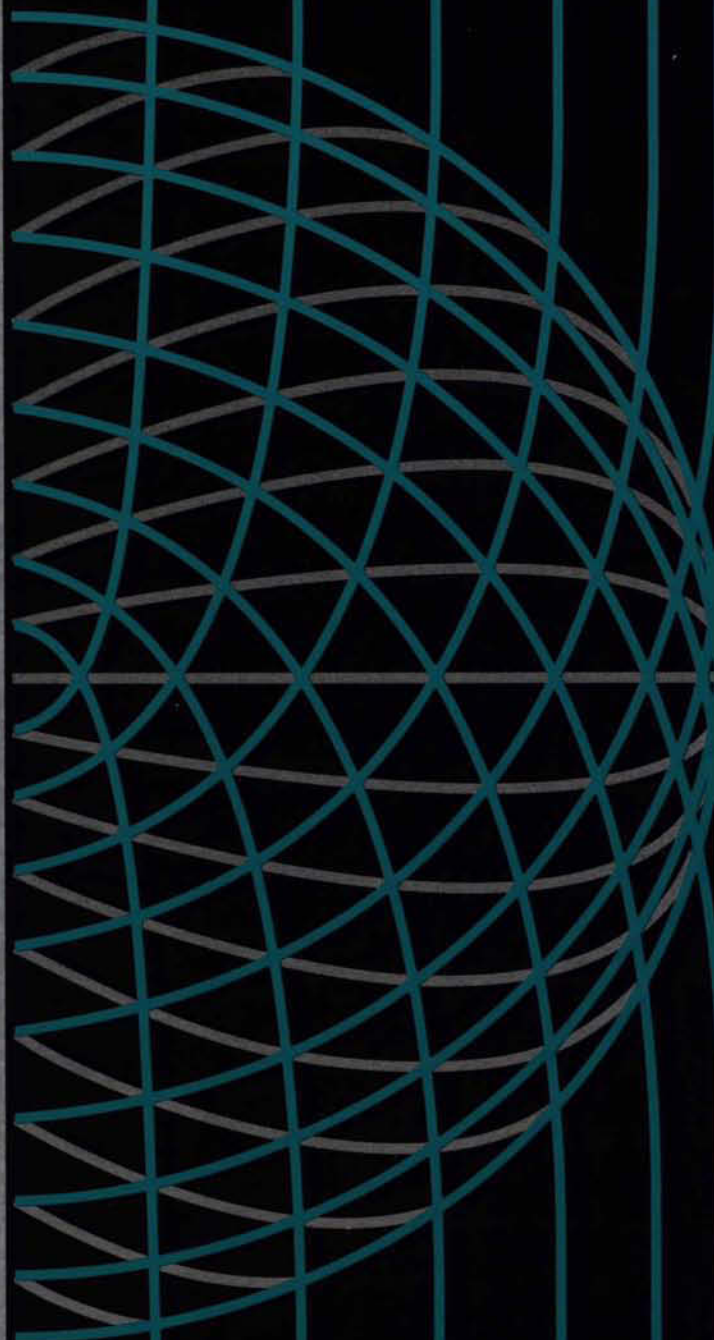


Hog Processing

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INDUSTRIE, SCIENCES ET
TECHNOLOGIE CANADA**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

Introduction

The meat processing sector in Canada consists of red meat products, including beef, veal, pork, lamb and horse-meat. Meat processors produce a wide variety of meat products ranging from fresh and frozen cuts to cured, smoked, canned or cooked products, sausages and delicatessen products of all kinds.

There are three major industries in the meat processing sector — cattle processing, hog processing and further-processing of meats. These industries stand between the farm livestock producers and the wholesale and retail food distributors. Their meat products are sold to distributors such as brokers, other wholesalers, food retailers, and the hotel, restaurant and institutional (HRI) trade.

Meat processing sector shipments account for approximately 25 percent of the total food industry shipments in

Canada; they totalled \$8.72 billion in 1989. Cattle processing is the largest component within the overall red meat industry in Canada, representing about 40 percent of shipments and worth approximately \$3.5 billion in 1989. The remaining shipments are divided almost evenly between the hog processing industry and the further-processed meats industry (Figure 1).

The meat processing sector is also important as the largest employer within the food industry complex. In 1989, there were 524 establishments in Canada employing 33 057 people.

Appended to this profile is a section describing the further-processed meats industry. The companion to this profile is *Cattle Processing*. Related industries are discussed in the profiles *Poultry and Egg Processing* and *Livestock and Poultry Feeds*.



Structure and Performance

Structure

Canada's hog processing industry consists of hog slaughtering as well as the conversion of hog carcasses into fresh or frozen pork products.

Pork products may be marketed either as wholesale cuts such as loins and bellies or as retail cuts such as roasts and chops. Wholesale cuts are usually sold to further-processors, who convert the pork into cured, smoked, canned or cooked products such as hams, bacon, sausages and delicatessen meats. Although an estimated 70 percent of pork products ultimately reach consumers in a processed form, further-processing is not considered part of hog processing and cutting. For information about processed meats, see the appendix to this profile titled "Further-Processed Meats" on pages 11-16.

The retail level and the HRI trade are other important markets for pork. The volume of sales to the HRI trade, particularly in the area of breakfast meat products for the fast-food market, is increasing as a result of the continuing growth in foodservices sales. Pork by-products such as lard and other rendered products are generally sold to industrial users or to international trade brokers.

Canadian hog processors in 1989 produced almost 1.3 million tonnes of fresh and frozen pork, with an estimated value of \$2.5 billion (Figure 2). Pork exports amounted to more than 270 000 tonnes of fresh, chilled or frozen pork (including offal), valued at \$553 million, or approximately 22 percent of total shipments. The value of exports rose to \$624 million in 1990 but fell back to \$502 million in 1991. By volume, almost 80 percent of this shipment total was destined for the United States. Japan remained Canada's second most important export market, receiving about 12 percent of the total volume of Canadian pork exports. Imports of pork cuts were negligible, amounting to \$29 million in 1989, or about 2 percent of the Canadian market. The value of pork imports rose to \$33 million in 1990 and remained at that level in 1991.

In most provinces, hog marketing boards are the sole marketing agents of hogs for slaughter. These boards do not have supply management authority, but are producer organizations operating under their respective provincial marketing acts. Hog sales are generally conducted through an electronic auction system, the settlements being made with the producer after the hog is slaughtered and the carcass graded.

Because many of the major meat industry companies are privately held, very little detailed financial information is publicly available. Separate data on gross domestic product, investment, profits after taxes and employment also are not

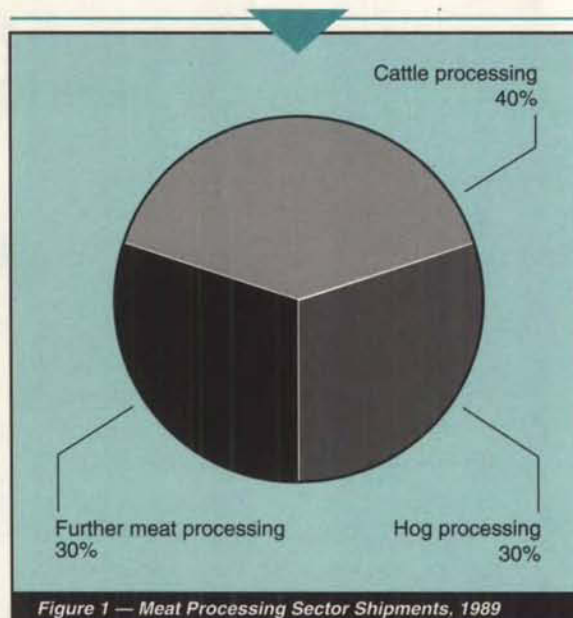


Figure 1 — Meat Processing Sector Shipments, 1989

available for this industry. Trends regarding employment, size and ownership concentration may be determined from the overall meat processing sector.

According to Statistics Canada data, 33 057 people were employed in the meat processing sector in 1989. About 80 percent of Canadian meat plants employ fewer than 50 workers. These small, provincially inspected establishments, which are not permitted to ship product outside their home province, accounted for less than 4 percent of total red meat sales in 1988. The major meat plants, however, may employ up to 1 000 workers. Of 524 establishments in 1989, the six largest accounted for approximately 55 percent of total meat sales. Canadian-owned establishments accounted for 95 percent of the country's production in 1988. The sale in 1990 of Canada Packers, Canada's largest meat processing company, to Hilldown Holdings PLC of the United Kingdom and the opening in 1989 of the U.S.-owned Cargill beef plant in High River, Alberta, signalled a significant change in the ownership pattern that had characterized this industry. Because these firms are conglomerates with diverse product lines, the market share still held by Canadian-owned establishments is difficult to estimate.

In the hog processing and cutting industry, about 50 federally inspected pork establishments in 1989 were registered under Canada's *Meat Inspection Act*. In compliance with the Act's regulations, these establishments are eligible to slaughter swine and to ship pork interprovincially or to export markets. Of these, 17 were major plants, almost all of which were vertically integrated with operations for boning, cutting,

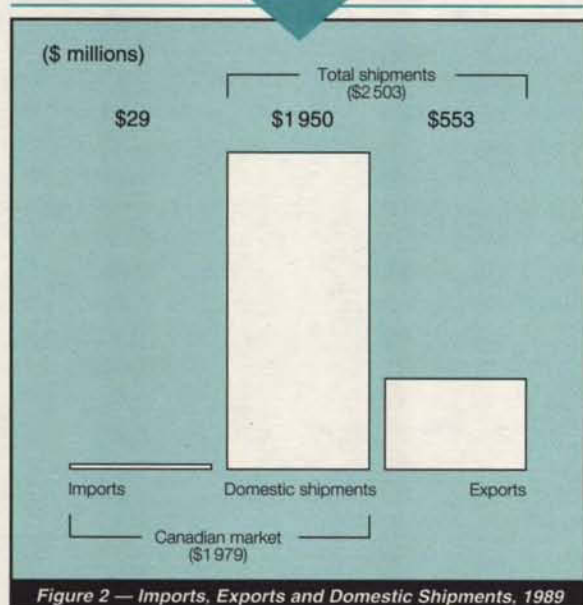


Figure 2 — Imports, Exports and Domestic Shipments, 1989

trimming and other value-adding activities. Many also conducted further-processing operations. Although the total number of both federally and provincially inspected hog processing plants in 1989 was estimated at 140, six plants accounted for more than 50 percent of pork production.

Although the industry is national in scope, hog processing is heavily concentrated regionally. Over 60 percent of hogs were processed in Central Canada in 1989; Quebec alone accounts for almost 50 percent of Canada's total pork exports. This pattern reflects the trend toward developing intensive hog production in areas that have competitive advantages, primarily relatively low-cost land and feeds (especially corn and soybeans) and proximity to major population centres.

Performance

The construction of larger, more capital-intensive hog facilities throughout North America during the 1980s has contributed to the stabilization of hog production cycles and has helped to change the character of hog processing. Prior to the 1980s, the hog production cycle was highly variable: farmers shifted resources into and out of production, primarily in response to hog prices and the price of animal feed. The latter is the most significant cost factor in hog production, representing more than 50 percent of the total cost.

Another contribution toward the levelling of hog production cycles in Canada is the National Tripartite Stabilization Plan (NTSP), which was introduced in 1986 to protect farmers against severe swings in hog prices.

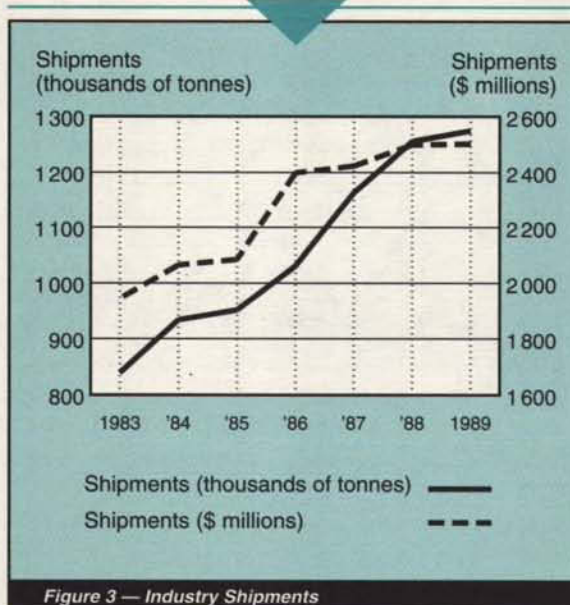


Figure 3 — Industry Shipments

Premiums are contributed by federal and provincial governments as well as by producers themselves, and benefits are paid out in years when hog prices fall below a certain defined level.

From 1984 to 1988, the value of fresh and frozen pork shipments in Canada increased by 21 percent (Figure 3). The value of pork exports increased by 33 percent over the same period, with the U.S. share averaging more than 75 percent of the total.

While the total value of Canadian pork exports to the United States decreased by almost 10 percent in 1989 relative to the 1988 level, the value increased by 15 percent in 1990 relative to the 1989 level. The sharp temporary decline in 1989 occurred because the U.S. government imposed a countervailing duty (CVD) on Canadian fresh, chilled and frozen pork to counteract in part Canada's NTSP, which the U.S. government deemed to be a public subsidy to producers. The pork CVD order was subsequently revoked in June 1991.

As is the case for other red meats, per capita consumption of pork in Canada has slowly declined over the past decade, from 25.5 kilograms in 1980 to 22.3 kilograms in 1989, based on retail weight. The decrease is attributed to a combination of perceived health concerns regarding high fat content of red meats, an aging population, lifestyles favouring convenience food products, and a growing consumer preference for poultry meat. Per capita consumption of poultry meat has risen from 22.7 kilograms in 1980 to 27.7 kilograms in 1989. Canadian pork consumption per person is not expected to increase in the future.



In recent years, the Canadian pork processing industry has been operating at levels fluctuating between approximately 75 and 90 percent of full production capacity. This underutilization, along with narrow processor margins, has led to rationalization of capacity through plant closures and mergers during the 1980s. This trend is expected to continue, but at a decreasing pace, into the 1990s.

Strengths and Weaknesses

Structural Factors

Key factors affecting the competitiveness of the Canadian hog processing and cutting industry include the availability and price of hogs, plant economies of scale, trends in the U.S. and Japanese markets, and opportunities for marketing higher value-added products abroad and at home.

One of the most important strengths of the Canadian meat sector is its reliable supply of high-quality hogs. Growing capital investment in hog confinement production facilities, coupled with the NTSP, have allowed this sector to evolve into a specialized industry, with committed producers providing a stable supply base for the marketing of pork. Today's leaner pork is a result of the industry's efforts since the early 1970s to reduce the fat content through improved breeding, feeding and grading techniques.

Canadian prices are normally competitive within the North American marketplace. Market prices are widely reported for hogs and key cuts such as bellies and loins, largely because of an active futures market in the United States. On occasion, however, high levels of live hog exports to the United States resulting from increased demand can cause temporary shortages of hog supplies in Canada and drive up raw material costs at home. In these cases, competition for the reduced supply of live hogs, particularly in Ontario and Quebec, has resulted in narrow processor margins, underutilization of capital resources and generally poor operating conditions. Some firms must therefore buy whole carcasses from other provinces to ensure adequate supply for processing. Large stocks of frozen pork in the United States in recent years have also depressed North American pork prices. Canadian pork prices are also affected by fluctuations in exchange rates; these are rapidly passed back to livestock producers.

Major acquisitions and investments by the top U.S. companies have led to markedly greater ownership concentration in that country; the four major firms account for 34 percent of total hog slaughter. For example, IBP Inc., the second-largest meat company in the United States, operates four hog slaughtering and processing plants with a combined

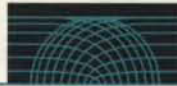
full-year capacity of about 13 million hogs. In comparison, hog sales for all of Canada in 1989 were approximately 16 million hogs. Economies of scale give large U.S. establishments an advantage over smaller operations in both countries.

In general, modern equipment and technology are used throughout the industry, although Canadian pork plants are considerably smaller than the newer mainline U.S. plants. The size of the Canadian market does not warrant the incorporation of the high-speed lines typical of the large U.S. plants, the specialized processing lines found in European plants, or the automated processes under development in Australia and New Zealand to satisfy their high-volume export markets. To be able to match major competing nations, Canadian establishments would need to carry out comprehensive modernization programs. No single hog processing operation in Canada yields sufficient net profit to allow it to undertake that sort of total revamping of its production facilities. The rate of return on sales is usually under 1 percent; consequently, firms can only afford to update their facilities on a piecemeal basis. Nevertheless, some strategic investments have been made.

In comparison with U.S. plants, for a variety of reasons, Canadian pork plants suffer from a wage and productivity gap. Many U.S. plants, particularly those engaged in slaughtering, have an estimated labour cost advantage of about 10 percent. Temporary shortages of hog supplies sometimes lead to underutilization of plant capacity in small Canadian plants. Such conditions increase Canadian production costs above those of U.S. plants.

An internationally respected, federally supervised quality control and inspection system, coupled with enough firms to ensure that regional and niche markets are adequately served, have made Canadian pork acceptable in virtually every major commercial market when it is competitively priced. However, Canada's reliance on the United States and Japan for export markets makes the pork industry vulnerable to losses whenever there is a decline in demand in these key markets. For example, a temporary loss to Canadian processors and producers followed the 1989 U.S. countervailing action on imports of Canadian fresh, chilled and frozen pork products, which was later revoked in June 1991.

Another factor affecting the Canadian hog industry's ability to compete internationally is the current hog grading and settlement system. By focusing on ranges of carcass weight and leanness particularly suited to meet Canadian requirements for standard, high-quality pork cuts, the system may constrain Canadian abilities to develop niche foreign markets that require unorthodox carcass specifications. Flexible product specifications and advances in meat



production technology that will enhance the industry's ability to compete successfully in foreign markets are currently being addressed; for example, industry and government working together have developed a new payment grid that will help producers target weights and grades to best serve the needs of processors and foreign and domestic customers.

Trade-Related Factors

Worldwide, the meat sector is essentially domestically oriented, with very few nations exporting more than 10 to 15 percent of their production. A large domestic market is essential for a strong slaughtering/processing sector that is capable of exporting on a competitive basis. World trade in pork products is essentially driven by demand from four major importing countries: the United States, Japan, the Commonwealth of Independent States (CIS) and Hong Kong. Until recently, CIS pork imports have been primarily from Eastern European countries, and Hong Kong's imports have come chiefly from mainland China; the United States and Japan have been the significant commercial export markets for Canadian pork.

Canada, which accounts for about 10 percent of total world trade in pork, is one of the largest pork exporters. Major competitors in the pork trade include Denmark, Taiwan and the United States. The Canada-U.S. Free Trade Agreement (FTA), implemented on 1 January 1989, has had direct implications for Canadian pork processors. One key feature stemming from the FTA is the creation of binational trade dispute panels. The legality of the American CVD against fresh, chilled and frozen Canadian pork was challenged both under the FTA (before two binational trade dispute panels) and under the General Agreement on Tariffs and Trade (GATT). The case was finally put before an extraordinary challenge panel who dismissed the case in Canada's favour and ordered the refund of the CVD already collected.

An ongoing issue affecting pork trade with the United States relates to the FTA provisions to harmonize technical regulations and inspection standards for meat and poultry. Prior to the signing of the FTA, the U.S. Department of Agriculture implemented border inspection for Canadian meat products entering the United States, removing the privilege of destination inspection. The increased cost, frequency of inspection and extra distance sometimes required, as well as the intensity of inspections, were widely perceived by the Canadian meat industry as harassment. Subsequently, the decision was taken by the Canadian government to amend the inspection procedures on its side of the border whereby a re-inspection system was set up for U.S. meat entering the country. In the meantime, both parties are continuing the effort to attain an open border concept for meat inspection.

Japan's total pork imports increased by approximately 60 percent between 1984 and 1989. Although the volume of Canadian pork exports to Japan increased during that period, Canada's share of Japanese imports remained under 10 percent. Japanese demand for high-value cuts such as loins plays a major role in determining quality standards throughout the industry.

The European Community (EC), formerly an important export market, has extremely high tariffs (20 percent) on pork imports. It utilizes a variable import levy that has effectively shut out Canadian access to that market. With the introduction of the Common Agricultural Policy (CAP), stringent standards set in the EC third-country meat inspection directive have resulted in a costly process of modernization undertaken by only a few Canadian and U.S. plants.

Recent economic and political changes in Eastern European countries resulted in export pork sales by Canada to the former Soviet Union for the first time in early 1990.

A new market was opened to Canadian pork in 1990 when Australia removed an embargo it had maintained on all pork exports to that country. Canada is the first and, so far, the only country to obtain access to that market. Another market opportunity for Canadian pork exports lies with Mexico. Successful ratification of the North American Free Trade Agreement (NAFTA) may further stimulate export trade to Mexico.

Technological Factors

The Canadian hog processing industry is gradually adopting cost-effective technology solutions, such as increased flexibility in product specifications to meet the demands of foreign customers; processes for extending the shelf life of chilled pork products; and best-practice ergonomics that seek to design workplaces and jobs to fit employees. The hog processing industry is also working to develop production technologies, including automated slaughter operations, sensing/scanning devices and electronic carcass identification to reduce costs and to enhance product yields and uniformity; and process control technologies, including computer-controlled operations, data capture and waste management.

Recognizing the need to work together on major projects, the industry is collectively addressing the development and incorporation of the best technology available to suit Canadian plants.

Other Factors

Another issue being addressed by the Canadian hog processing industry is the handling of the materials used to ship and package the product. Packaging for the meat



industry is closely monitored and regulated by Agriculture Canada, which requires that only "new" material be used. Most meat products are shipped in waxed cardboard. The cost of disposing of such a bulky material can be passed back to packers in some instances. Environmental pressure to restrict the use of materials such as plastic film, which extend the shelf life of the product, may present a challenge to the industry in their attempt to expand sales of case-ready meats to the retail level.

In order to address product-related environmental issues, the hog processing industry ensures that there is virtually no product waste, using all raw material to create meat or meat by-products. Meat plants are subject to government waterways and air anti-pollution regulations. Processing operations are generally regarded as insignificant direct contributors to environmental pollution; some older hog processing firms located in or near urban communities have relocated because of concerns about water and air pollution. However, rural environments, particularly water quality, can be negatively affected in areas where livestock is raised intensively in hog farms and beef feed lots.

Evolving Environment

Canada is well-positioned as a major global pork trading nation: we have a large and stable pork supply that exceeds domestic demand; a lean, high-yielding and high-quality product; a well-established trading process that delivers the product safely and quickly to different markets; and a hog processing industry (including producers, processors, export brokers and government) that is committed to customer satisfaction. Efforts have been made to diversify and increase customer loyalty via Canada Pork International, a joint initiative of the Canadian Meat Council and the Canadian Pork Council.

The prospect for hog processing and cutting is for further rationalization and consolidation. The industry is currently characterized by low profit margins, high processing turnover and intense competition for market share. Although several major firms closed during the 1980s, the rationalization of the industry has not lessened the intensity of competition nor has it improved the overall profitability and long-term survival capability of the remaining firms. Moreover, some provincial programs aimed at developing regional self-sufficiency are seen by industry critics as contributing to the overcapacity problem the meat industry is currently facing. Given the anticipated lack of growth in domestic per capita demand for pork, the pressures on the industry will probably continue for several years.

Future rationalization and adjustment of many pork processing companies are expected to proceed throughout the 1990s. Harmonization of meat inspection under the FTA over the medium term may also enlarge opportunities for Canadian pork exporters.

On 12 August 1992, Canada, Mexico and the United States completed the negotiation of a North American Free Trade Agreement (NAFTA). The Agreement, when ratified by each country, will come into force on 1 January 1994. The NAFTA will phase out tariffs on virtually all Canadian exports to Mexico over 10 years, with a small number being eliminated over 15 years. The NAFTA will also eliminate most Mexican import licensing requirements and open up major government procurement opportunities in Mexico. It will also streamline customs procedures, and make them more certain and less subject to unilateral interpretation. Further, it will liberalize Mexico's investment policies, thus providing opportunities for Canadian investors.

Additional clauses in the NAFTA will liberalize trade in a number of areas including land transportation and other service sectors. The NAFTA is the first trade agreement to contain provisions for the protection of intellectual property rights. The NAFTA also clarifies North American content rules and obliges U.S. and Canadian energy regulators to avoid disruption of contractual arrangements. It improves the dispute settlement mechanisms contained in the FTA and reduces the scope for using standards as barriers to trade. The NAFTA extends Canada's duty drawback provisions for two years, beyond the elimination provided for in the FTA, to 1996 and then replaces duty drawback with a permanent duty refund system.

Under the NAFTA, Mexico will phase out its 20 percent tariff on pork over 10 years in keeping with a special safeguard measure for the transition period. This measure will return Mexico's duty to the existing 20 percent tariff if imports exceed preset volumes. The base volumes for pork will rise by 5 percent annually over the transition period, after which Canadian pork will have barrier-free access to the Mexican market. Pork already enters Canada duty-free. Canada will exempt Mexico from its *Meat Import Act*. The United States as well will also exempt Mexico from its *Meat Import Law*. Canada and the United States exempted each other from their meat import laws in the FTA.

Although global pork exports from Canada represent about 25 percent of total shipments, the domestic market still determines product standards. However, in order to respond to the realities of global trade, the industry must adapt its pork products to meet the demands of foreign customers. This may require new standards or methods of achieving equivalency between Canadian and foreign standards.



Accessing alternative markets like Mexico, Australia, New Zealand and Eastern Europe for Canadian pork products and expanding sales in Japan will be important for the growth of this industry.

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

Competitiveness Assessment

The Canadian pork processing industry is capable of producing quality products at competitive prices for the domestic market. It is also capable of supplying significant quantities of product for export.

Canada's competitive advantages lie in the quality and integrity of the inspection system for pork meat, a major prerequisite for maintaining access to export markets. However, remaining competitive with other commercial exporting countries and further developing export sales can be achieved only by continually improving efficiencies, lowering costs of production, finding niche markets and adapting pork products to the specifications of the foreign customer. Pursuing further-processing activities that add value to pork cuts will improve and increase profitability for Canadian firms.

The impact of the FTA on the industry's competitiveness has been positive. Canadian access to the U.S. market has become more secure and, as a result, companies are establishing continental operations and distribution networks. Diversifying export destinations will also enhance competitiveness in the future.

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PRINCIPAL STATISTICS^a

	1973	1983	1984	1985	1986	1987	1988	1989	1990	1991
Establishments	N/A	N/A	92	136	142	142	142	140	N/A	N/A
Shipments (\$ millions)	614	1 945	2 065	2 085	2 399	2 424	2 500	2 503	N/A	N/A
(thousands of tonnes)	429	839	934	952	1 031	1 163	1 256	1 275	N/A	N/A

^aISTC estimates for hog processing. See *Food Industries*, Statistics Canada Catalogue No. 32-250, annual (SIC 1011, meat and meat products industry, except poultry).

N/A: not available

TRADE STATISTICS

	1973	1983	1984	1985	1986	1987	1988 ^c	1989 ^c	1990 ^c	1991 ^c
Exports ^a (\$ millions)	90	426	437	473	628	671	580	553	624	502
Domestic shipments (\$ millions)	524	1 519	1 628	1 612	1 771	1 753	1 920	1 950	N/A	N/A
Imports ^b (\$ millions)	25	36	30	35	37	49	31	29	33	33
Canadian market (\$ millions)	549	1 555	1 658	1 647	1 808	1 802	1 951	1 979	N/A	N/A
Exports (% of shipments)	15	22	21	23	26	28	23	22	N/A	N/A
Imports (% of Canadian market)	5	2	2	2	2	3	2	2	N/A	N/A

^aSee *Exports by Commodity*, Statistics Canada Catalogue No. 65-004, monthly.

^bSee *Imports by Commodity*, Statistics Canada Catalogue No. 65-007, monthly.

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

N/A: not available



SOURCES OF IMPORTS^a (% of total value)

	1983	1984	1985	1986	1987	1988 ^b	1989 ^b	1990 ^b	1991 ^b
United States	100	67	37	54	31	52	65	50	54
European Community	—	33	63	46	69	46	31	47	44
Japan	—	—	—	—	—	—	—	—	—
Other	—	—	—	—	—	2	4	3	2

^aSee *Imports by Commodity*, Statistics Canada Catalogue No. 65-007, monthly.

^bAlthough 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 import trends, but also changes in the classification systems.

DESTINATIONS OF EXPORTS^a (% of total value)

	1983	1984	1985	1986	1987	1988 ^b	1989 ^b	1990 ^b	1991 ^b
United States	55	70	77	77	80	73	67	72	75
European Community	—	—	—	—	—	—	—	—	—
Japan	43	28	22	21	19	23	28	21	21
Other	2	2	1	2	1	4	5	7	4

^aSee *Exports by Commodity*, Statistics Canada Catalogue No. 65-004, monthly.

^bAlthough 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 export trends, but also changes in the classification systems.

REGIONAL DISTRIBUTION^a (1988)

	Atlantic	Quebec	Ontario	Prairies	British Columbia
Establishments (% of total)	11	38	16	26	9
Shipments (% of total)	4	32	31	31	2

^aISTC estimates. Only federally inspected hog processing establishments registered under the *Meat Inspection Act* and Regulations are included.



MAJOR FIRMS

Name	Country of ownership	Location of major plants
Burns Meats, a Division of Burns Foods (1985) Limited	Canada	Winnipeg, Manitoba
Fearmans Fresh Meats, a subsidiary of Maple Leaf Foods Inc.	United Kingdom	Burlington, Ontario
Gainers Inc.	Canada	Edmonton, Alberta
Intercontinental Packers Limited	Canada	Saskatoon, Saskatchewan Vancouver, British Columbia
Olymel	Canada	Princeville, Quebec Saint-Hyacinthe, Quebec Saint-Valérien-de-Milton, Quebec Saint-Simon, Quebec Sainte-Perpétue, Quebec Vallée-Jonction, Quebec
J.M. Schneider Inc.	Canada	Kitchener, Ontario Winnipeg, Manitoba

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1990-1991

APPENDIX — FURTHER-PROCESSED MEATS

Structure and Performance

Structure

The industry profiles on cattle and hog processing deal with two of the three major components of Canada's \$8.72 billion red meat industry. The third component, processed meats, is a large and complex grouping of firms that process fresh meats into a vast range of cured or cooked products, including bacon, ham, sausages, delicatessen specialties and pâtés. Processed meats provide the industry with the scope to add significant value and variety to otherwise undifferentiated commodities, to fully utilize the edible raw material and, most important, to be innovative in product development and marketing.

Processed meats account for up to 70 percent of Canada's pork output and 25 percent of its beef output. Processing generally results in products with a significantly longer shelf life than fresh meats and permits a better balance in the industry's production and distribution patterns. Much of the technological basis of the meat industry rests on the innovations introduced to produce and package processed meats.

The processed meats component of the industry has two main streams based on use of either pork or beef. This separation of key product streams is maintained by the use of traditional formulations and methods as well as by labelling and ingredient regulations.

Meat processing provides approximately 40 percent of the employment in the meat industry as a whole and accounts for one of every two jobs in pork processing.

International trade in processed meat products is dwarfed by the trade in commodity meats. Canada exported \$72 million worth of processed pork and beef in 1989, compared with exports of just over \$1.3 billion in meat and meat by-products. Imports of processed meats accounted for less than \$60 million in 1989, out of \$900 million in total meat imports. Much of the imported meat consisted of canned ham, primarily from Denmark, and corned beef from Argentina. Canada's exports of processed meats, 80 percent of which were to the United States, were largely cured hams, bacon and specialty sausages.

The industry is represented by the Canadian Meat Council (CMC) and enjoys the support of producer groups, including Canada Pork Inc., the Beef Information Centre, and

producer/processor groups, such as the Canada Beef Export Federation and Canada Pork International. The Canadian Pork Council, the Canadian Cattlemen's Association and other producer associations are also interested in the role of processing to create product diversity and market breadth.

The processed meat industry has three major elements — the integrated companies, which produce their own raw material and also process it; the specialty companies, which purchase their meat from packers or traders and process it; and an array of small establishments, which process at least some of the products they retail on their own premises. The first group consists of the nationally known companies, such as Maple Leaf Foods, J.M. Schneider, and Burns Foods; the second of nationally or regionally known firms, such as Piller, Kretschmar, Coorsh, Kwinter, and Primo; and the last category of the traditional delicatessens serving local markets in the larger cities.

The integrated producers dominate the market for commodity processed products, such as sandwich meats and wieners, selling basically on price, while the specialty companies thrive on serving the premium market. Integrated processors produce a wide range of products made from the large quantities of high-quality trimmings generated by their fresh meat operations. The specialty companies, not being tied to their own meat supplies, source premium meat for their brand-name products and are often more capable of responding rapidly to new market opportunities. The integrated processors are well positioned to undertake mass merchandising of their products and distributing them on a national basis, particularly when a new packaging or promotional concept is developed.

Much of this industry is Canadian-owned, but foreign interests, notably from Europe, are becoming active in the field. European firms are particularly prominent in the rapidly evolving area of "lite" products, which are reformulated to reduce fat and salt content. The growing market acceptance of such products may change the assumptions under which this industry has operated for decades and could revitalize the entire meat industry.

Marketing is the heart of this industry. The range of approaches reflects the multitude of markets and market niches that it can serve with success. The most important overall markets for the national-scale processors are the supermarket meat departments, which handle most of the



cryovac-packed meat products sold in pegboard or self-serve packs. This market segment is complemented by in-store deli operations where meat is sold to customers in whatever quantities they choose. Such operations offer a greater range of higher-quality products than the self-serve counters do. The foodservice industry, increasingly important as a market, has stimulated strong demand for sausages for pizza toppings, Italian-style hams, smoked meats for ready-made sandwiches and sausage products for summer-time street vendors. Finally, a new market is emerging for processed meats as ingredients in convenience foods, particularly for school lunches.

Processed meats compete for market share against such traditional products as fresh beef and pork, poultry and cheese, as well as against a continuously growing range of international and convenience products. International foods include Italian pastas, oriental-style stir fries, Latin American corn-based products and Middle Eastern vegetarian dishes based on bulgur wheat or couscous. The convenience products include frozen or shelf-stable, single-portion meals. These culinary developments, however, have created new markets for certain processed meat products, particularly those that complement ethnic staple foods or those used as ingredients.

The processed meat industry's main competition is from poultry products, which have enjoyed a steady growth in demand for the past 20 years in all markets and product categories. Poultry meat is increasingly used for products formerly only made from red meats, such as sausages and frankfurters. Turkey rolls have become a frequent substitute for ham.

Performance

Overall sales of processed meats have been flat for many years, paralleling the situation in the red meat industry in general. However, there have been significant shifts in demand that favour the growth of European-style delicatessen meats and Italian dry sausages, often at the expense of the more traditional cured products, such as hams and bacon. Processed beef products also experienced a growing demand linked to the expansion of foodservice chains featuring submarine sandwiches or smoked meat sandwiches, a feature of large urban markets.

The further-processed meat industry has proven itself to be very capable of adapting to new market conditions in Canada. Plants are being upgraded to accommodate better equipment, particularly equipment to package processed products. Consequently, much of the new investment in the meat industry for plant modernization in recent years has been used for that equipment. Significant investment has also occurred in fully automatic curing/smoking facilities.

The further-processed meat industry accounts for approximately 30 percent of the red meat sector's shipments and a growing proportion of its employment and value-added. The growth in its contribution to employment and value-added results from a structural shift in the industry away from integrated operations and toward specialized operations. Such a shift occurred when Canada Packers was acquired in 1990 by Hillsdown Holdings PLC. After restructuring, Canada Packers' formerly extensive fresh meat operations were reduced to one major hog plant, but the successor company, Maple Leaf Foods, maintains its national market presence in processed meats. This loosening of the ties between the fresh meat and the processing operations parallels the model in the United States, where major brand-name companies such as George Hormel, Oscar Mayer and Sara Lee no longer have any involvement with the production of fresh meats.

This trend toward specialization also reflects a greater freedom in the further-processed meats industry to adopt technology. Processing operations have always been more capital-intensive than the fresh meat operations, when measured on a unit-of-production basis. Capital invested in processing technology generally has an immediate impact on productivity, quality and, increasingly, on the range of products that can be turned out. Steady improvements in processing and packaging technologies have greatly increased productivity and profits, particularly for the medium-sized firms.

One area where progress has not been steady is new product development. Regulations governing such product contents as binders, extenders and curing agents tend to challenge innovations in product formulations. A major shift in the pattern of demand toward low-fat, low-salt products is expected to have profound consequences for the industry, because entire product definitions may change to permit the incorporation of fat substitutes in product formulations.

Strengths and Weaknesses

Structural Factors

The Canadian processed meat industry has concentrated on supplying the domestic market for most of its recent history. The industry's role has been to provide a channel for the trimmings and less popular cuts produced in the fresh meat operations. These materials are ground and reconstituted to provide the basis for sausage stuffings, reformed hams and meat loaves. National regulations governing the production of such products differ significantly from country to country, and relatively high rates of tariffs discourage much international trade; consequently, exports and imports play a



relatively unimportant role in shaping the industry. Processed products made from entire cuts of meat, such as whole leg hams and sides of bacon, are limited by the supply of these cuts, and international trade is often constrained by supply shortages.

Economies of scale are important for commodity-type processed meats, such as smoked sausages and reformed hams, but are less important for premium products, such as traditional hams and smoked beef products (see table below).

Leading Meat Processing Companies, 1990

Country	Annual sales (C\$ millions)	Number of employees	Plants
Canada	500	3 300	7
United States	3 000	15 000	25

Canned meats, formerly significant, have declined in importance except in regional markets where food distribution costs are especially high. Canned hams, luncheon meats and corned beef remain the core of this trade; only a limited range of canned dinners is still available. This latter market segment has been overtaken by frozen or shelf-stable single-portion dinners.

International trade in processed meats is restricted to canned products and cured products. The major competitors in this waning market segment are Denmark, the Netherlands and Poland for canned hams, and Argentina and Uruguay for corned beef. What market growth there has been in this field has been limited to flaked ham products and luncheon meats, both of which are still produced in Canada.

Process technology developments have not been a dominant factor in this industry's recent development. Packaging technology has been much more important in shaping the nature of the industry, although the recent introduction of European co-extrusion technology is noteworthy, as are techniques to reduce product fat content.

Labour is less important in this segment of the industry than in the upstream segments because processing is, by its nature, more amenable to automation. While most processing is still done in batches, many of the curing and packaging functions are readily automated and continuous in nature. The traditional processing functions were based on relatively unskilled labour, but quality assurance and automation are increasingly requiring higher levels of employee skill.

Energy use is significant, because many products require cooking or high-temperature curing. A much more important cost component, however, is the cost of transporting and distributing processed meat products. These perishable products are distributed across Canada in refrigerated trucks. While some product lines have relatively long shelf lives, many others, particularly those carried by the delicatessen trade, need careful management and are therefore distributed for sale in relatively small amounts on a frequent basis.

Management practices in the processed meats industry are shaped by the need to integrate high-quality production runs with increasingly sophisticated, just-in-time distribution systems. Production and sales managers operate within a highly regulated environment, with government inspectors monitoring production, distribution and sales functions.

When the Canadian meat processing industry is compared with relevant competitors, several differences emerge. Compared with the U.S. firms, Canadian companies are relatively small operations, often with close ties to integrated fresh meat operations. As noted earlier, the leading U.S. companies — George Hormel, Oscar Mayer and Sara Lee — have no direct fresh meat operations. Instead, they concentrate their efforts on production and national marketing. These companies are also noteworthy for their investments in new, large plants using the best available technology for production and product development. Their scale of operations and ability to use poultry meat in many of their product formulations are major competitive advantages in their own markets.

European meat processing operations are likely to be smaller than the U.S. firms but often benefit from very advanced technology backed by high quality standards and a longer tradition of processing meat. Many generic types of products originated in Europe and, as a consequence, European products enjoy considerable prestige in markets around the world. The cost of European processed meats is often high because of high raw material and labour costs.

At present, the Canadian industry is adapting to new trading realities, and the leading firms are very aware of the need to improve productivity and develop new products. A growing trend to foreign ownership or close links with European firms may assist the industry to achieve these goals.

Trade-Related Factors

As a result of tariffs and product-standard requirements, trade in processed meats is relatively modest. Most Favoured Nation (MFN) tariffs on processed meat products remain relatively high, generally averaging 17.5 percent. The Canada-U.S. Free Trade Agreement (FTA) began the process of reducing the tariffs on 1 January 1989, phasing most of them out in 10 annual, equal steps for Canada-U.S. trade. The European



market is closed to foreign processed meats by high tariffs, variable levies and non-tariff barriers. Japan's tariff system has ensured that meat imports are essentially restricted to fresh and frozen meat products and very little processed product is imported. Some Canadian processed meats, particularly cured pork, are exported to Caribbean nations, but the volumes involved are small.

While tariffs have restricted the growth of trade in many processed products, non-tariff considerations, particularly animal health and food safety requirements, have been even more influential in determining trade flows. Whole classes of products are not permitted into several countries because of concern over the danger of introducing hoof-and-mouth disease. Similar restrictions limit other imports to cooked and canned products. The need to meet ever more stringent food safety regulations regarding preservatives and bacterial contamination has also limited international trade.

Technological Factors

The industry as a whole has not been very active in process or product development, preferring to adapt European and American ideas and products to Canadian conditions. Very little research and development (R&D) is currently being carried out in Canada, particularly following the closure of the Canada Packers research complex in 1990. At present, the industry relies primarily on contract research undertaken at various federal or provincial food research centres, notably Saint-Hyacinthe, Portage la Prairie and Leduc with support from university labs and food ingredient formulators. The Canadian industry has been able to introduce most relevant new technologies once they are generally available and has made its own contributions, particularly in process control systems, key components such as smoke tunnels and in innovative ingredients, such as deheated mustard flour, used as extenders.

Other Factors

Exchange rates are an element in determining the cost of such inputs as processing machinery and packaging materials. The price of livestock in Canada is competitive with U.S. costs because prices are established in an open North American market.

Environmental regulations affect the type and quantity of packaging material used by Canadian firms. Other regulatory issues include compliance with regulations reflecting nutritional aspects of these products, particularly their fat content and levels of preservatives. The industry has already made major strides toward introducing lower-fat ("lite") and low-salt-content products. The question of nutritional labelling is an emerging issue following the U.S. decision to require such labelling on most food products by 1994.

Evolving Environment

The most important opportunity open to the processed meat industry over the next decade appears to be the growing acceptance of "designer" foods. Converging market and technology trends favour the reformulation of foods to meet nutritional and convenience specifications.

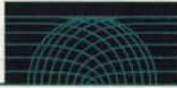
Increasingly, processed meats can be reformulated to any market requirement with the aid of the growing number of fat substitutes now available. The introduction of reduced-fat ground beef, first for the foodservice industry but most recently for the retail market, marks a possible extension of processed meat back into the commodity meat market. A similar effort in the early 1970s using textured vegetable protein (soya bean) extenders failed in the marketplace. These most recent efforts appear to be driven by a consumer requirement for a "universal" meat product with tightly specified nutritional characteristics.

Market growth for processed meats will remain linked to domestic market growth and the harmonization of product standards and regulations in North America. Export sales will depend on niche markets, particularly for meat-based snack foods (such as beef jerky) that are likely to enjoy continued growth in Asia.

The industry's share of the Canadian market may well increase significantly as reformulated ground meats gain acceptance. They would be sold as branded products with sufficient value-added to move them clearly into the category of processed meats. The success of such products will depend on the support of a sophisticated food ingredients industry and on the widespread market acceptance of some form of nutritional labelling emphasizing information such as amino acid balance and the level and nature of fat content. The developed world's desire for convenience foods will also determine the nature of such products.

Competitiveness Assessment

Relatively high tariffs continue to characterize the processed meat industry throughout the world. The FTA is reducing tariffs on trade between the United States and Canada and, once implemented, the NAFTA will reduce or eliminate tariffs on trade with Mexico. A small domestic market for such products compared with that of the United States, smaller plants, generally higher costs for secondary inputs and packaging, and the limited number of companies that can afford the high cost of national marketing promotions indicate areas of competitive disadvantage for Canada.



Under the FTA, Canadian firms will be challenged by competition. The FTA and the NAFTA will open opportunities for Canadian processors, particularly for products capable of filling niche markets in the United States, notably for pork-based delicatessen items such as ham "logs" for sliced meats or for high-quality ethnic products.

If world markets are liberalized in the wake of the latest Uruguay round of Multilateral Trade Negotiations under the GATT, there are prospects for increased trade in a wide range of processed meat products. In that case, there is ample reason to consider the Canadian meat processing industry to be capable of achieving a significant level of international competitiveness.



MAJOR FIRMS

Name	Country of ownership	Location of major plants
Burns Meats, a Division of Burns Foods (1985) Limited	Canada	Winnipeg, Manitoba Calgary, Alberta
Gainers Inc.	Canada	Edmonton, Alberta
Intercontinental Packers Limited	Canada	Saskatoon, Saskatchewan
Maple Leaf Foods Inc.	United Kingdom	Kitchener, Ontario Burlington, Ontario Vancouver, British Columbia
Piller Sausages & Delicatessen Limited	Canada	Waterloo, Ontario
J.M. Schneider Inc.	Canada	Kitchener, Ontario

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