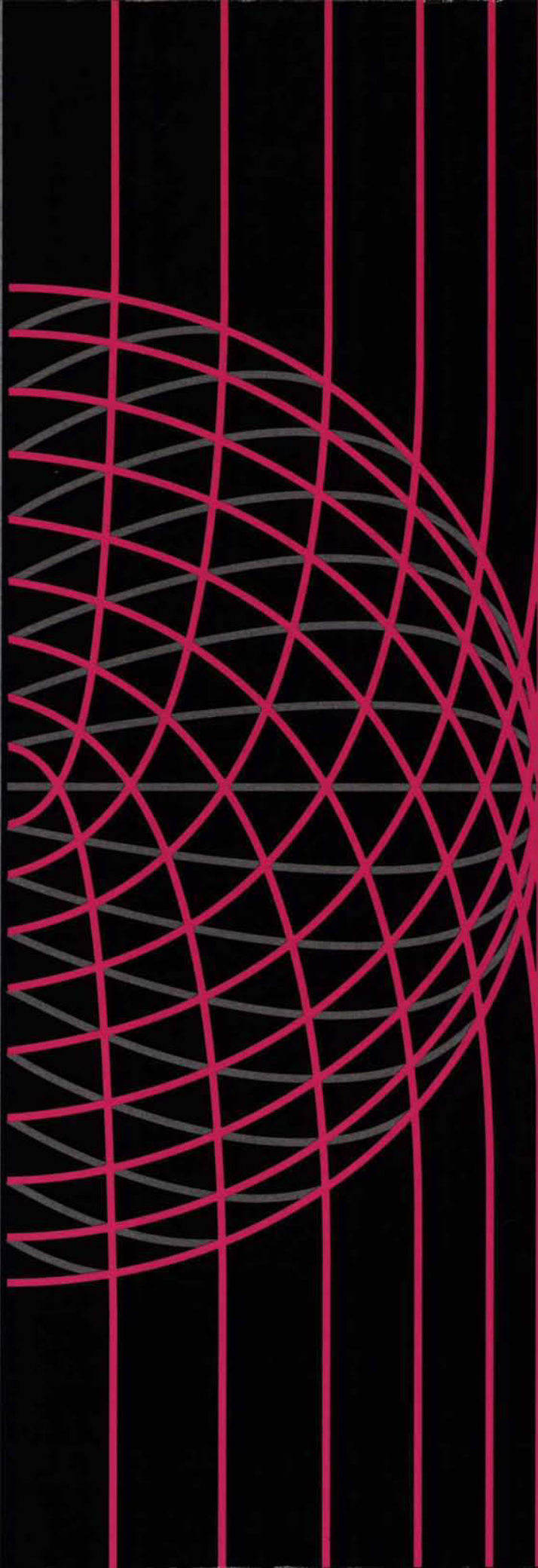


Plastic Products

HD9505
.C3
I5
1990-91
P7 c.2

IC



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



Business Service Centres / International Trade Centres

Industry, Science and Technology Canada (ISTC) and International Trade Canada (ITC) have established information centres in regional offices across the country to provide clients with a gateway into the complete range of ISTC and ITC services, information products, programs and expertise in industry and trade matters. For additional information contact any of the offices listed below.

Newfoundland

Atlantic Place
Suite 504, 215 Water Street
P.O. Box 8950
ST. JOHN'S, Newfoundland
A1B 3R9
Tel.: (709) 772-ISTC
Fax: (709) 772-5093

Prince Edward Island

Confederation Court Mall
National Bank Tower
Suite 400, 134 Kent Street
P.O. Box 1115
CHARLOTTETOWN
Prince Edward Island
C1A 7M8
Tel.: (902) 566-7400
Fax: (902) 566-7450

Nova Scotia

Central Guaranty Trust Tower
5th Floor, 1801 Hollis Street
P.O. Box 940, Station M
HALIFAX, Nova Scotia
B3J 2V9
Tel.: (902) 426-ISTC
Fax: (902) 426-2624

New Brunswick

Assumption Place
12th Floor, 770 Main Street
P.O. Box 1210
MONCTON, New Brunswick
E1C 8P9
Tel.: (506) 857-ISTC
Fax: (506) 851-6429

Quebec

Tour de la Bourse
Suite 3800, 800 Place Victoria
P.O. Box 247
MONTREAL, Quebec
H4Z 1E8
Tel.: (514) 283-8185
1-800-361-5367
Fax: (514) 283-3302

Ontario

Dominion Public Building
4th Floor, 1 Front Street West
TORONTO, Ontario
M5J 1A4
Tel.: (416) 973-ISTC
Fax: (416) 973-8714

Manitoba

8th Floor, 330 Portage Avenue
P.O. Box 981
WINNIPEG, Manitoba
R3C 2V2
Tel.: (204) 983-ISTC
Fax: (204) 983-2187

Saskatchewan

S.J. Cohen Building
Suite 401, 119 - 4th Avenue South
SASKATOON, Saskatchewan
S7K 5X2
Tel.: (306) 975-4400
Fax: (306) 975-5334

Alberta

Canada Place
Suite 540, 9700 Jasper Avenue
EDMONTON, Alberta
T5J 4C3
Tel.: (403) 495-ISTC
Fax: (403) 495-4507

Suite 1100, 510 - 5th Street S.W.
CALGARY, Alberta
T2P 3S2
Tel.: (403) 292-4575
Fax: (403) 292-4578

British Columbia

Scotia Tower
Suite 900, 650 West Georgia Street
P.O. Box 11610
VANCOUVER, British Columbia
V6B 5H8
Tel.: (604) 666-0266
Fax: (604) 666-0277

Yukon

Suite 301, 108 Lambert Street
WHITEHORSE, Yukon
Y1A 1Z2
Tel.: (403) 668-4655
Fax: (403) 668-5003

Northwest Territories

Precambrian Building
10th Floor
P.O. Bag 6100
YELLOWKNIFE
Northwest Territories
X1A 2R3
Tel.: (403) 920-8568
Fax: (403) 873-6228

ISTC Headquarters

C.D. Howe Building
1st Floor East, 235 Queen Street
OTTAWA, Ontario
K1A 0H5
Tel.: (613) 952-ISTC
Fax: (613) 957-7942

ITC Headquarters

InfoExport
Lester B. Pearson Building
125 Sussex Drive
OTTAWA, Ontario
K1A 0G2
Tel.: (613) 993-6435
1-800-267-8376
Fax: (613) 996-9709

Publication Inquiries

For individual copies of ISTC or ITC publications, contact your nearest Business Service Centre or International Trade Centre. For more than one copy, please contact

For Industry Profiles:

Communications Branch
Industry, Science and Technology
Canada
Room 704D, 235 Queen Street
OTTAWA, Ontario
K1A 0H5
Tel.: (613) 954-4500
Fax: (613) 954-4499

For other ISTC publications:

Communications Branch
Industry, Science and Technology
Canada
Room 208D, 235 Queen Street
OTTAWA, Ontario
K1A 0H5
Tel.: (613) 954-5716
Fax: (613) 954-6436

For ITC publications:

InfoExport
Lester B. Pearson Building
125 Sussex Drive
OTTAWA, Ontario
K1A 0G2
Tel.: (613) 993-6435
1-800-267-8376
Fax: (613) 996-9709

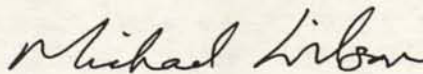
Canada

1990-1991

PLASTIC PRODUCTS**FOREWORD**

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

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



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

Structure and Performance**Structure**

The plastic products industry is composed of establishments whose principal activity is transforming synthetic resins¹ and plastic materials into a wide range of finished products, parts for other manufactured goods and intermediate products consisting of shapes and forms made by a variety of fabricating methods. Excluded from this profile are in-house or "captive" production by companies such as General Motors of Canada, Northern Telecom or Samsonite Luggage, toys and sporting goods manufacturers and establishments classified in other industries. While applications for plastics are found in virtually all end-use market segments, the packaging, construction and automotive markets account for nearly 80 percent of the industry's output

(Figure 1). The Appendix illustrates the processing sector and some of the products made.

The industry in 1989 comprised 1 280 establishments, shipped goods valued at \$7 506 million and employed approximately 65 000 people. According to the Society of the Plastics Industry of Canada, the trade association representing the industry, if in-house or "captive" production were included, shipments would exceed \$12 billion from approximately 2 500 establishments with 110 000 employees.

Imports of plastic products in 1989 amounted to \$2 023 million (Figure 2), of which 77 percent came from the United States, 12 percent from Asia and 9 percent from the European Community (EC). Plastic film and sheet accounted for 43 percent of imports, followed by broad categories of fabricated materials and end products, which include such things as components to be incorporated into electronic equipment

¹A related industry profile is available on *Synthetic Resins*.

INDUSTRY, SCIENCE
AND TECHNOLOGY CANADA
LIBRARY

JAN 13 1992
BFGJ
BIBLIOTHÈQUE
INDUSTRIE, SCIENCES
ET TECHNOLOGIE CANADA

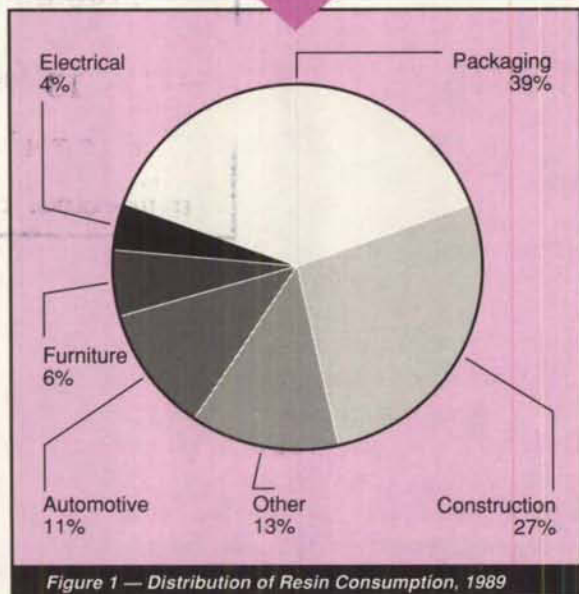


Figure 1 — Distribution of Resin Consumption, 1989

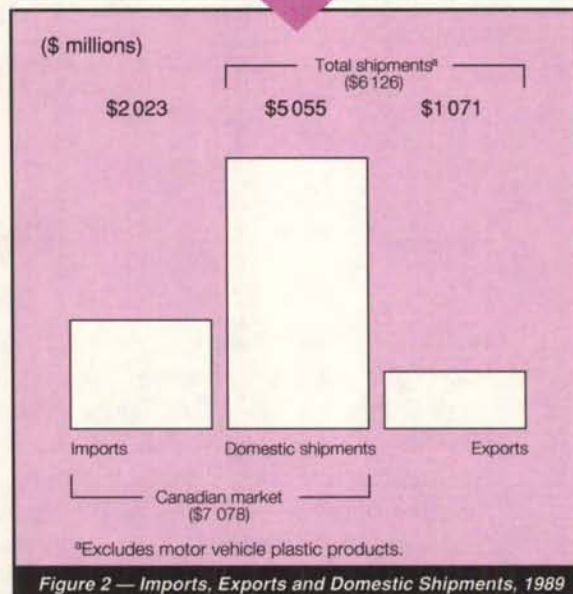


Figure 2 — Imports, Exports and Domestic Shipments, 1989

and appliances, interplant transfers of parts for further assembly in Canada and many products not manufactured in Canada for reasons of production scale.

Exports of plastic products were valued at \$1 071 million in 1989, 93 percent of which went to the United States; the balance was distributed broadly among other world regions. The largest volume was of fabricated materials and end products, mostly of a specialized nature, such as laminated packaging films, large-diameter plastic pipes and items of a proprietary nature or having some unique feature that would facilitate their sale abroad.

In 1989, about 22 percent of the industry's establishments accounted for more than 70 percent of the value of shipments. Approximately two-thirds of these larger firms are Canadian-owned. The majority of establishments employed 50 or fewer people and tended to concentrate manufacturing efforts on specific processes and products. Some Canadian-owned companies have become dominant in specialized fields: Canron and Scepter Manufacturing in plastic pipes; Magna International in plastic auto parts; Consumers Packaging, IPL and Twinpak in packaging systems; and Canadian General-Tower in calendered vinyl sheeting used, for example, in automobiles and as swimming pool liners.

The largest input cost is for purchased raw materials, mostly synthetic resins, which represent more than 50 percent of direct costs. Labour accounts for 15 percent of input costs. Another major input is the cost of transportation, which limits the distance that these large-volume, low-value-added products can be shipped economically.

Industry firms are generally located close to their customers. They are therefore concentrated in areas of high population density, especially greater Toronto and southern Ontario, followed by greater Montreal and the Eastern Townships in Quebec and, to a lesser extent, the western provinces.

Performance

From 1973 to 1982, the industry experienced steady growth, with annual increases in employment, investment and number of establishments of about 3, 4 and 5 percent, respectively. Most of this growth can be attributed to the growing acceptance of plastic products as replacements for those made of traditional materials such as wood, paper, glass and metal.

The plastic products industry has been keeping pace with the manufacturing sector as a whole through most of the 1980s. Following the 1981-1982 recession and during the subsequent period to 1988, the average annual growth in gross domestic product (GDP) of the industry in constant 1981 dollars was 6.5 percent, while that of all manufacturing was 6.2 percent. During the same period, the number of establishments in the industry increased at an annual rate of 4.8 percent. Employment meanwhile grew by 11.5 percent annually (Figure 3). ISTC estimates for 1989, however, indicate that industry performance in these areas has since stalled.

Historically, the plastic products industry has had to comply with many regulations from a variety of sources. For example, it has had to meet building codes that were written for competing materials and, in many cases, to seek new



codes for construction products made of plastic materials. In some cases, provincial government regulations, such as those restricting the use of plastic bottles for carbonated beverages, have inhibited or slowed the introduction of new or innovative plastic products. More recently, the industry has been the target of groups concerned about protecting the environment. Plastic materials have received a disproportionate share of public condemnation regarding solid waste disposal, although studies estimating that plastics contribute between 8 and 16 percent of waste volume would indicate that they are not the chief components of solid wastes. To counteract this threat, the industry and its customers are actively seeking technological and commercial solutions such as thinner-gauge materials that reduce the volume of plastic materials used, laminated products that make use of layers of both recycled and virgin materials, and coding of materials to allow for easy identification of reclaimed plastics, thus enhancing their capacity to be recycled.

In spite of these external pressures, the inherently high growth potential of the industry, the relatively low investment cost and the ready availability of technology and materials have attracted many new entrants, resulting in increased domestic production and more intensive competition.

From 1982 to 1987, while the cost of basic resins used by the industry remained relatively stable, the costs of other raw materials, such as pigments and plasticizers, and of manufacturing, marketing and equipment continued to increase. Late in 1987 and continuing into 1988, international resin shortages resulted in a sharp upward movement in prices, which adversely affected industry profit margins. Prices for petrochemical raw materials increased somewhat in 1990 as a result of the Persian Gulf crisis. However, because of the general decline in demand, increases have been more moderate than expected and in some cases could not be maintained.

In general, the industry has made steady improvements to process equipment and instrumentation over the years and has also improved its management of cash flows and inventories. Certain segments of the plastic products industry (i.e., pipes and, more recently, films) have attempted to gain competitive advantage through consolidation and rationalization. Nonetheless, the industry remains highly fragmented.

The industry was successful in increasing exports during the 1980s, benefiting from a relatively weak Canadian currency. Exports accounted for 17.5 percent of shipments in 1989, up from 10.8 percent in 1983. Imports, however, continued to gain an increasing share of the domestic market, rising from 21.3 to 28.6 percent over the same period.

At the time of writing, the Canadian and U.S. economies were showing signs of recovering from a recessionary period.

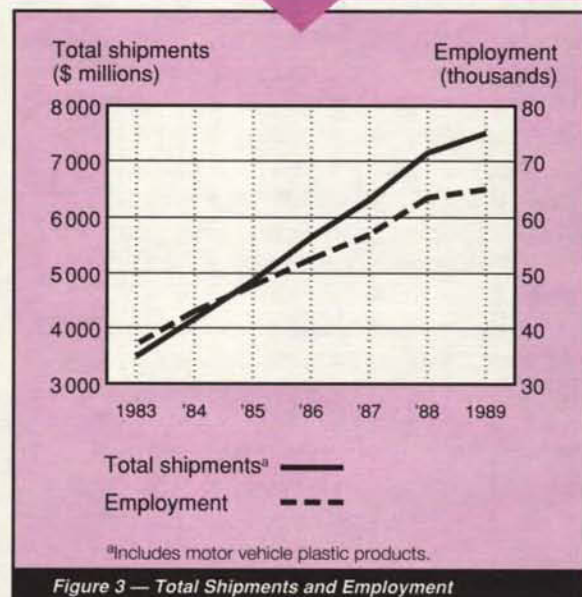


Figure 3 — Total Shipments and Employment

During the recession, companies in the industry generally experienced reduced demand for their outputs, in addition to longer-term underlying pressures to adjust. In some cases, the cyclical pressures may have accelerated adjustments and restructuring. With the signs of recovery, though still uneven, the medium-term outlook will correspondingly improve. The overall impact on the industry will depend on the pace of the recovery.

Strengths and Weaknesses

Structural Factors

The elements determining the competitiveness of the plastic products industry are the costs of raw materials, labour, transportation and distribution. Related factors are scale efficiencies and the possession of proprietary processes or designs. Also important is the financial and administrative strength to acquire and efficiently manage increasingly sophisticated manufacturing technologies and control systems.

Shorter production runs related to the smaller Canadian market, a general lack of larger processing firms and higher unit labour costs (including fringe benefits) have combined to raise the costs of most Canadian products relative to those in the United States. Maintaining a distribution network to serve the more widely dispersed Canadian market results in further comparative inefficiencies. The impact of scale inefficiencies and higher marketing costs is more heavily felt by small producers outside Central Canada.



Transportation provides an effective barrier to entry for some large and relatively low-cost products such as plastic drainage pipes and beverage containers. An exception to this is film products widely used in the packaging industry, which can be economically shipped greater distances. Canadian production of large-volume, low-value-added (commodity-grade) film products could be challenged by imports from the United States and Asia that can be more economically transported. Films constitute the majority of two-way trade between Canada and the United States.

Some firms have a competitive advantage resulting from possession of proprietary designs or process knowledge. However, the majority of Canadian plastic products manufacturers do not have this technological edge.

The acquisition of advanced manufacturing technologies and control systems is viewed by some industry observers as a prerequisite to meeting the quality and productivity challenges of the 1990s. A study² conducted in 1990 by Industry, Science and Technology Canada in conjunction with SRI International, a U.S. consultants firm, indicates that Canadian plastics processors are generally competitive with U.S. firms of similar size in the implementation of these technologies, but lag behind both larger U.S. processors and the European industry. These views are supported in a technology assessment³ by the Canadian Plastics Institute, a technology information organization supported by the Canadian plastics industry. Management of these technologies has been identified as a limitation to Canadian processors. The rapid growth of the plastic products industry has resulted in a high rate of vacancies in skilled positions. Industry sources report that engineering staff are employed in fewer than 10 percent of plastics processing firms. Similarly, a lack of trained operators and high labour turnover throughout the industry have been cited⁴ as important problems in implementing technological solutions to competitive manufacturing.

Canadian processors tend to depend on their suppliers of materials and equipment for new technology, a situation generally common to the international processing community. However, it is difficult to gain any technological advantage over the competition without in-house capabilities to ensure early refinement and implementation of these technologies and to further the state of the art. Relatively few Canadian processors have this capability, with the result that Canadian expenditures on research and development (R&D) by the industry as a percentage of value-added are only 0.5 percent,

compared with 3.1 percent for counterparts in the United States and Germany and 3.3 percent for those in Japan.

Trade-Related Factors

Before the implementation of the Canada-U.S. Free Trade Agreement (FTA) on 1 January 1989, raw material suppliers in Canada tended to maintain domestic resin prices at U.S. levels plus some portion of the Canadian duty. Resin prices in Canada now are more in line with those in the United States as a result of tariff reductions under the FTA.

Under the terms of the FTA, Canadian rates of duty applicable to plastic products in 1991 range from 6 to 9.5 percent. Duties will be eliminated completely by 1998. Large-volume imports of fabricated plastic products are at the higher end of the scale. The 1991 U.S. tariffs range from free to 5.6 percent; some widely produced items such as plastic pipes are assessed 2.2 percent, for example. In Japan, the duty applicable to plastic products imported from Canada ranges from 5.8 to 7.8 percent. In the EC, tariff rates range from 7 to 13 percent.

No major non-tariff barriers are evident on products exported to the United States. In some cases, different standards have caused some problems in product acceptability. Recent efforts by the industry to harmonize approval standards between the two countries have tended to improve the salability of Canadian products in the United States, although government procurement in that country is sometimes influenced by "Buy America" provisions, which exclude Canadian products. In some instances, these effectively dormant provisions have been rejuvenated and more aggressively implemented since the FTA went into effect. These activities make U.S. distributors hesitant to carry non-U.S. products in order to avoid the need to segregate supplies. In Canada, several provincial government purchase contracts insist on having products manufactured within their jurisdiction in order to qualify for funding from provincial or municipal sources.

The FTA will phase out duties on resins of U.S. origin consumed by plastics processors by 1993. This progressive reduction has already brought Canadian material costs more in line with those in the United States and has contributed to a more competitive cost structure in Canada. The FTA is also speeding up the rationalization of end-use industries on a North American basis, with the result that some of the traditional Canadian customers for plastic products are relocating in the United States. At this stage, it is difficult to assess the net effect.

²Assessment of the North American Plastics Processing Industry (Ottawa: SRI International and ISTC, 1990).

³Assessment of the Plastics Processing Industries in Canada and Europe (Toronto: Canadian Plastics Institute, 1991).

⁴Human Resources Planning for the Canadian Plastics Processing Industry (Ottawa: Canadian Labour Market and Productivity Centre, 1989).

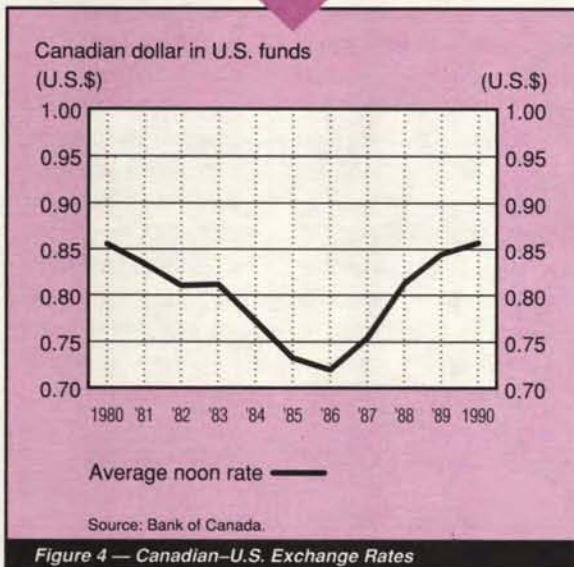
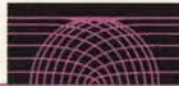


Figure 4 — Canadian—U.S. Exchange Rates

Technological Factors

In the plastic products industry, there are constant modifications and improvements in machinery, equipment and processes. Plastics processors in Canada traditionally have had ready access to, and currently employ, up-to-date machinery and tooling and other equipment. The technology they employ is generally competitive with that used by U.S. processors of similar size.

Technology is becoming an increasingly important competitive factor in productivity, as are product quality and performance. The industry is being pressed to increase the use of higher-performance polymer materials, instrumentation, controls and automated material-handling techniques in their processing operations. While these technologies continue to be generally available, they are more demanding in their implementation, operation and maintenance, reflecting a greater need for higher levels of labour and management skills. Such skills are generally in short supply.

With a few exceptions, Canadian firms have not developed extensive R&D capabilities in higher-performance markets such as aerospace, electronics and automotive parts. The reasons for this include the lack of adequate domestic markets to justify the associated high development costs and to support the commercial supplier, processor and user alliances necessary to compete in these market segments.

Other Factors

The industry has expressed concern about the relatively higher value of the Canadian dollar in recent periods vis-à-vis the American dollar (Figure 4). Under certain economic

conditions, a significantly lower value is widely recognized as being inflationary. The resulting higher domestic costs and prices can erode, over time, the short-term competitive gains of such a lower-valued dollar.

Through its trade association, the Society of the Plastics Industry of Canada, the industry has approached its waste and disposal difficulties through public awareness campaigns and is actively seeking solutions. A new industry body called the Environment and Plastic Institute of Canada (EPIC) has been formed to address the problem. Accordingly, manufacturers are being actively encouraged to reduce the amount of plastics used in given applications such as packaging and to develop means of economically recycling plastic materials. Additionally, a very active program has been undertaken to educate the public about the role of plastics in the environment and to implement viable technologies in Canada that will reduce the amount of plastic materials that eventually end up in landfill sites.

Evolving Environment

Because of the performance advantages of plastics over competitive products, their status as a material of choice in a wide range of applications is assured. As a result of evolving global marketing strategies, including rationalization, and of tougher competition due to lower tariffs, the industry cannot be expected to maintain the high rate of growth exhibited in the past. However, it is expected that its growth will continue to outperform the Canadian manufacturing GDP.

The three major subsectors of the plastic products industry — packaging, construction and automotive products — consume almost 80 percent of all polymer resins processed in Canada. Packaging accounts for about 40 percent of production, and film and film packaging products represent about half the value of trade in plastic products between the United States and Canada. It is expected that competitive pressure from U.S. suppliers of commodity films will increase as tariff parity approaches.

Many of the larger Canadian producers of plastic packaging products are subsidiaries of foreign companies, and the increasing attractiveness of rationalization of production within the North American market may be a powerful inducement to relocate or expand manufacturing operations in areas of greater market density than can be found in Canada. Recent detailed, unpublished studies of the packaging subsector conducted by Industry, Science and Technology Canada have shown increasing trends in acquisition, consolidation and, in some cases, disinvestment. In many cases, these changes are driven by the rationalization and consolidation of some



industries that consume plastic products. This in turn appears to be increasing the pressures on many domestic companies to improve their managerial and financial strengths and to assume a North American market perspective.

To control costs as well as to protect the environment, there is a trend towards reducing the volume of packaging materials in specific applications. For plastic packaging, this often means reducing its thickness. The plastic products industry has demonstrated an ability to achieve these objectives, and this trend towards reduction is to be seen as an opportunity for the industry to further replace competing materials.

The second largest volume of resin is consumed by products fabricated for the construction trade. Although construction is not as sensitive to import competition as the packaging subsector, certain product groupings will be adversely affected in the future. While plastic products used in construction usually must have specification approval by Canadian or other standards boards, enforcement is not always mandatory. There has been evidence that some U.S. products such as vinyl siding have not met Canadian standards, thus undercutting Canadian product specification in the domestic market. If foreign suppliers are determined to pursue these markets, they can have their products tested and can obtain specification approval in Canada. The trend towards harmonization of standards between Canada and the United States means that standards are likely to present less of a barrier to trade in construction products.

Plastic products for automotive uses are the third largest outlet for polymer resins. Because of the Canada-U.S. Automotive Products Trade Agreement (Auto Pact), tariff rates on these products are already low and so do not present a major factor inhibiting the growth of exports to the United States. Other unrelated factors are assuming a major level of concern, however. The market for motor vehicles seems to be lagging behind the recovery, a situation that may continue for the foreseeable future during the gradual cyclical upturn; consequently, the demand for plastic automotive parts will recover slowly. The emergence of competitive suppliers to the North American car manufacturing industry based in the Pacific Rim and Latin America, notably Mexico, will further increase import pressure on Canadian and American suppliers. To further compound this market dilution for established domestic manufacturers of plastic products for the vehicle trade, manufacturing transplants from Asian countries may continue to purchase part of their requirements from their parent companies. New applications, such as the introduction of thermoplastic exterior body panels for popular, widely produced models, could counterbalance some of the negative impact.

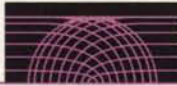
Because the larger companies in the plastic products industry are faced with increasing import competition, global marketing strategies are becoming imperative in North America in order to ensure survival. There are, however, a great number of smaller, less visible processors in Canada serving small or niche markets. These companies may not be willing or may not even have the product and financial strength to move into export markets, but they are protected indirectly from foreign competition because their own market areas are so small. The marketing effort required and the returns to be realized are not sufficient to induce or encourage foreign competition. For the time being, at least, these smaller fabricators should remain viable in the parochial markets they serve.

The impact of potential environmental legislative actions on the management of plastic waste is difficult to evaluate at this time. It is likely that environmental advocacy groups seeking a reduction in solid waste by consumers will force a reduction in the volume of plastics consumed in given applications and will encourage greater use of recycled materials in finished products. However, since many environmental regulations target materials and applications in general, rather than plastics specifically, it is possible that plastics could capture new markets from other materials. The industry must be prepared to react very quickly in order to minimize the impact of any such legislation affecting its products.

Competitiveness Assessment

The level of tariff protection allowed the plastic products industry in Canada to retain an important share of the Canadian market and to grow at a rate exceeding that of other domestic manufacturing industries.

In general, however, the industry cannot be considered totally cost-competitive with counterparts in the United States or other highly industrialized nations in Europe or Asia. The period of adjustment to freer international trade will depend in part on the movement of raw material costs towards international parity. Other costs such as manufacturing, marketing and distribution will move more slowly towards parity with those in the United States, causing the industry a difficult period of adjustment for the next three to four years. It may be expected that this period of adjustment will be less onerous for products such as films, which are widely manufactured, since they can be transported economically to U.S. markets, but the importance of their contribution to profitability will decline as prices decline because of falling tariffs and increasing competition.



Historically, the industry has been able to develop, absorb and exploit new technologies and products as they emerge. The need to continue to compete for and implement competitive technologies and to manage more complex business strategies will challenge the industry in the 1990s as trade barriers fall, environmental and other regulatory pressures increase and growth in some subsectors begins to soften. Rationalization of product lines and production units and the formation of commercial and technological alliances by market leaders can be expected as a means of competing successfully in export markets.

For further information concerning the subject matter contained in this profile or in the ISTC sectoral study (see page 11), contact

Materials Branch
Industry, Science and Technology Canada
Attention: Plastic Products
235 Queen Street
OTTAWA, Ontario
K1A 0H5
Tel.: (613) 954-3011
Fax: (613) 954-3079



PRINCIPAL STATISTICS^a

	1983	1984	1985	1986	1987	1988	1989
Establishments	1 086	1 143	1 172	1 235	1 223	1 355	1 280 ^b
Employment	37 027	43 058	47 712	52 565	56 959	63 509	65 000 ^b
Total shipments (\$ millions)	3 486	4 163	4 864	5 649	6 289	7 242	7 506 ^b
Plastic products ^c (\$ millions)	3 043	3 510	3 861	4 385	5 062	5 893	6 126 ^b
Motor vehicle plastic products ^d (\$ millions)	443	653	1 003	1 264	1 227	1 349	1 380 ^b
GDP ^e (constant 1981 \$ millions)	1 014	1 161	1 283	1 290	1 365	1 396	1 387
Investment ^f (\$ millions)	84	123	162	227	242	252	250
Profits after tax ^g (\$ millions)	88	114	141	N/A	N/A	N/A	N/A
(% of income)	3	3	3	N/A	N/A	N/A	N/A

^aFor establishments, employment and shipments, see *Rubber and Plastic Products Industries*, Statistics Canada Catalogue No. 33-250, annual (major group 16, plastic products industries); and *Transportation Equipment Industries*, Statistics Canada Catalogue No. 42-251, annual (SIC 3256, plastic parts and accessories for motor vehicles industry).

^bISTC estimates.

^cData comprise SICs 1611, foamed and expanded plastic products industry; 1621, plastic pipe and pipe fittings industry; 1631, plastic film and sheeting industry; 1691, plastic bag industry; and 1699, other plastic products industries not elsewhere classified.

^dData comprise SIC 3256, plastic parts and accessories for motor vehicles industry.

^eSee *Gross Domestic Product by Industry*, Statistics Canada Catalogue No. 15-001, monthly. Data comprise major group 16 only.

^fSee *Capital and Repair Expenditures, Manufacturing Subindustries, Intentions*, Statistics Canada Catalogue No. 61-214, annual. Data on repairs are not included. Data comprise major group 16 only.

^gISTC estimates for major group 16 only.

N/A: not available

TRADE STATISTICS^a

	1983	1984	1985	1986	1987	1988 ^b	1989 ^b
Exports (\$ millions)	328	430	551	726	782	1 043	1 071
Domestic shipments (\$ millions)	2 715	3 080	3 310	3 659	4 280	4 850	5 055
Imports (\$ millions)	733	931	1 075	1 192	1 352	1 934	2 023
Canadian market (\$ millions)	3 448	4 011	4 385	4 851	5 632	6 784	7 078
Exports (% of plastic products shipments)	10.8	12.3	14.3	16.6	15.4	17.7	17.5
Imports (% of Canadian market for plastic products)	21.3	23.2	24.5	24.6	24.0	28.5	28.6

^aSee *Exports by Commodity*, Statistics Canada Catalogue No. 65-004, monthly; and *Imports by Commodity*, Statistics Canada Catalogue No. 65-007, monthly. Data comprise major group 16 only (plastic products industries).

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



SOURCES OF IMPORTS^a (% of total value)

	1983	1984	1985	1986	1987	1988	1989
United States	86	85	83	80	80	77	77
European Community	6	7	8	10	10	10	9
Asia	4	2	2	2	2	12	12
Other	4	6	7	8	8	1	2

^aSee *Imports by Commodity*, Statistics Canada Catalogue No. 65-007, monthly. Data comprise major group 16 only.

DESTINATIONS OF EXPORTS^a (% of total value)

	1983	1984	1985	1986	1987	1988	1989
United States	84	85	90	91	89	89	93
European Community	3	3	2	3	4	4	2
Asia	3	2	2	2	2	4	3
Other	10	10	6	4	5	3	2

^aSee *Exports by Commodity*, Statistics Canada Catalogue No. 65-004, monthly. Data comprise major group 16 only.

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

	Atlantic	Quebec	Ontario	Prairies	British Columbia
Establishments (% of total)	2	25	52	11	10
Employment (% of total)	X	22	65	X	X
Shipments (% of total)	X	22	64	X	X

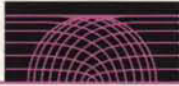
^aSee *Rubber and Plastic Products Industries*, Statistics Canada Catalogue No. 33-250, annual; and *Transportation Equipment Industries*, Statistics Canada Catalogue No. 42-251, annual. Data comprise major group 16 and SIC 3256.

X: confidential



MAJOR FIRMS

Name	Country of ownership	Location of major plants
ABC Plastic Moulding	Canada	Surrey, British Columbia Rexdale, Ontario
AT Plastics Inc.	Canada	Brampton, Ontario Edmonton, Alberta
Bonar Inc.	United Kingdom	Burlington, Ontario
Canron Inc.	Canada	Toronto, Ontario
Consumers Packaging Inc.	Canada	Etobicoke, Ontario
Decoma International Inc.	Canada	Concord, Ontario
Du Pont Canada Inc.	United States	Mississauga, Ontario
Groupe Hamelin Inc.	Canada	Boucherville, Quebec
Innopac Inc.	Canada	Vancouver, British Columbia
Lawson Mardon Group Limited	Canada	Mississauga, Ontario
PCL Packaging Ltd.	Ireland	Oakville, Ontario
Royal Plastics Ltd.	Canada	Weston, Ontario
Scepter Manufacturing Company Limited	Canada	Don Mills, Ontario
Twinpak Inc.	Australia	Dorval, Quebec
Winpak Ltd.	Finland	Winnipeg, Manitoba
Woodbridge Foam Corporation	Canada	Woodbridge, Ontario
Woodbridge Moulded Products Ltd.	Canada	Downsview, Ontario



INDUSTRY ASSOCIATIONS

Canadian Chemical Producers' Association
Suite 805, 350 Sparks Street
OTTAWA, Ontario
K1R 7S8
Tel.: (613) 237-6215
Fax: (613) 237-4061

The Society of the Plastics Industry of Canada
Suite 104, 1262 Don Mills Road
DON MILLS, Ontario
M3B 2W7
Tel.: (416) 449-3444
Fax: (416) 449-5685

SECTORAL STUDIES AND INITIATIVES

The following publication is available from the nearest
Business Service Centre (see inside front cover).

**The Canadian Plastics Processing Industry:
Strategic Priorities for the 1990s**

This publication reviews the major trends and issues facing the
Canadian plastics industry, prepared as a basis for discussion
with industry and government.



APPENDIX — PROCESSES AND END USES

