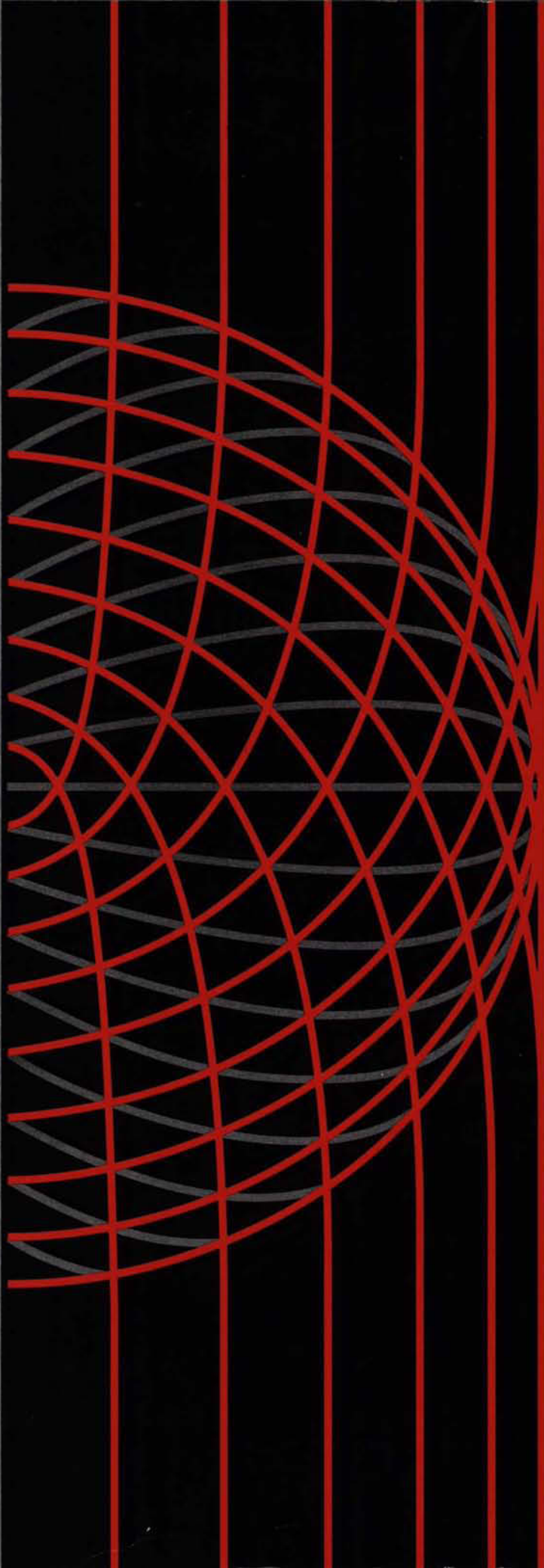


# Automotive Tires

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*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 automotive industry in Canada broadly includes the manufacturers both of motor vehicles (passenger cars, trucks, buses and specialty vehicles) and of the parts, tires and tubes that are used as original equipment in the assembly of new motor vehicles as well as for replacement parts and accessories. Most of the industry is rationalized to operate in one market that includes both Canada and the United States.

Automotive activities in 1989 generated slightly over 15 percent of the total shipments of products manufactured in Canada. They accounted for 32.5 percent of all exports of fabricated materials and end products. In 1989, automotive shipments were composed of \$28.1 billion in automobile, truck and bus assembly; \$14.7 billion in parts; \$1.9 billion in specialty vehicles; and about \$1.5 billion<sup>1</sup> in tires and tubes. In the same year, the industry employed 185 200 people.

Of these, 55 500 were involved in assembling automobiles, trucks and buses; 96 500 in parts; 22 700 in specialty vehicles; and about 10 500<sup>1</sup> people worked to manufacture tires and tubes.

This profile deals only with the automotive tires and tubes manufacturing industry. In addition to *Automotive Tires*, industry profiles have been prepared covering

- *Automotive Aftermarket Parts*
- *Automotive Original Equipment Parts*
- *Heavy-Duty Trucks*
- *Light Motor Vehicles*
- *Specialty Vehicles*
- *Urban and Intercity Buses*

<sup>1</sup>ISTC estimates.





## Structure and Performance

### Structure

The automotive tires industry comprises firms that produce a wide variety of tires for passenger cars, light and heavy trucks and buses. This profile covers all tires and tubes, with the exception of those for bicycles and aircraft. Tires are produced either for use by vehicle assemblers (original equipment market) or for the replacement market (aftermarket). Approximately 30 percent of Canadian production is sold for original equipment use, with 70 percent sold in the aftermarket.

In 1989, the Canadian tires industry was made up of one plant that manufactured tubes and 11 plants that manufactured tires. The tube plant and one tire plant were Canadian-owned, while the remaining 10 plants were owned by large multinational tire companies.

The total corporate employment of companies manufacturing and distributing tires in Canada was 15 000 people in 1989, of whom nearly 10 500 carried out manufacturing operations. These numbers do not include employees of companies engaged in sales and marketing of tires in Canada that do not manufacture here. Employment is distributed regionally, with major facilities in Ontario, Quebec and Nova Scotia, unlike the rest of the automotive industry, which is concentrated in Ontario and Quebec.

Industry shipments in 1989 totalled nearly \$1.5 billion (Figure 1). Exports that year were \$693.7 million for both original equipment and replacement markets and were primarily destined for the United States. Approximately \$450 million worth of tires and tubes (30 percent of shipments) were sold to original equipment manufacturers located mainly in Canada. When vehicles assembled in Canada with Canadian-made tires are exported, these exports are recorded as vehicle exports, and the tires are added to the tire export numbers. Imports equalled \$840.2 million and came primarily from the United States and Asia, principally Japan and the Republic of Korea.

North America accounted for about 34 percent (or U.S.\$16 billion) of the U.S.\$47 billion world market in 1989. The Canadian market accounted for \$1.6 billion (U.S.\$1.36 billion) of the total North American market, with the balance in the United States. Canadian plants supplied approximately 9 percent of the North American market and U.S. plants supplied another 71 percent, with the remaining 20 percent coming from offshore producers.

In 1989, Canadian companies manufactured approximately 27 million tires, for a total volume of 337 000 tonnes. The industry uses large quantities of various materials in tire manufacturing. A typical tire includes the following

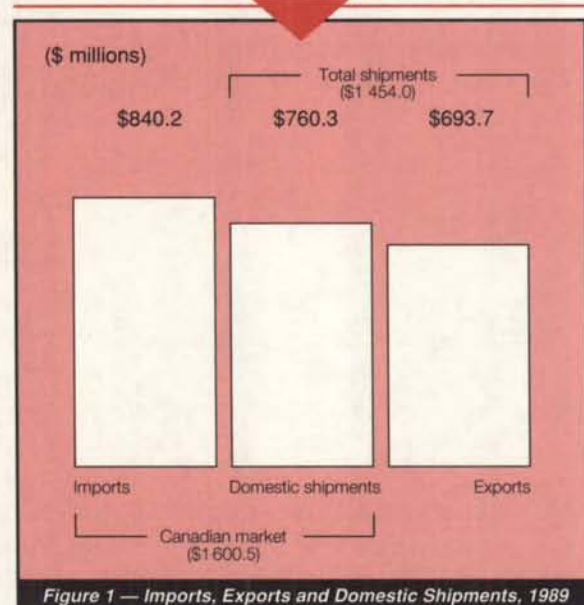


Figure 1 — Imports, Exports and Domestic Shipments, 1989

proportions by weight: carbon black, 27 percent; natural rubber, 26 percent; synthetic rubber, 25 percent; steel cord, 8 percent; bead wire, 5 percent; compounding chemicals, 5 percent; and textile cord, 4 percent. Tire production has a strong influence on Canadian suppliers, with well over half the material inputs available in Canada.

In 1989, major companies in Canada were Bridgestone/Firestone Canada (parent company, Bridgestone Tire of Japan), General Tire Canada (parent company, Continental Tire of Germany), Goodyear Canada (American-owned), Michelin Tires Canada (French-owned) and Uniroyal-Goodrich Canada (parent company, Michelin Tire of France). These large multinational companies exerted a significant degree of management control over their North American operations from their foreign offices. Trent Rubber Services and United Tire & Rubber were small, Canadian-owned companies serving niche tire and tube markets. All the large tire companies competed aggressively with each other in both the original equipment and replacement markets. With production sources tending to be rationalized on a North American basis, a full range of products was offered in Canada.

### Performance

In North America, industry ownership has evolved over the past 10 years from being largely American-dominated to a mix of American, Asian and European ownership. This change can be seen in Canada's import patterns, which show increasing volumes of imports coming from European and Asian affiliates of companies located in Canada. In addition,





companies based in the Republic of Korea, which do not manufacture tires in Canada, have established themselves as major exporters to Canada. During this period, Canada's export pattern has remained largely unchanged, with virtually all exports going to the United States.

During the late 1980s, the tires industry went through a major global restructuring, from which five major world tire producers have emerged: two Japanese companies, one German, one American and one French. Sumitomo of Japan acquired the American and European plants of the British tire manufacturer Dunlop in 1986. Bridgestone, Japan's leading tire producer, acquired Firestone of the United States in 1988. Continental GummisWerke AG of Germany acquired the operations of the American producer General Tire in 1986 and has subsequently announced a co-operative agreement with Yokohama and Toyo of Japan. Goodyear survived a hostile takeover attempt in 1987, but to do so the company had to sell its diversified operations and increase its focus on tire manufacturing. Michelin has maintained its position as a global competitor by building on its strong investment base and by its acquisition of Uniroyal-Goodrich in 1990. The result of this globalization is that these five companies control 70 percent of the world's U.S.\$47 billion tire market. These surviving multinational companies, each with annual sales of between U.S.\$3 billion and U.S.\$10 billion, compete globally with a full range of products.

Tire manufacturing in Canada peaked in 1986 with over \$1.8 billion in production (Figure 2). Since that time, three major but older tire plants, Goodyear in Toronto, Firestone in Hamilton and, most recently, General Tire Canada in Barrie, have been closed. Production fell to a little less than \$1.3 billion in 1988. Production recovered somewhat in 1989, increasing by 13 percent to almost \$1.5 billion, reflecting a degree of the renewal of Canadian production facilities currently under way.

Until the mid-1980s, there had been little new investment in the Canadian tire industry, with the exception of Michelin. In 1987, the major tire companies developed plans to renew their investment in Canada, with approximately \$900 million in upgrading facilities and training planned over a five-year period. This level of industry investment is double the traditional levels and involves the construction of a new plant by Goodyear in Napanee, Ontario, as well as a major upgrading of Canadian facilities by the other companies. The investment of \$272 million in 1989, compared with \$121 million in 1988, is largely due to these initiatives. It is expected that Canada's tire-making capacity could expand by 25 percent over 1989 levels by 1992 and greatly improve industry productivity.

Nonetheless, the financial performance of the industry continues to be disappointing. A loss of \$18 million

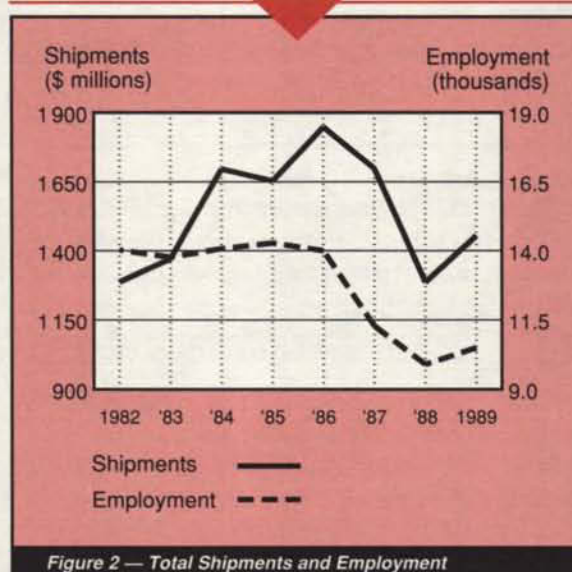


Figure 2 — Total Shipments and Employment

(1.2 percent of sales) in 1989 marked the second consecutive year of loss. These losses are due to the very competitive pressures the industry faces and are exacerbated by the continuing low productivity the industry is experiencing. The losses have not immediately endangered the financial stability of the Canadian operations, however, because they have the support of their large parent organizations.

## Strengths and Weaknesses

### Structural Factors

No current studies on factors affecting industry competitiveness are available. Prior to 1987, various industry analyses indicated that approximately 50 percent of the manufactured cost of a tire was for material and the remaining 50 percent was for conversion costs including labour, fringe benefits and plant overhead. The analyses also indicated little difference in material costs between Canada and the United States, while labour costs tended to be lower in Canada.

The studies found significant differences in manufacturing efficiencies. Tire processing time in Canada was 17 minutes per tire, compared with 10 minutes in the United States. Scrap rates in Canada were often 300 percent higher and machinery maintenance costs 50 percent higher than in U.S. plants. Some of these inefficiencies were related to the scale of plant operations; a typical Canadian plant had a capacity of 13 000 tires per day, while a typical plant in the United States made closer to 30 000 tires per day. Given the





Canadian cost structure at that time (taking into account the exchange rate), the average Canadian plant had a cost disadvantage of less than 5 percent relative to its U.S. counterpart.

Several recent events have affected productivity. While the closure of two larger and older tire plants prior to 1989 reduced capacity, it tended to improve productivity. The industry also embarked on an investment program and, as of 1989, approximately 30 percent of the \$900 million earmarked for investment had been made. However, most of the productivity benefits are not expected to appear until the investment is more fully implemented and the learning curve inefficiencies are digested.

Prior to 1987, the strategy of U.S. parent companies, which dominated the industry until very recently, had been to take advantage of depreciated Canadian facilities and lower Canadian wage rates to offset the lower productivity and efficiency of Canadian operations. This reduced productivity resulted from smaller production runs, production of more labour-intensive lines and use of older machinery. Although feasible in a time of static technology and high tariffs, this strategy is no longer viable. Michelin, with newer facilities, is the exception to this situation. Since 1987, other facilities have been upgraded.

### Trade-Related Factors

Tariff rates for tires and tubes among countries trading with Canada range up to 11 percent. The table below gives examples of tariff rates assessed by major importers of tire and tube products from countries enjoying Most Favoured Nation (MFN) status. Tires mounted on finished vehicles traded by manufacturers under the Canada-U.S. Automotive Products Trade Agreement (Auto Pact) or the Canada-U.S. Free Trade Agreement (FTA) enter Canada and the United States duty-free as part of the vehicle. Tariffs on all tires and tubes traded between Canada and the United States are being

eliminated under the terms of the FTA in 10 annual, equal stages, ending on 1 January 1998. However, most of the Canadian tire manufacturers will operate under a temporary duty remission order until 1992, whereby they can import tires free of Canadian duty. Under the FTA, vehicles, parts and tires exported to the United States are required to meet a new 50 percent North American rule of origin. This will provide increased opportunities for North American parts suppliers.

Exports of tires to countries within the European Community (EC) are limited by the use of different sizes and standards of tires in Europe. Access to the Japanese market is made difficult by testing and local distribution procedures.

Production of tires in Canada has historically been encouraged by a high tariff barrier that resulted in branch plants of multinational corporations being opened; all parents of Canadian tire companies, whether European, Japanese or American, have major facilities in the United States and the rest of the world. With the exception of the Michelin operations in Nova Scotia, the Canadian industry has traditionally been characterized by small-scale operations, with short production runs.

While there are no non-tariff barriers to tire trade between Canada and the United States, foreign subsidiaries in Canada are largely restricted to producing for the North American market by their parent companies' policies and plant capacities. To a great extent, such trade has been restricted to intra-company transfers, largely with the United States.

### Technological Factors

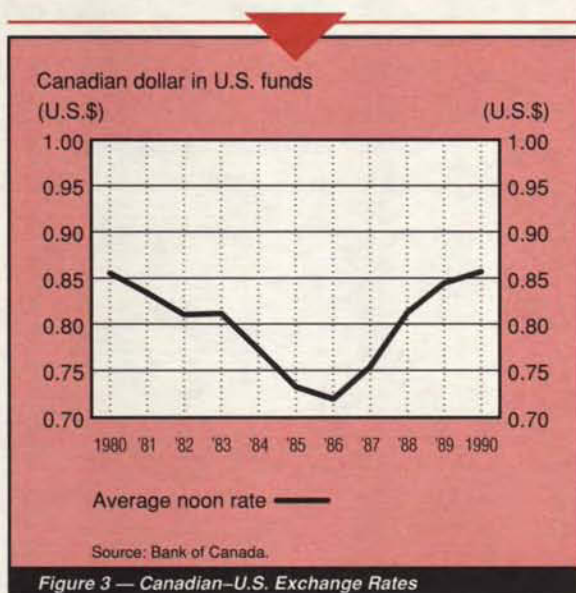
The tire industry is heavily committed to improving product and process technology. The larger companies in the industry typically invest between 3 and 5 percent of sales in research and development (R&D). These multinational firms generally conduct their R&D within their home facilities, and very little of this technology is developed in Canada, although it is used in Canada.

There has been significant technological change in the past 20 years. The 1980s saw extensive adjustment in the world tire industry driven by technological change and increased competition for market share. In the early 1980s, the replacement of bias-ply tires with radial-ply tires, with a potential tread life capable of travelling triple the distance, represented a basic change in the way the industry builds tires. This period was followed by other innovations in tires, such as the all-season radial and high-performance tires demanded initially by original equipment and later by aftermarket customers. These changes demanded major investment in new tire products and manufacturing facilities. These challenges were compounded by the demands of original equipment

**Comparison of Tariff Rates, 1991 (%)**

	MFN tariff		FTA tariff	
	Tires	Tubes	Tires	Tubes
Canada	10.7	10.2	7.4	7.1
United States	4.0	3.7	2.8	2.5
European Community	5.8	5.8		
Japan	0	0		
Republic of Korea	11.0	11.0		





customers to provide higher-quality tires at similar or reduced prices. The major tire companies responded by merging and acquiring other companies in order to achieve a world-scale size needed to be competitive. Production in Canada is now heavily oriented towards radial tires following the closure of several bias-ply facilities during the 1980s. These product enhancements have been achieved with an increase of only 14 percent in the wholesale price of a tire since 1981.

Process technology has also been transformed, not only to produce the radial tire, but also to improve quality, cost, timeliness and flexibility of production in response to demands from the marketplace. Many advances have been made in robotics and automation used in a new tire plant. These advances are reflected in the rising cost of a modern tire plant, which is now in the range of \$300 million to \$500 million.

The large tire companies in Canada have access to modern technologies through their parent companies. More recently, the companies have developed new technologies whereby plants can be competitive with a medium-range capacity output of 15 000 tires per day. These technologies, coupled with the significant \$900 million in currently planned investments, should markedly improve Canada's tire manufacturing competitiveness.

### Other Factors

The federal government meets with the tire and tube manufacturers in Canada on a regular basis. This forum enables the industry to address investment and competitiveness issues on an informed and co-ordinated basis.

The industry has expressed concern about the relatively higher value of the Canadian dollar in recent periods vis-à-vis the American dollar (Figure 3). On the other hand, under certain economic conditions, it is widely recognized that a significantly lower value is likely to be inflationary. The resulting higher domestic costs and prices can erode, over time, the short-term competitive gains of such a lower-valued dollar.

## Evolving Environment

The North American tire market is the largest tire market in the world, consuming approximately 34 percent of world tire production each year. At the time of writing, the Canadian and American 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. Historical annual growth patterns in the range of 1 to 2 percent are expected to resume in North America.

Canada's best potential for export growth is considered to be the U.S. market. Growth potential for European exports in 1992 is not considered to be strong, since that region has existing, well-established supply sources. Nor does Asia appear to be a potential export market but rather will continue to be a strong competitor exporting into Canada's domestic market.

Investment will continue to be the key factor in the health of the Canadian tire industry. While renewal of Canadian facilities has begun, it must continue if the industry is to address its continuing productivity problems. The demands of original equipment manufacturers and other tire customers for better-quality, just-in-time delivery and lower prices of tires and tubes will require continuing industry investment to meet these increasing requirements. Access to the large North American market by Canadian producers is required to make these capital-intensive investments viable. Without access to the U.S. market, a world-class, world-scale tire industry would not be successful in Canada. In that it provides such access, the FTA is critical to the ongoing health of the Canadian tire industry.

In the summer of 1991, Uniroyal-Goodrich Canada announced that it will phase out one of its plants in Kitchener, Ontario, and General Tire Canada closed its only Canadian plant in Barrie, Ontario. Closure of these two plants represents a loss of over 20 percent of Canada's tire manufacturing capacity, which is a significant reduction.





## Competitiveness Assessment

As indicated previously, the world tire industry has already experienced extensive restructuring. All of the major current Canadian manufacturers are part of multinational companies that rank among the largest rubber companies in the world. For this reason, it is unlikely — but not impossible — that Canadian firms will be directly involved in future ownership changes.

Almost all major tire companies have facilities in developing countries throughout the world. As can be seen from the rapid buildup of exports from the Republic of Korea, the indigenous manufacturers of such countries have the ability to compete in Canadian markets. At the moment, however, no other developing country has been identified as a likely export threat in the Canadian market.

The industry historically has traded principally with the United States. This trade pattern is expected to intensify and the United States will continue to be both Canada's major trading partner and competitor.

In assessing Canada's competitiveness, the comparison has been made primarily between this country and the United States. Major investments are in process to address a perceived 5 percent cost disadvantage that existed in Canadian plants relative to U.S. plants prior to 1987. Some industry observers consider that the net effect to date of all factors is that the average Canadian plant continues to be marginally uncompetitive relative to U.S. plants. Although significant productivity gains are still expected when planned investments come on stream, it is not clear whether these gains will be sufficient to increase exports. The investments now under way are a significant first step and, with continuing investment support, Canada can become internationally competitive.

For further information concerning the subject matter contained in this profile or in the initiative and sectoral study listed on page 10, contact

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## PRINCIPAL STATISTICS<sup>a</sup>

	1982	1983	1984	1985	1986	1987	1988	1989
Establishments	13	14	14	13	13	12	11	12
Employment	14 025	13 772	14 078	14 281	14 000	11 272	9 888	10 492
Shipments <sup>b</sup> (\$ millions)	1 288	1 371	1 697	1 653	1 849	1 699	1 287	1 454
Investment (\$ millions)	N/A	110	110	110	110	125	121	272
Operating profits (\$ millions)	3.1	-2.8	26.4	14.6	6.4	20.4	-21.0	-18.0
Tires produced (thousands)	N/A	N/A	N/A	N/A	N/A	N/A	25 642	26 672
Production (thousands of tonnes)	N/A	N/A	N/A	N/A	N/A	N/A	324	337
Shipments per employee (\$ thousands)	92	100	121	116	132	151	130	139
Tires produced per employee	N/A	N/A	N/A	N/A	N/A	N/A	2 593	2 542
Production per employee (tonnes)	N/A	N/A	N/A	N/A	N/A	N/A	32.6	32.2

<sup>a</sup>All principal statistics are ISTC estimates. For additional information, see *Rubber and Plastic Products Industries*, Statistics Canada Catalogue No. 33-250, annual. Before 1988, data on SIC 1511, tire and tube industry, were combined with those for SIC 1599, other rubber products industries.

<sup>b</sup>Shipment values in fact represent production.

N/A: not available

## TRADE STATISTICS

	1982	1983	1984	1985	1986	1987	1988 <sup>a</sup>	1989 <sup>a</sup>
Exports <sup>b</sup> (\$ millions)	488.4	531.2	682.6	678.0	766.6	726.4	573.8	693.7
Domestic shipments (\$ millions)	799.6	839.8	1 014.4	975.0	1 082.4	972.6	713.2	760.3
Imports <sup>c</sup> (\$ millions)	242.2	345.6	544.0	457.0	421.1	561.7	737.6	840.2
Canadian market (\$ millions)	1 041.8	1 185.4	1 558.4	1 432.0	1 503.5	1 534.3	1 450.8	1 600.5
Exports (% of shipments)	37.9	38.7	40.2	41.0	41.5	42.8	44.6	47.7
Imports (% of Canadian market)	23.2	29.2	34.9	31.9	28.0	36.6	50.8	52.5

<sup>a</sup>It 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. Various HS classes treated here are assigned an additional four digits (ANNEX code) for more detailed descriptions.

<sup>b</sup>See *Exports by Commodity*, Statistics Canada Catalogue No. 65-004, monthly.

<sup>c</sup>See *Imports by Commodity*, Statistics Canada Catalogue No. 65-007, monthly.





### SOURCES OF IMPORTS<sup>a</sup> (% of total value)

	1982	1983	1984	1985	1986	1987	1988	1989
United States	60.0	67.5	65.3	58.5	53.4	56.3	57.8	62.1
European Community	14.0	7.8	8.8	11.3	10.1	12.4	13.1	11.3
Japan	N/A	18.8	19.7	22.3	26.6	21.6	21.2	18.3
Republic of Korea	N/A	1.1	0.9	2.1	3.0	4.1	5.0	5.4
Other	4.8	4.8	5.3	5.8	6.9	5.6	2.9	2.9

<sup>a</sup>Special tabulations prepared by the Automotive Directorate, ISTAT. For additional detail, see *Imports by Commodity*, Statistics Canada Catalogue No. 65-007, monthly.  
N/A: not available

### DESTINATIONS OF EXPORTS<sup>a</sup> (% of total value)

	1982	1983	1984	1985	1986	1987	1988	1989
United States	94.4	96.4	96.1	92.8	95.2	95.2	94.0	96.6
European Community	0.6	1.2	0.3	0.7	0.5	0.4	1.2	—
Japan	N/A	0.3	0.4	0.7	1.4	1.2	1.4	0.3
Republic of Korea	N/A	—	0.7	2.4	1.0	0.4	0.7	0.4
Other	4.9	2.1	2.5	3.4	1.9	2.8	2.7	2.7

<sup>a</sup>Special tabulations prepared by the Automotive Directorate, ISTAT. For additional detail, see *Exports by Commodity*, Statistics Canada Catalogue No. 65-004, monthly.  
N/A: not available

### REGIONAL DISTRIBUTION<sup>a</sup> (1989)

	Atlantic	Quebec	Ontario	Prairies	British Columbia
Establishments (% of total)	25	17	50	8	—

<sup>a</sup>ISTC estimates.





## MAJOR FIRMS (1989)

Name	Country of ownership	Location of major plants
Bridgestone/Firestone Canada Inc.	Japan	Joliette, Quebec
General Tire Canada Limited	Germany	Barrie, Ontario
Goodyear Canada Inc.	United States	Valleyfield, Quebec Napanee, Ontario Medicine Hat, Alberta
Michelin Tires (Canada) Ltd.	France	Bridgewater, Nova Scotia Waterville, Nova Scotia Granton, Nova Scotia
Trent Rubber Services Inc.	Canada	Lindsay, Ontario
Uniroyal-Goodrich Canada Inc.	France	Kitchener (North), Ontario Kitchener (South), Ontario
United Tire & Rubber Co. Limited	Canada	Rexdale, Ontario

## INDUSTRY ASSOCIATION

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## SECTORAL STUDIES AND INITIATIVES

The following initiative is supported by Industry, Science and Technology Canada.

### **Memorandum of Understanding**

The Rubber Association of Canada, the tire and tube companies in Canada and the Government of Canada meet regularly to address investment and competitiveness issues under the auspices of a Memorandum of Understanding signed in 1986.

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

### **Statistical Review of the Canadian Automotive Industry**

This review is prepared annually and includes sales, production, employment and trade data on the Canadian automotive industry.

Printed on paper containing recycled fibres.

