufacture of ammonia. Although the operating costs for these two raw materials are expected to be similar, the capital cost of the hydrogen-based plan is less than half of the natural gas plant. Construction has begun on several new plants based on hydrogen. This will result in a significant increase of western Canadian capacity.

Phosphates

To date, there has been no commercially viable domestic source of phosphate rock. Rock costs represent over 60% of the cost of production. This disadvantage is alleviated to some extent by abundant, inexpensive Canadian sulphuric acid used in producing phosphate fertilizers. Recent low prices and soft demand have resulted in significant Canadian phosphate fertilizer capacity being shut down in the face of imports. Canadian producers import all their phosphate rock from U.S. mining companies, some of which also produce finished phosphate fertilizer.

The eastern Canadian phosphate industry has been reduced to a single producer as imports replace domestic production. In western Canada, most producers are continuing to operate, albeit at low profit levels, because of a greater degree of freight protection. Although production units are shut down in Canada, the storage, delivery, blending and application of phosphate fertilizer maintain many of the jobs. Some Canadian phosphate fertilizer plants remain in operation to consume involuntary sulphuric acid production at some base metal smelters.

Potash

Canada supplies about 30% of the international potash trade. The high quality of Canadian potash and a well-developed marketing vehicle (Canpotex) have been important factors in developing this strong competitive position for Canada. Canpotex is a marketing company, owned jointly by all the mining companies in Saskatchewan. It has contributed to the logistics of offshore marketing by introducing unit trains, common port facilities in B.C. and return freight for its unit trains. These arrangements have kept to a minimum the costs of shipping potash to port for export.

B. Trade Related Factors

Fertilizer passes international borders duty-free, with only minor exceptions. Few non-tariff barriers exist. However, the trend towards trend towards barter, particularly in potash markets, could have a negative impact on Canadian producers since Canada is less accustomed to dealing with barter than some foreign competitors. The participation of centrally-planned economies, in search of hard currency, has tended to

disrupt conventional fertilizer trade for Canada and other western exporters.

Nitrogen and potassium fertilizer exports to the U.S. from Eastern bloc countries have increased to significant levels. In the U.S., Canadian exporters compete with Easten European and other non-market economies. Increased barter trade in fertilizers between U.S. buyers and these suppliers could have negative effects on Canadian exports. There do not appear to be any formal U.S. policies concerning barter trade.

Canadian fertilizer producers will always need to be mindful of the possibility of U.S. contingency protection measures. For example, Canadian potash exports have been the subject of a U.S. anti-dumping investigation; in that instance, dumping duties were not applied. The U.S. has also investigated imports of ammonia from Mexico for dumping.

C. Technological Factors

Little product or process research is being done by companies in Canada. In the past, significant technological change has affected the industry at large, rather than a particular company. The research conducted by the Tennessee Valley Authority in the U.S. is offered freely and tends to establish technical standards within the industry.

D. Other Factors

Since the majority of Canada's trade in nitrogen is with the U.S., a low value of the Canadian dollar vis-à-vis the U.S. dollar, enhances the competitive position of Canadian producers.

In recent years, very large liability settlements have resulted from mishaps involving hazardous products. These settlements have lead to significant increases in insurance rates for the distributors of certain fertilizer products.

3. FEDERAL AND PROVINCIAL PROGRAMS AND POLICIES

With the exception of energy policies, this sector is not dependent on government programs and policies. Energy policy however, is of vital importance, particularly to the nitrogen segment, since energy costs can represent as much as 70% of the costs of producing ammonia and from 30-35% of the costs of urea.

Recent regulatory changes concerning the transport of hazardous goods have resulted in costly differences between Canadian and U.S. regulations. Requirements for specially trained personnel in the handling of ammonium nitrate have increased distribution costs.

4. EVOLVING ENVIRONMENT

The Canadian fertilizer industry is affected by foreign farm policies, the cyclical nature of the industry, the value of the Canadian dollar and Canada's strong resource position.

Limitation of arable land and the ever increasing demand for world food production drives the demand for fertilizer. As a result, fertilizer demand is expected to continue to increase at a steady rate. In 1984, 67 million tonnes of nitrogen, 35 million tonnes of phosphorus and 28 million tonnes of potassium were consumed worldwide. The FAO/UNIDO/World Bank Working Group on Fertilizers estimate that world consumption of all three nutrients will advance by 2% - 3% per annum through 1995. As a result, significant new fertilizer capacity will be required throughout the world on a regular basis to meet the steady advance of world consumption.

There are phosphate rock deposits in northern Ontario which, to date, have not proven commercially viable. However, large quantities of surplus sulphuric acid that will result from Ontario smelters' compliance with environmental requirements and may improve the prospets of developing these phosphate rock deposits.

In the potash sector, very soft demand and new sources of supply, both in Canada (New Brunswick) and outside (Jordan), have recently intensified competition in world markets. These conditions are not expected to improve until well into the 1990s. If new sources of supply are added in the interim (e.g. Manitoba), then it may take even longer.

5. COMPETITIVENESS ASSESSMENT

Nitrogen

The Canadian nitrogen industry supplies just over 25% of the North American market. This level could be maintained if natural gas remains favourably priced offsetting the transportation and capital cost disadvantages. Existing Canadian producers have demonstrated an ability to market effectively in the U.S.

Canadian nitrogen products can be competitive in offshore markets only when international demand and prices are strong. In periods of international oversupply such as currently exists, the Canadian industry's costs preclude off-shore sales.

Phosphates

Canadian phosphate producers are not competitive internationally and generally cannot compete domestically except in local markets. This is unlikely to change, given the trend to vertical integration in phosphate rock producing countries.

Potash

The Canadian potash industry is well able to compete internationally. Canadian reserves are estimated to be in excess of 1,000 years of high grade, easily mined ores. Canadian costs of production are the lowest in the world. However, because of the long distances involved in Canada, transportation can, at times of low international prices, reduce Canadian profit margins. It is expected that Canada will maintain its traditional 30% share of the growing international market over the long term.

Prepared by: Resource Processing Industries Branch
DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

Assistant Deputy Minister
Consumer Goods, Services and Resource Processing

Date: May 13, 1986

DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

FACT SHEET

NAME OF SECTOR: Fertilizers **SIC(s) COVERED:** 3721, 3722, 0624 (1980 SICs)

1. PRINCIPAL STATISTICS (excludes bulk blending segment)

	1976	1980	1981	1982	1983	1984	1985
Establishments	26	26	26	26	26	27	28
Employment*	11,400	12,300	12,300	12,400	12,200	13,600	13,600
Shipments ($ million)*	796	1,677	1,869	1,719	1,845	2,204	N/A
Gross Domestic Product							
Investment ($ million)	N/A	N/A	N/A	N/A	4,184	4,438	N/A
Profits After Tax ($ million)	N/A	N/A	N/A	N/A	(20)	148	N/A
(% of sales)	N/A	N/A	N/A	N/A	-1%	6.8%	N/A

N/A - Data not available.
* - includes bulk blending segment.

2. TRADE STATISTICS ($ million)

	1976	1980	1981	1982	1983	1984	1985
Exports (Stats Can)**	577	1,313	1,420	1,159	1,286	1,675	N/A
Exports (FOB producer)	433	985	1,065	869	930	1,240	N/A
Domestic Shipments	363	692	804	850	915	964	N/A
Imports***	17	143	170	153	196	213	207
Canadian Market	350	835	974	1,003	1,111	1,177	N/A
Exports as % of Shipments	54%	59%	60%	50%	50%	56%	N/A
Imports as % of Domestic Market	5%	17%	17%	15%	18%	18%	N/A
Cdn. Share of Int'l Market	21%	22%	22%	20%	17%	20%	N/A

**Stats Canada figures include freight to Cdn. border/port
***Excludes phosphate rock imports.

Source of imports (top 4)

	U.S.	E.E.C.	Asia	Others
1981	97%	2%	--	1%
1982	97%	1%	--	2%
1983	92%	7%	.5%	.5%
1984	83%	11%	1%	5%

Destination of exports (top 4)

1981	71%	1%	20%	8%
1982	73%	1%	20%	6%
1983	70%	1%	22%	7%
1984	65%	2%	25%	8%

3. REGIONAL DISTRIBUTION (Excludes bulk blending segment)

	Atlantic	Quebec	Ontario	Prairies	B.C.
Establishments (% of total)	5	0	20	70	5
Employment (% of total)	5	0	10	80	5
Shipments (% of total)	2	0	15	80	3

4. MAJOR FIRMS

Name	Ownership	Location of Major Plants
1. C-I-L Inc.	74% ICI (U.K.)	Ontario, Alberta
2. Esso Chemical Cda Ltd.	70% Exxon (U.S.)	Alberta
3. Potash Corporation of Saskatchewan	Prov. Crown Corp.	Saskatchewan
4. Sherritt-Gordon	35% Newmont Mining (U.S.)	Alberta
5. Cominco	53% CP Enterprises Ltd.	Saskatchewan, Alberta, B.C.

NOTE: Data for the above are taken from both Statistics Canada and industry sources.

June 4, 1986

DRAFT - PROJET

DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

COMPETITIVENESS PROFILE

FISHERY PRODUCTS INDUSTRY - ATLANTIC SHELLFISH

1. Structure and Performance

Structure

Atlantic shellfish production totalled $433 million in 1984, or 22% by value of national fishery products output and 31% of the total Atlantic coast output. Exports accounted, in 1984, for 72% of total shellfish production. The U.S. was the principal destination, followed by the EEC and Japan. The main Canadian species are: lobster (48% of 1984 production, by value); scallops (24%); crab (20%); shrimp (6%); and other shellfish principally clams, oysters and mussels (2%).

The shellfish industry operates in a different environment from other sub-sectors of the fishery. Highlights of these differences are: (a) generally low volume throughput, (b) high unit value of species, (c) specialized demand from the upper end of the market, (d) general profitability of operations and (e) short harvesting and processing seasons. Although large companies participate in this segment of the industry, it is characterized by private small to medium-sized owner-operated firms which specialize in the processing and marketing of one or more species. Output is sold to the foodservice, institutional and retail sectors. In the main, sales are via brokers, distributors, etc. with some direct sales. There is relatively little brand identification.

Canada accounts for some 15% of the world supply of lobster species. The Canadian resource is harvested to the limit of prudent resource management and demand is strong. The principal markets for Canadian lobster are the USA, the EEC and Japan and the principal product forms are live, frozen and canned. Competition comes from the USA, Cuba, Australia and Mexico. Nova Scotia, P.E.I. and New Brunswick are the prime sources of landings. The fishery is carried out primarily by small-scale enterprises or individual fishermen but the marketing is dominated by three major firms: National Sea Products, United Maritime Fishermen, and Clearwater. The harvest is seasonal and short, with most fishermen fishing for other species during the closed season.

Canada has about 10% of the world scallop supply. Canadian production is destined primarily for the U.S. market, in competition with U.S. domestic supply and Japanese imports (one-third of which are now from aquaculture). Scallops are sold in frozen, fresh chilled and in breaded or partially cooked form. The bulk of Canadian production is from the Georges Bank, off western Nova Scotia.

Canada supplies some 5% of world crab landings but about 20% of snow crab landings. Snow crab accounts for 90% of Canadian production. The industry is export oriented like the rest of the sector with the USA accounting for some 50% of Canadian exports, Japan for 25% and the EEC for 10%. The principal competitors are the U.S.A. for frozen crab and Japan and S.E. Asia for canned crab. Some 95% of Canadian output is sold as frozen and only 4% is canned. Both the harvesting and the processing sectors are characterized by small enterprises.

Canada is a net importer of shrimps with imports of $115 million in 1985 and exports of $20 million. Imports are primarily of the warm water species from the U.S. while Canadian production (which amounts to only 1% of the total world harvest) is of the smaller cold-water variety. Both meet separate and largely independent market requirements. Canadian exports are destined primarily to the USA with lesser volumes to the EEC and Japan. The principal competitors in the cold water shrimp market are the USA and Norway. The Canadian fishery is traditionally a small enterprise fishery with some recent expansion of a large boat fishery.

Other species in the industry, such as clams, mussels and oysters offer small but growing production opportunities. Squid is also classified as a shellfish and while of little current commercial significance, has reached harvests of up to 112,000 tonnes, principally for export to Japan.

Aquaculture of molluscs and lobster offers future potential but is still at an early stage of development and of no significance yet in production terms.

Performance

Atlantic coast shellfish landings (Pacific coast shellfish landings account for only 5% of the national total) have declined 27% between 1980-84 by volume and are equivalent to the landings of 10 years earlier. Landed values and value of shipments have not dropped to the same extent, reflecting an overall firming in prices. Lobster landings have been relatively stable, but crab and scallop volumes have fluctuated, making those segments of the industry somewhat volatile. Production volume of the sector has, in total, shown a decline, while employment, although not broken out, is believed to have declined at a somewhat faster pace due to process mechanization.

Crab, shrimp and squid markets have fluctuated widely. The crab fishery has benefited from a declining supply in Alaska which has stimulated Canadian exports to Japan. However, in the less significant canned crab segment, S.E. Asian volume and price competition has been affecting Canadian marketing efforts. Shrimp exports have been affected in the U.S. market by low-priced Norwegian product and by imports from S.E. Asia.

Because of the potential for profitability, and the large number of small companies involved, competition between processors for shellfish can be intense, driving up prices paid to fishermen, and reducing profit margins for particular species. From time to time, unexpected price declines result in substantial losses. However, a financial analysis of the Atlantic fishery products industry has indicated that shellfish processors have generated the best returns of the firms studied. Historically, specialty molluscs and crustaceans have been able to command higher than average prices relative to costs. As a result, gross margins in shellfish processing are higher than for most other fishery products. Because of the sector's profitability, new entrants tend to be attracted more readily than in the rest of the fishery.

2. Strengths and Weaknesses

a) Structural Factors

The shellfish industry, both in Canada and in world markets, is characterized by the availability of a limited supply, high-value resource for which demand is strong. The industry is essentially resource-driven with production and exports constrained for the most part by seasonal or cyclical resource availabilities, rather than international market conditions. The strength of international demand usually ensures output can be sold at remunerative prices, but competition in the upper-scale markets of developed countries is intense.

Shellfish earnings represent a solid contribution to the profitable earnings of the industry. U.S.-Canadian exchange rates obviously favour the industry but are less critical in this sector than in other fisheries sub-sectors.

A lower average fixed asset investment is required for shellfish processing than for the fish-processing industry as a whole and productivity has not been a major competitive concern. This is due to the small scale operation of most processors as well as the labour-intensive nature of the sector, at either the harvesting or processing stage. Labour productivity varies considerably by species and by province. The lower fixed asset investment makes it easier for shellfish processors to respond to changing resource and marketing circumstances and remain profitable. Mechanization has, to some extent, been used to substitute for labour in the crab sector but lags behind the Alaska industry for example. In the scallop sector, the fleet is now old (boats were not replaced due to the then ongoing Georges Bank dispute). Renewal, geared to the resource potential, will be necessary.

b) Trade Related Factors

In the key U.S. market, lobster, shrimp and scallops enter free of duty. Fresh and frozen crab and crabmeat face a 7.5% tariff, prepared or preserved crab and crabmeat (not in airtight containers) is 5% and the same product in airtight containers is 11%. Clams and oysters in airtight containers are also subject to duties ranging to 16.1%. However, the duties have a limited impact on trade volumes.

Canadian lobster exports face two potential obstacles that could affect volumes and returns. Firstly, there remains some concern that U.S. producers may seek a countervail investigation on the basis of the countervail investigation of the fresh groundfish industry. Secondly, legislation before Congress would limit lobster imports to certain sizes and exclude berried (egg carrying) or scraped lobsters to conform with U.S. resource management norms which differ from those in Canada. Similarly, U.S. size limits on scallops serve as a non tariff barrier to Canadian imports.

While shellfish imports face significant tariffs in the EEC with canned lobster, shrimp, squid, etc. bearing a tariff of 20%, live or whole frozen lobsters, 8%, and canned crab, 16%, this level of protection is not considered to affect Canadian market penetration, which is near the limit of supply. It may, however, have some negative effect on revenue.

In Japan, fresh or frozen crab is subject to a relatively low 6% tariff and fresh or frozen shrimp and lobster to 3%. Scallops are subject to a 10% tariff and quantitative restrictions. The squid catch is highly dependent on the Japanese market and can be very profitable under favourable resource and market conditions. Squid imports are subject to a 10% tariff and import quotas.

Canada maintains tariff protection on crabmeat (from 8% to 11%), frozen canned lobster (6%), prepared clams (6%) and clams in airtight containers (10%), oysters and juices of oysters or clams (5.6% to 6.4%). Canada does not impose any NTB's on shellfish.

c) Technological Factors

The special characteristics of the shellfish processing industry and higher margins have allowed greater flexibility to absorb product innovation and market testing costs. The product mix includes live products (lobsters), frozen or cooked items, some canned meat and recently developed specialty products (e.g. frozen-in-brine lobster, squid tubes). Certain segments of the industry face product obsolescence (e.g. hot pack lobster).

The industry is labour intensive in Canada. The use of automation is not as pronounced in the Canadian industry as it is in parts of the USA (e.g. Alaska), however, this is changing. Future trends point to more mechanization into the 1990's.

Surimi-based products, which resemble shellfish products but use less expensive groundfish as raw material, were expected to offer a major source of potential competition to natural products. Reports, however, indicate that this might not be a major concern as these products may be creating a niche and/or expanding the total market. Market interest has rapidly triggered production investment in the United States and subsequently in Canada and Europe. Canadian production has so far, however, been limited. Considerable potential exists for surimi not only for alternate fish products (imitation crab legs, etc.) but also for protein enhancement or substitution in other products.

The industry has been slow to adopt aquaculture and increased competition can be expected from Japan, in scallop production. Aquaculture of warm-water shrimp is expanding rapidly, however, this does not compete directly with Canadian cold-water shrimp. Canada is a world leader in lobster culture, but the technology is very recent.

3. Federal and Provincial Programs and Policies

A wide range of federal and provincial support programs have been available to the fish processing industry. In the past, the RDIA program of DREE was widely used for plant modernizations and expansions. Federal Government assistance for expansions is now strictly limited under guidelines approved for the IRDP of DRIE because overcapacity exists in most segments of the industry. IRDP assistance is now focussed on modernizations and productivity improvements. Various provincial programs aimed at both the primary fishing sector or at the fishery products industry have also been made available. In addition the federal government assumed an equity position in certain processing firms during the 1983 restructuring.

Because the industry is based upon the catching and processing of a common-property biological resource, it is also subject to a broad range of regulatory controls. Fishing licences are controlled by federal authorities and differentiate between size and type of vessel and gear and/or inshore and offshore fishing operations. Processing plants are licenced by provincial authorities and are subject to federal inspection requirements. Provincial governments also may regulate plant standards and in the case of Quebec, as an example, significant upgrading has been required. Utilization of the biological resource is regulated through the determination of total allowable catches (TAC) and/or limits on the traps used and the duration of the harvest as well as the setting of enterprise allocations for shrimp and lobster.

Foreign investment in the industry is influenced by Fisheries and Oceans policy which prohibits the granting of fishing licences to any firm with significant foreign participation. This policy is being reviewed by the Minister of Fisheries and Oceans, with a view of being more supportive of foreign investments. Foreign investment in the processing sector is possible, however, provided the operation does not involve harvesting.

4. Evolving Environment

Although competition will remain intense, Canada has a good reputation as a reliable supplier of high quality shellfish products. Profitability of the sub-sector allows more investment in improving productivity, and new product and market development.

In the case of lobster, the resource outlook is generally stable. Fresh lobster should continue to remain in a strong market position. In the short term, the industry is likely to strive for mortality reduction during the holding/or transporting of live lobsters. In the longer term, development will be directed at lobster culture so as to domesticate the species and accelerate the growth rate.

There has been increased competition in the U.S. shrimp market from low-priced Norwegian product and imports from S.E. Asia. However, an anticipated reduction of the Scandinavian resource, and a moderately increasing Canadian resource should result in the emergence of a stronger market.

Now that the Georges Bank dispute has been settled the scallop market should benefit from an increase in scallop resources. Resource projections show modest increases, but as noted, the fleet will require renewal.

The Canadian snow crab industry has benefited from the decline of the Alaska crab fishery which has stimulated exports to Japan. The Quebec crab fishery in particular, has expanded very rapidly. The resource projections for Alaska tanner crab show long term declines. This type of crab competes directly with Canadian snow crab, and therefore the outlook for the Atlantic industry is very promising. Interprovincial competition for resource in both crab and lobster is intense.

Because of increased prices and the resource limitation, there has been a trend to orient production to the most lucrative products or product forms and to seek increased productivity. This is reflected in the

lobster trade, for instance by increased sales of live lobsters and investments in related holding facilities which increase productivity and allow the matching of supply to market demand. At the same time, due to higher prices and resource limitations, less important shellfish species offer emerging development opportunities either through volume increases (e.g. oysters) or the evolution of experimental fisheries to commercial exploitation (e.g. hardshell clams). As the technology of meat removal progresses, previously unutilized crab species may also prove to be marketable.

Canada is and will likely remain a major shellfish importer, particularly of warm-water shrimp.

5. Competitiveness Assessment

The shellfish industry is competitive in both the domestic and international markets and can be expected to remain so. The industry is somewhat volatile but is in general profitable. Competition from surimi products may require adjustments, but limited supply of some natural resource species and a generally strong demand should keep the Atlantic shellfish sector healthy.

Prepared by: Food and Consumer Products Industries Branch
DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

Assistant Deputy Minister
Consumer Goods, Services and Resource Processing

Date: JUN 5 1986
JUIN

June 4, 1986

FACT SHEET

NAME OF SECTOR: Fishery Products - Atlantic Shellfish

SIC(s) COVERED: Sub-sector 102 *

A)

1. PRINCIPAL STATISTICS - Atlantic Coast[1]

	1971	1980	1981	1982	1983	1984	Preliminary 1985
Establishments	272	292	290	290	325	N/A	N/A
Employment	14,995	21,909	22,168	21,604	20,680	N/A	N/A
Shipments ($ millions)	316	1,157	1,278	1,436	1,414	1,393	1,571
Shipments (000 tonnes)	N/A	536	567	566	490	535	569
Landings (000 tonnes)	1,094	1,156	1,195	1,198	1,108	1,072	1,116
Landed Values ($000)	133	510	568	589	621	579	646

2. TRADE STATISTICS - Atlantic Coast[1]

	1971	1980	1981	1982	1983	Preliminary 1984	1985
Exports ($ millions)	N/A	965	1,104	1,177	1,150	1,104	N/A
Domestic Shipments ($ millions)	N/A	192	174	259	264	289	N/A
Exports as % of Shipments	N/A	83	86	82	81	79	N/A

B)

1. PRINCIPAL STATISTICS - Atlantic Shellfish[2]

	1971	1980	1981	1982	1983	1984	Preliminary 1985
Landings (000 tonnes)	76	174	191	170	142	131	N/A
Landed Values ($000,000)	50	189	244	238	295	276	N/A
Shipments ($000,000)	82	332	384	445	515	433	461

2. TRADE STATISTICS - Atlantic Shellfish[2]

Destination of Exports (% of Total $)	U.S.	E.C.C.	JAPAN	OTHERS
1981	71	20	4	6
1982	70	18	7	5
1983	78	13	6	3
1984	78	11	8	3

3. MAJOR FIRMS - Atlantic Shellfish

Name	Ownership	Location of Major Plants
National Sea Products	Canadian	N.S., Nfld., N.B., P.E.I.
United Maritime Fishermen	"	N.B., N.S.

*SIC on 1980 basis

1 Atlantic Coast industry comprises 3 sub-sectors: Atlantic pelagic, Atlantic groundfish and Atlantic shellfish, and 5 provinces: Nfld., N.S., P.E.I., N.B. and Quebec.

2 Breakouts have been provided for the Atlantic shellfish sub-sector to the extent available.

***Source:**

- Establishments and production-related employment from Statistics Canada 32-216. Employment consists of production and administrative employees. It excludes fishermen/vessel crews whether or not employed by a processing firm. The number of establishments and employment appear to be underestimated due to the reporting methods used. Peak season employment will considerably exceed the figures shown.
- Shipments equal production reported by DFO Annual Statistical Review
- Exports from DFO reports
- Domestic shipments equal total shipments less exports (inventory fluctuations may distort values)
- Landings are in live weight equivalent, whereas shipments are in product weight

DRAFT - PROJET

June 4, 1986

DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

COMPETITIVENESS PROFILE

FISHERY PRODUCTS INDUSTRY - ATLANTIC GROUNDFISH

1. Structure and Performance

Structure

The Atlantic groundfish industry comprises the processing of bottom-feeding seafish such as cod, haddock, flatfish and other species. It is the largest segment, in terms of both employment and output, of the Canadian fisheries industry and accounted, in 1984, for $738 million or 37% of the total value of shipments (i.e. processed product) of the fishery products sector and 53% of Atlantic shipments. Newfoundland and Nova Scotia are the two primary harvesting provinces, accounting for about 45% and 40% respectively of total groundfish landings.

Two major firms account for the majority of sales - Fishery Products International (FPI) and National Sea Products (NSP). Both companies are world class, multi-national enterprises (MNE's) which have set up subsidiary processing and sales operations in the U.S. market. In addition to these two firms which currently include significant government equity participation, the industry includes many privately owned firms.

FPI and NSP (and some of the smaller firms) are vertically integrated, trawler-owning companies, operating primarily in the "offshore" sector. As such they seek supplies year round to maintain plant operations. Production of inshore plants is limited by weather and the fishing season (both majors also operate "inshore" plants). The inshore fishery differs from the offshore in that the vessels used in the former are under 25 tonnes.

Most of the smaller scale inshore processors operate without harvesting capability. Privately owned fishing vessels serve these plants. They also supplement supplies of the vertically integrated plants.

The range of plant sizes varies from large world scale to small seasonal plants. Economies of scale are significant in the production of some products but on-site management and product flexibility can allow profitable operation of small plants.

Groundfish is processed into a variety of products. It is most commonly frozen (about 60% of the total) into blocks and into frozen fillets. About 25% of the catch is salted and about 12% is sold fresh, mostly in filleted form.

The groundfish industry is heavily export oriented. Exports account for 80% of production. The U.S. market, in turn, accounts for 84% of total groundfish exports. In the case of both frozen blocks and fillets the U.S. market accounts for over 90% of exports of these products. Canada is the largest supplier of groundfish to the U.S. market, accounting for 40% of total U.S. imports. Intense competition is provided by Iceland, Denmark and Norway.

Canada supplies some 90% of total U.S. imports of fresh groundfish (a rapidly growing and profitable market), around 50% of frozen fillet imports and around 34% of frozen block imports. The bulk of Canadian production is in the mid-quality, moderately priced, value-for-money segment. By volume and value, frozen fillets and blocks constitute the largest import items. The U.S. imports virtually all its block requirements which are used for further processing. The block market is supplied at the low end by South America and Korea, with lower price, lower quality species (primarily hake). At the mid and top ends of the market Canadian product competes with Scandinavian product with price directly related to the quality and product specifications of the customer. Canadian and Danish product compete directly on an open block market while most of the Icelandic production is brought in for further processing in Icelandic-owned U.S. plants. (Scandinavian and Canadian product is primarily cod.) Canada has successfully raised its share of the U.S. block market from 17% in 1977 to around 34%. Measures have and are being taken to upgrade the quality of Canadian production enabling Canada to meet a broad range of market requirements.

The bulk of U.S. domestic groundfish production goes to the fresh market on the Atlantic coast and, in the case of the Alaska fishery, to frozen products. The U.S. Atlantic resource has been declining while the Alaska resource still awaits full development by the domestic harvesting and processing industry. Foreign fishing interests are allowed to take the bulk of the U.S. catch. Due to tariff escalation in both the U.S. and Canada on breaded/battered portions and sticks, the largest Canadian processors have established subsidiaries in the U.S. for further processing and U.S. companies have established similar operations here.

The U.S. fisheries market is split between public food service (46%), retail sales (36%) and institutional sales (18%). Imports are basically on a commodity basis, differentiated primarily as to source and quality. Branding is not a major factor.

Much of the balance of Canadian groundfish exports go to the EEC in both frozen and salted form. Exports have been restricted by trade impediments, discriminatory trading arrangements and currency relationships. Canada has been regarded by the EEC as a residual supplier. Saltfish is also exported to Spain, Portugal, the Caribbean and Latin America.

The Canadian industry is marginally more oriented to frozen production than its Scandinavian competitors. The Scandinavian processors produce a higher percentage of saltfish. Norway's exports are more diversified as to both markets and product forms (South America and Africa have been important markets for saltfish and also dried fish respectively). In addition, Scandinavian processors have significant EEC sales and are able to sell lower quality product in the COMECON countries. In the U.S. market, Scandinavian groundfish is sold through a few large vertically integrated co-operatives or marketing associations some of whom have established integrated further processing facilities (similar to the Canadian operations already noted).

Canada imports some $90 million of groundfish products, primarily from the U.S. and primarily in whole dressed or fillet form for consumption. Minor quantities are used for processing.

Performance

The sector's performance has been profoundly affected by the declaration of the 200 mile economic zone in 1977. In terms of supply, the extended resource management which resulted allowed a steady strengthening of groundfish stocks. Production volumes also increased markedly over the same period. However, anticipation of an increased fish supply also resulted in a substantial expansion of the industry's capacity, well beyond economic necessity (processing facilities increased 35% between 1977 and 1981 and freezing capacity increased 2½ times). Much of the expansion had been debt-financed, and high interest rates and low demand during the recession had a dramatic negative effect on profits. At the same time, international supply pressures on the main consuming markets kept prices low while production costs continued to increase. The resulting cost-price squeeze drove many processors to the verge of bankruptcy. Severe losses occurred, beginning in 1980. Gross margins of firms accounting for over 80% of groundfish production declined from around 19% in 1977-78 to about 11% in 1980-81 and net income as a percentage of sales dropped from +4.6% to -6.0%. Nonetheless, some of the smaller firms, who were less highly leveraged and had greater flexibility, weathered the recession better (and continue to perform well).

In 1984, FPI and NSP received large equity investments from the federal and provincial governments to assist in a financial restructuring designed to return them to profitability. Adjustment measures have continued. Under a new business plan, FPI now projects a profit for 1986. NSP earned a profit in 1985.

Up until late 1985, groundfish prices and margins remained depressed and production flat. However, a tighter world resource situation subsequently produced a dramatic strengthening of prices in all product

categories. This has been assisted by a growth in U.S. consumption due to a preference for lighter and "healthier" foods. The Canadian industry has also benefited from the successful development of sales of higher value products, lessening dependence on the lower-value, commodity-type block market. These have included premium frozen fillets and in particular the rapid development of higher-margin fresh fish sales, which have made a major contribution to the improved profitability of the industry.

Introduction of a new system in 1982 of allocating fish quotas (Enterprise Allocations) has also enabled a better utilization of capital invested in both fleets and processing. Each offshore processor is now annually assigned an individual share of the overall offshore groundfish quota. This can be utilized over the season/year in accordance with plant needs whereas formerly, competition for the resource forced uneven and inefficient harvesting. This has reduced costs and should give Canada a long-term advantage in world markets.

2. Strengths and Weaknesses

a) Structural

The implementation of the 200 mile economic zones in the mid '70s resulted in major structural changes to the world fishery. In many cases, major producer countries were transformed overnight into importers. While the Canadian industry went through a period of turmoil and adjustment, it did achieve the advantage of a large, well-managed groundfish resource base. While only limited additional volume growth is currently projected, the situation contrasts with resource constraints faced by many other producing countries and the overall world outlook where future increases may in large part come from "inferior" species such as South American hake or Alaska pollock. The Canadian industry also benefits from proximity and direct transportation connections to the expanding U.S. market.

The bulk of Canadian exports remain concentrated in the price-sensitive, commodity (frozen blocks and non-premium fillets) end of the market. Here, the Canadian industry may be at a disadvantage in comparison with the Scandinavian processors in terms of productivity, technological innovation and the perceived quality of Canadian products. Canadian quality has been improving as markets for higher quality, higher valued products develop. Nonetheless, Canada's quality continues to lag in the perception of many customers.

Concentration of the groundfish sector in a few large multi-plant companies, during the industry restructuring of 1983 does not necessarily mean that economies of scale have been achieved. During the expansionary period of the late 70's, many plants were built without due consideration to long term raw material supply, availability of skilled labour and management, and marketability of the production. The restructured companies have continued to operate most of these plants. There is strong pressure to maintain the plants as they in many cases ensure the survival of single-industry communities. Federal policy calls for divestiture of the federal position in these companies and returning the companies to profitability. This could lead to closure of some plants and losses in employment.

Off-shore markets, including Japan, offer additional market opportunities for existing and/or underutilized species. The Canadian government's decision to authorize up to three factory freezer trawler licences represents an important step to world class technology and should help the industry to better meet evolving export market demand for frozen-at-sea products, particularly previously underutilized species such as redfish which require this technology.

b) Trade Related Factors

In the key U.S. market, tariffs apply only to fresh or frozen groundfish fillets ($0.01875/lb.-which represents a potential loss of income particularly to Canadian processors of frozen fillets who traditionally operate on very thin margins) and on further processed

items such as fish sticks/ battered and breaded products (dutiable at 10%-15%) and prepared entrée type items dutiable at 6%. Imports to Canada of fish sticks, portions, and like products are similarly dutiable, at 11% and entrée items at 5%-7.5% (other groundfish items can enter free of duty).

In addition to these tariff barriers, "Buy American" provisions on federal and state purchases (e.g. for school lunch programs and for government or armed forces commissaries) require supply of U.S. processed product and hence act as an NTB.

U.S./Canadian trade in groundfish is also becoming increasingly influenced by the complaints of unfair trade made by the U.S. fishing industry. The Canadian concern is not with the application of import protection measures per se but with their use as a form of harassment. While the industry has been subject to a series of investigations, in only two cases have protective measures been instituted: saltfish exports became subject to anti-dumping duties in 1985; and in a May 1986 decision, a countervailing duty of 5.82% ad valorem, attributed to a wide range of federal and provincial programs, was imposed on imports of whole fresh groundfish. Filleted fresh groundfish, in the same investigation, was found not to be causing injury.

In the EEC, trade restrictions are both numerous and complex. Major Canadian export interests, which consist primarily of frozen and salt cod, are subject to varying tariff/quota restrictions. In the case of frozen cod, access restrictions discriminate in favour of Norway and Iceland, leaving Canada at a competitive disadvantage. A Long Term Agreement, negotiated between Canada and the EEC to provide Canada with more favourable access on a number of groundfish items in return for EEC access to Canadian fish stocks, has had only limited benefits (it is due to expire at the end of 1987). The EEC may also specify minimum import prices while EEC export subsidies impact on Canadian exports to third countries. Spain and Portugal are both major saltfish markets and their accession to the EEC is likely to result in upwards pressure on existing EEC fishery duties and on linkage to resource access issues. Both countries have import licensing requirements.

Groundfish exports to Japan are subject to quota restrictions and significant tariff protection. The protective measures are aimed principally at Alaska pollock but impact indirectly on Canadian cod.

c) Technological Factors

Given post-1980 financial results, processors have been unable to invest in productivity-related improvements, even though the industry has demonstrated that significant productivity gains can be made when capital is substituted for labour. Social factors (i.e. employment maintenance) and/or lack of sufficient scale may be limiting factors in specific cases. The groundfish industry has been unable to catch up with its Scandinavian counterparts who readily adopted wide-ranging technological innovations in the processing sector, including the handling, automated processing, transportation and packaging of fish products. Application of these measures (which are generally available to the Canadian industry) and strict quality control has assisted our competitors in supplying consistent, high quality products to the marketplace. Now that profits are returning, Canada is also starting to take advantage of these measures. Much of the off-shore trawler fleet is also in need of upgrading or replacement which would entail substantial capital expenditures.

d) Other Factors

The decline in the value of the Canadian dollar, relative to the U.S. dollar, might have benefited Canada more if it were not for larger declines in the currencies of our Scandinavian competitors. These exchange rate changes have made the USA a more lucrative

market for Norway, Iceland and Denmark. This pressure may ease somewhat as Scandinavian currencies appreciate against the U.S. dollar.

3. Federal and Provincial Programs and Policies

A wide range of federal and provincial support programs have been available to the fishing industry. In the past, the RDIA program of DREE was widely used for plant modernization and expansion. Federal Government assistance for expansion is now strictly limited under guidelines approved for the IRDP of DRIE because significant overcapacity exists in most segments of the industry. IRDP assistance is now focussed on modernization and productivity improvement.

Because the industry is based upon the catching and processing of a common-property biological resource, it is also subject to a broad range of regulatory controls. Fishing licences are controlled by federal authorities and differentiate between size and type of vessel and gear and/or inshore and offshore fishing operations. The annual groundfish management plan determined by Fisheries and Oceans attempts to balance regional resource availabilities, and inshore and offshore requirements and capacities. Processing plants are licenced by provincial authorities and are subject to federal inspection requirements. A National Quality Improvement Program is being considered for dockside and final product grading. Provincial governments also may regulate plant standards and in the case of Quebec, as an example, significant upgrading has been required.

Utilization of the biological resource is regulated through the determination of total allowable catches (TAC) as well as the setting of offshore enterprise allocations and inshore and middle distance quotas by gear sector. Resource utilization is also governed, in the case of transboundary or straddling (the 200 mile economic zone) stocks by various international conventions to which Canada is a member. The Canadian Saltfish Corporation, a federal Crown Corporation, has a monopoly on the sale of saltfish production from Newfoundland and the Quebec north shore.

Foreign investment in the industry is influenced by Fisheries and Oceans policy which prohibits the granting of fishing licences to any firm with significant foreign participation. This policy is being reviewed by the Minister of Fisheries and Oceans, with a view of being more supportive of foreign investments. Foreign investment in the processing sector is possible, however, provided the operation does not involve harvesting.

4. Evolving Environment

The industry is expected to benefit from stronger demand and a relatively strong resource position. World groundfish resources are projected to increase but most of the increase will come from inferior species. The U.S. market is and will remain Canada's chief export market. Accelerated development of the Alaska groundfish industry could jeopardize the industry's long term prospects. The inroads which the Alaska fishery can make will be influenced by Canada's ability to protect its U.S. export market through price, quality, selective product differentiation, and participation in growth segments of the market. Continued lack of success in achieving greater access (and market diversification) to the EEC, Japan and other markets could also hurt the industry. Developing countries have already demonstrated their ability to create acceptance of their competing groundfish products (albeit at the lower end of the market) in major importing countries.

Groundfish processors will need to make changes which will involve closing inefficient plants and increasing the degree of mechanization in others. Changes could result in substantially less employment, particularly in Newfoundland and other areas where unemployment is very high. Economic adjustment will be difficult because of few alternative employment sources in the areas most affected.

The U.S. market for fresh fish has been expanding rapidly. Adapting to this demand has necessitated changes in harvesting, packaging and

shipping methods, and further changes may be required as it is forecast that the market will continue to grow. Health concerns and a trend to "light" protein sources such as chicken and fish have had a positive impact on consumption in the U.S. market and the market for both fresh and frozen fish is expected to show continued growth-providing prices remain competitive with other protein sources. A related factor has been an increased emphasis on product innovation and upgrading, including such items as complete entrées or seafoods in sauce.

Investment in the industry is a priority consideration with the announced intention of the government to divest itself of the equity positions which it assumed during the industry restructuring. New investment could also assist the industry in improving quality, technology and productivity and in expanding and diversifying markets as well as improving the equity base.

5. Competitiveness Assessment

The competitive position of the industry must be viewed firstly in terms of its export orientation and overwhelming reliance on the U.S. market and secondly by its primary dependance on frozen commodity-type block and fillet products.

Despite various difficulties and structural disadvantages, the Canadian industry has been and will remain competitive in the major frozen block and fillet product areas of the U.S. market. It will continue to face pressure at the low (and probably slower growth) end of the U.S. market from developing countries and at the mid and high end from Scandinavian suppliers. Canadian efforts to improve quality will improve the Canadian product image and competitiveness. A strong Canadian resource base will likely offer an increasingly important competitive strength. The U.S. market is growing and evolving. This is enabling Canadian suppliers to competitively build up a profitable fresh fish trade, supplementing resource-limited U.S. supplies, while also expanding exports of premium frozen products. The Canadian industry will need to continue adjusting production to meet changing conditions and will need to implement measures to upgrade productivity.

The Canadian domestic market ranks after the U.S. market in terms of shipments. The industry already operates competitively in a tariff-free market other than for breaded/battered/entrée items which are subject to protection on both sides of the border.

In the EEC market, which represents an important opportunity for diversification, Canada has tended to serve as a residual supplier. This has resulted from Canadian production costs being out of line due to exchange relationships and due to the more favourable trade access terms offered to Scandinavian suppliers. The currency problem has been easing and hence Canadian ability to compete has improved. Canada has also had an inconsistent quality image, which, however, is a factor the industry is resolving.

Prospects in the Japanese market are more limited as the Canadian industry can only compete on specific products/market niches. The introduction of freezer trawlers will allow production of products such as redfish in the form required by the Japanese markets. Japanese trade measures, however, will still impede development of this market and the market for cod.

Prepared by: Food and Consumer Products Industries Branch
DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

Assistant Deputy Minister
Consumer Goods, Services and Resource Processing

Date: JUN JUIN 5 1986

FACT SHEET

NAME OF SECTOR: Fishery Products - Atlantic Groundfish

SIC(s) COVERED: Sub-sector 102 *

A)

1. PRINCIPAL STATISTICS - Atlantic Coast[1]

	1971	1980	1981	1982	1983	1984	Preliminary 1985
Establishments	272	292	290	290	325	N/A	N/A
Employment	14,995	21,909	22,168	21,604	20,680	N/A	N/A
Shipments ($ millions)	316	1,157	1,278	1,436	1,414	1,393	1,571
Shipments (000 tonnes)	N/A	536	567	566	490	535	569
Landings (000 tonnes)	1,094	1,156	1,195	1,198	1,108	1,072	1,116
Landed Values ($000)	133	510	568	589	621	579	646

2. TRADE STATISTICS - Atlantic Coast[1]

	1971	1980	1981	1982	1983	Preliminary 1984	1985
Exports ($ millions)	N/A	965	1,104	1,177	1,150	1,104	N/A
Domestic Shipments ($ millions)	N/A	192	174	259	264	289	N/A
Exports as % of Shipments	N/A	83	86	82	81	79	N/A

B)

1. PRINCIPAL STATISTICS - Atlantic Groundfish[2]

	1971	1980	1981	1982	1983	1984	Preliminary 1985
Landings (000 tonnes)	569	740	780	820	766	740	N/A
Landed Values ($000,000)	60	241	264	291	277	260	N/A
Shipments ($000,000)	156	599	678	784	725	738	857

2. TRADE STATISTICS - Atlantic Groundfish[2]

Destination of Exports (% of Total $)	U.S.	E.C.C.	OTHERS
1981	76	6	18
1982	76	6	18
1983	83	5	12
1984	84	5	11

3. MAJOR FIRMS - Atlantic Groundfish

Name	Ownership	Location of Major Plants
National Sea Products	Canadian	N.S., N.B.
Fishery Products International	"	Nfld, N.S.

*SIC on 1980 basis

1 Atlantic Coast industry comprises 3 sub-sectors: Atlantic pelagic, Atlantic groundfish and Atlantic shellfish, and 5 provinces: Nfld., N.S., P.E.I., N.B. and Quebec.

2 Breakouts have been provided for the Atlantic groundfish sub-sector to the extent available.

* Source:
- Establishments and production-related employment from Statistics Canada 32-216. Employment consists of production and administrative employees. It excludes fishermen/vessel crews whether or not employed by a processing firm. The number of establishments and employment appear to be underestimated due to the reporting methods used. Peak season employment will considerably exceed the figures shown.
- Shipments equal production reported by DFO Annual Statistical Review
- Exports from DFO reports
- Domestic shipments equal total shipments less exports (inventory fluctuations may distort values)
- Landings are in live weight equivalent, whereas shipments are in product weight

June 4, 1986

DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

COMPETITIVENESS PROFILE

FISHERY PRODUCTS INDUSTRY - ATLANTIC PELAGICS

1. Structure and Performance

Structure

The Atlantic pelagic industry comprises non bottom-dwelling seafish, principally herring, and of lesser importance, capelin and mackerel. It accounted for $218 million or only 11% by value of the output of the fishery products industry in 1984, ranking well after the other sub-sectors examined. Some 55% of pelagic production is exported.

Herring accounted for 48% of the landed value (i.e. live basis) of this category in 1984. It is processed primarily to frozen form (whole or filleted), although there is a significant canned herring/sardine production, and lesser quantities are processed in cured or pickled form. Production and export of Atlantic herring roe is a newer development. Capelin production, which reached 23% of landed value in 1984, is almost exclusively for export in frozen form, containing roe. Mackerel production, accounting for 9% of landed value, is primarily fished for bait with some production of canned product largely for food-aid sales. Canada does not have a significant commercial tuna fishery but imports tuna, a species available from numerous supplier countries, for canning by Star-Kist Canada. Canada also imports some $40 million of canned tuna. Commercial fishery of Atlantic salmon has been very limited in recent years, due to a stock problem.

The herring processing industry is located throughout the Maritimes while capelin processing occurs primarily in Newfoundland. The pelagics industry is now dominated by independently owned and operated fish processing establishments, although National Sea Products and Fishery Products International continue to be involved. Their pelagic operations are, however, slight when compared to their groundfish operations and have also diminished since the late seventies as has industry production generally. Connors Bros. Ltd. remains the dominant processor in canned herring and is reputed to be the largest sardine canner in the world.

The industry is supplied for the most part by independent fishermen. There is little backward integration by processors. Fishermen also have had, since 1976, the option of selling a part of their catch directly to foreign vessels for processing and sale offshore. The direct sales program was intended to stimulate new markets and has had the effect of improving fishermen's returns. Output is usually marketed on a commodity basis, an exception being the sardine segment where Connors production is sold on a branded basis.

Both the herring and capelin industry are export oriented although total export values are well under those of other fish sub-sectors. Japan, in 1984, accounted for 28% of all exports, principally processed Atlantic herring roe, a developing market, and capelin, sold in competition with Norway and the USSR. The U.S. accounted for 23% of exports (the relative importance of the U.S. and Japan fluctuate year by year depending upon the volatile resource availability and market conditions for capelin). Exports to the U.S. consist primarily of fresh whole herring and cured herring shipped in barrelled form. Small quantities of smoked and frozen herring make up the balance. The fresh herring is destined to U.S. sardine processors and is often balanced by similar volumes imported by Canadian processors for seasonal requirements.

Canada exports herring to Europe, primarily in frozen form, but as a residual supplier to European production. European producers (Norway, Denmark, Netherlands, and the Federal Republic of Germany) also compete with Canadian suppliers in the U.S. and Caribbean market.

The canned sardine market is very export oriented with key Canadian markets being Australia, New Zealand, Trinidad and Tobago, and the U.S. Competition includes Spain, Morocco and Yugoslavia, all of whom are low cost producers, but with whom Connors Bros. is competitive.

Canada also sells herring under bilateral agreements to the centrally planned countries. Mackerel exports are limited primarily to food aid sales.

Performance

Over the last 10 years, the herring fishery has experienced both a boom and a bust, occasioned by international resource circumstances. A collapse in North Sea and Baltic herring stocks in the mid-1970's opened a hitherto untapped European market for Canadian herring. This market had largely been supplied by the European fishery, while the Canadian herring fishery had been directed to the low-value, non-food production of oil and meal. In 1976, to take up the opportunity afforded by the European market and to upgrade production, the federal government, through a series of policy initiatives, ensured the transition of the Atlantic industry to a food fishery. Although substantial inroads were made at that time, Canada was gradually forced out of the market when North Sea stocks began to rebuild. Atlantic herring production, exports and profitability peaked in 1978, and have fallen off significantly in recent years as the European market for Canadian product (principally frozen herring for reprocessing) contracted. With the market (and price) decline, many Atlantic herring processing plants were shut down.

There has been little room for movement to alternate herring product forms and production has fallen. Markets for cured herring (primarily the U.S.) are static and smoked herring markets, which were stable for many years, have been in a gradual decline since the early 1970's. The canned herring/sardine market is perhaps an exception, with exports holding stable, due to Connors Bros. Ltd. strong competitive position. However, a new opportunity for Atlantic processors has now opened up by taking advantage of the market for processed herring roe which has developed in Japan. This development has not had a significant effect on B.C. roe producers, because their product is of higher quality and satisfies a different market segment. (The B.C. roe industry is dealt with in the Pacific Coast profile.)

The capelin fishery is susceptible to wide yearly swings based on world supply, price and the Canadian resource base.

2. Strengths and Weaknesses

a) Structural

The pelagic industry has few structural advantages compared to its competitors. The resource is migratory and hence the industry is highly seasonal in its operation. This tends to result in high fixed costs and low profitability, a situation aggravated by the generally declining demand and resource volatility. Because pelagic stocks are difficult to manage, markets suffer from supply cyclicality. Canada's herring stocks are close to being fully exploited. Competing stocks in the Baltic and North Seas have suffered from serious over-exploitation in the past but have now been rebuilt. Capelin catches off the coast of Newfoundland have been down in recent years but have largely matched market prospects. Mackerel is a transboundary stock which is susceptible to over-exploitation as the stock migrates into U.S. waters during the winter months.

The Canadian herring industry has been squeezed out of the European market primarily due to the rebuilding of the European herring resource. European processors, primarily in the Federal Republic of Germany, are again able to obtain fresh herring fillets from European suppliers (Denmark, Sweden and Holland). There is a marked preference for fresh product, from established suppliers. European suppliers also have transportation cost and access advantages.

In contrast, the Canadian industry can only ship frozen herring to Europe and is viewed as providing a product of inconsistent quality (herring is a high fat fish, which is both very perishable and susceptible to bruising). The Canadian industry may also have a cost disadvantage due to fleet overcapacity (which increases the

harvesting cost) and generally less efficient plant/ infrastructure arrangements. The industry has also faced a significant exchange rate disadvantage. This is now becoming less significant.

Connors Bros. Ltd. is a world leader in canned herring production, less due to any notable technical advances but more to economies of scale and a vertically integrated operation (including their own can production) which have enabled reduction of production costs and ensured competitiveness with low cost supplier countries.

The developing Japanese market for Atlantic roe herring (exported frozen) is a promising development. Canadian supply potential is good and the trade generates good profits primarily for S.W. Nova Scotian producers.

The Canadian capelin fishery, as noted, is a major but residual supplier to the Japanese market. The Canadian share of Japanese imports has varied from 30% to 80%. The Canadian fishery season follows the Norwegian and the USSR seasons which tends to put Canada in the position of residual supplier. As such the industry has no control over prices, with returns also dependant upon the variability of the Canadian resource. The fishery has, however, been very profitable in years when high export demand has coincided with Canadian supply availability.

Canada is generally not competitive on the world mackerel market particularly in comparison with low-cost developing producer countries. The resource tends to be hard to locate, and is a small boat, low volume/high cost fishery. Mackerel essentially services the fishery with a bait supply which tends to be more remunerative than food use. Minor quantities of processed product are marketed, some as food aid.

b) Trade Related Factors

The EEC market applies relatively high tariff rates and quota restrictions to herring imports which, however, must be viewed in the context of European resource availability and Canada's position as primarily a residual supplier. Frozen whole herring, a key export item, is subject to a 15% seasonal (June-February) tariff. During this period, there is a duty exemption on a global 34,000 tonne quota. Norway and Denmark receive tariff preferences. Tariffs on other processed pelagic products range from 10%-20%. In addition, the EEC may also specify minimum (reference) import prices although this mechanism has not been extensively used.

The major export item to the U.S., whole fresh herring, enters free of duty as does cured herring in barrels (i.e. bulk form). Other export items enter free or at low rates, except for herring canned in oil (8%), and sardines in oil (15% when over 30¢ per pound). These tariffs restrict exports of Canadian canned herring and sardines and protect the U.S. industry.

In the case of the Japanese market, the 6% tariff and global quota on frozen herring and frozen herring roe may serve to limit the volume of Canadian exports from the East coast. The market for East coast frozen herring roe has nonetheless been developing rapidly and, in volume terms, now matches the higher value Canadian West coast herring roe exports to Japan. Quotas are also in effect for capelin in order to protect domestic producers.

Canada has a number of agreements (renewable on an annual basis) with centrally planned countries which link access to the Canadian resource to sales (in 1986, for example, the USSR has stated its intention to purchase $12 million in fish, including herring, from Canada). Canada also has markets for pelagic products in the Caribbean and Africa. Some $30 million per year of canned mackerel is shipped, primarily as food aid under CIDA. Commercial sales are made to these markets but for the most part are limited by income or balance of payments factors. Imports of pelagic products to Canada are free except in the case of canned herring (8%) and canned sardines ($0.005 per can, over 8 ounces).

c) Technological Factors

For the most part technology and the degree of mechanization in the Canadian industry is equivalent to that of competing producer countries. Germany has developed much of the equipment used for heading, gutting, nobbing, sorting, and filleting herring. This equipment is in use in Canada, particularly in the larger processing companies. Freezing technology in the Canadian industry is comparable to the competition. Smoking is carried out by relatively small-scale operations in Canada, and in general these are not highly mechanized although some progress towards mechanization has been made.

The technology used in canning has not changed appreciably since the 1930's. This is, however, also true of competing producers. Computer technology has been adopted by some of the more advanced food canners but is not extensively used in the fishery products industry. There is considerable room for productivity improvement in this area.

3. Federal and Provincial Programs and Policies

A wide range of federal and provincial support programs have been available to the fishing industry. In the past, the RDIA program of DREE was widely used for plant modernizations and expansions. Federal Government asistance for expansions is now strictly limited under guidelines approved for the IRDP of DRIE because significant overcapacity exists in most segments of the industry. IRDP assistance is now focussed on modernization and productivity improvement.

Because the industry is based upon the catching and processing of a common-property biological resource, it is also subject to a broad range of regulatory controls. Fishing licences are controlled by federal authorities and differentiate between size and type of vessel and gear and/or inshore and offshore fishing operations. Processing plants are licenced by provincial authorities and are subject to federal inspection requirements. A National Quality Improvement Program is being considered for dockside and final product grading. Provincial governments also may regulate plant standards.

Utilization of the biological resource is regulated through the determination of total allowable catches (TAC). Resource utilization is also governed, in the case of transboundary or straddling (the 200 mile economic zone) stocks by various international conventions to which Canada is a member.

In 1976, Fisheries and Oceans instituted a direct sales program for pelagic species, which allowed fishermen to sell directly to foreign vessels. These vessels are able to offer higher prices than Canadian processors because of their special marketing or access advantages and lower production costs. Direct sales improve the returns of fishermen who would otherwise be forced to sell all of their catch to Canadian processors at the lower prices which are necessary for Canadian plants to be profitable. The price gap has, however, been narrowing. Direct sales might not be necessary if more lucrative markets for Canadian pelagics can be found.

Foreign investment in the industry is influenced by Fisheries and Oceans policy which prohibits the granting of fishing licences to any firm with significant foreign participation. This policy is being reviewed by the Minister of Fisheries and Oceans, with a view of being more supportive of foreign investments. Foreign investment in the processing sector is possible, however, provided the operation does not involve harvesting.

4. Evolving Environment

The future evolution of this sector will be limited by a variable but tight overall resource outlook as well as a no-growth or declining market demand. The industry faces continued strong competition in export markets made more difficult by a residual supplier position, generally high costs and low profits, an aging and underutilized fleet,

and market forces which have inhibited development. However, when stocks are reduced in competitor countries, Canada may be in a position to make windfall gains/profits.

The massive rebuilding of Baltic and North Sea herring stocks has re-established traditional supply patterns in the EEC to Canada's detriment. Under existing conditions, the industry is only a marginal supplier to this market. For this reason it is unlikely that the frozen herring markets will strengthen for the foreseeable future unless the European stocks are again jeopardized.

The outlook for canned herring/sardines should remain favourable given Connors Bros. Ltd. dominant market position. Total mechanization in sardine canning is a future trend which could have a serious negative impact on employment in this labour intensive industry. Possibilities exist for the sale of cured and specialty cured herring to the COMECON and European markets respectively. Volumes are, however, likely to be small. The development of new roe herring markets in Japan is a potentially lucrative opportunity for Atlantic producers. Some advances are being made in non-traditional smoked herring markets by some independent processors located in Nova Scotia and New Brunswick.

The outlook for capelin production will depend upon Canadian and other producer stocks. Norwegian stocks have been declining which should assist the Canadian position in the short to medium term. Other market opportunities for capelin products are also being explored. Mackerel production is unlikely to change significantly.

5. Competitiveness Assessment

The Atlantic pelagics industry has gone through a period of adjustment since the market turned down in 1979. Frozen herring production and export, which provided the impetus for the sector's expansion in the mid-70's, remains at much lower levels. The market developed during the North Sea closure, and gradually eroded since the recovery of the North Sea stocks might, however, be at least partially regained, through careful quality assurance, and agressive marketing in Europe and in new markets. In the European market, this would be predicated upon currency relationships, the local resource situation as well as market access issues.

Under current market conditions, canned herring/sardines are and will likely remain competitive on world markets. Atlantic herring roe also is competitive in the Japanese market, although exports may be limited by tariff/quota measures. Capelin exports are heavily dependent upon the supply position of both competing producers and the Canadian industry. The outlook is positive, however, subject to substantial year to year variation. Mackerel production on the other hand, is not competitive on the world market and will remain domestically oriented to the bait industry.

Prepared by: Food and Consumer Products Industries Branch
DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

Assistant Deputy Minister
Consumer Goods, Services and Resource Processing

Date: JUN JUIN 5 1986

June 4, 1986

FACT SHEET

NAME OF SECTOR: Fishery Products - Atlantic Pelagics

SIC(s) COVERED: Sub-sector 102 *

A) 1. PRINCIPAL STATISTICS - Atlantic Coast[1]

	1971	1980	1981	1982	1983	1984	Preliminary 1985
Establishments	272	292	290	290	325	N/A	N/A
Employment	14,995	21,909	22,168	21,604	20,680	N/A	N/A
Shipments ($ millions)	316	1,157	1,278	1,436	1,414	1,393	1,571
Shipments (000 tonnes)	N/A	536	567	566	490	535	569
Landings (000 tonnes)	1,094	1,156	1,195	1,198	1,108	1,072	1,116
Landed Values ($000)	133	510	568	589	621	579	646

2. TRADE STATISTICS - Atlantic Coast[1]

	1971	1980	1981	1982	1983	Preliminary 1984	1985
Exports ($ millions)	N/A	965	1,104	1,177	1,150	1,104	N/A
Domestic Shipments ($ millions)	N/A	192	174	259	264	289	N/A
Exports as % of Shipments	N/A	83	86	82	81	79	N/A

B) 1. PRINCIPAL STATISTICS - Atlantic Pelagics[2]

	1971	1980	1981	1982	1983	1984	Preliminary 1985
Landings (000 tonnes)	451	242	224	207	200	201	N/A
Landed Values ($000,000)	19	72	51	53	46	41	N/A
Shipments ($000,000)	69	208	201	200	170	218	250

2. TRADE STATISTICS - Atlantic Pelagics[2]

Destination of Exports (% of Total $)	U.S.	E.C.C.	JAPAN	Central and South America
1981	25	27	16	16
1982	24	15	27	16
1983	31	13	23	15
1984	23	7	28	25

3. MAJOR FIRMS - Atlantic Pelagics

Name	Ownership	Location of Major Plants
National Sea Products	Canadian	N.S., Nfld., N.B.
Fishery Products International	"	Nfld, N.S.
Connors Bros. Ltd.	"	N.B., N.S.
Comeau's Seafood Ltd.	"	N.S.

*SIC on 1980 basis

1 Atlantic Coast industry comprises 3 sub-sectors: Atlantic pelagic, Atlantic groundfish and Atlantic shellfish, and 5 provinces: Nfld., N.S., P.E.I., N.B. and Quebec.

2 Breakouts have been provided for the Atlantic pelagic sub-sector to the extent available.

***Source:**
- Establishments and production-related employment from Statistics Canada 32-216. Employment consists of production and administrative employees. It excludes fishermen/vessel crews whether or not employed by a processing firms. The number of establishments and employment appear to be underestimated due to the reporting methods used. Peak season employment will considerably exceed the figures shown.
- Shipments equal production reported by DFO Annual Statistical Review
- Exports from DFO reports
- Domestic shipments equal total shipments less exports (inventory fluctuations may distort values)
- Landings are in live weight equivalent, whereas shipments are in product weight

June 4, 1986

DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

COMPETITIVENESS PROFILE

FISHERY PRODUCTS INDUSTRY - PACIFIC COAST

1. Structure and Performance

Structure

The Pacific Coast fishery processes primarily salmon and herring with groundfish and shellfish making up the balance. The average value of shipments between 1980-1984 amounted to $467 million of which 66% was frozen and canned salmon and other salmon products (including fresh, smoked and roe) and 18% was herring roe. Production of groundfish accounted for a further 12% of total value and shellfish for 4%. The Pacific Coast fishery accounted for 26% of total industry shipments over the same period. It is highly export oriented. 100% of herring roe and over 70%, by value, of salmon products are exported. The fishery had 3,000 employees in processing establishments in 1983 and some 17,000 registered fishermen.

The West Coast industry is dominated by fewer than a dozen companies with British Columbia Packers being the major producer. There are nevertheless significant other processors particularly in the shellfish, aquaculture, smoked fish and groundfish businesses. To compensate for the seasonality of harvest of both the salmon and roe fishery, most B.C. companies have diversified species and product capability. This is easier to accomplish than in the Atlantic industry as the species habitats coincide or overlap to a greater extent and as processing equipment is either not species specific or is inexpensive enough to be warehoused for most of the year.

The herring roe fishery takes place between February and April, when the female herring are carrying roe (i.e. eggs). The very short season is highly regulated in order to ensure maintenance of the resource and maximum quality in terms of Japanese market requirements. The roe is subsequently extracted and salted by both large and small processing firms in B.C. and then exported to Japan.

In 1984, B.C. roe accounted for 51% of estimated Japanese salted roe consumption. A further 22% was supplied by the Japanese industry which extracts and salts roe from both a small domestic catch and from frozen herring containing roe (the U.S. is a major source) which is imported for reprocessing. The U.S. supplied 10% of the market directly. China, North Korea, the USSR and Scandinavia all account for much smaller volumes. B.C. herring roe is prime grade and is highly valued by the Japanese market on the basis of subtle but important product quality differences. The market is based on strong cultural traditions. The roe is sold for consumption and gift-giving primarily around the New Year season.

Salmon is fished and processed during the summer months. Slightly under half of total production is canned and in periods of surplus catch, canning allows the use and holding in inventory of residual product. There are about ten large cannery operations in total with B.C. Packers accounting for about 50% of total output. B.C. Packers owns the largest salmon canning operation in the world (due to the technology in use, however, economies of scale are relatively limited). In the fresh/ frozen/smoked sector, the larger companies participate, but smaller enterprises and traders predominate. Harvesting is essentially a small enterprise operation. Canadian salmon is sold to both the institutional and retail trades with sales to the former sometimes being direct but sales to the latter usually through brokers, distributors or trading houses that can offer a broad product line.

The major salmon producers are the U.S. (primarily Alaska), Japan and the USSR, followed by Canada (with 11% of the world harvest) and Norway. However, the major exporters are the U.S., followed by Canada. Domestic consumption accounts for the bulk of Japanese production with both the USA and Canada competing essentially as residual suppliers.

In the EEC both countries must compete with domestic and Norwegian product at the high end of the frozen fish market. The USSR accounts for less than 5% by volume of any export market in which Canada competes.

Frozen salmon accounts for slightly over half of all salmon exports. Around 85% of frozen salmon production is exported for consumption or for further processing (smoking). France is the principal Canadian market (where between 1980-84 Canada supplied 37% of imports versus 53% from the U.S.) followed closely by Japan (Canada supplied 9% of imports versus 84% from the U.S.). Sweden, the U.S., and other EEC countries are also important markets.

Canned salmon accounts for most of the balance of salmon exports. Roughly 50% of total canned production is exported, with the balance going to the domestic market. By far the largest market for canned salmon is the U.K. (where Canada held 48% of total imports by value, versus 43% for U.S. suppliers) followed by Australia (where Canada supplied 35% of imports versus 57% for the U.S.), other European countries and New Zealand.

Canned and frozen salmon currently constitute Canada's largest fishery product export (by value) to the EEC. Fresh salmon is a small but growing export item, primarily to the U.S.

The groundfish industry is active in the Pacific rim fresh and frozen market. The principal species are Pacific halibut, hake, rockfish (a type of redfish), Pacific perch and Pacific cod. Most boats fish a variety of species. Around 70% of production is exported primarily as fresh sales to the Western U.S. with some frozen sales to the U.K. and Japan. Competition comes from Alaska and Atlantic Canada.

The shellfish industry is geared to the provision of high unit value specialty products. It accounts for about 4% of Pacific Coast shipments by value. The key species are clams, followed by crab, shrimp and oysters. It is a small enterprise fishery selling domestically with minor exports of crab and clams to the Western U.S. and Japan.

Performance

The salmon resource base has been stable over the last few decades but has shown considerable cyclical variability. A peak in the salmon cycle in 1985 resulted in record production which allowed the replenishment of depleted canned inventories.

Herring stocks have been unstable and have declined sharply from the mid-70's. For 1986, herring roe quotas are not expected to exceed 14,000 tonnes versus 39,000 tonnes as recently as 3 years ago. Another difficulty has been a highly speculative market for herring roe, and severe harvesting over-capacity triggered by the last boom.

A 1983 study noted that the salmon industry suffered from an excessively high debt-equity ratio and that gross margins (in 1982) were too low. These factors were aggravated by reduced landings, high interest rates and generally poor economic conditions which resulted in some bankruptcies. Since then conditions have improved and by 1985, the record landings of salmon resulted in a stronger, more confident industry.

Employment in salmon and herring processing declined by a quarter between 1980-1984, however, the large 1985 salmon catch is estimated to have created 1300 new jobs at least on a temporary basis.

2. Strengths and Weaknesses

a) Structural

Canada has relatively little control over world salmon prices. Producers have, however, generally been able to sell to the limit of their supply, with some price adjustment. The Canadian product is to some extent differentiated. Canned salmon exports are oriented more towards the higher value sockeye species than is the U.S. product.

The Canadian canned product is also generally considered to be of superior quality and tends to be concentrated more in the retail market than U.S. canned product which is aimed more at institutional sales. In the frozen and smoked markets, both countries are running into strong competition in the upper end of the European market from the high volume (30,000 tonnes plus) of salmon produced by the European, and principally, the Norwegian aquaculture industry. Canadian frozen salmon has long been subject to rigorous grading standards prior to export and has generally commanded higher prices than competing products from the U.S.

Overcapacity exists in the Canadian fleet and in the processing industry. In 1985, for example, the average landings per fisherman were more than twice as high in Alaska as in B.C. The B.C. fishermen also received, on average, a price almost 40% higher per kilogram of fish. For fish of comparable quality, B.C. and Alaska prices are approximately equal. But in some species, such as sockeye, which accounts for a little over 40% of production, harvesting technologies used in Canada may result in a higher value product. Grading and quality regulations also differ, allowing U.S. producers in both Washington State and Alaska to process different proportions of frozen/canned product. Scale and processing technologies employed in both the U.S. and Canada appear to be relatively equal and there has been some rationalization of the Canadian industry during the last few years. To extend the operating seasons for Canadian canners, whole salmon is also imported from Alaska. Around 10-15% of the annual Canadian canned pack is produced from imported raw product.

A series of resource management programs dating from the late 1950's and early 1960's, which included catch restrictions, have successfully addressed a decline in most salmon stocks. Current efforts to rebuild stocks center on the Pacific Salmon Stock Management Plan and the Salmonid Enhancement Program. The latter was established by the federal and provincial government in 1977 to rebuild the resource through hatchery programs and improvements to the habitat. These measures are having encouraging results. International negotiations to control fishing of salmon in coastal and/or international waters will probably also have a significant impact.

The herring industry is in a strong competitive position due to its dominant supplier position in the traditional, and high value Japanese salted herring roe market. Canada should be able to maintain this position although the market may be declining. The Canadian industry has overcapacity in processing and in harvesting. This resulted from the considerable fluctuation in landings and roe values which peaked in 1978 and 1979 respectively. Subsequently, the total allowable harvest was significantly reduced in the interest of stock rehabilitation. Roe wholesale values have now tended to stabilize at lower but renumerative levels. There is currently a reasonable supply-demand balance, and this situation is expected to continue for the next few years.

B.C. herring roe exports to Japan are extracted from the herring prior to export. This practice, required by federal regulation, has created Canadian employment and has been possible due to Canada's strong market position. This situation could change if Canadian processing costs were to become significantly more expensive in relation to costs in Japan or the USA. The United States ships most of its product as round herring for the roe to be extracted in lower cost countries or in Japan itself.

The Japanese herring roe market is changing. Although the total market is expanding, the growth is in new roe products, many of them made from lower-priced Atlantic herring roe. In 1985, for the first time, herring roe from Atlantic Canada equalled the volume (but not the value) of B.C. herring roe exports. The Atlantic and Pacific roe are aimed at separate and distinct markets, and consequently B.C. herring roe is not expected to be adversely affected for the foreseeable future. There has been some resistance to higher prices and it will be important that the current supply/ demand balance be at least maintained.

The groundfish industry is export orientated and active in the expanding and profitable fresh fish market.

b) Trade Related Factors

Canadian herring roe is exported to Japan in extracted form, and packed in brine. It faces a 12% duty. However, frozen round herring, which contains unextracted roe, and frozen roe, can be imported under a 5% tariff. This favours the import by Japan of Alaskan product which is normally exported roe-in (as well as imports of Atlantic frozen roe). In the Japanese market, fresh and frozen salmon is subject to a 5% duty as is salmon roe. Herring and herring roe are subject to global quotas in Japan as is squid.

Exports of canned salmon face a 5.5% duty in the EEC while exports of frozen salmon and dutiable at 2%. In the U.S. market exports are dutiable at 3% on canned salmon (not in oil), 12.5% on canned salmon in oil, and 5% on smoked salmon. Frozen is duty free.

In the important and lucrative Australian and New Zealand salmon markets, imports of frozen and smoked salmon are prohibited or restricted. This is attributed to health concerns.

The bulk of Pacific groundfish exports are in fresh form to the U.S. market. Only fresh fillets face a tariff which, however, does not limit trade. Groundfish exports to Japan are subject to quota restrictions and significant tariff protection. Pacific halibut faces a tariff rate in the U.K. market, which is nearly double the rate applied to imports of the Atlantic species. The dual rate stems from the U.K. accession to the EEC.

The U.S. International Trade Commission is currently undertaking a Section 301 investigation of Canadian federal regulations pertaining to the export of B.C. herring and herring products and of B.C. sockeye and pink salmon.

Canadian tariffs on imports of canned salmon in oil are 14% with canned salmon not in oil subject to a 3% rate. Other salmon products enter free. Canada does not import herring roe products.

c) Technological Factors

The industry has been slow to develop new technologies or innovative products largely because existing technologies and products have satisfied market and profit requirements. This is beginning to change and there is a strong entrepreneurial move in the fields of aquaculture and shellfish development. Further opportunities for advancement remain in the traditional salmon, herring and groundfish industries.

In the salmon canning industry the basic design of the processing lines and equipment has not changed in many years, however, relatively little can be done to modernize this equipment. The two main improvements underway are in the addition of improved defect detection equipment (computer technology) and in the conversion from a 3 piece to a 2 piece can. Both measures address the potential problem of can leakages and possible contamination. Major advances have been made in the area of quality control. Total mechanization is not yet feasible; however, moves in this direction are expected, given the generally high cost of labour on the west coast. Some rationalization of plants has also taken place. Competitor countries utilize basic handling and processing methods equivalent to Canadian plants.

Norway is a world leader in salmon farming and expanded production to 20,000 tonnes in 1984. Several other countries, including New Zealand and Canada are rapidly developing a salmon aquaculture capability. The Pacific coast has suitable salmon farming conditions similar to Norway's due to the availability of sheltered inlets, suitable water temperatures and salinity. Aquaculture of Atlantic salmon is being developed in the Atlantic provinces and Quebec but the most aggressive Canadian development is in British

Columbia. However, total Canadian production in 1984 was only 107 tonnes. A number of joint venture operations, including Norwegian participation, have been set up to facilitate the development of the technology on the Pacific Coast and offer good future growth potential. In the shorter term salmon aquaculture will offer advantages in quality and consistency and will ensure a competitive product which is very attractive to the domestic or export foodservice industry. Longer term, it will increase the resource, and allow genetic upgrading. Aquaculture of shellfish is more limited as it is a labour intensive, small enterprise type of operation. Commercial production to date has been very limited.

3. Federal and Provincial Programs and Policies

There has been less government involvement in the financial and operational affairs of the Pacific fishery than of the Atlantic. Issuance of fishing licences is regulated by the federal government. In the case of herring, because the end product is roe, it is crucial that a balance be maintained to ensure a sustained resource. As a result issuance of licences, and control of the harvest period is very closely controlled. Processing plants are licenced by provincial authorities and are subject to federal inspection requirements. Production and/or export of some specific product forms are controlled under the Fisheries Act.

The salmon resource has been addressed by government through the implementation of the Salmonid Enhancement Program and by the negotiation of an international treaty between the U.S. and Canada on salmon management. Negotiations are also ongoing with the USSR and Japan. In the case of salmon aquaculture, various regulatory and jurisdictional questions are under discussion. Their resolution is necessary to facilitate and maintain control over habitat utilization and disease prevention procedures.

A proposal to reduce the size of the fishing fleet by buying back some of the existing licenses was raised in a major government sponsored study of the primary West coast industry and has recently been a contentious issue. Controversy developed around the method of selecting those licences to be retired and the manner of funding the program and implementation of the plan has been deferred. The high landings of 1985 have reduced the pressure to resolve the issue but it is likely to become contentious again when the traditionally cyclical salmon runs drop from their current high levels. As already noted, surplus harvesting capacity has resulted in low catch rates and, in turn, higher industry input costs.

Foreign investment in the industry is influenced by Fisheries and Oceans policy which prohibits the granting of fishing licenses to any firm with significant foreign participation. This policy is being reviewed by the Minister of Fisheries and Oceans, with a view of being more supportive of foreign investments. Foreign investment in the processing sector is possible, however, provided that the operation does not involve harvesting.

4. Evolving Environment

Accurate salmon resource projections are difficult because of the conflicting influences of habitat damage, natural breeding cycles, changes in ocean currents and other marine environment conditions. However, as noted previously, extensive measures to rebuild salmon stocks are underway.

The commercial salmon fishery, however, faces competition from the native and sport fishery. Further, as there are many unresolved aboriginal claims in B.C., there is at present considerable uncertainty regarding the potential impact that litigated or negotiated settlement of such claims may have on resource access for the commercial fishery. Similarly, expansion of the sports fishery could lead to increased competition for the commercial fishery.

Output of farmed salmon can be expected to increase to several thousand tonnes over the next decade. Regardless of where it is produced, farmed salmon will potentially offer increasing competition to the traditional Canadian industry domestically and in export markets.

Aquaculture of a number of shellfish species is also well established and may soon become a significant component of the west coast commercial fisheries.

Roe herring is being harvested to the limit of the supply which prudent resource management allows. There is a reasonable supply-demand balance at present and it is not expected to change in the next two or three years. However, markets are developing for new types of roe products which do not depend on high quality Pacific herring roe. These are, however, aimed at separate and distinct markets and are not expected to constitute direct competition.

5. Competitiveness Assessment

The major output of the Pacific coast fishery, by value is salmon, followed by herring roe. Canada is not a price setter in the world salmon market. There is pressure at the premium end of the frozen market from Norwegian farm-raised salmon and at the low end from huge volumes of Alaska salmon. However, overall, Canadian salmon processing has been competitive. Salmon processors have adapted to dynamic market conditions, and generally sell to the limit of their supply. This should allow Canada to hold or to increase existing export markets in which it has a good reputation for quality and a traditional market presence. Development of Canadian salmon aquaculture, while in an early developmental stage (in 1984 it accounted for considerably less than 1% of total landings), will in the longer term also improve the Canadian competitive position by allowing the industry to meet the broad range of market demand. Its impact on the traditional Canadian industry remains to be determined.

The B.C. herring roe industry holds a dominant market position in the traditional, high end Japanese roe market. It is expected that, for the foreseeable future, this will continue, although this will be predicated upon rigorous management of the herring resource and thus a reasonable supply/demand balance. The various changes taking place in the Japanese roe market (including the inroads made by Atlantic herring) pertain to a different end market and therefore should serve to expand the roe market into new areas rather than affect the existing market for B.C. product.

The Pacific groundfish industry should continue to benefit from market growth trends particularly for fresh fish in the U.S. while the shellfish industry will continue to meet domestic demand with some export potential.

Prepared by: Food and Consumer Products Industries Branch
DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

Assistant Deputy Minister
Consumer Goods, Services and Resource Processing

Date: JUN JUIN 5 1986

June 4, 1986

FACT SHEET

NAME OF SECTOR: **Fishery Products - Pacific Coast** **SIC(s) COVERED:** **Subsector of 102 ***

1. PRINCIPAL STATISTICS - Pacific Coast

	1971	1980	1981	1982	1983	1984	Preliminary 1985
Establishments	41	59	52	50	49	N/A	N/A
Employment	2,599	3,950	4,208	3,040	3,007	N/A	N/A
Shipments ($ millions)	120	404	527	467	472	467	710
Shipments (000 tonnes)	N/A	103	135	115	132	126	153
Landings (000 tonnes)	113	130	183	158	192	166	213
Landed Values ($000,000)	59	182	236	240	210	240	335

2. TRADE STATISTICS - Pacific Coast

	1971	1980	1981	1982	1983	Preliminary 1984	1985
Exports ($ millions)	N/A	245	336	346	346	368	N/A
Domestic Shipments ($ millions)	N/A	159	191	121	126	99	N/A
Exports as % of Shipments	N/A	61	64	74	73	79	N/A

Destination of Exports (% of Total $)	U.S.	E.C.C.	JAPAN	OTHERS
1981	13	39	35	13
1982	13	32	44	11
1983	14	38	38	10
1984	17	32	40	11

3. MAJOR FIRMS - Pacific Coast

Name	Ownership	Location of Major Plants
B.C. Packers	Canadian	B.C.
Prince Rupert Fishermen's Co-operative Association	"	B.C.

*uses SIC on 1980 basis

Source:

- Establishments and employment from Statistics Canada 32-216. Employment consists of production and administrative employees. It excludes fishermen/vessel crews whether or not employed by a processing firms. These figures appear to underestimate total establishments/employment due to the reporting methods used. Industry estimates show peak seasonal employment of around 7,000 in 1984 from 186 processing plants.
- Shipments equal production reported by DFO Annual Statistical Review
- Exports from DFO reports
- Domestic shipments equal total shipments less exports (inventory fluctuations may distort values)
- Landings are in live weight equivalent, whereas shipments are in product weight

DRAFT - PROJET

DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

COMPETITIVENESS PROFILE
FLOUR MILLING INDUSTRY

1. STRUCTURE AND PERFORMANCE

a) Structure

The flour milling industry, SIC category 1051 (1980), comprises those firms which primarily mill wheat and other cereal grains into flour and meal and to a lesser extent blend milled cereal products. The industry is closely linked with the baking, biscuit and breakfast cereal manufacturing industries which collectively use over 50 percent of all milled cereal products consumed in Canada. It provides a market for about 10% of Canadian wheat production and has an impact on the grain handling and storage system.

In the last twenty years Canada has moved from being an important flour exporter to essentially serving the domestic market. Cuba is the only significant remaining commercial export market accounting for roughtly 50% of our flour exports with most of the balance exported as food aid. Former traditional markets have largely developed their own milling capacity. Those commercial markets that remain are largely dominated by the USA and the EEC due to their subsidy and export credit programs.

Wheats grown in Canada are mainly the hard varieties (hard kernels and relativly high protein levels) and are mainly used in bread making. Soft wheats have lower protein levels and are suited for cake and pastry flours. Durum wheat which has very high protein levels is used in pasta production. As a result of developments in baking technology a larger proportion of lower protein, lower priced wheats are being used in bread making. As a reflection of this change in demand farmers are showing a greater interest in growing for the domestic milling and export markets higher yielding but lower protein wheats.

There are currently 47 flour mills operating in Canada, including the branch plants of multi-national companies and two mills which are components of pasta and breakfast cereals plants. The three largest firms (Maple Leaf Mills, Ogilvie Mills, Robin Hood Multifoods) operate 13 plants representing approximately 75 percent of total Canadian milling capacity. Ownership is predominantly Canadian with only 6 mills owned through subsidiaries of U.S. firms.

There is a distinctive regional aspect to the Canadian flour milling industry. Milling capacity has slowly but steadily increased in eastern Canada while declining in western Canada. This reflects the ongoing closure of older western mills built earlier in this century to serve export markets which have now disappeared. Approximately 70% of the nation's milling capacity is now located in Ontario and Quebec. Western mills however have begun producing more soft wheat products due to the increasing availability of western soft white wheats.

The milling industry is highly regulated and all plants operate under licences issued by the Canadian Grain Commission which also inspects plant operations. The Canadian Wheat Board controls supplies of grain for milling and sets prices to domestic millers. As strict import restrictions exist on wheat and wheat products the industry operates in an essentially closed market.

Total employment in the flour industry is approximately 3000 persons. About 40% are employed in Ontario.

Production of wheat flour increased from about 1.7 million tonnes in 1974 to about 2 million in 1978 and fell back to about 1.9 million by 1984.

Exports of milled cereal products produced by the industry were valued at about $180 million in 1984 but declined to $120 million in 1985. The Canadian share of world trade in flour declined from roughly 20% in the early 1970's to approximately 8% presently.

.../2

b) Performance

The industry has undergone extensive rationalization since 1973. The number of companies slowly declined and several large but aging milling facilities in western Canada were closed. The levels of employment and shipments during the same period, however, were not greatly affected as the expansion of the more modern mills offset the closure of obsolete facilities.

Canadian mills have operated at around 70% of their rated capacity throughout the eighties. This chronic underutilization of capacity reflects the continued erosion of world markets for commercial flour from Canada due to predatory pricing by the EEC, increased milling in traditional markets and limited food aid allocations for flour purchases. The U.S. industry faces similar circumstances.

The industry is generally profitable but the ratios of earnings to gross sales and investment are highly variable among individual firms. Several larger firms have diversified in recent years into other food product areas (e.g. bakery mixes) in efforts to offset the decline in demand for flour for household use.

2. STRENGTHS AND WEAKNESSES

a) Structural

The protected market for wheat flour and some related milled cereal products and the existence of central selling agencies for wheat has resulted in Canadian millers losing some competitive skills that are essential in the U.S. and elsewhere. For example, many Canadian firms no longer possess the commodity trading expertise that is necessary under a more competitive system.

Canadian mills range in size from small family operations to a world scale plant of over 1,000 tonnes daily production capacity. While some mills are highly specialized, producing only one or two products, others may mill several grains singly or in combination to yield an extensive product range. This structural diversity allows the industry to satisfy the demands of a wide variety of domestic end-users while retaining the ability to collectively respond to opportunities for export sales, the majority of which are coordinated through the Canadian National Millers Association.

Despite years of slow decline in plant numbers, capacity utilization (about 70%) remains below optimum and generally below that of the milling industry in the United States. The same situation exists in virtually all developed countries. Excess capacity in the U.S. is roughly equivalent to total Canadian capacity. Many Canadian mills are old, but can still operate efficiently. Except for recent improvements, the capital costs of such mills would have long since been covered, therefore, current operations need only to cover their variable costs.

Transportation costs are regulated, with favourable rates applying on rail freight movements of wheat and flour from western Canada to eastern Canada and for export through both east and west coast ports. Millers in both regions benefit from such rates as provided for under the Western Grain Transportation Act, the "At and East" rates and low stop-off (milling in transit) costs.

The eastern Canadian mills, however, have a competitive locational advantage as a result of their proximity to large population centres and food processing industries in both Canada and the United States. A number of these mills both directly and through corporate linkages are already exporting some further processed products to the USA. On the other hand the milling industry in western Canada, traditionally more oriented to export markets faces few development opportunities given the concentration of further processors in eastern Canada and the limited development and competitiveness of the baking industry in parts of western Canada.

.../3

Wheat prices are set by the Canadian Wheat Board (CWB) which has a monopoly on all western Canadian wheat sold for domestic processing. The price is set within a range established by the federal government. Producers of wheat in other regions of Canada (primarily Ontario) set prices to millers in line with CWB prices. In periods of low international wheat prices, the policies of the CWB continue and expand price differentials between Canadian and U.S. wheat and flour. This inhibits the competitiveness of Canadian further processors in the foreign and domestic markets especially in the case of high flour content products and therefore also limits the domestic marketing opportunities for the flour milling industry.

Although all mills face the same raw material costs under the domestic pricing system, the occasional anticipation by users of abrupt price changes can lead to large fluctuations in the demand from one price period to another. Raw material costs alone account for about 75% of the sales value and labour costs represent about 5%. Labour agreements, however, leave little room for production cost adjustments to match these wide swings in milling activity.

A gradual decline in per capita consumption of milled cereal products has restricted growth of the domestic market. This decline has occurred despite growing consumer demand for specialty breads, pasta, fast foods, and prepared foods such as sauces, sauce mixes and prepared batters and coatings, most of which contain varying proportions of milled cereal grains.

b) Trade Related Factors

Tariffs are relatively unimportant determinants of the world trade in flour. Non tariff measures such as import licenses, state trading, etc. have had a much greater influence in determining which countries could supply which markets. The Canadian milling industry is protected from imports of most milled products of wheat, oats and barley by the import controls imposed by the Canadian Wheat Board. Further processed flour based products in retail packages are not subjected to import controls although provision exists for restricting all products containing large percentages of grains which are under the control of the Canadian Wheat Board.

c) Technological Factors

Milling technology is well established and major innovations are few. The Canadian industry is continuing to improve productivity and product quality through automation and faces no problems of access to technology and equipment from abroad.

The industry's performance has become increasingly dependent upon supplying other Canadian food processing sectors. Its future is therefore also dependent upon continuing technological innovation and adaption by these sectors whose R & D expenditures are relatively larger than those of milling firms.

The further processing activities of Canadian milling firms such as the blending and packaging of bakery mixes are areas where technology will play a major role. The bakery mix business, however, also is becoming increasingly competitive throughout Canada as more mills add mixing and packaging facilities to their bulk flour operations.

3. FEDERAL AND PROVINCIAL PROGRAMS AND POLICIES

The milling industry is influenced by Canadian Wheat Board and transportation policies. Federal and provincial capital cost assistance to the industry has been minimal.

.../4

4. EVOLVING ENVIRONMENT

The domestic household market for milled cereal products, principally wheat flour, does not offer potential for industry expansion. Slow population growth combined with declining per capita consumption due in part to steadily increasing prices will continue to limit total domestic demand.

Any increase in demand will likely come as a result of expanded use of flours or purified flour fractions (starches, glutens) by the food processing industry which already accounts for the bulk of consumption in North America.

Expanded and more diversified use of flour by other food processing sectors may offer new opportunities for the milling industry. These opportunities can only be realized if Canadian prices for flour and flour derived products allow Canadian manufacturers of further processed foods (e.g. pasta, bakery mixes) to compete with their foreign counterparts in the domestic and export markets.

The commercial export market for milled grain products continues to be dominated by the U.S. and the E.E.C. both of whom provide extensive export credit facilities and export price subsidies.

The food aid market, already relied upon for about half of Canada's flour exports, has been targetted by the milling industry as an opportunity for expanded exports. The industry views bilateral aid programs in particular as an area where the appropriate federal government policies could further favour value added flour exports rather than grain.

Milling capacity in developing countries is likely to expand, continuing the shift in world import demand from milled cereal products to whole grains. This trend promises to intensify international competition for the remaining commercial flour trade and to reduce demand for flour provided under food aid programs.

5. COMPETITIVENESS ASSESSMENT

The Canadian flour milling industry operates in a highly regulated domestic market, e.g. raw material supply/price controls established by the Canadian Wheat Board. Import restrictions ensure a protected domestic market.

Generous export assistance measures in other exporting countries and the self-sufficiency policies of importing countries results in Canadian flour being essentially priced out of the diminishing commercial export market.

Price premiums levied by the Canadian Wheat Board on wheat sold to Canadian millers results in higher domestic flour prices. This reduces the competitiveness of further processors which collectively account for over 50% of domestic flour consumption.

Prepared by: Food and Consumer Products Branch
DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

Assistant Deputy Minister
Consumer Goods, Services and Resource Processing

Date: 25.6.86.

DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

June 13. 1986

FACT SHEET

NAME OF SECTOR: FLOUR SIC(s) COVERED: 1051 (1980)

1. PRINCIPAL STATISTICS

	1971	1980	1981	1982	1983	1984	1985
Establishments	48	50	50	48	47	47	n.a.
Employment	n.a.	----------approximately 3000----------					
Shipments ($ millions)	236	729	866	785	741	n.a.	n.a.
Gross Domestic Product* (Constant 1971-$ millions)	59.5	66.0	65.9	67.1	63.3	n.a.	n.a.
Investment ($ millions)*	8.3	22.8	26.6	49.7	109.9	119.4	86.7E
Profits After Tax ($ millions)**	20.4	71.4	70.0	90.6	114.8	n.a.	n.a.
(% of income)	2.1	2.1	1.8	2.5	3.1	n.a.	n.a.

* SIC 105 (1970) - Flour and Breakfast Cereals
** SIC 123, 124, 125 (1960) - Grain Mills

2. TRADE STATISTICS

	1971	1980	1981	1982	1983	1984	1985
Export ($ millions) estimated	58	156	243	129	128	177	120
Domestic Shipments ($ millions)	178	573	623	656	613	n.a.	n.a.
Imports ($ millions)	1	2	3	3	3	4	4
Canadian Market ($ millions)est.	179	575	626	659	616	n.a.	n.a.
Exports as % of Shipments est.	25	21	28	16	17	n.a.	n.a.
Imports as % of Domestic Market	----------not significant----------						
Canadian Share of International Market (commercial sales) est.	20	10	9	9	5	11	8

		U.S.	E.E.C.	ASIA	OTHERS
Imports - % of Total*	1981	87	7	6	---
	1982	59	14	7	20
	1983	76	15	9	---
	1984	89	6	5	---

		U.S.	E.E.C.	ASIA	OTHERS
Exports - % of Total*	1981	--	--	1	99
	1982	1	--	17	82
	1983	1	--	9	90
	1984	1	--	28	71

* estimated basis Hard Spring Wheat Flour exports

3. REGIONAL DISTRIBUTION - Average over the last 3 years

	Atlantic	Québec	Ontario	Prairies	B.C.
Establishments - % of total	2.0	13.0	53.0	30.0	2.0
Employment - % of total (est.)	2.0	27.0	46.0	24.9	0.1
Shipments - % of total (est.)	3.0	25.0	44.0	27.7	0.3

.../2

4. MAJOR FIRMS

	Name	Ownership	Location of Major Plants	Concentration (% of domestic market)
1.	Maple Leaf Mills Ltd.	Canadian	Toronto, Montreal, Calgary, Port Colborne, Almonte	n.a.
2.	Ogilvie Flour Mills Co. Ltd.	Canadian	Montreal, Midland, Winnipeg, Medicine Hat, Strathroy	n.a.
3.	Robin Hood Multifoods Ltd.	USA	Montreal, Saskatoon, Port Colborne	n.a.
4.	Dover Mills Ltd.	Canadian	Halifax, Cambridge	n.a.

E estimated

DRAFT

DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

COMPETITIVENESS PROFILE

FLUIDS HANDLING AND MECHANICAL POWER TRANSMISSION EQUIPMENT SECTOR

1. STRUCTURE AND PERFORMANCE

Structure

This sector comprises approximately 180 manufacturers engaged in the production of a wide range of fluids handling and mechanical power transmission equipment which is used in virtually every industry sector.

The products in almost every category vary widely in size and value. For example, valves are manufactured in sizes varying from ½ inch to over 15 feet in diameter, compressors range from ¼ h.p. standard portables to custom-designed 40,000 h.p. units, and pumps vary from inexpensive sump pumps to 3,500 h.p. reciprocating slurry pumps which cost over $1 million each.

The companies are located primarily in Ontario and Quebec and employ an estimated 9,250 persons. Sector shipments have averaged $820 million since 1980 with exports comprising 27 per cent. During the same period imports averaged $811 million, and captured 58 per cent of the domestic market.

Many of Canada's competitors in other countries have world-scale facilities, while the domestic industry, mainly producing for the Canadian market, manufactures a range of specialty, highly engineered 'niche' products in smaller facilities which do not have the same economies of scale.

There is worldwide overcapacity in the fluids handling and mechanical power transmission equipment sector. This has led to increased competition in both domestic and international markets. Canadian manufacturers, for the most part, are operating on one shift or nominally at less than 50 per cent capacity.

The sector can be divided into two broad groups of equipment:

- Fluids Handling Equipment (SIC 3092, 3191, 3192, 3199, 3911)

  This group of products is manufactured by 150 companies with approximately 8,000 employees and includes fluid transfer pumps, compressors, fans and blowers, valves, and accessories. About 10 per cent of manufacturers in the sector have over 100 employees, and account for over half of industry shipments. Approximately 60 per cent of these firms are foreign subsidiaries manufacturing a range of sizes and types of equipment to serve a wide end-use market. The smaller firms on the other hand have a higher incidence of Canadian ownership and are more active in the production of specialty-engineered equipment to satisfy specific end-use requirements in various industries.

  Import penetration is high and competition strong, especially from major manufacturers in U.S.A., Europe and Japan. Recent product rationalization and specialization brought about by the economic slowdown and the need to adjust to increased competition in both domestic and international markets has resulted in progressively larger gaps in the range of products being manufactured in Canada. This process in turn has opened up new areas of the domestic market to import penetration, while restricting further the ability of manufacturers to offer a complete line of products to both domestic and export markets.

  This sector draws upon a wide range of suppliers for basic steel and alloys, castings, forgings, seals, bearings, instrumentation and controls, and engineering services. Most of the equipment and services

are of Canadian origin, however, some alloys, forgings, bearings and seals are not available from domestic production and are imported. The sector's markets are predominently the natural resource and process industries, pipelines, and service and maintenance companies.

- Mechanical power transmission equipment (SIC 3194, 3199)

There are 30 companies with 1,250 employees manufacturing this group of products which includes: gears and gearboxes; clutches and couplings; hydraulic pumps and motors, valves, and cylinders; and pneumatic and hydraulic fittings. All companies in this sector are small, with less than 100 employees; and 30 per cent are foreign-owned, mainly by major U.S. manufacturers.

Mechanical power transmission equipment manufactured by Canadian-owned companies is mainly limited to the production of custom engineered and specialty products, and the assembly and packaging of imported components. Mass produced standard item products such as gearboxes, gearmotors, hydraulic motors, pumps and valves, for the most part, are imported by Canadian subsidiaries of major producers in the U.S.A. and Europe either as fully-machined individual components or sub-assemblies for custom packaging. Canadian-owned manufacturers have secured a niche in both domestic and export markets mainly through the manufacture of custom-engineered products for specialty applications. Import competition comes from major manufacturers in the U.S.A., Europe and Japan.

The manufacturers are purchasers of basic steel, forgings, castings, bearings, seals, electric motors, lubrication systems, and finished components. Over half of these parts and equipment are of Canadian origin; the balance is imported. Mechanical power transmission equipment is mainly sold to a variety of manufacturers for incorporation in industrial products.

Performance

Shipments of Fluids Handling and Mechanical Power Transmission Equipment totalled $942 million in 1985 which represented 7 per cent of total machinery industry shipments. Exports of $236 million represented 25 per cent of total sector shipments of domestic manufacturers, and imports of $955 million captured a sizable 57 per cent of domestic market.

Total sector shipments in during the period 1980-1985 declined at 2.5 per cent (in real terms) annually, compared to the overall machinery industry which declined at 1.3 per cent per annum.

The performance of the two major subsectors for the period 1980-1985 was very different:

- Fluids Handling Equipment

Shipments of fluids handling equipment, which in 1985 were $795 million, declined at a real annual rate of 2 per cent during the period 1980-1985. Exports of $211 million represented 27 per cent of shipments in 1985, while imports of $661 million captured 53 per cent of the $1,245 million domestic market.

Canadian manufacturers increased their share of the domestic market from 43 per cent to 47 per cent during the 1980-1985 period. Their apparent success in the domestic market was due to the sector's ability to supply quality specialty-engineered equipment in relatively short lead times, and to after-sales service.

- Mechanical Power Transmission Equipment

Shipments of mechanical power transmission equipment, which in 1985 were $147 million, declined at a real annual rate of 5 per cent during the period 1980-1985. Exports of $25 million comprised 17 per cent of shipments from domestic manufacturers in 1985, while imports of $294 million captured 71 per cent of the domestic market.

Canadian manufacturers increased their share of the domestic market only slightly, from 27 per cent to 29 per cent during the 1980-1985 period. The high incidence of imports is due to the fact that the small size of the domestic market does not allow sufficient economies of scale to warrant production of the wide range of products demanded.

2. STRENGTHS AND WEAKNESSES

Structural

In general, many of the manufacturers in the fluids handling and mechanical power transmission sector are strong in the areas of product technology, and after-sales service, which are demanded by a sophisticated clientele. The industry's labour and material costs are high, and while it has adopted sophisticated design and production equipment, it does not benefit from the same economies of scale as many of its international competitors.

Most of the larger firms in the sector are foreign-owned which contributes to both its strengths and weaknesses. In some instances, due to licensing agreements and corporate market rationalization, Canadian companies find themselves excluded from participating in certain export markets. Furthermore, in times of a weak economy production has been, and can in the future, be rationalized and transferred to parent company plants.

However, in many instances, foreign ownership has been a strength for subsidiary companies, particularly those that possess world product mandates. Parents of these companies have often provided invaluable international marketing assistance to the Canadian subsidiary. Other benefits obtained by Canadian companies from parent operations include access to technology and research and development facilities, and financial assistance.

Canadian-owned firms, on the other hand, in pursuing niches in their markets have developed considerable expertise and technology. For example, Velan Ltd. is a leader in the manufacture of nuclear valves, and Wilson Machine Company in high precision gears.

Trade Related Factors

As previously noted the sector is dominated by mainly U.S.-owned multi-nationals that established in Canada many years ago in order to get relief from high import tariffs. These tariffs were generally 22.5 per cent on goods of a class or kind made in Canada and 7.5 per cent on goods not made in Canada. Currently the tariff rate on machinery is 9.9 per cent and duty remission may be granted where the products are not available from Canadian manufacturers. However, little or no tariff protection is in place for a wide range of equipment imported for end-use services including: fertilizer plants, mining, and oil recovery. This tariff structure which was put in place to assist specific industries, has in turn reduced the protection for Canadian manufacturers and, in effect opened their market up to strong import competition.

Price dumping has had a significant impact on the domestic market. Dumping is difficult and costly to prove as many projects are tendered through closed bids which makes it difficult for Canadian manufacturers to establish grounds sufficient to justify initiation of a dumping

investigation by Revenue Canada. Furthermore, most companies are reluctant to initiate proceedings against a major customer for fear of losing future business.

Canadian manufacturers are at a serious disadvantage in the domestic market when competing with foreign producers which have secured concessional financing for major projects. These projects are particularly important to domestic manufacturers who rely on the Canadian market as a base for financing capital investment and research and development.

Tariffs on goods shipped to the U.S.A., which account for 80 per cent of sector exports, vary from 2.8 to 8.5 per cent; while those of the EEC, Canada's second largest market, range from 3 to 5 per cent.

Technological Factors

Canadian mechanical equipment manufacturers possess a high level of technological competence. This capability is, however, due partially to affiliations with foreign parent organizations that have developed the majority of technologically-advanced machinery products. Canadian-owned firms tend to specialize in mature technology areas of production where R & D activities are related to improvements in performance characteristics and applying equipment to specific process applications, as opposed to new product development. In some product areas the next generation of equipment will see built-in microprocessor controls in individual operating units. This could be an excellent opportunity area for Canadian manufacturers who are strong in application engineering. The industry overall, with its thorough knowledge of equipment service requirements, well equipped manufacturing and test facilities, highly trained people, and (in the case of subsidiary operations) access to parent company design information, is at a level of technological competence on par with the U.S.A., and other industrialized countries.

While many Canadian companies utilize modern computer-numerically-controlled (CNC) machinery and CAD/CAM in their manufacturing operations, there is room for further upgrading by additional automation.

Other Factors

The low value of the Canadian dollar in recent years has helped to offset the country's high labour costs. Should the value of our dollar increase substantially, Canada's competitive position versus foreign suppliers in both the export and domestic markets could be seriously impaired.

3. FEDERAL AND PROVINCIAL PROGRAMS AND POLICIES

The fluids handling and mechanical power transmission equipment sector benefits from the provisions of the Machinery Program which ensures that manufacturers receive duty protection on equipment they manufacture in Canada. At the same time, many of these firms are assisted in rounding out their product line by receiving remission of duty on imported machines not manufactured in Canada.

4. EVOLVING ENVIRONMENT

The demand for fluid handling and mechanical power transmission equipment will closely follow overall industrial activity in Canada. The majority of Canadian companies are on single-shift operations and a further reduction in tariff protection and resultant increase in international competition will increase the potential for further manufacturing rationalization, particularly by U.S. multi-nationals whose Canadian subsidiaries were established to serve the Canadian market. Such rationalization would have the greatest impact on the producers of

high-technology products such as turbo blowers, high vacuum pumps, and centrifugal compressors where product design is based solely on parent company technology.

The mainly Canadian-owned manufacturers of the more mature, custom-built products with a high element of after-sales service should continue to grow. However, to maintain their position in the marketplace these manufacturers will have to maintain or increase spending on R & D and further application of CAD/CAM and flexible manufacturing systems.

5. COMPETITIVE ASSESSMENT

Canadian manufacturers in the fluids handling and mechanical power transmission equipment sector do not supply a complete line of products due to low demand for some goods, and recent rationalization in the industry.

The level of competitiveness in the sector varies widely from those product lines which now enjoy international success such as forged steel valves, plant air compressors, and coal slurry pumps, to products which are encountering severe import competition including piston/plunger pumps, and portable air compressors.

The sector has a solid core of skilled workers, good engineering support, and currently benefits from the low value of the Canadian dollar in relation to its major competitors in the U.S.A. It is expected that Canada will retain its competitive position vis-à-vis its largest export market unless there is a significant change in the value of the dollar.

Nevertheless, with substantial worldwide overcapacity in the industry, competition is fierce in both the domestic and export markets, and it is expected that Canadian producers will find themselves subject to intense price competition especially when quoting on major industrial projects. This situation will become more critical in the domestic marketplace with reducing import tariffs.

Furthermore, the smaller manufacturers, many of them Canadian-owned, who do not have competitive economies of scale in their manufacturing operations will be under continuing pressure to acquire more automated design and manufacturing equipment.

Prepared by: Machinery and Electrical Equipment
Department of Regional Industrial Expansion

Assistant Deputy Minister
Capital and Industrial Goods

Date: 26 June 1986

DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

FACT SHEET

NAME OF SECTOR: **Mechanical Power Transmission and Fluids Handling Equipment.**

SIC(s) COVERED: **3092, 3191, 3192, 3199, 3911, 3194.***

1. PRINCIPAL STATISTICS

	1971	1980	1981	1982	1983	1984	Estimate Partial 1985
Establishments							180
Employment							9,250
Shipments ($ M)	221	730	838	837	731	844	942

2. TRADE STATISTICS

	1971	1980	1981	1982	1983	1984	1985
Exports ($ M)	63	230	247	219	188	215	236
Domestic Shipments ($ M)**	158	500	591	618	543	629	707
Imports ($ M)	199	790	880	803	632	806	955
Canadian Market ($ M)**	357	1,290	1,471	1,421	1,175	1,435	1,661
Exports as % of Shipments	29	32	30	26	26	26	25
Imports as % of Domestic Market	56	61	60	57	54	56	58

Source of imports (%)	**U.S.**	**E.E.C.**	**ASIA**	**OTHERS**
1981	80	12	5	3
1982	79	11	5	5
1983	82	10	5	3
1984	82	11	5	2

Destination of exports (%)	**U.S.**	**E.E.C.**	**ASIA**	**OTHERS**
1981	73	8	3	16
1982	69	7	6	18
1983	57	11	2	30
1984	69	12	4	15

3. REGIONAL DISTRIBUTION - Average over the last 3 years

	Atlantic	Québec	Ontario	Prairies	B.C.
Establishments - % of total	2%	13%	61%	17%	7%
Employment - % of total	2%	18%	60%	15%	5%
Shipments - % of total	3%	20%	55%	15%	7%

4. MAJOR FIRMS

Name	Ownership	Location of Major Plants
Crane Canada Ltd.	U.S.A.	Brantford, Ontario, St. John, N.B.
Canadian Blower/Canada Pumps Ltd.	U.S.A.	Kitchener, Ontario
Novenco Canada Inc.	Denmark	Cambridge, Ontario
CML Northern Blower Ltd.	Cdn.	Winnipeg, Man.
DeVilbiss (Canada) Ltd.	U.S.A.	Barrie, Ontario
Cord Turbo-Blower Limited	Cdn.	Toronto, Maple, Ontario
Dresser Industrial Products	U.S.A.	Lethbridge, Alta.
CompAir Canada Ltd.	U.K.	Mississauga, Ontario
Monarch Industries Ltd.	Cdn.	Winnipeg, Man., Cambridge, Ontario
Bingham Willamette Ltd.	U.S.A.	Burnaby, B.C.
Velan Ltd.	Cdn.	Montreal, Granby, Quebec
Jenkins Valve Ltd.	Cdn.	Montreal, Quebec
Worthington Canada Ltd.	U.S.A.	Brantford, Ontario
Allis Chalmers Canada Ltd.	U.S.A.	Guelph, Ontario
Delhi-Sheldons Inc.	Cdn.	Delhi, Ontario
Wilson Machine Co.	Cdn.	Montreal, Quebec
Hamilton Gear & Machine Ltd.	Cdn.	Toronto, Ontario

* SIC's on 1980 basis

** May not add due to rounding

DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION June 23, 1986

COMPETITIVENESS PROFILE

FOLDING CARTONS & SET-UP BOXES

1. Structure and Performance

a) Structure

Folding cartons and set-up boxes are produced by cutting and creasing lightweight boxboard. Folding cartons are folded flat for shipment (e.g. home detergent boxes). Set-up boxes are sold in the end use form and shape (e.g. old-fashioned shoe boxes).

The largest markets for these cartons and boxes are the food, beverage and tobacco industries, accounting for almost 70 percent of the Canadian market. The user list also extends to a wide spectrum of other customers, none of which accounts for more than a few percent of the market. There is strong competitive pressure from substitutes, such as plastics, for the same end uses.

The subsector was developed under strong tariff protection and is heavily oriented to the domestic market. International trade is not significant (exports and imports are each about 2 to 3 percent of shipments).

There are an estimated 107 manufacturing establishments in this subsector. They are concentrated in Ontario (60) and Quebec (28) but there are plants in most other provinces. In 1984, employment was estimated at 5,100 and shipments at $655 million.

Approximately 40 to 45 percent of container capacity is integrated with boxboard production, mostly within the major producer, Belkin Inc. Boxboard is by far the major element of material cost and is supplied mostly by Canadian mills. Adhesives and printing inks are also key raw materials.

Facilities for the production of folding cartons and set-up boxes exist in all of the developed countries, and in a less sophisticated way, in some of the developing countries. Generally, freight costs keep trade among producer countries small.

b) Performance

From 1973 to 1984 there has been a negligible net increase in the number of manufacturing establishments. However, production capability has increased as a result of capital investment in more efficient production equipment. This has led to a severe and chronic competitive overcapacity condition. Real rate of demand growth is low because of the mature market and the loss of market share to containers made of other materials. This will continue over the long-term. The interplay of overcapacity and low growth has sustained a highly competitive price environment within which price increases have often failed to offset increasing costs. Profit margins have been squeezed, reducing the ability of the industry to finance modernization. On average, the earnings of the subsector are of the order of 2 to 3 percent of net sales, before taxes.

2. Strengths and Weaknesses

a) Structural

The size of the Canadian folding carton market is relatively modest. The number of production plants is relatively large but none is specialized. As a result, Canadian producers cannot take advantage of the economies of scale and in the continuing scramble for the available business, the producers must respond to a wide range of customer demands. The chronic overcapacity - particularly in Ontario and Quebec - is likely to continue, given the maturity of the market and the continuing pressure of alternative packaging products, such as plastics.

The main elements of costs are material costs (65%) and labour. Even with the advantage of the current exchange rate ($Cdn = $U.S. 0.72), the average Canadian producer's labour and material costs are higher than his U.S. counterpart's by some 8 to 10 percent of selling prices. The higher material cost is discussed in the Boxboard Competitiveness Profile.

Transportation costs are sizeable because of the bulk of the product and limit trade to areas close to the Canada/U.S. border.

The Canadian producers' ability to meet smaller orders allows them to serve niche markets where price is less of a consideration than quality of design and graphics. Even so, the question of price is always somewhat relevant. Canadian competitiveness in these niche markets generally hinges on the use of cheaper American-made boxboard that is imported, converted in Canada and resold in the U.S. The Canadian duty on boxboard, paid upon entry, is refunded when the board is re-exported in the converted form.

b) **Trade Related Factors**

Canada's imports and exports in this subsector are almost negligible, each amounting to less than 3 percent of shipments.

Effective January 1, 1987, the Canadian tariff on cartons and boxes will be 10.2 percent and the U.S. tariff will be 3.0 percent.

The "Buy American" requirement is a potential barrier to trade but has not yet been a significant factor against Canadian carton sales.

c) **Technological Factors**

Japan and Europe are the principal suppliers of production equipment to carton and box producers of the world. The U.S. has a relatively small indigenous equipment industry that caters mainly to the U.S. market. Canada has no domestic suppliers of production equipment of this class. The level of basic technology in place in the major folding cartons producing countries is comparable.

d) **Other Factors**

Apart from the higher tariff, the existing currency exchange rate is an important protection for the Canadian producer against the U.S. penetration of the domestic market. From time to time, U.S. producers with an excess supply will adjust prices to offset the currency premium and temporarily penetrate the Canadian market.

3. **Federal/Provincial Programs and Policies**

This subsector has made a number of requests for IRDP assistance but most have been rejected and the actual assistance has been small. No provincial government appears to have in place any specific policy with regard to the government appears to have in place any specific policy with regard to the subsector.

4. **Evolving Environment**

Over the long term, the average real growth in the subsector is expected to be marginal, at less than 2 percent per year. This expectation applies to both Canada and the U.S.

Product substitution is likely to continue, and probably even intensify in certain applications (such as liquid packaging), thereby aggravating the overcapacity problem.

The squeeze on profit margins will likely continue and this will result in a continuing low level of capital formation in the subsector. Such modernization as the industry may be able to afford, carries the clear risk of increasing capacity, and thereby again aggravating the chronic overcapacity problem.

Domestic price levels of the boxboard raw material could rise faster in Canada than in the U.S. and tip the competitive balance further in favour of U.S. producers. Ontario and Quebec producers would be particularly hurt.

5. **Competitiveness Assessment**

Canadian producers in the subsector are generally not competitive in the U.S. market, and are only marginally so in their home market against U.S. competitors, even with the benefit of the current exchange rate and existing tariff. The root of the Canadian disadvantage is material and labour costs as well as the difficulty of achieving economies of scale with the small Canadian market and fragmented production. The current Canadian cost disadvantage is 8-10 percent of the sale price, excluding duty and freight. On the other hand, in certain U.S. niche markets, where price is less of a consideration than functional design and quality graphics, some Canadian producers can compete.

In general, the relatively fragile state of the corporate financial structure of Canadian producers will constrain many from participating in development opportunities and improving their competitiveness by modernizing their equipment.

Prepared by: Resource Processing Industries Branch
DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

Assistant Deputy Minister
Consumer Goods, Services and Resource Processing

Date: 25.6.86

DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION June 18, 1986

FACT SHEET

NAME OF SECTOR: Pulp and Paper SIC(s) COVERED: 2731 (1980) *
SUBSECTOR: Converted Products - Folding Cartons & Set-up Boxes

PRINCIPAL STATISTICS

	1973	1980	1981	1982	1983	1984	1985 (e)
Establishments	105	109	109	106	107	107(e)	107(e)
Employment	6264	5611	5526	5330	5260	5100(e)	5100(e)
Shipments ($ millions)	231	486	557	578	603	655(e)	702(e)
Gross Domestic Product (Constant 1971-$ millions)	Not available - confidentiality in sub-groups						
Investment ($ millions)	"	"		"		" "	"
Profits Before Tax (% of Sales)(e)	6	4	4	3	3	3	2

2. TRADE STATISTICS

	1973	1980	1981	1982	1983	1984	1985
Export ($ millions)	Neg.	3(e)	2(e)	9(e)	16(e)	18(e)	20(e)
Domestic Shipments ($ millions)	231	486	557	574	602	660	705
Imports ($ millions)	9	19	20	21	24	26(e)	28(e)
Canadian Market ($ millions)	240	505	577	595	626	686	733
Exports as % of Shipments	Neg.	Neg.	Neg.	2	3	3	3

Canadian Share of International Trade (Exports as % of World Apparent Consumption): Infinitely small.

Source of imports (top 4): U.S.

1981	98(e)
1982	98(e)
1983	98(e)
1984	95(e)

Destination of exports (top 4): U.S.

1981	80(e)
1982	60(e)
1983	86(e)
1984	90(e)

3. REGIONAL DISTRIBUTION - Average over the last 3 years

	Atlantic	Québec	Ontario	Prairies	B.C.
Establishments - % of total	3	28	59	6	4
Employment - % of total	2(e)	32	60	4(e)	2(e)
Shipments - % of total	2(e)	31	61	3(e)	3(e)

4. MAJOR FIRMS

Name	Ownership	Location of Major Plants	Concentration (% of domestic market)
Somerville-Belkin Industries Ltd.	Canadian	National	)
Rolph Clark Stone Packaging	"	Ont./Que.	)
Lawson Mardon Group Ltd.	"	"	) 74(e)
Reid-Dominion Packaging Ltd.	"	"	)

e - Denotes estimate
Neg. - Denotes negligible

DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION DRAFT

COMPETITIVENESS PROFILE

FOOD PROCESSING EQUIPMENT

1. STRUCTURE AND PERFORMANCE

a) Structure

This sector includes manufacturers of machinery and ancillary equipment, controls, and inspection equipment for sale to the food industry. The primary uses of machinery in this sector are for processing edible foods such as meat, poultry and fish, baked goods, milk products, beverages and fresh produce. Some examples of the type of machines produced in Canada are: dough sheeter-moulders, dough proofers and ovens for use in bakeries; fish eviscerating machines, fish conveying and unloading equipment for use in fish processing plants; and hide strippers, carcass washing, scalding and singeing machines for use in slaughterhouses.

Canadian capability in the manufacture of food processing equipment is limited. Most firms specialize in one or two "niche" type products. The equipment sub-sectors in which Canada has developed the strongest manufacturing capability are bakery, meat and poultry, fish, and milk processing equipment. Thirty-two manufacturers of bakery equipment supply a wide range of standard and custom engineered machinery, ranging from pizza ovens to complete mobile bakeries for military field camps. There are 21 manufacturers of meat and poultry processing equipment that supply a somewhat limited range of machinery including meat cutting bandsaws and continuous sausage processing systems, and 12 manufacturers of fish processing equipment producing machinery such as fish unloaders and automatic fish descalers.

The remaining sub-sectors have limited production capability (e.g. flour and gristmilling machinery, distilling and brewing equipment). In many product areas, (e.g. pasta processing and confectionary equipment) the domestic market is served entirely by imported machinery.

There are approximately 115 manufacturers of food processing equipment in Canada. In statistical terms the sector employs an estimated 2,000 people and had 1985 shipments of $64 million of which exports comprised $47 million. Imports to Canada in 1985 were $181 million. The firms in this industry are generally characterized as small Canadian owned businesses. Average employment is between 15 and 25 people and only four companies have over 100 employees. The four major firms in the sector are: TCI-Superior, Division of Mueller Canada Ltd.; L and M Manufacturing Co. Ltd.; Food Machinery Engineering and Knud Simonson Industries Ltd. These four companies account for approximately 20 per cent of the sector's employment, 50 per cent of shipments and 30 per cent of exports.

Approximately 90 of the 115 manufacturers are Canadian owned. Only, the dairy equipment sub-sector is dominated by Swedish and American owned subsidiaries.

Seventy-five per cent of the firms in the industry are located in Ontario and Quebec and about 10 per cent in the Atlantic Provinces, the latter being mainly fish processing equipment producers.

In the U.S.A. the structure of the industry is similar but on a much larger scale. There are approximately 800 manufacturers of food processing equipment employing an estimated 90,000 people with 1985 shipments of about $5.6 billion (U.S.). About a dozen large companies supply approximately 20% of the U.S. market for food processing equipment. Information on the structure and performance of this sector in other countries is not available. Canada's major international competitors are the U.S. firms, FMC Corp., AMF Inc., and Cherry-Burrell (a unit of Canadian owned AMCA International); the U.K. based, APV-Crepaco, with large subsidiary operations in the U.S.A.; Alpha-Laval of Sweden; and Baader Machine Works of West Germany. These competitors all have sales in excess of $100 million (U.S.) annually.

b) Performance

The performance of the food processing equipment sector is linked to investments by the food processing industry and is mainly influenced by population growth and consumer food preferences. As such, the sector is relatively mature with production tending to grow slowly but consistently. Shipments in the sector grew by less than one per cent in real terms annually, from $25 million in 1974 to $64 million in 1985. Growth in shipments continued during the economic recession due partly to strong export shipments in 1983.

The sector has a high export orientation relative to its shipments. This reflects a trend towards specialized equipment designs, particularly by a small number of firms who have successfully adjusted their operations to focus on specific export markets in product areas such as bakery and meat processing equipment. The majority of the smaller firms primarily serve the domestic market. The U.S.A. is the principal export market for food processing equipment although isolated exports, mainly of bakery equipment, have occurred to such countries as China, Algeria, Jordan and Indonesia. The relative importance of exports as a component of total Canadian shipments has increased from 25 per cent in 1974 to as high as 93 per cent in 1983. Over the past 10 years exports have averaged 64 per cent of sector output.

The share of the Canadian market held by domestic manufacturers has declined from 26 per cent in 1974 to 9 per cent in 1985. Imports have consistently captured a significant share of the Canadian market averaging 90 per cent over the last 10 years. Canadian imports in 1985 were $181 million of which the U.S.A. supplied over two-thirds, the U.K., 5 per cent, and other EEC countries, 25 per cent. Approximately half of the imports of food processing machinery and components are in product areas where no Canadian manufacturing capability exists. Even within the bakery, meat, fish and dairy equipment areas there are imports of specialized equipment which are not produced in Canada.

The relatively small Canadian food processing equipment firms generally lack the financial strength of the large international competitors with which they compete in both the Canadian and export markets. Cash flow problems are common as many companies are unable to afford a level of promotional activity or a distribution network comparable to that of larger firms.

2. STRENGTHS AND WEAKNESSES

a) Structural

In common with most Canadian machinery sectors, competitive strength in food processing equipment tends to be selective in terms of the types and sizes of equipment produced. As noted above, there are many areas where there is either narrow or non-existent production capability. The areas of greatest capability and competitive strength are bakery, meat and poultry, fish and milk processing equipment. The four firms mentioned above constitute the competitive strength of the sector.

The high import penetration rate primarily reflects the following factors: (i) the extremely wide range of sizes and types of machinery required by the food industry, often in small quantities with the result that it is uneconomical for the sector to attempt to produce all requirements; (ii) the tendency of subsidiary firms in the food industry to purchase their machinery requirements on the basis of what is currently in place in the parent's facilities; (iii) the established reputation of many foreign competitors with well developed distribution and service networks in Canada; and (iv) the fact that Canadian manufacturers do not supply complete lines of equipment in many areas.

A particular weakness of the sector is related to the fact that few Canadian manufacturers are large enough to be able to commit themselves to contracts containing process performance clauses. In addition, food

product companies are building large, integrated plant installations. In Canada there are only four equipment manufacturers who are capable of undertaking these turnkey projects which require the installation of structural, mechanical, electrical and computerized process control systems. The majority of manufacturers in the sector specialize in only one or two kinds of food processing equipment and do not have complete processing lines.

Although, on a currency adjusted basis, Canadian labour and material costs are comparable with U.S. manufacturers, the competitiveness of producers can be influenced by factors other than price. Quality, design, efficiency, after sales service and ease of maintenance are some of these factors. Compared to competitors in Europe and America, Canadian equipment producers generally do not have the financial strength, economies of scale, technology, marketing strength or after-sales service to compete on world markets. These factors have tended to limit their acceptance by major domestic and international food companies.

The sector achieves its level of shipments primarily through the direct sale of products to the purchaser, using its own sales force. Other marketing techniques such as, participation in trade shows, bidding to specific projects and the exploitation of 'showcase' type installations often prove effective in expanding the sector's reputation and marketshare. Government assistance programs (i.e., PPP, PEMD, and EDC) are frequently used by many of the small firms in the sector and contribute to the development of export markets. The sector will require continuing export assistance to remain competitive internationally.

b) Trade Related Factors

Food processing equipment is imported into Canada under Tariff Item 42700 with an MFN rate of 9.9 per cent (decreasing to 9.2 per cent in 1987). If reasonably equivalent machinery is not available from Canadian production, then under the terms of the Machinery Program the duty which might otherwise be payable on the machine, including its replacement parts, controls, attachments and accessories, may be remitted. Food processing equipment imported into the United States is subject to a duty of 4.0 per cent ad valorem. Equipment imported into the EEC is subject to a duty of 3.8 per cent ad valorem. There are no non-tariff barriers which constitute a significant barrier to trade with the U.S.A. or Europe.

c) Technological Factors

The design and development of new food processing machinery in Canada is quite limited. Only a few of the Canadian equipment manufacturers are capable of independently conducting their own product developments. In general U.S. and European competitors manufacture products with more advanced designs. Major food companies, in an effort to increase their productivity, are demanding high speed, automated, sanitary equipment designs. Most firms in the Canadian food processing equipment sector are too small and undercapitalized to undertake the necessary R&D projects that would improve the quality of their machinery to meet these requirements. New technologies, if developed at all, usually are generated in-house; licensing agreements and other formal technology acquisition happen infrequently.

3. FEDERAL AND PROVINCIAL PROGRAMS AND POLICIES

Food processing equipment firms benefit from the provisions of the Machinery Program which ensures that manufacturers receive duty protection on equipment they manufacture in Canada. At the same time, many of these same firms are assisted in rounding out their product line by receiving remission of duty on imported machines and components not manufactured in Canada.

Firms also have access to incentive programs that encourage export development, R&D and innovation.

4. EVOLVING ENVIRONMENT

The future environment for food processing equipment will be characterized by the incorporation of new technologies into machine designs. New and emerging technologies in such areas as ultrafiltration, gamma irradiation, microwave food containers, biotechnology, and technology for low calorie, ethnic and convenience foods, are creating new opportunities and challenges for Canadian manufacturers to design and supply machinery. Canadian equipment manufacturers have limited capability in these emerging technologies and it is likely that they will lag behind their competitors in incorporating new technologies into their equipment.

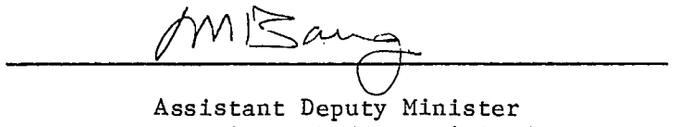
The market for food processing equipment in North America is expanding again after suffering a downturn in both 1981 and 1982. Three growth factors are creating a positive impact on equipment demand: i) the general economic recovery in the U.S.A., ii) a gradual rise in food consumption, and iii) the ongoing commitment in most food processing industry segments to higher productivity and integrated processing and packaging systems. The U.S.A. market is expected to remain strong into the 1990's. Annual sales are expected to increase by more than 10 per cent, and to reach the $10 billion level by 1995. In Canada, the same market trends are expected to prevail.

5. COMPETITIVE ASSESSMENT

In general, the Canadian food processing equipment sector is comprised of small firms with limited financial resources. While strong demand is forecast for food processing equipment over the next decade, these small Canadian firms will have difficulty taking advantage of the opportunities. A particular weakness of the sector is its inability to supply complete plant installations to the large food companies. This is expected to make it difficult for most sector firms to compete internationally. Small firms in particular will be continually pressed to maintain adequate levels of marketing, technical, and service support to meet the competitive pressures of an international marketplace dominated by strong multi-national corporations.

A small number of Canadian food processing equipment manufacturers are competitive in certain 'niche' product lines such as milk sterilization systems, bakery equipment, meat processing equipment and some specialty machines such as continuous sausage processing systems. These manufacturers are active in both domestic and export markets and are internationally competitive. Continued and enhanced access to foreign markets is an important factor if these companies are to remain competitive.

Prepared by: Machinery and Electrical Equipment Branch
Department of Regional Industrial Expansion



Assistant Deputy Minister
Capital and Industrial Goods

Date: 27 June 1986

DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

FACT SHEET

NAME OF SECTOR: FOOD PROCESSING EQUIPMENT **SIC(s) COVERED:** 3199 *

1. PRINCIPAL STATISTICS

	**1974	1980	1981	1982	1983	*** 1984	*** 1985
Establishments	–	–	–	–	–	–	115
Employment	–	–	–	–	–	–	2,000
Shipments ($ millions)	25	37	41	52	47	55	64
Gross Domestic Product	–	–	–	–	–	–	–
Investment ($ millions)	–	–	–	–	–	–	–
Profits After Tax ($ millions)	–	–	–	–	–	–	–

2. TRADE STATISTICS

	**1974	1980	1981	1982	1983	1984	1985
Exports ($ millions)	6	25	29	27	44	28	47
Domestic Shipments ($ millions)	19	12	12	25	3	27	17
Imports ($ millions)	53	140	147	134	143	180	181
Canadian Market ($ millions)	72	152	159	159	146	207	198
Exports as % of Shipments	25%	60%	71%	52%	93%	51%	73%
Imports as % of Domestic Market	74%	92%	92%	84%	98%	87%	91%
Canadian Share of International Market	–	–	–	–	–	–	–

Source of imports $ millions and (%)	U.S.	E.E.C.(9)	ASIA	OTHERS
1981	107 (73)	32 (22)	0.3 (0)	8 (5)
1982	93 (70)	33 (25)	0.6 (0)	7 (5)
1983	99 (70)	38 (26)	0.8 (0)	5 (4)
1984	125 (69)	47 (26)	2.0 (1)	7 (4)

Destination of exports $ millions and (%)	U.S.	E.E.C.(9)	ASIA	OTHERS
1981	15 (54)	2 (4)	1.0 (2)	10 (40)
1982	17 (59)	1 (4)	2.0 (8)	7 (25)
1983	17 (39)	2 (5)	5.0 (11)	20 (45)
1984	20 (70)	3 (11)	0.6 (1)	5 (18)

3. REGIONAL DISTRIBUTION – Average over the last 3 years

	Atlantic	Québec	Ontario	Prairies	B.C
Establishments – % of total	10	24	50	10	6
Employment – % of total	–	–	–	–	–
Shipments – % of total	–	–	–	–	–

4. MAJOR FIRMS

	Name	Ownership	Location of Major Plants	Sub-Sector
1.	TCI-Superior, Div. of Mueller Canada Ltd.	American	Ontario	Dairy
2.	L and M Manufacturing Co. Ltd.	Canadian	Ontario	Bakery
3.	Food Machinery Engineering	Canadian	Ontario	Bakery
4.	Knud Simonsen Industries Ltd.	Canadian	Ontario	Meat Processing

*SIC on 1980 basis used

**1973 data not provided due to a data base change

***Estimated

DRAFT - PROJET

DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

Competitiveness Profile
The For-Hire Trucking Industry In Canada

1. Structure and Performance

a) Structure

The trucking of freight takes place through either the for-hire trucking sector or private trucking fleets owned and operated by companies, such as large retail chains, to serve their own transportation needs. Little data are available on the privately-owned fleets and this profile covers only the for-hire trucking sector.

The for-hire trucking industry in Canada (1980 SIC 456) is characterized by a significant degree of regulation and is made up of three different types of carriers. Firstly, regulated common carriers offer their services to any shipper for a fee and operate over both regular and irregular route networks, transporting general freight and special commodities such as refrigerated cargo, forest products, bulk liquids and automobiles. Secondly, regulated contract carriers enter into contractual arrangements with a shipper or several shippers to carry goods to a specific destination on a frequent, scheduled basis. Thirdly, unregulated exempt commodity carriers transport a variety of commodities, which vary from jurisdiction to jurisdiction, without obtaining the usual operating authorities. These exempt commodities include garbage, sand, gravel, livestock and mail. The first two types are the most significant in terms of numbers of firms and total revenues earned.

In 1984, the Canadian for-hire industry as a whole was comprised of 4,805 carriers, each earning revenues of over $100,000 a year. These carriers earned revenues totalling $6.74 billion and employed 83,675 individuals.* Among the regulated common carriers, carriers of general freight dominate the for-hire industry in terms of number of firms (27% of total), employees (62% of total), as well as share of revenue (56%). Although no reliable statistics exist with respect to carriers earning less than $100,000 in annual revenues, it is estimated that there are approximately 9,000 trucking firms in this category who earn a combined total of approximately $950 million in revenues each year. It is also estimated that total for-hire revenues account for 45% of all trucking industry revenues, while private carriage accounts for the remainder.

The for-hire trucking industry in Canada is largely Canadian owned. Foreign controlled firms can, however, operate in the Canadian market either by establishing wholly-owned subsidiaries and acquiring new operating authorities or by acquiring the operating authorities of existing Canadian carriers through purchase or merger. These foreign controlled firms are few in number but usually have large and financially secure parents that often have existing operational networks within the North American marketplace. Foreign controlled carriers earn approximately 10% of total Canadian domestic revenues. The industry, whether Canadian or foreign controlled, is currently subject to direct foreign competition in the Canada - U.S. transborder market only.

Transborder trucking plays an important role in the movement of Canadian exports to the United States. In 1984, 53% of the total value of these exports (or over $82 billion worth) was transported by truck to the United States. Some estimates placed total transborder revenues in 1983 for carriers domiciled in both countries at $1.5 billion, with the 750 Canadian domiciled carriers earning $700 million or 46% of the total, and the 1,000 U.S. domiciled carriers earning the remainder. No reliable data exist concerning the value of U.S. products shipped to Canada by truck.

The for-hire trucking industry has recently been characterized by a movement towards a greater degree of concentration. In the early 1980's,

* Although 1984 is the most recent year for which reliable statistical information on the for-hire trucking industry is available, it should be noted that the analysis contained in this profile is based as well on more recent knowledge obtained through industry contacts.

this process involved mainly small and medium-sized carriers who found themselves unable to survive the recession and were acquired by larger, more financially sound firms. In addition, it now appears that some merger and acquisition activity is beginning to take place among the larger carriers in the industry as well.

b) Performance

As is the case with all transportation service sectors, performance in the Canadian for-hire trucking industry is closely linked to the quantity of freight to be moved, and thus, to the economic health of the country in general. During the mid to late 1970's, the industry was in a high growth period and showed significant increases in the number of establishments and employees, as well as in revenues earned. However, at the beginning of this decade, the North American recession had a severe impact on the industry and resulted in a significant decline in employment (16,000 fewer employees in 1983 than in 1980) and an increase in bankruptcies, particularly among smaller firms. However, since the end of 1982, there has been a steady upward trend in revenues, and the industry significantly improved its overall performance in 1984.

Using 1978 as a base year, the industry's debt-to-equity ratio increased significantly during the years of the last recession and has declined steadily since. This indicates that during the recession, the for-hire trucking industry in Canada was forced to rely on debt financing to a more significant degree than usual.

Over the past six years, many of the firms in the industry have been forced to operate with negative working capital. This has affected the industry's ability to meet short-term payments for wages, accounts payable and current debts.

Deregulation of the trucking industry in the United States, which occurred in 1980, has resulted in an increasing U.S. presence in the Canadian market as U.S. carriers, through mergers and acquisitions, have penetrated new markets.

2. Strengths and Weaknesses

a) Structural Factors

There are a number of structural factors which have a negative impact on the competitive ability of Canadian based trucking firms. For example, Canadian carriers of general freight are generally smaller than their foreign competitors and have weaker financial and traffic bases. The various complex and non-uniform regulations which currently apply to the for-hire industry in Canada hinder the efficient movement of goods across the country and often result in increased operating costs for the carrier. It is estimated, based on a 1983 study, that costs for fuel, taxes, and labour are 20-25% higher in Canada than in the United States, on a common currency basis.

In addition, Canadian firms trying to penetrate U.S. markets are hampered by certain geographic realities. For example, on a northbound transborder movement, U.S. carriers usually do not require warehouse or terminal facilities in Canada, since most of the customers served are located within 240-325 kilometres of the border and can be reached in one day. Many U.S. carriers have warehouses or terminals near the border as part of their existing U.S. network. Canadian carriers, on the other hand, would be forced to establish and operate costly new distribution networks in the United States, including warehouses and terminals, if they were to compete effectively in the more distant U.S. markets on a single line haul basis (i.e. without interlining with a U.S. carrier at or near a border point). While it may be argued that the longer U.S. routes have the potential to generate more revenue for the carriers serving them, it should be noted that the high initial capital investment needed to start operations there prohibits all but the largest Canadian firms from entering the market.

Notwithstanding the foregoing, it should be noted that the Canadian industry is competitive in certain specialized market segments, which are either region specific (e.g. short-haul transborder routes in the eastern corridor) or commodity specific (e.g. carriers of forest products).

b) Trade Related Factors

Since it is a transportation service, transborder trucking services are not governed by the General Agreement on Tariffs and Trade.

While most of the barriers to trade are regulatory in nature, there is one tariff barrier which has the potential of affecting the competitive ability of Canadian operators. Canadian carriers are required to pay an import duty on U.S.-manufactured equipment coming into Canada unless that equipment is totally and solely dedicated to transborder operations. The rate of duty ranges between 3.5% and 12%, depending on the type of equipment involved (e.g. straight trucks, 20- and 40-foot trailers, refrigerated units). Canadian-made equipment is not suitable for some types of operations, and in these instances, equipment manufactured in the United States must be imported. Duty must be paid on this imported equipment if it is used in Canadian domestic operations, thereby resulting in increased operating costs.

In addition to this trade barrier, there are also a number of irritants experienced by carriers of both countries which, while not directly impeding trade, result in increased operating costs. Two of the more significant irritants are: i) driver residency requirements, which stipulate that intra-Canada movements must be handled by Canadian drivers and intra-U.S. movements by U.S. drivers, and ii) U.S. customs inspection procedures, which require southbound movements out of Canada to be inspected at the border crossing point, whereas freight can be moved into Canada in bond and then unloaded in sufferance warehouses for inspection. This means that southbound trailers must be loaded in such a way as to permit customs officials to walk the full length of the trailer to inspect the cargo, resulting in a 25% waste of available cargo space in some cases.

Canadian allowances for vehicle sizes and weights are generally greater than those in the United States. In essence this means that in the transborder market, Canadian carriers either cannot maximize their loads, which results in lower productivity levels, or they must operate an additional, smaller fleet of vehicles, which results in higher operating costs since they must acquire and maintain two fleets. On the other hand, U.S. carriers in most instances are able to operate their vehicles at maximum capacity levels in Canada, since their sizes and weights are within Canadian limits.

The complexity and non-uniformity of regulations affecting the trucking industry in Canada also create serious interprovincial barriers to trade. Domestically, provincial variations in vehicle size and payload weight limitations reduce a carrier's fleet flexibility and increase its operating cost because of the inability to use the same size equipment or to maximize payloads in all jurisdictions. Restrictions imposed on operating licenses often result in unbalanced traffic patterns (no backhaul), again increasing costs.

c) Technological Factors

The trucking industry relies to a considerable extent on technological advancements with respect to fuel efficiency (engines and truck bodies) and computerization (rate quotations, shipment tracing). While some of this technology is available from Canadian sources, a large portion of it is imported from U.S. manufacturers. The fact that U.S. firms generally have the financial resources from which to draw results in the Canadian industry lagging the U.S. industry in the acquisition of new technologies.

3. Government Policies and Programs

Under the authority of the federal Motor Vehicle Transport Act and the various provincial transport acts, provincial and territorial transport boards administer the economic regulations of the for-hire trucking industry in Canada. This includes regulations of entry, exit, operating authority specifications, rates, insurance, and vehicle size and weight configurations. The federal government is involved in regulating areas such as safety (including the transportation of dangerous goods), customs, visa and work permit requirements, and hours of work.

In an attempt to lessen some of the regulatory constraints present in the Canadian for-hire trucking industry, all provinces and territories have agreed in principle to implement a number of reform measures designed to ease and standardize certain existing economic regulations. The first phase of these measures consists of easing and simplifying entry requirements and standardizing rate approval and licence application practices. It was originally intended that this phase would be completed by the end of 1986; however not all the provinces have as yet endorsed the proposed measures. The Canadian reform measures have been designed to harmonize our regulations as much as possible with those of the United States.

Deregulation of the U.S. domestic trucking industry has created a current imbalance in entry requirements between Canada and the United States. Since the passage of the Motor Carrier Act in 1980, Canadian carriers seeking to enter the U.S. market must only pass a fitness test in order to be granted a licence. On the other hand, U.S. carriers attempting to obtain Canadian licences must still apply to the various highway transport boards and prove the public convenience and necessity of the proposed service. In recent years, some U.S. carriers have claimed that this imbalance brought about by differing regulatory philosophies impacts negatively on their ability to operate in the Canadian market.

4. Evolving Environment

Deregulation of the for-hire trucking industry in Canada will ultimately result in easier entry into both the Canadian domestic and Canada-U.S. transborder markets for Canadian and foreign owned firms alike. This, in turn, will significantly increase the level of competition among carriers of both countries, as they vie for intra-Canadian and transborder traffic. This eventuality is viewed with concern by some in the Canadian industry who foresee an influx of large, financially secure foreign owned firms who may be in a position to force Canadian carriers out of business. However, it may present an opportunity for some carriers as well.

To this end, a second major restructuring of the industry is beginning to take place. A number of large firms operating in Canada are merging with or buying out other Canadian companies in an attempt to consolidate their holdings and gain expanded operating authority, both domestically and in the United States. For example, Reimer Express Lines, a Canadian owned carrier, has purchased Inter-City Truck Lines; TNT Canada Inc., an Australian owned firm, has bought Dominion Consolidated Truck Lines; and Canadian Motorways Ltd., another Canadian owned carrier, recently reached an agreement to buy Direct Transportation System Ltd. All of these carriers have operations in the United States as well. It is likely that this trend toward concentration will continue as regulatory reform in the for-hire industry progresses. In this new, less regulated environment, Canadian carriers intending to compete effectively with their foreign counterparts should be well-established in both the Canadian domestic and transborder markets.

Those Canadian based firms who choose not to enter into head-to-head competition with foreign owned carriers, either due to their size or lack of market presence, may concentrate instead on establishing and developing a particular market niche. An example of this type of specialization is the increasing number of trucking firms who serve the "just-in-time" market. This concept allows manufacturers to have inventory delivered when it is needed rather than maintaining large inventories.

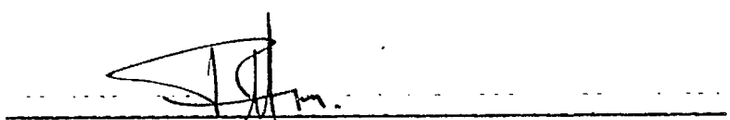
5. Competitiveness Assessment

The competitiveness of the for-hire trucking industry in Canada cannot be accurately assessed in aggregate terms, since significant variations occur with respect to region, carrier specialty, size and average haul length. However, certain conclusions can be drawn.

Although the Canadian industry is competitive in some highly specialized market segments, the structural disadvantages and regulatory hurdles which are faced by the industry result in an overall lower level of productivity and higher operating costs when compared with the U.S. industry. Consequently, the industry in Canada is not, in an overall sense, currently competitive with the U.S. industry. However, an easing of some of the more stringent regulations affecting the industry domestically would encourage Canadian-owned carriers to become more efficient and productive. This would place Canadian-owned carriers in a stronger starting position from which to try and compete for revenue and market share with foreign owned firms, either operating in Canada or from a U.S. base, who will, at the same time, be attempting to increase their penetration of both the intra-Canadian and transborder markets. These types of improvements are also essential for Canadian-owned carriers who hope to successfully compete in the U.S. domestic market.

Some Canadian-owned carriers will still find it difficult to compete successfully with many of the larger, more financially secure foreign owned carriers, based either in Canada or the United States. In fact, the view is held by some that U.S. firms would totally dominate an integrated North American trucking market characterized by unregulated entry. Canadian-owned carriers who concentrate on serving specialized niches, based on geographic region or commodity to be carried, will likely survive and prosper.

Prepared by: Service Industries Branch
DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION



Assistant Deputy Minister
Consumer Goods, Services and Resource Processing

Date: June 5, 1986

DRAFT - PROJET

DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

The For-Hire Trucking Industry in Canada

Fact Sheet (1980 SIC 456)

1. Principal Statistics

	1974*	1979	1980	1981	1982	1983	1984 **
Establishments	13,186	3,889	4,320	4,145	4,541	4,209	4,905
Employment	125,481	96,584	96,609	90,782	83,989	80,546	83,675
Tonne-kilometres (billion)	--	--	--	--	--	41.8	--
Operating Revenues ($ million)	2,966	4,666	5,224	5,687	5,589	5,753	6,739
Operating Expenses ($ million)	2,667	4,470	5,060	5,498	5,449	5,527	6,421
Operating Ratio	0.899	0.958	0.989	0.967	0.975	0.961	0.953
Current Assets ($ million)	487	968	1,138	1,205	1,082	1,242	--
Current Liabilities ($ million)	424	1,047	1,279	1,302	1,296	1,362	--
Long-Term Debt ($ million)	1,040	896	1,024	1,034	972	1,000	1,204

2. Regional Distribution
(Average over last 3 years)

	Atlantic	Quebec	Ontario	Prairies	B.C.
Establishments-% of total	7.4%	24.8%	25.9%	26.9%	15.0
Employment-% of total	5.6%	23.3%	40.1%	21.2%	11.2
Operating Revenues-% of total	6.1%	18.9%	37.5%	24.7%	12.8

3. Foreign Trade (Value of Merchandise Trade)

	1981	1982	1983
Imports-Motor carrier % of total value of Canadian import from all countries	20.4%	20.4%	21.2%
Exports-Motor carrier % of total value of Canadian exports to all countries	24.3	24.6	25.8
Exports-Motor carrier % of total value of Canadian exports to United States	45.3	49.1	49.2

4. Major Firms

	Ownership
1. CP Express and Transport	Canadian
2. CN Route	Crown Corporation***
3. Inter City Truck Lines	Canadian
4. Brazeau Transport	Canadian
5. Trimac Transportation Services	Canadian

-- Not available

Sources: Statistics Canada
Catalogues 53-222
65-202
67-002

*Statistics for 1974 include carriers earning less than $25,000 in revenue. Statistics for other years are for those carriers earning over $100,000 only.

**1984 data are preliminary.

***To be privatized.

DRAFT - PROJET

DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

COMPETITIVENESS PROFILE

FRUIT AND VEGETABLE PROCESSING INDUSTRY

1. STRUCTURE AND PERFORMANCE

Structure:

The fruit and vegetable processing industry in Canada includes fruit and vegetable canners and preservers and frozen fruit and vegetable processors. Canning operations account for some 74 percent of sector shipments and 70 percent of employment. Producers of frozen fruit and vegetable products account for the remaining 26 percent of industry shipments and 30 percent of employment, but are growing rapidly in market share.

Fruit and vegetable processors are primarily dependent on the availability and price of Canadian agricultural products, although both the canning and freezing segments of the industry also re-process and package a wide range of imported fruits and vegetables. The reliance on domestic horticultural crops also imposes a strongly seasonal pattern of activity on many operations. To a great extent, the structure and performance of Canadian agricultural production and the fruit and vegetable processing industry are interdependent.

In 1984, the Canadian fruit and vegetable processing industry was comprised of some 180 firms with a total of 217 establishments, 179 canning and 38 freezing operations. This is a decrease from 190 firms and 232 establishments in 1980, reflecting both industry rationalization and plant closures, especially among canning operations.

Canadian fruit and vegetable processors had manufactured shipments of $2,106 million in 1984, and annual average employment of 16,800. Of this employment figure, approximately 75 percent are production workers.

Employment in the industry is primarily in small and medium-sized population centres rather than large cities, with the establishments being very significant to local economies. Employment in some parts of the industry is also highly seasonal, with shortages of available labour a common problem in periods of peak activity, when the total number of production workers in the sector can double the yearly average.

Exports in 1984 reached $262 million, 25 percent of which were directed to the EEC and 30 percent to the United States, and were mainly frozen potato products, frozen and canned corn and a variety of dried peas and beans. On the other hand, imports were valued at $699 million, 50 percent of which originated in the United States. Major import items are frozen orange juice concentrate, canned mushrooms and canned tomato and tomato paste.

In terms of shipments, approximately 60 percent of the fruit and vegetable processing industry is under foreign control. The original cause for this high degree of foreign ownership was the establishment of the canning segment behind a tariff wall that encouraged foreign firms to set up Canadian plants to serve domestic markets. The majority of well-known national brands are produced by subsidiaries of U.S. MNE's, including Libby, Del Monte, Aylmer, Heinz, Campbell, Swanson, Green Giant, Hunt, Welch, Gerber, Allen's and Bicks. Nationally distributed brands manufactured by Canadian firms include McCains, York, East Chilliwack Cooperative (Westvale Foods), Cavendish Farms and E.D. Smith. The Canadian-owned firms tend to be smaller and regionally or locally oriented, although McCains, Canada Packers (York) and Cavendish Farms are well-known exceptions.

Vertical integration in the industry has been mainly backward into corporate farming and the self-manufacture of metal cans. Corporate farming, although not prominent in fruit processing, is estimated to account for a relatively stable 15 to 20 percent of total vegetable

production for processing. Self-manufacture of metal cans began in the early 1960's, but the high capital costs of this activity have limited self-manufacture to the six or seven largest processors. Two of these companies, H.J. Heinz Ltd., and Canadian Canners, have recently divested themselves of their can-making operations.

The two segments of the fruit and vegetable processing industry are structured quite differently. The canning segment is dominated by a few major firms, operating mainly in Ontario, with a large number of small and medium-sized canners operating in every region on a more seasonal basis. The major canning companies operating in Canada are subsidiaries of U.S. multinationals, and generally produce widely-known brand products for the domestic market on a steady year-round basis. These subsidiaries benefit greatly from the marketing strength of their parent companies. The smaller regional canners are more closely dependent on the supply of agricultural inputs, handling peak loads during the harvest season with long periods of under-utilization or temporary closure.

The canning process utilizes a fairly mature technology emphasizing high through-put and an end product that requires little special handling for storage and transport. The product must be sterilized before canning, either through a cooking process, pasturization or blanching. Most fruits are packed in a sugar syrup while vegetables are packed in brine, altering the taste and texture of the product.

Frozen fruit and vegetable processors are mainly domestically owned, with activity more evenly distributed across Canada and plants operating on a larger average scale, although none are as large as the few largest canning operations. Plants tend to be diversified, processing a large range of local vegetable products, imported fruit juice concentrates, pre-cooked dishes and some baked goods so that capacity utilization is maximized.

The technology for freezing foods was introduced in the 1930's, but frozen foods only became widely popular with consumers in the past twenty-five years. Freezing operations are able to process raw produce with very little change in the end product's taste or texture, therefore delivering a higher quality product. However, frozen products require expensive handling for storage and transport.

Performance:

Although the nominal value of processed fruit and vegetable shipments increased by some 35 percent from 1980 to 1984 ($1,554 million to $2,106 million), overall shipments, in volume terms, have remained relatively stable. There is also a trend away from the consumption of canned produce and toward frozen and fresh products. Canadian consumption of canned fruit and vegetables is estimated to have fallen 11 percent in the last ten years due to the perception that these products are lower in nutrition, lower in quality and higher in additives. However, frozen foods have experienced a much higher growth rate than the industry average, increasing from 19 percent of total shipments in 1974 to about 26 percent of current shipments.

The processed fruit and vegetable sector has traditionally experienced a large trade deficit due primarily to consumer demand for a wide range of products that cannot be produced in Canada's climate, although many of these are re-processed in Canada. Imports of processed fruits and vegetables have supplied between 25 and 30 percent of the Canadian market since 1977. Much of this increase in imports is due to growing domestic demand for agricultural products that cannot be produced in Canada, such as frozen citrus juices. However imports of some low-cost or subsidized products are putting pressure on several otherwise viable segments of the Canadian industry, eg. canned mushrooms from Taiwan and canned tomato products from the EEC.

Exports have represented between 12 and 15 percent of industry shipments since 1980, a significant increase over previous export levels which averaged 8.5 percent. Most of this increase is due to the strong performance of Canadian frozen potato products and frozen and canned corn in the U.S. market. In particular, McCains and Cavendish Farms in the Maritimes have been successful in the Northeastern states.

Smaller firms in the industry have tended to find secure niches in the marketplace by not competing directly with the larger firms but rather aiming at a small, specialized segment of the market. Large firms, on the other hand, more often control a high market share of one or more large product categories, with high returns. The medium-scale firms have the disadvantage of competing directly with large firms without enjoying comparable economies of scale, marketing or technical expertise.

2. STRENGTHS AND WEAKNESSES

a) Structural

Production costs are consistently higher in Canada than in the U.S. In large measure, the competitiveness of Canadian fruit and vegetable processors is dependent upon the availability and price of Canadian agricultural products. A substantial portion of the raw fruit and vegetable inputs used by the industry is acquired under prices and conditions of sale either negotiated or, for some products, fixed by grower marketing boards. There are 27 such boards dealing with fruit and vegetable production across Canada operating under provincial authority, but with a concentration in Ontario and British Columbia.

Marketing boards regulate the production and distribution of a number of products under their control by negotiating the price, terms and conditions of sale on behalf of their grower members, by acting as the single agent for all sales of fresh produce within their jurisdiction, or in some cases by fixing prices. These activities have the effect of raising input prices to the processing industry, since the intention of these boards is to raise the incomes of their grower members. However, they also stabilize supply of raw produce to processors. Should agricultural marketing boards seek to maintain a pricing structure for produce higher than that which can be offset by tariffs on processed goods, the domestic processing industry would face extreme pressure from imported products.

Differences in unit labour costs have narrowed over the past decade, but even with the current value of the Canadian dollar Canadian producers are still at a slight disadvantage. Productivity improvement in the industry has generally been hampered by low levels of new investment in plant and equipment as a result of the seasonality of operations and their dependence on crops that can vary greatly in quality and availability from year to year.

Comparison of unit labour costs in Canadian and U.S. canning operations has consistently shown U.S. labour productivity to be higher by about 10 percent after corrections for currency differentials. Lower labour productivity vis-à-vis U.S. operations is also evident among Canadian frozen food processors, but to a lesser degree. This could be due to recent investments by Canadian frozen food processors in modern equipment as a result of increased market demand for their products.

Transportation costs play a significant role in the patterns of trade in the sector. Generally speaking, canned fruit and vegetable products are much easier and less expensive to ship long distances than frozen products. This allows canned products more potential for wide-ranging trade, and makes the climatic and production-cost advantages of our major competitors more significant in determining the competitiveness of the canned fruit and vegetable sector. On the other hand, frozen

products are expensive to ship long distances because of the high cost of constant refrigeration and the risk of spoilage. This has protected frozen fruit and vegetable producers somewhat from competitors in the southern and western United States with more favourable input and production costs. As well, changes in the pattern of transportation costs due to deregulation in the United States have been instrumental in opening the large northeastern U.S. market to eastern Canadian producers of frozen vegetable products because of their proximity to major market areas relative to alternative U.S. producers

b) Trade-Related Factors

There are a wide range of tariffs applying to processed fruit and vegetable products, from duty-free to over 20% in both Canada and the U.S. In general, Canadian Bound (1987) Rates are significantly higher (in the 10% to 15% range) than the more common U.S. tariffs (usually 5% to 10%) but are lower than EEC and Japanese rates (15% to 30%). In addition, the EEC applies variable levies on imported products priced below the Community reference prices before applying customs duties.

Non-tariff barriers are highly prevalent in international trade in this sector, and have a much greater impact than tariffs. All developed countries erect NTB's against imported processed products in the form of various regulations dealing with product purity and quality, and with package sizing and labelling. These standards are often not easily met by importers. Food products crossing international borders are often unduely delayed for inspection, increasing the risk of spoilage.

NTB's are also used to restrict trade in fresh produce used for processing. Canada, the U.S., Japan and the EEC all adopt measures to protect domestic agricultural producers from imports, at least during the harvest period. Variable levies and seasonal tariffs are used to raise the prices of imported produce, in effect supporting prices for domestic growers. As well, most countries, including Canada and the U.S., have regulated markets for some fruit and vegetables in specified geographic areas. GATT rules do not restrict many of these barriers to trade in agricultural produce.

c) Technological Factors

Technological innovation in the sector is presently oriented towards new packaging. Recent examples are the widespread adoption of aseptic packaging, and the increased use of aluminum, plastic laminates and foils as packing materials. New packaging technology has also allowed product changes that take advantage of current consumer preferences, such as individually wrapped prepared meals that are nutritious, appealing and can be conveniently prepared in a microwave oven. Canadian fruit and vegetable processors are adopting these technologies and products at least as rapidly as U.S. firms, but are still somewhat behind Japanese and European food processors. New packaging technologies are generally developed elsewhere, and then adopted by the Canadian industry. Subsidiaries of MNE's do not perform a significant amount of research and development in Canada.

3. FEDERAL AND PROVINCIAL PROGRAMS AND POLICIES

The entire food industry is highly regulated with primarily three departments having authority: namely, Health and Welfare, Consumer and Corporate Affairs and Agriculture Canada. The Department of Health and Welfare is responsible for administering those sections of the Food and Drugs Act pertaining to product safety, integrity and freedom from adulteration; some aspects of fraud; and the production, manufacturing and storage of food under sanitary conditions. The Department of Consumer and Corporate Affairs is responsible for the enforcement of the Food and Drugs Act and the Consumer Packaging and Labelling Act in matters relating to the advertising and labelling of food. Under the Canada Agricultural Products Standards (CAPS) Act, Agriculture Canada is responsible for grades and standards as well as monitoring a number of establishments processing fruit and vegetables.

4. EVOLVING ENVIRONMENT

Future domestic market expansion is expected to only match population growth. Frozen foods have experienced a much higher growth rate than the industry average over the past decade. This, accompanied by increases in the consumption of fresh produce, has caused a sharp decline in the consumption of canned goods. This trend can be attributed to consumers' perceptions, more concern about physical fitness and balanced diets, as well as more interest in a wider selection and variety of produce. These factors will remain important in the coming years, and will enable the frozen food segment of the industry to expand more rapidly than the average for the industry, and causing the canning sector to decline further.

The development and use of new packaging has increased both the quality and convenience of some products. The increased use of such packagings will improve the market outlook for some segments of the industry, especially fruit juices and frozen vegetables. Fruit and vegetable juices, for example, are being seen increasingly as a substitute for such other beverages as soft drinks in the trend toward better nutrition and health consciousness.

5. COMPETITIVENESS ASSESSMENT

The processed fruits and vegetables industries in most developed countries are protected by high tariffs and substantial non-tariff barriers. The industry in Canada, in particular the canning segment, developed behind tariff walls that, to some extent, determined the pattern of sector development.

Canadian canning operations are reasonably competitive in the domestic market, but are losing market share due to the growing popularity and availability of fresh and frozen fruit and vegetables. The canning segment has a higher cost structure than its U.S. counterpart, due mainly to higher prices for fresh produce, and to some degree because of lower productivity. Smaller canners are not currently as efficient as U.S. competitors due to scale and seasonality considerations, but should remain competitive in smaller specialty niches. Provided that processors have access to produce at price levels comparable to U.S. prices, the industry should remain competitive in the domestic market.

Plants producing frozen fruit and vegetable products are generally as efficient as their major competitors. High transportation costs for frozen products provide some protection for domestic markets from large southern U.S. producers. As well, transportation cost factors allow some Canadian frozen corn and potato products to be more competitive in some eastern U.S. markets vis-à-vis western U.S. producers. Consumer demand for frozen products is increasing and points to continued growth and competitiveness for the sub-sector, providing agricultural input prices remain in line with those in the U.S.

Prepared by: Food and Consumer Products Branch
DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

Assistant Deputy Minister
Consumer Goods, Services and Resourcing Processing

Date: JUL 30 1986

DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

FRUIT AND VEGETABLE PROCESSING INDUSTRY

PRINCIPAL STATISTICS	1980	1981	1982	1983	1984	1985*
Establishments	232	214	213	217	217*	NA
Employment	17570	17242	17256	16796	16800*	NA
Shipments ($ million)	1554	1754	1977	2103	2106	NA
TRADE STATISTICS						
Exports ($ million)	199	257	257	246	262	280*
Domestic Shipments ($ million)	1355	1497	1639	1728	1844	NA
Imports ($ million)	511	611	608	591	699	650*
Canadian Market ($ million)	1867	2108	2247	2320	2544	NA
Exports - % of Shipments	12.8	14.7	13.5	12.4	12.4	NA
Imports -% of Domestic Market	27.4	29.0	27.1	25.5	27.5	NA

	U.S.	EEC.	ASIA	OTHERS
Imports - % of total 1981	51	4	15	30
1982	49	5	16	30
1983	47	7	16	28
1984	46	7	15	32
1985*	43	9	16	32

	U.S.	EEC.	ASIA	OTHERS
Exports - % of total 1981	16	32	10	42
1982	23	33	12	32
1983	22	32	13	33
1984	31	24	14	31
1985*	50	16	10	24

REGIONAL DISTRIBUTION	ATLANTIC	QUEBEC	ONTARIO	WEST
Establishments - % of total	8.9	24.8	48.1	18.2
Employment - % of total	16.1	13.1	52.2	18.5
Shipments - % of total	12.6	13.9	55.3	18.4

MAJOR FIRMS

	LOCATION	OWNERSHIP
Green Giant (canned and frozen)	All regions	U.S.
Canadian Canners (canned)	All regions	U.S.
Canada Packers (canned)	All regions	Canadian
McCains Foods (frozen)	All regions	Canadian

DATE: July 1986

* Estimates

COMPETITIVENESS PROFILE
HARDWOOD LUMBER SECTOR (CORRIGENDUM)

PLEASE SUBSTITUTE FOR PREVIOUS DOCUMENT

October, 1986

DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

COMPETITIVENESS PROFILE

HARDWOOD LUMBER SECTOR

1. Structure and Performance

a) Structure

The **hardwood lumber** industry described in this profile is comprised of those sawmills that process hardwood logs to produce rough lumber, timbers, railway ties, and a number of by-products such as wood chips, sawdust, shavings, slabs and hogged fuel. It also includes related planing and drying operations. The major Canadian hardwood lumber species are maple, birch, and aspen. The mixed hardwood forest regions in eastern Canada often contain stands of white pine and other softwood species. Some of the sawmills included in the hardwood sector periodically saw softwood logs since much of the hardwood sawmill equipment is also capable of processing large softwood logs.

The industry produces a number of grades of hardwood lumber from each log. The higher grades of hardwood lumber command the highest prices and are primarily used for the manufacture of quality furniture and interior decorative trim. These higher grades are sold in the Canadian and export markets. The lower grades of hardwood are used principally for the production of railway ties, pallets, furniture frame stock, and in construction. Softwood lumber is often substituted for hardwood lumber in some uses of the lower grades. The majority of hardwood lumber produced from indigenous species is sold in the Canadian market, with about 10% being exported to the U.S.A. Exports to offshore markets consist primarily of high grade lumber processed from imported species.

Hardwood lumber makes up about 10% of the total volume of lumber production of eastern Canada and about 3% of the total volume of Canadian lumber production; the balance is softwood lumber. In 1985, the estimated total Canadian production of hardwood lumber was about 1.3 million cubic metres (m^3) or 550 million feet board measure (fbm), valued at about $180 million.* By comparison, the value of Canadian softwood lumber production in 1985 was about $6.6 billion. Total annual employment in the hardwood lumber sector is estimated at about 5,000 people. Production of hardwood lumber is concentrated primarily in Ontario and Quebec, utilizing both private and public timber holdings. The distribution of production by province over the past 3 years averaged as follows: Ontario 45%, Quebec 40%, New Brunswick 5%, Nova Scotia 2%, Manitoba 3%, Alberta 4% and 1% for the remaining provinces combined.

It is estimated that there are about 850 sawmills in Canada producing hardwood lumber. The ten largest sawmills account for about 25% to 30% of the total sector output. These mills average about 35,000 m^3 (15 million fbm) of hardwood lumber each. About one hundred mills of medium size account for about 35% of sector output, while the balance account for about 35% to 40%. The latter consist of a large number of very small sawmills which individually produce less than 2,360 m^3 (1 million fbm). Most of these sawmills operate with fewer than seven employees and remain closed during periods of poor market conditions.

Revenues from by-products significantly reduce the net cost of production of hardwood lumber products. Many of the smaller sawmills convert their slabs to firewood, while most of the large sawmills produce wood chips for local pulpmills. It is estimated that hardwood sawmills, on average, receive approximately 10% of their total revenue from by-products.

* Data on the Canadian hardwood lumber industry are limited. The analysis in this profile is based on available statistical data and information obtained from other sources, including consultations with the industry.

Hardwood lumber is often sold to wholesale companies that perform separate drying, sorting, storing, and shipping operations. In addition, there are numerous independent establishments that offer custom kiln drying and/or planing services to producers and buyers.

Almost all of the firms producing hardwood lumber are privately owned. There are a few government owned sawmills. With very few exceptions, all of the companies are Canadian-owned.

Total Canadian exports of hardwood lumber in 1985 were valued at $72 million: $34 million to the U.S.A., $26 million to EEC countries, $3 million to Japan, and the remaining $9 million to some 35 other countries. Oak lumber was the leading species exported comprising 31% of the total value of exports to all countries (a significant level of the oak lumber originated in the U.S.A. and was further processed in Canada before being exported to other countries). The other principal species exported were maple, birch and aspen.

Imports consist mainly of species not available, or not readily available, in Canada, and were valued at $168 million in 1985. Approximately 94% of these imports came from the U.S.A. and consisted primarily of oak lumber. The balance consisted mainly of tropical species, such as mahogany from Brazil. Generally, hardwood lumber imports supply about one third of the domestic market, in volume terms.

b) Performance

Production in the 1970's was relatively stable at an average of about 1.2 million m^3 per year, peaking in 1980 at 1.4 million m^3. Following the subsequent recession, production recovered to about 1.3 million m^3 in 1985. Reflecting the different size of the natural resource and the market, production in the U.S.A. is about 12 times Canadian production.

The recovery in hardwood lumber output since 1983 reflected a higher level of housing starts, increased production of furniture, interior trim and flooring, as well as improvement in other industrial uses. Prices for hardwood lumber have also recovered from the low levels in 1980-82. Consumer preferences are an important factor in the demand for higher grades used for furniture and decorative purposes and are currently focused on species not readily available in Canada. Plastics, metals, wood veneer, particleboard, hardboard and other products are being substituted for hardwood lumber in some furniture and other uses.

The profitability of the hardwood lumber industry depends on both the competitiveness of the higher grades, which are of principal interest in the domestic and export markets, and on the sale of lower grades at an adequate price. During market downturns, severe price pressures may result in softwood lumber being substituted for the lower grades of hardwood in some uses such as pallets, skids and packaging. Under these conditions, some hardwood sawmills may either close or switch to softwood lumber production, where feasible.

Some of the sawmills that purchased new equipment during the more profitable years of 1978 and 1979 were pressed financially by payments on debts incurred during the high interest period of the early 1980's. Interest rates have been lower since mid 1984 and some companies are now in a better position to implement sawmill modernizations. However, very few such projects are currently underway.

2. Strengths and Weaknesses

a) Structural

Economies of scale are important in this sector. Such economies, however, require not only large modern mills, but adequate supplies of logs with economical trucking distances. The majority of hardwood sawmills in Canada are small operations using less than the most modern equipment.

Many companies in Canada do not have sufficient hardwood log supplies within economical trucking distances to justify the capital investments in modern equipment necessary for efficient large volume production. In the U.S.A. there are relatively more areas with concentrated log supplies which support a greater number of large sawmills with their resulting economies of scale.

Hardwood sawmills in Canada and the U.S.A. generally utilize labour intensive processing equipment in order to produce the best grades and highest yields from logs of different species, sizes, and grades. The U.S.A. has a larger and a more diversified resource of commercial hardwood forest than Canada. The Canadian industry faces a continuing problem of producing acceptable percentages of higher grade lumber from the large proportion of lower grade logs in the available timber resource.

Transportation costs are also important. The Canadian industry benefits from its proximity to major markets in eastern Canada and some areas in northeastern U.S.A. However, transportation costs preclude the export of most of the lower grades of hardwood lumber to offshore markets.

The hardwood lumber imported is mainly oak and other open-grained woods from the U.S.A. Since drying and sorting facilities are often more available in Canada than in some of the northern producing areas of the U.S.A., oak lumber is imported in random grades from northeastern U.S. mills by Canadian wholesalers who select a large portion of the higher grades for export after kiln drying and sorting. The costs of transporting the lumber from some northeastern U.S. sawmills to Canada for processing and for subsequent export overseas are not significantly different from those faced by U.S. processing facilities.

b) Trade Related Factors

Tariffs and NTBs are not critical factors in domestic and export markets. No tariff is applied on rough or planed hardwood lumber imported into Canada. Canadian hardwood lumber is usually exported rough-sawn and there are no tariffs on rough lumber in most markets, including the U.S.A., Japan and EEC countries. However, two countries that do apply tariffs on rough lumber are Taiwan at 1.25% and the Republic of Korea at 20%.

Planed Canadian hardwood lumber enters duty-free into some countries, including the U.S.A., and Japan. A tariff of 4% is applicable on planed hardwood lumber into the EEC countries with much higher duties applicable in some other countries, such as Taiwan at 25% and the Republic of Korea at 20%. With the exception of flooring, practically no planed hardwood lumber is exported to offshore countries.

A trade related factor of concern is the phytosanitary regulations imposed by certain countries. The regulations are designed to control the possible spread of insects and diseases, such as oak wilt. The EEC phytosanitary regulations governing imports of oak lumber are less restrictive for Canadian than for U.S. oak.

c) Technological Factors

Hardwood sawmills depend heavily on human judgement in choosing the proper saw settings to yield the best grades of lumber. The majority of Canadian hardwood sawmills are not highly automated and are not equipped with high speed, electronically controlled equipment. Advanced foreign and domestic sawmilling equipment is readily available in Canada to improve yields from short and low grade sawlogs. However, many companies consider that the large investments required to modernize the sawmills would not provide a reasonable return at this time. In some instances, this situation is accentuated by a lack of a concentrated supply of raw material to justify the upgrading of plants.

It is difficult for sawmills to produce lumber from the low grade portion of the raw material. For the larger operations, an alternative to chipping the full length crooked logs is to slash some of these logs for sawing into short lumber. Mills with sufficient manufacturing equipment are able to market some of the resultant shorter length lumber in cut-to-size products.

d) Other Factors

The current exchange rate between the Canadian and U.S. dollar is a positive factor in the industry's export to the U.S.A. of products using indigenous species. Under present world supply conditions, the bulk of Canadian hardwood production from indigenous species remains uncompetitive in offshore markets, despite currency re-alignments since September 1985 between Canadian and U.S. dollars vis-à-vis European and other foreign currencies.

3. Federal and Provincial Programs and Policy

There are no federal assistance programs targetted specifically to this sector. A substantial proportion of Canada's hardwood forests is owned by the provinces as Crown forests. In order to assure a continuing wood supply for the industry, provincial governments carry out a forest management policy to upgrade the future yield of the hardwood forests.

4. Evolving Environment

One of the most important factors affecting the sector's competitiveness over the next 5 to 10 years will be the success of manufacturers in locating new markets for the lower grades of maple and birch lumber. Additional markets for these grades are more likely to be found in North America than offshore. Some firms are attempting to become better equipped to produce specific cut-to-size orders, such as pallet components, and furniture dimension stock.

Aspen is Canada's most abundant hardwood species. The potential to produce large volumes of aspen and white birch lumber from this underutilized resource will open additional export opportunities in the future. The present demand for aspen lumber is mainly for the higher grades, although there is a market developing in Canada and the United States for certain lower grades of aspen for treated landscape timbers. Potential offshore markets for aspen lumber in selected specifications include the EEC, Saudi Arabia, China, Japan and the Republic of Korea.

Some further market opportunities would develop if consumer preferences moved towards Canadian light coloured, tight-grained maple or birch rather than open-grained hardwoods imported from the U.S.A. Plastics, metals, wood veneer, particleboard, hardboard and other products continue to be substituted for hardwood lumber in some furniture parts and other selected end-uses.

Production of hardwood lumber for the next fifteen years in the United States is expected to grow at an average of 1% per year. Private sector forecasts indicate that the demand for hardwood lumber in the U.S. will also grow at about 1% per year for the next fifteen years. They suggest the growth in demand over the forecast period will be in mine timbers, railway ties, furniture and lumber export markets. While forecasts are not available for the Canadian industry, its performance is usually similar to that of the United States. In the event that markets improve for the large aspen resource, Canadian hardwood production and exports could increase at a faster rate than these forecasts suggest.

will remain substantial. Canada currently imports more hardwood lumber than it exports.

The Canadian industry has been successful in establishing export business in several offshore countries. However, only a small segment of the total Canadian hardwood lumber processing industry is able to produce the high grade or cut-to-size lumber specifications that are required in offshore markets. A large percentage of Canadian offshore hardwood lumber exports consists of open-grained lumber species which were imported from the U.S.A. for sorting and kiln drying at Canadian facilities. Under present world supply conditions, the bulk of the production of Canadian hardwood sawmills is expected to remain uncompetitive in offshore markets.

Prepared by: Resource Processing Industries Branch
DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

Assistant Deputy Minister
Consumer Goods, Services and Resource Processing

Date: JU 1986

FACT SHEET

HARDWOOD LUMBER SIC: 2512

1. PRINCIPAL STATISTICS

	1973	1980	1981	1982	1983	1984	1985
Establishments(e)	900	850	850	850	850	850	850
Employment(e)	5,300	5,300	5,000	5,000	5,000	5,000	5,000
Shipments ($ millions)	100	110	102	72	94	145(e)	150(e
(Volume, 000m^3)	1,359	833	741	535	668	1,100(e)	1,100(e
Gross Domestic Product(e)* (Constant 1971-$ millions)	28	37	35	31	39	40	40
Investment ($ millions)(e)**	9	18	16	11	13	16	15
Profits After Tax ($ millions) (% of Sales or Revenue)	N/A	N/A	N/A	N/A	N/A	N/A	N/A

(e) estimated - see general notes below
*figures shown represent 5% of Sawmill and Planing Mill statistics
**figures shown represent 3% of Sawmill and Planing Mill statistics

2. TRADE STATISTICS

	1973	1980	1981	1982	1983	1984	1985
Exports (Volume, 000m^3)*	344	274	243	236	226	268	241
($ millions)*	40	88	77	65	69	75	72
Domestic Shipments ($ millions)(e)**	75	75	68	40	62	110	115
Imports ($ millions)***	39	127	146	105	158	172	168
Canadian Market ($ millions)(e)	114	202	214	145	220	282	283
Exports as % of Shipments (Volume)	25	33	33	44	34	24	22
Imports as % of Domestic Market (Vol)	36	34	42	32	42	38	38
Canadian Share of International Trade	0.4	0.2	0.2	0.2	0.2	0.2	0.2

Source of imports (%)

	U.S.A.	E.E.C.	ASIA	OTHERS
1982	95	-	-	5
1983	92	-	-	8
1984	94	-	-	6
1985	94	-	1	5

Destination of exports (%)

	U.S.A.	E.E.C.	ASIA	OTHERS
1982	35	47	5	13
1983	38	45	4	13
1984	44	34	8	14
1985	47	36	6	11

(e) estimated
* - includes exports of high value imported lumber.
** - Domestic Shipments have been estimated using a unit value price.
*** - includes imports of high value lumber to be exported.

3. REGIONAL DISTRIBUTION - Average over the last 3 years

	Atlantic	Québec	Ontario	Prairies	B.C.
Establishments - % of total(e)	8	40	48	4	*
Employment - % of total(e)	8	40	48	4	*
Shipments - % of total	8	40	47	5	*

(e) estimated
* less than 0.5%

4. MAJOR FIRMS

	Ownership	Location of Major Plant
1. G.W. Martin Lumber Ltd.	Private/Canadian	Harcourt, Ont.
2. Murray Brothers Lumber Co. Ltd.	Private/Canadian	Madawaska, Ont.
3. Rexfor, Quebec, Que.	Provincial	Mont-Laurier, Que.
4. Commonwealth Plywood Co. Ltd. Ste. Therese, Que	Private/Canadian	Joachims, Que.
5. The James MacLaren Industries Inc.	Public/Canadian	Thurso, Que.
6. J.D. Irving Ltd., Saint John, N.B.	Private/Canadian	Veneer Siding, N.B.
7. McRae Lumber Co. Ltd.	Private/Canadian	Whitney, Ont.

Note 1: The above figures do not include railway ties.
Note 2: Since there is a general lack of financial information and statistics relating to this sector, a significant degree of estimation has been required in the preparation of this profile; figures will be revised as new information becomes available.

DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

DRAFT

COMPETITIVENESS PROFILE

GUIDED URBAN MASS TRANSIT

1. Structure and Performance

a) Structure

The guided urban transit industry consists of suppliers of a wide range of products and systems serving the market for urban transit. Most of the companies serve other markets as well. Data on the sector are therefore derived by the Department of Regional Industrial Expansion from company information and must be treated as indicative.

Guided urban transit systems have two components, infrastructure and electrical and mechanical equipment. The infrastructure component includes guideways, stations, power sub-stations, garages and the like. It often requires engineering and project management. The electrical and mechanical equipment component includes the following major segments: vehicles and parts, vehicle control and communications, fare control, traction power, track, and passenger distribution. Many sales are made on a turnkey basis. A turnkey project encompasses both infrastructure and electrical and mechanical equipment. Infrastructure typically accounts for some 50 per cent of the cost of a guided transit system. Since the actual construction is usually supplied locally, this profile deals primarily with electrical and mechanical equipment.

The Canadian industry is dominated by the two major car assemblers, Bombardier in Quebec and the Urban Transportation Development Corporation (UTDC) in Ontario. These companies produce mass transit and commuter cars and can design complete systems. They are complemented in Canada by some 250 other companies which manufacture vehicle assemblies and sub-assemblies, including propulsion, and supply the other categories of electrical and mechanical equipment. These companies range from giant multinationals such as Westinghouse, General Electric, and ITT-SEL to small specialty firms such as RMS Controls (digital radios) and DSL (training simulators).

Since most sales in the urban transit industry require the integration of a complete system or even a turnkey package, the two dominant vehicle assemblers typically take the lead to form consortia. Depending on project specifications and contract conditions, the assemblers may draw on foreign companies for components or equipment.

Bombardier and UTDC together employ an average of 3-4,000 workers in urban transit, about equal numbers in Quebec and Ontario. Their suppliers employ at least as many more. Urban transit employment figures for other equipment manufacturers cannot be segregated from their overall employment. Because of the nature of the industry, the flow of sales and shipments is irregular and does not lend itself readily to identifying trends. Shipments have averaged $300 million annually in the period 1980-84, but fluctuate sharply from year to year. The industry is highly export oriented. Seventy per cent of orders on hand for 1983-87 are destined for export. The U.S. has been the major export market, accounting for 95 per cent of total exports.

Canada's two vehicle manufacturers face 56 competitors worldwide. They include Transit America in the U.S. - a division of Thyssen of West Germany; Kawasaki Heavy Industries and Hitachi of Japan; Siemans, Duewag and MAN of West Germany; Alsthom Atlantique of France; Metro Cammel of the United Kingdom; Breda and Ansaldo of Italy; Hyundai of Korea; and Comeng of Australia. The purchasers of the urban transit equipment are usually government authorities.

All international sales are large scale. Even those to established operators, where the product is manufactured to specifications compatible with existing equipment, tend to be over $100 million. Vehicles, the largest element in this type of purchase, cost over $1 million each. In the case of international sales of complete new systems, including design and development and equipment supply, consortia are normally formed. This allows the preparation of an integrated proposal with compatible equipment, as well as creating the core of financial strength required to obtain a performance bond.

Given the long life of transit systems, there is intense competition for initial systems, since follow-on orders for extensions will normally be awarded to the original supplier. Because of the scale of these orders and strong international competition, financing and especially concessional loans are a major factor in securing sales.

b) Performance

In the early 1970's there was virtually no activity in the industry. This situation changed dramatically from the mid 1970's onward. The entry of Bombardier and UTDC into the industry strengthened Canadian supply capability. The U.S. market, stimulated by generous federal funding for mass transit projects, provided a ready export market which was not subject to buy America requirements until 1978. The Canadian vehicle manufacturers have worked at close to full capacity since the mid 1970's and are fully booked through 1987. Export sales began in the mid 1970's and have grown steadily. They account for 70 per cent of the $2.6 billion in orders on hand for 1983-87.

2. Strengths and Weaknesses

a) Compared to its Japanese and European competitors, the Canadian industry suffers from having a small domestic market base. However, its proximity to the important U.S. market has compensated for this. When U.S. demand surged in the 1970's in response to federal funding, the American firms were too large to handle smaller projects economically. The Canadian industry penetrated the U.S. market by filling these smaller orders. Later, for a variety of reasons, all but one of the large American companies withdrew from the urban transit industry. Canadian firms were then well situated to expand further into the market and undertake larger projects.

Overall, Canadian costs are competitive with those of other suppliers. This is reflected in the fact that Canadian bids are usually close to that of the winner. Manufacturing economies of scale are of marginal importance in this industry, since orders usually involve unique specifications.

Lack of vertical integration in the Canadian industry relative to other competitors, however, hampers its ability to develop systems bids. Canada also suffers from having two companies bidding on major international projects. In most cases, only one bid is made from one country, and that bid enjoys full official support, frequently including financing. Foreign government purchasers perceive export bids as national efforts and have difficulty understanding that two Canadian bids can enjoy government support. This undermines the credibility of Canadian bids and the Canadian industry.

Bombardier's 1983 sale to the New York City subway and UTDC's Advanced Light Rail Transit (ALRT) project in Vancouver demonstrate that the Canadian industry is capable of handling very large projects. However, for some projects, especially turnkey projects, Canadian consortia lack the financial depth of other competitors. The U.S. consortium organized to bid on a $3 billion (U.S.) project in Taipei had combined assets greater than those of the whole Canadian industry. That consortium can therefore arrange large performance bonds much more easily than could a Canadian group.

Bombardier's recent acquisition of a major Belgian designer and manufacturer of urban transit equipment should improve the company's design capability and enhance its access to EEC markets. UTDC's purchase by Lavalin should strengthen its competitive position, especially for turnkey projects, by adding expertise in international project management and engineering design and construction.

Purchasers of urban transit systems place heavy emphasis on quality and reliability. In this respect Canadian suppliers fully match the performance of their competitors. Their association with large operating companies (the Toronto Transit Commission and the Montreal Urban Community Transportation Commission) provides them with a showcase in which to demonstrate their performance.

b) Trade-Related Factors

Barriers to trade are critically important, given Canada's dependence on exports. Tariffs, however, are not the major obstacle. Canada's tariffs (set by product rather than end-use) range from 9.2 per cent to 12.5 per cent. Those in the U.S. range from 2.2 per cent to 6.3 per cent. There are tariffs in most developed and some third world countries.

Non-tariff barriers, specifically government procurement policies, are a significant barrier to Canadian exports to developed countries. Such barriers have effectively excluded Canada from European and Japanese markets. While Canada has been successful in the U.S. market, Buy America requirements under the Federal Surface Transportation Assistance Act and various state requirements have become increasingly restrictive in recent years. They have led Bombardier to establish an assembly facility in Vermont and UTDC to make arrangements for U.S. assembly on an ad hoc basis for specific projects. Any increase in the stringency of these requirements could seriously compromise the future of the industry in Canada.

Third world countries increasingly seek countertrade or technology transfer as part of bidding packages. Canada's competitive position is not affected directly, because most of these countries do not have indigenous suppliers so all bidders must meet the same conditions. However some suppliers, such as Japan, are better equipped to handle countertrade.

Through their purchases, Ontario and Quebec have established a domestic market and nurtured two major Canadian companies. However, provincial purchasing practices have also precluded the development of a horizontally integrated Canadian industry, which would facilitate international bidding. Quebec requires 45 per cent Quebec content in urban transit projects. Ontario gives a 10 per cent preference for Canadian purchases and has traditionally purchased from Ontario sources. Most other provinces give a 10 per cent preference for Canadian equipment.

c) Technological Factors

Overall, Canadian firms are competitive in terms of product technology, and have a lead in selected product areas. They can supply a broad range of conventional equipment and can meet most Canadian requirements domestically. The UTDC has a design capability and a major facility in Kingston to prove their designs and test their vehicles. The company developed the Advanced Light Rail Transit (ALRT) for Vancouver, including linear motors, steerable trucks and automatic train control, all of which are new to the industry. UTDC also designed a new streetcar for North American use, the Canadian Light Rail Vehicle (CLRV), special freight bogies for the rail industry, the unique bilevel commuter car in use in Toronto (for which there appears to be a good market in heavy suburban corridors) and the light subway car now used exclusively by Toronto.

Bombardier has acquired up-to-date product designs through licensing (Kawasaki designs for New York) or purchase (Disney's WEDWAY people mover system). It has its own test track and some R&D facilities.

Both Canadian vehicle assembly companies have introduced computer assisted design and some computer assisted manufacturing. Their production technology is on a par with that of their competitors and their employees are well trained.

d) Other Factors

The appreciation of the Canadian dollar against European currencies in the past five years has put Canadian suppliers at a disadvantage in the third world. This currency trend seems to have been reversed recently.

3. Federal and Provincial Programs and Policies

Financial assistance from the federal government has been instrumental in developing new products and processes. Bombardier has built new test facilities through the Industrial and Regional Development Program. UTDC received federal assistance to have the ALRT system ready as a demonstration project in time for Expo 86. All companies have made significant use of PEMD assistance in overseas markets since the cost of bidding on major projects can exceed $500,000. Export Development Corporation financing, particularly Canada Account funds, plays a significant role in obtaining export orders in the face of international concessional financing competition.

4. Evolving Environment

The world market for electrical and mechanical equipment for urban mass transit is expected to be substantial. Outside of those markets of Europe and the U.S.S.R. which are closed to Canadian suppliers, demand is estimated at $30 to $50 billion over the next fifteen years. Canadian domestic demand accounts for only one per cent of this total. Canadian demand would thus occupy only 10 per cent of domestic productive capacity. Exports will therefore be essential for the survival of the Canadian industry. However, competition will be intense as new competitors (Brazil, Korea and Australia) enter the market. Financing will continue to play a central role. There will continue to be a role for international joint ventures as consortia attempt to put together the most attractive financing and marketing packages.

The U.S. will continue to be Canada's best potential market. It is estimated at $15 billion. Reduced availability of U.S. federal funding and the high costs of subway systems are encouraging buyers to consider lighter systems such as the ALRT and streetcars, where Canada is well positioned to compete. Financing, however, will become an increasingly important part of the bidding for U.S. projects in the light of reductions in government funding and a loosening of U.S. rules requiring transit authorities to award contracts to the lowest responsive and responsible bidder. Also, the future development of Buy America requirements is uncertain. While recent proposals at the federal level to increase local content requirements to 80 per cent have not proceeded, protectionist pressures continue.

Population trends in the third world will create important market opportunities. The world's largest cities are in these areas and, with continuing rapid urbanization, there will be a growing demand for mass transit systems.

5. Competitiveness Assessment

The Canadian guided urban transit industry has demonstrated its ability to compete in world markets. Overall, the companies are competitive in terms of price and technology and, in certain product areas have a world technological lead. While Canadian vehicle manufacturing facilities

are fully booked through 1987, survival of the industry beyond then depends on export success. However, the companies are vulnerable to non-tariff barriers in the U.S. and handicapped in competition for third world markets by their lack of financial strength and their tendency to bid against each other. Success in offshore markets will depend on overcoming these weaknesses, and meeting the government supported financing packages of foreign competitors. A failure to penetrate offshore markets combined with any tightening of U.S. non-tariff barriers could result in a transfer of the industry to the U.S.

Prepared by: Automotive, Marine & Rail Branch
Department of Regional Industrial Expansion

Assistant Deputy Minister
Capital and Industrial Goods

Date: 6 June 1986

DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

FACT SHEET

NAME OF SECTOR: Guided Urban Transit **SIC(s) COVERED:** Various

1. PRINCIPAL STATISTICS

	1980	1981	1982	1983	1984	1985
Establishments	250	250	250	250	250	250
Employment	---------8000----------				-5500	6000
Shipments ($ millions)	80	37	246	355	364	508
Gross Domestic Product (Constant 1971-$ millions)	N/A	N/A	N/A	N/A	N/A	N/A
Investment ($ millions)	N/A	N/A	N/A	N/A	N/A	N/A
Profits After Tax ($ millions) (% of income)						

2. TRADE STATISTICS

	1980	1981	1982	1983	1984	1985
Exports ($ millions)	35	37	161	115	44	208
Domestic Shipments ($ millions)	45	0	85	240	320	300
Imports ($ millions)	0	0	0	0	0	0
Canadian Market ($ millions)	48	0	85	240	320	300
Exports as % of Shipments	44	100	65	32	12	41
Imports as % of Domestic Market	0	0	0	0	0	0
Canadian Share of International Market	----------Less than 1%----------					

Source of imports (top 4)	U.S.	E.E.C.	ASIA	OTHERS
1981				
1982	Not applicable			
1983				
1984				
1985				

Destination of exports (top 4)	U.S.	E.E.C.	ASIA	OTHERS
1981	17	-	-	20
1982	93			68
1983	25			90
1984	22			22
1985	208			-

3. REGIONAL DISTRIBUTION - Average over the last 3 years

	Atlantic	Québec	Ontario	Prairies	B.C.
Establishments - % of total		45	55		
Employment - % of total		50	50		
Shipments - % of total		50	50		

4. MAJOR FIRMS

Name	Ownership	Location of Major Plants	Concentration (% of domestic market)
Bombardier (Rail)	Cdn.	Québec, Vermont	50% (rail)
UTDC (Rail)	Cdn.	(Prov. Ontario Crown)	50% (rail)

DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

DRAFT

COMPETITIVENESS PROFILE

URBAN BUSES

1. STRUCTURE AND PERFORMANCE

a) Structure

The urban bus industry in Canada consists of three major manufacturers (GM Diesel, Flyer and Ontario Bus Industries) and approximately 75 suppliers. Data on the industry are not readily available, since under current SIC codes, buses and parts are aggregated with automotive statistics. Data used in this analysis are derived by the Department using information provided by the three major manufacturers.

General Motors Diesel Division (GMD) has its headquarters in London, Ontario and its plant in Ste. Eustache, Quebec. It is a wholly owned subsidiary of the largest manufacturer of buses in North America, GM Truck and Coach of the U.S. Flyer Industries (Winnipeg, Manitoba) was owned by the Manitoba Government and since July 1986 has been controlled by Den Oudsten of Holland, a bus manufacturer similar in size to Flyer. Ontario Bus Industries (OBI), Toronto, Ontario, is a privately held Canadian company with plants in Mississauga and New York state. With a total production capacity of 2,000 units, GMD (1,200 units), Flyer (500 units) and OBI (300 units) have historically ranked 3rd, 5th, and 9th in production in North America. Current employment at the three plants is approximately 1,500 (1983-1985 averages).

The urban bus industry operates under the conditional duty free provisions of the Canada/U.S. Auto Pact. The industry is dependent on the U.S. for the supply of major components - engines, transmissions and axles. These components account for approximately 50 per cent of the value added in a bus. The Canadian supply sector, which according to departmental estimates provides an additional 1,500 jobs, supplies the comparatively more low-value, low-technology parts and components (such as window frames, seating, lighting, mouldings etc.).

Virtually all Canadian urban bus demand is met from domestic production. Exports are primarily to the U.S. The industry's customers are publicly-funded operators. The traditional competitors in the U.S. have been GM, Flxble, and Gillig. More recently offshore producers such as Neoplan, Saab-Scania, Volvo, and MAN, have opened plants in the U.S. in response to local content requirements.

b) Performance

The industry in Canada has been producing below capacity for a number of years. Production declined to 900 units in 1984 from 1,550 units in 1981. The only firm working at capacity is OBI, which has found a niche in the small and special purpose market. Exports have been relatively steady. This has been due to OBI entering the U.S. market in 1982 just when "Buy America" restrictions were beginning to have an impact on the other two producers and Canadian exports were on the decline.

Intensifying competition in a shrinking North American market has resulted in substantial overcapacity and had put pressure on companies to reduce prices. Poor profit margins have been the consequence. GMD's financial data cannot be segregated from the Diesel Division's other operations, however, with GM's U.S. market being served primarily by the parent company, GMD's production in Canada has been reduced due to the small and declining Canadian market. Flyer has been experiencing severe financial losses with an accumulated deficit of $51.2 million in 1984. OBI has incurred substantial up front costs for the development of the Orion II bus for persons with special needs.

2. STRENGTHS AND WEAKNESSES

a) Structural

The Canadian urban bus industry operates from a small domestic market base. The proximity of the much larger U.S. market has compensated for this. Continuing exports to the U.S. in spite of restrictive procurement practices indicate that Canadian costs are competitive with those of U.S. suppliers. Some producers have been able to successfully find niche markets in the U.S. and Canada and have been highly competitive on small volume orders.

Generally the Canadian industry in inefficient with some of the plants operating at less than a third of capacity. This has not necessarily been a competitive weakness with most U.S. manufacturers facing a similar situation in their plants. However, with new competitors from Europe entering the market and exerting a downward pressure on prices, production efficiencies are becoming more important.

The principal structural weakness of the Canadian industry remains the lack of domestic suppliers for high value added, high technology components such as engines, transmissions, axles. The Canadian urban bus sector is essentially a "metal bashing" industry, with low R&D expenditures and employing a relatively unskilled labour force. This is unlikely to change since huge economies of scale are required for powertrain facilities. The lack of these facilities constrains Canada's competitiveness in international markets. In developing countries, most buses are of body-on-chassis design (as opposed to the North American monocoque design) and most of these countries are capable of manufacturing bus bodies and even standard boxy school bus type vehicles. They source bus chassis from major multinationals. Canada does not make a chassis. The North American bus, due to its durability and design specifications, is also far too costly for most third world nations which simply do not have the same standards of maintenance and comfort as on this continent.

b) Trade Related Factors

The principal export market for the Canadian industry is and will remain the U.S. The European market has been essentially closed to Canadian producers due to non tariff barriers and a large European industrial base. Access to the U.S. market is therefore essential to the survival of the Canadian urban transit sector. The Canadian tariff on urban buses will be 9.2 per cent and the U.S. tariff will be 3.1 per cent by January 1987. The Canadian industry, however, has been operating under the duty free provisions of the Canada/U.S. Auto Pact. The low U.S. tariff does not, in any event, present a major obstacle. A far more critical barrier to Canadian exports to the U.S. are non tariff barriers, in particular the increasingly restrictive "Buy America" requirements under the Federal Surface Transportation Assistance Act and other state procurement practices. The "Buy America" policies have brought about a shift of Canadian value added from Canadian to U.S. plants and have compromised the utility of the Auto Pact for Canadian bus manufacturers and component suppliers. GMD's sales to the U.S. have been effectively restricted, putting in question the survival of GMD's facility in Quebec. OBI has opened a plant in New York and Flyer has used facilities in North Dakota for final assembly in order to comply with U.S. procurement restrictions, resulting in a shift of some Canadian jobs to the U.S. These restrictions have also meant that the U.S. market for Canadian suppliers of components and parts is limited.

In addition to "Buy America", there are other U.S. federal and state policies which benefit U.S.-based plants. The U.S. federal government can declare any manufacturing plant a "Free Trade Zone". European entrants, therefore, can import components duty free and pay duty only on the finished product. Since the U.S. tariff is lower for finished products than for parts, this is advantageous to the company. Manufacturers in the U.S. can also have access to inexpensive capital for plant construction, expansion and equipment acquisition through municipal or state guaranteed Industrial Revenue Bonds.

c) Technological Factors

The basic bus design produced in Canada is old when compared to products supplied, in particular, by European producers who now have assembly facilities in the U.S. OBI is an exception with a technologically superior product in the Orion II. The company has also entered a licensing arrangement with Ikarus of Hungary for the manufacture and marketing of articulated buses, thereby expanding the company's product base. In the case of GMD, R&D for new products is done by the U.S. parent. Flyer, who has recently been acquired by Den Oudsten of Holland, will probably get access to different product designs. It remains to be seen whether the Canadian facility gets involved in R&D.

The urban bus industry is mature and the thrust of future technology is expected to be primarily in the supplier sector. Canada is therefore severely disadvantaged by having an underdeveloped supplier industry. R&D work in this country will probably centre on production/design techniques and a cautious exploration of alternate power sources. In the case of process technology, Canadian facilities are generally not as well developed as facilities of U.S. manufacturers. The small volumes being produced do not warrant any significant expenditures in robotics or greater automation.

3. FEDERAL AND PROVINCIAL PROGRAMS AND POLICIES

Provincial procurement practices in Canada provide preference to local or Canadian production. Quebec requires 45 per cent Quebec content, precluding OBI and Flyer from marketing their products in that province. Ontario like most other provinces gives a minimum 10 per cent preference for Canadian equipment.

Financial assistance from the federal government has been available for product development. All companies have access to PEMD to market their products around the globe.

4. EVOLVING ENVIRONMENT

North American and European suppliers are facing intense competition for what has largely become a replacement market in most areas of the world. Demand in Europe has stagnated at 1,600 units per year and European bus manufacturers will continue to focus on the richer North American market where they may have a competitive edge due to vertical integration and relative exchange rates. As the Europeans build assembly facilities in the U.S., they also successfully meet the "Buy America" requirements. These new entrants have aggravated the overcapacity situation in North America. Forecasts of demand suggest that, at least for the next two to three years, demand in Canada and the U.S. is expected to be 250 and 2,500-3,000 respectively. The depressed demand is largely due to uncertainty about the continuation of U.S. federal capital assistance and operating subsidies to transit authorities. Demand in Canada and the U.S. should increase to about 400-500 and 5,000 respectively but this is not expected to happen for another five years, by which time it is hoped that the subsidy question in the U.S. will be settled. Even then demand will be far less than production capacity - 20 to 25 per cent of Canadian capacity. Optimistic projections of the growth of mass transit during the oil crises of the 1970s are partly responsible for the severe overcapacity situation. With current U.S. capacity at 10,000 units, rationalization of the industry is inevitable. Already Volvo has announced the closure of its U.S. facility and GMD and its U.S. parent have cancelled their proposed articulated bus program.

For Canadian producers, a domestic market of 250 units does not support three manufacturers, and overcapacity in the U.S. market makes access more difficult, particularly in the face of "Buy America" policies. A new entrant in Canada can aggravate the industry's problem. Bombardier will be manufacturing or importing an articulated urban bus from Van Hool of Belgium as part of an offset for the sale/licence agreement with Belgium for the Iltis military jeep. The Van Hool articulated bus competes

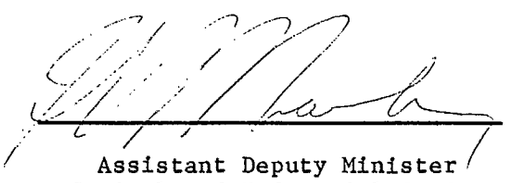
directly with OBI's Ikarus/Orion. Bombardier is expected to market these buses in Montreal, Ottawa, and Vancouver. Sales to the U.S. are also contemplated.

Companies which appear to have the ability to survive this environment of overcapacity and keen competition are following niche strategies, and are linking up with joint venture partners to broaden their product base.

5. COMPETITIVENESS ASSESSMENT

With a domestic market too small to sustain more than one manufacturer, survival for the Canadian urban bus industry depends on access to the U.S. market. Canadian firms have demonstrated their ability to compete against traditional U.S. suppliers on small scale orders. With the exception of targetted niche markets, Canadian manufacturers find it more difficult to compete against new entrants located in the U.S., in particular the new entrants from Europe. These companies benefit from both federal and state incentives (e.g. free trade zones) and are able to meet "Buy America" requirements. In offshore markets, Canadian producers are uncompetitive both in terms of price and product. Working well under capacity, the industry is inefficient and is behind world leaders in technology. These factors coupled with its lack of financial strength makes the Canadian urban bus sector highly vulnerable in the face of severe North American overcapacity and the expected restructuring of the North American industry.

Prepared by: Automotive, Marine and Rail Branch
Department of Regional Industrial Expansion



Assistant Deputy Minister
Capital and Industrial Goods

Date: 25 June 1986

DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

FACT SHEET

NAME OF SECTOR: URBAN BUSES SIC(s) COVERED: - *

1. PRINCIPAL STATISTICS

	1980	1981	1982	1983	1984	Estimate Partial 1985
Establishments	3	3	3	3	3	3
Employment	N/A	N/A	N/A	-----	1,500	-----
Shipments ($ millions)	139.3	209.2	197.3	152.9	149.5	
Gross Domestic Product				N/A		
(Constant 1971-$ millions)				N/A		
Investment ($ millions)				N/A		
Profits After Tax ($ millions)						
(% of income)						

2. TRADE STATISTICS

	1980	1981	1982	1983	1984	1985
Exports ($ millions)	60.7	102.4	45.5	60.0	60.0	N/A
Domestic Shipments ($ millions)	78.6	106.8	151.8	92.9	89.4	N/A
Imports ($ millions)	0	0	0	0	0	0
Canadian Market ($ millions)	78.6	106.8	151.8	92.9	89.4	N/A
Exports as % of Shipments	44%	49%	23%	39%	40%	N/A
Imports as % of Domestic Market	0	0	0	0	0	0
Canadian Share of International Market	Less than 1%					

Source of imports (top 4)	U.S.	E.E.C.	ASIA	OTHERS
1981				
1982		No imports		
1983				
1984				

Destination of exports (top 4)	U.S.	E.E.C.	ASIA	OTHERS
1981	100%			
1982	100%			
1983	100%			
1984	100%			

3. REGIONAL DISTRIBUTION - Average over the last 3 years

	Atlantic	Québec	Ontario	Prairies	B.C.
Establishments - % of total	0	33	33	33	0
Employment - % of total	0	34	24	42	0
Shipments - % of total	0	N/A	N/A	N/A	0

4. MAJOR FIRMS

Name	Ownership	Location of Major Plants	Concentration (% of domestic market)
1. Flyer	Dutch/Canadian	Manitoba	N/A
2. GM Diesel Division	United States	Quebec	N/A
3. Ontario Bus Industries	Canadian	Ontario	N/A

*Please indicate whether using the SIC on 1970 or 1980 basis

DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

DRAFT

COMPETITIVENESS PROFILE

HEATING EQUIPMENT INDUSTRY

1. STRUCTURE AND PERFORMANCE

a) Structure

This industry encompasses manufacturers of major heating apparatus such as warm air furnaces and hot-water-based central heating equipment (but excluding power boilers), unit heaters, space heaters, solid fuel heating stoves, fireplaces and metal vents and chimneys, radiators and domestic water heaters. Most of the manufacturers in this sector are classified in SIC 3071 - Heating Equipment industry.

The production of heating equipment consists mainly of metal shearing and forming, welding, painting and assembly work. Production labour is primarily semi-skilled and unskilled. Where the production of components (e.g. blowers, pumps, motors, and power burners) requires machining, the components are generally purchased from other manufacturers. Economies of scale in production are relatively unimportant in the manufacture of central heating systems such as warm air furnaces, but are a factor in some unit heaters and space heater products.

Total Canadian shipments reached $411 million in 1985, and approximately 5,000 persons were employed in the industry. In 1985 Canadian exports of heating equipment ($76 million) amounted to 18 percent of Canadian shipments, and imports ($75 million) accounted for 18 percent of the domestic market.

Of the estimated 130 manufacturers of heating equipment in Canada, over 100 are small local establishments with less than 20 employees and less than $1 million in sales annually. Approximately 50 firms are primarily engaged in manufacturing equipment other than solid fuel (wood and coal) stoves. Small Canadian-owned solid fuel stove manufacturers proliferated from 1973 to 1980, but there has been substantial attrition since then.

The largest eight firms account for 40 percent of total industry shipments. Most establishments are located either in Ontario (43%) or in Quebec (25%), although several other provinces have retained at least one significant manufacturer.

The industry is predominantly Canadian-owned, and heating equipment products generally attain from 85 to 100 percent Canadian content. The main exception is in the hydronic heating sub-sector (which accounts for less than 10 percent of Canadian shipments) where U.S. subsidiaries account for about 75 percent of Canadian capacity and Canadian content is less than 70 percent.

Transportation costs are not equally important for all products. While a completed home furnace has a low value-to-volume relationship, transportation costs have not been an important restraint in the growth of the Canadian industry. When shipped in truckload quantities, Canadian furnaces can be delivered to most U.S. markets (i.e. the northern states) at a transportation cost of no more than 3 or 4 percent of total costs. On the other hand, transport costs do serve as a buffer in North America against potential offshore competition (since transoceanic shipping costs are more significant). In addition, because of the much longer trucking distances involved in serving western Canada from Ontario and Quebec, furnace production capacity has remained somewhat regional. For instance, several medium-size manufacturers located in western provinces have been successful in serving primarily their local market area.

Smaller unit heaters, space heaters, and components have a high enough value-to-weight ratio to make offshore trading practicable, and Scandinavian (high quality) and Asian (low cost) imports of solid fuel stoves and heaters have occasionally appeared on the Canadian market.

The market for heating equipment, estimated at $410 million in Canada in 1985, depends primarily on the availability and cost of heating fuels, and on new construction activity, which consumes an estimated 80 percent of the sector's output. An increasingly important segment in the Canadian context has been the retrofit and renovation markets, which have received a major boost since 1981 from the off-oil provisions of the National Energy Program. It was originally anticipated that some two million heating equipment conversions would be undertaken by 1990, and over 440,000 conversions were subsidized in the program's first two years of full operation. The termination of the program is not expected to greatly reduce this level of activity, although consumers are likely to postpone some furnace conversions in response to the decline in world oil prices experienced during 1986.

House and building construction in the United States is very similar to that in Canada, and the heating equipment used is similar in design. European home construction is quite different (houses without basements, and less space per person in living quarters), and in most cases the European industry has developed substantially different product lines from those which predominate in the North American market. As a result, Canadian trade in this sector is predominantly with the United States.

Most major U.S. heating equipment manufacturers have production facilities in Canada. Although several, such as Carrier and Trane, produce primarily air-conditioning equipment at their Canadian plants. U.S.-owned subsidiaries import production parts and components, as well as complete units in those sizes and designs which they do not produce in Canada. The product line of major firms may encompass as many as fifty different items, and subsidiary plants in Canada might manufacture one-quarter to one-half of these and import the remainder for sale in the Canadian market. Some firms, such as Trane in unit heaters, have included their Canadian subsidiaries in rationalized manufacture of elements of their product line.

Canadian-owned manufacturers also rely on some imported components, such as gas control valves for furnaces and boilers. Some are imported in finished form while others are assembled in Canada. Some cast iron heat exchangers for boilers are still imported, although domestically- produced finned tube exchangers are now being used by many Canadian boiler manufacturers.

Sporadic imports of wood-burning space heaters from the Far East and Scandinavia have had an adverse effect on Canadian manufacturers of similar products. However, this has been a diminishing market in recent years because of relative fuel inefficiencies and problems with creosote buildup, and is not expected to be a major factor in the overall heating equipment market in the near future.

b) Performance

From 1973 to 1980 industry shipments grew at 3.8 percent in real terms , exceeding the 2.6 percent rate of growth of the domestic market. This was largely the result of increased production and exports of solid fuel heaters and stoves by many small firms in the Canadian industry. The recession of 1982-83 led to a decline of 16 percent in real terms in the size of the domestic market and in the value of shipments of Canadian manufacturers. This decline was far smaller than that experienced in most other manufacturing sectors, primarily because of the stimulus provided to the Canadian renovation and retrofit market by the off-oil portion of the National Energy Program. By 1985, shipments had virtually recovered to pre-recession levels, although the Canadian market was still 8 percent below its 1980 peak volume in real terms.

Although the sector is largely oriented to the requirements of the Canadian market, recently there has been more sustained export marketing activity. Canadian exports, which were virtually non-existent in the

early 1970s but reached $76 million in 1985, are almost entirely to the United States. The Canadian trade balance, which stood at a $1 million surplus in 1985, has improved in recent years because of the success of Canadian manufacturers of high-efficiency gas furnaces in the United States market.

2. STRENGTHS AND WEAKNESSES

a) Structural Factors

In general, heating equipment manufacturers throughout North America, especially those involved in forced air furnace production, tend to be survivors of past consolidations in the industry. This consolidation, together with a slow rate of change in product design (which has held down the turnover rate of production equipment used) has resulted in quite low capital investment levels in the sector. Much of the metalworking machinery employed tends to be relatively old.

Consolidation of the industry has, however, produced larger companies with more adequate financial resources available to them. Several of the larger firms in the Canadian industry have recently invested in numerically controlled metalworking equipment and CAD-CAM facilities which will allow them to make some increases in productivity, to lower their production costs, and to protect or expand their market position in North America.

The many small firms in the industry face problems typical of small firms in many industries, such as higher material costs. In general, they have only limited financial resources with which to finance continuing research and development efforts, and so tend to concentrate on mature technologies, such as solid fuel heating equipment, where R&D are not critical success factors.

With minor exceptions foreign-owned subsidiaries have little or no authority to export, except under captive arrangements back to their parent firms in the United States. Under these arrangements, the plants import production parts and components as well as complete units of those sizes and designs which they do not manufacture in Canada.

Most export sales by the industry originate with Canadian-owned firms. The development of high-efficiency gas furnaces by the Canadian industry has enabled several firms to expand their sales in the United States during the last five years. They are now firmly entrenched suppliers of these units.

b) Trade Related Factors

Heating equipment entering Canada faces tariffs ranging from 12.4 to 14.4 percent (effective January 1987). Although tariffs apply to parts such as gas control valves which are imported for use in Canadian heating products, such items are only a minor element of total production costs.

The tariff on heating equipment entering the United States from Canada is 3.9 percent. There are no significant non-tariff barriers affecting trade in heating equipment products between the United States and Canada. For example, provincial or state procurement policies do not constitute a significant restraint to trade.

Japanese tariffs on heating equipment are around 4.2 percent, and E.E.C. tariffs are 4.1 percent. The industry has been largely unsuccessful in securing the necessary product safety approvals from standards and testing bodies in Europe, and attempts by Canadian manufacturers (aided by the Canadian Gas Association) to arrange for pre-testing of their products in Canada prior to entry to the U.K. market failed.

c) Technological Factors

The level of technology incorporated in most heating equipment products has been relatively low and has generally been widely available and easily accessible. Furthermore, the low cost of fuel in North America prior to 1974 did not encourage manufacturers to innovate in product design, other than to achieve production cost reductions. As a result, technological change has traditionally not been a major factor affecting the Canadian industry's competitiveness. However, in the last decade design improvements have been made more frequently, focusing on improved fuel efficiency. The major Canadian manufacturers have steadily increased the fuel efficiency of their product lines in pace with, or ahead of, their competitors.

The production process involved in the manufacture of heating equipment is not very sophisticated. It is generally limited to sheet metal work and assembly operations. Components requiring machining are usually sub-contracted to outside suppliers. There are no significant economies of scale involved. Most major manufacturers have sought to automate and improve production through studies of plant layout and work flow and through some purchases of CAD/CAM equipment and numerically controlled metal working equipment. However, the nature of the production process does not suggest that dramatic improvements can be made in production technology.

d) Other Factors

The exchange rate between the U.S. and Canadian currencies has a direct bearing on the performance of the Canadian industry. Recent improvements in sales to the United States have been aided by, and in some cases initiated because of, the favourable rate of exchange on the Canadian dollar.

The difficulties encountered through 1985 and into 1986 in obtaining liability insurance for products sold in the United States have forced some Canadian firms to re-examine their participation in that market. In some cases, companies have chosen to temporarily withdraw from the U.S. market.

3. FEDERAL AND PROVINCIAL PROGRAMS AND POLICIES

The Off-Oil provisions of the former National Energy Program stimulated the Canadian market for conversions to gas and electrical furnaces, providing a valuable market impetus during a period when new construction was in decline. Other programs that have stimulated residential construction, such as special tax treatment of investments in multiple unit residential buildings (MURBs) have indirectly benefited the heating equipment industry.

4. EVOLVING ENVIRONMENT

While the heating equipment market is not expected to return to the growth levels experienced during the 1970's, the North American market should remain stable at current levels through the medium term. Market growth is expected to come primarily in the area of higher fuel efficiency technologies -- an area in which several Canadian firms are now well established.

Product technology, while not likely to be a major competitive element in the medium-term, will continue to require refinements in energy efficiency and improvements in noise suppression. With the expected growth of "airtight" housing, residential heating equipment manufacturers will continue to develop systems that incorporate air quality control and recovery of heat from exhaust air via air-to-air heat exchangers. Several Canadian-owned firms have already developed products that address these developing market requirements.

5. COMPETITIVENESS ASSESSMENT

The heating equipment industry in Canada has, for the most part, been oriented towards the domestic market. It encounters little competition from imported products, because most U.S. competitors have plants in Canada, because offshore competition in major product lines is discouraged by the high transoceanic shipping costs involved, and because the quality and pricing of Canadian products is currently competitive in the domestic market.

In recent years some Canadian firms have been active in developing higher efficiency products, and today Canadian-made products are as efficient and reliable as any in the world. Furthermore, production capabilities in Canada are fairly complete. As a result, the Canadian industry has been increasingly successful in the United States, its prime export market.

PREPARED BY : Machinery and Electrical Equipment Branch
Department of Regional Industrial Expansion

for Assistant Deputy Minister
Capital and Industrial Goods

DATE: July 11, 1986

DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

FACT SHEET

HEATING EQUIPMENT S.I.C. 3071 (1980)

1. PRINCIPAL STATISTICS

	1973	1980	1981	1982	1983	1984	1985
Establishments	83	123	124	160*	171		130
Employment	4,453	5,993	5,806	5,119	5,032		5,000
				($Millions)			
Shipments	114	292	314	306	328	362e	411e
Profit After Tax	7	25	73	14	25	N.A.	N.A.
Capital Expenditures	3	9	9	9	6	8	8e
Gross Domestic Product ($1971 Millions)	52	67	65	50	51	53	64e

2. TRADE STATISTICS

	1973	1980	1981	1982	1983	1984	1985e
				($ Millions)			
Exports	3	29	34	35	50	64	76
Domestic Shipments	111	263	280	271	278	298	335
Imports	21	48	57	75	63	65	75
Canadian Market	132	311	337	347	341	363	410
Exports as % of Shipments	3%	10%	11%	11%	15%	18%	18%
Imports as % of Dom. Market	16%	15%	17%	22%	18%	18%	18%

	U.S.	E.E.C.	ASIA	OTHER
Source of Imports				
1981	84%	4%	12%	-
1982	58%	5%	34%	3%
1983	74%	6%	17%	3%
1984	83%	12%	2%	3%
Destination of Exports				
1981	84%	5%	2%	9%
1982	83%	4%	2%	11%
1983	86%	5%	1%	8%
1984	91%	2%	1%	6%

3. REGIONAL DISTRIBUTION - 1983

	Atlantic	Quebec	Ontario	Prairies	B.C.
Establishments	5%	25%	43%	9%	18%
Employment	N.A.	23%	56%	N.A.	6%
Shipments	N.A.	21%	59%	N.A.	5%

4. MAJOR FIRMS

NAME	OWNERSHIP	LOCATION OF MAJOR PLANTS
Canadian Corporate Management	Canadian	Rexdale, Ont.
Mark Hot Inc.	Canadian	Longueuil, Que.
Keeprite Inc.	Canadian	Winnipeg, Man.
Duo-Matic Olsen Inc.	Canadian	Tilbury, Ont.
Lennox Industries Int'l	U.S.A.	Etobicoke, Ont.
Petro Sun International	Canadian	Longueil, Que.
E.H. Price Ltd.	Canadian	Winnipeg, Man.
Airtex Industries Ltd.	Canadian	Calgary, Alberta
Selkirk Metalbestos	U.S.A.	Brockville, Ont.

e = Estimated by Machinery and Electrical Equipment Branch, DRIE.

* NOTE Since 1982 sector data includes 32 firms producing solid fuel burning equipment, transferred from SIC 332. Beginning in 1983, sector data no longer includes humidifier manufacturers or establishments primarily engaged in manufacturing commercial cooking equipment.