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TRADE NEGOTIATIONS STUDIES:

DOCUMENTS RELEASED UNDER THE ACCESS TO INFORMATION ACT,

MAY 21, 1986

STUDY NO. 17b:

Sectoral competitiveness profiles: consumer goods,
services and processing. (Dept. of Regional Industrial
Expansion. Rev. August 1985)

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Dept. of External Affairs
Min. des Affaires extérieures

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SECTORAL

COMPETITIVENESS

PROFILES

CONSUMER GOODS, SERVICES AND RESOURCE PROCESSING

Department of External Affairs
D.R.I.E. *Exp. 1985*

REVISED AUGUST 1985
Dept. of External Affairs
Min. des Affaires extérieures
OTTAWA

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COMPETITIVENESS PROFILE

SOFTWOOD LUMBER INDUSTRY

1. Structure and Performance

Structure

- The softwood lumber industry is one of Canada's leading industries in terms of sales, employment, export earnings and regional dispersion. Canada is the world's largest exporter of softwood lumber accounting for some 45 per cent of international trade and 13 per cent of world production. The industry is comprised of well over 2,000 sawmills which provide employment for about 90,000 people in sawmilling and related forest operations.
- Lumber production totals about 20 billion board feet (47 million cubic metres) annually. Total value of shipments in 1983 was \$4.8 billion of which \$3.9 billion was exported.
- On a regional basis production is concentrated in B.C. (65 per cent), followed by Quebec (17 per cent), Ontario (9 per cent), Alberta (4 per cent), New Brunswick (3 per cent). The remaining 2 per cent is produced in the other provinces and the Territories.
- The softwood lumber industry can be divided into 4 subsectors based mainly on the type of resource available. The Spruce-Pine-Fir (SPF) subsector extends from the Interior of B.C. to Newfoundland and accounts for about 73 per cent of total softwood lumber production. The Hemlock-Fir (Hem-Fir), Douglas-Fir (D-F) and Western Red Cedar (WRC) subsectors are concentrated on the B.C. coast and comprise respectively 13, 6 and 6 per cent of total output. Eastern Pine and Western Sitka Spruce and Yellow Cedar are considered as minor specialty species subsectors and comprise the balance of 2 per cent.
- Production is concentrated in some 225 companies operating 365 sawmills. Some 50 large, publicly owned integrated forest products companies account for about 55 per cent of total production and provincial Crown corporations represent 3 per cent. The large number of privately owned firms, comprise the balance.
- Foreign ownership accounted for an estimated 24 per cent in 1983, mainly concentrated in western Canada.
- About 75 per cent of production workers are unionized. Collective bargaining in the East is more fragmented than in the West where unions typically have larger memberships. Management is considered effective and entrepreneurial in outlook.

Performance

- During the 1970's the industry experienced rapid growth and production increased by 60 per cent to some 43 million cubic metres by 1980. In this same period considerable rationalization occurred with a reduction in the number of producing units and in employment. The industry became more efficient with a strong export capacity and achieved a good competitive position internationally. During the 1970's Canadian lumber exports increased by 67 per cent to nearly 29 billion cubic metres in 1980.
- The high rate of growth of the 1970s can be attributed to the high levels of housing activity in North America and to the technological development of systems enabling the economic processing of small diameter logs at high lineal feed rates. The significant expansion of the industry, particularly in the B.C. Interior and Quebec was further facilitated through increased integration with the pulp and paper sector which provided an increasingly important source of revenue for pulp chips.

- Since 1980 the industry in all regions has gone through the deepest market downturn in 40 years. Softwood lumber production in 1982 reached only 38 million cubic metres, a reduction of 16 per cent since 1980 in volume terms and considerably more in value, reflecting the drastic fall in lumber demand. While improvement occurred in demand in 1983 and 1984, the industry is still in a situation of oversupply, prices are depressed and competition is intense.
- The industry's financial position is currently weak due to heavy losses incurred in most sectors in 1981 and 1982 when debt load greatly increased, investment was drastically curtailed and repair expenditures were reduced significantly. The long term debt/equity ratio for the Wood Industries rose from 0.46 in 1980 to 1.16 in 1984. The financial situation diminished the industry's ability to obtain financing and resulted in several mill closures. This situation has improved somewhat more recently.
- The over-riding problem currently facing the industry arises from the lumber oversupply situation in North America and the next two years can be expected to be critical as intense competition is expected to continue. Little improvement in profitability can be expected until lumber prices strengthen.
- Even though prices are depressed, many companies have no other option but to continue operating to maintain cash flow and to service debt. Since the industry is highly integrated, many mills need to keep operating to supply chips to pulp mills.

2. Strengths and Weaknesses

Structural

- Economic mill size varies greatly and is governed by log availability, size, quality and geographic dispersion as well as the regional demand for pulp chips. Generally, sawmills larger than 20 million board feet annual capacity are more efficient than smaller units.
- Small sawmills, numbering about 2,000, have limited impact on total capacity but process pockets of resource unattractive to larger organizations, often produce specialties, service regional markets, and provide employment in numerous single industry communities, particularly in eastern Canada.
- While there is some need for further rationalization in the industry to enhance productivity and yield, the scale of lumber producing operations generally compares favourably with those in other producing countries.
- The industry in several regions of Canada is operating at the upper limit of economic wood supply. In addition, due to declining quality and decreasing average log diameters coupled with increasing distance between harvesting and mill sites, wood costs are rising. As a result industrial adaptation and modernization of production facilities are needed. In addition, further integration with the pulp and paper and other wood products sectors should take place to achieve improved raw material utilization.
- The industry is overly dependent on the U.S. market which consumes about 60 per cent of Canadian softwood lumber production. The current competitive environment is intense due to lumber oversupply. While the Canadian industry is generally cost competitive in U.S. regional markets and has the important benefit of a favourable exchange rate, competition will likely increase from the U.S. South due to its proximity to the fastest growing regional economies in the U.S. Exports to the U.S. are largely in the standard sizes of lumber from the higher volume SPF mills in the B.C. Interior and east of the Rockies. The B.C. Coast producing region has relatively high wood and labour costs and is generally less competitive in North American standard structural markets.

International Trade Related Factors

In general, NIB's are of greater concern than tariffs. Exceptions are the 10 per cent tariff on planed whitewood (SPF) in Japan and the 4 per cent EEC tariff on planed GLS (standard structural) lumber.

United States

The key factors relating to Canada/U.S. trade in software lumber include:

- The U.S. and Canada jointly comprise a common duty-free market for almost all sizes and grades of software lumber.
- New U.S. standards on strength and physical performance of lumber are currently being developed.

The Canadian industry's in-grade testing project, with assistance from DRIF, is being coordinated with similar work in the U.S. and should ensure that Canadian lumber will meet the new standards when adopted. Developments are being monitored closely.

- Canadian softwood lumber exporters are facing serious U.S. industry protectionist sentiments.

While the Canadian industry was successful in its defence during the U.S. countervailing duty investigation in 1983, the U.S. industry continues to seek means to limit lumber imports from Canada. At present, there are several proposed bills being considered by the U.S. Congress. A Section 332 investigation is currently underway and an action under Section 201 of the U.S. Trade Act is a distinct possibility. The imposition of a quota or tariff would have an extremely serious impact on the Canada industry which depends on the US. market for some 60 per cent of total production. The socio-economic implications could extend to small, isolated single-industry communities.

EEC

- In the EEC, major factors which impact on trade in software lumber include: a 4 per cent duty on planed (GLS) lumber; the need for improved official acceptance within European building code and product standards; phytosanitary import regulations; and potential accelerated harvest of acid rain damaged forests in Germany.

The removal of the 4 per cent tariff and better access through technical liaison and promotional activities would improve Canada's competitive position. While the Canadian industry has demonstrated it can comply with EEC plant health regulations, this and the possibility of accelerated forest harvest hold the potential for trade restrictive measures.

Japan

- The key issues in lumber trade with Japan include: the 10 per cent tariff on imports of planed whitewood (SPF); lack of Japanese building code acceptance of platform frame construction for 3-storey apartment dwellings; need to obtain approval for certification of Canadian sawmills to affix the JAS mark on lumber in Canada prior to export.

The Japanese tariff represents an important constraint to increased exports of SPF lumber. Similarly, overcoming building code restrictions and potentially costly JAS regrading requirements would provide increased lumber export potential.

Technological Factors:

- During the 1970s the Canadian industry achieved an international reputation for technological development with the high speed processing of small diameter logs which enabled increased throughput and improved productivity. More recently, however, technical leadership has shifted to the Scandinavian industry where advanced micro-electronics assisted processing equipment is being used more extensively to optimize lumber yield and product value.
- A key objective is to adapt existing technology to the present needs of the industry which faces increasing wood costs and intense competition. Greater emphasis is required on maximizing yield and product value from wood input rather than the past thrust directed primarily toward higher productivity.
- Over the longer term, a new generation of reconstituted wood products utilizing new manufacturing techniques could replace sawn lumber products to some degree. In addition, further development and application of technology will enhance industrial energy self sufficiency with increased use of plant and forest waste.
- The industry is not limited by the availability of technology but rather by its financial capability to invest in the most modern equipment and systems.

Other Factors

- The economic situation of the Canadian softwood lumber industry is governed largely by external supply and demand factors since some 70 per cent of total production is exported. The single most important factor is North American housing activity which is highly cyclical and sensitive to interest rate changes.
- The Canadian industry's competitive position has been weakened in EEC markets due primarily to the relative strength of the dollar. This situation is also a significant factor in all offshore markets.

3. Federal and Provincial Programs and Policies

- Federal financial assistance has been provided to the lumber sector under a variety of programs including ADIP, EDP, ISDP, PEKD, COMDP, ENFOR and FIRE. While government assistance was an important factor in certain regions, on an industry wide basis it has been relatively insignificant.
- The Cooperative Overseas Market Development Program (COMDP) was established in 1971 to assist the wood products industry of B.C. in the development of offshore markets. The COMDP is jointly funded by the federal and B.C. governments and the provincial wood products industry. During the 1970s, annual offshore exports increased some four-fold to about \$1 billion. The COMDP in B.C. and the new offshore market development project in Quebec will continue to be very important to the industry which is highly dependent on the U.S. market.
- The Forest Industries Advisory Committee (FIAC) to the Minister of DRIE presented its interim report in August, 1983. This report reviewed industry prospects in the major forest product sub-sectors including softwood lumber and made several recommendations. A federal government response to these recommendations was made public in February 1984. Launching of the offshore market development project in Quebec and other activities will effectively respond to FIAC recommendations in the areas of export market development and corporate intelligence. FIAC attention is now focused on examining ways and means for improving labour/management relations, international competitiveness and value-added.

4. Evolving Environment

- The Canadian industry will continue to dominate the domestic market which consumes about 30 per cent of production. Softwood lumber imports account for about 6 per cent of domestic consumption and comprise species not indigenous to Canada for use primarily for millwork.
- Forecasts to 1990 indicate an average annual increase in demand of about 1.6 per cent reflecting an outlook of limited new housing activity. Consequently, any additional growth will depend on new product development and increased non-structural use. Softwood lumber is expected to remain cost competitive in relation to other construction materials.
- Due to lumber oversupply in North American markets, current prices are depressed and the competitive environment is expected to continue to be intense. U.S. consumption is expected to peak in 1988 and then decline to 1983 levels by 1990. Forecasts beyond 1990 show a slower rate of growth than in the 1980s as demographic factors indicate a slowing in housing demand.
- The industry is highly dependent on the U.S. which consumes some 60 per cent of Canadian production. U.S. producers are resentful of the substantial market share (currently over 30 per cent) achieved by Canadian exporters resulting largely from the competitive advantage provided by the dollar exchange rate. Protectionist sentiments are strong and the U.S. industry is seeking means to limit imports of lumber from Canada. Any measure which would restrict exports to the U.S. would have very serious consequences for the Canadian industry.
- In the EEC, Canada will continue to maintain its position as the third most important supplier after Russia and Scandinavia. The Canadian industry's competitive position has been eroded due primarily to the relative strength of the dollar and market share has fallen to less than 7 per cent. EEC markets could be regained if the exchange rate became more favourable since the Canadian industry is otherwise competitive and major companies have established distribution operations in Europe.
- In Japan, the Canadian (almost entirely B.C.) industry will likely continue to be the largest foreign supplier. Canada continues to be competitive and acceptance of platform frame construction continues to grow, but market demand has weakened in recent years due to reduced housing activity. While a widening gap between domestic production and consumption is foreseen, competition is expected to increase from the U.S., West, New Zealand, and Chile.
- In the Middle East and North Africa, until very recently Canadian exports were increasing. Provided that the industry remains competitive with Scandinavian, East European and other suppliers, Canadian lumber exports to these regions could grow but at a reduced rate compared to previous years. Should hostilities cease, construction in Iran, Iraq or Lebanon could provide opportunities for Canadian exporters.
- Australia is expected to remain a small but stable market, particularly for B.C. coast species.
- New market areas such as China and Korea are considered to hold good potential for increased exports from Canada.
- The further development of traditional offshore markets as well as penetration of new markets is necessary for the future stability and development of the Canadian softwood lumber industry.

5. Competitiveness Assessment

- In general, the Canadian softwood lumber industry is considered to be competitive in North American but is very dependent on the U.S. market and is highly specialized to serve the cyclical housing sector with standard structural lumber sizes. While the competitive position of Canadian exports is enhanced by the favourable relative dollar exchange rate, lumber prices in both the U.S. and Canada have become depressed due to oversupply in an intensely competitive environment.
- In offshore markets, the competitive position of Canadian lumber has been seriously weakened due to the high relative value of the dollar. In addition, Scandinavian and European competitors have achieved a higher yield performance with good productivity. In order to improve its competitiveness, the Canadian industry will need to modernize to improve lumber yield, product value and productivity.
- The B.C. coastal industry faces high wood and labour costs and is generally not competitive in North American markets for construction (commodity) grades of lumber. Investment is needed for a structural shift in this sector to adapt to higher value added processing to improve profitability.
- A review of corporate investment in the wood industries shows that capital investment fell by nearly 29 per cent from 1981 to 1982 and by an additional 31 per cent in 1983. Expenditures on repairs in 1982 were only about 38 per cent of normal, indicative of the extremely serious financial difficulties of sector companies. While the results of a capital intentions survey in 1984 indicate that repair expenditures will return to near normal, capital expenditures will likely remain at least 22 per cent below normal levels.
- Under current market conditions characterized by low prices coupled with an outlook for limited growth in demand, there is little to attract investment in the softwood lumber industry. Faced with a tenuous financial situation, many Canadian mills have little option but to continue to operate in order to maintain cash flow. While investment in technically advanced equipment and processes is necessary, the industry is generally not in a financial position to do so.
- The industry will require substantial capital investment in modernization, improved yield, restructuring and product up-grading in order to maintain competitiveness. The capital requirements for the period 1985 to 1990, have been estimated to be in the order of \$1.5 billion.
- The impact on employment resulting from modernization and rationalization is expected to be less in regions which have modern mills with a low labour content. In eastern Canada where there is a proliferation of smaller sawmills and labour content is much higher, modernization and rationalization will have a significant impact on employment. While it is estimated that some 3,500 jobs will be displaced by 1990 the impact of modernization on employment may be offset to a degree by diversification from commodity to upgraded lumber products which entail a higher labour content.
- In view of current industry high debt/equity ratios, a resumption in capital investment programs cannot be expected for at least 2 to 3 years, until balance sheets return to a more healthy position.
- The development and expansion of offshore markets is a key objective for the industry. In this regard activities under the Cooperative Overseas Market Development Program in B.C. and the offshore market development project in Quebec, which are jointly funded by government and industry, will be important.
- The industry in several regions of Canada is operating at the upper limit of economic wood supply. This will require long term solutions in the area of forest management.

FACT SHEET

SOFTWOOD LUMBER SIC: 2512

1. PRINCIPAL STATISTICS

	<u>1973</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>
*Establishments	1,519	1,317	1,313	1,223	1,280(e)
Employment	70,000	63,000	60,000	50,000	55,000(e)
Shipments (\$ millions)	2,127	3,394	3,521	3,031	4,800(e)
**Gross Domestic Product (Constant 1971\$ millions)	999	1,257	1,213	1,037	1,335
**Investment (\$ millions)	277	469	448	320	221
**Profits after tax	231	233	27	-288	N/A
Exports (\$ millions)	1,558	3,262	2,913	2,846	2,900
Domestic Shipments (\$ millions)	569	632	608	195	500
Imports (\$ millions)	60	108	130	72	123
Canadian Market (\$ millions)	629	740	738	257	623
Exports - % of shipments	69	67	70	75	72
Imports - % of domestic market	6	5	6	5	6

(e) - estimated * - Does not include many small mills.
 ** - Softwood lumber industry represents about 70% of Wood Industries statistics shown.

2. REGIONAL DISTRIBUTION - Average over the last 3 years

	<u>Atlantic</u>	<u>Quebec</u>	<u>Ontario</u>	<u>Prairies</u>	<u>B.C.</u>
Establishments - % of total	19	31	18	6	26
Employment - % of total	4	22	10	7	57
Shipments - % of total	3	18	8	5	66

3. FOREIGN TRADE

	<u>U.S.</u>	<u>B.E.C.</u>	<u>Asia</u>	<u>Others</u>
Imports - % of total 1981	99	-	-	1
1982	99	-	-	1
1983	99	1	-	-
Exports - % of total 1981	78	9	9	4
1982	77	8	10	5
1983	83	5	7	5

4. MAJOR FIRMS

	<u>Ownership</u>	<u>Location Major Plant</u>
1. Canfor Corp., Vancouver, B.C.	Public	B.C., Alberta
2. B.C. Forest Products Ltd., Vancouver, B.C.	Public	B.C., Alberta
3. MacMillan Bloedel Ltd., Vancouver, B.C.	Public	British Columbia
4. Northwood Pulp and Timber Ltd., Prince George, B.C.	Public	British Columbia
5. MacnicK Perron Inc., La Sarre, Quebec	Public	Quebec, Ontario
6. Rexfor, Quebec, Quebec	Provincial	Quebec
7. J.B. Irving Ltd., St. John, N.B.	Private	New Brunswick

MAJOR REPORTS AVAILABLE

	<u>Type of Report</u>	<u>Year</u>
ETAC Interim Report	Labour/Industry Consultation	1983
Federal Government Response to the ETAC Recommendations	Labour/Industry Consultation	1984

COMPETITIVENESS FE TLR

CONVERTED WOOD PRODUCTS

1. Structure and Performance

Structure

The converted wood products sector, as defined by Statistics Canada, is composed of those manufacturers whose primary activity is the further processing of primary wood inputs such as lumber, particleboard and plywood into a wide range of wooden end products. A representative listing of the major products include millwork items such as windows and doors, interior woodwork, mouldings, roof trusses, hardwood flooring and kitchen cabinets; manufactured housing of various types, mobile homes and prefabricated components; and a wide range of miscellaneous products such as fencing, wooden handles, wood turnings, cooperage and woodenware. The largest identifiable industrial segments, millwork and manufactured housing, historically have accounted for about 75 percent of total sector activity. Total estimated shipments in 1984 were \$2.1 billion, with total employment at approximately 30,000.

The total number of establishments currently comprising the sector are estimated to be in the neighbourhood of 1,000, approximately 1,300 in millwork, 100 in manufactured housing and the balance of approximately 600 in the miscellaneous wood products segment. The large majority (94%) of the companies are small, employing less than 50 workers, are Canadian owned, family owned, non-integrated and domestic market oriented. The sector is a classic example of a small industry sector with the largest companies (less than 5 firms) having sales levels in the vicinity of \$50-\$60 million with the majority (over 50%) with sales less than \$1 million. Regionally, the sector is spread across Canada but concentrated in the two provinces of Quebec and Ontario with approximately 60 percent of the companies and shipments located in these two provinces. An additional 15 percent are located in the province of British Columbia. Finally, in addition to the significance of the sector in terms of employment generation and regional impact, it is also important in terms of value added and as an important market for the primary producers of lumber and plywood. Foreign ownership is virtually non-existent throughout the sector as is vertical corporate integration while a small number of large leading companies dominate the sector. These few companies because of their size and scale of operation are highly productive and as a result are internationally competitive.

Performance

The fortunes of the sector, due to the large number of products manufactured for the housing market, are closely tied to cycles and long term trends in the Canadian housing industry. As a result, this sector exhibited a rapid growth in factory shipments over the period 1973 to 1980 in response to an unprecedented boom in housing construction over the period. Shipments during this period expanded from a level of \$890 million in 1973 to approximately \$2,100 million in 1980. In constant dollar terms, this represented a real annual growth rate in excess of 12.2 percent over the period. From 1980 to 1984, however, reflecting both the significant downturn in housing activity and depressed economic conditions which occurred in 1982 and 1983, indications are that total factory shipments in the major segments declined by some 20 percent or more indicating stagnant market conditions throughout the total sector over the period 1980 to 1984.

As a result, this period saw a significant decrease in capacity utilization among a number of industrial segments in the sector, notably kitchen cabinets, windows and doors and manufactured housing, but all were affected to some degree. With the downward pressure on sales, competition intensified appreciably and price cutting became rampant. Profit margins were reduced and in many sectors, notably manufactured housing, this has resulted in leaner, more competitive companies. However, the resultant squeeze on working capital levels has stalled productivity improvement and export market development plans, when both would have assisted the industry. In addition, manufacturers in some of the sectors over the

period were forced to increase their debt loads appreciably in order to survive and as a result a large number are poorly positioned to respond to the changing market demand scenario facing them in the future, i.e., declining domestic prospects and the need to expand into foreign markets.

It should be noted, however, that during the difficult economic period, some companies in most of the sectors have become more competitive as the weaker companies have been weeded out. Leading Canadian companies have reduced inventory levels, concentrated on efficiency improvements and have aggressively pursued niche market opportunities, mostly in the U.S. to offset declining product demand at home.

2. Strengths and Weaknesses

(a) Structural

The severe domestic market problems have direct relevance to the competitive position of the sector, both domestically and on the international front. The question is particularly relevant vis-à-vis both U.S. and European manufacturers in certain product lines such as windows and doors, kitchen cabinets and manufactured housing which have significant economies of scale advantages over Canadian manufacturers. Foreign manufacturers have penetrated markets in Canada, in spite of exchange rate disadvantages as in the case of U.S. competition and additional tariff barriers and transportation costs in the case of all foreign competitors. While actual imports are lower than exports from the sector and have remained relatively static over the last few years, the Canadian industry remains highly vulnerable to foreign competition. This has been demonstrated in some sectors such as windows and cabinets where leading foreign firms have successfully penetrated Canadian distribution channels, although relatively few foreign companies include the Canadian market in their export strategy. These differences in scale are illustrated by the fact that a number of U.S. window manufacturers have individual production levels roughly equivalent to total Canadian production and some 20 U.S. kitchen cabinet manufacturers are larger than the largest Canadian firm which has sales of some \$20 million. Kitchen cabinet companies from Europe such as Beckerman and Popenpohl have sales in the range of \$150 to \$200 million. Such large scale means a very high degree of automation, large financial resources for R&D and promotion and significantly lower per unit costs. In addition, per unit labour costs tend to be lower along with significant reductions in raw material and packaging costs, through large scale buying. Finally, in some sectors, foreign competitors tend to have low levels of debt, a situation which places the Canadian companies at a further disadvantage.

While the decline in domestic market demand related to new housing construction during the 1980-1984 period and the continued downward trend expected due to adverse population and net family formation trends projected into the late 1990's point to continued poor performance by the sector, two parallel movements are expected to provide some market impetus as well as some shifts in product orientation. The first trend relates to the strong growth both domestically and in foreign markets being experienced in renovation and do-it-yourself. In Canada, total expenditures in this area have risen dramatically from the early 1970's when such expenditures accounted for only 8.1 percent of total expenditures related to housing. In 1983, this percentage stood at 23.5 percent and is expected to account for approximately 50 percent of total expenditures by the mid 1990's.

Niche markets are also expected to provide significant opportunity for future growth in the sector. With the decline in domestic potential from 1980, the larger Canadian companies as well as a number of smaller ones, have been forced to place more emphasis on export opportunities, particularly to the U.S. to maintain production levels. As a result, exports from the sector have increased from a level of some \$100 million in the late 1970's to some \$350 million in 1984. This strong upswing in renovation, D.I.Y. and exports represents a

significant shift in the underlying demand factors affecting the sector as well as an emphasis on product improvement and innovation to develop products to penetrate these new markets.

Many companies throughout the industry have had to adjust to seriously declining markets which has affected product lines, seriously altered marketing and distribution policies, reinforced the trend to consolidation and rationalization and in extreme cases has caused plant closure and bankruptcy. The most seriously affected sector in this regard has been manufactured housing which currently is operating at a level less than half its 1970's volume.

Finally, over the last five years, there have been inroads made by alternative materials such as plastic and metals, particularly aluminum and other substrate materials in some sectors. But to date, there have been no significant challenges to wood primary materials in converted wood products.

(b) International Trade Related Factors

International trade considerations are undoubtedly an important key element in the future outlook of the sector. From all indications, numerous export opportunities in select product lines exist for leading companies in the sector, primarily in the U.S., Western Europe and Japan in the longer term. The successful exploitation of these "niche" opportunities depends, however, on a number of critical factors; namely, the attitude and aggressiveness of Canadian companies in pursuing them; the ability of companies in the sector to develop adequate resources and scale of production to achieve successful penetration, a situation which has been somewhat eroded since 1980; the ability of companies to fund the high costs of successful market promotion; the ability of the sector to compete in these select market "niches"; and the ability of the companies to innovate and adapt their products to the demands of these markets and last but not least the currency exchange situation. The importance of the last factor is illustrated by recent adverse movements vis-à-vis the European currencies which has rendered many products uncompetitive in these markets and hence has increased the threat of import competition from these countries.

In comparison to a number of economic and cost factors, foreign tariffs are not a major constraint to the current and future export opportunities of the sector. The Canadian tariff levels are generally higher than those in the prime market areas of the U.S., Western Europe and Japan averaging some 10 percent currently against an average of 6 percent in the U.S., 6.5 percent in Europe and 5.5 percent in Japan. Non-tariff barriers, however, while not a general problem, do in some instances have an effect in these markets. Buy America clauses in certain states in the U.S., codes and product specifications in the U.S., Europe and Japan are examples.

While the Canadian industry does possess a number of distinct market advantages, in these key market areas in certain select product lines, such as high quality image, technically advanced product, reliable delivery, competitive cost and unique product styling, the industry as a whole suffers from a number of important disadvantages relative to foreign competitors.

These companies, because of their lower levels of capital intensity and smaller plant size in international terms are better able to manufacture to small order and custom requirements in a significant niche in export markets. However, because of the many very small companies in Canada, i.e., 75% of companies have sales less than \$1 million, costs per unit of product are higher as for example in the kitchen cabinet and window and door sectors where competing companies from Europe and the U.S. are three to five times larger than the largest Canadian companies. This size advantage translates into lower costs of production, higher degrees of plant automation, lower labour input per units, lower material costs due to large scale purchasing, and lower per unit transportation costs which result in a clear market

advantage. Furthermore, the larger financial resources available to production units of larger size mean greater market impact in terms of market promotion, distribution and service.

It should be noted that the more competitive Canadian companies make a determined effort to penetrate certain market niches in foreign markets, primarily in the U.S. They sell on the basis of product quality plus service as well as price. As a result, exports have shown a strong upward growth trend since the late 1970's with the devaluation of the Canadian dollar to a level of approximately \$350 million. This can be expected to continue give a continued positive stance relative to tariffs, the exchange rate, improving cost factors in the sector and expanding niche opportunities in foreign markets.

(c) Technological Factors

Technology and innovation are critical elements in the future health and vitality of the Canadian converted wood products sector. Historically, in this sector, much of the research and development in manufacturing and new product development, which are a significant competitive factor in the market place, have been done in-house, often using ideas from foreign competitors, foreign visits, new product literature and experience of production and marketing management. Since successful marketing is vital to these sectors, products must be constantly improved and developed to respond to consumer requirements. Examples include energy conservation which has substantially changed the nature of windows, doors and manufactured houses and European style kitchen cabinets which are currently in increasing demand in Canada. Research and development related to new machinery and equipment is primarily done by the equipment suppliers and adapted to the specific needs of the companies. Since the major suppliers of the new state-of-the-art machinery and equipment have been from either Germany, Italy, Britain or the U.S., Canadian capability, in this area, historically has and is expected to continue to be limited.

With the exception of the large foreign automated plants, the application of technology in Canadian companies is nearly on a par with foreign competition. While new technology is readily available from a number of sources, constraints to implement include lack of capital, management expertise, and the labour intensive characteristics of many of the smaller companies. In some sectors, there may be a trend to reduced employment because of the potential for increased levels of automation.

(d) Other Factors

As indicated earlier, the sector must be considered extremely vulnerable to any unfavourable major shift in the exchange rate relationship relative to the major trading currencies. Evidence on this effect has been the recent strengthening of the Canadian dollar relative to the European currencies, already mentioned earlier in the paper, which has reduced the competitive position of a number of Canadian companies which have already penetrated the Western European market in a number of product lines as for example kitchen cabinet doors being sold in Europe.

With the Canadian dollar remaining in a relatively weak position with respect to the U.S. dollar, a strong export potential to this country can reasonably be expected to persist. The critical relationship of raw material prices is an important consideration in respect to a number of product lines such as kitchen cabinets, window and doors, solid wood panelling, manufactured housing and a wide range of miscellaneous products due to the fact that a significant portion of raw materials are purchased from the U.S., including oak and ponderosa pine lumber. Any major upward movement on prices or availability has a significant impact on the competitive positions of the Canadian company selling in the U.S. market.

Finally, it is noted that the utilization of capacity in the Canadian industry is currently about 50 percent. This is a significant constraint to effective cost performance and puts many Canadian companies at a distinct competitive disadvantage.

3. Federal and Provincial Programs and Policies

The Converted Wood Products sector is not dependant on any specifically tailored government incentive programs and is not a particularly heavy user of the industrial programs in place to influence industrial development. The Forest Sector Advisory Council Subcommittee was established to advise the Department on issues affecting the Converted Forest Industry.

4. The Evolving Environment

Due to the strong domestic orientation of the sector, anticipated future trends in the national economy will have a significant impact on the general health and future development of the sector. The direct link between the level of construction activity and the demand for the large majority of products from the sector underscores the serious implications of anticipated fundamental changes in the structure of the Canadian population, net family formation and related housing requirements over the period into the 1990's.

The latest and most reliable projections indicate strong downward trends in the annual level of housing activity over the next fifteen years in response to significant declines in population growth, fertility and net new family formation. In absolute terms, these projections suggest an annual housing requirement level of some 140-150,000 in the late 1990's. This compares to the annual rate of some 250,000 during the late 1970's. Future levels of capacity utilization is a major concern, particularly considering that even during the unprecedented activity levels of the 1970's overcapacity was significant in a number of sectors.

On the other hand, as already mentioned, a counterbalancing effect is anticipated from the strong observed growth in renovation, DIY and export markets. These movements in demand are expected to mitigate somewhat the downward shift in new housing market demand and to the extent that industry sectors are internationally competitive these factors can be expected to provide new opportunities for further growth of the sector. Constraints on the ability of the sector to respond to the challenge, however, very clearly lie in the overall small scale of operation relative to its major competitors, sector fragmentation, current and future chronic overcapacity, historically domestic orientation, and weakened financial base which has limited the ability of the industry, as a whole, to penetrate new markets, update equipment and adjust to exchange rate differentials.

Opportunities include niche export markets, mainly in the U.S., Europe, and Japan supplied by leading Canadian companies manufactured houses, doors, cabinets, mouldings, fencing and other millwork items as well as productivity improvement from modernization, product improvement, consolidation and rationalization.

5. Competitiveness Assessment

Due to the fact that the industry has evolved to serve domestic markets, the large majority of firms in the sector are not competitive internationally with the larger scale U.S., European and Japanese manufacturers. As pointed out, these foreign companies have, on average, significant cost advantages from economies of scale, marketing and management expertise, higher levels of automation and larger production runs. Moreover, they also tend to have lower cost of raw materials, labour and transportation. On balance, with the exception of the leading companies described, the major portion of the Canadian industry is highly vulnerable to import competition and exists only because of the protection offered by the tariff barriers of 10 to 15 percent and the advantageous exchange rate. A significant shift in either of these two factors would severely affect this portion of the sector. The manufactured housing segment differs somewhat in that the principal competition facing this group comes from the site-builders domestically.

Despite this situation, as already indicated, there are some 100 companies throughout the sector that are internationally competitive; could survive increased import competition, have a strong financial structure, are aggressive in market development and have exploited significant niches of export market opportunity, both domestically and internationally. In recent years, exports by these companies have grown significantly and currently stand at some \$350 million or about 15 percent of current total industry shipment. These exporters are competing 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. This is particularly the case in the rapidly expanding world market for renovation and DIY products.

To maintain or enhance its future competitive situation, the sector will need to respond positively in a number of critical areas.

1. An increased export emphasis in world markets by the stronger companies where niche opportunities exist.
2. Respond aggressively in domestic markets to increased import activity.
3. Improve capacity utilization rates throughout the sector to improve profit margins and financial strength.
4. Increase company size and product specialization to lengthen production runs and reduce per unit costs.
5. Increase raw material utilization rates to reduce per unit costs.
6. Update to state-of-the-art levels of machinery and equipment to promote greater production efficiency.
7. Emphasis on product improvement and innovation in an attempt to penetrate new export niches of opportunity.

The implications, both regionally and sectorally, of such a stance by the sector point to the need for continued movement toward consolidation and rationalization. Currently there are too many companies pursuing a shrinking market pie which limits the sector's ability to achieve the required economies of scale and financial strength required to respond to the changing competitive environment.

FACT SHEET

Converted Wood Products

SIC(s) - 2541, 2542, 2543, 2549, 2599, 3241.

<u>1. Principal Statistics</u>	<u>1973</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>
Establishments	1,300	1,920	1,950	1,980	2,000
Employment	25,000	34,000	32,000	31,000	30,000
Shipments (\$ million)	1,000	2,000	2,200	2,000	2,100*
Exports (\$ million)	80	220	308	210	250**
Domestic Shipments (\$ million)	920	1,780	1,892	1,790	1,850
Imports (\$ million)	85	135	167	123	170
Canadian Market (\$ million)	1,005	1,915	2,059	1,913	2,020
Exports - % of Shipments	8	11	14	11	12
Imports - % of Domestic Market	9	7	8	6	9
Investment (\$ million)	10	20	22	20	21
Gross Domestic Product	N/A	N/A	N/A	N/A	N/A

* Millwork \$1.2 billion.
 Manufactured Housing \$0.4 billion.
 Miscellaneous Wood Products \$0.5 billion.

** Statistics Canada export totals do not include several converted wood products. The additional export value is estimated at approximately \$50 million.

<u>2. Regional Distribution - 1982</u>	<u>Atlantic</u>	<u>Quebec</u>	<u>Ontario</u>	<u>West</u>
Establishments - % of total	6	39	25	30
Employment - % of total	8	31	31	30
Shipments - % of total	5	26	35	34

<u>Foreign Trade</u>	<u>U.S.</u>	<u>E.E.C.</u>	<u>Asia</u>	<u>Others</u>
Imports - % of total 1981	78	15	4	3
1982	77	15	4	4
1983	78	15	3	4
Exports - % of total 1981	52	13	5 (Middle East)	30
1982	72	9	4	15
1983	86	6	3	5

3. Leading Firms

Kitchen Cabinets

Canac Kitchens Ltd., Ontario
 Crestwood Kitchen Cabinets Ltd., B.C.
 Citation Cabinets Ltd., B.C.
 Kitchencraft of Canada Ltd., Manitoba

Manufactured Housing

Atco Ltd., Alberta
 Treco Inc., Quebec
 Viceroy Homes Ltd., Ontario
 Nelson Homes Ltd., B.C.
 General Home Systems Ltd., Ontario

Windows and Doors

Sauder Industries Ltd., B.C.
 Premium Forest Products, Ontario
 Robert Hunt Corporation, Ontario
 Dashwood Industries Ltd., Ontario

Other Converted Wood Products

John Lewis Industries Ltd., Quebec
 Artek Contracting Ltd., B.C.
 Satin Finish Hardwood Flooring Ltd., Ontario

4. Tariffs* - Canada and Major Trading Partners (Major Products)**

	<u>Canadian</u>	<u>U.S.</u>	<u>EEC</u>	<u>Japan</u>
Manufactured Housing	9.2	5.1	5.0	4.9
Wood Windows	12.5	5.1	6.0	FREE
Wood Doors	12.5	7.5	6.0	FREE
Kitchen Cabinets	15.0	2.5	6.0	4.9
Flooring	5.5	FREE	6.0	4.9
Mouldings	FREE	4.5	4.0	10.0

* Sub-categories of products are not included.

** Tokyo round 1987.

COMPETITIVENESS PROGRAMPULP SECTORA. Sector Status

- The pulp sector consists of 52 mills owned by 41 companies and has a capacity of 11.5 million tonnes. Of this 49 per cent is located in British Columbia, 19 per cent in Quebec, 15 per cent in Ontario, 9 per cent in New Brunswick, 6 per cent in Alberta and Saskatchewan and 2 per cent in Nova Scotia.
- In 1984 the sector produced 20 million tonnes of pulp. Of this 7 million tonnes were exported for a value of \$3.9 billion the remainder was used domestically.
- The total direct employment of the sector is 22,300.
- It is estimated that the sector is 82 percent Canadian owned.
- The 5 largest companies are:
 1. MacMillan Bloedel Limited, B.C.
 2. B.C. Forest Products Ltd., B.C.
 3. Westar Timber Limited, B.C.
 4. Great Lakes Forest Products Ltd., Ontario
 5. Norchwood Pulp and Timber Ltd., B.C.
- The Management/Labour relations are characterized by high wage demands and relatively long strikes.

B. Markets

- The United States is Canada's largest customer for market pulp. Although the U.S. is largely self sufficient, 3,605,402 tonnes were imported from Canada in 1984 or 84 per cent of its import requirements.
- Western Europe uses annually less than half the amount of pulp used in the U.S. but is much less self sufficient and purchases nearly three times as much market pulp mostly from Scandinavian countries. Canada supplied 1,725,938 tonnes in 1984 or 20 per cent of the total Western European import requirement. The European market is mature and will provide few opportunities for increased market share.
- Competition from Scandinavian pulp producers has increased significantly since their currency devaluations in 1982.
- Asia is the only other major market for market pulp importing nearly 2.5 million tonnes in some years with Japan accounting for about half of this. In 1984 Canada supplied 1,250,364 tonnes to this market or about 50 per cent of Asia's total import requirement.

C. Investment and Competitive Position

- The financial position of the major forest products companies, especially the pulp producers in western Canada has been precarious since the recent recession. Their dependency on lumber revenue has been a major contributing factor. Very little capital will be available for new investment in the near future.
- Canadian producers are competitive with respect to size and age of facilities. With respect to production costs, Western Canadian mills are competitive on the U.S. market, but some Eastern mills are losing money at 1984 selling prices.
- Pulp enters most countries, including the U.S. free of duty.
- Although pulp enters the EEC duty-free there has been a constant harassment in the form of dumping and price fixing investigations to discourage North American pulp producers from competing for market share.

- North American producers are turning increasingly to Pacific rim countries because this area promises some future growth and trade is less restrictive.

D. Federal and Provincial Programs and Policies

- The major federal program is the IRDP. There do not appear to be any specific provincial programs for this product.

E. State of Technology

- The industry is on average considered to be technologically competitive in most areas of production.
- In order to stay in step with changing technology during the next ten to fifteen years there is a need to improve energy efficiency, labour costs, fibre yield and pollution control.

F. Industry Outlook

- Forecasts indicate that while overall demand growth for paper and paperboard will be slowing, demand for pulp will continue on a relatively high level. Profitability will continue to be modest over the short and medium term.
- In view of the high cost of a greenfield kraft pulp mill, it is expected the trend will be to build TMP, CTMP mills or variations of these processes at less than 50 per cent of the kraft mill cost.
- It is expected that kraft mills will use increasing amounts of hardwood.
- More competition on the international markets (and in Canada as well) from pulps produced from plantations in tropical locations, e.g. Brazil, Australia or African countries.

G. Conclusion

- The Canadian market pulp sector is competitive in most export markets on the basis of existing capacity although profitability is not at acceptable levels. Exchange rates with the U.S. are currently favourable to Canadian exports making Canadian producers not only competitive but also yielding relatively good returns.
- Because of currency devaluations in Sweden and Finland Canadian producers face about a 30 per cent cost disadvantage in Europe and other markets dominated by the Scandinavians. Currency fluctuations often outweigh all other competitive factors such as technology, wood cost, or energy.
- In the short term the relatively small capacity increases, required to meet expected demand growth, can be generated by modernization and expansion of existing facilities. The low profit levels of recent years have slowed down the creation of investment capital within the industry and because of low return prospects investment capital from outside the industry has virtually dried up. The lack of investment capital is especially noticeable in Western Canada where many pulp companies also produce lumber which has suffered tough market conditions even longer than pulp.
- In the long term demand must be allowed to catch up with supply so produce higher prices and generate the investment capital for new facilities.

FACT SHEET

NAME OF SECTOR: Pulp SIC COVERED: 2711

1. PRINCIPAL STATISTICS

	<u>1973</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>
Establishments	N/A	53	52	50	53
Employment	N/A	N/A	N/A	22,300	22,300
Shipments (\$ millions)	1,301*	4,200*	3,600*	3,600*	4,391
Exports (\$ millions)	1,059	3,820	3,233	3,057	3,903
Domestic Shipments (\$ millions)	300*	400	367	343	389
Imports (\$ millions)	13	83	88	86	128
Canadian Market (\$ million)	315*	483	455	429	517
Exports % of shipments	75	91	90	90	89
Imports - % of domestic market	5	17	19	20	25

*denotes estimate

2. REGIONAL DISTRIBUTION - Average over the last 3 years

	<u>Atlantic</u>	<u>Quebec</u>	<u>Ontario</u>	<u>West</u>
Establishments - % of total	15	25	14	46
Employment - % of total	13	22	17	48
Shipments - % of total	12	19	13	54

2a. FOREIGN TRADE

	<u>U.S.</u>	<u>E.E.C.</u>	<u>Asia</u>	<u>Others</u>
Imports - % of total 1981	95	NIL	NIL	5
1982	95	NIL	NIL	5
1983	95	NIL	NIL	5
1984				
Exports - % of total 1981	52	27	10	11
1982	53	26	11	10
1983	53	24	11	12
1984	51	25	18	6

3. MAJOR FIRMS

	<u>Ownership</u>	<u>Location</u> <u>Major Plants</u>
1. MacMillan Bloedel	57% Canadian 43% Public	Port Alberni (B.C.), Powell River (B.C.), Nanaimo (B.C.)
2. B.C. Forest Products	18% Canadian 41% Foreign 41% Public	Crofton (B.C.) MacKenzie (B.C.)
3. Westar Timber	100% Canadian	Prince Rupert (B.C.), Coquitlam (B.C.)
4. Great Lakes Forest Products	34% Canadian 46% Public	Thunder Bay Dryden (Ont)

4. MAJOR REPORTS AVAILABLE

1. Sector Profile 1984

Sector: Pulp, paper and paperboard

Sub-sector: Boxboard

1. Structure and Performance

Structure

- boxboard includes the virgin fibre product of solid bleached boxboard and waste paper-based products of folding and rigid boxboards.
- in terms of trade, only solid bleached is of significance but exports are not large.
- 16 mills are wholly or partially engaged in the production of boxboard but only 2 have relatively significant output of solid bleached board.
- 90 per cent of capacity is located in Eastern Canada, with the balance in B.C.
- total employment in the grades, estimated at 2900, is distributed regionally in the following percentages B.C. 10, Ontario 31, Quebec 33, Maritimes 6 in a mix of urban and outlying areas.
- the major market for the mills is the domestic converting industry; exports are not a significant proportion of shipments, amounting to 3 to 4 per cent, on average.
- Canadian ownership extends to almost 90 per cent of the capacity and forward integration to the converting process affects about 30 per cent of grade capacity, in three mills owned by the same company.

Performance

- capacity growth since 1972 has been modest, averaging 1 per cent per year.
- demand growth in that period has averaged slightly less than 1 per cent and is not expected to change significantly in the long-term.
- currently the demand/capacity ratio is 0.8 and may edge closer to but not reach 1.0 in the foreseeable future.
- certain of the grades and weights of boxboard continue to depend on imported waste paper for their fibre furnish.
- rising mill costs continue to erode the domestic competitive position of the mills vis-à-vis U.S. mills and imports of U.S. boxboard are increasing slowly but steadily in certain grades.
- solid bleached boxboard is the principal import grade.
- in the context of a North American market for boxboard, the domestic position of Canadian mills generally is becoming increasingly vulnerable to displacement by U.S. mills as suppliers to domestic demand.

2. Strengths and Weaknesses

- no world-scale mill (800-1000 m.c./day capacity) exists in the subsector in Canada.
- none is likely by reason of high capital and production costs and limited markets and growth prospects.
- economies of scale are not, nor ever likely to be, available to Canadian mills by reason of the limited size of market.

- while some natural specialization, in sub-grades produced, is available to the mills; the limited market entails their being "too many things to all people".
- interruptions in supply from labour disputes is a cause for concern to many Canadian boxmakers.
- The domestic container market is under strong competitive price pressure from U.S.-based container producers, particularly in containers used for liquid dairy products.

b) Trade Related Factors

- solid bleached boxboard tariff into Canada has been reduced due to a Canada/U.S. agreement in the Tokyo Round, to reach 6.5 per cent on 1 January 1987.
- all other grades of boxboard will reach 9.2 per cent on 1 January 1987.
- as in the case of linerboard, the tariff on solid bleached boxboard will be of lesser importance than the protection from the exchange rate vis-à-vis the U.S.
- at the mill and the converter level, the U.S. has heavy price advantages over Canadian counterparts.
- 65-70 per cent of domestic demand is created by non-integrated converters who, it is expected, would source much of their board requirements in the U.S., given nearer par currencies.

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c) Technological Factors

- Technological leaders in this grade are the U.S., Sweden and to some extent W. Germany - economies of scale are not available to Canadian mills in the subsector nor are they likely to be in the long term.
- Canadian mill facilities range from modern to old and are generally below the level of U.S. and European counterparts.
- some major converters, notably suppliers to the tobacco products industry, claim that quality (hence "runability" of the board over high speed presses) is the cause of increased imports of solid bleached boxboard.

d) Other Factors

- the mill product is the raw material for the folding carton and setup box domestic industry.
- almost 70 per cent of the domestic demand arises from independent i.e. non-integrated converters.
- a claimed lack of response by mills to converter problems, of quality, price etc., is, according to converters, the cause of the rise in imports.

3. Federal and Provincial Programs

- the major assistance program is IRDP.
- no province appears to have in place any specific policy affecting the subsector.
- as a result of the MTN, the domestic market is slowly evolving into a North American market.
- perceptions of the Combines Act as it relates to domestic marketing have continued to keep the mills producing too many grades in any one mill.

4. Evolving Environment

- a gradual but steady erosion of competitive position, vis-à-vis U.S.-based producer mills, in the domestic market continues.
- in general, U.S. producers are likely to maintain their slow but steady increase of exports into Canada.
- solid bleached boxboard in particular, with its lower Canadian tariff, will continue to be a prime target for competition from U.S. mills.
- a developing and eventually substantial market for multi-laminated solid bleached boxboard for aseptic packaging is foreseen.
- in other boxboard grades, real demand growth will be marginal at best reflecting product substitution together with some displacement by U.S. container imports.
- mill operating rates in the subsector are already relatively low and little improvement is likely through the long term.
- any substantial loss of market would lower the operating rate appreciably and quickly imperil the viability of the mill.
- regional mill employment loss would be highest in Ontario and Quebec.
- employment at risk in these provinces is 1400 in a mix of urban and rural centres.
- in short term, at least to 1990, the sector will reflect the general industry problem of weakness in corporate financial structures.

5. Competitiveness Assessment

- product of sub-sector is not internationally competitive and has no prospects for increasing exports.
- within its "natural" market, (i.e. domestic), and in the context of a North American market, the subsector is in a weak competitive position.
- in the grade of solid bleached board, in particular, fibre cost and fibre quality disadvantage Canadian against U.S. mills.
- the limited scale of the subsector's market and its marginal real growth preclude world scale facilities.
- the option is to upgrade facilities through major improvements and rationalized product lines for efficiencies in labour and fibre utilization.
- improvements on this scale are estimated to require \$400 to \$500 million over the short term.
- given the precarious debt/equity position, the industry cannot undertake additional debt financing at this time.

FACT SHEET

NAME OF SECTOR: Pulp, Paper and Paperboard

SIC(s) COVERED*: 2713

Subsector: Boxboard

.. PRINCIPAL STATISTICS

	<u>1973*</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>
Establishments	16	16	16	16	16
Employment (a)	2760	2480	2620	2300	2655
Shipments (\$millions)	198	305	357	332	407(a)
Gross Domestic Product (Constant 1971\$ millions)	Not available confidentiality requirement in sub groups.				
Investment (\$ millions)	Not available confidentiality requirement in sub groups.				
Profits after tax	Not available confidentiality requirement in sub groups.				
Exports (\$ millions)	4	13	15	14	24
Domestic Shipments (\$ millions)	194	292	342	318	383(a)
Imports (\$ millions)	11	12	21	40	43
Canadian Market (\$ millions)	205	304	363	358	431(a)
Exports - % of shipments	2	4	4	4	6(a)
Imports - % of domestic market	5	4	6	11	11(a)

2. REGIONAL DISTRIBUTION - Average over the last 3 years

	<u>Atlantic</u>	<u>Québec</u>	<u>Ontario</u>	<u>Prairies</u>	<u>B.C.</u>
Establishments - % of total	12	44	38		6
Employment - % of total(c)	5	32	51		12
Shipments - % of total			Not Available		

2. a. FOREIGN TRADE

<u>Foreign Trade</u>	<u>U.S.</u>	<u>E.R.C.</u>	<u>Asia</u>	<u>Others</u>
Imports - % of total 1981	100	-	-	-
1982	99	-	-	1
1983	99	-	-	1
Exports - % of total 1981	99			1
1982	99			1
1983	99			1

3. MAJOR FIRMS

<u>Name</u>	<u>Ownership</u>	<u>Location of Major Plants</u>
1. Belkin Paperboard	Canadian	Vancouver, B.C., Toronto, Ont.
2. Beaver Wood Fibre	American	Thorald, Ont.
3. CIP Inc.	Canadian	La Tuque, Que.
4. Cascades Paper	Canadian	Jouquières, Que; East Angus, Que.

4. MAJOR REPORTS AVAILABLE

<u>Name</u>	<u>Type of Report</u>	<u>Year</u>
1. Review of the Canadian Forest Products Industry	Description and analysis of the industry	November 1978
2. Converted Paper and Wood Products Profile	Description of subsector and component segments.	January 1985

Note: (a) denotes estimate

Sector: Pulp, paper and paperboardSub-sector: Containerboard1. Structure and PerformanceStructure

- containerboard includes the virgin fibre products of kraft liner and semi-chemical corrugating medium and waste paper-based products of recycled liner and corrugating medium.
- In terms of trade, only kraft liner and semi-chemical medium are of significance.
- 18 mills are wholly or partially engaged in production of the four grades but of these only 12 produce the key virgin grades.
- employment in the subsector is estimated to be 4800 with majority in Ontario(36%) and Quebec(35%).
- 75 per cent of capacity is located in Eastern Canada, Ontario and Quebec with the balance in the west, British Columbia.
- eastern mills are essentially oriented to the domestic market and are major suppliers to the domestic corrugated container producers.
- western mills are oriented to export markets and account for 80-85 per cent of all exports in the kraft linerboard grade.
- eastern mills are Canadian owned and heavily integrated forward to the converting process i.e. corrugated containers.
- by contrast both western kraft linerboard mills are foreign-owned and only one is integrated to the small-scale converting process in the region.

Performance

- in the period 1973-1977 capacity in the containerboard grade continued to grow, on average, at 6 per cent annually.
- in 1973 Labrador Linerboard Ltd. closed, withdrawing substantial annual capacity, (315,000 m.t.).
- in 1978 growth resumed at 1 per cent annual average and continues at that rate.
- containerboard demand is driven by corrugated container demand and this latter growth has slowed markedly and is forecast to be 3 per cent annual into the foreseeable future.
- in the major grade of kraft linerboard high-cost fibre is used in a low-yield pulping process to produce a low-value product and mill net returns are low.
- net returns are such that the mill capital formation rate is inhibited.
- rising costs, especially of fibre, are eroding Canada's competitive position in the world market.
- Canada is a residual supplier to the world market in kraft liner and held, in 1983, 7.8 per cent share versus 13.2 per cent in 1977.
- increasingly Canada's position in the North American market for kraft linerboard is becoming vulnerable vis-à-vis U.S. mills' cost and pricing structure.

2. Strengths and Weaknesses

Structure

- no world-scale mill (1000 m.t./day capacity) exists within the subsector in Canada.
- none is likely because of high capital and production costs.
- certain economies of scale continue to be denied the Canadian industry because of this lack.
- eastern mills compound this disadvantage by making too many grades in any one mill.
- no industrial adjustment is underway in the subsector.
- international competitiveness is eroding and high transportation costs to world markets compounds the problem especially vis-à-vis Scandinavian and U.S. competitors.
- unstable labour relations are leading to onerous sales contract conditions especially for exports.
- the domestic container market is under strong competitive pressure from U.S. container producers and even the captive market for Canadian mills is very vulnerable if Canadian dollar appreciates.
- developments in the container industry will call for a higher quality liner and it is not yet clear whether Canadian mills will be able to undertake the necessary up-grading of their facilities.

Trade Related Factors

- Canadian linerboard tariffs have been adjusted, downwards, as a result of a special Canada/U.S. agreement during the Tokyo Round.
- the new level, 6.5 per cent effective January 1, 1987, will provide only nominal protection in comparison with the non-tariff protection afforded by the Cda/U.S. currency rate.
- of the five suppliers to the linerboard world market, Canada ranks third and is virtually a residual supplier, with a similar capacity ranking.
- 1983 world market percentage shares were U.S. 57; Sweden 28; Canada 8; Finland 7; Norway negligible.
- in semi-chemical corrugating medium, Canada had 25 per cent of world market in 1983 and ranked third marginally below Sweden, and the U.S. is not a significant competitor in this grade.
- world capacity and trade in kraft liner is dominated by the U.S. as the low cost producer and price leader.

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Technological Factors

- economies of scale are not present in Canadian mills nor are they a valid option now nor in the long term by reason of high capital cost, limited domestic market, high fibre-cost for a low-value product.

- Canadian facilities, in general, are below the state-of-the-art of many U.S. counterparts and clearly below those of Sweden, and probably Finland.
- the low value of the product coupled with a low rate of capital formation inhibits the ability of Canadian mills especially in Eastern Canada, to upgrade production facilities.
- the single foreign owned mill, located in B.C., appears to be an exception and the facilities are modern, although not of the scale of many foreign mills.

Other Factors

- the mill product is the raw material for the corrugated container, demand for which is closely tied to economic conditions in specific markets.
- the symbiotic relationship of the primary and converting subsectors transmits the converting sensitivity to the mills.
- the residual - supplier role of Canadian mills to the world markets reinforces this sensitivity where exports are concerned.

3. Federal and Provincial Programs and Policies

- the major assistance program is IRDP.
- there appears to be no specific policy in place at the provincial level regarding producer mills in this subsector.
- rationalization of product lines would assist the competitive position of the eastern mills.
- the domestic market, as a result of the MTN, is evolving into a North American market.
- perceptions of the Combines Act in a domestic-marketing context keep eastern mills from rationalizing the production of too many grades in one mill.

4. Evolving Environment

- the gradual but steady erosion of the world competitive position of the industry is particularly acute in this subsector.
- in the grades of kraft liner and corrugating medium, eastern mills are likely to be squeezed out of Europe.
- in the long term western-mill liner production is likely to lose major or total share in Europe.
- in this event, western production will seek to offset this loss in the Far East markets.
- in this market area the sole competition is U.S.-based and it is strong on all counts.
- domestically, the eastern mills are highly vulnerable to loss of market and will be exposed to disastrous loss if the currency exchange gap is significantly reduced.
- regional mill employment impact would be strongest in Ontario and Quebec.
- employment at risk in these provinces is some 3,400 jobs, all in outlying or single industry communities.

3. Competitive Assessment

- generally speaking Canada enjoys only one cost element advantage - energy.
- in other cost elements eastern Canadian mills are poorly placed against U.S. and Scandinavian competition.
- this position is expected to deteriorate further.
- western production costs are relatively better than the national average but this differential is expected to be eroded over time.
- three major producers in eastern Canada may face a decision to close their facilities or upgrade or convert to other products.
- for these producers the estimated capital cost of conversion or up-grading is \$800-\$1,000 million.
- because of the limited capital formation capacity of the companies concerned, it is likely that government assistance will be sought.

Department of Regional Industrial Expansion

FACT SHEET

NAME OF SECTOR: Pulp, Paper and Paperboard

SIC(s) COVERED*: 2713

Subsector: Containerboard

1. PRINCIPAL STATISTICS

	1973*	1980	1981	1982	1983
Establishments	18		19	18	18
Employment (e)	5300	5100	5400	4900	5500
Shipments (\$millions)	352	550	603	517	577(e)

Gross Domestic Product (Constant 1971\$ millions) Not available confidentiality
 Investment (\$ millions) requirement in sub groups.
 Profits after tax

Exports (\$ millions)	65	192	167	119	152
Domestic Shipments (\$ millions)	287	358	436	398	425(e)
Imports (\$ millions)	6	5	9	13	15
Canadian Market (\$ millions)	293	363	445	411	440(e)
Exports - % of shipments	18	35	28	23	26(e)
Imports - % of domestic market	2	1	2	3	3(e)

2. REGIONAL DISTRIBUTION - Average over the last 3 years

	Atlantic	Québec	Ontario	Prairies	B.C.
Establishments - % of total	17	33	33		17
Employment - % of total(e)	11.6(e)	38.4	31.7		18.2
Shipments - % of total			Not Available		

2. a. FOREIGN TRADE

Foreign Trade	U.S.	E.E.C.	Asia	Others
Imports - % of total 1981	100	-	-	-
1982	100	-	-	-
1983	100	-	-	-
Exports - % of total 1981	21	35	20	24
1982	29	32	22	17
1983	32	34	17	17

3. MAJOR FIRMS

<u>Name</u>	<u>Ownership</u>	<u>Location of Major Plants</u>
1. Donnar Inc.	Canadian	Trenton; Red Rock, Missisauga, Ont.
2. Consolidated Bathurst Inc.	Canadian	New Richmond, Que.; Bathurst, N.B.
3. CIP Inc.	Canadian	La Tuque; Matane - Que.
4. Eurocan Ltd.	Can/Finland(50/50)	Kitimat, B.C.

4. MAJOR REPORTS AVAILABLE

<u>Name</u>	<u>Type of Report</u>	<u>Year</u>
1. Review of the Canadian Forest Products Industry	Description and analysis of the industry	November 1978
2. Converted Paper and Wood Products Profile	Description of subsector and component segments.	January 1985

Note: (e) denotes estimate

Sector: Pulp, paper and paperboard

Sub-sector: Converted Products

Segment: Corrugated Shipping Containers

1. Structure and Performance

a) Structure

- the corrugated container segment is the largest of Canada's packaging industry.
- production of these containers occurs in all provinces except Prince Edward Island.
- in 1982, 111 establishments were classified to this segment.
- in 1982, 61 corrugator units were in service with an estimated annual capacity of 27 billion square feet of corrugated sheet production.
- in 1982, total production and related workers numbered 7,200.
- vertical integration is prominent in the segment.
- approximately 83 per cent of corrugator capacity is integrated with mill production.
- approximately 67 per cent of corrugator capacity is shared by 3 companies, on an integrated basis, that account for almost 70 per cent of national shipments of the product.
- ownership in the segment is almost totally Canadian.
- Ontario and Quebec hold the major regional concentration of capacity at 47 and 28 per cent respectively.
- principal demand derives from the domestic market, exports are minimal.

b) Performance

- in the period 1973-82 2 new corrugator plants and 32 sheet plants were added to the establishment population.
- in the period 1973-82 employment decreased by 1,050.
- in the period, annual demand growth dropped to 3 per cent, on average, from the 7-9 per cent recorded in the 50's and 60's.
- in the early 70's, the overcapacity problem emerged and has since become a chronic condition in the segment.
- in the period, the overcapacity has led progressively to a highly competitive market.
- competitive pricing, especially in Ontario and Quebec, in the face of rising costs has reduced margins and inhibited the rate of capital formation in the segment.
- modest productivity gains have been outpaced by labour wage rate increases.
- raw material costs have risen sharply in the period.

- having failed to match the labour productivity gains, and denied the raw material cost advantages of U.S. producers, the Canadian producers have lost competitive position.
- Canadian producers, despite the currency advantage, are totally non competitive in the U.S.
- U.S. producers, despite their currency disadvantage, are competitive in Canada, especially in Ontario and Quebec.

2. Strengths and Weaknesses

- the absolute size and user density of U.S. regional markets affords opportunity for economies of scale and specialization to many U.S. producers.
- Canadian producers, even in Ontario and Quebec, have virtually no opportunity to achieve economies of scale in the comparatively small regional markets.
- production runs in many Canadian corrugator plants are characterized by relatively small quantities.
- the frequent machine changes inflate production costs and lower plant efficiencies overall.
- in addition, relatively large volume users spread their orders among several producer companies as a matter of purchasing policy.
- transportation costs are a limiting factor in the movement of the product from plant to user.
- transportation costs insulate the regional markets in Canada from each other.
- transportation costs serve to limit the North American market area to border states adjoining Ontario and Quebec.
- the normal mode of transport is trucking, and in this cost element the U.S. producer has cost advantages over the Canadian producer.

a) Trade Related Factors

- the only competitor to Canadian producers is the U.S. counterpart.
- by 1 January 1987, under the MTN, the Canadian tariff will be 9.2 per cent.
- by 1 January 1987 the corresponding U.S. tariff will be approximately 3 per cent.
- for Canadian producers the principal import protection is provided by the currency exchange.
- however, the currency exchange is not sufficient to increase Canadian container exports to the U.S. at this time.
- on a national basis, the U.S. market is approximately 12-14 times the size of the Canadian market and production capacities are in comparable ratio.
- regional U.S. markets adjoining Ontario and Quebec are approximately 3 to 6 times the combined Ontario/Quebec market with production capacity at an estimated 4 to 5 times ratio.
- U.S. producers in these regional markets are among the most cost efficient producers in the U.S. and operate consistently with labour and material cost ratios below the U.S. average.

- average U.S. labour cost into the product, as a percentage of the net sales dollar, is 48 per cent of the Canadian average ratio and U.S. material cost is 80 per cent of Canada's ratio.
- this very competitive U.S. cost structure results in a fully competitive price level for export purposes.
- the competitive level of U.S. prices in proximity to the Ontario and Quebec major Canadian regional markets, can and does influence Canadian pricing in Ontario and Quebec.
- the former high rate of growth has been replaced by a sharply lower rate but is still closely tied to performance of the economy.
- the capacity developed in anticipation of continued growth at that earlier rate remains in place and constitutes a chronic overcapacity problem that has been aggravated by the proliferation of sheet plants in the decade to date.

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b) Technological Factors

- in general in the basic technology installed "in-plant", the Canadian and U.S. operations are comparable.
- in a combined application of industrial engineering and capital investment, U.S. producers have steadily improved labour usage efficiency vis-à-vis their Canadian counterpart.
- the U.S. producers are moving heavily into new corrugator technology at a much faster rate than Canadian producers.
- new graphics-related technology is in place in the U.S. in numbers, but only modest Canadian capacity will be in place in late 85.
- each technology is expensive in its own right and only very few Canadian companies can afford to acquire either or both, at this time.

c) Other Factors

- in general all major production equipment is sourced in the U.S. or offshore and, priced generally in U.S. funds, is relatively more costly for Canadian than U.S. buyers.
- the segment is sensitive to the performance of the Canadian economy and as the economy goes so goes the demand for the container.

3. Federal and Provincial Programs and Policies

- because of the chronic overcapacity condition most IRDP applications have been rejected, especially in the Ontario/Quebec region.

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4. Evolving Environment

- no improvement in the modest real demand growth is foreseen.
- the excess capacity overhanging the market will persist unless producer action occurs to withdraw capacity and equipment is scrapped or exported.
- modernization in support of productivity improvement is likely to increase capacity in the segment.
- nothing on the horizon suggests any change in the role of the container as the lowest-cost protective shipping package in the world's distribution systems.
- highly competitive pricing will persist in Ontario and Quebec.
- improved margins will likely be possible only by making the product for less i.e. cost reduction will be increasingly necessary.
- while lower material cost is a vital cost reduction requirement, it is difficult to contemplate any significant degree of success being achieved on the basis of Canadian suppliers.
- the major raw materials (kraft linerboard and semi-chemical medium) are produced from a low-yield pulping process using high cost fibre.
- opportunities for significant mill price reductions are limited in the case of eastern mills and lower cost western mills cannot economically supply the eastern container producers.
- U.S. producers will continue to improve their cost ratios and increase their competitive position in a liberalized North American market.

5. Competitiveness Assessment

- Canadian producers, on average, are not competitive in the U.S. nor offshore.
- Canadian producers, particularly in Ontario and Quebec, are not fully competitive against U.S. producers in the Canadian market.
- in the larger volume business, Ontario and Quebec producers frequently have to match U.S. prices to retain Canadian business.
- the resulting loss of margin has impaired capital formation capability.
- raw material cost advantages will continue to lie with the U.S. producers because of U.S. fibre cost advantages.
- the NTN tariff reductions will be fully implemented by 1 January 1987 on corrugated containers.
- the final level is 9.2 per cent and by itself would provide little protection against the competitive price levels of U.S. producers selling into Canada.

- the principal protection of the Canadian market stems from the relative weakness of the Canadian dollar in relation to U.S. currency.
- any marked currency shift towards par would likely result in substantial U.S. imports penetrating the major Canadian markets of Ontario and Quebec.

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- labour cost ratio improvement lies within the control of the producers and failure to achieve cost reduction in this element will result in an increase of competitive edge for the U.S.
- particularly in Ontario and Quebec, Canadian producers must undertake investment in new corrugated technology and improved graphics and must negotiate less onerous machine manning requirements i.e. eliminate feather bedding practices.
- while the segment believes it should stand on its own feet, its ability to do so at this time is open to question.
- both the new technology and changed manning requirements reduce employment.

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FACT SHEET

NAME OF SECTOR: Pulp, Paper and Paperboard

SIC(s) COVERED*: 2732

Subsector: Converted Products - Corrugated Containers

1. PRINCIPAL STATISTICS

	<u>1973*</u>	<u>1980</u>	<u>1981</u>	<u>1982¹</u>	<u>1983²</u>
Establishments	77	108	107	111	N/A
Employment (e)	8243	8787	8313	7202	N/A
Shipments (\$millions)	417	898	1050	1001	1020(e)
Gross Domestic Product (Constant 1971\$ millions)	Not available - Confidentiality requirement in subgroups				
Investment (\$ millions)	Not available - Confidentiality requirement in subgroups				
Profits after tax	Not available - Confidentiality requirement in subgroups				
Exports (\$ millions)	1	3.3	3.6	1.4	0.7
Domestic Shipments (\$ millions)	416	895	1046	1000	1019(e)
Imports (\$ millions)	5	20	21	39	28
Canadian Market (\$ millions)	421	915	1067	1050	1047(e)
Exports - % of shipments	0.2	0.4	0.3	0.1	0.1
Imports - % of domestic market	0.1	0.2	0.2	3.6	2.5

1 - Extended labour conflict in 1982 affected major portion of domestic industry.

2 - Principal statistics for year not available yet from Statistics Canada.

2. REGIONAL DISTRIBUTION - Average over the last 3 years

	<u>Atlantic</u>	<u>Québec</u>	<u>Ontario</u>	<u>Prairies</u>	<u>B.C.</u>
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

2. a. FOREIGN TRADE

<u>Foreign Trade</u>	<u>U.S.</u>	<u>E.E.C.</u>	<u>Asia</u>	<u>Others</u>
Imports - % of total 1981	96		Negligible	
1982	98		Negligible	
1983	96		Negligible	
Exports - % of total 1981			Negligible	
1982			Negligible	
1983			Negligible	

3. MAJOR FIRMS

<u>Name</u>	<u>Ownership</u>	<u>Location of Major Plants</u>
1. MacMillan Bathurst Inc.	Canadian	National
2. Domtar Inc. (Packaging Division)	Canadian	National
3. CIP Inc.	Canadian	Ont/Que/Nfld
4. Atlantic Packaging Ltd.	Canadian	Ont/Que.

4. MAJOR REPORTS AVAILABLE

<u>Name</u>	<u>Type of Report</u>	<u>Year</u>
1. Review of the Canadian Forest Products Industry	Description and analysis of the industry.	November 1978
2. Converted Paper and Wood Products Profile	Description of subsector and component segments.	January 1985

Note: (e) denotes estimate.

Sector: Pulp, paper and paperboard

Sub-sector: Folding Cartons and Set-up Boxes

1. Structure and Performance

a) Structure

- the folding carton segment is the third largest of Canada's packaging industry.
- except for PEI and Saskatchewan the container is produced in all provinces.
- in 1982, 106 establishments were classified to this segment.
- establishment population is concentrated in Ontario and Quebec, 60 and 27 per cent respectively.
- in 1982 total segment sales were valued \$514 million versus \$250 million in 1973, in current dollars.
- in 1982 segment employment was 5,200 versus 6,300 in 1973.
- vertical integration is not a prominent feature in this segment and only 35 per cent of estimated capacity is integrated and one Canadian owned company accounts for this.
- foreign ownership accounts for less than 15 per cent of estimated capacity.
- the major market is the domestic one and exports are minimal at 2-3 per cent of shipments.
- within the domestic market Ontario and Quebec hold 53 and 38 per cent of sales respectively.

b) Performance

- in the period 1973-82 the trend of establishment growth remained flat.
- in the period 1973-82 the demand trend of the segment was modestly down at 1 per cent per year.
- in plant capital expenditures for modernization in 1973-84 and new technology acquisition in 1977-79 aggravated an already evident overcapacity problem.
- in the period 1973-82 the pressure of product substitution (plastics) continued to mount and became a substantial factor in inhibiting real demand growth.
- modest labour productivity gains over the period (43 per cent) were eclipsed by wage rate gains (255 per cent).
- in the period highly competitive pricing in the domestic market became evident.
- rising costs in this competitive market triggered an erosion of margins that continues today.
- in constant dollars (1971=100) price realizations (\$/ton of board converted) in 1982 were lower than in 1973.

- indications are that Canadian container producers have not matched the labour productivity gains of U.S. producers in the period.
- Canadian raw material (boxboard) costs in certain grades are not now competitive with U.S. costs, regardless of the currency denominated.

2. Strengths and Weaknesses

a) Structural

- the absolute size and concentration of the U.S. "regional" markets affords the U.S. producer undoubted benefits of scale such as specialization, long run orders etc.
- Canada's regional markets, even Ontario, are relatively small and do not permit specialization, nor large order efficiencies comparable to those in the U.S. markets.
- low real growth and overcapacity combine to keep most Canadian producers "all things to all buyers" in the face of too much capacity looking for too little business.
- among the few major producers some industrial adjustment, to accommodate new printing technology, continues and one major producer is rationalizing production facilities.
- Canadian producers are fully competitive internationally with respect to container design and graphics.
- transportation cost, in the main, limits the international marketing of the container.
- the U.S. niche markets are the only potential opportunities open to Canadian producers where price is less important than design and graphics.
- these markets tend to be small, with order quantities more suited to Canadian production capability.
- the market demand for improved graphics has become very strong in recent years - both in Canada and the U.S.
- Canadian producers have responded by way of acquisition of the necessary equipment despite the adverse impact upon the already evident overcapacity condition.
- product substitution (plastics, aseptic packaging etc.) is increasing steadily.

b) Trade Related Factors

- Canadian tariff on this product will be approximately 10 per cent, by 1 January 1987.
- U.S. tariff will be nominal, approximately 3 per cent, by 1 January 1987.
- For Canadian producers the principal protection against nearby, lower-cost U.S. product imports, into the domestic market, is now the NTB of currency exchange.
- the U.S.-based producer is the single potential competitor in the Canadian market.

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c) Technological Factors

- in general, the level of basic technology in place in Canada is comparable to that in the U.S. and other major producer countries, except for economies of scale.
- Canadian and U.S. producers source production equipment from European manufacturers in the main, with some from Japan and U.S.
- U.S. producers, especially the major ones, are considered better able to afford to stay abreast of production equipment developments and refinements of the basic technology.
- many U.S. producers have pursued effective cost reduction via capital investment in the 1973-1983 period.

d) Other Factors

- relatively higher costs for imported production equipment (vis-à-vis U.S. producers), usually sold in U.S. funds, result from the relatively weaker Canadian dollar.
- the currency exchange premium affords the principal protection for Canadian domestic producers against U.S. container imports to Canada.
- the highly competitive domestic market with its high "service" requirement on delivery imposes a substantial inventory obligation on many producers, especially in Ontario and Quebec.
- fluctuating interest rates on bank loans financing the inventory requirement are claimed by producers to have serious adverse effect on earnings.
- the highly competitive nature of the market restricts the ability of container producers to recover the rising costs of the major raw material used-board.

3. Federal and Provincial Programs and Policies

- this segment has sought limited use of IRDP assistance.

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4. Evolving Environment

- no improvement is contemplated for the marginal long term real growth forecast.
- the overcapacity condition will remain, without some specific actions to withdraw some production capacity.
- modernization in pursuit of productivity gain and cost reduction carries inherently the risk of increasing capacity if replaced equipment is not scrapped or exported.
- the rate of product substitution will be maintained and may even be accelerated under the stimulus of packaging innovations targeted on the food and beverage industry, the major segment customer.

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- the segment rate of capital formation is likely to remain low.

5. Competitiveness Assessment

- the segment not competitive, on average, in the U.S. market nor offshore.
- the segment is competitive, on average, in the domestic market against U.S. imports except when U.S. producers elect to use transfer pricing.
- in general the lack of capital resources is likely to constrain most of the producers from participating fully in any development opportunities that entail substantial capital outlay.

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- of primary importance, and within producer "control", improved labour usage efficiency calls for the application of capital, sound industrial engineering and revised machine manning requirements.
- raw material cost reduction is also important but, being outside the control of the producers, may be less amenable to reduction.
- producers in the segment take the view that they must "stand on their own feet" but the financial condition of many begs the question of their ability to pay upgrading costs on their own.

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Department of Regional Industrial Expansion

FACT SHEET

NAME OF SECTOR: Pulp, Paper and Paperboard

SIC(e) COVERED*: 1710

Subsector: Converted Products - Folding Cartons and Set-up boxes

1. PRINCIPAL STATISTICS

	1973*	1980	1981	1982 ¹	1983 ²
Establishments	103	109	109	108	107(e)
Employment (e)	6264	5611	5526	5203	5200
Shipments (\$millions)	231	486	537	574	640(e)
Gross Domestic Product (Constant 1971\$ millions)	Not available - Confidentiality requirement in sub groups				
Investment (\$ millions)	Not available - Confidentiality requirement in sub groups				
Profits after tax	Not available - Confidentiality requirement in sub groups				
Exports (\$ millions)	Not available - Confidentiality requirement in sub groups				
Domestic Shipments (\$ millions)	231	486	537	574	640(e)
Imports (\$ millions)	9	19	20	21	24
Canadian Market (\$ millions)	240	505	577	595	664
Exports - % of shipments	negligible				
Imports - % of domestic market	3.8	3.7	3.5	3.5	3.6

2. REGIONAL DISTRIBUTION - Average over the last 3 years

	Atlantic	Quebec	Ontario	Prairies	B.C.
Establishments - % of total	2.7	27.9	59.2	6.5	3.7
Employment - % of total	2.0(e)	32.2	59.8	3.9(e)	2.1(e)
Shipments - % of total	2.0(e)	29.8	61.6	3.0(e)	3.6(e)

2. a. FOREIGN TRADE

Foreign Trade	U.S.	E.E.C.	Asia	Others
Imports - % of total 1981	98+			
1982	98+		negligible	
1983	98+			
Exports - % of total 1981	Detail is not available, but total exports less than 2 per cent of shipments in any year.			
1982				
1983				

3. MAJOR FIRMS

Name	Ownership	Location of Major Plants
1. Somerville Bekin Industries Ltd.	Canadian	National
2. Ralph Clark Stone Packaging	Canadian	Ont./Que.
3. Lawson Packaging	U.K.	Ont./Que.
4. Reid-Dominion Packaging Ltd.	Canadian	Ont.

4. MAJOR REPORTS AVAILABLE

Name	Type of Report	Year
1. Review of the Canadian Forest Products Industry	Description and analysis of the industry	November 1978
2. Converted Paper and Wood Products Profile	Description of subsector and component segments.	January 1985

Note: (e) denotes estimate

Sector: Pulp, paper and paperboard

Sub-sector: Kraft papers

1. Structure and Performance

Structure

- kraft papers includes sack/bag kraft, wrappers and specialty kraft paper and all are produced from a virgin fibre pulp only.
- in terms of international trade, only sack kraft is of significance.
- 9 mills are wholly or partially engaged in the production of kraft papers but only 4 produce a significant annual tonnage of sack kraft.
- the production capacity for sack kraft is distributed regionally in the following percentages B.C. 52; Manitoba 29; Quebec 18.
- the principal exporting mills are in B.C. and Manitoba.
- employment in the subsector is estimated at 1,200 distributed regionally in the following percentages B.C. 42; Manitoba 23; Ontario 7; Quebec 28.
- foreign ownership accounts for 23 per cent of subsector capacity's centred on 2 mills in B.C. producing sack kraft at 30 per cent of capacity in the grade.
- concentration of domestic supply is prominent with two producers accounting for approximately 75 per cent of domestic shipments.
- world market competitors are Sweden and Finland - the U.S. is not a major participant in offshore markets.

Performance

- in the decade ending 1975, annual capacity growth, on average, approximated 5 per cent.
- since 1975 capacity has declined, on average, at 2 per cent per year.
- capacity withdrawals (2 mills in Quebec), in 1980 and 1981 reflected expectations of dropping domestic demand, unsatisfactory margins and the removal of Canadian tariffs on sack by 1 January 1987.
- apparent consumption declining since 1978 due to substitution by plastics.
- in 1973 paper and plastic bags shared the domestic market in a 60/40 relationship and by 1982 the relationship was 40/60.
- U.S. market also declining by reason of plastics substitution, and is diminishing in importance to Canadian mills - from 40 per cent of grade exports in 1978 to 25 per cent in 1983.
- kraft papers, as with kraft linerboard, are based on a low-yield pulping process using a relatively high cost fibre to produce a low-value product.
- eastern mills, catering mainly to the domestic market, do not enjoy acceptable prices in comparison with their costs and profit margins are less than satisfactory.

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- margins are expected to decay further as Canadian tariffs move to zero under the Tokyo Round schedule.
- corporate financial structures particularly for eastern mills in the subsector, have weakened markedly in recent years and this has been magnified by the 1981/82 recession.
- western mills while less cost-disadvantaged than eastern counterparts have experienced loss of market share in Europe to Sweden and Finland.

2. Strengths and Weaknesses

a) Structural

- no world scale (600-800 m.t./day capacity) mill exists in Canada.
- none is likely due to high capital cost, marginal international demand growth, declining domestic demand and tariff elimination.
- Canadian producers would not benefit from economies of scale sufficiently to be competitive.
- the major industrial adjustment within the subsector has occurred with the substantial capacity withdrawals in Eastern Canada in the early 80's.
- real demand growth is stagnant and expected to remain so due to inroads by plastic materials and the growth of bulk and semi-bulk packaging systems.

b) Trade Related Factors

- kraft papers, other than wrapping grades, will reach 4 per cent duty by 1 January 1987 as will the U.S. duty on the grade.
- wrapping grades, including sack/bag kraft, will become duty free in both countries on 1 January 1987.
- in both grades the historical pattern of modest trade activity is expected to continue i.e. "top-up" or convenience tonnage either export or import.
- in terms of capacity dedicated to export, Sweden holds first place and is the leading exporter of the principal traded grade - sack kraft.
- Canada ranks a distant second as an exporter of sack kraft, Finland in third place.
- the U.S. export activity is negligible and is confined to the Canadian market as top-up tonnage for eastern Canadian mills.
- almost all Canadian offshore exports in sack kraft derive from B.C. mills.
- B.C. mills are more competitive in the Pacific Rim than in Europe, particularly since devaluation of the Swedish krona, and seem likely to emphasize the former in future marketing efforts.

c) Technological Factors

- eastern Canada production facilities are comparable to those in the U.S. and neither ranks with western Canada facilities that compare favourably with Sweden's facilities.

- historically the product in Eastern Canada has been little better than a commodity with relatively low value despite high production cost.
- the resultant low margins have not justified modernization investment and the small domestic market with its negative growth has compounded the problem.
- by contrast B.C. producers have traditionally sold in the export market where price levels have been higher than in the domestic market.
- cost advantaged over eastern mills, and more modern by reason of more recent construction, the western mills have enjoyed satisfactory margins and the ability to up date progressively the technology in use.

d) Other Factors

- the pricing of eastern producers is sensitive to exchange rate fluctuations.
- eastern pricing for sack/bag kraft is largely determined by the U.S. delivered price and the exchange rate is an integral part of that price.
- the heavy export orientation of western mills makes them particularly sensitive to changes in international demand and pricing in offshore markets.
- the kraft sack high demand growth in the 60's and 70's was due to the desirable properties of the material: extensibility and capability.
- plastics offer these properties and do so competitively.
- sack/bag kraft is probably the most cyclical major grade category of kraft papers.
- this reflects the high cyclicity of its end-use markets and is often accompanied by wide inventory swings at the converter level.

3. Federal and Provincial Programs and Policies

- IRDP use is minimal at this time and seems likely to remain so with no further modernization justifiable by the market prospects in eastern Canada for sack/bag kraft.

4. Evolving Environment

- the downward trend overall in demand will continue in the face of market losses to plastics and bulk handling systems.
- eastern mill operating rates will remain relatively high, reflecting the shift of capacity out of the market, in the period to 1990 before commencing a slow decline in the longer term.
- the declining importance of the U.S. market will persist as U.S. consumption continues its steady downward trend.
- the long term trend for offshore exports will continue down.
- modest mill efficiency improvements will only partially offset the MTN tariff reductions over the long term, but year to year effect will be small.
- Sweden will continue to be the leader in world markets particularly in Europe and the Mid East.
- Gradually squeezed out of the European market, western Canadian producers will place emphasis on the Pacific Rim area.

5. Competitiveness Assessment

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- labour strife interruptions of production continues to pose a threat to the "supply reputation" of western mills.
- high labour and material cost ratios, a shrinking market and external influences on domestic market prices provide little incentive to eastern mills to modernize production facilities.
- poor corporate financial structures compound the lack of financial means.
- western mills are becoming increasingly cost disadvantaged in material and labour elements despite the relatively modern facilities.
- in the major European market, the transportation cost to the market compound the difficulties of western mills.
- western mills cannot participate in the major domestic market - eastern Canada - by reason of high transportation charges.
- thus there is no meaningful offsetting market within Canada so the mills must remain dedicated to export shipments for the major volume of production.
- the North American market for sack/bag kraft, to all intents and purposes liberalized by 1 January 1987, is a diminishing one where mill operating rates, in general, are being sustained by capacity withdrawals in both Canada and the U.S.
- increasingly, the eastern Canadian mills are becoming less and less able to maintain their competitive position.
- capital investment in this market is core and core financially risky.
- eastern producers are understandably cautious about major investment in the kraft grades, particularly in the light of their poor financial health and the high risk attached to achieving a satisfactory return on that investment.
- the low-yield pulping process is inconsistent with the best use of an increasingly scarce fibre resource.
- the low-value nature of the product, particularly within the domestic market, does not maximize the return from the allocation of a scarce resource.
- the interests of Canada and the provinces might be better served if the fibre supply were switched to a high yield, higher value product.

FACT SHEET

NAME OF SECTOR: Pulp, Paper and Paperboard

SIC(s) COVERED*: 2713

Subsector: Kraft Papers

1. PRINCIPAL STATISTICS

	1973*	1980	1981	1982	1983
Establishments	11	19	9	9	9
Employment (e)	1570	1400	1350	1200	1260
Shipments (\$millions)	242	327	327	305	320
Gross Domestic Product (Constant 1971\$ millions)	Not available - Confidentiality requirement in sub groups				
Investment (\$ millions)	Not available - Confidentiality requirement in sub groups				
Profits after tax	Not available - Confidentiality requirement in sub groups				
Exports (\$ millions)	60	143	137	118	118
Domestic Shipments (\$ millions)	182	179	190	187	202(e)
Imports (\$ millions)	8	17	37	24	37
Canadian Market (\$ millions)	190	196	217	211	230(a)
Exports - % of shipments	25	43	42	39	37(e)
Imports - % of domestic market	4	9	12	11	15(e)

2. REGIONAL DISTRIBUTION - Average over the last 3 years

	Atlantic	Québec	Ontario	Prairies	B.C.
Establishments - % of total	-	45	11	11	33
Employment - % of total	-	29	7	23	41
Shipments - % of total	Not Available				

2. a. FOREIGN TRADE

Foreign Trade	U.S.	E.E.C.	Asia	Others
Imports - % of total 1981	99	1	NIL	
1982	99	1	NIL	
1983	99	1	NIL	
Exports - % of total 1981	34	36	19	11
1982	33	27	24	16
1983	38	22	28	12

3. MAJOR FIRMS

Name	Ownership	Location of Major Plants
1. Manitoba Forest Industries Ltd.	Canadian	Prairies, Man.
2. Eurocan Ltd.	Can/Finish(50/50)	Kilomat, B.C.
3. Canadian Forest Products Ltd.	Canadian	Prince George, B.C.
4. Cascades Paper	Canadian	East Angus, Que.

4. MAJOR REPORTS AVAILABLE

Name	Type of Report	Year
1. Review of the Canadian Forest Products Industry	Description and analysis of the industry	November 1975
2. Converted Paper and Wood Products Profile	Description of subsector and component segments.	January 1983

Notes: (e) denotes estimate.

NEWSPRINT SECTOR

A. Sector Status

- The newsprint sector comprises 43 mills with shipments valued well over \$4.0 billion annually.
- Total capacity of the sector is nearly 10 million tonnes with 45 per cent located in Quebec, 21 per cent in Ontario, 18 per cent in B.C. and 16 per cent in the Atlantic provinces.
- In 1984 total newsprint production was 9.0 million tonnes. Of this, 10 per cent were consumed domestically, 74 per cent were exported to the U.S. and 16 per cent to various offshore markets.
- The total direct employment of the sector is 34,000.
- It is estimated that the sector is 63 per cent Canadian owned.
- The five largest newsprint producers are:
 1. Abitibi Price Inc.
 2. CIP Inc.
 3. Consolidated Bathurst Inc.
 4. MacMillan Bloedel Limited
 5. Ontario Paper Co., Ltd.

B. Markets

- Worldwide import requirements for newsprint are about 11 million tonnes or 40 per cent of global newsprint consumption. The U.S. and EEC account for about 9 million tonnes of this demand:
- The United States, Canada's most important market, consumes over 10 million tonnes of newsprint annually; of which over 6 million tonnes are imported from Canada. In addition the U.S. imports 1.3 million tonnes of Canadian groundwood printing paper.
- The EEC consumes about 4 million tonnes of newsprint annually of which 3 million tonnes are imported, mostly from Scandinavia. In the past Canada supplied between 600,000 and 700,000 tonnes, however, in 1984, partly because of the access reducing quota and mainly due to the relative high dollar value, only 537,400 tonnes could be sold.
- Access to the EEC market for Canadian newsprint will continue to be restricted. In spite of a favourable GATT-panel ruling after the EEC unilaterally reduced the newsprint quota the final settlement was only 650,000 tonnes. Since there is little growth in this market and virtually no opportunity to compete for a greater market share the Canadian industry may gradually lose interest in this market.
- Groundwood specialties are not shipped offshore to any extent because most consuming areas are self-sufficient.

C. Investment and Competitive Position

- Because the industry failed to make sufficient investments compared to the U.S. and Scandinavian competition during the 1970s, it now faces serious competitive disadvantages. The situation is aggravated by a worldwide overcapacity which largely disappears during times of high demand but becomes very noticeable when demand drops causing slowdowns and increasing the risk of closures among the less competitive mills.
- Large investments for modernization are urgently required to make Canadian newsprint more price competitive and increase profitability for the producers.
- Profitability is very low in spite of relatively high demand and it is unlikely that companies can generate sufficient capital, either from earnings, equity or additional debt, to bring the industry up to world

competitive standards. Consequently, it is possible that several of the less competitive mills will close within the next few years.

- Currency devaluations in Sweden and Finland have given Scandinavian producers a sizeable advantage in the European market by making them low cost producers and allowing them to sell newsprint at relatively low prices while making still a healthy profit. For this reason Canadian producers, because their costs are measured in a much higher valued currency, had their profits sharply reduced when competing with the Scandinavians.
- While Canadian and Scandinavian newsprint enter the U.S. free of duty Canadian newsprint is restricted from entering the EEC by a small (650,000 tonnes in 1985) duty-free quota and relatively high rates of duty on ex-quota shipments. This means that Scandinavian newsprint producers are well protected from Canadian competition in the EEC market whereas the Canadian producers must face the artificial low-cost Scandinavian producers in open competition in the U.S.

D. Federal and Provincial Programs and Policies

- The major federal program available is the IRDP. There do not appear to be any specific provincial programs targeted at this product.

E. State of Technology

- Technology is gradually changing toward fuller utilization of the resource. For this reason the stone groundwood pulp portion traditionally used to make newsprint is being replaced by recently developed mechanical pulps such as TMP and CTMP which are much stronger with yield nearly as high as stone groundwood and require little or no chemical reinforcement pulp.
- The basis weight of standard newsprint formerly at 52 g/m² has been lowered in stages to 48.8 g/m² and will probably go lower. This enables the publisher to print more newspapers from a cone of paper.
- New paper machines are designed to operate at higher and higher speeds and are electronically controlled to produce newsprint suitable for new printing machines and printing processes.

F. Industry Outlook

- Forecasts indicate that demand growth for newsprint will be slow to the end of this decade and, even in North America where recent demand has exceeded earlier expectations, the market is now levelling off. Prices, however, during the recent period of high demand have not moved up to expected levels due to high capacity and heavy competition by more competitive foreign producers.
- While capital investment in production facilities is necessary to keep the industry competitive an even more fundamental problem exists in the long term security of the wood supply. In recent years it has become increasingly evident that serious wood shortages will occur, in the longer term, if decisive action is not taken soon.

G. Conclusion

- Present newsprint prices do not reflect the real value of this commodity. In spite of this the industry will continue to rationalize and modernize in an effort to maintain and regain its international competitive position. If present trends continue, relative international currency exchange values will have a greater effect on competitiveness than production efficiency. Because of increasing self-sufficiency in some of Canada's most important export markets such as U.S., Europe and Latin America the Canadian world market share for newsprint is expected to gradually diminish in future years..

FACT SHEET

NAME OF SECTOR: Newspaper and Groundwood Special. papers SIC COVERED: 2711

1. PRINCIPAL STATISTICS

	1971	1981	1982	1983	1984
Establishments	N/A	43	43	43	43
Employment	N/A	37,300*	37,000*	37,000*	36,500
Shipments (\$ millions)	1,339	4,338	4,178	4,575	5,328
Exports (\$ millions)	1,287	4,326	4,080	4,113	5,265
Domestic Shipments (\$ millions)	120	510*	463*	454*	575*
Imports (\$ millions)	NIL	NIL	NIL	NIL	NIL
Canadian Market (\$ million)	120	510*	463*	454*	575*
Exports - % Shipment	96	91	90	90	90
Imports - % of domestic	NIL	NIL	NIL	NIL	NIL

*denotes estimate

2. REGIONAL DISTRIBUTION - Average over the last 3 years

	Atlantic	Quebec	Ontario & Manitoba	West
Establishments - % of total	16	49	26	9
Employment - % of total	17	51	22	10
Shipments - % of total	16	45	21	18

2a. FOREIGN TRADE

	U.S.	E.E.C.	Asia	Others
Imports - % of total 1981	NIL	NIL	NIL	NIL
1982	NIL	NIL	NIL	NIL
1983	NIL	NIL	NIL	NIL
1984	NIL	NIL	NIL	NIL
Exports - % of total 1981	76	10	4	10
1982	79	11	3	7
1983	92	9	3	6
1984	36	6	3	5

3. MAJOR FIRMS

	Ownership	Location Major Plants
1. Abitibi Price	93% Canadian 7% Public	Grand Falls (NFLD), Stephenville (NFLD), Alma (Que), Beauséjour (Que), Kamogami (Que), Chandler (Que), Forsyth (Que), Trois-Rivières (Que), Thunder Bay (Ont), Saucier (Que), Sault Ste. Marie (Ont), Pine Falls (Man.)
2. CIP	100% Canadian	Dalhousie (NB), Gacineau (Que), Trois-Rivières (Que)
3. Consolidated Bathurst	40% Canadian 16% Foreign 44% Public	Shawinigan (Que), Port Alfred (Que), Trois-Rivières (Que), Grand-Mère (Que)
4. MacMillan Bloedel	57% Canadian 43% Public	Powell River (BC), Port Alberni (BC)

4. MAJOR REPORTS AVAILABLE

- Sector Profile

1984

CANADIAN FINE PAPERS INDUSTRY1. Description

- Major grades: writing and printing papers, e.g. book, lithograph, offset, coated and uncoated, envelope and duplicating papers. I.e. paper grades with less than 90 percent groundwood pulp.
- 1984 Shipments: 1.01 million mt.; exports 250,000 mt.; Imports 266,000 mt.; apparent consumption 1.03 million mt.; value of shipments approximately \$1 billion. Total annual capacity 1.1 million mt. of which 90 percent is located in Quebec and Ontario; balance in B.C.
- Dollar exports represent approximately 20 per cent of Canadian fine paper shipments. Over 90 per cent of total exports are to the U.S.A.
- Mill employment approximately 7,000.
- Fine paper industry (FP) operations mostly part of integrated forest products companies except Rolland Inc.
- First new machines (2) since 1968 started up in 1982-83 period i.e. Dryden (Great Lakes) and Island Paper (Fraser/MacMillan).
- Canadian consumption is expected to grow at 3.0 per cent annually.

2. The Sector

- Domtar is the largest with 329,000 mt. annual capacity and four others with about equal capacity of over 110,000 mt. each. Three others produce less than 80,000 mt. each.
- All producers are members of the Canadian Pulp and Paper Association (CPPA), but often act as an independent group, or individual when communicating with governments.
- FP is 100 percent Canadian owned and also controls foreign enterprises. One Canadian company owns a small FP mill in the U.S., some own merchant groups there.

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- It is not expected that the so-called electronic age will have much influence on this industry over the next decade; the present information explosion is forecast to continue and consume large tonnages of paper, i.e. computer printout papers and forms.

3. Further Processing

- While FP represents only 5.3% of total paper and paperboard shipments, its dollar value accounts for 10% of total and provides 9 percent of the employment in the pulp and paper sector.
- Only 55 percent of production is integrated with pulp manufacturing; other production is dependent on market pulp or pulp produced in other company locations, resulting in higher cost products as compared with grades made at integrated U.S. mills.
- The FP sector extracts the highest financial return from available Canadian timber.

4. Investment

- Financial health of FP reasonably sound but poor health of most parent companies must be taken into consideration (losses in other forest products subsectors).

- There are at least two U.S. fine paper manufacturers each capable of producing a higher volume than the entire Canadian industry and hence derive substantial manufacturing cost advantages through long runs of commodity grades not at present available to Canadian producers. However, a gradual rebuilding of the FP industry is taking place to make Canadian mills cost competitive with U.S. mills, including the Domtar mill at Windsor, Que. to start up in 1987.
- This will lead to new capacity and removal of non-competitive machines resulting in an estimated average annual capacity increase of 2.9 percent over the next 10 years. Employment is expected to remain static due to lower manpower requirements for modern machines.
- Total new FP capacity investment is estimated to be as much as \$2.0 billion by 1995. Approximately half of this will be used by Domtar for the new Windsor, Que. mill.

5. Federal and Provincial Programs and Policies

- The major federal assistance program is the IRDP.
- No specific provincial programs are in place for these products.

6. Competitive Position

- In the past the FP industry was totally oriented to Canadian markets behind high tariffs, but recent and future cuts in tariffs is forcing industry to rationalize and become more cost competitive with U.S. producers.
- However US/Canada tariffs are losing their importance today. Exchange rate (low Canadian dollar) is the major element in keeping FP competitive with U.S. mills but the industry is not relying on the this low exchange rate and hence has started modernization program.
- Other markets could become more attractive to the FP providing tariff and non-tariff barriers are reduced, exchange rates are favourable to Canada and freight rates do not become excessive.

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- Future in-depth market penetration of the EEC appears unlikely unless the Canadian dollar takes a drastic drop in value or European currencies increase in value as both Nordic and German FP mills are close at hand, are very efficient and can, in most cases, deliver to customers overnight -- a service Canadian FP cannot provide without costly warehousing facilities in Europe.

BOOK WRITING AND COATED PAPERS
(Including Coated Groundwood Printing Papers)

<u>Principal Statistics</u>	<u>1973</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>
Establishments	14	14	14	14	14	14
Employment (Mills only)	7200	7100	7100	7000	7000	7000
Shipments (\$ million)	321	780	734	854	900	1000
Exports (\$ million)	63	221	160	174	175	204
Domestic Shipments (\$ million)	256	559	574	680	725	796
Imports (\$ million)	35	170	250	191	242	351
Canadian Market (\$ million)	291	729	824	871	967	1147
Exports - % of shipments	21	28	22	20	19	20
Imports - % of Domestic Market	12	33	30	22	25	31

<u>2. Regional Distribution - 1982</u>	<u>Atlantic</u>	<u>Quebec</u>	<u>Ontario</u>	<u>West</u>
Establishments - % of total	Nil	43%	30%	27%
Employment - % of total	Nil	41	57	2
Shipments - % of total	Nil	35	53	12

<u>3. Foreign Trade</u>	<u>U.S.</u>	<u>E.E.C.</u>	<u>Asia/Others</u>
Imports - % of total 1981	95	2	3
1982	95	2	3
1983	95	2	3
1984	90	2	8
Exports - % of total 1981	74	11	15
1982	85	6	9
1983	92	1	7
1984	90	1	9

4. Manufacturers - 1984

1. Goulet Inc.	329
2. Kruger Inc. (Coated groundwood)	113
3. S.B. Sddy Forest Products Ltd.	127
4. Abitibi-Price Inc.	121
5. Golland Inc.	123

COMPETITIVENESS PROFILE

CONVERTED PAPER PRODUCTS INDUSTRY

1. Structure and Performance

Structure

The converted paper products industry is defined as being the population of companies where the prime raw material input is paper, although end products often contain other materials. Although major consumers of paper, products manufactured by the printing, publishing, graphic arts, stationery and business forms manufacturers are excluded. A myriad of products, organizational types, market scenarios, and competitive environments exist in the converted paper products industry. To facilitate analysis, the industry has been broken down into five major subsectors as follows:

Consumer Disposables

Products for the consumer used at home or in an institutional setting generally being of a single use or disposable nature. (e.g. napkins, facial and toilet tissue, diapers)

Specialty Institutional Paper Products

Products used primarily by the service industries such as hotels, restaurants, fast food chains, institutions and similar organizations. (e.g. place mats, doilies, plates, cups, sandwich bags, waxed interleaving paper)

Specialty Commercial Paper Products

Products generally for use in the office or in a commercial setting, often in conjunction with office machines or recording instruments. (e.g. telex rolls, adding machine rolls, charts)

Wallpaper

Products used primarily by the do it yourself market for home decorating. (prepasted, dry strippable, often vinyl coated).

Packaging

The wide range of paper based products used by industry to package products for sale distribution and shipping. (e.g. multiwall bags, flexible laminated products, precoated papers, molded pulp products).

The converted paper products industry, because of its diversity in terms of products, companies, markets and economic performance can be defined as a scale model of Canadian industry in general. The sector has areas of growth potential, international cost competitiveness and marketing capability, state-of-the-art facilities, rapid technological change, and industrial development opportunities. However, it also has areas of product and market maturity, over capacity, total domestic orientation behind a protective tariff wall, import competition, and decline due to substitute products.

The converted paper products industry comprises a full range of organizational types from the large multi-national, multi-plant organization, offices integrated to a primary producer, to a single facility owner/manager company. This does result at times in a situation wherein the raw material supplier is also the competitor. In the commercial and to a lesser extent the institutional market, the major national distributors through which in excess of 50 per cent of the product is sold, are subsidiaries of the primary paper producers (i.e. the raw material supplier). Although these linkages exist they have not resulted in serious implications for the sub-sector because of the large number of companies in the industry.

The small business component of the industry is significant however with in excess of 80 per cent of the establishments employing less than 100 people. Additionally, it is estimated that in excess of 55 per cent of the employment provided by this industry is also generated by establishments employing less than 100 people.

The converted paper products industry is composed of approximately 350 companies and can be broadly defined as Canadian owned. Foreign ownership does play a role in all subsectors, however, but is much more prevalent in the consumer disposable field where three of the major firms are part of worldwide organizations with headquarters outside Canada. The converted paper products industry, unlike the primary industry locates production facilities, for cost and servicing reasons near the customer. Consequently, the industry is concentrated in the provinces of Quebec (30 per cent of establishments) and Ontario (46 per cent), with minor representation in B.C. (9 per cent) and only a handful of companies in each of the remaining provinces.

Although there are major players in all subsectors, each contains a significant number of smaller companies which minimizes domination of any one subsector. The subsector most affected by "major players" would be consumer disposables wherein 3 to 4 companies account for the major share of the market by producing branded products utilizing national distribution. The remaining companies, often specialize either in regional markets, industrial products, or in producing generic and private label products to be sold through retail chains. In the commercial and the institutional subsector, several examples exist of companies with a unique product line not duplicated by any other company. However, no single company is without competition. There are, in the wallpaper and packaging sectors, companies that represent substantial sales volumes and hence play a major role in some product lines. However, no one company can be classed as dominating the sector.

As well as being the largest existing and potential market, the U.S. represents the major competition of the Canadian converting industry. By comparison, the U.S. industry tends towards larger production facilities producing narrower product ranges. Canadian companies more often are trying to be "all things to all people" and produce a much broader range of products in their plants and on the same equipment as does their U.S. competitor. The phenomenon of longer production runs and more dedicated production equipment also permeates the U.S. primary paper industry in part contributing to lower paper prices in the U.S. compared to Canada. Additionally, the sheer size of the U.S. market in relation to the Canadian market also permits U.S. manufacturers to specialize in specific products, much more so than is the case in Canada. Although it is difficult to generalize across such a diverse industry, the U.S. industry would tend towards more integration between primary producer and the converter than is in evidence in Canada.

Performance

The converted paper products industry supplies product to virtually every other sector of the Canadian economy. In addition, the vast majority of products ultimately end up in the hands of the consumer. As a result, the overall performance of this industry, as well as the future prospects for the industry, vary closely parallel the performance of the economy as a whole. The recent worldwide and Canadian recession was widely felt across the industry. With consumer spending being curtailed during this period, the packaging and wallpaper subsectors were most directly affected as they are involved in consumer products that often are vying for the discretionary spending of the consumer. The consumer disposable and institutional subsectors were less affected. Consumer disposables, in fact, continued to perform well and company projects to increase capacity, modernize equipment, and introduce new products were in evidence during this time. In the case of the institutional market a large portion of their product is consumed by the food services industry which continued to enjoy sales increases throughout the recessionary period. As business activity generally was much lower during this period, the commercial market likewise declined. The statistics for the converted paper products industry, under review, is difficult to determine precisely as the detail level of the statistical base is inadequate. Miscellaneous NES categories

represent major portions of the data. Current industry shipments are estimated at \$1.76 billion compared to \$1.50 billion in 1973. Based on the estimates of industry shipments, the average annual real growth rate for the period 1973 to 1977 was 4.2% and 5.7% for the period 1978 to 1982 with a 10 year average of 5.0%. Employment is currently estimated at 22,000 direct jobs compared to 23,000 in 1973. Despite an increase in the number of establishments and growth in the industry, employment levels have decreased as plants have been modernized and as managers have learned to operate more efficiently with fewer people. The recent economic recession accelerated this process. The sector does, however, in addition to direct employment create a significant number of indirect jobs especially in the area of distribution. Distributors play a large role in the sale of converted paper products especially in the institutional, commercial and wallpaper markets. The industry makes a significant contribution in the area of job creation as estimates reveal that 30.7 jobs are created per thousand tonnes of paper consumed, versus the primary industry which employs 4.3 people per thousand tonnes of product produced.

Although many of the sectors products are traditional, the industry is constantly developing modified products and new products often in response to customer needs, new substrate developments and new technology. This is particularly true in the consumer disposable, wallpaper and packaging subsectors. Although it varies considerably between subsectors, between product lines and between companies, the overall financial picture of the paper converting industry can be described as healthy. Continually rising raw material and labour costs have put pressure on profit levels. The industry, despite this, has remained profitable with gross profits up to 25 per cent and net profits averaging approximately 5 per cent of sales. Other key business ratios of the paper converting industry would suggest that the industry is fairly liquid, and at the same time is conservative in its financial management. For example, the current ratio statistics for the industry show a current asset to current debt ratio of 1.8 to 1. The industry is also well managed financially as the debt to equity ratio is in the range of 60 cents of debt per dollar of tangible net worth. The one area where this differs is in the paper bag business facing a declining market due to plastic substitution and to the trend toward bulk shipments. This has caused most paper bag companies to diversify into plastic bag manufacturing, resulting in the acquisition of new machinery and as a result the contracting of additional long term debt when profit levels were down. In this product line the debt equity ratio is 1.8 to 1.

As is the case with the financial performance, the investment level varies considerably across the industry. The following examples may serve to indicate the level of investment required in the converting industry, which is much less than that required in the primary industry. The replacement cost of a packaging plant, including inventory, with annual sales exceeding \$7 million is estimated at \$12 million. A converting plant in the consumer disposable field capable of generating sales of approximately \$30 million annually is projected to require an investment of \$18 million. Additionally, a small plant producing institutional products with sales totaling \$1.5 million annually would need an investment of \$1 million.

The investment climate in the industry reflects the diversity of companies within the industry. The larger integrated or multi-national operations are well financed and capital spending requirements for modernization and/or expansion are readily available. Smaller companies, which represent a sizable percentage of the industry often suffer from typical small business problems such as the availability of funds to finance modernization or new product development as well as the time and the talent to manage in today's complex business environment.

2. Strengths and Weaknesses

Overall, the converted paper products industry in Canada is operating with state-of-the-art equipment and as well utilizes the latest developments in technology and raw material. By and large, the technology is imported from other countries, as is the majority of the equipment. Nonetheless Canadian converters keep abreast of the latest developments in their industry internationally. Additionally, the industry has a reputation of

producing quality products that can compete effectively from a quality stand point with products produced by any of their major competitors around the world. Additionally, as much of their products are aimed at the consumer, the Canadian industry tends to keep abreast of changes in consumer tastes, and adjust their products to meet these changes. This is most in evidence in the packaging sector where changes in family size and living styles, have resulted in shifts from large family size packaging to smaller unit packages stressing consumer convenience.

By contrast, there are several major issues and concerns which prevail across the whole sector and have a bearing on the international competitiveness of the industry. Raw material costs (i.e. paper) account for 50 per cent or more of the cost of production for most converted products. As a result paper is a critical production input to the industry and the adequate supply of the many different grades required at internationally competitive prices is an issue of concern most often raised by industry executives. Traditionally, paper prices in Canada have been higher than in the U.S. as the primary industry in Canada often suffers from diseconomies of scale compared to U.S. mills. Additionally, the limited buying power of many converters due to their corporate size results in reduced order sizes and higher prices. In addition to price, there is room for improved communications and increased cooperation between the primary paper producing industry in Canada and the converting industry. This is particularly true in the area of improving international competitiveness and export market development.

The second major issue of concern in the industry is the area which can be broadly defined as labour management relations, particularly as it relates to wage levels, productivity and international costs competitiveness. Traditionally, labour rates in Canada exceed those of our major international competitors in general and U.S. manufacturers in particular. No one factor or group can be held accountable for this phenomena, although higher Canadian industry wage settlements in general have played a role. Additionally, generous wage increases in the primary industry have put pressure on wage rates in the converting industry, both by a desire to achieve parity and by the presence of integrated products in most subsectors of the converting industry.

These two costs items have resulted, at times, in Canadian converters not being cost competitive in international markets. In fact, most industry spokesmen would agree that a return of the Canadian dollar to near parity with the U.S. would severely hamper the ability of many converters to export, and would significantly increase import pressure from the U.S. Additionally, the Canadian paper converting industry overall can be classified as a domestic industry in which many product lines developed behind a tariff wall. The existing Canadian tariff rates for converted paper products ranges between 7 and 15 per cent, while U.S. tariffs are from 2.5% to 10%.

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The third main area of concern, again affecting international competitiveness, is transportation costs both domestically and internationally. Many products have a very high volume to weight ratio. Consequently, freight rates play an important part in pricing strategy and in turn competitiveness. Evidence suggests that freight rates not only within Canada but to international destinations as well are higher for Canadians than for most of Canada's major competitors.

Technology, especially in the area of new product development, is important in the converting industry. The industry does however have access to the latest technological developments, and overall maintains state-of-the-art equipment and manufacturing processes.

A critical area, at present, is the strength of the North American currencies (U.S. and Canadian \$) vis-à-vis the currency of other international competitor countries. This strength makes Canada an attractive market for these countries and places increased import pressure on domestic manufacturers. It also makes Canadian goods more expensive in foreign markets and affects our competitiveness. The wallpaper subsector

has been most affected with imports from European countries on the increase and eroding the Canadian producers traditional markets. While tariff and non-tariff barriers are important, the relative value of the Canadian dollar versus other currencies has a far greater impact on the industry both in the domestic and international markets.

Despite these problem areas, and the fact that the converted paper products industry is not a highly visible export performer compared to the primary industry, exports play an important role in the industry and currently represent approximately 10 per cent of industry shipments. All subsectors are exporting to varying degrees which range from very modest by one or two selected firms in the consumer disposables field to in excess of 50 per cent of production by all companies in the wallpaper sector. The trend is toward more companies becoming dedicated exporters, especially as the limited growth projected for the Canadian market will not allow companies to fully utilize their existing production capacity and/or to expand. Canadian converters tend to operate with smaller plants, and produce much wider product lines than their U.S. competitors. At times this economy of scale phenomena has been detrimental to Canadian competitiveness. The issue is two sided however, as many companies have utilized their experience and ability to produce smaller runs with greater flexibility to their advantage in servicing small "niche" export markets.

At present, while it varies considerably between product lines overall capacity utilization within the industry is estimated at 79 per cent. In paper bag production, overcapacity exists and industry adjustment is anticipated to continue. By contrast, under capacity exists in some product lines within consumer disposables and new production facilities are in the planning stages to address this situation and prepare for projected strong future growth.

Federal and Provincial Programs and Policies

There are no specific government support programs directed to the Converted Paper Products Industry, although selected firms have and will continue to use existing general support programs such as CIRB, IRDP and especially PEMO. Additionally, the industry does utilize the industry counselling services and other non-monetary assistance provided by DRIE and provincial governments.

At present, a subcommittee of the Forest Sector Advisory Council is in place to review and develop recommendations, to all concerned parties, on the converted wood and paper products sectors with the focus being improved international competitiveness.

Evolving Environment

The important opportunities and constraints most affecting the sectors future competitiveness have been highlighted in the strengths and weaknesses section and relate to financial strength, modern equipment and technology, raw material supply, transportation costs, labour management relations and currency fluctuations. Export market development will be an important factor with the U.S. representing the major present and potential market. The overall performance of the industry, by reason of the products and users, is closely linked to the performance of the economy as a whole. Consequently, the projected growth of the Canadian economy will not be sufficient to sustain more than marginal growth in the industry unless more companies place increased emphasis on export market development. No major product vacuums exist in the U.S. market, but niches of opportunity do exist where Canadian corporations can compete effectively. At times, our ability to produce smaller production runs can be an advantage allowing Canadian converters to service smaller companies or regional markets in the U.S.

Competitiveness Assessment

Many segments of the industry are not internationally competitive although there are numerous exceptions in all categories, most notably wallpaper and certain flexible packaging products. These product lines are well

positioned to take advantage of export opportunities, particularly in the U.S., given their predominant locations in Ontario and Quebec, and certain technological advantages in products and process.

The bulk of the industry, however, is not competitive with U.S. or even European manufacturers because of the current weakness of the European currencies. This includes most products in the institutional and specialty commercial categories. Kraft paper bag products, in the packaging category, are particularly vulnerable to a more competitive U.S. products, as well as plastic substitution. Canadian consumer disposables involve a mixed picture with some companies and product lines being exported to the U.S. On the other hand, other companies are prevented from exporting as the Canadian plants were established, behind the tariff wall, to service only the domestic market.

To remain or become competitive, the industry will have to address the major cost elements. These include: raw materials, which can represent over 30% of manufacturing cost, labour, and transportation. The major players to address these problems are management and labour, while Government is able to act as a catalyst and provide industry counselling.

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The sector, by and large, does not lack access to capital for investment in modernization and technology, but this is not a major competitive factor as much of the industry uses state-of-the-art equipment. Improvement in major cost factors above are restrained by institutional rigidities such as transportation regulation, management/labour constraints and limitations on product specialization affecting the primary industry, hence the cost of paper.

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FACT SHEET

Converted Paper Products

SIC(s) - 2733, most of 279

<u>1. Principal Statistics</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983(E)</u>
Establishments	350	340	350	360
Employment *	22,000	23,000	21,000	22,000
Shipments(\$ million)	1,300	1,500	1,600	1,700
Exports (\$ million)	150	155	150	160
Domestic Shipments (\$ million)	1,150	1,345	1,450	1,540
Imports (\$ million)	130	125	135	130
Canadian Market (\$ million)	1,270	1,470	1,385	1,670
Exports - % of shipments	12	10	9	9
Imports - % of Domestic Market	9	9	9	8

* Also generates indirect employment especially in the distribution field.

<u>2. Regional Distribution - 1982</u>	<u>Atlantic</u>	<u>Quebec</u>	<u>Ontario</u>	<u>West</u>
Establishments - % of total	4	30	46	20
Employment - % of total	2	27	65	6
Shipments - % of total	2	27	65	6

<u>3. Foreign Trade</u>	<u>U.S.</u>	<u>E.E.C</u>	<u>Asia</u>	<u>Others</u>
Imports - % of total 1981	90	1	1	8
1982	90	1	1	8
1983	90	1	1	8
Exports - % of total 1981	90	1	1	8
1982	90	1	1	8
1983	90	1	1	8

4. Major Firms

1. Consumer Disposables

E.S. Eddy Forest Products
 Kimberly Clark
 Scott Paper
 Sargella Inc.

2. Institutional

Nixie Canada Ltd.
 Bondware Division Dover Industries
 Perkins Paper Products Ltd.
 J.H. McNairn Ltd.

3. Commercial

Appleton Paper Canada Limited
 Cutting International
 Eastern Coated Papers Ltd.

4. Wallpaper

Berkley Wallpapers Inc.
 International Wallcoverings
 North American Decorative Products Ltd.
 Seid Decorative Products Ltd.

5. Packaging

Associated Paper Mills Ltd.
 Bonar Packaging
 DRG Packaging
 Twinpak Inc.

5. Tariff Rates for Selected Converted Paper Products **

	<u>Canadian</u>	<u>U.S.</u>	<u>EEC</u>	<u>Japan</u>
Table Napkins	10.2	3.0	11.0	3.6
Disposable Diapers	10.2	3.0	7.0-10.0	2.0
Placemats and Doilies (Paper)	10.2	3.0	11.0	3.6
Paper Sandwich Bags	9.2	5.3	12.0	5.7
Wallpaper	7.5	0.0	7.0	1.1
Business Machine Papers *	6.5-10.2	3.0-5.3	9.0-12.0	4.2-5.4
Flexible Packaging *	0.0-10.2	0.0-5.3	10.0-12.0	1.8-5.4

* Tariffs vary from specific product to product. In packaging, the tariff is based on highest value component of the finished product.

** Tokyo round 1987.

PETROCHEMICALSEXECUTIVE SUMMARY: PETROCHEMICALSINDUSTRY DESCRIPTION

The petrochemical industry makes up over 60% of the chemical manufacturing industry in Canada. Petrochemical capacity is located in 4 provinces: Alberta, Ontario, Quebec, and British Columbia. The additional capacity in Alberta associated with the 1984 start up of Alberta Gas Ethylene's second world scale unit has resulted in Alberta's dominance. The industry's raw materials are presently derived mainly from crude oil in the east and from natural gas in the west. The companies that are involved in the sector are for the most part large multinationals, the majority being foreign controlled. (Polymer is a large Canadian owned multinational.)

The petrochemical sector is one of the most technologically advanced and highly capital intensive sectors of Canadian manufacturing industry. It has been characterized in the past by high growth rates. Responding to energy policy in the 1970's that was aimed at providing Canadian industry with oil and gas prices below those of their international competitors, the industry invested in world scale facilities and this led to a positive balance of trade for the first time in 1979.

Generally the companies within the sector are financially stable and usually able to weather the periodic economic downturns. The depth and duration of the recent recession seriously affected all companies in the sector and in addition they are experiencing competitive difficulty, particularly in the east, due to the loss of the feedstock cost advantages that they had enjoyed prior to 1982. The situation in the east was so serious that, divided equally between the federal and provincial governments, \$80 million of government assistance was provided to Pétromont in Quebec in the two-year period ending March 31, 1985. The gas based sector suffered substantial losses in 1982, 1983 and 1984 and still has not returned to acceptable profitability.

The petrochemical industry produces a wide range of products that are further upgraded by other industries in Canada into an array of essential industrial and consumer products. These downstream industries employ in excess of 300,000 workers. In addition to domestic requirements there is great potential for primary petrochemicals in export markets. The U.S. is Canada's most important petrochemical market but Japan is also important for western producers. Other Pacific Rim countries, South America and to some extent Europe also have potential for Canadian exports.

INDUSTRY STRENGTHS AND WEAKNESSESa) Structural

Canada has a real advantage in terms of its energy resource position, relative to virtually all other industrialized nations, particularly in natural gas.

The overwhelming factor in determining competitiveness, however, is feedstock pricing. With the kind of energy policy that existed while most of the present industry was committed or built, the industry would be internationally competitive and would grow. Present energy policy has allowed Canadian oil prices to become market responsive. This will result in no growth and a possible decline with shutdowns in the oil-based sector. Most of the gas-based sector already enjoys feedstock pricing that is below world levels, but not by enough to overcome the freight and tariff penalties incurred by shipping to distant export markets. Implementation of market sensitive pricing for natural gas (by November 1, 1985), under the terms of the Western Accord, may improve the situation but little or no growth is expected in Canada unless and until there is real growth in world energy pricing.

Energy rich developing nations such as Saudi Arabia entering the petrochemical field do not have Canada's well developed industrial base and highly educated, skilled workforce.

Our relatively small population, spread across thousands of miles results in transportation cost penalties and a relatively higher export component of the output from world scale plants than our major competition on the U.S. Gulf Coast.

Initial capital and operating costs are higher in Canada than on the U.S. Gulf Coast because of our severe winter climate.

b) International Trade Related

Most of the new capacity with which Canada will have to compete in export markets will be in developing countries having GSP status in target markets. Canadian products will face significant tariff barriers in entering these same markets.

Trade liberalization with the U.S. on petrochemicals was a recommendation of the 1983/84 Petrochemical Industry Task Force. The options for achieving significant liberalization of trade with the U.S. are under review.

c) Technological Factors

A strength of the industry is that it has modern plants which are world competitive in scale and technology. More than two-thirds of the industry's investments in Canada are less than six years old. In addition additions in the order of \$250 million per year are continuing to be made to petrochemical facilities to add improved technology.

d) Governmental Factors

Federal:

Much of the existing petrochemical investment was made in an environment in which Federal energy policy was aimed at keeping Canadian energy prices below world levels to provide an advantage to Canadian industry. This situation prevailed from 1973 onwards and was reaffirmed

In October 1980: "Oil pricing policy should translate Canada's relative strength in oil and other energy into a competitive advantage for Canadian industries through prices that are below those prevailing in other industrial countries". It was on this basis that the industry committed \$6 billion of investments between 1974 and 1980.

All this changed with the Memorandum of Agreement on Energy Pricing and Taxation (MOA) between the Governments of Canada and Alberta (September, 1981) in which no mention was made of the 85% price cap on Canadian oil prices. The MOA did fix gas prices at 65% of the energy equivalent price of oil, at Toronto, but it also added new taxes and other charges on both oil and gas, while continuing a regulated pricing regime for oil. The worldwide recession of 1982 resulted in energy prices falling elsewhere in the world while Canadian prices continued to increase.

As a result, the oil based industry lost the feedstock price advantage that it had enjoyed relative to its international competitor, while the advantage that the gas sector enjoyed was greatly reduced from the level anticipated when the investments were committed.

The Industry Task Force that reported to government in February 1984 made several recommendations on energy pricing and taxation changes designed to make Canadian pricing more market responsive and to reduce upfront taxation. The government response of June 1984 did not implement such recommendations.

When the provisions of the Western Accord of March 1985 are fully implemented, most of the industry's recommendations on energy issues will have been met.

Provincial:

Most of the new petrochemical investment by the industry has been located in Alberta, based on that province's large reserves of natural gas.

Petrochemicals were identified by Alberta as a sector that would help it achieve provincial goals of Economic Diversification, i.e. to become less dependent upon the sale of unprocessed resources both renewable (agriculture, and non-renewable (oil and gas).

No other incentives were provided to the industry; in fact, the provincial "stepping out" policy that required new plants to locate away from large metropolitan areas resulted in significant capital cost penalties. These additional costs plus the freight cost penalty in having to serve export markets from landlocked Alberta were expected, by companies investing in Alberta, to be offset by a feedstock cost advantage. Most of this advantage was lost in 1982 but is expected to return by the late 1980's as world energy prices increase.

Alberta has done nothing to modify the provincial royalty charges on petrochemical feedstocks to help its industry. Provincial royalties on oil and gas represent about 30% of the well-head prices of these materials. Recently Alberta announced assistance to Alberta Gas Ethylene (AGE) that will extend to that company the advantages of within Alberta gas pricing enjoyed by other Alberta producers and help overcome the ethane pricing problems that resulted in a three month shutdown in 1982.

e) Other factors

Even when the developing countries rich in oil and gas enter the worldwide petrochemical marketplace in a significant way, Canada will have an advantage in being regarded as a secure, diversified source of supply to other countries. Canada's reputation as having a stable and reliable business environment is certainly a large advantage in terms of international marketing. This reputation is based on Canada's historic political stability and mature infrastructure.

EVOLVING ENVIRONMENT

1984 was the third year in a row in which the industry showed before tax losses exceeding \$200 million. Once the investment has been made, however, a company will operate as long as it is making some contribution to its fixed costs even if it is not covering its full costs. In the case of AGE, the ethylene customers have take or pay contracts that dictate that they continue to operate even if they are losing money.

Severe overcapacity still exists in the world and until demand improves, allowing for price increases, profitability in the Canadian industry will continue to be unsatisfactory. It is expected that it will be the late 1980's before world supply/demand comes more into balance.

The U.S. Gulf Coast is now the minimum cost producer and price setter on petrochemicals. Decontrol of natural gas pricing in the U.S. in 1985 may result in increases in petrochemical feedstock costs in the U.S. putting upward pressure on petrochemical prices. The first half of 1985, however, has shown no sign of this happening.

New capacity will be required worldwide by the late 1980's and with the correct investment climate and feedstock pricing, some of this investment could come to Canada. Since it takes 3-4 years between the decision to build and plant startup, these investment decisions must be taken soon. Unless existing producers are profitable they are unlikely to commit to additional large capital investments.

KEY ISSUES

For the gas based sector, which already represents the major part of the existing industry and has the potential for further growth, the key issues are market responsive pricing and the upfront fiscal burden. The Alberta border price concept, as applied, prevents gas prices from adjusting to reflect international conditions. Even within Alberta where contract prices have been negotiated, the basis for the contract price is often the inflexible border

price. Taxes and charges applied to feedstocks have reduced the feedstock cost advantages that the existing industry had expected and leave it inadequate to attract further investments. Removal of the COSC and the phasing out of the PGRT which were provided for in the Western Accord, will give gas producers more flexibility in setting feedstock prices.

The June 1, 1985 decontrol of crude oil and refined products will not restore a feedstock advantage for the oil-based sector since Canadian prices are expected to be higher than those on the U.S. Gulf Coast. There is the potential for reducing the oil-based ethylene producers' feedstock pricing if viable facilities can be converted to use the natural gas liquids (NGLs), propane and butane. Only the individual companies can determine if conversion to NGLs will result in viability.

Both the oil-based and gas-based sectors of the industry support a bilateral trade agreement with the U.S. that would lead to tariff reduction or elimination. This is particularly important for the Alberta and British Columbia industry which, on the whole, depends on export markets to a greater extent than petrochemical producers in Ontario and Quebec.

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Tariffs on petrochemicals between Canada and the U.S. are broadly consistent, although some sizeable differences exist for particular products. These tariffs are also relatively high and will remain so, even when reductions negotiated in the Tokyo Round are fully implemented. Non-tariff barriers are not significant for this industry.

Under the new energy agreement, recovery of the Canadian petrochemical industry and any future growth is dependent upon growth in world petrochemical demand and a strengthening of world energy and petrochemical prices.

STATISTICAL INFORMATION

<u>Principal Statistics</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>
Establishments	55	58	61	57	52
Employment	13,16	16,261	15,455	14,653	14,438
Shipment (\$ million)(1)	4,220	5,022	4,434	4,992	5,258
Exports (\$ million)	1,234	1,466	1,366	1,556	1,645
Domestic Shipments (\$ million)(2)	1,812	2,371	2,074	2,313	2,279
Imports (\$ million)	1,058	1,226	1,043	1,475	1,693
Canadian Market (\$ million)	2,890	3,597	3,117	3,788	3,972
Exports - % of shipments (2)	40.2	38.2	39.7	40.2	41.9
Imports - % of domestic market	36.6	34.1	33.5	38.9	42.0

(1) Includes Intermediates
 (2) and Products

<u>Foreign Trade*</u>	<u>U.S.</u>	<u>Western Europe</u>	<u>Asia</u>	<u>Others</u>
Imports - % of total 1982	77.2	17.1	3.7	2.0
Exports - % of total 1982	53.5	23.7	13.0	7.8
Petrochemical Exports - U.S. as % of total**	1981-86	1982-83	1983-86	

<u>Major Firms</u>	<u>Net Sales</u>	<u>Net Income</u>	<u>Employees</u>
1. Polysar	1,336.9	8.7	5,985
2. DOW	1,221.8	19.5	5,822
3. CIL	1,113.8	23.9	6,737
4. Imperial Oil	9,027.0	290.0	14,732
Esso Chemical	945.0	(9.0)	-
5. Du Pont	1,116.0	35.1	4,991
Chemicals and Plastics	767.0	-	-

* Stats Can

SIC Group 512 Organic Chemicals

+ SIC Group 581 Plastic materials etc.

** Canadian Chemical Producers' Association

Source: Canadian Chemical Producers' Association and Statistics Canada

COMPETITIVENESS PROFILE

PRIMARY IRON AND STEEL
SIC (291)

1. STRUCTURE AND PERFORMANCE

1.1 STRUCTURE:

The primary iron and steel sector consists of 17 companies operating 26 facilities across Canada. These companies produce "primary rolling mill products"; semi-finished ingots, blooms, billets and slabs, sheets, strip, plate, bars, rods, structural sections and rails.

There are three general classes of producers; large "integrated" mills which consume iron ore and produce a wide range of products; Mini-mills which consume ferrous scrap and produce a limited range of products; and "processors" which do not melt steel but produce a narrow line of primary mill products. Integrated mills are integrated backwards into raw materials (iron ore, coal, limestone) and forward into finished products (pipe, wire products). Mini-mills may be backward integrated (scrap) and forward integrated (pipe, wire products).

More than 90% of the industry is privately owned and Canadian controlled. Two mills are wholly provincially owned (Nova Scotia, Quebec) and one has partial provincial ownership (Saskatchewan).

Proximity to market is the prime determinant of mill location (about 90% Ontario, 10% Quebec), but technology (very large production scale requirements) dictates disproportionate concentration in Central Canada. Three companies, Stelco, Dofasco and Algoma, constitute 75% of the domestic capacity, but smaller mills play important regional roles.

1.2 PERFORMANCE:

Despite capital investment of \$5 billion and commissioning of several new plants since 1973, the industry has experienced slow volume growth, primarily due to domestic steel market stagnation. Canadian steel consumption actually declined on average by about 20,000 tons per year between 1973-1983. Growing exports (by about 150,000 tonnes per year during 1973-83) have offset domestic trends and allowed for some increase in shipments. Import penetration has generally remained unchanged at reasonable levels of 10% to 12% of Canadian demand, but significant price erosion has been experienced since 1982 as a result of an international glut of low-priced steel. Market uncertainty in industrialized economies is the root cause of the sluggish performance, but the oil shock, technology (stronger steels, better design engineering) and shifting international market forces (manufacturing in LDCs) are important contributing factors. New facilities once viewed as incremental capacity have become replacement capacity, with a concomitant reduction in older equipment.

Compared with other integrated steelmakers, traditionally Canadian steelmakers have been among the most profitable internationally. Profitability declined sharply in 1982, however, and only one integrated company, Dofasco, recovered strongly in 1984. This sector, however, has generally underperformed the average profitability for all manufacturing in Canada since the early 1970s. This trend is expected to continue as soft markets, excess supply and the growing presence of low cost suppliers (LDCs) work to suppress market prices.

In order to arrest or reverse these trends, capital investments of about \$3 billion must be undertaken by the end of the decade to reduce costs and enhance product quality. Some companies, particularly Algoma, have accumulated serious debt loads as a result of debt financing of capital projects and borrowing to support recent operating losses. The attending capital formation problems tend to be company-specific rather than a general sector condition.

The industry will increasingly become capital intensive in order to decrease dependence on internationally uncompetitive factor costs such as labour. For example, Dofasco's recent announcement of \$600 million in capital projects indicates a net employment gain of only 100 jobs.

2. STRENGTHS AND WEAKNESSES:

2.1 STRUCTURAL:

Steel markets are changing, both in size and in composition. Many forces which supported the market's structural growth cycle, creation of infrastructure in industrialized countries, reindustrialization of Europe and Japan etc., have matured. Down-sizing of automobiles, substitution of materials (concrete for structural steel) and improved technologies (stronger steels require lower quantities, improved design technology allow more efficient consumption of materials) all contributed to declining steel consumption per capita and steel intensity in Canada, and in most other industrialized countries. Internationally, steelmakers must come to grips with a quantitatively saturated market which, simultaneously is pushing the technological limits for product quality.

The domestic industry faces comparatively little adjustment by international standards. Most plants are of international scale, and well placed with respect to markets in Canada and the U.S.A. Unlike U.S. companies where investment has been spread across several plants with sub-optimal results, Canadian firms generally operate single plants and can focus new investments to maximum advantage. Actual closures of facilities have been comparatively few, although there has been a general shedding of non-essential labour. It has been estimated that Canadian producers require about \$30 per year per tonne of currently installed capacity in order to be technologically competitive. U.S. firms are expected to require investment at twice this rate over the next five years.

Domestic mills are generally not capable of competing profitably against low cost suppliers outside of North America. In Canada and the U.S., however, they gain back some advantage by competing other than solely on price. Canadian mills can successfully supply Canadian and U.S. OEMs which have specific, demanding needs for products and services such as "just in time" delivery. Proximity to the largest and most lucrative international steel markets is a major factor in the strength of the industry.

The major weaknesses of the industry include internationally uncompetitive factor costs in labour and the relative strength of Canadian and U.S. currencies internationally. The 30% spread in Canadian and U.S. dollars greatly assists in competing for North American business, but Canadian mills are at a significant disadvantage against most other industrialized and developing countries with currency alignments now in place. Domestic currency strength has also reduced the competitiveness of Canadian and U.S. manufacturers of steel intensive goods, further reducing North American steel demand.

Cost reduction is essential to improved profitability and securing market share on commodity-grade products. Higher product quality is necessary to avoid competing head-on with low cost producers, and to satisfy the requirements of the high margin product customers such as OEMs. Most producers are undertaking capital spending to meet these objectives. It is not clear, however, that reduced costs will necessarily lead to higher industry profits. Continuing over-capacity may push prices downward as costs decline. Producers which do not improve costs, under this scenario, are destined to become hopelessly uncompetitive in the future.

2.2 TRADE FACTORS

Trade issues are of fundamental importance to the domestic steel industry, both from import and export perspectives. Simultaneously, the industry is being pressured by imports, often unfairly traded, while increasingly facing tariff and non-tariff barriers abroad.

Tariffs: Canadian tariffs are nominally higher than those in the U.S.A., but when end-use exemptions are considered, the effective tariff protection is only 5-6%, and declining in accordance with MTN schedules. Existing tariffs are generally ineffective in limiting imports from offshore suppliers due to the tendency to dump or subsidize steel exports.

Normal tariffs in other countries are not generally a barrier to Canadian exports. Tariffs do become a significant barrier to Canadian producers, however, when they are used intentionally to restrict imports as a result of safeguard actions. Recent examples include U.S. surcharges of 10% on imports of stainless steel sheets.

Non-Tariff Barriers: NTBs are increasingly becoming an instrument of foreign government policy. For Canadian steelmakers, U.S.A. NTBs are the most significant because it is a market in which Canadian mills are otherwise generally competitive. Recently, the U.S. Congress has shown a willingness to reinforce unfair trade and safeguard actions administered under existing trade laws with new NTBs. A current example involves U.S. requirements to mark individual pipes and tubes with country of origin. This type of action, over the longer term, presents a serious threat to the industry as a result of the uncertainty it creates about continued market access.

A Canada/U.S.A. bilateral trade agreement on steel trade has been explored with Canadian producers, and a proposal to enter discussions in this regard was offered to and accepted by the U.S. government in April 1984. U.S. industry deferred discussion at that time due to pending safeguard actions against steel imports. Certain U.S. steel factions rejected the concept in January 1985.

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The general industry consensus, which was not unanimous, was that liberalized trade would be favourable. The long-term consequences to the sector, including impact on future investment patterns need to be further explored.

2.3 TECHNOLOGICAL FACTORS

Canadian mills are relatively modern compared with the steel plants in Europe and the U.S.A. today, but the rapid rationalization/modernization programs in these countries will result in very much more competitive facilities in the near future. Canadian companies generally have very modern finishing facilities, and consequently can concentrate spending on primary facilities, improved steelmaking techniques, and continuous casting. The higher product quality and reduced costs at the primary stages benefit all finished products lines.

Steelmaking technology is internationally available, and Canadian producers have a history of commercializing technological advances at an early date. The only major limitation to adopting new technologies is the small domestic market. Once committed to a certain process it is generally necessary for markets to grow sufficiently to support new facilities. Steelmaking plants have very long lifespans. Scrapping of serviceable, fully depreciated assets can only be justified where operating savings and/or product quality considerations offset capital costs.

2.4 OTHER FACTORS

A number of factors are important to competitive steel production. Major inputs include labour, materials, energy and capital. Canadian producers are not internationally competitive, except with the U.S., in labour and in some materials (Iron ore) costs. Canadian companies are currently tied to captive

high cost iron ore mines in Canada and the U.S.A., but the iron ore industry is being rationalized and iron ore costs are gradually being reduced. Similarly, labour costs are being moderated and may, in future, be partially tied to company profitability. The major factor, over which the companies have no control is exchange rates. In 1980, Canada had the lowest domestic market steel prices of all industrialized countries. In 1984 Canadian prices were second highest (after the U.S.A.). At current exchange rates, profitable offshore exports are almost impossible, domestic markets are seriously pressured by large volumes from offshore suppliers, prices are suppressed, and Canadian manufactured goods less competitive, reducing domestic demand.

3. FEDERAL AND PROVINCIAL PROGRAMS AND POLICIES

With a few exceptions, the Canadian steel industry has neither depended upon, nor received substantial government financial support.

The current major assistance program is IRDP, however, its applicability was sharply curtailed by the November 9, 1984, revisions. Most of the Canadian steel capacity is situated in Tier I regions which are ineligible for capital assistance.

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4. EVOLVING ENVIRONMENT

During the next 5 to 10 years, Canadian steelmakers are likely to face i) sluggish domestic markets; ii) competitive price and quality competition from both established and developing foreign suppliers; iii) growing protectionism in their prime export market, the U.S.A. The responses to this environment must be to: i) secure existing domestic share and improve price structure through enforcement of unfair trade statutes; ii) undertake capital projects needed to permit competing on the basis of price and product quality; and iii) maintain favourable accesses to U.S. markets. The latter consideration necessitates that the industry maintain its profit-oriented unsubsidized status.

5. COMPETITIVENESS ASSESSMENT

Aggregated statements on the competitiveness of the Canadian steel sector are not able to adequately describe many of the important industry characteristics. To this end, summary comments on three subgroupings are appropriate, as well as comments specific to the three major producers.

1) Mini-Mills - As a group these companies dominate the production of steel bar and rod products, having competed successfully against traditional integrated mills over the past twenty-five years. They now compete amongst themselves, although foreign low-cost suppliers are eroding markets at the low quality end of the product range. Prices of scrap, the major input, are critical to competitiveness. Canadians generally enjoy low scrap prices. Canadian firms have been amongst the leaders in mini-mill technology. Generally, Canadian mini-mills are considered to be competitive, although since few if any financial data are available on these plants, this conclusion is primarily based on observation rather than documentation.

ii) Integrated Mills

There are five Canadian firms operating integrated mills, however, only Scelco, Dofasco and Algoma will be considered here. Sidbec Usco and Sydney Steel (Syaco) will be addressed as a separate group.

DECLASSIFIED = ~~DO~~CLASSIFIED
EXTERNAL AFFAIRS = AFFAIRES EXTERIEURES

By international comparisons, these three firms are technologically competitive today, but will require substantial investment to remain so. The three companies are very different in market orientations and financial capabilities.

Dofasco produces only flat-rolled products, sheet, strip and plate, primarily for consumer durables markets; automotive, white goods etc. Historically these markets have been relatively stable. Dofasco, avoided the worst of the 1982/83 steel slump, did not experience financial losses and was quick to recover in 1984. The company reported 1984 profit of \$180 million. With low debt service requirements and strong earnings, Dofasco should have no problem in undertaking its \$600 million in modernization spending. The company should remain competitive.

Stelco produces the widest range of steel products in Canada, serving both consumer and capital goods markets. Its dependence on capital goods markets, which have been slow to recover, has delayed financial recovery. In 1984 the company was hovering around break-even after losses in 1982 and 1983. The company operates the most modern integrated mill in North America (Lake Erie Works opened in 1981) but requires substantial upgrading at its main Hamilton plant. The company has announced plans to install two continuous casters, and upgraded steelmaking and rolling facilities at Hamilton which should greatly improve production costs by the late 1980s.

Algoma produces a product line which is heavily oriented to capital goods and energy markets. These markets are highly volatile, traditionally returning above average yields during strong markets, but subject to swift declines. Since 1982 these markets have been depressed and what volume recovery that was experienced in 1984 failed to generate significant firming of prices. Algoma's financial position has been seriously eroded since 1982, and though breaking even on an operating basis in 1984, debt service requirements continued to place the company in a net loss position.

(iii) Provincially owned mills

The provinces of Quebec (Sidbec Duesco) and Nova Scotia (Systco) operate mills which were legacies of U.K. interests which abandoned unprofitable facilities in the late 1960s. Both companies have encountered substantial losses since. Systco has just completed Phase I of a \$96 million modernization program; 60% federally funded. Further investments will have to be made to allow this mill to become profitable. Sidbec Duesco operates several facilities in the Montreal area. Many of these operations are cost competitive. The companies losses have resulted from an unprofitable iron ore mining operation. This situation is slowly correcting itself with the rationalization of the Quebec iron ore mining industry. Direct federal financial assistance to Sidbec Duesco's steel facilities has not been significant.

The U.S.A. will remain a crucial market for about 15-20% of Canadian production. This market is increasingly becoming restricted as U.S. industry and government respond to low cost, often subsidized, offshore competition. Canadian exporters have suffered and may be further jeopardized as a result of U.S. safeguard actions to restrict imports. Bilateral arrangements with the U.S. in the steel sector could benefit Canadian producers if they provided for a Canadian exemption from U.S. safeguard actions and from U.S. NTBs. Tariff protection is not a major issue with most domestic producers.

A by-product of U.S. protectionism is the diversion of steel to the only remaining open market - Canada. This is a major threat to Canadian producers and its effects are already evident from recent import volumes.

The industry recognizes that the necessary structural adjustments are three-fold:

- i) Modernization of existing facilities through installation of improved steelmaking equipment and continuous casting facilities.
- ii) Undertaking limited investment projects as opportunities permit (new domestic automotive stamping plants may support an electro-galvanizing line).
- iii) Appropriate financial restructuring.

Prepared by R.A. Potter

Approved by W. Black

Resource Processing Industries Branch
Department of Regional Industrial Expansion

FACT SHEET

PRIMARY IRON AND STEEL

SIC 291

1. PRINCIPAL STATISTICS

	<u>1979</u>	<u>1980</u>	<u>1981*</u>	<u>1982</u>	<u>1983</u>
Establishments	21	26	26	26	26
Employment	49,000	50,214	53,564	43,051	49,500
Shipments (\$ millions)	2,345	5,432	5,398	4,962	6,244 (est)
GDP (Constant 1971 \$ millions)	942.1	1,009.1	955.4	775.3	828.0
Investment (\$ millions)	261.0	601.9	854.3	596.0	208.8
**Net Profits (\$ millions)	148.2	424.1	472.5	5.6	8.7
Exports (\$ millions)	292	1,301	1,305	1,259	1,042
Domestic Shipments (\$ millions)					
Imports (\$ millions)	410	739	1,872	659	691
Exports - % of Shipments	12.1	24.5	20.8	32.7	22.7
Imports - % of domestic market	15.3	10.5	24.3	14.3	11.7

*5 month strike at Stelco

**1980-83 reflects only 6 companies reporting financing statements (85% of capacity)

2. REGIONAL DISTRIBUTION - 1980-82 Average

	<u>Atlantic</u>	<u>Quebec</u>	<u>Ontario</u>	<u>Prairies</u>	<u>I.C.</u>
Establishments - % of total	3.8	27.0	50.0	15.4	3.8
Employment - % of total	3.5	8.5	83.5	3.3	1.0
Capacity - % of total	3.8	5.6	80.4	6.2	1.0

2a. FOREIGN TRADE

		<u>U.S.</u>	<u>E.E.C.</u>	<u>Asia</u>	<u>Others</u>
Imports - % of total	1981	38	56	14	12
	1982	40	26	13	19
	1983	44	29	16	11
Exports - % of total	1981	77	3	5	15
	1982	47	12	13	28
	1983	84	2	4	10

3. MAJOR FIRMS

<u>Name</u>	<u>Ownership</u>	<u>Location of Major Plants</u>
1. Stelco Inc.	Canadian	Hamilton, Ontario Hamilton, Ontario Contrecoeur, Quebec Edouard, Ontario
2. Infasco Inc.	Canadian	Hamilton, Ontario
3. Algoma Steel Corp.	Canadian	Sault Ste. Marie, Ont.
4. Sidbec Dosco Ltée	Prov. of Quebec	Contrecoeur, Quebec Montreal, Quebec Longueuil, Québec
5. Lake Ontario Steel Co.	Canadian	Whitby, Ontario
6. Ipsco Inc.	Canadian	Regina, Saskatchewan

4. FEDERAL AND PROVINCIAL GOVERNMENT PROGRAMS

There are no programs specific to the primary iron and steel industry. Companies are eligible to most general assistance programs such as IRDP, IRKO, PERSD, etc.

5. MAJOR REPORTS AVAILABLE

CANADA/U.S.A. SECTORAL TRADE LIBERALIZATIONS - Memorandum to Cabinet - MAY 1983.

6. COMPARATIVE COSTS OF PRODUCTION - 1984*

	Cost Per Ton Of Crude Steel (U.S.)
Japan (avg.)	193.78
West Germany (avg.)	190.30
United Kingdom (avg.)	189.09
France (avg.)	185.28
Korea (Pohang)	169.40
U.S.A.	250.43
Algoma	184.05
Dofasco	198.00

- N.B. 1) Algoma and Dofasco data 1983
2) Based on actual operating rates during this period. Canadian mills were operating above 1983 rates in 1984. Costs should be lower.
3) These figures reflect only the costs to raw steel (liquid). Finishing mill costs may augment or eliminate any apparent advantages in primary production costs.

Source: World Steel Dynamics
Monitor Report #6

COMPETITIVENESS PROFILE

Aluminum Smelting

1. Structure and Performance

Structure

This sector deals with the production of aluminum metal, usually in ingot form, by the electrolysis of alumina (aluminum oxide). The traditional ore is bauxite, normally found in tropical or warm, temperate areas of the earth's surface. In the early years of the industry, smelting and even the refining of bauxite into alumina were sited at the marketplace. As might be expected, economics eventually led to the refining operations being built near the bauxite source to reduce raw material transportation costs. More recently with the formation of OPEC and the considerable impact it had on energy cost, two further changes developed. Traditional producers are siting smelters where ample supplies of relatively cheap power can be obtained and new stand-alone smelters have been constructed, largely by governments, in order to utilize cheap or waste power (flare gas) and provide a source of hard currency or a flagship industry.

During the development of the industry, much effort was expended by the producers to develop uses for aluminum and to initiate the necessary fabricating operations to develop the markets identified. In many cases, however, only a small proportion of a company's production would be fabricated in-house. During the course of the Second World War, many more fabricators were established and several new major ingot producers entered the market.

More recently, private producers of aluminum have become more aware of the importance of forward integration from two standpoints. Mainly the advantage, particularly for exporters such as Alcan, is the assurance of an in-house market for ingot. A second major advantage is the considerably increased margin which applies to fabricated aluminum products. The former of these two features was most evident during the recent recession when demand fell but supplies were plentiful, largely because of the growing number of government owned or subsidized smelters in the Western World (now approaching 50 percent of western world capacity). As a result of experiences during that recession, many private industry producers have adopted a policy of building additional capacity only when a market for the incremental metal is assured.

In 1984, world primary aluminum capacity amounted to 13,376,000 metric tonnes distributed between 169 smelters:

<u>Area</u>	<u>Number of Smelters</u>	<u>Capacity mt. x 1000</u>	<u>% of World Capacity</u>
Canada	7	1,234	6.7
U.S.A.	30	4,988	27.1
W. Europe	49	3,641	19.8
Asia	22	1,799	9.8
S. America	10	1,124	6.1
Oceania	6	1,097	6.0
Commonwealth	45	4,493	24.5

Of the 1984 world capacity, over 54 percent is controlled by seven companies:

<u>Company</u>	<u>Type</u>	<u>Capacity mt. x 1000</u>	<u>% of World Capacity</u>
Alcan	private - Canada	2,100	11.4
Alcoa	private - U.S.A.	2,074	13.3
Kaiser	private - U.S.A.	1,540	8.4
Reynolds	private - U.S.A.	1,446	7.9
Pechiney	nationalized France	1,351	6.8
Alusuisse	private Switzerland	953	5.2
Alumax	private - U.S.A./Japan	615	3.3
	TOTAL		54.3

Performance

During the years from 1946-1973, the demand for aluminum grew at a rate in excess of 8 percent per annum. Much of this growth resulted from the relative stability of the price which remained low due to the number of new producers which entered the market and improvements in production technology. Canada's major producer, Alcan, also expanded during this period in spite of the relatively small domestic market and became the western world's major aluminum exporter. However, as Alcan had not integrated forward to the degree that other major producers did, Alcan's markets were not assured and the company was subjected to excessive fluctuations of orders and consequently price pressures. Even in periods of heavy demand in the United States, its major market, the improvement was late in developing and slumps would be felt immediately. Alcan took remedial action by acquiring more fabricating capacity in countries and areas of high demand. These steps, together with the energy crisis which caused a number of plant closures where plant operations were based on power from gas or oil, improved Alcan's position considerably. Even during the recent recession both Alcan and Canadian Reynolds, with low cost hydropower, were able to continue to operate at almost 90 percent of capacity while the majority of smelters, without government assistance, were forced to cut back to 60 percent or lower.

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2. Strengths and Weaknesses

a) Structural

With the growth in aluminum demand now reduced to some 2 1/2 percent per annum and the increasing number of government owned or subsidized smelters coming into operation, the market share of the privately owned companies is being reduced. This is however offset, in the case of Alcan, by the number of plants which have been shut down by other producers because of high energy costs. These curtailments are resulting in an increase in the need for imports in Alcan's three major export markets: the United States, Japan, and the E.E.C.

b) International Trade Related Factors

Insofar as Canadian Reynolds' aluminum production is concerned, the market is well assured since shipments of the bulk of its production are made to other Reynolds facilities in Canada and the United States for further fabrication. Alcan on the other hand has a very sophisticated world-wide distribution and metal management organization which has proved effective. An improvement in return would be brought about mainly through increasing the company's degree of forward integration. Steps in this direction are being taken as in the current acquisition of ARCO's facilities in the United States.

With respect to foreign markets, Alcan is well placed to serve the U.S. market where tariffs on ingot will shortly be entirely removed. In regard to the tariffs of 9 percent and 7-8 percent which apply to shipments to Japan and the E.E.C. respectively, it is unlikely that a change there would significantly improve Alcan's market share or margin.

c) Technological Factors

Both Alcan and Reynolds have purchased state of the art reduction technology for their latest expansions. Further, Alcan has developed new large cells which it plans to use in the Labrador plant due to be put in operation in 1988. Much of current technological development is aimed at improving energy efficiency but both of the Canadian companies have secure supplies of cheap hydro power. Therefore, while modernization is important and is being planned for, it is not as crucial to Canadian production as it is in other areas of the world.

3. Federal and Provincial Programs and Policies

Provincial government policies relating to water tax and power rates are important.

4. Evolving Environment

Aluminum is becoming a mature metal. While some markets are being lost to plastics, other stable uses are developing. Major in-roads are being made in the packaging industry and this market should continue to grow for some years. New aluminum-lithium alloys are permitting expansion of aluminum use in aeronautics and aerospace applications. Further developments will also be made in aluminum usage in automobiles. Annual growth will not likely approach the rates of the sixties and seventies but should continue at a more modest 2-4 percent per annum. Canada's position as a world exporter should remain secure due to the power cost advantage its industry enjoys. This position will be further enhanced as Alcan integrates forward in importing countries.

5. Competitiveness Assessment

With its secure hydro power base and its proximity to the major market, the U.S., Canadian aluminum producers should be well placed to compete internationally. Notwithstanding the fact that many Canadian smelters are old and therefore inefficient, the low power costs permit all Canadian production variable costs to fall within the lowest quartile of the attached cost curve (Figure 1). The second and third quartiles are mainly U.S. and European smelters and the extreme costs at the far right apply to plants still operating in Japan. With curtailments of private producing facilities because of power cost or antiquated equipment, new sites for production will be sought. Canada, Brazil and Australia are the most likely countries to be selected. New facilities built there will be efficient and together with low cost power should prove competitive and indeed displace older plants. From Canada's standpoint, it would be advantageous if new producers choosing Canada as a site for a smelter were fully integrated so as to assure a market for the metal produced and not require sale through the LME or Comex. The governments' role in fostering investment may involve offering competitive power rates, providing an attractive investment climate in regard to tax treatment taking whatever steps are required to improve labour stability, and resolving as early as possible the problems with native peoples' rights, and salmon habitat.

- 4 -
FACT SHEET

NAME OF SECTOR: Aluminum Smelting

SIC COVERED: 2951

1. PRINCIPAL STATISTICS

	<u>1974</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>
Establishments	6	7	7	7	7
Employment	14,600 ¹	14,634	14,123	13,620	13,500
Shipments (Can \$ million) ¹	2,448	5,911	5,481	6,393	7,223
Gross Domestic Product (Constant 1974 \$ million)	526.7	567.8	488.3	540.5	606.7
Investment (Can. \$ million)	94	431	264	141	313
Profits after tax (Can. \$ million) ²	167	318	(72)	91	147
Exports (Can. \$ million) (ingots) ¹	657	1,087	1,031	1,200	1,524
Canadian Market (Can. \$ million) (ingots) ¹	388	662	394	483	N.A.
Exports % of Shipments (ingots)	81	80	87	86	N.A.
Imports % of Domestic Market (ingots)	43	35	42	42	N.A.

¹ Estimated

² Alcan Corporate data - Can. Reynolds not available

2. REGIONAL DISTRIBUTION - 1980-82 Average

	<u>Atlantic</u>	<u>Québec</u>	<u>Ontario</u>	<u>Prairies</u>	<u>B.C.</u>
Establishments % of total		85.7			14.3
Employment % of total		95.3			14.7
Shipments % of total		78.3			21.7

2.(a) FOREIGN TRADE (ingot forms)

	<u>U.S.</u>	<u>E.E.C.</u>	<u>Asia</u>	<u>Others</u>
Imports % of total 1981	71.0	22.5		6.5
1982	85.5	10.2		4.3
1983	69.5	23.2		7.3
Exports % of total 1981	70.8	0.3	21.9	7.0
1982	51.9	1.4	42.9	3.8
1983	65.0	2.1*	31.7	1.2

* W. Europe

3. MAJOR FIRMS

	<u>Ownership</u>	<u>Main Plants</u>
1. Alcan Smelters and Chemicals Ltd.	Canadian	Jonquière, Quebec Alma, Quebec Grande Baie, Quebec Shawinigan, Quebec Beauharnois, Quebec Nitinat, B.C.
2. Canadian Reynolds Metals Co. Ltd.	American	Baie Comeau, Quebec
3. Aluminerie de Bécancour Inc.	50.1% French 24.95% U.S. 24.95% Cdn.	Bécancour, Quebec (expected operation 1986)

4. FEDERAL AND PROVINCIAL GOVERNMENT PROGRAMS

No programs are sought or utilized at this time.

Provincial government power rates and water tax assessment are important.

Variable Cost Curves for the Non-Socialist World, 1984 and 1985

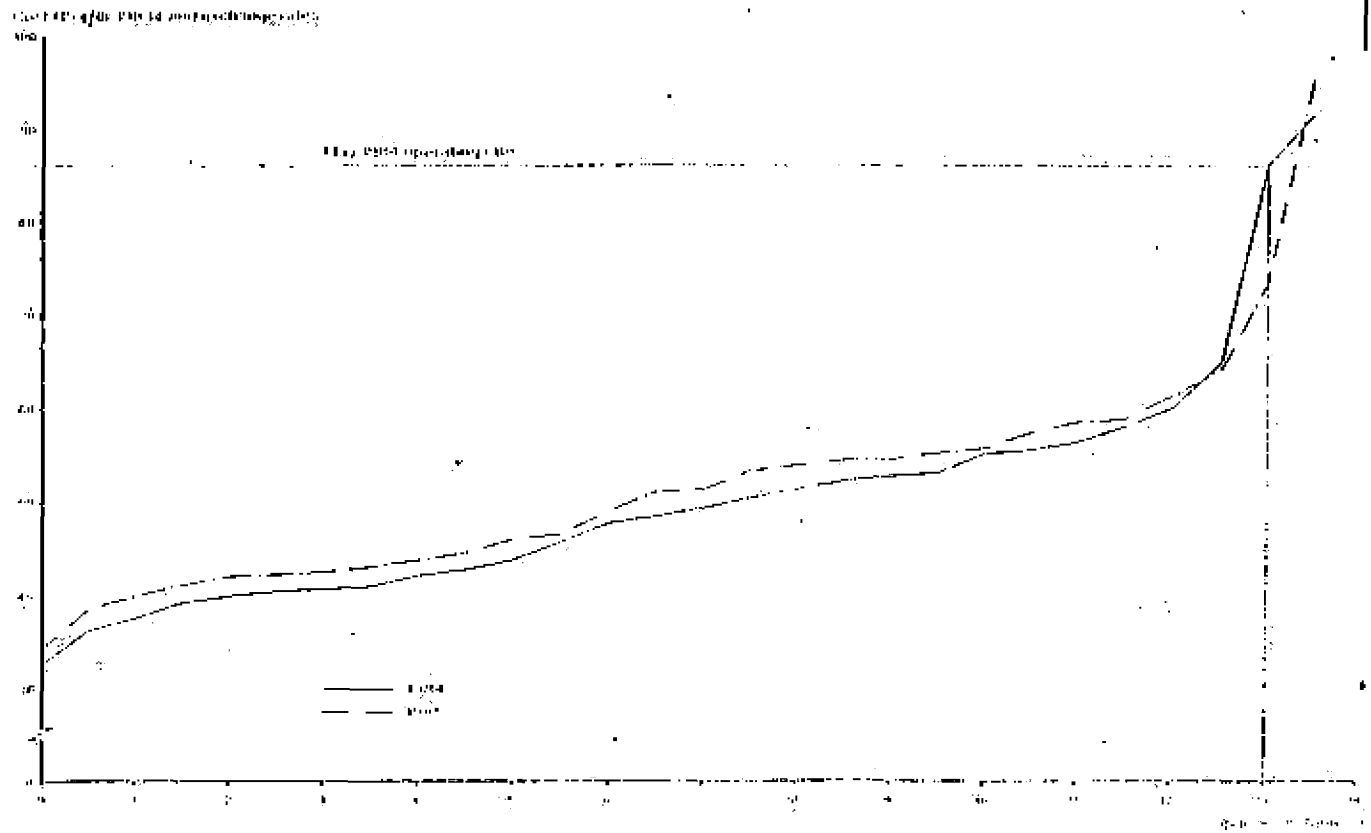


FIGURE 1

COMPETITIVE PROFILE
PRIMARY COPPER SMELTING AND REFINING
SIC # 2959 PART ONLY

1. STRUCTURE AND PERFORMANCE

1.a. Structure

The primary copper smelting and refining sector consists of five companies operating nine facilities located in Quebec, Ontario and Manitoba. All of the companies operate smelters but only three have refineries. The smelter products which are further processed in refineries are blister and anode copper. The refinery products are electrolytic copper in the form of cathode, cake, ingot and wire bar.

In Canada all smelter production is further processed domestically except the production from Falconbridge's smelter which is processed by the company's facilities in Norway.

All of the producers are integrated backward owning mines but only Noranda is integrated forward owning brass mills and a continuous cast rod mill as well as wire drawing facilities. There are two general classes of smelters, those that are self-sufficient in mine production and those that must draw upon additional sources of concentrates. Noranda and, to some extent, Hudson Bay, are in the latter class and are therefore termed "custom smelters".

More than 90 percent of the industry is privately owned. Canadian control is approximately 95 percent. One company is owned by the federal government through the Canada Development Corporation.

Proximity to the resource base was the prime determinant of smelter location. Two companies, Noranda and Inco constitute some 80 percent of domestic capacity. All companies operate world class facilities and produce metals other than copper.

Copper production does not respond rapidly to changes in demand.

Price competition is not a factor in selling copper. Prices are established by market forces and bear no direct relationship to production costs. Copper prices in North America are based on the New York Commodity Exchange (COMEX) price and in the rest of the world on the London Metal Exchange (LME) price.

1.b. Performance

Over the last ten years the sector has processed the concentrates that have been produced east of the Manitoba/Saskatchewan border. There has not been an appreciable decrease in production of copper metal.

Early in the ten-year base period, Noranda's Horne mine became depleted and was closed, but Kidd Creek brought its Timmins mine into production at about the same time providing a compensating new source of supply for the Noranda smelter. However in 1981 Kidd Creek's smelter and refinery came on-stream increasing Canadian capacity by some 9 percent but not increasing actual metal production since this new smelter consumed concentrates that up to that time had been processed by Noranda.

Because of low copper prices exploration has declined and some mineral deposits have been dropped from the "ore" classification. As a result the Noranda/Noranda smelter is slowly depleting its source of supply and at present is examining the possibility of importing some foreign concentrates. Copper consumption in Canada and the world has been declining. Canadian companies continue to supply 90 percent of domestic consumption and have increased exports.

All of the companies have shown losses in 1982 and 1983. However, there is no way of determining the performance of the copper smelting sector because the companies report only on their total operations and do not provide separate information concerning smelting and refining of copper. Cost information is closely guarded by the companies.

2. STRENGTHS AND WEAKNESSES

2.a. Structural

Canadian operations are comparable to international standards in size of operations and quality of product.

Inco, Kidd Creek and Falconbridge like the other Canadian companies are integrated backwards but have enough mine production to satisfy their own requirements.

The ore bodies mined by Inco and Falconbridge are nickel properties with copper classed as a co-product. Production decisions are based on nickel requirements.

The Kidd Creek property has copper and zinc as co-products. Production decisions are based on optimizing its returns from sales of both metals.

Noranda and Hudson Bay do not have enough captive mine production to satisfy their smelter requirements and consequently must obtain feedstock from independent mines. These custom smelters were initially built to serve major mines in fairly remote inland areas of Canada. Noranda's Gaspé smelter is close to tidewater. Because of the relatively low metal-to-concentrate ratio, the proximity of a smelter to the original mines resulted in relatively low transportation costs. This enhanced the competitive position of Canadian mines and smelters and, in some measure, shielded them from the vagaries of the international copper concentrate market. Unfortunately, the ore bodies which originally supported these operations are nearing depletion or have been closed. Noranda is examining the possibility of obtaining concentrates from foreign sources. Hudson Bay will continue to treat their own concentrates but may have to adjust their production levels.

For these two smelters, treating British Columbia concentrates or importing off shore concentrates would entail a substantial transportation cost disadvantage. Because of a shortage of supply of economic concentrates Canadian custom smelters find themselves in a vulnerable position.

The use of copper in industrialized countries is at the saturation point and as a result only a low rise in consumption rate is anticipated. Substitutable materials such as fibre optics, plastics and aluminum continue to replace copper. Technology allowing downsizing and miniaturization of products also decrease the amount of copper required. The recent recession coupled with the above factors have been reflected in decreased world consumption of copper by some 8 percent in 1983 compared with 1979.

2.b. Trade Factors

This sector is heavily oriented towards foreign trade. Canadian exporters have two main markets, the European Community (EC) and the United States, which account for over 90 percent of exports. Transportation costs from Canadian refineries make other markets uneconomic except for spot sales. Under normal circumstances the seller negotiates any tariffs with the buyer.

Tariffs & Trade Barriers

Canada and the EC do not have any tariffs or trade barriers restricting trade in copper. The United States tariff on copper is 1.1 percent and has been considered as only a nuisance by both sellers and buyers. The main danger facing copper exports is possible action taken under Section 201 of the U.S. Trade Act. This type of action is usually resorted to by American producers during times of depressed markets and defence against it is costly and time consuming.

There are no tariffs imposed on trade in concentrates. The newly industrialized countries (NICs) Brazil, Taiwan and Korea have adopted

trade practices similar to those employed by Japan, to support further manufacturing industries based on low labour rates. They have erected high tariff barriers against the imports of refined metal to support a higher domestic price for refined copper. The higher price is passed on to the smelter allowing it to quote treatment charges at less than cost. This action has created a world surplus of smelting capacity and has put pressure on the limited availability of exportable concentrates, making uncompetitive those smelters that do not control a source of concentrate. Some less developed countries (LDC's) such as the Philippines have placed export restriction on concentrates to ensure that its smelters have adequate supplies.

World Capacity and Production

LDC's have increased mining, smelting and refining capacity. Today, due to this and to the decline in copper demand there is over-production in the world. The LDC's 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 are being incurred. In contrast North American producers have cut back some 15 percent, as they are constrained to operate at a profit, at least in the medium term. Chile is an exception among the LDC's, as its expansion is based on rich, low cost ore bodies that generate profits even at depressed copper prices.

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2.c. Technological Factors

Pyrometallurgical processes are dominant for copper smelting technology. There are several technologies that are energy efficient and which permit converting sulphur dioxide emissions into sulphuric acid. Inco, Noranda, Outokumpu Oy, and Mitsubishi have commercial processes in place.

There are no barriers to obtaining foreign technology through technology licensing arrangements. Canadian processes have been sold to foreign competitors.

If Hudson Bay has to comply with the proposed pollution regulations, further R&D must be engaged in to develop a suitable process which avoids the generation of sulphur dioxide.

Several hydrometallurgical processes are in various stages of development throughout the world; however, none is comparable with the type of concentrates treated by Hudson Bay.

In Canada, a sulphate leaching process by Sheritt-Consolidated (S-C) was developed in the mid-1970's while a chloride-leach process by Great Central Mines (GCM) is under development.

These processes are expected to offer lower capital costs, comparable operating costs, better economies of scale and the important financial benefits associated with marketing elemental sulphur.

3. FEDERAL AND PROVINCIAL PROGRAMS AND POLICIES

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

It is estimated that proposed new pollution regulations to reduce acid rain may require Noranda and Hudson Bay to spend large sums in relation to their smelter operations:

Existing programs are not primarily directed towards providing large companies with assistance for capital expenditures and the companies themselves are in a poor financial position to undertake such expenditures. Therefore, the two levels of government are considering the possibility of providing financial assistance where necessary.

4. EVOLVING ENVIRONMENT

World over-production and weak demand have resulted in depressed copper prices. Forecast consumption growth is not anticipated to exceed 2 percent per year in the next five to ten years. A large percentage of copper production capacity is owned or controlled by governments in the LDCs. Some of these countries have higher grade deposits, lower wage rates and, in some cases, less stringent pollution controls than in Canada. Consequently, some of these operations are profitable even at present prices. For a variety of social and economic reasons those that are not profitable have not cut back on production during times of low demand.

No new major uses for copper being developed to offset the inroads being made by technical developments in the use and application of other materials.

5. COMPETITIVENESS ASSESSMENT

The Canadian industry is internationally competitive; this is evidenced by the fact that over 60 percent of production is exported. The attached chart and graph show that Canada ranked in 1983 as having the second lowest copper production operating costs in the non-socialist world.

One of the main reasons for Canada's competitiveness is the proximity of the smelters to the mines which results in significant transportation cost savings. Unfortunately the major ore bodies which have supported the Rouyn/Noranda and Flin Flon smelters are nearing depletion. If Canadian smelters are to continue to operate profitably, new economic ore bodies must be discovered east of the Saskatchewan/Manitoba border.

World smelting charges are being quoted at less than cost as a result of actions taken by the NICs.

The proposed new pollution regulations to control acid rain which are being considered by governments in Canada are threatening to place a financial burden on Noranda and Hudson Bay. Not counting the necessary R&D expenditures, the required capital outlay would amount to some \$249 million. Operating costs will also be increased. This expenditure is strictly related to environmental improvement.

EXTERNAL AFFAIRS = AFFAIRES EXTERIEURES

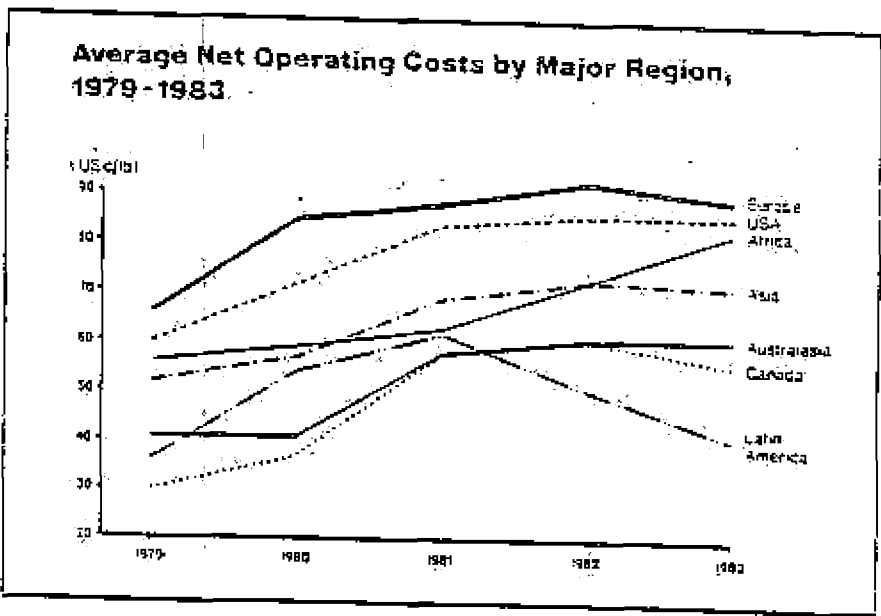
If Noranda, which is wed to pyrometallurgical technology, constructs an acid plant, it will add to the present surplus of sulphuric acid in the North American market. The same environmental pressures on the nickel smelters would force them to generate enormous quantities of acid at the same time. This would depress already low prices and, combined with transportation costs, would cause operating losses to most, if not all, smelters.

Hudson Bay's smelter is too far from the market to economically produce sulphuric acid. In order to comply with the regulations it would be forced to develop and install a hydrometallurgical unit which produces easily stored sulphur. It is not certain that this process development can be brought about, and it will take several years of R&D to come to a conclusion.

Governments in LDC's and NIC's have not imposed stringent environmental regulations. Consequently some of Canada's main competitors are not faced with similar expenditures. On the other hand, American, European and Japanese smelters have been required to meet even more stringent environmental requirements. Responses have been varied: a considerable amount of American mining and smelting capacity has been permanently closed; European smelters are suffering losses (primarily, though, because of underbidding by Japanese and NIC's for concentrate supply); and Japanese tariff protection has been established to enable survival of the smelters.

Average Net Operating Costs by Major Region,
1979-83 (current US c/lb)

	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>
Africa	56	59	61	73	83
Asia	52	57	69	73	72
Australasia	41	41	58	61	59
Europe	46	83	88	93	89
Latin America	36	54	52	51	41
Canada	30	37	56	61	52
USA	<u>60</u>	<u>72</u>	<u>84</u>	<u>86</u>	<u>86</u>
Total Non-Socialist World	48	58	69	67	68



Source: Copper's Changing Cost Structure, 1980 - 1983
Commodities Research Unit, New York

1. PRINCIPAL STATISTICS

	1973	1981	1982	1983	1984
Establishments	7	8	8	9	9
Employment (estimated)	NA	NA	NA	4,500	4,000
Shipments (\$ millions)	736	1,370	1,049	707	921
Gross Domestic Product (Constant 1971\$ millions)	493	368	568	488	605
Investments (\$ millions)					
*Profits after tax (\$ millions)	444	812	(259)	(403)	(279)
Exports (\$ millions)	411	463	368	450	600
Domestic Shipments (\$ millions)	325	907	681	257	321
Imports (\$ millions)	26	32	58	53	21
Canadian Market (\$ millions)	351	539	537	110	305
Exports - % of shipments	55.8	43.9	54.1	63.8	65.1
Imports - % of domestic market	4.0	5.9	10.4	17.0	14.1

* Relates to overall operation of companies, not just to smelting & refining operations.

2. REGIONAL DISTRIBUTION - Average over the last 3 years

	Atlantic	Québec	Ontario	Practices etc.*
Establishments - % of total	0	32.0	53.0	11.0
Employment - % of total (1983-84)	0	64.2	28.3	7.3
Shipments - % of total	0	53.3	39.3	6.6

* Teck Corporation operated a 22,000 tonne smelter in B.C. from 1978-1980. The smelter was designed specifically to treat ore from the Afton mine. Depressed copper price forced it to close earlier than anticipated.

2a. FOREIGN TRADE

	U.S.	E.E.C.	Asia	Others
Imports - % of total 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
Exports - % of total 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	3.2

3. MAJOR FIRMS

1. Noranda Mines Ltd.	Canadian 99% Brasacade Resources Control	Gaspé, Que. Rouyn/Noranda, Que. Montreal, Que.
2. Inco Ltd.	Canadian 46% Management Control	Sudbury, Ont.
3. Kidd Creek Mines Ltd.	Canadian 100% Canada Dev. Corp. Control	Timmins, Ont.
4. Hudson Bay Mining & Smelting	U.S.A. 100% Anglo American Group South Africa Control	Flin Flon, Man.
5. Falconbridge Ltd.	Canadian 98% Dome Mines Ltd. Control	Sudbury, Ont.

4. FEDERAL AND PROVINCIAL GOVERNMENT PROGRAMS

Ontario: Mining Tax Act; Processing Allowances for Northern Ontario; Tax provision for smelting and refining.

British Columbia: Copper Smelting & Refining Incentive Act grants \$t per kg of copper smelted to a maximum of \$500,000 per year.

5. MAJOR REPORTS AVAILABLE

Name	Type of Report	Year
EMR Nickel & Copper A Special Report	Background & analysis of issues	1984

COMPETITIVENESS PROFILE

Nickel Smelting and Refining Sector - #SIC 295

1. Structure and Performance

Structure:

The nickel smelting operation transforms the mineral concentrates into crude metal while the refining operation upgrades metal purity.

About 80 percent of Canadian nickel production comes from Ontario and the remainder from Manitoba; however, reserves would indicate that the ratio will approach 70/30 eventually.

The Canadian nickel industry is made up of three companies. Inco, the largest, is fully integrated, processing its ores from some 14 mines in Ontario and Manitoba through two smelter/refinery facilities at Sudbury, Ontario and Thompson, Manitoba. Falconbridge, the second largest nickel producer, smelts concentrates at Sudbury and transports its nickel-copper matte to its refinery at Kelowna, B.C., and its nickel-copper concentrate to its refinery at Kongsberg, Norway. Sherritt Gordon Mines has no nickel mining operations but processes nickel-bearing concentrates from Inco's Thompson mill into nickel powder and briquettes at its Eyrer Saskatchewan, Alberta refinery. Unlike Inco and Falconbridge, Sherritt Gordon Mines is not dependent upon the nickel market as its fertilizer and chemical division accounts for about 70 percent of the company revenues.

Performance:

	<u>Nickel Exports</u>						
	(tonnes)						
	<u>Production</u>	<u>In Matte</u>	<u>In Oxide</u>	<u>Refined Metal</u>	<u>Total</u>	<u>Refined Imports</u>	<u>Consumption</u>
1973	244,461	91,259	59,835	125,424	286,318	15,731	10,785
1980	184,802	42,647	16,989	88,125	147,761	4,144	7,576
1981	160,247	53,891	14,390	79,935	148,166	2,335	9,446
1982	88,795	27,037	13,127	62,314	102,478	2,431	6,637
1983	121,836	40,087	11,167	66,949	118,203	2,357	4,800
1984	151,831	59,410	20,080	80,414	159,904	3,479	4,800

In the period 1946 to 1973, western world annual nickel consumption grew at an annual rate of over 6 percent. The growth rate changed abruptly after the oil shortage in 1973, due to the sharp decline in the overall performance of the world economy. Except for a brief period in the late 1970's, nickel consumption has yet to surpass the 1974 peak.

Canada has been the dominant producer of nickel in the world since the turn of the century. In the 1950's Canada accounted for more than 76 percent of the world nickel production. In 1977 Canada's production accounted for 37 percent of nickel output. During the past five years, Canada's share of the market has shrunk to about 30 percent of world nickel production.

In large measure, the change in role from dominant supplier to swing supplier by Canadian producers can be explained by the emergence of LDC's in the world nickel market and the increase in state ownership and control of producers in the 1970's. Over 40 percent of production capacity is either directly or indirectly state-controlled. These operations are not responsive to the usual price/cost relationships because their primary goals are raising foreign currency and maintaining employment. During the recent recession high-cost, state-owned companies maintained production, further depressing prices and forcing private producers to cut back disproportionately.

The Canadian nickel companies have incurred large debts in the years 1981 to 1983. Both Inco and Falconbridge have taken corrective measures to improve their financial positions.

The recession has had a profound impact upon employment, as Falconbridge has reduced its workforce by 38 percent while Inco has laid off 35 percent. During this period the value of Canadian exports of primary nickel has dropped about 35 percent to about \$743 million.

2. Strengths and Weaknesses

a) Structural:

Over the past thirty years, the characteristics of the nickel industry have changed significantly. Now, there are over 60 producers in more than 25 countries, of which half are government controlled.

Much of the structural imbalance being experienced is due to the fact that, on the one hand, demand for nickel has stagnated to a growth rate of one to two percent per annum, with few new applications being developed. On the other hand, the LDC's embarked in the 1970's on very ambitious resource development based upon an assumption of the continuation of six percent growth rates. This has resulted in a global overcapacity that is expected to last until the year 2000. This structural change portends a long-term pricing problem which will require our producers to be swing producers, in spite of being the lowest cost producers in the western world.

b. Trade related Factors:

The problem facing Canadian nickel producers is not so much tariff and non-tariff barriers as the fact that half of the world capacity is supported, directly or indirectly, by governments. Uneconomic operations have been kept in production by some of these governments as social rather than commercial criteria have become increasingly important in determining production decisions. The unpredictability of Soviet shipments to western Europe is another destabilizing factor. The strong Canadian dollar in terms of other currencies is also an impediment to profitability of Canadian producers. In terms of European currencies, nickel prices have risen during the recession.

c. Technical Factors:

Inco has traditionally been the world leader in developing new applications for nickel uses. Lately, Inco has begun concentrating its efforts toward developing new technologies in sintering, milling, and smelting. Sherritt Gordon Mines, on the other hand, has been the leader, also on a world scale, in developing hydro-metallurgical and powder metallurgy processes for nickel. While Falconbridge has not played any distinguished role in technology development, its R&D activities have focused on improving its productivity and environmental control.

The technological challenge facing Inco and Falconbridge in the near future pertains to developing affordable smelting processes to reduce SO₂ emissions drastically. This latter development relates to the fact that the federal government is committed to reduce acid rain by fifty percent by 1994 with the nonferrous smelters expected to take the brunt of the SO₂ cutbacks.

3. Federal Provincial Programs and Policies

The Ontario Government has, under the Ontario Mining Act, the legislative power to force companies to increase further processing of ores in Canada, but has allowed specific exemptions. For instance, Falconbridge has argued its case successfully for continued sanction of nickel-copper matte

export to its refinery in Norway, stating that for the \$160 million needed for a refinery only 300 jobs would be created, whereas a new mine at about the same cost would create 800 to 900 new jobs. In general, it was suggested the money could be better spent in several areas: exploration, research, mine development and environmental improvements.

Under its exemption, Inco is allowed to ship an unspecified amount of nickel oxide sinter to its plant in Clydach, Wales for processing, continuing a long established relationship. It is also allowed to ship nickel sulphide under long-term contract to two Japanese refineries in which it has an equity interest.

The acid rain issue has focused attention upon the nonferrous smelters, especially the nickel smelters. This has resulted in numerous studies being conducted and reported upon as listed in the data sheets. The underlying theme of these reports is that while the nonferrous smelters are the most cost effective means to reduce SO₂ emissions, the industry requires financial assistance to conduct R&D to develop and implement affordable technology in order to be in a position to reduce this pollution and at the same time to remain competitive.

4. Evolving Environment

The demand for nickel in the western world is expected to grow at an average rate of 1.5 to 2.0 percent until 1990 and somewhat less thereafter. By the year 2000, total western world nickel consumption could approach 658,000 tonnes. This compares with an average annual growth rate of over six percent in the period 1946 to 1979 and a meager one percent in the period 1974 to 1982.

On the supply side, present world nickel supply capacity is 850,000 tonnes and this could increase if Cuba and USSR follow through on expansion plans.

Despite the cost-competitiveness of Canadian nickel producers, this sector is not likely to return to the level of production experienced in the 1970's. Production will be affected by several factors, including global overcapacity, slower growth in world demand and environmental regulations.

5. Competitiveness Assessment

It is generally acknowledged that sulphide nickel producers (such as those in Canada) have lower costs than the lateritic nickel producers (those in tropical countries). In fact, some estimates place laterite production costs at 1.5 - 2.0 times higher. Part of this difference is attributed to the by-product credits received by sulphide producers from the sale of copper, cobalt, platinum group metals and other precious metals. In relative terms, energy constitutes as much as 60 percent of lateritic nickel costs. Labour represents about 30 percent of Canadian operating cost with energy at about 15 percent. It is thus not surprising that Canadian producers have accelerated bulk mining methods, which are expected to result in significant improvements in productivity. Fuel oil prices will determine the relative competitiveness of the lateritic nickel producers in the long term.

While Canadian producers are expected to remain the lowest cost producers in the western world, the experience of the past three years indicates that cost competitiveness does not ensure protection of market share. In fact, Canadian producers have absorbed most of the recent production curbacks while state-controlled producers have continued to keep unprofitable facilities operating. Inco and Falconbridge reduced output by 48 percent in 1982 alone.

At this juncture, both Inco and Falconbridge have rationalized their operations to the extent that production costs are matching the current depressed nickel price. Cost-cutting measures are continuing which are expected to further reduce nickel cost below U.S. \$2.00 a pound.

The Canadian government's commitment to reduce sulphur dioxide emissions by 50 percent in Central Canada by 1994 will have a major impact upon the nonferrous smelters, especially the nickel producers. These companies are confronted with R&D costs of over \$30 million to develop more affordable smelting technologies to reduce SO₂ emissions. Implementation costs are estimated to be in excess of \$350 million and could well increase operating costs, as well, by up to 15 cents a pound, which would affect their competitiveness.

FACT SHEETS

Nickel Smelting and Refining Sector SIC 295

1. Principal Statistics

	1973	1980	1981	1982	1983	1984
Establishments	7	7	7	7	7	7
Employment*	26,000	24,000	20,000	16,000	13,000	17,000
Shipments (\$millions)	895.0	1155.5	1152.9	747.6	766.3	
Gross Domestic Product** (Constant 1971 \$millions)	493.2	568.2	567.8	488.3	540.5	606.7
Investment (\$millions)	113.4	208.2	223.1	129.7	98.0	145.0
Profits (loss) after tax	296.1	327.7	(481.8)	(289.2)	(248.5)	(20.0)
Exports (\$millions)	807.8	1106.0	1115.9	723.6	742.9	1022.7
Domestic Shipments (\$million)	87.2	49.5	36.2	24.0	23.4	
Imports (\$millions)	16.91	20.9	13.5	17.1	13.1	32.6
Canadian Market (\$millions)	103.7	70.4	54.7	41.1	38.5	
Exports - % of shipments	90.3	95.7	96.8	96.8	96.9	
Imports - % of domestic market	15.6	29.7	33.8	41.6	39.2	

* Employment cannot be broken out for the smelter and refinery segment, thus estimates include mining and milling employment as well.

** Total value for SIC 295, which includes all smelting and refining of non-ferrous metals except aluminum; nickel is not separated out.

2. Regional Distribution

	Ontario	Prairies
Establishments - percent of total	57.2	42.8
Employment - percent of total	85.6	14.4
Shipments - percent of total	61.0	39.0

3. Major Firms

<u>Name</u>	<u>Ownership</u>	<u>Location of Plants</u>
Inco Ltd.	Publicly owned: 50 percent by Canadians	Smelter at Sudbury & Thompson Refineries at Sudbury, Port Colborne and Thompson.
Falconbridge Ltd.	Publicly owned: 95% Canadian, 31.5 percent controlled by Dome's Mines, Ltd.	Smelter at Sudbury.
Sherrill Gordon Mines	40 percent controlled by Newmont of U.S.A.	Refinery at Fort Saskatchewan.

Inco Performance

Primary Metals (\$ millions)	1984	1983	1982	1981
Sales by product				
Primary nickel	720	\$ 603	\$ 532	\$ 491
Refined copper	170	98	117	194
Precious metals	110	56	68	103
Cobalt	24	10	24	36
Other products	28	19	24	21
Net sales to customers	\$1,052	\$ 786	\$ 785	\$1,170
Operating earnings (loss)	\$100	\$(138)	\$(130)	\$ 283
Deliveries (pounds in millions)				
Primary nickel and intermediates	316	278	216	298
Nickel contained in alloy products	40	36	35	44
Total nickel	356	314	251	342
Copper	273	140	167	240

Falconbridge Performance

Primary Metals (\$ millions)	1984	1983	1982	1981
Sales by product				
Primary nickel	\$ 252	\$ 212	\$ 151	\$ 230
Refined copper	63	46	40	53
Precious metals	7	6	5	3
Cobalt	33	12	13	35
Other products	43	37	37	40
Net sales to customers	\$ 398	\$ 313	\$ 246	\$ 372
Operating earnings (loss)	24.7	(18)	(85)	(4)
Deliveries (pounds in millions)				
Total nickel	83	80	51	92
Copper	79	53	48	56

Falconbridge recorded a consolidated profit in 1984, before extraordinary items, of \$24.7 million, compared with a loss of \$31.4 million in 1983. The company gained \$41.5 million from sale of its shares in Superior Oil.

SELECTED FINANCIAL RATIOS

	INCO			FALCONBRIDGE		
	Interest Coverage	Net Return On Equity	Debt/Equity	Interest Coverage	Net Return On Equity	Debt/Equity
1973	9.2(Times)	19.1%	27:63	4.9(Times)	21.1%	51:49
1980	3.9	11.1	38:62	5.2	21.8	38:62
1981	1.9	(2.1)	45:55	.8	(1.8)	50:50
1982	(1.0)	(18.9)	44:56	(1.1)	(19.1)	55:45
1983	(1.8)	(22.8)	47:53	(0.2)	(3.6)	54:46
1984(est)	()	(10.9)	46:54	1.4	12.6	38:62

4. Federal and Provincial Government Programs

C.E.E. - Canadian Exploration Expense
 IRDP - Industrial and Regional Development Program
 Federal income tax provisions relating to the mining and processing industries and to environmental control equipment.

5. Major Reports Available

Canada's Nonferrous Metals Industry: Nickel and Copper	The assessment of the international competitive position of Canada's nickel producers and the evaluation of SO ₂ abatement options	1984, E.N.R.
Ontario/Canada Task Force on Inco and Falconbridge	The development and evaluation of air pollution abatement options	1982
Economic Effects of Smelter Controls	The assessment of the viability of Canadian nonferrous producers	1981, Centre for Resource Studies

6. Foreign Trade

	<u>Imports (X)</u>		<u>ASIA</u>	<u>OTHER</u>
	<u>U.S.A.</u>	<u>EEC</u>		
1973	6.0	2.9	-	91.1
1981	55.5	17.3	.1	27.1
1982	59.0	9.4	-	31.6
1983	52.4	30.0	.2	18.4
1984	38.0	31.0	-	31.0

	<u>Exports (Z)</u>		<u>ASIA</u>	<u>OTHER</u>
	<u>U.S.A.</u>	<u>EEC</u>		
1973	38.3	24.1	8.1	28.3
1981	40.1	26.6	.6	32.7
1982	45.5	22.6	-	32.0
1983	38.9	31.6	-	29.5
1984	34.2	27.5	-	38.3

Sector: Lead and Zinc Smelting and Refining*

1. Structure and Performance

Structure

The primary lead and zinc smelting and refining sector consists of five companies across Canada. These companies produce lead bullion, and refined lead and zinc shapes such as blocks, pigs, sheets and slabs. Zinc is also marketed as dust, powder and flake. Major byproduct metals are silver and copper. Only Cominco produces large quantities of both lead and zinc metals. The other majors in lead is Brunswick Mining and Smelting (BMS). The three other majors in zinc are Canadian Electrolytic Zinc (CEZ), Hudson Bay Mining and Smelting (HBMS), and Kidd Creek.

Generally, the companies - some in conjunction with sister companies owned or controlled by the same parent - are integrated backward into mining. Cominco exports concentrates to Europe and Japan; BMS, to Europe, with some going to Japan; and Kidd Creek, to Europe. HBMS is not self-sufficient in concentrates; and CEZ does not mine but receives concentrates from BMS and other sources. There is little forward integration into semi-fabricated metal products, the exception being Cominco which co-owns Canada's largest secondary lead company, and HBMS which owns a zinc die-casting plant. There is considerable forward integration with regard to production of large quantities of sulphuric acid from the sulfur dioxide emissions, and then production of fertilizers from the sulphuric acid.

Regarding ownership, the primary lead sector is virtually 100% controlled by Cominco and BMS; thus there is no foreign ownership in lead. The zinc sector is only 11% foreign-controlled (HBMS); of Canadian-controlled capacity, 80% is privately owned and 20% is government-owned (Kidd Creek). The Canadian government has announced its intention of selling its 49% equity position in C.D.C., which is 100% owner of Kidd Creek, during 1985.

Geographically, with Cominco in British Columbia and HBMS in Manitoba, western Canada represents half of employment and production. The other half is split between New Brunswick (HBMS), Quebec (CEZ) and Ontario (Kidd Creek).

Canada has a significant role in the world, ranking consistently among the leaders in production of concentrates, and lead and zinc metal.

Performance

Despite estimated capital investment of over two billion dollars since 1979, the industry has experienced very slow growth. Volume averaged 242,000 tonnes of lead within a narrow range. Volume averaged 601,000 tonnes of zinc, also within a narrow range except for the recession year of 1982 when only 512,000 tonnes were produced.

Compared with the previous 3-year period (1974-78), Canada's share of the world market since 1979 has increased from 4.7% to 6.0% of lead, and from 11% to over 13% of zinc.

In concentrate form (Note: all weights indicate contained metal), Canada's lead concentrate production has remained fairly constant, except for a dip in 1983 (attributed to shutdown of the Cyprus Avril mine), at an average of 313,000 tonnes or almost 13% of world production. Zinc concentrate production has been somewhat more variable and has averaged 1,125,000 tonnes or over 24% of world production.

Thus, Canada is the world's largest producer of zinc in ores, concentrates and metals, and the third largest producer of lead in the western world. Canada consumes 40% to 50% of its lead metal production. The tonnage trend has been down because of the recession and because of environmental regulations. Canada consumes 10% to 20% of its zinc metal production; again the tonnage trend is down because of the recession. There is no import penetration of lead or zinc, and none is expected in the future.

*The lead and zinc profiles are described together because, for the most part in Canada, the two metals are closely associated in the ore bodies.

Production growth expectations in Canada are quite low, and are expected to remain low until the 1990's for zinc and 2000 for lead. This is due to market maturity, substitution of other metals, increasing production by LDC's, closure of some capacity due to stringent hygienic regulations in the smelter workplace, and stricter environmental regulations. For example, Cominco has "permanently" reduced its lead annual smelter capacity in the last decade, due in part to government regulations and in part to obsolescence.

Profits dropped dramatically from \$300 million in 1979 to a loss of \$17 million in 1983 (for the companies which reported results during that period), then bounced back to \$51 million in 1984. Profits are expected to stay low in 1985 due to low prices for lead, zinc and silver. The industry had had to borrow heavily over the last five years to modernize. This has left it highly leveraged, and in a poor position to raise capital, via debt or equity. This lack of funds will make it difficult to modernize further, to increase profitability through capital intensification, and therefore to maintain its competitive position in world markets.

Canadian companies have significantly improved their productivity. The best example is that, in 1983, Cominco opened its highly automated 271,000 tonnes per year zinc electrolytic refining plant, which has the largest capacity in the world.

There is considerable idle smelter and refinery capacity in the U.S. and Europe. In the U.S. in 1983, only four zinc smelters operated, having a total capacity of 300,000 tonnes. The others, with a total capacity of 207,000 tonnes, were idle, suggesting a utilization rate of under 50%. European smelters also continued to operate at a low rate, perhaps keeping alive the option that the European commission has given its smelters, namely, a \$203 per tonne payment for operations permanently closed. Europe's low rate of metal production has caused several closures in 1984 and 1985 of Canadian lead and zinc mines. These closures are planned to be short-lived but, no doubt, future decisions will depend on the European economy.

Profitability of the sector was under further pressure during the latter part of 1984 and early 1985. The price of zinc has dropped to 56¢, lead has dropped precipitously from 42¢ to 24-26¢, and silver has dropped from \$10 to \$7.75 (all are in Canadian funds).

2. Strengths and Weaknesses

(a) Structural

The scale of operations in Canada compares favourably with international standards. In lead, Cominco's 130,000 tonnes capacity is among the largest smelters in the world (two of the largest are BHS, Australia, 250,000 tonnes and St. Joe, U.S. 218,000). BHS' capacity of 58,000 tonnes is in the medium range by world standards. Cominco's new zinc refinery is the largest in the world. Kidd Creek's and BMS' zinc capacities would be in the medium size range of world operations.

The sector has been undergoing adjustment related to two factors: productivity and government restrictions on emissions. Low metal prices and reduction of profit margins have caused Canadian companies to modernize. Canadian producers are not price leaders; therefore, they attempt to improve margins by cutting costs. A greater proportion of funds has gone into modernization of zinc operations, and a lower proportion into maintaining operation of the old lead smelters. In Canada, as elsewhere in the world, lead smelter capacity has had to be reduced significantly to improve hygienic conditions in the workplace. The adjustment will continue. However, the adjustment could be catastrophic if, for whatever reason -

technical, financial, etc. - smelters are forced to reduce capacity too much and must shut down completely. It should be noted that smelters in all of the industrialized countries are under similar constraints, in varying degrees. Increasing competition is coming from LDC's, whose governments do not place as much emphasis on environmental considerations, although LDC's are not as large a factor in lead and zinc as they are in nickel, copper and aluminum.

Concerning other non-technological factors on ability to compete:

Transportation is a major cost at all stages and can affect the competitiveness of Canada's producers. BMS is on tidewater; CRZ is well located on the St. Lawrence Seaway, on rail lines and major highways, close to major markets; Cominco, HBMS and Kidd Creek are "inland", which increases their transportation costs. Costs of transporting concentrates to smelters is somewhat higher, on average, than those costs in other regions of the world, but the cost of transporting concentrates to port for exporting, or metal to market is significantly higher than for Canada's major competitors. U.S. smelters in the so-called Missouri belt have low transportation costs, partly because the mines are close to the smelters, which in turn are close to major metal markets.

(b) Geographical Factors

The fact that many lead and zinc mines are situated in Canada's northern regions means higher transportation, energy, materials and labour costs. These in turn lead to higher capital and operating costs than is the case for many of Canada's competitors.

Labour supply is a problem in Canada's northern mining regions which produce some of the concentrate supply for the smelters but which export much of their productions.

Labour/management relations have improved recently. Previously there had been considerable labour unrest and work stoppages at the mines and smelters, and at rail and port transportation centres.

Foreign ownership is not a negative factor in Canada's competitive position.

Resource base in Canada, with exceptions, is generally sufficient for several decades. Cominco has large deposits in the N.W.T, Greenland and Alaska, in addition to the Sullivan mine in S.C. It also custom smelts concentrates from the U.S. and other countries. HBMS is not self-sufficient in ores and will be better able to compete if a long term exploration program results in finding sufficient ore to take up the approximately 50% deficiency. SMS and Kidd Creek treat concentrates from their own large, nearby mines.

(c) International Trade Related Factors

Trade issues are of fundamental importance to the domestic lead and zinc sector, particularly from the point of view of exports. The sector is faced with tariff and non-tariff barriers in its major export markets, E.G., U.S. and Japan.

Tariffs: Canada imposes no tariffs on imported lead and zinc. Generally, tariffs in other countries are zero, low, or postponed for Canada's ores and concentrates because these countries, particularly the EEC, where unemployment is high, and Japan, require feed for their smelters. However, there are substantial tariffs on metals which tend to restrict Canada's exports. Tariffs are as high as 7 to 12% on lead and 2.5% on zinc entering Japan. The EEC protects its smelting industry - operating at a low rate of capacity - by imposing a 3.5% tariff on lead and zinc. Tariffs into the U.S. are slightly lower. All of these tariffs will decline slowly in accordance with MTN schedules.

Non - Tariff Barriers: None

(d) Comparative Unit Costs

The major factors that determine the cost competitive nature of Canada's lead and zinc industries are:

- labour (Canada has relatively high costs)
- energy (relatively low costs)
- ore grade (variable)
- byproduct and coproduct credits (high credits for silver, modest credits for sulphuric acid)
- transportation - concentrates to smelters (high costs)
 - metal to market (high costs)
- technology and productivity (high cost for lead; low cost for zinc)
- scale of operations (average to lower cost)
- metal yields (low costs; with exceptions)
- raw materials (coke costs are exceedingly high for Canada's lead smelters).

The estimated average operating cost for smelting lead concentrates in Canada's two operations is 17¢ (U.S.) per pound of lead. This is considerably higher than the estimated world average of 13¢ (U.S.); much higher than the U.S. average of 11¢ (U.S.); and only 2¢ (U.S.) below the current world price of 19¢ (U.S.). Because of non-operating costs, such as high interest expense, the lead portion of the industry operates at a loss. Sections of the lead smelting and refining plants employ old technology, have high labour components, high cost of coke and, in the case of SMS, relatively high energy cost. However Canadian smelters benefit from high silver and zinc by-product values.

U.S. lead operations are the lowest cost in the world because of scale of operations, high grade ore, nearness to coke supply, and low transportation costs between mines, smelters and markets. These smelters are simple in design, and therefore have low capital and operating costs, because the concentrate being treated are relatively free of impurities. On the other hand, by-product values are minimal.

Due to the low price of lead and to environmental regulations, resulting in reduced margins, the secondary lead industry has contracted, and a number of plants have gone out of operation. In spite of these factors, there is still some secondary lead product capacity that can operate at a profit even at lead prices from 18¢ to 25¢ per pound. In the United States, it is estimated that approximately 500,000 tonnes of secondary lead capacity exists at current prices. Because of this factor and the low growth of world lead consumption, lead prices will tend to stay low. In addition, the market for zinc is expected to grow, albeit slowly, and increased production of zinc will tend to increase the supply of lead, with which it is associated, regardless of the market for lead.

Zinc demand will grow at a somewhat faster rate than lead demand. Almost all Canadian zinc production is closely associated with lead and/or copper, and to some extent silver, values. Four Canadian zinc refineries process approximately 55 to 60 percent of the total zinc contained in Canadian concentrates. These plants are among the lowest-cost refineries in the world, enjoying the advantages of large scale of operation and relatively low energy cost as compared to other regions in the world. The estimated average cost for Canadian zinc refining is 15¢ (U.S.) per pound of zinc. This is the lowest of all world regions, which average 19¢ (U.S.). It is lower than the U.S. average of about 23¢ (U.S.), and considerably below the current world price of 43-44¢ (U.S.). In spite of high nonoperating costs, such as interest expense, the zinc portion of Canada's lead/zinc operations produces an acceptable profit.

In sum, Canadian zinc mines and their associated processors tend to be more profitable than those in other world regions. This is primarily due to relatively lower processing and refining costs and relatively high recoveries and values associated with byproduct silver.

(e) Technological Factors

Canada is considered to have the western world's most modern zinc processing facilities and lowest production costs. Cominco, C&I and Kidd Creek fall into this category. The U.S. zinc processing plants are becoming out-dated, and are among the highest cost producers in the world; a number of them have shut down. Cominco and Kidd Creek also use a state-of-the-art (Sheritt Gordon) hydrometallurgical process to produce a significant portion of their zinc production and, not incidentally, sulphur production rather than sulphur dioxide.

The two Canadian lead smelters still use the out-dated sinter/blast furnace process. This in itself is not the major reason for Canada's being among the highest cost producers, as almost all world producers use a similar process. New technology would bring Canada to a position of leadership in world technology and to the lowest operating cost position.

The Russian-developed Kivcet process, the German-American QSL process and the Finnish-developed Outokumpu flash-smelting methods for lead extraction are not yet in commercial production anywhere. BMS, BMS in Australia, several processors in Germany and China, and one Canadian producer are known to be considering them. A large pilot-plant based on the Kivcet process has been constructed by the Bolivian government but there is no record of its having been operated. Considerations holding back installation are the high capital cost, which is in the order of several hundred million dollars for a world-scale plant, in an environment of low cash flows, and low potential profitability for any lead smelter (even these new ones) in the medium term.

There are no barriers to obtaining these new technologies from abroad through technology/licensing arrangements. The implications of this significant technological change will likely include a scale-up of capacity, a decrease in employment, and a solution to the hygiene problem in the work-place. The first companies to adopt these processes will have a markedly enhanced chance of survival. Some companies must go out of business in the medium term.

(f) Other Factors

Canadian lead production input costs are most sensitive to changes in the cost of labour, followed by costs of coke and raw materials. Energy cost is not as influential a factor. Canadian zinc production input costs are most sensitive to changes in the cost of energy, followed by the cost of labour.

In the present climate of decreasing interest rates, two major industries-housing and construction, and automotive - could improve and create increased demands for, and prices of, lead and zinc and products such as batteries, galvanized steel, pipes, paints, etc. Of course, the opposite would occur if interest rates were to increase. Lower rates would be a boon to Canadian companies, most of whom sell large quantities of lead and zinc concentrates to custom smelters around the world. The effect in the short term would probably not be as beneficial for the Canadian smelters and refiners because they are already operating at high capacity: in 1984 lead was at 84%, and zinc was at 103%. In mid-1985, Cominco and Noranda announced 10% reductions in zinc production for the remainder of 1985. Also, producing more lead would probably not increase operating profit because there is little or no margin between production cost and selling price. The above effects are related to operations. There would be significant non-operating benefits of lower interest rates for Canadian producers.

At least one Canadian union has accepted a zero wage increase recently whereas several large U.S. unions have accepted significant reductions in hourly wages.

3. Federal and Provincial Programs and Policies

Since 1973, federal and provincial governments have introduced a number of tax incentives to encourage processing and manufacturing activity in Canada. The incentives include: (a) a 50 percent investment tax credit in qualified regions for certain processing and manufacturing investments (November 1980); and (b) provincial processing allowances and tax rebates which encourage further processing prior to export. Incentives are also available under the Industrial Regional Development Program, IRDP, REMP and DIPP, and general federal/provincial development agreements to encourage processing and manufacturing activity in Canada.

A constraint is the rate of growth of taxes in some provinces.

The sulphur dioxide pollution problem is of concern to NMS at Flin Flon. The other smelters have established recovery systems years ago.

MAJOR REPORTS AVAILABLE

<u>Name</u>	<u>Type of Report</u>	<u>Year</u>
The Canadian Non-Ferrous Metals Industry	Task Force	1978
Non-Ferrous Metals Smelting and Refining	Profile	1980
Opportunities and Constraints in the Development of the Canadian Lead Sector	Profile	1981
Opportunities and Constraints in the Development of the Canadian Zinc Sector	Profile	1981

4. Evolving Environment

Constraints

1. Hygienic regulations in the work-place have forced smelters to significantly reduce metal capacity at great costs.
2. There are low, long-term growth expectations of both lead and zinc, due to the low growth of the economy, environmental control (lead in gasoline and paints), increasing use of substitution products, and maturity of the lead and zinc markets.
3. Modernization is stalled by lack of financing, considering the projected RDI's.
4. Tariffs and MTS's set up by Canada's largest customers continue to impede exports of metals and fabricated products, while permitting the free entry of mineral concentrates.
5. High provincial taxes are in some cases an impediment to financing modernization and expansion programs.

Opportunities

1. Modernization of smelters offers the best opportunity to place or keep Canada in the forefront of world technology, with regard to cost and emission controls. These new generation technologies are now available and their adoption will be a strategic move necessary to long-term survival of lead smelting in Canada, as well as the survival and growth of a number of small lead-silver mines in S.C.
2. USIE has provided major financing for R&D to develop a novel process for treating the large deposits of fine-grained ores in New Brunswick which have until now been uneconomic. Small scale R&D has recently been expanded to operation of an \$18 million pilot-plant.

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- 4. A potential shortage of zinc smelting capacity in the 1990's could provide the opportunity for construction of two world scale zinc refineries in Canada totalling 200,000 tonnes.
- 5. Canadian companies have an opportunity to increase export market share:
 - in Japan, if tariff barriers can be lowered, and China, which gives the appearance of opening its doors
 - in newly industrialized and developing countries where growth rate, from a low base, is greater.

5. Competitiveness Assessment

Canada's primary zinc smelting industry is internationally competitive. In the case of lead, Canada's plants are relatively high cost; rebuilding of these smelters to change to some new smelting process appears to be necessary for survival.

This modernization is also required to improve occupational hygiene to avoid shut-downs by government regulators. Significant and increasing proportions of zinc extraction from concentrates are being carried out by the zinc pressure leaching process. This Canadian-developed process eliminates the evolution of sulfur dioxide gas and, instead, produces elemental sulfur.

Lead refining processes in Canada are state-of-the-art, and costs compare favourably with world costs. Nevertheless the refineries would close if the smelters did because the refinery feed comes from the smelter.

Canadian companies are not the only ones who are taking steps to strengthen their balance sheets and rationalize their horizontal and vertical linkages. For example, North Broken Hill recently raised \$64 million (Australian) by an equity issue. Belgium's Union Miniere is in a three-year restructuring of its two large French zinc affiliates, Vieille-Montagne and Royale Asturienne des Mines. Among other major changes, Austrigone's electrowinning plant is doubling its annual capacity to 200,000 tonnes and Vieille-Montagne's will cease to operate. It is believed that Union Miniere will not be eligible for the EEC subsidy of \$203 (U.S.) per tonne of production permanently stopped because the net reduction for the merged operation will be zero; in any case, it is believed that the E.E.C. shutdown agreement is, for all intents and purposes, dismantled.

Asarco is (again) considering a permanent shut-down of its 107,000 tonnes zinc refinery at Corpus Christi, Texas. It has been operating at only 37% of capacity since it reopened in May, 1984 after a lengthy 19-month "temporary" shutdown, and has apparently been operating at a loss. St. Joe Minerals Corp. bought National Zinc Co., Bartlesville, Oklahoma, to create the largest United States zinc producer with a capacity of 142,000 tonnes.

The above examples indicate the world-wide restructuring and modernization programs will maintain pressure on Canadian companies.

**ESTIMATED DIRECT OPERATING COSTS FOR
AND REFINERIES (1983)**

<u>COUNTRY</u>	<u>COMPANY</u>	<u>SHELTER</u>	<u>CAPACITY</u> (000 mt/year)	<u>COST</u> (U.S.\$/lb)
United States	St. Joe	Herculanum, Mo.	218	11
France	SMM de Pennaroya	Noyelles Godault	150	11
Mexico	IMM	Chihuahua	120	12
Australia	BHAS	Port Pirie	230	12
Belgium	Metallurgie Hoboken-Overpelt	Hoboken	125	13
Yugoslavia	Trepca	Zvecan	60	13
Peru	Centromin	La Oroya	90	14
United States	Asarco	El Paso, Texas	68	15
Canada	Cominco	Trail, B.C.	150	15
Japan	Mitsubishi/Cominco	Naoshima	35	16
Canada	Brunswick	Bellefleur, N.B.	68	19

COMPETITIVE COST RANKING OF MAJOR LEAD SMELTING & REFINING REGIONS (1984)

UNITED STATES	- 63
AFRICA	- 71
EUROPE	- 76
MEXICO	- 76
SOUTH AMERICA	- 82
AUSTRALIA	- 88
CANADA	- 100
ASIA	- 100
WESTERN WORLD AVERAGE	- 76

**ESTIMATED DIRECT OPERATING COSTS FOR SELECTED ZINC PLANTS
AND REFINERIES (1983)***

<u>COUNTRY</u>	<u>COMPANY</u>	<u>SHELTER</u>	<u>CAPACITY</u> (000 mt/year)	<u>COST</u> (U.S.\$/lb)
Canada	Cominco	Trail, B.C.	272	12
Australia	Electrolytic Zinc	Risdon, Tas.	214	14
Canada	CSZ	Valleyfield, Que.	218	15
United States	Jersey Minerals	Clarksville, Tenn.	82	17
Netherlands	Budelco	Budel	180	17
Canada	Kidd Creek	Kidd Creek, Ont.	127	18
Finland	Outokumpu Oy	Kokkola	160	18
France	Austrienne	Auby-Les-Douai	115	18
Canada	HMMS	Flin Flon, Man.	73	21
Belgium	Vielje-Montagne	Balen	190	21
Japan	Toho Zinc	Annaka	140	23
Japan	Akita Smelting	Akita	156	23
Mexico	IMM	Nueva Rosita	168	23
United States	Asarco	Corpus Christi, Tex.	106	27

COMPETITIVE COST RANKING OF MAJOR ZINC SMELTING & REFINING REGIONS (1984)

CANADA	- 62.5
AUSTRALIA	- 75.0
EUROPE	- 74.2
SOUTH AMERICA	- 83.3
MEXICO	- 95.8
UNITED STATES	- 95.8
AFRICA	- 100.0
ASIA	- 100.0
WESTERN WORLD AVERAGE	- 79.0

*SOURCE: Charles River Associates

FACT SHEET.

NAME OF SECTOR Primary lead and zinc SIC CODE(S): 295
smelting and refining

1. PRINCIPAL STATISTICS	1974	1980	1981	1982	1983	1984
Establishments		5	5	5	5	5
Employment	8,200**	N/A	N/A	N/A	7,000**	6,500**
Shipments (\$ millions)	643	790	887	864	760	1,067
Gross Domestic Product (Constant 1971 \$ millions)	1,526	1,769	1,542	1,416	1,588	N/A
Capital Investments (\$ millions)*		388	533	302	143	127
Profits after tax*	-	264	98	8	(37)	51
Retained earnings (\$ millions)*	-	974	953	808	736	747
Equity (\$ millions)*		1,133	1,201	1,217	1,314	1,356
Debt/equity*		28/72	35/65	40/60	35/65	34/66
Exports (\$ millions)		353	601	479	354	649
Domestic Shipments (\$ millions)		237	286	185	206	225**
Imports (\$ millions)		18	5	13	12	3
Canadian Market (\$ millions)		253	291	198	218	250**
Exports + % of shipments		70	68	72	73	75**
Imports + % of domestic market		7	2	7	6	N/A

* Investments and profits refer to Cominco, BMS and HBMS, representing 100% of lead and 71% of zinc capacity.

** Estimated.

2. (a) REGIONAL DISTRIBUTION	East	Que.	Ont.	West
Establishments - % of total	16	17	17	50
Employment - % of total	8	22	15	55
Shipments - % of total	7	25	16	52

2. (b) FOREIGN TRADE	U.S.		E.C.C.		Asia		Others	
	Pb	Zn	Pb	Zn	Pb	Zn	Pb	Zn
Imports - % of total 1981	.90	11	9	55	-	-	1	34
1982	100	99	-	1	-	-	-	-
1983	83	18	6	56	-	-	11	16
1984	-	-	-	-	-	-	-	-
Exports - % of total 1981	51	71	44	4	2	8	3	17
1982	36	58	50	4	5	18	9	20
1983	46	67	30	7	4	21	11	5
1984	60	65	36	7	1	10	3	18

3. MAJOR FIRMS

Name	Ownership		Location of Major Plants
	Parent	(Eventual) Ownership	
1. Cominco Ltd.	(54%) C.P.E.	Canada	Trail B.C.
2. Cdn. Electrolytic Zinc	(100%) Noranda	Canada	Vallyfield, B.C.
3. Hudson Bay Mining & Smelting	(100%) Inspiration	South Africa	Flin Flon, Man.
4. Kidd Creek Mines	(100%) C.D.C.	Canada	Timmins, Ont.
5. Brunswick Mining & Smelting	(64%) Noranda	Canada	Selladune, N.S.

COMPETITIVENESS PROFILE

Name of Sector: TEXTILES

I. STRUCTURE AND PERFORMANCE

Structure:

- The Canadian textile industry includes a number of diverse sub-sectors producing a range of products for the apparel (40% by weight), home furnishings (35%) and industrial (25%) markets. Major products are cotton and man-made yarns and fabrics, man-made fibres and filament yarns, carpets, and automotive fabrics. The extent of vertical integration is more pronounced in Canada than in other countries and is predominant in the cotton and wool fabric sub-sectors and in man-made fabrics made of spun yarns.
- The industry comprises 1,110 establishments of which 8% employ more than 200 workers (accounting for 60% of all employment). It employed 75,100 workers and made shipments of \$6.4 billion in 1984. While for the industry as a whole the average size of establishment and the size distribution are generally comparable to those in the U.S. (e.g. both industries tend to be fragmented with establishments of less than 50 employees accounting for 75% of the total in Canada and 74% in the U.S.), there are important differences. The structure of the U.S. industry is characterized by more diversity (i.e. there are relatively more very small firms as well as more very large firms), and less vertical integration.
- In a number of sub-sectors, the average size of establishment is significantly larger in Canada than in the U.S. (carpets, wool yarns and fabrics), while in others, the reverse is true (cotton and man-made yarns and fabrics and man-made fibres).
- In Canada, concentration is highest in spinning and weaving and in man-made fibres where only one or two firms dominate production. This is in contrast to the U.S. industry where smaller specialized manufacturers service the need for yarns, grays and finished fabrics.
- It is estimated that roughly 50% of textile shipments (excluding knitting mills) are made by foreign-controlled (mostly U.S.) firms. Foreign-owned establishments account for over 60% of shipments in 3 sub-sectors: man-made fibres (98%), linoleum and coated fabrics and auto fabrics and accessories.
- Some 82% of the establishments are about equally distributed between Quebec and Ontario, with most located in smaller communities. Firms at the initial stages of textile production (e.g. fibres, fabrics) are larger and more capital intensive with higher economies of scale than those at the later stages (e.g. hosiery, draperies).
- Over the period 1973-84, shipments grew from \$2.6 to \$6.4 billion (Average Annual Growth Rate (AAGR) of 9.3%), with the GDP (in constant 1971 dollars) increasing at an AAGR of only 1%, while employment dropped by 16,641 reflecting substantial productivity growth of 2.5% per year (vs. 1.3% for all manufacturing).
- After-tax profits on capital employed during the 1970s were generally below the average for all manufacturing. Over the 1979-1981 period, however, they surpassed or approximated the levels for all manufacturing. Like all manufacturing, the textile sector suffered substantial decreases in profits during the 1982 recession.

2. STRENGTHS AND WEAKNESSES

a) Structural

- As the industry has adopted state-of-the-art technology available world wide, it has become increasingly capital-intensive and with the corresponding requirements for larger economies of scale, consolidation and restructuring have occurred in some sub-sectors, particularly traditional spinning and weaving. However, despite the capital intensity of the industry, there remain some sub-sectors (e.g. hosiery, draperies and curtains) where technological advances have not progressed at the same pace. Wages as a share of shipments for the industry are about 15 percent (13% for all manufacturing) with a wide variation ranging from 10% for carpets to 24% for the dyeing and finishing sub-sector.
- Fashion changes in clothing have resulted in shifts between fabrics (e.g. woven vs knitted fabrics as well as from one fibre to another). Continuing developments in the field of nonwoven fabrics have created new end-uses for textiles such as geotextiles or new marketing concepts such as disposable garments.
- Manufacturers of apparel textiles are also seeking to diversify into homefurnishing and industrial products which are less exposed to import competition.

b) International Trade Related Factors

- Canada, like most developed countries, maintains relatively high tariffs on textiles. Average Canadian textile tariffs in 1987 (post MTM) will be 18% compared to 9% for all manufacturing. Canada has excluded textiles and clothing from the General System of Preference (GSP). Most developed countries did the same.
- Because of the capital intensity of the textile industry, imports of most textiles currently originate from developed countries (particularly the U.S.A.) and much tend to complement domestic production. The share of textile imports covered by bilateral restraint arrangements has fallen to 6%. Nevertheless, there are a few sub-sectors which still face substantial import competition from low-cost sources primarily because of their higher labour cost content as compared to other sectors (worsted fabrics, certain acrylic yarns).
- The overall import share of the Canadian textile market has remained in the 25-28% range over the period 1971-84. Export share of shipments has increased somewhat since 1972 to 7-8%. It is expected that a level of 10% could be reached within the next three to five years with the current currency advantage over the U.S. Textile exports to that market in 1984 accounted for 34% of the total, up from 32% in 1981. However, Canada has lost substantial textile export sales (carpets to Australia) as a result of a loss in tariff preference and a change in the Australian tariff structure. As well, the new U.S. country-of-origin regulations effective at the end of October 1984 and aimed at blocking quota circumvention by countries under restraint may also reduce potential export sales.

- In a consulting study commissioned by the Textile and Clothing Board on production costs in Canada and the U.S., costs were collected for 10 textile products for two groups of firms: "best" firms and "typical" firms. The best firms are those which already utilize the best performing machinery available, "typical" firms are those which use average technology found in firms which are not in the forefront of progress, but still not obsolete. The results, which were calculated in Canadian dollars based on an exchange rate of Canadian \$1 = U.S. \$0.80, show that production costs are generally higher in Canada than in the U.S. For the "best" Canadian firms, and depending on the product, unit production cost was 4 - 15% higher than for the "best" U.S. firms. Furthermore, in 8 out of the 10 products, the cost in "best" Canadian firms was higher than the cost in "typical" U.S. firms. The disadvantage in Canadian costs was smallest for cotton products (in the 3 - 6% range between the "best" firms). These results however should be treated with caution as they reflect only one point in time and a certain exchange rate. Variations in exchange rate would affect the various products in different ways, depending on whether raw materials are imported or not.
- A comparison of cost structures in that study showed that costs of direct wages and social charges account for a greater share of total costs in Canada than in the U.S. and since wages in the Canadian industry are no higher than in the U.S., the difference is due to the degree of efficiency with which labour is utilized and reflects the constraints faced by the Canadian industry of a much smaller market, shorter production runs of a large variety of products. This relative absence of specialization and economies of scale also lead to generally higher selling and administrative expenses in Canada vs. the U.S. Furthermore, raw materials, transportation and construction costs are higher in Canada than in the Southern U.S. where the industry is concentrated.
- In 1984, imports from the U.S. captured 14% of the Apparent Canadian Market (ACM), and were valued at over \$1 billion (51% of total imports), up 24% from 1982. Canadian exports to the U.S. were \$283 million (54% of total exports), also up 29% from 1982. Thus, Canada incurred a trade deficit with the U.S. in textiles of almost \$843 million, although a substantial portion of imports complement domestic production.
- Imports from the U.S. were concentrated in man-made fibres, yarns and fabrics which amounted to \$482 million (43% of total imports from U.S.). Canadian exports to the U.S. were also concentrated in these same products amounting to \$125 million (44% of total exports to the U.S.).

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c) Technological Factors

- State-of-the-art technology is available world wide. While Canada has not played a role in technology development and is not involved in textile machinery production, the domestic industry has kept pace with other countries in taking advantage of available new technologies. In this industry, technologies can be expensive (the latest facilities had investments of up to \$300,000 per job for the production of yarns and fabrics) and often require higher economies of scale which are not always compatible with domestic market requirements for greater varieties and smaller quantities. Accordingly, it is not viable to produce the wide range of yarns and fabrics required in Canada.

- While technological evolution will continue, no major breakthrough is anticipated in the near future.

d) Other Factors

- The sector is very sensitive to exchange rate changes and competitiveness and profitability would decline significantly if the Canadian dollar moves closer to par with the U.S. dollar.
- The performance of the textile industry depends to a large extent on that of the clothing industry, which in turn is influenced by government policy (especially border measures) for that industry.

3. FEDERAL AND PROVINCIAL PROGRAMS AND POLICIES

- In addition to relatively high tariff protection, import restraints on some textiles and similar but more extensive protection for its major customer (clothing), government financial assistance to the textile industry is available through the Canadian Industrial Renewal Board (CIRB). Since its inception in 1981 to May 1985 \$111.1 million in contributions have been committed to textile companies. Also, assistance to workers in the textile, clothing and footwear industries to May 1985, has amounted to \$39.6 million under CEIC adjustment measures for workers from both regular CEIC programs (placement, institutional and industrial training, mobility assistance, work-sharing, etc.) and special CEIC programs (enhanced training allowances, enhanced mobility assistance, wage subsidies and special job creation in specific communities). As well, for the textile and clothing industries \$51.4 million has been paid under Labour Canada's Labour Adjustment Benefit Program covering pre-retirement benefits.

4. EVOLVING ENVIRONMENT

- If imports, notably clothing, are allowed to continue increasing substantially faster than the market, activity in apparel textiles (40% of total output) will be significantly affected. Combined with continued productivity improvements, the result will be a marked decrease in textile employment.

5. COMPETITIVENESS ASSESSMENT

- The Canadian textile industry is competitive in the domestic market, with current tariff protection and favourable exchange rates, vis-à-vis imports from the U.S. (the major competitor) and other developed countries. Its sensitivity to changes in exchange and tariff rates is high.
- Due to the increasing capital intensity of production, the industry is generally competitive with low-cost countries, except in a few labour-intensive sub-sectors. However, to the extent that a substantial portion of its output is destined for the clothing industry which is not competitive with low-cost sources and relies on border measures, the textile industry is influenced indirectly.

by these measures. This situation is common to all developed countries which have negotiated bilateral quantitative restraints on imports of clothing and textiles from low-cost countries under the Multi-fibre Arrangement (MFA).

- The technology used in the most modern Canadian plants is on par with that used in other developed countries, and the industry has increasingly adopted the latest available technology. However, this poses a dilemma in that the most advanced technology dictates very long runs of a limited variety of products for production to be economical, while customers (particularly the apparel industry and ultimately the consumer) demand a large variety in small quantities. The small size of the Canadian market thus prevents efficient production of a wide variety of products.
- Despite the high degree of concentration in fabric weaving, yarn spinning and man-made fibres, a number of sub-sectors (e.g. knitted fabrics, hosiery) remain highly fragmented.
- Continuing technological advances are expected to lead to further rationalization and consolidation in the industry, as small, marginal and inefficient producers will likely be either forced out, or forced to merge so that they can reach the minimum economic size of operation required to justify this costly technology.

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APPROVED BY:

Director General

FACT SHEET

TEXTILE SECTOR

S.I.C. - 181 to 189, 231, 239, 3391

<u>1. Principal Statistics</u>	<u>1973</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1982(e)</u>	<u>1984(e)</u>
Establishments	1,085	1,101	1,095	1,130	1,110	1,110
Employment	91,741	80,706	79,529	69,713	74,400	75,100
Shipments (\$ million)	2,625	5,175	5,884	5,203	6,105	6,439
Exports (\$ million)	157	424	474	431	429	522
Domestic Shipments (\$ million)	2,468	4,751	5,410	4,772	5,676	5,917
Imports (\$ million)	866	1,643	1,868	1,546	1,928	2,221
Canadian Market (\$ million)	3,334	6,394	7,278	6,318	7,604	8,138
Exports - % of shipments	6.0	8.2	8.1	8.3	7.0	8.0
Imports - % of Domestic Market	26.0	25.7	25.7	24.5	25.4	27.0

<u>2. Regional Distribution-1982</u>	<u>Quebec</u>	<u>Ontario</u>	<u>Other</u>
Establishments - % of total	40	42	18
Employment - % of total	49	45	6
Shipments - % of total	48	46	6

<u>2a. Foreign Trade (\$)</u>	<u>U.S.</u>	<u>E.E.C.</u>	<u>Other Developed</u>	<u>Low-Cost</u>
Imports - % of total 1981	59	14	8	19
1982	57	15	8	20
1983	55	15	8	22
1984	51	18	7	24
Exports - % of total 1981	32	18	18	32
1982	40	15	16	29
1983	48	12	4	36
1984	54	10	4	32

3. Major Firms:

<u>NAME</u>	<u>OWNERSHIP</u>	<u>PLANT LOCATIONS</u>
1. Dominion Textile Inc.	Canadian (MNC)	Various Quebec and Ontario
2. Dupont Canada Inc.	U.S.	Kingston, Ont., North Bay, Ont.
3. Calanese Canada Inc.	U.S.	Drummondville, Qué., Millhaven, Ont.
4. Peerless Carpet	U.S./Canadian	Actonville, Quebec

4. Federal and Provincial Government Programs

<u>PROGRAM</u>	<u>TYPE</u>	<u>AMOUNT</u>	<u>PURPOSE</u>
C.I.R.B. Import Restraints	Financial Regulatory	\$108 million	Restructuring Adjustment

(e) Estimates

Textiles, Clothing and Footwear Directorate
Office of Industrial Adjustment
April 23, 1985

COMPETITIVENESS PROFILE

CLOTHING SECTOR

STRUCTURE AND PERFORMANCE

a) Structure

The clothing industry in Canada consists of firms that make apparel for consumers as well as industrial and institutional users. Its major sub-sectors are: men's wear, women's wear, children's wear, fur goods, foundation garments, other knitting mills (sweaters, T-shirts, underwear, gloves) and miscellaneous clothing.

While the sweater, T-shirt and underwear sub-sectors are generally vertically integrated, knitting garments from yarns, most sub-sectors purchase fabric from upstream mills and cut, sew and finish garments. The clothing industry, therefore, is an important customer of the Canadian textile industry and utilizes about 40 percent of its output. In a few cases there are also forward linkages where garment manufacturers are also actively involved in retailing.

The industry comprises 2,268 establishments of which about 500 are contractors (there are a number of additional contractors and home workers not reported by Statistics Canada). Overall, the industry employs 99,900 workers and its shipments were nearly \$4.8 billion in 1984. The 94 largest establishments (200 and more employees) employed 29,900 (30 percent of total employment).

Ownership is predominantly Canadian with 35 foreign-owned companies (0.2 percent of total firms). However, foreign-owned firms tend to be larger than the average and account for an estimated 10 percent of total industry shipments. These firms tend to be concentrated in, and in some cases, dominate, jeans, men's and boys' shirts, foundation garments and the work gloves sub-sectors.

Fabric inputs account for 35-40 percent of the clothing industry's value of shipments and roughly 50 percent of the Canadian industry's fabric usage is imported.

The industry's location, mostly in Quebec and Ontario (91 percent of establishments and 87 percent of employment) is primarily in large urban centres such as Montreal and Toronto. Geographic concentration is a phenomenon of the clothing industry world wide and manufacturing tends to be close to major markets and to pools of semi-skilled labour.

b) Performance

Real domestic product of the clothing industry rose by 20 percent between 1971 and 1981. The recent recession, however, resulted in a decline of 13.5 percent in real domestic product in 1982. In comparison, real domestic product for overall manufacturing was off 11.4 percent in 1982 while sectors such as furniture and fixtures (21.9 percent), non-metallic mineral products (19.1 percent) and primary metals (18 percent) declined considerably.

In the meantime, some improvement in the clothing industry's position has occurred with RDP advancing in 1983 by 12.4 percent and by a further 4 percent in 1984. In this cyclical pattern the clothing industry's RDP currently stands at or near its 1980 level. Over the past decade as a whole, the pattern of growth varied considerably but averaged less than 1 percent per annum. In the period between 1973 and 1978 the average annual growth rate was 2.2 percent, but between 1978 and 1984 RDP actually increased at an average annual rate of 0.2 percent.

Over the period 1973-84 employment in the clothing industry declined by 19,180 workers. This loss of 16 percent of the industry's employment appears to be, in part, the result of some improvement in productivity and, we suspect, the trend of contractors to make greater use of home workers.

The clothing industry has generally maintained its profit position, operating costs and long term debt/equity position over the past ten years. The long term debt to equity ratio in clothing has remained relatively high in view of its lower fixed assets and reliance on credit. The industry's relatively small share of total manufacturing capital expenditures reflects the labour intensity of production. Annual investment levels in clothing peaked in the early 1970s, remained essentially unchanged throughout the 1970s and during the recent recession fell to historic lows. After tax profit on capital employed by the clothing industry has, however, remained higher than that of all manufacturing.

INDUSTRY STRENGTHS AND WEAKNESSES

a) Structural

The Canadian clothing industry is highly fragmented with 74 percent of all establishments employing less than 50 employees. This low degree of concentration is not unlike the industry structure in other developed countries such as the United States where 70 percent of all establishments have 50 employees or less. A major factor in fragmentation of production is the ease of entry, related to use of traditional technology and low capital costs.

Opportunities for significant economies of scale in the clothing industry are limited primarily by high labour intensity of production (24 percent versus 13 percent for all manufacturing) and exacerbated by the lack of standardization in apparel production. Nevertheless, the small scale of many firms, particularly those in women's wear, allows for flexibility in solving customer needs where style and delivery are important in a market where changes occur rapidly.

Historically, little or no change in structure has taken place in the industry as a whole. Since 1973 the number of manufacturing establishments has declined marginally (by 42 to 2,235 in 1982) and the large number of establishments with fewer than 100 employees (89 percent of all establishments) still account for a substantial volume of shipments (52 percent). Small family-owned firms continue to make up the vast majority of establishments in the industry.

The industry's regional concentration, primarily in large urban centres such as Montreal and Toronto, has traditionally allowed it ready access to pools of low and semi-skilled labour. Efficiencies in marketing domestically produced apparel are also realized from the concentration of apparel production in these urban areas where most retail buying occurs.

b) International Trade Related Factors

Canada, as with most developed countries maintains high tariffs (25 percent for clothing versus 9 percent for all manufacturing) in addition to quantitative restraints covering over 80 percent of apparel imports. Canada's bilateral restraint arrangements (currently with 21 low-cost and state-trading countries) have been negotiated within the Multi-Fibre Arrangement which provides the international framework for regulating trade in textiles and clothing.

Overall, the clothing industry enjoys more certainty than many other industries in regard to import competition in that imports have been controlled to some degree since the 1960s. However, within this system there have been two major periods of uncertainty because of unforeseen developments in the clothing market (1976 and 1982-84) primarily related to fashion swings when imports increased substantially.

The trend in international trade in apparel products has been for low-cost countries to increase their share of world exports (from 10 percent in 1955 to 48 percent in 1982). Low-cost and state-trading countries have put considerable emphasis on developing clothing industries primarily geared to exporting. With comparative labour cost advantages, (e.g. for clothing \$1.80 hourly wage in Hong Kong versus \$7.28 in Canada), these countries have put increasing competitive pressure on the domestic industries of developed countries. Newly industrialized countries (NICs) such as Hong Kong have also upgraded their products and are now competing with medium to higher priced merchandise produced by developed countries.

While exports account for some 6 percent of overall Canadian shipments, export opportunities are concentrated in fur apparel and outerwear which account for 49 percent and 21 percent, respectively, of total industry exports. In the case of furs, exports account for 42 percent of this industry sub-sector's production and in the outerwear sub-sector about 20 percent. The United States is Canada's primary export market accounting for more than 82 percent of all clothing exports. The ornamentation clause of the U.S. tariff which applies higher duties (as much as 42.5 percent) to apparel with non-functional characteristics such as epaulets is a major barrier to increased non-fur apparel exports. More stringent application of country of origin regulations on textiles and clothing entering the United States is a recent measure which could have an impact on Canadian apparel manufacturers who export to the U.S.A. utilizing imported yarns and fabrics. Other international activities such as the anti-trapping and anti-fur campaign in the EEC have contributed to a substantial decline in Canada's fur apparel exports to that market. However, increasing advantages in terms of cost, improved quality and styling of products as well as a more favourable exchange rate have generally benefited Canadian exporters as evidenced by a rise in fur apparel exports to the U.S. from \$34 million to \$107 million over the period 1981-84.

The potential for trade liberalization initiatives with the United States has recently been examined in the context of a sectoral approach to free trade in textiles and clothing. The main findings of a Textile and Clothing Board study were that: structural characteristics of industries in both countries are similar, Canadian textile and clothing industries are generally at a competitive disadvantage to their U.S. counterparts, elimination of customs duties on fabrics and other supplies would not have a dramatic impact on the competitiveness of Canadian clothing producers and there is a greater need in Canada than in the U.S. for a period of adjustment to a free trade environment.

Canada's competitive prospects at the individual clothing product level were highlighted to some degree in the report. It was indicated that Canadian producers are at a marked disadvantage in the manufacture of standardized products such as jeans, sport shirts, t-shirts and pyjamas but in contrast have a slight advantage in products with more of a fashion content such as ladies' sweaters, blouses and dresses, sportswear and men's suits.

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The clothing sub-sectors where Canada is indicated by the Board as having a slight advantage account for the bulk of overall industry shipments and since these are fashion products, there are indications that they have good prospects for medium term market growth. As many of these products would be regarded as ornamented under the U.S. apparel tariff and, consequently attract much higher duties, it is likely that Canada's competitive advantage could be even more preponderant. This view is also reinforced by the duty free entry of raw materials under such a scheme bearing in mind that Canadian manufacturers of fashion apparel rely to a considerable extent on imported yarns and fabrics.

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c) Technological Factors

New technology incorporating state-of-the-art computer-assisted equipment has been introduced in the early production stages, but sewing continues to be labour intensive. Canadian use of such technology compares favourably with that in place in other developed countries.

The application of new technologies (e.g. CAD/CAM, robotics, micro electronics, lasers) to the clothing industry offers the potential to transform that industry into a capital intensive one where developed countries can offset the low wage advantage enjoyed by low-cost countries and recapture their markets. As a result, ambitious, large-scale R & D programs aimed at applying new technologies to the clothing industry have been launched in the past couple of years by several developed countries with large budgets and with strong support by their governments.

In 1982, Japan initiated a nine-year R & D project with a budget of some U.S. \$60 million aimed at developing a fully automated sewing system. At about the same time, the U.S.A. embarked on an R & D project with the initial goal of producing an automated machine capable of sewing a man's coat sleeve, one of the most complex sewing operations. That research is sponsored by a group of apparel, textiles and fibre manufacturers, labour and the U.S. Department of Commerce. The budget grew steadily from U.S. \$400,000 in 1982 to reach \$7 million for 1985/86, with half of the funds coming from the U.S. government. The results were reported to be very encouraging and a prototype sewing system (involving moving sewing machines that are automatically directed by cameras and computers) was developed and tested in a factory. The research has since been expanded to cover other sewing operations and to reduce the cost of the prototype system. This revolutionary sewing system is expected to reach the market in the next three years.

In Europe, R & D work is carried out at two levels: the EEC level and the national level. The EEC's R & D project has a budget of \$15 million over four years and seeks to encourage cross-sector, cross-border research by providing up to 50 percent of the cost of approved research projects (i.e. the total cost will exceed \$70 million). At the national level, France, Germany, the U.K., Italy and Sweden are vigorously undertaking R & D in this field with substantial support from governments (except Italy). At a third level, Sweden, France and the U.K. are currently negotiating an agreement to participate in a new joint R & D program.

No R & D is performed in Canada at the present time in this field.

One major challenge of the push for automation in this industry is the need for great flexibility (to satisfy fashion/style requirements) to permit economic production of short runs of a wide variety of garments. Another key challenge is to bring down the cost of the new technology to within financial reach of the typically small clothing firms.

FEDERAL AND PROVINCIAL POLICIES

Government measures and policies as they impact on the clothing industry include relatively high tariffs, import quotas as well as CITA's sector firm and a labour adjustment assistance program.

In its 1981 Textile and Clothing Policy which was essentially a continuation of the adjustment emphasis of the 1970 Policy, the government sought to reduce reliance on special measures of protection through continued rationalization and restructuring of the industry. Since 1981, under the Sector Firms Program administered by CIRB, a total of \$71.9 (May 31, 1985) million in financial commitments has been made to clothing firms to improve their competitiveness of which \$19.1 million have been disbursed to date. In addition, some \$39.6 million in assistance to textile, clothing and footwear workers have been made under the CEIC adjustment measures for workers from both regular CEIC programs (placement, institutional and industrial training, mobility assistance, work-sharing, etc.) and special CEIC programs (enhanced training, allowances, enhanced mobility assistance, wage subsidies and special job creation in specific communities). Another \$51.4 million of assistance has been made under Labour Canada's Labour Adjustment Benefit Program covering pre-retirement benefits for textile and clothing workers.

EVOLVING ENVIRONMENT

For the next few years, modest annual average growth of the apparent Canadian market of some 1 percent is projected. Although the rate of import growth appears to be slowing from the extremes of the last couple of years, continuation of present trends in conjunction with anticipated gains in productivity are projected to cut employment in the clothing industry almost in half over the next ten years.

With the lapsing of Canada's bilateral arrangements at the end of 1986, there is a need to re-examine the future role of border measures. This is being done in the context of the impending renegotiation of the MFA and a key issue is whether Canada should continue to adhere to any revised MFA. In particular, a revised MFA should take into account Canada's position in world trade as an importer with a small domestic market and include various instruments to reduce short-term fluctuations in imports.

COMPETITIVENESS ASSESSMENT

The labour intensity of clothing production, coupled with such higher labour costs in Canada and other developed countries relative to low-cost countries (the major competitors), lead to the inability of all developed countries to compete in their domestic markets with low-cost imports (except in high fashion apparel) thus necessitating quantitative restraints on these imports which are negotiated bilaterally under the Multifibre Arrangement (MFA).

The Canadian industry is competitive in the domestic market with imports from developed countries (which in 1984 represented some 11% of the value of all imports) with current tariff and exchange rates. Industry's sensitivity to these rates is moderate. Certain products (fur and outerwear) are also competitive in the U.S. market (and to a lesser extent in Europe).

Although Canada's bilateral restraint agreements generally allow for annual growth of imports by some 6% in conformity with the MFA, this has largely not materialized in a systematic manner over the past decade. Rather, there have been large fluctuations in low-cost imports created by under filling the quota in a given year, followed by precipitous increase the following year (which is exacerbated by the flexibility provisions of the MFA). These large fluctuations cause serious problems for the Canadian industry and lead to strong pressure on Government to take drastic action, such as the imposition of a global quota under GATT Article XIX.

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The application of new technologies (e.g. CAD/CAM, robotics and microelectronics) to the clothing industry offers the potential to change this industry into a highly automated, capital intensive one in which developed countries could regain international competitiveness. This is the subject of large R&D programs launched in the past three years by the leading developed countries with strong support from Governments. This research is aimed at achieving flexible automation which renders the production of small quantities of a large variety economical.

APPROVED BY: _____
Director General
OIA

FACT SHEET

CLOTHING

1. <u>Principal Statistics</u>	1973	1980	1981	1982	1983(a)	1984(a)
Establishments	2,277	2,286	2,259	2,235	2,268	2,268
Employment	119,080	107,829	107,348	101,131	106,400	99,900
Shipments (\$ million)	2,064.9	4,276.6	4,523.3	4,370.8	4,507.0	4,798.3
Exports (\$ million)	115.1	230.2	263.7	241.9	219.6	289.1
Domestic Shipments (\$ million)	1,949.8	4,046.4	4,259.6	4,128.9	4,287.4	4,509.4
Imports (\$ million)	322.0	777.5	954.4	985.0	1,195.9	1,611.4
Canadian Market (\$ million)	2,271.8	4,823.9	5,214.0	5,114.1	5,483.3	6,120.8
Exports - % of shipments	5.6	5.4	5.8	5.5	4.9	6.0
Imports - % of Domestic Market	14.2	16.1	18.3	19.3	21.8	26.3

2. Regional Distribution (1982)

	Quebec	Ontario	Manitoba	Others
Establishments - % of total	68	23	4	3
Employment - % of total	59	28	7	6
Shipments - % of total	61	26	6	7

2a. Foreign Trade (\$)

	U.S.	E.E.C.	Other Developed	Low-cost
Imports - % of total				
1981	14	9	3	74
1982	13	9	3	75
1983	10	10	3	77
1984	8	11	3	78
Exports - % of total				
1981	45	23	22	10
1982	57	17	16	10
1983	73	11	11	5
1984	82	6	8	4

3. Major Firms

<u>NAME</u>	<u>OWNERSHIP</u>	<u>LOCATION OF MAJOR PLANTS</u>
1. Tan Jay International	Canadian(MNC)	Winnipeg
2. Dale's Inc.	Canadian	Montreal
3. Gilbert Peabody Canada Inc.	American	Kitchener, Sherbrooke
4. Canadian Lady Canadelle	American	Montreal, Quebec City
5. Great Northern Apparel Inc.	American	Hamilton, Cornwall
6. Algo Industries Ltd.	Canadian	Montreal

4. Federal and Provincial Government Programs

<u>**PROGRAM</u>	<u>TYPE</u>	<u>AMOUNT</u>	<u>PURPOSE</u>
C.I.R.S.	Federal	\$70 million in financial commitments	Restructure and modernize industry
Le Centre de Promotion de la Mode	Quebec	\$2.5 million over five years starting in 1984	Promote Quebec apparel products, designers and Montreal as fashion centre
Le Centre de Productivité	Quebec	\$1.5 million over three years starting in 1984	Promote productivity in Quebec apparel industry

(a) Estimates

* Clothing includes SICs 2392, 243, 244, 245, 246, 248 and 249

** Sector specifics only

COMPETITIVENESS PROFILE

Name of Sector: FOOTWEAR

1. STRUCTURE AND PERFORMANCE

Structure:

- The Canadian footwear industry covers all non-rubber footwear including those made of canvas and plastic. Its major products are women's shoes, women's high boots and men's shoes. In 1984, domestic shipments were an estimated \$727 million, exports \$52 million and imports \$460 million.
- The industry comprises 159 establishments located primarily in Ontario (48%) and Quebec (45%). The major footwear producing centres in Canada are Quebec City and surrounding area, Montreal, Toronto, and the Kitchener/Cambridge area. The industry is fragmented; with only 13 establishments (8%) employing 200 or more persons, and 76 establishments (47%) employing 50 or less. This size distribution is generally comparable to other OECD countries. The largest four and largest eight firms account for some 22% and 36%, respectively, of total shipments. In terms of overall manufacturing, the footwear industry represents less than 1% of production and employment.
- It is estimated that 95% of firms are Canadian owned and these account for approximately 86% of employment. Average hourly earnings in 1982 were 3.2% lower in Canada than in the U.S.

Performance

- Over the period 1973-84, employment fell by 326 (5%) to reach 16,000 in the latter year. Although the volume of production dropped 10% over that period, GDP (in constant 1971 dollars) increased by 22%. Imports grew very rapidly (more than quadrupled) and their share of the ACM in 1984 increased to almost 39% by value (from 16% in 1973), and in volume terms to 57% (from 47% in 1973).
- The relatively stable employment maintained during a period of falling production volume can be explained by the restructuring of the industry which has been ongoing since 1974. Canadian firms have been gradually upgrading their product lines by ceasing to produce non-leather sandals and jogging type footwear which compete directly with low-cost imports, and concentrating on the manufacture of more fashionable and higher quality leather footwear, which requires more labour input per pair but less labour as a percentage of the total value of the product.
- After tax profits on capital employed in the industry were less than the all manufacturing average from 1974 to 1977. However, this situation was reversed from 1978 to 1982, the latest period for which data are available.

2. STRENGTHS AND WEAKNESSES

a) Structural

With the restructuring that has taken place, the Canadian industry is competitive in the domestic market with

imports from other developed countries, but is at a disadvantage when competing with imports from Brazil (a major world supplier of leather footwear). This is due to the latter's low wage rates, government export subsidies and restrictions imposed on the export of hides.

- Medium to larger Canadian footwear establishments are generally similar in scale to their counterparts in other countries, although some larger firms in developed countries as well as in the Far East generally operate a greater number of establishments, each specializing in a relatively small number of product lines. Smaller Canadian firms are generally structured to compete only in the domestic market in which they rely on low overheads, quick response times and dependence on client marketing expertise.
- Canadian production (along with that of other developed countries) is heavily concentrated in leather footwear, reducing the disadvantage of higher wages in Canada relative to developing countries which specialize in non-leather footwear.

b) International Trade Related Factors

- Global footwear quotas in Canada have been in place since 1977 for four-year periods including extensions. The current quota is due to expire in November 1983.
- Canadian tariffs on most imports of footwear are currently 23.4% (MFN) declining to 22.5% by January 1, 1987. This compares with an 8 - 10% tariff rate by the U.S. on most of its imports. However, the U.S. also has a few tariff items where product descriptions could result in the possible classification of imports to much higher tariff rates [e.g. 37.5% for mocboots (a certain kind of winter boots) deemed to have a foxing-like band, up from 6%].
- Low-cost countries such as Taiwan and South Korea specialize in mass produced, inexpensive footwear, mainly non-leather, for the world market. These countries, producing footwear in high volumes, achieve economies of scale unattainable in Canada and against which the domestic industry is generally not competitive with its higher wage structure. South Korea is also emerging as a major world exporter of leather footwear.
- This low-cost import problem, which is experienced to varying degrees by other industrialized countries, is being exacerbated by the shift in the market from leather to cheaper non-leather footwear. This shift to less expensive material in effect amplifies the proportion of labour cost in the price of a shoe and thus increases the comparative advantage of lower wages enjoyed by low-cost countries.
- Domestic production is concentrated in medium to high-priced leather footwear where direct competition from low-cost countries (with the exception of Brazil) does not constitute a direct threat at the present time. However, this market segment is estimated to account for no more than half the Canadian market and, further, has been declining and will probably continue to do so in the foreseeable future.

- Thus, domestic producers are caught in a dilemma: on the one hand, they have to adjust towards more viable lines of production in which they can compete without special measures of protection (that is avoid head-on competition with low-cost imports in non-leather footwear and concentrate on leather footwear); on the other, the leather footwear market in which they are specializing is declining.
- The U.S. footwear industry is beleaguered by imports which capture about 64% of its apparent market in volume terms. The U.S. is by far the world's largest importer of footwear and there are currently no special measures of protection in place.
- The U.S. market is the most natural and most accessible market for Canadian exporters to penetrate. They have already succeeded in penetrating that market and can build on their success by intensifying their effort. There are presently two export consortia in the industry and another is in the formation stage.
- In 1984, imports of non-rubber footwear from the U.S. amounted to \$28 million or 6% of total imports, a minor increase from 1983. Canadian exports to the U.S., excluding ice skates, were valued to \$48 million, representing 92% of total exports. Thus Canada had a trade surplus with the U.S. in non-rubber footwear of \$20 million.

c) Technological Factors

- As evidenced by the continued high labour intensity of production in footwear, (in 1982 wages represented 23% of shipment value in footwear vs 13% for all manufacturing) the evolution of technology in the sector has been slow. Over the next ten years, however, it is expected that the application of robotics to shoe production and the further development of computerized machines and production controls in a multi-product environment will reduce the labour portion of total costs substantially.

d) Other Factors

- The industry is very sensitive to cattle hide prices which are traded on the international market and fluctuate widely in price.

3. FEDERAL AND PROVINCIAL PROGRAMS AND POLICIES

- In addition to high tariffs and global quotas on footwear, the government has provided assistance to the industry since 1973, formerly under the Footwear and Tanning Industries Adjustment Program and more recently (since 1981) under the Canadian Industrial Renewal Board. Generally, CIRB assistance takes the form of consulting and capital contributions to promote the restructuring of the industry. (CIRB contributions approved to May 1985 total \$22.6 million). Parallel to the assistance to individual firms, adjustment measures for workers, currently administered by Canada Employment and Immigration Commission (CEIC) on behalf of CIRB provides enhanced training, mobility and wage subsidies for displaced workers in the industry. As well, Labour

Canada provides pre-retirement benefits to older employees laid off as a result of industry contraction.

4. EVOLVING ENVIRONMENT

- Over the medium term the following factors are expected to affect the industry:
 - *modest market growth (1%) in pairage;
 - *a continuation of the switch from leather to non-leather footwear;
 - *the increasing popularity of athletic footwear which will continue to be supplied by low-cost countries;
 - *the application of new state-of-the-art technologies to footwear manufacturing will increase over the medium term;
 - *overall, low-cost imports will continue to grow and maintain pressure on the industry to restructure;
 - *Canadian producers will remain domestically oriented, although they may be able to increase their exports in the Northern U.S.A.

5. COMPETITIVENESS ASSESSMENT

- Canadian footwear management generally lacks international marketing expertise mainly due to the small size of the average firm which inhibits costly and sustained marketing efforts. Canada, however, has specialized to some extent in the production of winter and work footwear, and has earned a world-wide reputation for styling, quality, and ruggedness in these products, particularly in leather winter boots and work footwear.

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- Existing tariff levels alone, however, are not sufficient to offset the labour cost advantages of low-cost sources. While low-cost non-leather import pressures will continue for certain sub-sectors, there are significant business opportunities arising from past restructuring and specialization which have resulted in world class sub-sectors.
- In the medium term, domestic footwear firms must continue to upgrade product lines with greater emphasis on styling in order to remain competitive with the developed countries. Additionally, the introduction of new technologies as they become available, as well as more R & D expenditures must be accelerated. The fragmentation of the industry due in large measure to the ease of entry of new manufacturers and low capital cost requirements, will likely be reduced over time as the industry becomes more capital intensive.

PREPARED BY:

R. Hanna

APPROVED BY:

Director General or Director

FACT SHEET

N-RUBBER FOOTWEAR SECTOR

S.I.C. 174(i)

<u>Principal Statistics</u>	<u>1973</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983(e)</u>	<u>1984(e)</u>
Establishments(i)	164	162	158	162	159	159
Employment(ii)	16,826	15,496	16,494	14,355	15,200	16,000
Shipments (\$ million)(i)	286.3	619.7	704.4	651.0	578.1	779.4
Exports (\$ million)(iii)	18.4	36.9	35.9	49.3	46.8	52.1
Domestic Shipments (\$ million)	267.9	581.8	668.6	601.7	531.3	727.3
Imports (\$ million)(iii)	94.5	306.0	372.6	373.0	403.5	460.2
Canadian Mkt (\$ million)	362.4	887.8	1,041.2	974.7	1,034.8	1,167.5
Exports - % of shipments	6.4	6.0	5.1	7.6	6.9	6.7
Imports - % of Domestic Market	25.1	34.5	35.8	38.3	39.0	38.8

<u>Regional Distribution 1982 (i)</u>	<u>Quebec</u>	<u>Ontario</u>	<u>Others</u>
Establishments - % of total	45	48	7
Employment - % of total	43	54	3
Shipments - % of total	43	53	4

<u>Foreign Trade (\$)</u>	<u>U.S.</u>	<u>E.E.C.</u>	<u>Other Developed</u>	<u>Low-cost</u>	
Imports(iii) - % of total	1981	10	25	6	59
	1982	7	31	7	55
	1983	6	30	7	57
	1984	6	31	8	55
Exports(ii) - % of total	1981	75	19	4	2
	1982	83	11	4	2
	1983	86	10	2	2
	1984	92	6	1	1

Major Firms

<u>Name</u>	<u>OWNERSHIP</u>	<u>PLANT LOCATIONS</u>
1. Grab Industries Ltd.	Canadian	Mississauga, Ont.
2. Bata Ltd.	Canadian (MNC)	Battawa, Ont.
3. Susan Shoe Industries Ltd.	Canadian	Hamilton, Ont.
4. H.H. Brown Shoe Co. (Canada) Ltd.	U.S.	Richmond, Que.
5. Genfoot Inc.	Canadian	Montreal, Que.
6. Bastien Bros. Inc.	Canadian	St. Emile, Que.

Federal and Provincial Government Programs

<u>PROGRAM</u>	<u>TYPE</u>	<u>AMOUNT</u>	<u>PURPOSE</u>
C.I.R.B. Import Quotas	Financial Regulatory	\$22 million —	Restructuring Adjustment

- () S.I.C. 174, Shoe Factories. Excludes S.I.C. 1624 Rubber & Plastic Footwear.
 (i) Includes Rubber & Plastic Footwear. Excludes Ice Skates.
 (ii) Includes Waterproof Plastic and Utility, Fabric Tops, Footwear. Excludes Disposable Slippers.
 (iii) Estimates

COMPETITIVENESS PROFILE

Name of Sector: BREWERY SECTOR

1. STRUCTURE AND PERFORMANCE

Structure:

- The brewing industry (SIC 1131) produces lager, ale, porter, and stout, both bottled and draught. The industry focusses directly on consumers and the hospitality industry as its major customers. Key backward linkages are to the malting industry and to the packaging industry for bottles, boxes and labels.
- The Canadian brewing industry is dominated by three large companies: John Labatt Limited, the Molson Companies Limited and Carling O'Keefe Limited which together hold a 97% share of the domestic market. The first two are the largest and are Canadian owned, John Labatt by Brascan Limited (41% of common shares representing effective control) while majority control of The Molson Companies Limited is held by the Molson family. Carling O'Keefe Limited is 50.1% owned by the U.K. firm, Rothman's of Pall Mall. Several smaller regional breweries, and imported brands, accounts for the remaining 3% of the domestic market.
- While three major companies dominate the Canadian industry, the market is divided into provincial markets served by breweries in each province. This is due to provincial government regulations that require a brewer to maintain production facilities in a province if it wishes to market its brands there. The result is a tightly controlled, concentrated industry with production fragmented along provincial lines, limiting the economies of scale available to Canadian brewing operations and thus increasing their vulnerability to international competition.

Performance:

- In 1983 the Canadian brewing industry had total sales of \$1,843 million with shipments of approximately 21.8 million hectolitres. Industry shipments accounted for 5.4% of total food and beverage industry shipments in that year, and .9% of total manufacturing industries shipments. Employment in 1983 was approximately 13,000 representing a 5.3% increase from 1980. The brewing industry is significantly export oriented, with exports valued at \$157 million in 1983 and imports of only \$19 million, exclusive of licencing arrangements.
- Canada's major brewing companies are highly competitive and the industry has been profitable and had excellent financial reserves. However, in the face of shrinking demand, capacity utilization rates have dropped off to about 85% in recent years after several decades of constant growth, and profit margins and financial reserves have declined somewhat. As a result, competition for market share has intensified among the major firms with stronger advertising efforts, new packaging to appeal to consumer tastes and new products such as low calorie and low alcohol beverages. Among the most successful efforts has been the production, under license, of major U.S. brands to capitalize on the "spill over" advertising on U.S. television networks.

2. STRENGTHS AND WEAKNESSES

a) Structural

- While Canadian brewers are performing well in the current domestic regulatory environment, there are some structural weaknesses in the industry that could become apparent in a more internationally

integrated market. Brewing is an industry with very large economies of scale giving tremendous productivity advantages to those companies with high-volume operations. Canadian brewing companies are relatively small compared to the major U.S. brewers; in fact, industry analysts predict that the minimum viable size for brewing companies wishing to market nation-wide in the U.S. will soon be 20 million bbl. of output per year, although breweries concentrating on regional markets will survive at a lower level of activity. This indicates that Canadian producers could find themselves unable to compete in a continentally integrated market without substantial rationalization and expansion.

- Exacerbating the problem of a small domestic industry relative to that in the U.S., the operations of the major Canadian brewers are fragmented along provincial lines because of provincial regulations that effectively balkanize the domestic market. Significant regulatory barriers exist in each province to protect indigenous brewing operations. For example, provincial regulations require that a company must have a brewing establishment in the province before its products can be displayed in retail stores and this is why regional brands are generally available only in the province where they are brewed, although "out of province" beers can often be sold if a special surtax is paid. This system results in a fragmented market and limits the economies of scale available to the industry.
- Alternatively, the U.S. brewing industry is undergoing a major rationalization with companies competing very aggressively for market share in a slowly growing domestic market (0.5% in 1983). The two industry leaders, Anheuser-Busch and Miller Brewing, now control 54.5% of the U.S. market, while the second-tier companies such as Stroh, G. Heileman and Adolph Coors have been purchasing other brewing companies and marketing aggressively in an attempt to break out of traditional regional markets and capture more of the national market share.

b) International Trade-Related Factors

- The Canadian brewing industry is protected by an import duty rate of 15¢/gallon plus excise duty equivalent to the excise tax applied to Canadian brewery products. The U.S. imposes a duty on brewery products of 6¢/gallon plus appropriate excise duty. These tariff levels do not represent a significant barrier to trade. Rather, the Canadian industry is afforded greater protection by the provincially-controlled domestic distribution system which acts as an effective barrier to brewery products imported from outside the province, and by a pricing system favouring indigenous operations. In most provinces, the provincial government has a straight monopoly on the sale of alcoholic beverages, or has delegated some portion of that monopoly to domestic producers. The U.S. does not tend to have a similar system of distribution monopolies, making access to markets dependent on securing the appropriate importing agent.
- Because of protected provincial markets, Canada imported only \$19 million in brewery products in 1983 (exclusive of licencing revenue) while exporting \$157 million worth, of which over 99% is directed to the U.S. market. The major Canadian exporter is Molson (the second largest U.S. import) while Moosehead Breweries of Saint John, N.B. is also surprisingly strong in the U.S. (fourth largest imported brand). These brands are directed at the premium end of the U.S. market.
- In 1983, U.S. brewers shipped 177.5 million bbl. or 208.3 million hectolitres for domestic consumption, representing \$11.8 billion in sales and making it the largest brewing industry in the world. The industry currently has excess capacity of about 40 million bbl. - approximately double the total capacity of the Canadian industry - and brewers have been reducing prices to the point of selling some brands at prices below cost of production in an effort to keep plants occupied. In 1983, U.S. brewers spent an estimated \$700 million on advertising (more than the total value shipped by any single Canadian brewer), reflecting the increased aggressiveness of the major firms.

- Innovations in the brewing industry include the rapid introduction of "light" beers to appeal to more health-conscious consumers. The industry leader in this area is the Miller Lite brand, although Anheuser-Busch is rapidly expanding in the "light" beer market. Both Anheuser-Busch and Miller are investing in new plant capacity and are poised to grab 70% of the U.S. beer market by 1990. This will result in even greater over-capacity which could lead to more mergers in an effort to create more production efficiencies among smaller producers. Industry experts predict that no brewer under 20 million bbl. will survive the decade because of the economies of scale needed to compete in production and marketing on a national basis.

c) Technological Factors

The brewing industry generally employs mature technology, with advances coming mainly in the area of packaging. The major Canadian brewers have undertaken to install new high-speed bottling equipment in their larger plants, but the general uptake of this equipment is hindered by the small sizes of production runs.

Recently, the brewing industry has introduced innovative new products (low calorie and low alcohol beers) and a variety of packaging shapes and sizes in an effort to appeal to changing consumer tastes. This closely mirrors changes taking place in the U.S. brewing market.

3. FEDERAL AND PROVINCIAL PROGRAMS AND POLICIES

The federal government has no industrial development programs targeted specifically at the brewing industry.

EXEMPT 20(1)(4)(c)(d)

The major governmental influence exerted on the industry is that of the provincial governments which control licensing, pricing and distribution within their jurisdictions. The provinces have used these powers to effectively balkanize the Canadian market, thereby reducing economies of scale in the industry.

The brewing industry feels that tax levels have reached the point where they are having a significant depressing impact on demand. Generally in Canada, some 50% of the retail selling price of beer is accounted for by federal and provincial taxes, while comparable taxes in the U.S. make up only 16% of the retail price.

4. EVOLVING ENVIRONMENT

The key to understanding the future outlook for the brewing industry is found in the shifting importance of various demographic age groups. The aging of the "baby boom" generation will have a strong effect on overall consumer preferences. For brewers, the decline in the size of the 21-35 age group will severely restrict growth prospects. In fact, demand growth is already sluggish and a decline in overall consumption could result from the aging of this largely beer-drinking group.

There are also strong indications that the next 5-10 years will see an increasing health-consciousness among North American consumers. Low calorie and low alcohol beverages may benefit from these trends at the expense of other products. Current concerns regarding drinking and driving have prompted several U.S. states to raise their legal drinking age. If this trend becomes widespread, a considerable number of potential consumers could be removed from the market. As well, Canadian jurisdictions are becoming increasingly concerned with this issue, as demonstrated by Ontario's recent ban on "happy hours" promotions.

As a result of the above factors, market demand in the brewery sector in both Canada and the U.S. will grow only slowly in the coming years, leaving both countries with overcapacity for the foreseeable future. This will

lead to increasingly aggressive marketing and some rationalization, especially in the U.S. market. As noted before, industry analysts predict that the minimum viable size for brewing companies in the U.S. will soon be 20 million bbl. of output per year; therefore, the trend among U.S. brewers is to national distribution and aggressive marketing in an effort to boost market share.

Over the coming years, Canadian brewers expect that the prospects for continued growth in profits and shipments are limited. The major brewing companies, recognizing this trend, are using profits to diversify into other interests, such as food, communications and professional sports franchises, and to intensify exports in the U.S.

5. COMPETITIVENESS ASSESSMENT

Within the current regulatory environment that favours indigenous producers, the Canadian brewing industry is very competitive, with the three major firms competing fiercely for market share in a stagnant domestic market. The major firms have also increased their exporting efforts in an attempt to increase capacity utilization.

Restrictive provincial regulations have resulted in an industry structure fragmented along provincial lines. This has made many Canadian operations vulnerable to a much larger and rationalizing U.S. industry should the regulatory environment change drastically. Nonetheless, the industry is currently strong and profitable because of its protected status, and the major firms are using it as a base from which to diversify into other business opportunities.

Adjustments required to make the industry more competitive include:

- 1) the elimination of barriers to inter-provincial trade in brewery products, thereby allowing national brewers to rationalize their operations and regional brewers to more readily penetrate national markets.
- 2) extensive rationalization will be required to increase economies of scale should trade be liberalized with the U.S., with the potential employment loss mainly in the Atlantic and Prairie provinces; and
- 3) greater penetration of the large U.S. market by Canadian brewers to compensate for a stagnating domestic market and to increase production volume and economies of scale.

The elimination of inter-provincial barriers to trade would require extensive negotiations with provincial authorities.

EXEMPT.
20(1)(c)(d)

Prepared by: [Signature]

Grocery Products Division

Approved by: [Signature]

Food & Consumer Products Industries
CCSRP

BREWING INDUSTRY

<u>PRINCIPAL STATISTICS</u>	<u>1971</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>
Establishments	44	41	40	40	40
Employment	11400	12342	12637	12938	13000(E)
Shipments (\$000,000's)	438	1206	1444	1668	1843
Exports (\$000,000's)	11	105	123	145	157
Domestic Shipments (\$000,000's)	427	1101	1321	1523	1686
Imports (\$000,000's)	2	25	19	13	19
Canadian Market (\$000,000's)	429	1126	1340	1536	1705
Exports - % of Shipments	2.5	8.7	8.5	8.7	8.5
Imports - % of Domestic Market	0.5	2.2	1.4	0.8	1.1

<u>FINANCIAL STATISTICS (4th Quarter)</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>
Profits after Tax (\$000,000's)	136	160	198
Retained Earnings (\$000,000's)	591	700	852
Debt/Equity ratio	1.37	1.25	1:14
Return on Equity (%)	27	27	27
Return on Fixed (Net) Assets (%)	30	32	36

<u>REGIONAL DISTRIBUTION - 1982</u>	<u>ATLANTIC</u>	<u>QUEBEC</u>	<u>ONTARIO</u>	<u>WEST</u>
Establishments - % of total	20	7.5	27.5	45
Employment - % of total	8	37	31	24
Shipments - % of total	9	29	39	23

<u>FOREIGN TRADE</u>	<u>U.S.</u>	<u>EEC.</u>	<u>ASIA</u>	<u>OTHERS</u>
Imports - % of total 1981	53	45	16	1.4
1982	32	61	7	6.3
1983	47	46	2	5
1984(E)	45	48	2	5
	<u>U.S.</u>	<u>EEC.</u>	<u>ASIA</u>	<u>OTHERS</u>
Exports - % of total 1981	99	.6		
1982	99	.4		
1983	99.5	.1	.1	.3
1984(E)	99.4	.2	.1	.3

<u>MAJOR FIRMS</u>	<u>LOCATION</u>	<u>OWNERSHIP</u>
The Molson Companies Ltd.	Que., Ont., West	Canadian
John Labatt Limited	All regions	Canadian
Carling O'Keefe Ltd.	All regions	U.K.
Mooshead Breweries Ltd.	Maritimes	Canadian

(E): Estimate

COMPETITIVENESS PROFILE

Name of Sector: DISTILLERY SECTOR

1. STRUCTURE AND PERFORMANCE

Structure:

- The Canadian distilling industry (SIC 1121) produces most types of distilled spirits, in particular Canadian whiskey, rum, vodka, gin, liqueurs, brandy and raw ethyl alcohol. Like most consumer products, the individual consumer is the focus of the industry's marketing, although a great deal is also sold through the hospitality industry. Key backward linkages are to the packaging and grain milling industries.
- In 1983, there were 32 distilleries in the industry; the number of establishments has remained fairly constant at 29 to 34 over the past 10 years. The Canadian distilling industry is dominated by two Canadian-owned multinationals, Joseph E. Seagram and Sons Ltd., and Hiram Walker and Sons Ltd., which have world-wide holdings in the distillery and winery sectors.
- Concentration levels in the distilling industry are among the highest within the food and beverage sector. Statistics Canada reported that in 1974 the 4 largest corporations accounted for 82.6 percent of shipments and the 8 largest for 95.9 percent. These figures were 74.9 percent and 94.5 percent respectively in 1980. Some rationalization seems to be occurring, as demonstrated by the recent purchase of Melchers Canada Co. by Seagram.
- Foreign ownership in the distilling industry is less than in the total food and beverage sector. In 1976, Statistics Canada reported that 46.6% of plants and 30.6% of shipments were under foreign control. These statistics reflect the fact that the majority of the firms including the two largest, Seagram and Hiram Walker, are Canadian-owned.

Performance:

- The distilling industry in 1983 had total shipments of \$763 million, a 2.5% decline from 1981 levels. However, the industry is highly export oriented, with exports in 1983 of \$355 million, 97% of which went to the U.S. market. In terms of volume, Canadian producers shipped 16.9 million cases, or 1.5 million hectolitres, in 1983. Imports of distilled spirits were \$132 million (4.2 million cases) of which 9% came from the U.S., 69% from the EEC and 22% from other countries. In 1971, the distilling industry accounted for 1.5% of Canada's manufacturing exports, but by 1983 this had declined to only 0.6%. However, the industry still contributes approximately 9% of food and beverage exports, while accounting for only 2.2% of sector shipments.
- The major Canadian distillers are mature and financially strong, although recent acquisitions combined with high inventories due to declining demand have depleted some of these companies' financial resources. Profits and retained earnings declined substantially in the 1981-1983 period, while the industry's overall debt/equity ratio doubled from .59 in 1981 to 1.2 in 1983, peaking at almost 1.5 in 1982.
- The volume of distilled spirits consumed has been declining significantly in recent years, although population trends would indicate that it should be growing at a moderate pace. Consumer tastes have shifted away from "dark" spirits (whiskey, dark rum, etc.), but this alone cannot fully explain lower trends in consumption. Due mainly to federal excise federal and provincial

taxes, retail prices for Canadian whisky have risen 45% since April 1981, drastically reducing domestic demand and pricing many premium quality brands out of the market. The results include capacity utilization of less than 50% and a weakened contribution by the industry to the national economy.

2. STRENGTHS AND WEAKNESSES

a) Structural

- Canadian distillers have a solid world-wide reputation for quality and are very competitive in our major export market, the United States. Both Seagram and Hiram Walker have world scale distilling plants in both countries, with excellent economies of scale.
- Production facilities range in size from plants employing 4 people or fewer to plants employing up to 1,000. That there are substantial economies of scale in production is evidenced by the fact that the 8 plants employing more than 200 people account for 64% of industry shipments.
- Vertical and horizontal integration is not a significant factor in the industry. However, the large distilling companies have made an effort to diversify their holdings in recent years, and some of the smaller distillers are slowly following in the same footsteps. Some of this diversification has been into another segment of the alcoholic beverage area - wine.
- Many of the distilleries have diversified their interests to differing extents. For example, Seagram has a major investment in E.I. du Pont de Nemours & Co. of the United States in addition to wine interests; Hiram Walker has major investments in the oil and gas industry. Other smaller distilleries have followed a similar course; for example, Potlatch Distilleries Limited now has a wine subsidiary, Beaupré Wines (Canada) Ltd.

b) International Trade Related Factors

- Canadian tariff duties applied to distilled spirits range from \$1.34/gallon proof for whiskey to \$1.38/gallon proof for rum. Some distilled spirits not produced in Canada, such as tequila, may enter duty free. U.S. tariffs on distilled spirits range from 39¢/gallon proof for Scotch and Irish whiskeys to \$3.40/gallon proof for some brandies. Appropriate excise duties are also applied in both countries. These tariffs do not appear to have hindered the trade of distilled products between the two countries.
- The distribution monopoly held by the provincial governments acts as a significant non-tariff barrier to trade by limiting the number of brand listings available to U.S. distillers, thereby restricting access to the Canadian market. The U.S. distilling industry is very vocal in its complaints about its limited opportunity to compete, although similar state-run monopolies exist in 18 states, called control market areas, which tend to discourage the sale of Canadian bottled whiskey in favour of U.S.-bottled Canadian whiskey. The elimination of these market barriers could improve the outlook for the Canadian industry somewhat, while it is unknown what effect increasing the number of U.S. brand listings in Canadian markets would have on domestic distillers.
- Conditions in the U.S. distilling market bear some resemblance to those in Canada. The industry is being faced with decreasing demand, while dark liquors lose market share to white goods (vodka, gin, white rum, etc.) and to specialty liquors such as brandy, cordials and sweet pre-mixed drinks.

- In 1983, the total U.S. consumption of distilled spirits was 157 million cases, a 5.5% decline since 1979. Surprisingly, consumption of imported Canadian whiskey increased slightly over the period, faring much better than U.S. whiskeys and other imports such as Scotch. The resilience of Canadian whiskey was mainly due to the increased imports of "bulk Canadian" whiskey to be bottled in the U.S. This has resulted in an extended variety of brands and price levels providing consumers with a wide range of choice. In 1983, the less expensive, so-called "bulk-brands" accounted for over 64% of Canadian whiskey sales in the U.S.

c) Technological Factors

- The Canadian distilling industry is as sophisticated technologically as its major competitors. Technology development in the industry currently stresses modernization of plants to achieve lower cost production as well as product development. Packaging is a concern since usage of glass bottles is very expensive; there has been some consideration of usage of PET (plastic) bottles but the general feeling seems to be that image concerns and the associated cost of new bottling lines would delay any early acceptance of this technology.
- Product innovation in the distilling industry is concentrating on developing new, sweet tasting products to appeal to younger drinkers. Much of the emphasis has been on cream based liqueurs in an attempt to copy the recent success of Bailey's Irish Cream.

d) Other Factors

The distilling industry is very sensitive to high and fluctuating interest rates. For example, whiskey must age for a minimum of three years before being packaged and sold and therefore must be carried as inventory. This ties up a distilling company's working capital, making it more vulnerable to changes in the capital markets.

3. FEDERAL AND PROVINCIAL PROGRAMS AND POLICIES

The major constraining factor on distilling sector growth and viability, as viewed by the industry, is the high level of government taxation on their products. The total impact of federal and provincial taxes and mark-ups on the end price of distilled spirits is extremely large. The industry estimates that over 80% of the retail price of spirits in provincial liquor board outlets is accounted for by mark-ups and taxes. By comparison, all taxes in the U.S. account for less than 50% of the retail price of distilled spirits, although retail mark-ups are subsequently added by private retailers.

4. EVOLVING ENVIRONMENT

The key to understanding the future outlook for the alcoholic beverages industries is found in the shifting importance of various demographic age groups. The aging of the "baby boom" generation will have a strong effect on overall consumer preferences. The distilled beverages industry could experience some modest growth as older consumers switch to spirits and away from brewery products. In particular, rising affluence among "baby boomers" could trigger a resurgence in the dark spirits market, especially for upscale, premium-priced products.

There are strong indications that the next 5-10 years will also see an increasing health-consciousness among North American consumers. Low calorie and low alcohol beverages may benefit from these trends at the expense of other products. Current concerns regarding drinking and driving have prompted several U.S. states to raise their legal drinking age and have caused tougher restrictions in Canada, including the recent

elimination of "happy hour" in Ontario. If these trends become widespread, a considerable number of potential spirits consumers could be removed from the market.

North American demand for distilled spirits has been declining for several years, leaving Canadian plants vastly underutilized. While there may be potential for modest growth later in the decade, as a maturing population switches away from brewery products, it is doubtful that the industry's major companies will make substantial new investments in production capacity. Nonetheless, profits in the industry should remain reasonably strong and this income will be streamed toward new investment opportunities. For example, Seagram has invested heavily in U.S. and European wine production and is a major owner of DuPont, the chemical manufacturer; while Hiram Walker has become a major participant in the Canadian energy sector through Hiram Walker Resources.

5. COMPETITIVENESS ASSESSMENT

The key to competitiveness in the distilling sector is brand acceptance, availability and recognition, and in these areas the Canadian distilling industry is highly competitive internationally and has a world-wide reputation for quality. Seagram and Hiram Walker have world scale distilling plants with excellent economies of scale, and are very strong in the important U.S. market.

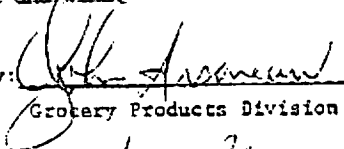
The volume of distilled spirits consumed in the North American market has been declining significantly in recent years. Shifts in consumer tastes have also caused a decline in the consumption of dark spirits, such as Canadian whiskey, in international markets. Nonetheless, the Canadian distilling industry is adapting quite readily and should remain competitive in the key U.S. market.

Adjustments required to make the industry more competitive include:

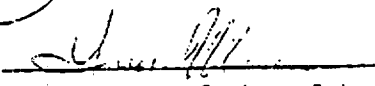
- 1) a rationalization of some production facilities to improve capacity utilization rates; and
- 2) increasing export marketing efforts to replace permanently lost domestic markets, not only in the U.S. where Canadian products are already well established, but also in offshore markets such as Japan, Europe and Latin America which are relatively unexploited by Canadian distillers.

The major Canadian distilling companies are well aware of market trends and have sufficient financial and market strength to exploit opportunities as they arise. The key difficulty facing the sector appears to be the very limited potential for new opportunities in the distilling business for the rest of the decade. As a result, both Seagram and Hiram Walker are extensively diversifying their business interests into chemicals, energy, real estate and wine.

Prepared by:


Grocery Products Division

Approved by:


Food & Consumer Products Industries
CGSRP

Department of Regional Industrial Expansion

DIST. - BEV SECTOR

<u>PRINCIPAL STATISTICS</u>	<u>1971</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>
Establishments	31	33	33	33	32(E)
Employment	6300	5509	5529	5282	5000(E)
Shipments (\$000,000's)	379	679	782	781	763
Exports (\$000,000's)	186	313	349	345	353
Domestic Shipments (\$000,000's)	193	366	433	436	408
Imports (\$000,000's)	39	125	140	131	132
Canadian Market (\$000,000's)	232	492	573	593	540
Exports - % of Shipments	49.1	46.0	44.6	44.2	46.5
Imports - % of Domestic Market	16.8	25.5	24.4	26.4	24.4

<u>REGIONAL DISTRIBUTION - 1982</u>	<u>ATLANTIC</u>	<u>QUEBEC</u>	<u>ONTARIO</u>	<u>WEST</u>
Establishments - % of total	6	27	42	24
Employment - % of total	2	28	55	16
Shipments - % of total	2	23	58	17

<u>FOREIGN TRADE</u>	<u>U.S.</u>	<u>EEC.</u>	<u>ASIA</u>	<u>OTHERS</u>
Imports - % of total 1981	9	72		19
1982	8	73		19
1983	9	69		22
1984(E)	8	70		22

	<u>U.S.</u>	<u>EEC.</u>	<u>ASIA</u>	<u>OTHERS</u>
Exports - % of total 1981	96	1	1	2
1982	96	1.5	1	1.5
1983	97	1	1	1
1984(E)	97	1	1	1

<u>MAJOR FIRMS*</u>	<u>LOCATION</u>	<u>OWNERSHIP</u>
Joseph E. Seagram and Sons Ltd.	All regions	Canadian
Hiram Walker and Sons Ltd.	Ont., B.C.	Canadian
Gilbey Canada Inc.	Ontario	U.K.
Corby Distilleries Ltd.	Ontario	Canadian

*Note: Estimates do not include foreign operations of the firms identified.

(E): Estimate

COMPETITIVENESS PROFILE

Name of Sector: WINERY SECTOR

1. Structure and Performance

Structure

- The Canadian winery sector (SIC 1141) produces a wide variety of red and white table and sparkling wines, and several new "wine cocktail" products. The wine industry is a vital customer for grape growers in Ontario and British Columbia, although approximately one half of the wine deemed to be domestically produced is made from grapes, juice or concentrate imported from the U.S., or is imported in bulk and merely bottled in Canada.
- There were 33 winery establishments in Canada in 1983, with operations concentrated in Ontario and British Columbia. The Canadian wine industry has five major firms, and a number of smaller producers. The two publicly-owned companies are Andrea Wines Limited and T.G. Bright and Co. Limited. In addition, there are three other majors, owned by companies involved in the food and beverage industry: namely Rideout Wines Limited (Chateau-Gai, Casabella) owned by John Labatt Limited; Jordan and Ste-Michelle Cellars Ltd., owned by Carling O'Keefe; and Calona Wines Ltd., owned by Nabisco Brands (Canada) Ltd. These five companies account for some 85% of wine produced in Canada, showing a high degree of sector concentration.

Performance:

- In 1983, the Canadian winery industry had total shipments of \$230 million, of which exports were \$1 million. Canada also imported \$164 million worth of wine in 1983, primarily from the EEC (87%) and the United States (7%). In 1982, Canadian consumers purchased 1,050,174 hectolitres of domestically produced wine, and an additional 1,110,912 hectolitres of imported wines.
- Canadian wines are finding increasing acceptance in the domestic market following a major shift in emphasis from sweet, sparkling "party" wines to higher quality table wines based on European and Californian style grapes and methods.

EXEMPT 15(1)

- Profits in the wine industry are generally lower than the food and beverage industry average due to small scale and changing products and processes. Investment in the industry by parent corporations over the past several years had been strong until the recent upsurge in imports from EEC producer countries. Nonetheless, the industry may be able to capture some import substitution opportunities provided quality continues to improve.

2. Strengths and Weaknesses

a) Structural

The Canadian wine industry is in a nascent stage of development

EXEMPT 15(1) The industry is centered in Ontario and British Columbia, where grape producers are dependent upon the winery for markets.

EXEMPT 20(c)(d)

As much as 50% of wine listed as domestically produced is merely bottled in Canada, or is made from imported grapes or concentrates. Because of the recent development of the industry in Canada, most Canadian wineries are not yet of sufficient scale to be cost competitive with the enormous wine-making facilities of California and Europe.

- The Canadian wine industry has shifted in recent years away from sweet sparkling wines to higher quality table wines based on European and Californian varietal grapes. However, the supply of high quality domestic grapes is erratic and twice as expensive as grapes imported from competing areas. This problem is exacerbated by the agricultural policies of the B.C. and Ontario governments that restrict the access of wineries in their provinces to imported grapes through marketing board supply management policies.

b) International Trade Related Factors

- The Canadian and U.S. tariff rates on wine are as follows:

	Canada	U.S.
Still wines	20¢/gallon	37.5¢ - 62.5¢/gallon
Sparkling wines	\$4.00/doz. bottles	\$1.19/gallon

EXEMPT.
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- Currently there is an international wine glut, caused primarily by EEC subsidies to grape producers that have resulted in increased production with no increase in domestic demand, and falling world prices as these wine surpluses are dumped in other markets. In addition, several years of bumper harvests in California's grape producing regions have compounded the world-wide oversupply. The major threat to the Canadian wine industry is this competition from low-priced wines imported from countries with large wine surpluses. The quality and competitiveness of Canadian wines is steadily improving, but the industry still requires some protection to compete successfully with subsidized producers elsewhere. As well, EEC and U.S. vintners have cost advantages due to larger scale operations, secure grape supplies and pricing advantages due to reputation and brand recognition.
- The U.S. wine industry currently has a 100 million gallon surplus from the record 1982 grape harvest in California, and is being hurt by the strong U.S. dollar and the importation of government-subsidized wines from Europe. This is a major problem because U.S. wine drinkers are more price-sensitive than brand-loyal with price wars pushing the cost of 4 litres of wine to as low as \$4. U.S. wine makers have filed a petition to the International Trade Commission charging EEC wine makers with illegally selling wine in the U.S. at prices below their production costs.
- Wine industry analysts are predicting 3% to 4% growth in U.S. wine consumption this year. However, with only 7% of the population consuming nearly two-thirds of all table wine sold, the potential for future growth is substantial. The wine industry in the U.S. is attempting to launch a co-operative campaign among vintners to promote wine consumption among non-drinkers.

- The Canadian-owned Seagrams company is a major marketer of wines in the U.S., ranking number two behind Gallo with a 11.2% share of the U.S. market, after purchasing The Wine Spectrum from Coca Cola Ltd. The U.S. market is highly concentrated, with the top four firms producing over 51% of U.S. wine. By far the largest is Gallo with a 27.7% market share, followed by Seagrams (11.2%), Heublein (6.5%) and Viller Banf (6.0%).
- Gallo, with a huge lead in market share, seems to be the best positioned to benefit from this growing market since it enjoys significant economies of scale; it has its own glassmaking and trucking operations to help control costs, and a subterranean aging facility with a capacity of 2.6 million gallons.

c) Technological Factors

- Research is currently being devoted to developing improved vinifera and hybrid grape varieties for planting in Canada. Some research on Flavour modification is also underway. More innovation is also being applied to packaging techniques, such as aseptic packaging and the "bag in a box" method. New wine-based beverages have also been developed to make use of surplus, lower quality wine. (e.g. "Canada Cooler")
- Wine-making is becoming increasingly industrialized, with capital intensive processes and large economies of scale. The adoption of larger scale operating plants would make Canadian wineries more cost competitive with international competitors but would require a stronger agricultural base. However, investment is slowly growing in line with increasing production, improved quality and marginally increasing profits.

d) Other Factors

- Recent exchange rates have improved the industry's competitiveness vis a vis U.S. competitors, but the strong Canadian dollar relative to European currencies has exacerbated the problem of subsidized production in the EEC. Increasing imports of French and Italian wine have made Canadian vintners more conservative in their plans for expansion.

3. Federal and Provincial Programs and Policies

In recent years, the industry has received federal government assistance under IRDP, EDP and IRAP for establishment, expansion/modernization and for innovation in both products and processes. Proportionately, program assistance has been highly innovation-oriented (\$1.2 million versus \$2.5 million for other purposes). However, programs have only a minor influence on the industry relative to that exerted by government regulation and provincial monopolies on distribution of alcoholic beverages.

The wine industry is closely regulated with influence from both levels of government. Federal government involvement covers such areas as excise tax assessment and regulation, labelling, competition aspects and advertising on radio and television. Metric Commission standardization and conversion requirements have also now been met.

Provincial government involvement in the industry covers media advertising regulations, grape marketing boards and liquor control boards. The Wine Content Act and grape marketing boards deal with the importation of grapes, requirements on the percentage of provincially-grown grapes to be used, and the importation of concentrates or wine for blending purposes. The liquor control boards determine listing policies, price mark-ups and shelf space, all of which directly affect retail availability and prices to consumers, as well as the distribution of wines and, indirectly, the return to the wineries.

Liquor commission mark-ups on wine differ significantly by province, by type of wine, by alcoholic strength and by origin. In general, those provinces that have a native wine industry apply favourable mark-ups to their own product compared to that of other Canadian provinces or other countries. Those without a native wine industry tend to apply more favourable mark-ups to Canadian products, with the exception of P.E.I. that applies the same mark-up to all types. The Newfoundland method of taxation depends on selling price for different types of wines. In all provinces, mark-ups are applied in addition to provincial sales tax from 7% to 11%, except for Alberta and N.W.T. where there is no sales tax. Prince Edward Island, in addition to its sales tax of 10%, has a health tax of 25%.

EXEMPT. 15(1)

The number of liquor control board listings also differs by province for Canadian and imported types. Those provinces with their own industry tend to have a higher number of domestic listings and total listings have increased significantly since 1960 reflecting both the increase in demand and supply. The ratio of the number of Canadian listings as a percentage of the number of imported wine listings for 1982 is indicated in the table below and gives a quick overall impression of how Canadian products compare to imports.

EXEMPT. 15(1)

NUMBER OF CANADIAN WINE LISTINGS AS A PERCENTAGE OF
NUMBER OF IMPORTED LISTINGS BY PROVINCE - 1982

<u>Province</u>	<u>%</u>	<u>Province</u>	<u>%</u>
Alberta	56	Northwest Territories	22
British Columbia	94	Nova Scotia	90
Manitoba	38	Ontario	76
New Brunswick	79	Prince Edward Island	70
Newfoundland	44	Quebec	53
Yukon	30	Saskatchewan	72

At the federal level, a basic sales tax of 12% is levied on total sales made by the manufacturer and is paid at the end of the month following the month of sale. The sales tax base is the final product price and thus already includes a significant excise tax burden. In addition, excise tax is levied depending on alcohol level as follows: wines with less than 1.2% alcohol, \$.0142 per litre; wines with alcohol content of between 1.2% and 7%, \$.1703 per litre; and wines with alcohol level of greater than 7%, \$.3548 per litre.

Because of the variety of taxes applicable to alcoholic beverages and the way in which they are levied, it is difficult to determine the relative total tax burden. A study by the Brewers' Association of Canada showed that the total tax per litre of absolute alcohol on spirits (40%) was \$28.05; that on table wines (12%) was \$23.85; on fortified wines (18%), \$15.85 and on beer (5%), \$13.60.

4. Evolving Environment

On the basis of changing demographic patterns and consumer trends, the prospects for increased wine consumption in Canada appear excellent. The growth of the table wine market indicates an increased willingness among consumers to drink wine with meals on a fairly regular basis, thereby expanding the consumer base considerably.

The industry requires a great deal more development if it is to compete with European and Californian vintners in the longer term. There are currently large surpluses of European wines, partially due to EEC agricultural policy, which, combined with California surpluses, will continue to put downward pressure on prices. Profits in the industry probably will not rise substantially in the next few years because of the price depressing effect of the current world glut in wine production. Costs of production are high in Canada due to the shortness of the growing season, lack of appropriate land for grape growing and overall climate factors. Although the quality of Canadian wine is improving, domestic producers will continue to face a pricing problem in coming years. Nonetheless, Canadian wine makers will need to make substantial investments in the coming years to improve production processes, increase efficiencies of scale to lower costs and to improve quality.

EXEMPT
15(1)

5. Competitiveness Assessment

EXEMPT 15(1)

Canadian wines are finding increasing acceptance in the domestic market following a major shift in emphasis from sweet, sparkling "party" wines to higher quality table wines based on European and Californian style grapes and methods, although the image that Canadian wines are of vastly inferior quality is still difficult to overcome.

EXEMPT
15(1)

Adjustments required to make the industry more competitive include:

- 1) increased production of high quality vinifera grapes for sale at a lower price, especially in British Columbia where the grape marketing board and land use policies combine to raise grape prices to about double the price of imported grapes;
- 2) effective expansion of the domestic market through lessening the restrictions on interprovincial trade in domestic wine and through active marketing campaigns by domestic producers; and
- 3) increased production scale to capitalize on improving plant efficiencies through larger grape harvests, or perhaps through increased grape imports.

Given the market incentives of expanding consumption and a freer domestic regulatory environment, domestic wine producers and their parent companies are fully capable of making the required investments to improve the competitiveness of the sector. The key inhibiting factors, however, tend to result from government intervention in the market to limit the free movement of domestic wines within Canada, and to increase the price of raw materials in an attempt to support the incomes of grape producers.

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CGSRP

WINERY SECTOR

<u>PRINCIPAL STATISTICS</u>	<u>1971</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>
Establishments	50	52	52	53	53
Employment	1200	1313	1385	1399	1300
Shipments (\$000,000's)	52	170	191	218	230
Exports (\$000,000's)	0	1	1	1	1
Domestic Shipments (\$000,000's)	52	169	190	217	229
Imports (\$000,000's)	15	168	169	199	164
Canadian Market (\$000,000's)	87	325	359	406	393
Exports - % of Shipments	0.3	0.5	0.5	0.5	0.6
Imports - % of Domestic Market	40.1	49.6	47.0	46.6	41.7

FINANCIAL STATISTICS

Because of the size of the industry, financial statistics are not available through Statistics Canada.

<u>REGIONAL DISTRIBUTION - 1982</u>	<u>ATLANTIC</u>	<u>QUEBEC</u>	<u>ONTARIO</u>	<u>WEST</u>
Establishments - % of total	9	27	30	33
Employment - % of total	3	14	50	33
Shipments - % of total	1	16	46	33

<u>FOREIGN TRADE</u>	<u>U.S.</u>	<u>SEC.</u>	<u>ASIA</u>	<u>OTHERS</u>	
Imports - % of total	1981	9	75		16
	1982	8	79		13
	1983	7	87		8
	1984(E)	7	88		5
Exports - % of total	1981	70	25		5
	1982	72	8		20
	1983	67	9	2	22
	1984(E)	73	5	2	20

<u>MAJOR FIRMS*</u>	<u>LOCATION</u>	<u>OWNERSHIP</u>
Andres Wines Ctds.	All regions	Canadian
T.G. Brights and Co. Ltd.	Que., Ont.	Canadian
Rideout Wines Ltd.	Atl., Ont., Prairies	Canadian
Jordan & Ste Michelle Cellars Ltd	Ont., B.C., Prairies	U.K.
Calona Wines Ltd.	B.C.	U.S.

*NOTE: Figures are rough estimates based on domestic market share and do not include the non-domestic operations of these firms.

(E): Estimate

COMPETITIVENESS PROFILE
Name of Sector: Commercial Printing

1. Structure and Performance

a) Structure

The industry is classified under S.I.C. 2811 and 2819. It is composed of establishments primarily engaged in the production of printed items, regardless of the printing method used. Integrated printing facilities in organizations such as insurance companies and governments, commonly referred to as in-house printing plants, are excluded. The industry produces a wide variety of consumer and industrial goods for all segments of the economy. The bulk of its output involves custom work. The industry is an integral part of the "Printing, Publishing and Allied Industries" sector. While a certain degree of interdependence is present between printing and publishing, there are notable differences in the structures and operations of these two industries.

It is estimated that in 1984, the Canadian industry comprised 2,875 companies that controlled 3,000 establishments, employed about 51,000 people and reported shipments valued at \$3.9 billion. Catalogues, circulars, price lists and other advertising matter represented the single largest product group, accounting for about one-fifth of the industry's output. The other dominant product groups were business forms (15 per cent) and periodicals printed for publishers (9 per cent). Finally, the industry has large indirect employment ramifications through the purchase of raw materials. For example, it consumes about 50 per cent of the Canadian production of printing, book and fine papers.

Although plants can be found throughout the country, the industry is heavily concentrated in Ontario and Quebec. While the industry provides important employment opportunities in smaller communities, printing activities tend to be concentrated in the areas of high population density. Plants located in the Toronto and Montreal metropolitan areas account for about half of the industry's shipments. The average printer tends to service its local market only.

The industry is characterized by the presence of a large number of small, relatively labour-intensive production units. There are no major barriers to entry into the industry at the small scale level. Roughly four-fifths of all plants employ fewer than 20 people but together they account for only 20 per cent of total shipments. At the other extreme of the scale, the 89 largest establishments, or about 3 per cent of the total, account for roughly half of the industry's shipments. At the company level, the four largest printers account for about 20 per cent of all shipments. Two of these firms are controlled by communications conglomerates.

The industry is primarily Canadian-owned with a strong tradition of family ownership. It is estimated that about 4 per cent of the plants are foreign-owned and/or controlled, primarily by American interests and to a lesser extent by British interests. These companies tend to be larger than average and collectively they account for about 15 per cent of industry's shipments. Non-resident ownership is most extensive in the greeting card and business form fields.

The industry is highly organized from a management viewpoint, through the Graphic Arts Industries Association. Its 697 active members account for about 75 per cent of the industry's shipments. The Association offers its members a broad range of educational programs and administers a scholarship fund. Over the years, it has played a major role in promoting the growth of its members and bringing their problems and views to the attention of governments in Canada.

The general structures of the Canadian commercial printing industry parallel those of its counterpart in most developed nations.

b) Performance

In response to generally favourable market conditions, industry's employment and shipment levels during the period 1974-84 expanded at average annual growth rates of 1.5 and 12.4 per cent respectively. In 1984, the industry has experienced a period of rapid growth following upon the recent economic recession. Concurrent with this growth has been the virtual disappearance of the overcapacity situation that had existed since early 1982. During the period

under review, the commercial printing industry has performed better than the manufacturing sector. For example, its share of all manufacturing shipments expanded from 1.5 per cent in 1974 to 1.7 per cent in 1984. Generally speaking, Canadian growth patterns in shipments and employment in the printing industry have paralleled those in the United States.

During the period 1974-84, exports of commercial printed products grew at a faster rate than domestic shipments increasing their share of the industry's total output from 2.2 per cent to 2.8 per cent. Imports expanded at the same rate than domestic production, as their share of the apparent Canadian market remained at 3.2 per cent. Nonetheless, the trade imbalance has grown from \$79.3 million to \$221.8 million. Canada's trade in this field is conducted primarily with the United States. In 1984, the United States took 87 per cent of our export shipments and supplied 93 per cent of our import requirements. In addition, foreign trade is conducted predominantly by the larger printers. The Canadian industry experiences its strongest competition in mass-produced items such as advertising materials.

The commercial printing industry has consistently performed better than all manufacturing in terms of before-tax profit on total income and after-tax profit on equity. As a general rule, small and large printing operations have done better than medium-size firms.

The potential market of the industry, worldwide, has been eroded increasingly in the last decade by in-house printing facilities. The equivalent value of in-house printing in Canada is estimated at \$250 million.

2. Strengths and Weaknesses

a) Structural

As in Canada, the United States printing industry comprises a large number of small businesses; where the Americans do have an advantage however, is in the relative size of their largest firms which simply dwarf the largest Canadian companies. For example, Lawson & Jones, the largest Canadian printer, reported revenue of Cdn \$259 million in 1983, compared to U.S. \$1.5 billion for its American counterpart, R.R. Donnelly & Sons. Small scale in Canada is primarily a reflection of the small size of the domestic market and its segmentation into two linguistic groups.

The commercial printing industry, worldwide, is basically a locally oriented industry, reflecting both the nature of the products and the supplier/customer relationships. As a result, transportation is not a significant cost element for the average printer. The manufacturing operations in the printing industry do not give rise to serious pollution or health problems. Most employment in the industry is in the skilled category. In the last few years, labour supply has not been a major problem area for the industry. Unionization is relatively high in the industry and it has been relatively free of strikes and other forms of labour strife. Many of the work stoppages that have taken place have occurred because the unions felt that the introduction of technological changes would alter or eliminate jobs. Paper and ink are the two major raw materials consumed by the industry. No critical sourcing difficulties have been experienced in the past few years, although some higher quality paper grades, such as coated web-stock, have been at times in tight supply.

While reliable statistics are not available to confirm it, it would appear that the Canadian industry operates under cost disadvantages vis-à-vis its American counterpart in the areas of fine paper prices, labour rates and productivity levels. On average, paper accounts for about 25 per cent of the final selling price of printed products. Prices for Canadian fine paper grades are between 10 to 20 per cent higher than they are for similar grades produced in the United States. Wages represent roughly 25 per cent of the industry's value of shipments. The Canadian printing industry historically has had a lower wage structure than its American counterpart, however, the difference in wages has declined in recent years and there are indications that in 1983 and 1984, wages in Canada were marginally higher. This is due to a large extent to higher inflationary pressures in Canada and the higher degree of unionization. Productivity level in the American industry is estimated to be 10 to 15 per cent higher than that in Canada owing largely to the more dominant market positions of larger scale

American printers and associated longer printing runs. However, given equivalent manufacturing facilities, Canadian printing labour is generally as productive as American labour. At present, these cost disadvantages are offsetted by relatively high Canadian tariff barriers and a favourable exchange rate.

As a general rule, the level of management sophistication in the Canadian printing industry increases with the size of the firm. In most instances, larger firms are managed by professionals who tend to employ effective management systems. Small firms tend to be owned by entrepreneurs with production or direct selling backgrounds and little experience in other functions. Consequently, managerial decisions are frequently made by instinct. However, it is generally recognized that, on an equivalent size basis, management characteristics are basically similar in both the Canadian and American printing industries.

b) Trade Related factors

Canada, like most developed nations, provides duty-free entry to periodicals, newspapers and books, whether supplied by publishers or printers. For most of the remaining printed products, Canadian tariff rates are usually higher than those in its main trading partners. With final implementation of the staged duty reductions coming under the MTN on January 1, 1987, Canadian tariff rates will average over 10 per cent compared to 5 per cent for the United States. Except for government procurement, there are no significant non-tariff barriers affecting Canada's trade in commercial printed products. Commercial printing is not covered by the MTN Agreement on Government Procurement.

c) Technological Factors

In terms of manufacturing processes, the commercial printing industry, worldwide, generally relies on suppliers of machinery and equipment to originate technological developments. Because of the existence of several competing printing methods, extensive on-going research and development programs are conducted by these suppliers in order to capture a larger share of the market. Most efforts in the last few years have been directed at further automating the processes and improving the speed and efficiency of machinery and equipment. These new and more sophisticated manufacturing technologies are available on a worldwide basis. As a result of these technologies, the industry is slowly shifting from a labour-intensive, craft-oriented activity to a capital-intensive, technology-oriented sector.

Generally speaking, the Canadian industry has kept pace with its counterpart elsewhere in the world in modernizing its manufacturing facilities. In particular, most large Canadian firms use state-of-the-art technology. For a number of reasons, including economic and market factors, the rate of implementation of technological innovations is much slower in smaller firms in Canada as well as in other developed countries. However, the relatively small size of the domestic market restricts the printing industry's ability to acquire some highly specialized and expensive technologies, such as in-line finishing equipment which necessitate very long print runs to be operated economically. With the notable exception of business form presses, manufacturing equipment used by the Canadian industry must be imported. Generally speaking, this equipment enters Canada duty-free.

3. Federal and Provincial Programs and Policies

Government involvement in the Canadian printing industry through special measures is modest. Instead, horizontal policies in the areas of taxation, tariffs, public procurement, postal distribution, culture and copyright and horizontal incentive programs, such as CIRB and IRDP (and its predecessor RDIA), are those that have had the strongest influence. The use of these incentive programs was restrained in 1983-84 because of a serious overcapacity situation within the industry.

Government departments and agencies at all levels, federal, provincial and municipal, are major users of print materials. For example, in 1984-85, the Department of Supply and Services purchased \$150 million worth of print materials on behalf of the federal government. On the other hand, the federal and several provincial governments are engaged in printing activities; at times, these activities have had an adverse impact on private sector printers.

It is estimated that about one-quarter of the printing industry's output is ultimately distributed through the postal system. Consequently, changes in postal rates and regulations and mail disruptions have an important influence on several segments of the printing industry.

In the last decade, governments in Canada have moved on several fronts to promote the growth of periodical and book publishing in order to reduce foreign cultural influence. Commercial printers in Canada have benefited from the strengthening of the publishing industry.

Many of the products manufactured by the commercial printing industry are subject to provisions of the Canadian Copyright Act. This Act is the legal expression of the rights granted by Parliament to creators to protect their works against unauthorized use. It came into force in 1924 and no major revisions have since been made. In 1984, the government issued a White Paper entitled "Proposals for the Revision of the Canadian Copyright Act". At present, this document is being examined by the House of Commons Standing Committee on Communications and Culture. Some of the changes contemplated, such as in the area of ownership of work originated by an employee, would impact negatively on the printing industry. On the other hand, other proposals to better protect creators would assist the publishing industry and in turn the printing industry. By way of comparison, the copyright law in the United States was completely revamped in the late-70's.

We commissioned Stevenson & Kellog in 1974-75 to undertake an in-depth study of the industry and we published a sector profile in 1977-78. Subsequently, an industry task force was established to review the profile and formulate recommendations for concerned action by government, industry and labour to improve the economic performance of the sector.

4. Evolving Environment

As indicated previously, the industry manufactures a wide variety of products. Market demand for these products is influenced by a complex and interrelated mix of factors, economic, demographic and sociological. In the medium term, some of the forces that contributed to the rapid growth of the industry during the seventies are expected to moderate to some extent, notably the rate of population growth, while others will continue to have a strong positive effect, such as the amount of leisure time. However, the next few years will bring to maturity a number of technological developments in non-print methods of transmitting and storing information, which will adversely affect some printed products. Overall, it is projected that Canadian demand over the medium term will grow at a somewhat more moderate level than in the seventies. Finally, the potential market should continue to be eroded by in-house printing plants.

On the international front, the United States should continue to offer relatively good potential for Canadian printers over the medium term on the basis of no significant changes in the value of the Canadian dollar. Conversely, import pressures from the United States are not expected to moderate. The competitive position of the industry would deteriorate should the Canadian dollar appreciate.

With the return of better market conditions in 1984, capital expenditures by the printing industry have picked up in the latter part of the year, placing the industry in a good position to capitalize on increased market demand in Canada and abroad. On the other hand, there is growing concern within the industry that the number of large printing presses that have been installed recently or that are planned, could result in overcapacity and price-cutting practices if the deacceleration of the North American economy over the next few years is stronger than currently projected.

Barring government intervention, it is anticipated that there will continue to be an ever increasing concentration of industry's shipments among the larger firms. Other than coated web-stock paper, no critical shortages of paper or other raw materials currently used by the printing industry are expected in the medium term. Similarly, the industry should have no major problem in attracting adequately trained workers. The industry is a small energy consumer and moderate increases in energy prices would not affect its competitive position. It is generally believed that no dramatic developments in manufacturing processes utilized by the industry are likely to occur during the next five years, and that the major emphasis will be on refining existing technologies. In particular, electronics and computers will continue to make rapid inroads into printing plants of all sizes bringing improved speed, efficiency and economy.

5. Competitive Assessment

The commercial printing industry worldwide is basically domestically oriented. Under the present tariff structure and exchange value of the Canadian dollar, the Canadian printing industry is able to compete with its American counterpart in spite of cost disadvantages in the areas of fine paper prices, labour rates and productivity levels. However, the tariff protection will be eroded gradually over the next few years as a result of the last MTN negotiations.

There is scope for improving the industry's level of international competitiveness through further rationalization and specialization and through access to adequate supplies of paper at internationally competitive prices. Otherwise, a number of firms, particularly at the medium-size level, will find it increasingly difficult to adjust to growing import competition. Furthermore, the industry should increase its efforts to identify and exploit export market opportunities.

Further trade liberalization could conceivably result in stronger import pressures that could have the potential to adversely affect the structures of the Canadian printing industry. Under these circumstances, the industry would need a period of adjustment. The negative impact could, however, be partially offset by concurrent liberalization of trade in fine paper. Further analysis would be required to gauge the potential impact of freer trade.

Historically, the Canadian industry has perceived itself as being entrepreneurial and has looked to the market place for determination of its health and growth. Given its inherent strengths, both in terms of human and financial resources, and the generally favourable market prospects for its products over the medium term, it is believed that the industry should be capable of adjusting successfully to the changing competitive environment. Generally speaking, it should be able to overcome its constraints on its own or within existing federal/provincial incentive programs. More than anything, the industry requires the creation by government in Canada of the right economic and social climate for private businesses to exist and prosper.

PREPARED BY: *[Signature]*
Leisure Products Division

APPROVED BY: *[Signature]*
Consumer Products Industries
CCSRP

Department of Regional Industrial Expansion

FACT SHEET

NAME OF SECTOR: COMMERCIAL PRINTING

S.I. (a) COVERED: 1981 & 1982

<u>L. PRINCIPAL STATISTICS</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984(E)</u>
Establishments	2,488	2,653	2,702	2,882	3,000
Employment	50,991	53,016	54,463	50,145	51,000
Shipments (\$millions)	2,675	3,139	3,227	3,430	3,854
Gross Domestic Product (constant 1971 \$millions)(E)	647	676	647	664	743
Investment (\$millions)	145.2	152.6	129.0	133.7	192.4

<u>Z. TRADE STATISTICS</u>					
Exports (\$millions)	60	60	63	76	111
Domestic Shipments (\$millions)	2,915	3,079	3,164	3,354	3,743
Imports (\$millions)	232	247	254	279	332
Canadian Market (\$millions)	2,848	3,326	3,418	3,633	4,075
Exports - % of shipments	2.2	1.9	2.0	2.2	2.8
Imports - % of domestic market	8.2	7.4	7.4	7.7	8.2
Canadian Share of International Market (%)	1.0	1.0	1.0	1.0	1.0
Source of Imports (%)					
U.S.	86.0	84.2	85.2	81.3	82.7
E.E.C.	9.3	10.0	9.1	11.8	10.9
Japan	1.9	2.6	2.3	3.0	2.7
Destination of Exports (%)					
U.S.	78.0	75.6	75.9	83.7	87.8
E.E.C.	8.9	8.9	9.2	6.2	4.2
Australia	0.7	0.8	1.3	0.9	1.5

<u>Y. TRADE RESTRAINTS</u>	<u>TYPE</u>	<u>DESCRIPTION</u>	<u>COUNTRY</u>
<u>EXPORTS</u>			
	Tariff		various
	NTB	Government Procurement	various
<u>IMPORTS</u>			
	Tariff		various
	NTB	Government Procurement	various

<u>4. REGIONAL DISTRIBUTION - 3 yr avg.</u>	<u>ATLANTIC</u>	<u>QUEBEC</u>	<u>ONTARIO</u>	<u>PRAIRIES</u>	<u>B.C.</u>
Establishments - % of Total	3.8	30.1	43.2	13.3	9.8
Employment - % of Total	1.8	28.8	52.0	11.1	5.3
Shipments - % of Total	1.3	31.0	50.4	10.9	6.4

<u>5. MAJOR FIRMS</u>	<u>OWNERSHIP</u>	<u>LOCATION OF MAJOR PLANTS</u>	<u>Concentration 1984 (% of Shipments)</u>
1. Lawson & Jones	U.K.	Montreal, Toronto, London, Winnipeg	7.0
2. Southam Printing	Canadian	Cambridge, Montreal, Toronto, Burnaby	6.0
3. Ronalds-Federated	Canadian	Montreal, Toronto, Calgary, Vancouver	5.0
4. Moora Corp. (Cdn Outpac)	Canadian	Beauceville, Fergus, Trenton, Toronto, Vancouver	4.0

6. FEDERAL AND PROVINCIAL GOVERNMENT PROGRAMS

<u>PROGRAM</u>	<u>TYPE</u>	<u>AMOUNT</u>	<u>PURPOSE</u>
No special incentive programs have been developed to assist the industry			
Canadian Copyright Act	Law	Not applicable	Protect creators

(E) - Estimate

HOUSEHOLD FURNITURE1. Structure and Performance

The Canadian household furniture manufacturing sector includes establishments primarily engaged in the manufacture of furniture products for residential or household use. The sector is identified as (1980) SIC 261 - Household Furniture Industries - and is further divided into SIC 2611 - Wood Household Furniture Industry -, SIC 2612 - Upholstered Household Furniture Industry - and SIC 2619 - Other Household Furniture Industries.

Wood furniture accounts for about 50% of sector shipments, upholstered furniture about 35%, with the remaining 15% consisting mainly of metal and plastic furniture products. In Canada, the bed spring and mattress industry is a part of SIC 269 - Other Furniture and Fixtures - whereas in the U.S., it is a part of the household furniture grouping.

In total, the sector accounts for annual shipments amounting to \$1.4 billion with employment of about 24,000 persons. The portion of shipments destined for export markets is 6 to 7% while 15% of the domestic market is satisfied by imports.

The activity of the sector is equal to 0.7% of the total of the overall domestic manufacturing sector in terms of annual shipments and 1.4% when measured by employment.

The industry is comprised of 915 establishments located mainly in Quebec (45%) and Ontario (37%). In these two provinces, the plants are more or less equally distributed between metropolitan areas and smaller communities. Over 69% of the establishments employ less than 20 persons and account for 10% of shipments while 7% of establishments employ 100 or more and account for about 50% of shipments. About 5% of industry shipments originate in Manitoba and the sector is important to that Province's economy.

Industry shipments, in constant 1971 dollars, increased 25% during the period 1971 to 1983 representing an average annual growth of 1.8%. Production capacity utilization in 1983 was about 65% after a reduction to 58% in 1982 while the average for 1981 was 80%. During this period, the sector's utilization rate, while following the general trend of all manufacturing, was constantly lower.

The industry has regularly generated annual profits but the resulting financial returns have not made the sector an attractive investment. In general, investment in the industry has been low relative to total investment in manufacturing. In recent years, the long term debt to equity ratio in the furniture industry has been about 0.33.

2. Strengths and Weaknessesa) Structural

Generally, the furniture industries in major furniture producing countries, such as the U.S., Germany, France, the U.K., Sweden, Denmark, Italy and Canada have similar structural characteristics. For example, establishments with fewer than 20 employees are in the majority and plants employing more than 100 are less than 10% of the total but account for more than 50% per cent of total output. Also, in general, furniture shipments account for less than one per cent of the respective GNP. In the U.S., there are some 100 establishments with more than 500 employees whereas in Canada there is one.

Data from both the U.S. and Canada suggest that productivity does not always vary directly with size. There is evidence that efficiencies are also achieved by firms, both large and small, that focus on

product specialization and standardization. However, in Canada too often manufacturers, in serving the small domestic market, have been unable to benefit from production specialization savings as they produce a wide range of products to maintain reasonable volumes of production. This places the Canadian industry at a disadvantage compared to U.S. manufacturers who serve a large domestic market and therefore can be more selective in their product ranges. The Canadian industry's ability to compete with the U.S. industry is also affected by higher labour, material and transportation costs.

Canadian manufacturers import up to 50 per cent of fabric requirements as well as substantial quantities of lumber, finishing materials and hardware. With the exception of lumber, these carry duties at least as high as the end product and in the case of textiles, they sometimes are higher. In the U.S., materials are almost entirely from domestic sources with the exception of exotic wood species.

b) International Trade Related Factors

Non-tariff barriers are not a significant factor in international trade in furniture products.

Most furniture imported into Canada is classified to one of two main tariff items depending upon the chief component material. The rate for furniture in chief part by value of metal prior to the Tokyo round was 17.5% and will be 12.5% in January 1987. The duty for other furniture, including wood, is being reduced from 20% to 15%. These levels of tariff have protected the Canadian industry against increased competition in the domestic market. Imports of household furniture have never accounted for more than 18% of the Canadian market and in 1983 they represented 15%.

There is currently a shift in the origin of imported furniture. The United States, which accounted for 66% of all Canadian imports in 1976, had its share shrink to 49% in 1983 while imports from Asian countries have grown from 5% in 1976 to 20% in 1983. Western European countries' share of imports into Canada have remained relatively stable at 20 to 30%. The growth of imports from Europe and decrease from the U.S. have coincided with currency exchange rate changes.

This shift in the origin of imported furniture is also indicative of a strengthening Asian industry mostly in Taiwan, South Korea, Singapore and the Philippines. An undetermined quantity of furniture is imported from these countries as components at varying stages of manufacture for assembly and finishing in Canada. Far eastern developing countries are also making inroads into the USA, European and Japanese markets. These exports from Asia to Canada are particularly strong in wooden dining room where they account for over 31% of all Canadian imports in this commodity.

Canadian exports have been directed to the United States in a proportion of about 80% to 90% over the past five years. Although its relative importance decreased slightly from 1978, this country remains by far Canada's main export market. The final rates of duty imposed on Canadian furniture entering the U.S. will range between 2% and 7% as of January 1987.

c) Technological Factors

Until very recent years, furniture manufacturing technology was considered quite mature and advances were marginal and mainly through tool improvement for speed and precision of operation. The advent of digital controlled machines for operations such as automatic stacking, panel cutting and lumber break-out is starting to have a positive impact on some companies which are gradually acquiring this technology. This modern machinery and equipment is available to the industry throughout the world but only larger factories have sufficient production to benefit from the investment required. As a result, Canadian factories in general are not as technically advanced as those in the U.S.

d) Other Factors

World currency exchange rates have had a significant bearing on foreign trade in furniture. Import pressures experienced by Canadian manufacturers from the U.S. were greatest in the period 1974-1975 when the value of the Canadian dollar was high. Also imports from Europe have enjoyed a larger share of total imports as North American currencies have strengthened during the past two to three years.

3. Federal and Provincial Programs and Policies

Federal government assistance programs which apply to all manufacturing industries have been used by the furniture sector. Financial assistance has been provided to household furniture manufacturers under the former RDIA, CIRS and ISDF programs.

The Government has also been active in supporting export development through the Program for Export Market Development and the Promotional Projects Program. This support has been directed mainly to the U.S. market.

4. Evolving Environment

Based on family expenditures on furniture and fixtures which have remained fairly constant over the past decade, it is realistic to assume that the growth of the Canadian furniture market will follow the increase in the number of families during the next ten years. Demographic and social considerations such as the "baby boom", the aging of the population, the smaller size of families including those with single parents, the reduced size of dwellings mainly in urban areas, etc., do not seem to have affected the buying pattern of the consumer in terms of overall volume. It is quite possible however that in the future, within the overall quantity to be purchased, there may be a shift from one type of furniture to another e.g. more wall units, modular and knocked-down furniture, fewer complete room settings etc.

Economic considerations such as high interest rates and high unemployment as was experienced in 1982 would seem to have more impact on the market than any other factors. High fluctuation in these economic factors at any point during the next decade could have short term effect on the market but would unlikely affect the overall long term trend.

With the gradual reduction of Canadian tariffs under the GATT, Canadian furniture will become increasingly exposed to international competition. The rapid growth in imports from Far East countries over the past several years is indicative of a potential threat in the medium to long term. It is a known fact that Taiwan, South Korea, Singapore and Philippines are developing efficient furniture manufacturing industries for the purpose of exporting. This potential threat is however limited by the types of furniture that they can export to Canada because of the distance and transportation costs. Canadian manufacturers may have to become assemblers of imported parts for some categories of furniture or concentrate on more profitable lines.

With a continuation of the present value of the Canadian dollar, there will be opportunities for Canadian made products in the U.S.

It is expected that advanced technology will become increasingly important in furniture production processes.

5: Competitiveness Assessment

On a non-exchange rate-adjusted basis, Canadian furniture manufacturers incur higher labour and material costs than U.S. producers. In addition, due to the structure of the industry and the markets served, U.S. manufacturers are better positioned to effect cost savings through longer production runs, product specialization and usage of more modern machinery and equipment. As a result, it is estimated that a piece of furniture manufactured in the U.S. would be 20 to 25 per cent less expensive than if it were produced in Canada.

The current value of the Canadian dollar and the existing differential in Canada's favour, in the tariffs imposed by the U.S. and Canada, have offset the competitive advantages enjoyed by U.S. producers to the extent that in most cases Canadian products are competitive in the domestic market. In addition, domestic manufacturers are able to compete in the U.S. market with unique products or products in which design and quality are as much or more a consideration as price.


To become more internationally competitive and be able to take advantage of future opportunities, Canadian manufacturers will need to reduce their costs through improved productivity. Accelerated modernization, the adoption of modern technology and improved marketing strategies taking into account production strengths would lead to more viable companies and a stronger industry. Since competitive pressures from Asia and the U.S. will continue and increase as trade becomes more liberalized, Canadian manufacturers will need to develop export markets in order to be able to benefit from the economies of scale required for more efficient operations.

Firms that are taking advantage of the present economic conditions to develop exports to increase production volumes may be able to adjust to the evolving environment and emerge competitive in at least the North American market.

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FACT SHEET - HOUSEHOLD FURNITURE

1. Principal Statistics

	1971	1980	1981	1982	1983
Establishments	681	844	901	917	915(E)
Employment	22,114	26,483	27,285	22,973	24,000(E)
Shipments (\$ millions)	388	1,164	1,335	1,112	1,407(P)
Shipments (1971 constant \$ millions)	388	501	516	395	485
Exports	18	46	60	66	89
Domestic Shipments	370	1,118	1,275	1,046	1,318(P)
Imports	31	200	254	176	224
Canadian Market	401	1,318	1,529	1,223	1,542(P)
Exports - % of Shipments	4.6	4.0	4.4	6.0	6.3
Imports - % of Domestic Market	7.7	15.2	16.6	14.3	14.6
Shipments As % of Total Manuf. Shipments	0.8	0.7	0.7	0.6	0.7
Employment As % of Total Manuf. Employment	1.4	1.4	1.5	1.4	1.4

(E) - Estimated
(P) - Preliminary

Yr. to Yr. Av. % Change

	1971/1981	1980/1983
Establishments	2.8	2.7
Employment	2.1	-3.2
Shipments	13.3	6.5
Constant \$ Shipments	2.9	-1.1
Exports	13.8	24.6
Domestic Shipments	10.9	5.6
Imports	18.9	3.8
Canadian Market	11.8	5.4

2. Regional Distribution

	Atlantic	Quebec	Ontario	West
Establishments - % Total	3	45	37	15
Employment - % Total	1	39	49	11
Shipments - % Total	1	37	50	12

3. Foreign Trade

	U.S.	West. Europe	Asia	Others
Imports - % Total 1981	57	20	17	6*
1982	52	24	18	6*
1983	49	27	20	4*
Exports - % Total 1981	79	12	-	9
1982	84	8	-	8
1983	92	3	1	4

*Principally from Eastern European Countries

SECTOR COMPETITIVENESS PROFILE

OFFICE FURNITURE

1. STRUCTURE AND PERFORMANCE

The Canadian office furniture manufacturing sector includes establishments engaged in the production of metal, wood and other office furniture. The sector is identified as (1980) SIC 264 - Office Furniture Industries - and is further divided into SIC 2641 - Metal Office Furniture Industry - and SIC 2649 - Other Office Furniture Industries.

Metal office furniture products consisting mainly of desks, chairs and filing equipment currently account for 55% of the sector's shipments, wood, and other office furniture 30% and screens and panel systems about 15%. Purchasers of these products are mainly corporations, institutions and governments for all types of office space. Demand, therefore, depends upon new commercial construction, retrofitting and large scale replacements.

In total, the sector accounts for annual shipments of \$330 million with employment of 7,800 persons. Exports play an increasingly significant role and in 1983 amounted to \$225 million or 42% of factory shipments. Imports satisfy about 8% of the domestic market demand.

In terms of the overall Canadian manufacturing sector, office furniture activity is minimal representing less than one half of one per cent of total manufacturing shipments and employment.

As in other sectors of the furniture industry, the bulk of office furniture manufacturers can be classified in the small to medium size category when viewed from the aspect of the number of employees per establishment. However, when compared with the household furniture industry, there are about twice as many employees per establishment. In 1982, of the total of 143 establishments, 102 or 70% employed less than 50 and accounted for about 70% of shipments. Fifteen per cent of the establishments employed more than 100 and accounted for 62% of shipments.

The sector is mainly Canadian owned although a number of the large U.S. office manufacturers operate subsidiaries in Canada. In addition, some of the more successful Canadian exporters have established plants in the U.S.

The Provinces of Quebec, Ontario and Alberta have traditionally supplied the bulk of office furniture with Ontario and Quebec being the major factors. In 1960, Quebec produced 33% of total shipments, Ontario 64% and Alberta 2%. By 1971, the proportions were 37%, 61% and 2% respectively and in 1982 were 21%, 72% and 5%. In all of the provinces, most of the industry is located in metropolitan areas.

Over the period 1971-1981, the office furniture industry experienced a relatively strong rate of growth. In constant 1971 dollars, shipments increased from \$79 million to \$250 million for an annual average change of +9%. This rate of growth was higher than the increase of the domestic market as the portion of exports grew from 11% to 42% of sector shipments.

The period of strong growth ended with the recession in 1982 as commercial construction was cut back. As a result, it is estimated that companies are now operating at 70% to 75% of capacity.

The industry has regularly generated annual profits and in recent years the after tax returns have been improving. The debt to equity ratio for the sector is about 0.15.

2. STRENGTHS AND WEAKNESSES

a) Structural

The office furniture industry is similar to many other Canadian industries in that it is strongly influenced by activities in the U.S.A. and to a

lesser extent by European developments. The preponderance of small to medium sized companies that make up the Canadian industry is also a characteristic of the industry of other countries such as the U.K., Germany, France, Denmark, etc. In the U.S. in the metal and office furniture industries, annual shipments amount to more than \$2 billion and although there are over 500 establishments, there is a higher concentration ratio than in Canada. In wood office furniture, the largest four U.S. manufacturing companies account for 32% of shipments while in metal office furniture, the similar figure is 47%. The fact that these two groups of companies employ only 18% and 38% of the respective labour forces illustrates the labour productivity improvements that can result from economies of scale.

Generally, the size of the market for office furniture in Canada has a limiting effect on the size of production runs and is not conducive to economies of scale. The development of export markets has enabled companies to increase volumes to improve production efficiency. Success in export markets for the most part has been the result of well designed and quality manufactured innovative furniture products in the medium to high price ranges.

In addition to the competitive disadvantages from lack of economies of scale, the Canadian industry incurs higher costs due to higher labour rates and material costs than the U.S. industry.

The competitive disadvantages confronting the Canadian industry have been significantly offset by relatively high rates of duty and in more recent years, the lower value of the Canadian dollar in terms of the U.S. dollar.

b) International Trade Related Factors

Non-tariff barriers are not a significant factor in international trade in office furniture products.

Most furniture imported into Canada is classified to one of two main tariff items depending upon the chief component material. The rate for furniture in chief part by value of metal prior to the Tokyo round was 17.5% and will be 12.5% in January 1987. The duty for other furniture, including wood, is being reduced from 20% to 15%. This level of tariff protection may have been instrumental in encouraging the establishment of subsidiaries of foreign owned manufacturers in Canada to serve the Canadian market. Exports of office furniture have been consistently less than 10% of the market. Products from the United States have regularly accounted for in excess of 85% of total imports into Canada with the remainder being essentially from Western Europe. Unlike the household furniture sector, imports from Asia represent less than one per cent of the total and therefore are not presently a factor. This is probably due to the fact that office furniture products tend to serve a contract market where new designs and customer specifications are more a factor than in the consumer market served by household furniture.

The United States as well as being the major foreign supplier to the Canadian market, is almost the exclusive recipient of exported Canadian made furniture. Currently, about 95% of Canadian exports are shipped to the U.S. market. Since U.S. tariff rates accorded Canadian made furniture range between 3.4% for wood to 10.9% for textile materials, Canadian products already have easy access to the U.S. market.

In making comparisons between Canadian and American exports of office furniture for the years 1975 to 1981, the increase in exports from Canada is marked, whereas U.S. export increases are not as spectacular. Canadian exports increased from \$14.1 million in 1975 to \$147.3 million in 1981, while American exports went from \$17.7 million in 1975 to \$79.4 million in 1981. In 1981 Canadian exports of office furniture amounted to 29.7% of the value of manufacturers' shipments, whereas, in the U.S.A., exports amounted to only 2.3% of the value of American manufacturers shipments. Again, currency exchange rate variations have influenced these trends.

c) Technological Factors

Modern machinery and equipment is available to the industry throughout the world but only larger factories have sufficient production to benefit from the large investment required for the most advanced technologies. As a result, the U.S. industry tends to be more advanced than the Canadian.

Wooden desk manufacturing remains a labour intensive process, particularly in the fitting and finishing stages and tends to rely on recognized standard production methods. While a number of firms tend to retain traditional equipment, others have gone to more sophisticated items, such as computerized panel cutout saws and routers, etc. Over the past few years, several new factories have been constructed and their owners have equipped them with the latest in machinery. Metal desk and filing equipment manufacturers use standardized shearing and stamping machinery. Baked on electrostatic powder finishes, while not universal, are being employed on a more extensive scale and are replacing traditional spray methods. Systems furniture manufacturers tend to employ the most recent equipment innovations, where economically feasible, since they are involved with a variety of materials, such as wood, metal, plastics and textiles and must, if possible, have a competitive edge.

3. FEDERAL AND PROVINCIAL PROGRAMS AND POLICIES

Government (federal, provincial and municipal) is the largest buyer of office furniture in Canada, and as such, is an important customer. The procurement policy of the federal government centralizes purchasing through Supply and Services Canada, which, besides purchasing through its headquarters operation, has twenty-nine regional supply centres across the country, encouraging local suppliers to fill federal government needs. Office furniture purchases, for the most part, are for the government designed line of modular desks, work stations and filing equipment, etc. While the federal government's policy of buying government designed furniture may have certain advantages, the office furniture industry claims that standard products could satisfy government requirements. In the long term, the addition of government purchases to plant production runs could result in production efficiencies and cost savings to both the private and public sectors. A similar policy by each of the provinces could result in further savings.

Federal government funded assistance programs are generally of the umbrella type with none specific to the furniture industry. Several manufacturers have made use of these programs in the past; however, there has not been any large scale industry sector response to the programs. On the other hand, the programs designed to stimulate export trade have been well received by the office furniture industry. The Solo Canadian Business Furniture Show Program to the United States of America, under the Promotional Projects Program, has been very effective and a large number of firms have availed themselves of this assistance. The Program for Export Market Development has also been used by the industry, but not to the same extent.

4. EVOLVING ENVIRONMENT

The force that propels the office furniture industry is the interaction between the requirements of consumers and the continuing attempts of the industry to cope with these requirements. While a decline in output has been experienced by the office furniture sector in the last two years, a general expansion of business and an expectation of increasing numbers of white collar workers would indicate a developing market and a demand for increased furniture output. A recent U.S. report indicates prospects for sustained growth of the North American office furniture market appear bright, with rates outpacing domestic furniture manufacturing and increasing an average of more than 9% per annum.

Historically, Canadian office furniture manufacturers have been influenced by economic developments in the USA and the effect these have upon the market. Large companies with five hundred or more white collar workers are opting for systems furniture and this market is expected to grow significantly.

Single purpose or conventional office furniture will probably experience a more modest growth. Metal furniture tends to be of lower cost than wood and to have greater durability, and with cost systems furniture being made of metal, metal furniture will capture an increasing share of an increasing market. Wood furniture will likely lose ground in the general office area due in part to its lack of durability and resistance to scratching. On the other hand, wood has a warm, attractive appearance and will continue to be preferred for executive office suites.

The development of office furniture to accommodate the use of computers and other electronic equipment having relatively short life spans requires emphasis on flexibility so the furniture may adapt to the new generations of equipment. A close working relationship between the makers of office automation equipment and office furniture manufacturers will become significantly important to the design and marketing of furniture. The Canadian industry's ability to compete at home and in export markets will, in large part, become dependant on such relationships.

5. COMPETITIVE ASSESSMENT

Design, quality and service are the main factors influencing trade in the range of furniture products in which Canadian manufacturers have found export market success. By stressing these factors, Canadian products have been able to overcome competitive disadvantages resulting from input costs and lack of economies of scale. In product categories in which price is a more important consideration and transportation costs become a factor, the market in both the U.S. and Canada appears to be served regionally. Therefore, in this segment of the market, Canadian competitive capabilities have not been put to as severe a test.

The competitiveness of the industry in the domestic market has been enhanced by the Canadian tariff structure and exports to the U.S. have increased as the value of the Canadian dollars in terms of the U.S. dollar has decreased.

As a result of these factors, Canadian made products hold a ninety per cent share of the domestic market. In addition manufacturers ship some forty per cent of production to the U.S. market.

The potential for the industry lies in the competitive international arena and Canadian office furniture manufacturers are strongly influenced by economic developments in the U.S.A. since it presents the main export market for the industry.

While some segments of the industry are alert and tend to employ the most recent equipment innovations, technological improvements are more often employed in product design than in plant production methods or techniques. In the present period of dynamic industrial development, modernization and expansion of markets will be needed to improve the competitiveness of the industry. The application of CAD/CAM and the use of robotics and computer numerically controlled equipment can provide continuing opportunities for improvements. Input from a close working relationship between the machinery and equipment manufacturers could also help to significantly improve productivity.

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FACT SHEET - OFFICE FURNITURE

1. Principal Statistics

	1971	1980	1981	1982	1983
Establishments	82	121	137	143	149(E)
Employment	4,713	7,305	8,071	7,640	7,300(E)
Shipments (\$ millions)	88.6	394.1	496.7	510.7	530.7(E)
Shipments (1971 Constant \$ million)	88.6	186.9	211.9	197.0	197.7
Exports	9.5	118.9	147.3	166.3	225.0
Domestic Shipments	79.1	275.2	349.4	344.4	305.7
Imports	4.9	25.8	30.3	24.3	25.4
Canadian Market	24.0	301.0	379.7	368.8	331.1(E)
Exports - % of Shipments	10.7	30.2	29.7	32.6	42.4
Imports - % of Domestic Market	5.8	8.6	8.0	6.6	7.7(E)
Shipments As % Of Total Manuf. Shipments	0.2	0.2	0.3	0.3	0.3
Employment As % Of Total Manuf. Employment	0.3	0.4	0.4	0.4	0.4

Year to Year Average % Change

	1971/1981	1980/1983
Establishments	8.2	7.3
Employment	5.5	2.3
Shipments	18.8	10.5
Constant \$ Shipments	9.1	1.9
Exports	31.5	23.7
Domestic Shipments	16.0	3.6
Imports	20.0	-0.5
Canadian Market	16.3	3.2

(E) - Estimated

2. Regional Distribution

	Atlantic	Quebec	Ontario	West
Establishments - % Total	1	23	57	19
Employment - % Total	1	23	67	9
Shipments - % Total	1	21	72	6

3. Foreign Trade

	U.S.	Western Europe	Asia	Others
Imports - % Total 1981	86	12	1	1
1982	88	10	1	1
1983	87	12	1	-
Exports - % Total 1981	92	2	-	6
1982	93	1	-	6
1983	95	1	-	4

1. STRUCTURE & PERFORMANCE

With the increasing use of computer-related services and products by nearly all sectors of the economy, the computer service industry has become one of the most dynamic and fastest growing sectors in Canada. Despite the recent economic decline this industry has been registering an average annual growth rate of 27 percent since 1976, a rate unmatched by any other economic sector. In 1982, some 1,700 firms with an employment level of about 22,000 and estimated revenues of \$1.65 B were operating in the sector (Statistics Canada SIC 772).

This industry is comprised primarily of three major sub-sectors: processing services, professional services and the software products sector. On a sub-sector level there were an estimated 250 businesses performing processing services in 1982, with a combined revenue of almost \$700 M. This sub-sector is dominated by a few large firms, with the largest Canadian-owned firms being Canada Systems Group, Datacrown and I.P. Sharp. The top 10 firms accounted for over 60 percent of revenues, while the top 34 accounted for over 80 percent. Growth of this industry has slowed down significantly from an average rate of 19% over the preceding 5 years to 7% in 1982. The major impetus to accelerated growth in earlier years was due to improvements in on-line storage technology, the emergence of reliable telecommunications networks designed for data transmission, and the development of database management systems. These developments, together with the introduction of the micro and mini computers and increasing use of communicating word processors, have led to the on-line provision of a variety of sophisticated socio-economic databases (I.P. Sharp, Cansim, Infoglobe, etc.) and other business services (such as stock market quotations, insurance brokerage etc.).

In the software sub-sector in 1982 more than a thousand firms supplying and developing software generated about \$640 M in revenues. About 50 firms had estimated revenues of over \$1 million and represented almost 80% of market revenues. This structure suggests that the sector consists mainly of small firms. The largest software houses are Cognos Inc., Systemhouse and Sydney Development Corporation. The software product and services field has been dramatically affected by the "unbundling" of software by the hardware manufacturers which has given birth to a new industry dedicated to the design and development of software. The emergence of applications software, particularly in the micro-computer market has also provided a major growth area.

While the professional services sector is highly fragmented several firms with revenues in excess of \$5 million are now emerging. The total revenue for all professional services activity was about \$340 million in 1982, with employment standing at about 4,000. The largest firms are DMR and Associates, Computech, Synerlogic, Systemhouse and BSS.

The computer services sector is small relative to Canada's traditional resource and manufacturing industries, and accounts for less than 1% of GNP. However, the products and services derived from the industry affect all sectors of the economy, and are crucial for ensuring productivity improvements and increased competitiveness for Canadian industry.

The strength of the Canadian industry rests for the most part on the ability to adapt and utilize existing technology to unique domestic and international needs. Accordingly, the Canadian computer services industry has achieved international competitiveness in certain niches, including specialized software and vertically

integrated data processing services, while expanding the use and benefits of technology throughout the domestic economy.

2. STRENGTHS AND WEAKNESSES

a) Structural

In 1982, 96% of firms operating in the computer services sector were more than 51% Canadian controlled. This high level of Canadian control was partly influenced by special investment regulations which have since been relaxed. There has not appeared to be a large increase in the number of foreign entrants to the Canadian market since the changes were enacted.

The computer services industry is knowledge and labour intensive and benefits from Canada's highly skilled labour force. The software and professional services sectors are characterized by ease of entry due to low capital requirements, and are primarily composed of small yet highly innovative firms. This innovative quality has led to the development of internationally competitive products and services including specialized software and value-added processing and communications services. The small firm size results in certain disadvantages such as lack of management expertise and reduced access to financing, which impede both product development and marketing initiatives.

Processing services firms tend to be larger, with high fixed and capital costs restricting entry. The higher cost structure, coupled with low sub-sector profit margins, reduces processing firms' flexibility and ability to react to changing market needs.

The relatively small Canadian market requires firms to enter the highly competitive export market. Canadian firms wishing to export look first to the United States as the closest market. However, unless they can identify a clear market niche, Canadian firms have difficulty competing with large and well established U.S. firms. Further, some segments of the U.S. industry have benefited from funding provided by NASA and the Department of Defence for product research and development. While this funding is targeted at larger defense-oriented firms, the technological spin-offs filter throughout the entire U.S. computer service industry.

b) International Trade Related

The computer services industry has been domestically oriented, particularly the processing services sub-sector. While overseas market penetration has been increasing, exports were only about \$75 M in 1982 out of total sales of \$1.65 B. Because the U.S. represents a large but very competitive market, some Canadian firms have gained a market share in areas such as Southeast Asia, Australia and the Middle East, which have relatively underdeveloped computer services industries. To maintain and expand this market share, Canadian firms must be highly innovative while at the same time continuing to market their products and services in an aggressive manner.

Export levels are expected to increase for the software and professional services sector as firms attempt to overcome constraints imposed by the small Canadian market. To date, the export of software products has proved to be very difficult for a high percentage of software firms due to their characteristic lack of marketing and management skills. Also, the cost of adapting Canadian software to the business or language requirements of another country can prove prohibitive. Canadian software firms have however achieved international competitiveness in educational software and specialized software for the earth sciences, engineering and transportation

industries. This international expertise has developed as a result of a strong domestic demand for these services. At present developmental work is underway in Canada on French language software which is regarded as having good export potential.

The data processing sector is less suited to the export market due to the high fixed cost of establishing a processing firm overseas and the fact that demand for these services is just emerging in many countries. Further, this sector is undergoing a reorientation in the domestic market in an attempt to meet the changing demands of clients and with some exceptions is unlikely to enter the export market in the near future.

While no tariff barriers are imposed on trade in computer services, there are a number of potential non-tariff barriers. These include social policy issues/privacy and access to data, procurement policies, copyright laws, regulation, taxation and enhanced telecommunication services. However, these non-tariff barriers are not critical to the competitiveness of the industry at present.

c) Technological Factors

The international computer industry is continually experiencing rapid technological change. The Canadian industry benefits from this by adapting new technology to new applications. At present a major reorientation of the domestic industry is occurring as a result of the convergence of three technologies: computing, telecommunications and office and industry automation. These linkages will increase demand for professional services and modified software in order to integrate existing and new technology. The convergence of the three technologies will also have a profound impact on the processing services sector as businesses are now moving towards more complex integrated electronic offices where the data processing previously contracted out to processing firms can be undertaken in-house.

On a technological level, the processing services, professional services and software sub-sectors are presently at par with the United States and advanced relative to most other countries. However, with the rapid advances being made in areas such as Artificial Intelligence (AI), the industry is moving towards a new technological era. Indications are that Japan will probably lead the world in the development of AI, followed by the United States. To date Canada's industrial activity in this field is fairly limited, mainly because this technology is still in the infancy of commercial applications. However, private and public sector interest in using AI products and/or conducting research in this area is growing. There are some dozen Canadian firms actively involved in AI, while several federal departments and agencies have initiated AI research activities. The linkage between government and university research efforts, and industry requires further encouragement and development to ensure the new technology is applied in industry.

d) Other Factors

According to industry officials, Canadian firms are at a competitive disadvantage vis-à-vis U.S. firms as a result of higher costs for imported hardware and telecommunications. This area requires further analysis to determine the extent and impact of the apparent cost differentials.

3. FEDERAL AND PROVINCIAL PROGRAMS AND POLICIES

At present, only advanced software development is eligible for IRDP assistance. The Program for Export Market Development however has been of assistance to all sub-sectors of the industry particularly professional services, as it provides financial assistance to allow firms to participate in export-oriented trade fairs, missions and development of overseas markets.

Federal and provincial government procurement policies have the potential to assist the computer services sector in that they could provide both financial support and product recognition. In view of this, DSS is now adjusting its procurement policies with a view to provide greater support to the Canadian computer services industry.

Certain ambiguities in Canada's tax regulations are presently seen to be having some adverse effects on software development. For example, the lack of a concise definition of R&D as it applies to the development of software creates an uncertain climate for long-range planning of firms who are unsure about the eligibility of certain expenditures for tax incentives.

4. EVOLVING ENVIRONMENT

The most important factor affecting the industry in the medium to long term will be the rapidly changing technology, and the convergence of the computing, telecommunications, and office automation technologies. To maintain or increase market share at home and expand its activities abroad, Canadian computer services firms will be required to develop specialized and vertically integrated products and services within the next two to five years. In addition, the industry should further develop its ability to manage and market these products and services at home and abroad.

This will be particularly important for firms in the data processing sector as they are directly and negatively affected by the trend towards in-house data processing. This sub-sector is adapting to the changing needs of clients by offering value-added and specialized processing services. This reorientation has been evolving over the past number of years and will continue in parallel with technological changes and subsequent changes in client's requirements. It is expected that despite the reorientation the sector will continue to experience low growth rates.

The professional services and software services sub-sectors by providing customized and/or improved or new software, are expected to benefit from the in-house processing trend and the convergence of technologies. These sectors should continue to show high growth rates.

Other factors which will impact on the computer services sector, and in particular the processing sub-sector, include changing U.S. policies such as the deregulation of telecommunications and an apparent trend towards U.S. national security considerations which may exclude Canadians from participation in or access to a growing list of U.S. technologies. In addition the telecommunications policy review now underway in Canada will likely result in significant changes for this industry.

5. COMPETITIVENESS ASSESSMENT

The degree of competitiveness of the computer services industry varies by sub-sector. The professional services sub-sector for example is fully competitive internationally and according to industry observations can be expected to lead the industry in future growth levels.

The software sub-sector will also continue to show high growth levels provided the move towards developing specialized and vertical market niches is maintained. Being non-capital intensive this sector has the flexibility to achieve the above with relative ease. It is doubtful however, if Canada's software sector can overcome its lack of competitiveness in most areas of the saturated horizontal packaged software market, particularly in the U.S.

The data processing sub-sector is experiencing a slowdown in growth due to a shift to in-house computing and technological changes such as the development of powerful and less costly computers. In order to maintain and improve its relative position the processing sub-sector is reorienting its offerings to include specialized services, vertically integrated processing services and value-added data bases. This reorientation however is made difficult by the high fixed and capital costs characteristic of the sub-sector which tend to decrease flexibility and increase the cost of adjustment. These cost factors together with the rapidly changing technology referred to earlier have lead to the current shakeout and increased number of acquisitions in the processing sub-sector. The shakeout should not however result in declining employment due to labour absorption by the successful data processing firms as well as in-house processing operations.

6. KEY ISSUES

Processing Services

This sector is adapting to new technological advances and changing market demands by developing specialized service, vertically integrated processing services and value added data bases. This process is made core difficult due to the high cost structure and low profit margins facing the sub-sector. Indications are that while the industry will experience an increased number of acquisitions as this adaptation occurs, employment levels will not change significantly.

The processing services sector is unlikely to attempt export marketing ventures in the short to medium term due in part to the fact that its resources are devoted to domestic restructuring.

Software Products

The software sector must improve its export marketing capability as the Canadian market is too small to sustain growth. While Canada has achieved international competitiveness for specialized software (i.e. French language, healthcare, educational and earth sciences) its ability to export is impaired by the lack of management and marketing skills found in the majority of small firms. The sector also requires improved market intelligence to enable them to enter relatively untapped market niches in otherwise saturated markets (i.e. the U.S.).

Prepared by: *Michael R. [unclear]*

Approved by: *Luisina [unclear]*

Director General

STATISTICAL INFORMATION

<u>1. Principal Statistics</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>
Establishments	1,036	1,392	1,752
Employment	17,538	20,495	22,137
Gross Revenue	1,103	1,400	1,650
- software	345	475	640
- data processing	550	655	700
- consulting	210	270	310
Exports \$M	50	60	73
Domestic Sales	1,055	1,325	1,535
Imports	n/a	n/a	n/a
Canadian Market	n/a	n/a	n/a
Exports - % of shipments*	5.0	5.4	7.0
Imports - % of Domestic Market	n/a	n/a	n/a

<u>2. Regional Distribution - 1982</u>	<u>Atlantic</u>	<u>Que</u>	<u>Ont.</u>	<u>West</u>
Establishments - % of total	3.0	19.6	45.3	32.0
Employment - % of total	2.1	19.4	56.0	22.8
Shipments* - % of total	1.8	19.8	55.8	22.7

<u>3. Foreign Trade</u>	<u>U.S.</u>	<u>E.E.C.</u>	<u>Asia</u>	<u>Others</u>
Imports - % of total 1981	80		All others - 20	
1982	-		n/a	
Exports - % of total 1981	75		All others - 25	
1982	-		n/a	

4. Major Firms
1. Canada Systems Group
 2. Datacrown
 4. Systemhouse

Source: Statistics Canada/Evans Research Corporation

n/a not available

The Construction Industry

1. Structure and PerformanceStructure

Construction is defined as the creation, renovation, repair and demolition of immobile structures and the alteration of the natural topography. Construction provides the physical means for resource exploration and industrial development, as well as the supporting infrastructure, such as transportation systems, commercial facilities and residential accommodation. The construction sector is composed of firms and labour engaged, on a contract basis, in the various activities whereby construction is accomplished. There is no vertical integration in the industry except in a few very specialized areas, such as structural steel, lift and conveyor systems and curtain walls.

The Canadian construction industry consists of 106 thousand firms located in all areas of the country. 14 thousand of these firms specialize in residential and non-residential buildings, 3 thousand are primarily involved in heavy engineering (electric power and oil and gas facilities and heavy industrial structures) and road building, and 89 thousand undertake mechanical, electrical and other special trades work.

While the majority of contracting companies serve only a very localized market, some of the larger firms may serve a regional market. The largest firms in the sector do, however, operate nationally. Only 5.5 percent of the industry's firms have gross operating revenues of \$1 billion or more and these undertake 65 percent of the work. These firms are more broadly based and therefore more capable of undertaking larger more complex projects.

Many firms, particularly in the special trades group, are highly specialized and technically competent. However, owners lack other basic skills in the areas of general management, marketing and finance.

Foreign ownership is an important issue for the industry, but it is not as critical as it may be in other sectors. The 1981 CILIMA report indicates that there were 191 foreign-controlled construction companies operating in Canada (a drop of 12 percent from 1980). These represent 0.3 percent of the number of firms, 10.5 percent of the industry's assets, 15.0 percent of the equity and 11 percent of the profits. Canadian controlled firms, unlike their foreign controlled counterparts, have not expanded their capability to include the engineering and procurement skills frequently sought by clients when considering major projects.

Performance

The industry is particularly vulnerable to business cycle fluctuations and recessionary trends in the economy. Nevertheless, over the past twenty years construction investment achieved an average annual rate of growth of 3.3 percent (slightly below that of GNP) to reach \$56 billion in 1981 and accounted for 38 percent of total capital investment in the Canadian economy. The construction industry (the 106 thousand firms) provided \$38 billion of the aggregate figure with the balance carried out by utility companies, governments and firms not primarily engaged in the industry.

Construction, traditionally, accounts for 5 to 6 percent of Canada's employed labour force. With the levelling off of industry output, the industry employed 566 thousand hourly paid wages earners, down 5.2 percent from 1982 and 13.6 percent from 1981.

In the late 1970s, there was a gradual shift away from the construction of residential and other buildings to engineering construction. While this shift appears to have ceased it did bring about a change in the structure of the industry. The slowdown in construction activity as a result of the current recession and high interest rates has led to greater competition among existing firms and it is suspected to increased company closures.

The construction contractor has control over significant costs and to a certain degree over labour related costs. The cost of input materials and machinery used by the industry is determined outside the sector, mainly in the manufacturing industry. Construction companies do not require the same equity base as companies in other sectors which must finance, through equity, the purchase of special purpose plant and equipment. Contracting firms are able to rent much of their equipment, or to finance the purchase of this equipment, through chattel mortgages, as most large pieces of equipment are mobile and have a reasonable resale value. Contractors, traditionally, use bank credit and a large measure of supplier credit to finance their operations. In addition, when tendering a job, they seek a reasonable early cash flow from their work so that it will be, in large measure, self financing. By using these methods, contractors are able to finance their operations adequately with a high liability and low equity structure. The margin for error however is thin, particularly in a period of slowdown when firms are competing aggressively for a static or declining volume of business.

2. Strengths and Weaknesses

a) Structural

All firms in the industry tend to be highly specialized and technically competent and this ensures a high degree of competition across Canada. The larger firms are more broadly based and therefore more capable of undertaking the larger more complex projects. The Canadian industry, unlike its foreign counterpart, has not expanded its capability to include the engineering and procurement skills frequently sought by clients when considering major projects at home or abroad.

In many countries of Europe and Japan unlike Canada there is a close working relationship between the design construction, and manufacturing communities and the government in the pursuit of export work.

In the late 70s, some concern was expressed that should several of the much discussed mega projects be built concurrently, shortages of certain skilled tradesmen would hinder project completion. With the exception of pipe fitters, shortages did not materialize. Because of the seasonal aspects of construction, workers sought and were granted high wage settlements and became pace setters. This had a significant impact on the economy as workers in other sectors sought wage and benefits settlements in line with construction.

At the present time, the industry with the exception of house builders is highly unionized, but there is a strong trend towards non-unionization. Labour content currently accounts for one third of the cost of construction. As labour costs and union jurisdiction becomes more restrictive, the trend toward the use of non-union labour will likely increase. This could result in lower cost construction.

b) Trade Related Factors

Construction activity in Canada is not threatened to any degree by import competition. Foreign-owned firms operating in Canada generally act as good corporate citizens. The industry's skilled workers are protected by Canadian immigration laws.

Until recently, the domestic construction market was buoyant. This, coupled with the fact that Canadian contractors tend to be small, highly specialized firms lacking the financial resources to enter higher risk export markets, has meant that few have ventured outside Canada. A small nucleus of contracting companies have exported their expertise and management skills successfully over the years to the U.S. and overseas, primarily to the developing countries. At the present time, the Canadian International Construction Corporation, a consortium of eight contractors, is actively seeking overseas construction contracts.

In order to gain export experience and establish a track record, Canadian companies have tended to rely on CIDA and EDC sponsored projects rather than seek offshore work without Canadian financing. While the size of the world construction market is an unknown, it is estimated that the top 250 international contracting firms operating in this market undertake contracts totalling \$100-135 billion (U.S.) a year. Exports from other developed countries account for as much as 20 percent of their total domestic construction activity. Increased construction exports would appear to represent a significant long term opportunity for the Canadian industry where they currently account for about 1.5 percent of construction activity.

Oil price shocks disrupted the world market for construction. LDCs look first for the necessary credit and at the project itself. Where a few years ago, the Middle East was the prime market, Canadian interests have now shifted to the United States and southeast Asia.

c) Technological Factors

The industry in Canada, the U.S. and other developed countries uses constantly advancing state-of-the-art technology in terms of its machinery, equipment and materials. This situation is not expected to change in the future, and therefore technology is not a major factor for construction contractors.

d) Other Factors

The high interest rates of the last few years have had a dampening effect on residential construction in Canada. The general economic slowdown with the concomitant slackening in overall demand and increasing idle capacity in manufacturing and high interest rates have led to a levelling off in the demand for non-residential construction. Canada is a relatively mature country industrially, the bulk of its production facilities and infrastructure has been built. A return to the boom years of the late 60s and 70s is not expected.

Traditionally, public expenditures on construction have accounted for about one third of the total output. Provincial governments as a group have been the largest spenders (50%), followed by the municipal level (30%) and the federal government (20%). Despite the best intentions of government, public expenditures on construction often serve to reinforce the cyclical nature of the industry rather than to stabilize it.

1. Federal and Provincial Programs and Policies

The federal government influences the overall domestic performance of the construction industry through a wide range of policies (i.e. taxation, procurement and environment).

The construction industry was one of the first to accept and comply with the metric conversion time schedules recommended by government. The Canadian Construction Association is on record as vehemently opposing a return to the imperial system. The government also influences the export performance of the industry through such programs as the Export Development Corporation (EDC), the Canadian International Development Agency (CIDA) and the Program for Export Market Development (PEMD). The construction industry is specifically excluded from receiving assistance under DRIS's Industrial and Regional Development Program (IRDP).

The other levels of government also influence the industry through policies such as provincial preference and regulation in the area of land development.

In mid 1983, the Construction Industry Development Council, an advisory group to the Minister of Regional Industrial Expansion, published a report entitled Canada Constructs - Capital Projects and Canadian Economic Growth in the Decades Ahead. This report contains 54 specific recommendations directed at the construction industry, all levels of government, project

owners, educational institutions and others involved in the construction process. The federal government is presently preparing a detailed response to these recommendations which should be available in early 1985.

4. Evolving Environment

Average annual growth in the construction industry as a whole is expected to be somewhat slower (3.2%) in the period 1983-92 than over the past 20 years (3.8%). With the projected slowdown, shifts in the structure of the industry will continue. On the housing side, small local firms will likely become more prevalent because of the decreasing importance of speculative building and a probable increase in renovation and conversion activities. Engineering projects tend to be larger and more complex and are undertaken by larger firms. Projects of this nature may not be as numerous as they have been in the past. These changes, while unlikely to have any impact on the competitiveness of the industry, will have implications for the employees, requiring changes in skills and jobs.

During periods of national economic slowdown, export markets become particularly significant for industry firms in all developed countries as a means of maintaining an adequate level of business activity and profits, and retaining key personnel. However, the current state of the world economy and high energy prices are causing a shrinkage of the construction market in most developing countries. While export opportunities do exist in Asia and in oil producing countries, the volume of business available is much smaller than it has been and the competition from American, European and some Asian builders is becoming more intense. The export market is a difficult one for contractors. It is a high risk market. While there is scope for certain specialized types of contractors, such as heavy industrial, exports should not be considered as a counterbalance or panacea for the industry as a whole. There could also be increased competition in the Canadian market from foreign contractors who have not previously worked in this country.

5. Competitiveness Assessment

The large number of contracting companies, both large and small, ensures a highly efficient and competitive industry in Canada. They are well positioned to take advantage of industrial development opportunities in the domestic market. In general, Canadian firms need to improve both their technical expertise and their managerial skills in relation to further expansion in the export field. However, they have not developed the corporate size and the financial capability, the international marketing skills or the experience of their international competitors. In addition, government export support programs are judged by the industry to be less effective than similar programs provided by other industrialized countries.

6. Adjustment Required

Several factors must be considered if Canadian contractors are to increase their share of overseas projects, including:

- a) an improvement in export support programs. This matter is now being studied, but leaders in the industry are of the view that Canada's programs are not comparable to those of other countries;
- b) the formation of a strong teams of designers, contractors and manufacturers to pursue opportunities on a project by project basis. The government can play an important role in assisting the industry to identify specific market areas and to pursue projects relating to a particular sector of expertise.
- c) a substantial increase in size of firm and a broadening of capability.

PREPARED BY: *[Signature]*

APPROVED BY: *[Signature]*
Director General

CONSTRUCTION WORK BY TYPE OF STRUCTURE

TABLE 6

CONSTRUCTION WORK BY TYPE OF STRUCTURE

Sector	Million Current Dollars				
	1970	1975	1980	1982	1983
Building Construction	8,098	16,609	26,540	28,843	30,600
Residential	4,008	8,689	13,872	13,581	16,684
Industrial	1,000	1,510	3,005	3,044	2,502
Commercial	1,287	3,732	5,912	7,064	6,228
Institutional	1,330	1,561	2,157	3,092	3,198
Other Building	473	1,117	1,594	2,062	1,988
Engineering Construction	5,683	11,767	21,797	27,222	25,498
Marine Construction	145	181	269	480	404
Road, Highways and Runways	1,280	2,382	3,731	4,310	4,270
Waterworks and Sewage Systems	488	1,241	1,996	2,244	2,402
Dams and Irrigation	38	137	202	314	295
Electric Power Construction	1,223	2,825	4,297	4,866	4,673
Railway, Telephone and Telegraph	568	1,099	1,851	2,390	2,531
Gas and Oil Facilities	1,094	1,850	6,709	9,706	8,115
Other Engineering Construction	827	2,052	2,731	2,912	2,808
Total Construction	13,781	28,376	48,327	56,065	56,098

Sector	Percentage of Total Demand				
	1970	1975	1980	1982	1983
Building Construction	58.8%	58.3%	54.9%	51.4%	54.5
Residential	29.1	30.6	28.7	24.2	29.7
Industrial	7.3	5.3	6.2	5.4	4.5
Commercial	9.3	13.2	12.2	12.6	11.1
Institutional	9.7	5.5	4.5	5.5	3.7
Other Building	3.4	3.9	3.3	3.7	3.5
Engineering Construction	41.2	41.5	43.1	48.6	45.5
Marine Construction	1.0	0.6	0.6	0.8	0.7
Road, Highway and Runways	9.3	8.4	7.7	7.7	7.6
Waterworks and Sewage Systems	3.5	4.4	4.1	4.0	4.3
Dams and Irrigation	0.4	0.5	0.4	0.6	0.5
Electric Power Construction	8.9	10.0	8.9	8.7	8.3
Railway, Telephone and Telegraph	4.1	3.9	3.8	4.3	4.5
Gas and Oil Facilities	7.9	6.5	13.9	17.3	14.5
Other Engineering Construction	5.0	7.2	5.7	5.2	5.0
Total Construction	100.0	100.0	100.0	100.0	100.0

Source: Construction in Canada, Statistics Canada, various issues.

STATISTICAL INFORMATION SHEET

1. The construction industry encompasses Standard Industrial Classification (SIC) 401, 402, 411, 412, 421 to 427 and 429.

<u>Principal Statistics</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>
Contractor Establishments	96,600	106,000	n/a	n/a
Employment	624,000	651,000	597,000	566,000
Total Value of Construction(\$million)	48,327	56,881	56,065	56,098
- Performed by Contractors	36,221	39,360	36,869	37,606
- Performed by other sectors **	12,106	17,524	19,196	18,492
Exports (\$million)		800e	800e	n/a
Imports (\$million)	n/a	n/a	n/a	n/a

* Total Value of construction used. "Shipments" data not relevant to this sector.

** i.e. governments, utilities and other sectors using own labour force.

e - estimated

n/a not available

<u>Regional Distribution (1981)</u>	<u>Atlantic</u>	<u>Quebec</u>	<u>Ontario</u>	<u>West</u>
	(Percent of total)			
Contractor Establishment	6.2	16.9	35.4	41.5
Contractor Employment	7.9	19.1	33.6	39.4
Work Performed by Contractors	5.1	17.8	29.2	47.9

<u>Foreign Trade</u>	<u>U.S</u>	<u>E.E.C.</u>	<u>Asia</u>	<u>Others</u>
Imports - % of total 1981	-----not available-----			
1982				
1983				
Exports - % to total 1981	-----not available-----			
1982				
1983				

5. Major firms

1. PCL Construction Limited, Edmonton, Alberta
2. Cana Construction Co. Limited, Calgary, Alberta
3. Ellis-Don Limited, London, Ontario
4. Banister Continental Limited, Edmonton, Alberta
5. A. Janin & Company Ltd. Montreal, Québec

Source: Statistics Canada publication

AN OVERVIEW - CONSULTING ENGINEERING SECTOR

1. Structure and Performance:

The industry comprises professional engineers in private practice undertaking feasibility studies, planning and design development, detailed field services during construction and project management, primarily pertaining to capital projects. It consists of some 1,300 firms, which employed 39,500 people in 1982. The large firms have staffs ranging from 500 to 4,000, offer both consulting and project management services on a national basis and are extremely active in export work. The medium sized firms, employing from 200 to 800 people, offer mainly consulting services, with some also offering project management. In general these firms operate on a regional basis and are only moderately active internationally. The small firms have staffs ranging up to 75-100 people, mainly offer consulting services at the local level, and generally have little, if any, export experience. There are also specialized firms of small and medium size offering consulting services and, in some cases, project management. They are generally active internationally, some to a much larger extent than others.

Small businesses, with revenues of less than a \$1 million, account for 90% of firms but less than 20% of total revenues generated, while 14 firms with revenues greater than \$10 million (accounting for a little over 1% of firms) generate 50% of the total income and 70% of export fees.

The distribution of firms across the country reflects fairly closely the country's natural resource, industrial and population patterns. The industry is almost entirely Canadian owned.

There was no real growth in the domestic market over the period 1974/79. In 1980 the market picked up and peaked in 1981/82. During the subsequent recession, the industry experienced a reduction in revenues of 15% by 1984. Prior to 1982, growth in the international market was strong, but no growth was recorded over the period 1982-84. However, in spite of this stagnant market in recent years and a heightened intensity of competition among a greater number of world participants, the Canadian industry's export business declined only slightly. The result of this experience on both domestic and international markets is that profitability and employment levels are down. In some cases debt loads have risen in order to sustain operations. At the same time, however, lower revenues have reduced the borrowing capacity of firms.

The domestic market in some areas has improved but no major growth is anticipated over the next few years since the sector is highly sensitive to levels of capital investment which are forecast to be modest over the short to medium term. Growing competition in the export market will make it more difficult for interested firms to enter the field for the first time.

2. Strengths and Weaknesses

(a) Structural

The structural trend is toward more specialized firms and to larger firms. In addition, the recession has created a special situation where laid off engineers have established individual consulting practices. Further, continued adoption of policies favouring local procurement has increased the establishment of branch offices by larger firms in various provinces. Mergers and acquisitions have also been utilized to strengthen provincial representation.

The consulting engineering sector is highly developed in the Canadian economy and also in relation to other countries. Furthermore, it is considered competitive with major global competitors from among the OECD countries. Nonetheless, an inhibiting factor in the complete development of the sector

is the degree of foreign ownership of Canadian manufacturing and resource industries. Potential clients in these sectors either use the in-house services of their parent or tend to employ consultants from the country of the parent.

In recent years, the industry has suffered from declining profitability levels with the situation exacerbated due to the substantial drop in revenues caused by the recession. However, some factors which would favour a restoration of profits have begun to emerge. Salaries, which comprise 50% to 70% of operating costs, have stabilized in the context of an environment characterized by layoffs. Also improving the international competitiveness of firms has been the movement towards adoption (albeit not as widespread as desirable) of more efficient operating methods, with some firms proceeding faster than others in such areas as automated drafting systems and computer-based design and information systems. The advent of computer aided design and drafting (CAD/CAM), aside from enabling productivity gains in the operations of firms and providing greater flexibility to the designer, has had a marked effect on employment levels by effecting reductions in staff particularly at the technical and subprofessional levels. Knowledge of the displacement of the technician/draftsman from this particular market should prompt labour planners/trainers and training institutions to reassess their training requirements. These productivity enhancing measures are expected to have positive effects in restoring acceptable levels of profitability when market growth returns.

(b) Trade Related Factors

Exports are an important component of total industry activity, representing about 15% of overall billings or some \$300 million estimated for 1984. The bulk of the export activity is accounted for by large and specialized firms. Imports account for less than 10% of the domestic market and are concentrated in the oil and gas field. These originate largely from the U.S.A.

Export potential is promising based on Canada's proven technological capability, particularly in resource and infrastructure projects; the recognition of Canadian capabilities by International Lending Agencies; and the growing demand for training (at both the engineering and post-construction operation phases) services in which the Canadian industry has proven strengths. Moreover, the high degree of domestic ownership accords broad export freedom to the Canadian industry, a factor of special interest relative to the exploitation of communist bloc markets.

However, there are certain factors that may influence the extent of Canadian participation abroad, such as the increasing requirements being imposed by developing countries for local participation in projects which implies less actual project work in future years. In addition, to the extent that export-oriented firms have had to put into their core of experienced engineering talent in the recession-induced down-sizing, there may be increased vulnerability to import competition in the future.

Moreover, while technological excellence is required to succeed internationally, financing is also an important element in obtaining engineering services contracts in developing countries. External financing accounted for 50% of the export fees of Canadian consultants in 1982. CIDA and EDC financing alone accounted for 32% of the export fees. Many clients make financing assistance a prerequisite to bidding. As a result, to penetrate the international market Canadian firms must not only compete on a technological basis but also on the basis of financing. It is, therefore, necessary that Canadian government financing facilities are capable of meeting the financing terms offered by competing countries.

While export of these services makes a valuable contribution to economic growth on its own, it should also be recognized that the benefits of consulting activity abroad extend beyond the engineering sector itself by the creation of opportunities for follow-on sales of manufactured products and/or construction services. Clearly, this spin-off potential is a function of a number of factors such as the source of financing, project location and

Canadian construction and manufacturing capability. Furthermore, the enhancement of spin-off sales in the future will require:

- the development of better linkages between Canadian consulting, construction and manufacturing industries;
- the formation of consortia capable of executing all phases of turnkey projects;
- the enhancement of mechanisms to provide project financing packages competitive with those offered by other project bidders.

It is generally agreed that the multiplier effect falls within the range of 2:1 to 10:1.

While Canadian consulting firms export all around the world, barriers to trade in services exist in varying degrees and differ between regions. The main concern of Canadian firms is in dealing with developing countries which offer the greatest export potential. The factors which are considered to be the most important in distorting competition relate to subsidies, financial assistance, and export tax credits provided to firms by their governments. Other difficulties arise from requirements and regulations pertaining to such factors as local content and administrative procedures.

The U.S. market is the largest single country market for Canadian firms. At the same time, the U.S. is by far the most significant source of imports into Canada. The current trend in the Canada-U.S. market is for firms to establish local entities in each country or enter into joint ventures. While the Canadian consulting industry overall is presently not as strong and diversified as that of the U.S., Canadian government policies provide for the strengthening of Canadian industry. Up to now the Canadian government approach, which is supported by industry, has been to achieve reciprocity in coping with cross border flow problems. /

EXEMPT
15 (1)

(c) Technological Factors

The technological capability of Canadian firms is recognized in many fields. It is particularly internationally recognized in the hydro-electric power, forestry, mining, municipal, transportation and communication areas. With notable exceptions, the industry needs strengthening in manufacturing and process engineering.

The industry performs limited contract R&D. Own account R&D by consulting engineering firms is minimal because of the very limited ability to finance it internally, highly restricted access to government financial support programs for R&D and innovation, and the limited prospects for a ready market for the results owing to the bland investment outlook. Currently, most research activity done with the consultants' own funds are in areas relating to the firm's operations -- management information systems, computer-aided design and drafting, computer-based specifications and conditions of contract -- but there is scope for consultants to get involved in product, process or system development.

While consulting engineers often apply the technologies developed by others to produce practical solutions for specific projects, future competitiveness of the industry will depend to a significant extent on its ability to increase its overall participation in R&D and other elements of the innovation process to develop new services and products. In addition, it will need to participate in, or instigate, research activities with elements of the manufacturing and processing industries so as to be able to meet the competition from foreign EPC firms or industry-linked engineering firms. Not only will the results be valuable for increasing the penetration of export

markets, but this strategy will be important to a strengthening of the industry's capability in sectors where it is currently weak but where opportunities for future growth exist, e.g., certain manufacturing and process engineering areas.

The outcome of a greater involvement in R&D on the part of the industry would be to: increase its own efficiency of operation, provide more innovative engineering to clients, thereby creating an economic impact on the industrial sectors it serves, and encourage direct participation either on its own or in joint ventures with the manufacturing and construction sectors in the development of new equipment, products, processes and systems conducive to improving productivity and technological advancement in those areas. It would also produce direct benefits to the consulting engineering industry from receipt of payments of licensing fees as well as the likely subsequent participation in the engineering phase of the related industrial plant or capital project.

The principal constraints on consulting firms becoming more active in R&D are resource limitations and the high risk of the activity. Government assistance, particularly of a risk sharing variety, may be needed to encourage the industry to participate more fully in R&D and the overall innovation process.

(d) Other Factors

The level of activity in consulting engineering industry is predominantly dependent on capital investment. The industry is, therefore, deeply concerned about national policies and programs which will influence investment flow. For instance, investor confidence for capital project development is needed to sustain a healthy industry. Interest rate levels are an extremely important factor to the industry insofar as they affect investment decisions by clients.

3. Federal and Provincial Programs and Policies

There are no federal government programs designed exclusively for the consulting engineering industry. Nonetheless, consultants can and do participate in existing industrial, energy and export promotion programs either as direct applicants or as consultants to manufacturers and others.

The department's own IRDP presently excludes consultants from being direct applicants, but consultants can participate along with a manufacturer or processor. This limits assistance to direct users of the technology, whereas if the consultant were eligible to develop the technology for its own account, this would facilitate making the technology more accessible to other manufacturers through licensing arrangements. Moreover, fees earned in this way by the consultant could then be directed to further R&D effort.

Consultants are involved directly in the Unsolicited Proposal program administered by OSS, but unlike IRDP and IRAP, the disadvantage is that the title to any new technology developed under the Unsolicited Proposal program rests with the federal government and not with the business which originated and carried out the project. Much favoured are export programs such as the Program for Export Market Development (PEMD) and CIDA's Canadian Project Preparation Fund (CPPF) which are extensively used by consultants and represent considerable export support to the consulting community. While provincial governments do have marketing assistance measures that appear to be supplementary, coming into effect when federal support is not available. The provinces do, however, mount missions abroad separate from federally-sponsored missions.

In August 1982, the Consultative Committee on the Canadian Consulting Engineering Industry made forty-six recommendations addressed to all levels of government, consulting engineers and other industrial sectors. There has been positive movement in the direction of some of the recommendations. For instance, on the matter of income tax exemptions for Canadians working abroad, increased tax

credits were put into effect in April, 1983 and a further improved tax credit comes into effect for the 1984 taxation year. These tax credits will enhance the international competitive position of Canadian companies. However, there are a number of policy areas which require review with a view to enhancing the climate for business so that consulting engineers can increase their contribution to the economy:

- Contracting Out: While a favourable policy stance was adopted by the federal government some time ago in favour of contracting engineering and other scientific work out, the degree of implementation has not met expectations, with the result that very substantial in-house activity continues. This activity constitutes lost opportunities for the further development of domestic capability and, consequently, export potential. Contracting out is also a major issue at the provincial and municipal levels. A substantive amount of underemployed expertise in provincial hydro authorities overhangs the market and jeopardizes increased private sector activity when markets recover.
- Procurement Policy and Practices: The complexity of the government process, and the excessive number of bids requested in the context of the contract value, are at least irritants to, and often constrain participation in government projects, a market sector which has become increasingly important in some regions of the country during and post-recession.
- Export Financing and Support: A number of countries offer attractive financing packages for entire capital projects. Since project financing is an increasingly important element of project bidding, it is imperative that there be competitive, expeditious mechanisms to meet foreign financing packages. In addition, support for market development is needed to compete successfully with the government-backing provided by competitors. There may be scope for enlarging the role of the Canadian government in financing the high risk, front-end market development costs faced by the industry, such as making CPPF-type assistance eligible in a much broader range of markets.
- Industrial and Regional Benefits: Bias sometimes exists in foreign sponsors of major projects in Canada towards hiring home country consultants in project development and execution even when Canadian capability exists. It is important that existing mechanisms be continued and enhanced to ensure that these sponsors are adequately informed of Canadian capabilities; the selection process is open to Canadian firms; and that adequate scope exists for upgrading Canadian capabilities where necessary through joint ventures and other experience-gathering mechanisms.
- Developing Engineer-Procure-Construct (EPC) Capability

While foreign-sponsored major projects offer an opportunity for increasing business activity and developing capabilities in specific areas, public sector projects constitute an opportunity to further develop the EPC capability of Canadian consultants so that they might bring proven experience in this field to the offshore bidding process and effect substantial follow-on sales of Canadian construction services and machinery and equipment purchases.
- Support for Turnkey Projects Abroad: Further development of the capacity to bid and deliver on turnkey projects abroad is essential. Promoting better links among the industrial sectors which must form teams to participate in such projects is a key area for further government action, together with implementing effective, competitive project financing mechanisms.

A profile of the industry is presently being completed as well as a consultant study on the industry entitled "Coming to Grips with Change".

Attached to the appended Fact Sheet is a list of published major reports concerning the consulting engineering industry.

4. Evolving Environment

While the domestic market has improved from the 1982/83 low, only very modest growth is anticipated for the remainder of the decade. Neither is the rapid growth in export markets, seen prior to 1982, expected to return. Essentially, the activity in this industry will vary directly with the country's capital investment performance. This volatility can be illustrated with reference to the past four years. In 1981/82 there was concern in the industry that there would be a shortage of qualified personnel to handle the large demand. Yet since 1982 the industry has experienced massive layoffs and today the situation is completely reversed with firms having a wide choice from which to recruit highly qualified people.

In tandem with this modest outlook for the remainder of the 1980's, the competitive environment has changed, involving greater emphasis on price competition among an increased number of bidders. In some circumstances, this emphasis precludes innovative engineering processes which would otherwise improve overall or long-term cost efficiency for the project. At the same time, foreign governments are expected to continue to provide heavy support to their consulting engineering firms. As well, firms from the backing countries appear to be moving toward greater exploitation of the R&D potential. To the extent this apparent trend continues and solidifies, the Canadian industry will find itself at a disadvantage in competing internationally unless it receives commensurate support from government and more effort is directed into R&D activity.

In addition, productivity and cost factors will assume greater importance in the future in offsetting industry cyclical changes. This will be reflected on a number of areas such as hiring practices, reduction of overhead through sharing of facilities, more emphasis on improving people productivity, speedier adoption of computer technologies, and greater focus on technological development.

Internationally, the competition will be much stronger. Canadian firms will have to be encouraged to export and programs developed so as to meet the needs of both small and large firms. Firms will have to offer more complete services including training, financial engineering and EPC. Also, they will have to recognize the opportunity and be ready to organize and group with other companies which offer complementary services. Of increasing importance also will be the ability to work with local firms to effect transfer of technology.

5. Assessment of Competitiveness

The consulting engineering industry, and in particular the corps of companies accounting for the bulk of the activity, is considered generally competitive on an international basis. Recession-induced downsizing and movement toward adoption of leading-edge, less labour intensive methods augur well for improved competitiveness and hence profitability when markets eventually recover. However, to the extent the core of experienced talent has been weakened through layoffs, vulnerability to competition at home and abroad could be heightened.

Specifically, large firms, because of technology, unique technical skills, diversification, marketing skills and financial resources, are in a better position to compete internationally. Medium sized firms have less scope because their marketing resources are relatively restricted and their services are in more conventional fields where there is greater competition. The situation of small firms is far more pronounced. Their export prospects are considerably lower on account of both financial and technical (i.e., offering conventional services available elsewhere) factors, except for those companies in highly specialized fields. Moreover, most small firms are not oriented internationally and prefer to concentrate on the domestic market.

Successful focussing of their technical skills on international markets we require an enhancement of their marketing skills and/or marketing assistance

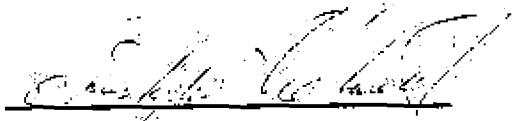
The industry needs to develop more strength in the fields of oil and gas, and certain manufacturing and process engineering areas. While the educational formation of Canadian engineers is fully adequate and the requisite skills base appears present, the industry suffers from the lack of a track record in these fields due to: high foreign ownership in the client sectors which are prone to hire home-based consultants; the existing track record of U.S. engineering firms giving them an edge in the contract awarding process; and client use of in-house engineering.

To maintain and extend its competitiveness and restore profitability levels, the following actions should be taken by the industry:


- increased intensity and aggressiveness of marketing activity and provision of a more complete range of services;
- faster adoption of computer technologies and improved management information systems;
- mergers, joint ventures, and other cooperative endeavours among smaller firms to increase the range and depth of capabilities;
- acquisitions/mergers among larger firms, combined with a streamlining of operations, to broaden capabilities while increasing efficiency;
- instilling in client groups the importance of criteria other than price in non-standard projects to avoid growth of the "minimal engineering" phenomenon.*
- more direct assistance to increase R&D activity in the sector;
- assistance to improve productivity through adoption of computer technology;
- increased support for front-end market development costs; quicker turnaround mechanisms to respond to project financing requests; and more competitive project financing.

* The practice encouraged by reliance on the lowest price selection criterion whereby safe design is provided with the least amount of engineering. This practice may not yield the lowest possible life-cycle costs for the project. As it discourages innovative activity by consulting engineers, it can jeopardize their competitiveness.

PREPARED BY:



APPROVED BY:


Director General or Director

INDUSTRY COMPETITIVENESS PROF

Name of Sector: Consulting Engineering
 SIC 7792 - Offices of Engineers; and
 SIC 4411 - Project Management

Statistical Information

1. <u>Principal Statistics</u>	1980 (E)	1981	1982	1983
Establishments	1,700		2,300	
Employment	42,000		39,500	
Revenues (\$ million)	1,740		2,200	
Exports (\$ million)	340	N/A	250	N/A
Domestic Sales (\$ million)	1,400		1,800	
Imports (\$ million)	140		150 (E)	
Canadian Market (\$ million)	1,540		1,950	
Export - % of shipments	20		11	
Imports - % of Domestic Market	10		8	

2. <u>Regional Distribution - 1982</u>	Atlantic	Quebec	Ontario	West
Establishments	128	320	773	1,015
Employment	1,576	8,310	14,488	14,478
Shipments - % of total	3	25	34	38

3. <u>Foreign Trade</u>	U.S.	E.E.C.	Asia	Others
Imports - % of total				
1981		Not available		
1982	90(E)	10(E)		
1983		Not available		
Export - % of total				
1981		Not available		
1982	15	10	35	40
1983		Not available		

4. Major Firms

1. Lavalin
2. SNC
3. Monenco
4. H.A. Simons
5. Acres.

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Sectoral competitiveness profiles
consumer goods, services and
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