

JUNE 1998

INDUSTRY TRADE AND TECHNOLOGY REVIEW

OFFICE OF INDUSTRIES
PUBLICATION 3114

PREFACE

The *Industry, Trade, and Technology Review (ITTR)* is a quarterly staff publication of the Office of Industries, U.S. International Trade Commission. The opinions and conclusions it contains are those of the authors and do not necessarily reflect the views of the Commission or of any individual Commissioner. The report is intended to provide analysis of important issues and insights into the global position of U.S. industries, the technological competitiveness of the United States, and implications of trade and policy developments.

Inquiries or comments on items appearing in this report may be made directly to the author, or to:

Director of Industries
Industry, Trade, and Technology Review
U. S. International Trade Commission
500 E Street, SW
Washington, DC 20436
Fax: 202-205-3161

Requests for copies of the *ITTR*, or to be added to the mailing list, should be address to the Office of the Secretary, U.S. International Trade Commission, 500 E Street SW, Washington, DC 20436, or by fax: 202-205-2104

Quarterly Review Staff

Larry Brookhart
Robert Hughes

assisted by

Zema Tucker
Sharon Greenfield

Contributing Authors

Laura Polly
Reuben Mata

Robert A. Rogowsky
Director of Operations

Vern Simpson
Director of Industries

Listing of Published Articles

(May 1995 - June 1998)

May 1995

Section 22: Uruguay Round Agreement changes U.S. operation of agricultural program
Telecommunication services: Bell companies act to join global network alliances
The information superhighway: Global implications from current test projects
Direct ironmaking: A case study in government and industry cooperation to commercialize new manufacturing processes for materials

September 1995

Structural changes and competitive strategies of the U.S. footwear industry in the 1990s
U.S./EU toy safety standards and the implications for APEC harmonization
Comparison of production-sharing operations in the Caribbean Basin with those in Mexico and in selected East Asian countries
Free-trade zones: Global overview and future prospects

December 1995

Financial services: An overview of the World Trade Organization's negotiations
Sol-gel: Industry seeks to commercialize energy-saving technology for existing and emerging markets
China's evolving grain trade opens new marketing opportunities for U.S. exporters
NAFTA update: Early signs confirm benefits

April 1996

Approaching the next frontier for trade in services: Liberalization of international investment
The impact of Cuba's new foreign investment law
The development of information technology in the Arab world

July 1996

Computer services: Examination of commitments scheduled under the General Agreement on Trade in Services
The global positioning system advances toward universal acceptance
Reformulated gasoline program achieves smooth transition

October 1996

World textile and apparel trade: A new era
World shipbuilding and the status of the OECD Agreement to eliminate subsidies
Thin-slab casting/flat-rolling: New technology to benefit U.S. steel industry

Listing of Published Articles--Continued

January 1997

Basic telecommunication service negotiations in the World Trade Organization: Impetus, offers, and prospects
U.S. film industry: How mergers and acquisitions are reshaping distribution patterns worldwide
Global competitiveness and organized labor: The case of Caterpillar Inc. and the United Auto Workers Union
Evolution of the U.S.-Japanese semiconductor trade regime

April 1997

Liberalization of the Mexican telecommunication sector
Use of magnesium castings in automobiles rises, but challenges remain
U.S. trade in intangible intellectual property: Royalties and licensing fees

July 1997

Mobile satellite services
India's steel industry emerging as a competitive global player
Textiles and apparel: India's integration into the world economy and opportunities for U.S. firms

October 1997

The Uruguay Round elimination of duties on pharmaceuticals: Developments in the 2 years since implementation
Alternative materials in the U.S. automotive industry promote development of joining and bonding technology
Electronic trade transforms delivery of audiovisual services

January 1998

Free trade in information technology goods
Factors affecting the commercialization of new manufacturing processes for materials
Thermoplastic elastomers in the auto industry: Increasing use and the potential implications

March 1998

Textiles and apparel: New U.S. trade program likely to spur imports from Israel and Jordan
The assembly industry in Hungary: Favorable business climate creates new opportunities for U.S. industries
Indian market reforms attract U.S. investment and trade in capital goods and equipment

June 1998

China's evolving automotive industry and market
Canadian involvement in Mexico's maquiladora industry

CONTENTS

	<i>Page</i>
China's evolving automotive industry and market	1
Chinese Government policy for the automotive industry	2
Chinese Government market projections and recent trends in the Chinese automotive market	4
Fleet size and projections	4
Motor vehicle sales and projections	5
Factors affecting market development	7
Chinese Government production projections, production, and foreign investment	9
Production projections and current motor vehicle production	9
Foreign investment	12
Market access for U.S. exports	17
Outlook	20
 Canadian involvement in Mexico's Maquiladora industry	 23
Profile of selected Canadian maquiladoras	27
Northern Telecom (Nortel de Mexico)	28
Nygard International, Tan Jay Division (Nygard (S.A.))	29
Noma Appliance and Electronics (Noma Appliances)	30
Beck Electric Co., subsidiary of Noma Industries (Sistemas y Conexiones)	30
Outlook	30
 Appendix A: Key performance indicators of selected industries	 32
Steel:	
Figure A-1 Steel industry: Profitability by strategic groups, producer price index for steel products	33
Table A-1 Steel mill products, all grades	33
Table A-2 Steel service centers	34
Figure A-2 Steel mill products, all grades: Selected industry conditions	34
Automobiles:	
Figure A-3 U.S. sales of new passenger automobiles, by quarter	35
Table A-3 U.S. sales of new automobiles, domestic and imported, and share of U.S. market accounted for by sales of total imports and Japanese imports, by specified periods, January 1997-March 1998	35

CONTENTS—Continued

	<i>Page</i>
Appendix A: Key performance indicators of selected industries—Continued	32
Aluminum:	
Figure A-4 Aluminum: Selected U.S. industry conditions	36
Figure A-5 Aluminum: Price and inventory levels	36
Flat glass:	
Figure A-6 Average monthly Japanese imports of flat glass, by quantity and value, from the United States and all other countries, 1994-98	37
Services:	
Figure A-7 Balance on U.S. service trade accounts, first quarter 1997 through fourth quarter 1997	38
Figure A-8 Surpluses on cross-border U.S. service transactions with selected trading partners, by quarter, 1996-97	38

#

China's Evolving Automotive Industry and Market

Laura Polly
(202) 205-3408
polly@usitc.gov

In 1994, the Chinese Government issued the "China Automotive Industry Development Policies." The stated purpose of these policies is to restructure the inefficient domestic automotive industry in China through forced consolidation and import substitution policies. The Chinese Government has issued rather optimistic forecasts for future domestic sales and production of motor vehicles, but a variety of factors such as low per-capita income, poor distribution networks, and lack of purchase-financing schemes deter the emergence of widespread private individual vehicle ownership. Despite the fact that the domestic market is not developing as rapidly as once predicted, European, U.S., and Japanese automakers continue to press for a manufacturing presence in China through joint ventures with Chinese partners. This article discusses the current state of the Chinese automotive industry, presenting information relating to recent trends in the size and composition of the Chinese automotive market, and describes factors affecting imports, market access, and foreign participation in the Chinese automotive manufacturing sector. Data in this article were generally available only for the period 1992-96; developments through May 1998 also are discussed.

Notwithstanding recent economic problems, the countries of the Asian region are currently a primary focus of the global automotive industry because they have the fastest growing markets in the world.¹ China is unique among these countries for a number of reasons. It is a socialist market economy that is encouraging foreign investment within very strict guidelines; its automotive sector is not dominated by the Japanese industry;² it is the third-

¹ The recent currency crisis in this region is likely to dampen domestic demand in at least several countries, causing some automakers to reevaluate their short-term strategies.

² This is largely because of the historical political and military animosity between China and Japan. Graeme P. Maxton, *The Automotive Sector of the Pacific Rim and China: Moving Into the Fast Lane* (London: Economist Intelligence Unit (EIU), Nov. 1994), p. 16.

largest market within the region (including Japan);³ and it is predicted to become the fifth-largest market in the world by 2005.⁴

The Chinese Government has designated the automotive sector, deemed essential to the nation's economic development, as one of a number of "pillar industries" for the Ninth Five-Year Plan (1996-2000)⁵ and has delineated a very specific path for the industry to follow to reach what the Government believes is its potential. China already has a large number of motor vehicle manufacturing operations; however, these manufacturers are considered among the most inefficient producers in the world since output remains below minimum efficient production volumes. Import barriers and government assistance, however, have enabled these domestic automakers to enjoy high profit margins despite low economies of scale.⁶ Participation in the form of financial and technological investment by the world's major automakers from Europe, Japan, and the United States is likely to contribute significantly to the development of the Chinese automotive industry, which marked its 40th anniversary in 1996.⁷

Chinese Government Policy for the Automotive Industry

In August 1994, as part of its Ninth Five-Year Plan, China's State Planning Committee issued a plan to develop the automotive industry in China. In general, the "China Automotive Industry Development Policies" aim to (1) make the automotive industry a "pillar industry" of the national economy, with emphasis on auto parts, economical sedans, and heavy vehicles; (2) develop six or seven auto manufacturers capable of producing automobiles that meet the quality and sophistication requirements of all global markets; (3) enable the Chinese industry to satisfy 90 percent of domestic demand by 2000; and (4) encourage the development of electric vehicles, unleaded gasoline, and cleaner fuels. The plan also aims to shift production away from commercial vehicles in favor of passenger cars, and shift demand from institutional to private use.⁸ The means to accomplish these goals reportedly include restricting imports; encouraging exports; increasing local content; and improving quality, technology, and research and development levels.⁹

³ Max Pemberton and David Puckering, *Ward's/Pemberton World Auto Atlas and Directory 1997* (Southfield, MI: Ward's Communications, 1997), p. 11.

⁴ "Asia-Pacific: automotive prospects in China, South Korea and India to 2005," ch. 4 in *Motor Business International*, 2d quarter 1998, EIU, p. 56.

⁵ China's Five-Year Plans are designed to facilitate its transformation to a decentralized socialist market economy.

⁶ EIU, "China's Vehicle-Making Strategy: All Revved Up . . .," *Business China*, May 2, 1994.

⁷ This anniversary marks the production of the first Jiefang brand truck produced by China's First Automotive Works in 1956. "Cars on 'Long March'," Xinhua, received by NewsEdge/LAN, May 20, 1996.

⁸ U.S. Department of Commerce (USDOC), International Trade Administration (ITA), "China--Automotive Industry--ISA9506," *Market Research Reports*, Aug. 18, 1995, National Trade Data Bank (NTDB), Jan. 2, 1996.

⁹ Maxton, pp. 17-18.

The plan projects that 6 or 7 world-class producers will initially be created from the 13 largest auto joint ventures, and recent Chinese Government pronouncements indicate intentions to further consolidate the industry into two giant auto groups.¹⁰ Commercial vehicle makers are also being encouraged to consolidate through mergers, acquisitions, or the issuance of stock.¹¹ The Government's goal for the component sector is to reduce the current 2,000 to 3,000 suppliers to 300, each capable of making 60 distinct types of auto components.¹² China recognizes a need to strengthen its automotive industry through consolidation because of the inevitable reduction of industry protection as China bids to join the World Trade Organization (WTO).¹³

Also as part of the Ninth Five-Year Plan, the Government announced its intention to support the development of a "family car," or "personal-use vehicle" for the domestic market: a four-person, three-door hatchback with a 1.3-liter engine, anti-lock brakes, seat belts, fold-down rear seats, and optional air conditioning, to sell for approximately \$7,500.¹⁴ Industry analysts report that new family car market entrants will appear during the next few years, and are expected to account for 25 percent of the automobile market by 2005.¹⁵

Other stated goals of the Chinese Government regarding the auto sector include stepping up efforts to stem the tide of smuggled autos; implementing regulations that require that new automobiles manufactured in China must meet certain speed, fuel efficiency, and price standards;¹⁶ and requiring that leaded gasoline be phased out by 2000 and that catalytic converters increasingly be used.¹⁷ In addition, to encourage private auto purchases, Chinese officials reportedly are considering simplifying the over 20 separate fees and taxes faced by new car buyers, thereby reducing the total cost of a new vehicle.¹⁸

¹⁰ "China to Merge 13 Car Makers into Two Groups," *The Autoparts Report*, Mar. 5, 1998, p. 7.

¹¹ EIU, "China Industry: Motor Vehicle Production Update," *EIU ViewsWire*, Nov. 28, 1995.

¹² USDOC, ITA, "China--Automotive Industry--ISA9506;" and EIU, "China's Auto Plans: Dream Machines," *Business China*, Jan. 22, 1996.

¹³ "China's Auto Makers to Merge," *China Economic News (PRC)*, Mar. 24, 1997, as presented in U.S. and Foreign Commercial Service (US&FCS) and U.S. Department of State (USDOS), *China Commercial Daily Brief*, Mar. 28, 1997, found at Internet address <http://www.stat-usa.gov>.

¹⁴ Greg Gardner, "China: Watchword is Patience," *Ward's Auto World*, July 1996, p. 71.

¹⁵ EIU, "Asia-Pacific: automotive prospects for China," p. 58.

¹⁶ Maximum speed of 140 kilometers, fuel efficiency of 4 liters per 100 kilometers, and retail prices around 80,000 yuan (\$9,600). "China Takes Seriously Side-Effects of Auto Industry," Xinhua, received by NewsEdge/LAN, June 21, 1996.

¹⁷ USDOS telegram No. 021764, "China's Automobile Emissions Poking Along in the Slow Lane," prepared by U.S. Embassy, Beijing, June 1996.

¹⁸ Nationwide, taxes and fees on car purchases approximate one-third of a car's price. "Auto Industry Needs Effective State Regulation," Xinhua, received by NewsEdge/LAN, Sept. 19, 1996.

Chinese Government Market Projections and Recent Trends in the Chinese Automotive Market

Fleet Size and Projections

The total number of vehicles registered in China was nearly 11 million in 1996 (table 1), ranking China as 12th in the world in terms of fleet size, with 1.6 percent of the world total. Chinese officials estimate that the total fleet will range from 18 million to 21 million vehicles by 2000, with passenger cars accounting for 6 million to 7 million of these vehicles; from 29 million to 33 million by 2005, including 12 million to 14 million passenger vehicles; and from 44 million to 50 million by 2010, including 22 million to 27 million passenger cars.¹⁹

Table 1
Motor vehicle registrations in China, 1992-96

Item	1992	1993	1994	1995	1996
Passenger cars (1,000)	493	743	1,001	1,320	1,650
Commercial vehicles (1,000)	5,800	6,550	7,390	8,350	9,322
Total (1,000)	6,293	7,293	8,391	9,670	10,972
Percentage increase	--	16	15	15	13

Source: Pemberton and Puckering, *Ward's/Pemberton World Auto Atlas and Directory 1997*, p. 57.

The Chinese Government estimated that personal-use vehicles would account for up to 8 percent of the total vehicle fleet by 2000, and up to 34 percent by 2010.²⁰ However, reports in mid-1997 indicated that personal-use vehicles already account for 8 percent of the fleet in China.²¹ In 1996, the Chinese fleet reached 1.4 passenger cars per 1,000 people and 7.7 commercial vehicles per 1,000 people; for a total of 9.1 vehicles per 1,000 people. This is significantly lower than the developing-country average of 36.1.²² The U.S. total in 1996 was 776 motor vehicles per 1,000 people (508 passenger cars and 268 commercial vehicles).²³

¹⁹ "China's Demand for Automobiles To Soar," Xinhua, received by NewsEdge/LAN, June 18, 1996; and *China Automotive Technology Workshop Recommendations: An Assessment of the Developing Chinese Motor Vehicle Industry and Recommendations Regarding Sustainable Resources, Energy, and the Environment*, resultant publication from the China Automotive Technology Workshop (Oct. 26-28, 1995), Beijing, Sept. 2, 1996, p. 36.

²⁰ Ibid.

²¹ "Chinese Increasingly Buying Cars, But Focus on Domestic Market," FWN/UPI, received by NewsEdge/LAN, June 27, 1997.

²² Developing countries are defined as all those except Australia, Canada, the European Union, Japan, Mexico, New Zealand, Norway, Switzerland, and the United States. Pemberton and Puckering, p. 56.

²³ Ibid., p. 200.

Motor Vehicle Sales and Projections

Sales of new motor vehicles in China reached a record 1.5 million units in 1996 (table 2), accounting for 2.9 percent of the annual global market and making China the eighth-largest market for new motor vehicles in the world. Sales of motor vehicles increased steadily during 1992-96, with commercial vehicles accounting for 74 percent of the total in 1996. In that year, new vehicle sales in China reached 0.3 per 1,000 people for passenger cars and 0.9 per 1,000 people for commercial vehicles, for a total of 1.2 vehicles per 1,000 people. The developing country average is 2.9.²⁴

Table 2
Sales of new motor vehicles in China, 1992-96

Items	1992	1993	1994	1995	1996
Passenger cars (1,000)	160	259	273	356	403
Commercial vehicles (1,000)	800	850	1,005	1,099	1,143
Total (1,000)	960	1,109	1,278	1,455	1,546
Percentage increase	--	16	15	14	6

Source: Pemberton and Puckering, *Ward's/Pemberton World Auto Atlas and Directory 1997*, p. 57

Notwithstanding the fact that Chinese Government predictions for motor vehicle sales have been optimistic and that total sales have been setting new records each year, the rate of increase has been slowing, and 1996 was the first year that the supply of motor vehicles exceeded demand. This trend continued in 1997.²⁵ Increased production and improved economies of scale in joint-venture operations, a credit crunch for institutional buyers,²⁶ and measures by some cities to reduce traffic congestion have caused the growth in demand to slow, prices to fall, and profits for automakers to slide. Analysts predict that the slowing economic growth will result in a 5-percent decrease in sales in 1998, the first decline in 10 years. This decrease may be even more dramatic depending on the course of the regional economic crisis.²⁷ The development of new, lower priced "family cars" in the coming years may stimulate the market for passenger vehicles in China; however, is it unlikely that the rapid market growth of the early- to mid-1990s will recur.²⁸

Official Chinese statistics report that total vehicle sales in the first half of 1997 reached 774,800 units, up 7 percent over those in January-June 1996;²⁹ sales of passenger cars reached

²⁴ Ibid., p. 56.

²⁵ "China Auto Market Flat in First Half of 1997," AFP, found at Internet <http://www.newsedge>, posted July 25, 1997.

²⁶ Includes government ministries, state-owned enterprises, foreign-owned enterprises, and private limousine services.

²⁷ EIU, "Asia-Pacific: automotive prospects in China," p. 55.

²⁸ Ibid.

²⁹ "Automotive Industry Expands Production," Xinhua, found at Internet address <http://www.newsedge>, posted Aug. 25, 1997.

226,900 units during the period, up 25 percent from those in January-June 1996.³⁰ Sales of heavy trucks and buses also increased during the first half of 1997.³¹ Sales for the full year 1997 were projected to reach 1.62 million vehicles, including 446,000 sedans, 90,000 of which would be purchased by individuals.³²

The Chinese Government plans to replace 1.8 million older vehicles during 1996-2000³³ in order to reduce pollution, save energy, and stimulate demand.³⁴ In 1997, the central government issued stricter standards for vehicle scrappage in terms of mileage and vehicle age, which are expected to help boost vehicle sales in 1998.³⁵ According to Government forecasts, annual consumption for new vehicles is expected to range from 2.5 million to 3 million in 2000, including 1.2 million to 1.3 million passenger vehicles; from 3.8 million to 4.4 million in 2005 (2.2 million to 2.7 million passenger vehicles); and 5.5 million to 6.5 million in 2010 (3.5 million to 4.4 million passenger vehicles).³⁶ However, industry observers state that sales of 860,000 passenger vehicles by 2000 and 943,000 by 2015 are more reasonable forecasts.³⁷

Because of low per capita income in China, the market for passenger cars currently is dominated by businesses and government entities which continue to account for at least 80 percent of market demand.³⁸ However, passenger cars are a status symbol among wealthy Chinese, and purchases of passenger cars by individuals are rapidly growing. Estimates vary, but it is said that passenger car ownership is not commonplace until per-capita income is in the \$3,000 to \$6,000 range. Per-capita income in China reportedly must quadruple before a mass market for autos in China will emerge.³⁹ However, passenger cars are expected to become an increasingly important segment of the motor vehicle industry, and private

³⁰ "China Auto Market Flat."

³¹ "Flat in First Half," Xinhua.

³² "Current Situation and Prospects of China's Auto Industry," AsiaInfo Services, received by NewsEdge/LAN, June 18, 1997.

³³ Includes 172,662 trucks, 31,394 jeeps, 51,050 passenger cars, 22,736 station wagons, and 22,158 other types of autos in 1996. "China To Replace 300,000 Automobiles This Year," Xinhua, received by NewsEdge/LAN, Apr. 15, 1996.

³⁴ Cars subject to junking are those that do not meet specified standards after two major overhauls, those that require repairs which exceed 50 percent of the cost of a new vehicle, those with fuel consumption levels 15 percent higher than a specified standard, and those that are seriously damaging the environment. "China, Following a Pattern Set by Japan, Will Order Older Vehicles Off Road," *The Japan Automotive Digest*, Mar. 25, 1996, p. 6.

³⁵ "China: State Mulls Car-Maker Mergers," *China Daily*, found at Internet address <http://www.newsedge>, posted Sept. 8, 1997.

³⁶ "China's Demand for Automobiles To Soar."

³⁷ "China's Auto Supply Continues To Outpace Demand," *EIU Business China (U.K.)*, Mar. 3, 1997, as presented in US&FCS and USDOS, *China Commercial Daily Brief*, Mar. 11, 1997, found at Internet address <http://www.stat-usa.gov>; and Barbara McClellan and David C. Smith, "GM's China Gamble," *Ward's Auto World*, Aug. 1997, p. 70.

³⁸ EIU, "China Industry: Motor Vehicle Market Fast Growing, But Erratic," *EIU ViewsWire*, Apr. 9, 1996; Michael Hsu, "Growing Chinese Sector Offers Rewards for Foreign Automakers," *Journal of Commerce*, Aug. 15, 1996.

³⁹ Mack Chrysler, "No Matter the Problems, China Too Enormous To Ignore," *Ward's Automotive International*, June 1997, p. 7.

ownership is expected to increase as personal wealth rises and infrastructure limitations improve. The demand for passenger cars is projected to account for nearly two-thirds of total vehicle demand by 2010; the consumption of personal-use vehicles is projected to account for up to 20 percent of total vehicle sales by 2000 and up to 46 percent by 2010.⁴⁰

Chinese economists predict that some 5 million households in China will be able to purchase a personal-use vehicle priced at \$7,000-\$8,000 (in 1995 US\$) by 2005, and that 3 million households will be able to do so at a price of \$10,000-\$12,000 (1995 US\$).⁴¹ A 1997 survey conducted by the Ministry of Civil Affairs indicates that more than one-third of Chinese families hope to purchase a car by 2000; of that group, 64 percent want to buy domestically produced vehicles.⁴² Although annual per-capita income is very low, some Chinese citizens reportedly have significant personal savings indicating a real purchasing power much higher than their salaries would suggest, since housing and health care are either subsidized or free. However, a new car can cost nearly 20 times the average urban salary, and the Chinese Government predicts that cars will be beyond the reach of ordinary families until 2010.⁴³

China is expected to be the second-largest market for trucks in the world after North America by 2005.⁴⁴ The market for heavy trucks (Class 7 and 8, or 26,000 pounds gross vehicle weight and up) reached 30,000 units in 1996, and was expected to reach 70,000 units by 2000⁴⁵ before economic growth began to slow and the regional economic crisis set in. The market for trucks is expected to increase owing to growth of the national economy, highway construction, and the completion of some freight transportation centers;⁴⁶ however, the pace of market expansion is likely to be tempered by slower GDP growth in the next couple of years. Moreover, the future rate of growth for trucks is expected to lag behind that for cars, as the truck market is significantly more saturated. Total annual sales of all commercial vehicles are predicted to reach 1.1 million by the end of the decade, nearly 100 percent more than in 1991.⁴⁷ Imports do not constitute a significant portion of commercial vehicle sales.

Factors Affecting Market Development

In addition to dampened demand from institutional buyers and existing low per-capita income, the pace of new motor vehicle sales in China also has been slowed by a number of other factors. Most joint-venture production reportedly is sold in the region where it is

⁴⁰ "China's Demand for Automobiles To Soar," *China Automotive Technology Workshop Recommendations*, p. 36.

⁴¹ *China Automotive Technology Workshop Recommendations*, p. 40.

⁴² "36 Percent of Chinese Urban Families May Buy Cars in 3 Years," Xinhua, received by NewsEdge/LAN, June 26, 1997. The survey also showed that price is the leading consideration when buying a car, followed by safety and after-sales service.

⁴³ Maxton, *The Automotive Sector of the Pacific Rim and China*, p. 29.

⁴⁴ EIU, "Asia-Pacific: automotive prospects in China," p. 58.

⁴⁵ John D. Schulz, "Portland, Ore., Manufacturer To Build Heavy Trucks in China," *Traffic World*, received by NewsEdge/LAN, Sept. 23, 1996.

⁴⁶ "Demand of Heavy Trucks To Soar," AsiaInfo Services, Inc., received by NewsEdge/LAN, Apr. 2, 1997.

⁴⁷ EIU, "Asia-Pacific: automotive prospects in China," p. 56.

produced because authorities are anxious to promote local industries at the expense of auto makers from other regions. This inhibits market development and industry rationalization. For example, Shanghai supports use of the Shanghai-Volkswagen Santana for city taxi services, and forbids the use of Tianjin-made vehicles as taxicabs.⁴⁸ A policy to eliminate local restrictions and fees on auto sales was reportedly being drafted in mid-1997.⁴⁹

The Chinese sales, service, and distribution system for passenger motor vehicles is underdeveloped, and foreign automakers complain that they have little control over distribution channels.⁵⁰ China's first automobile sales chain opened in Changzhou in mid-1997; Chinese officials hailed this event as a breakthrough in the marketing of autos in China. Reportedly, the company plans initially to open 22 outlets across China, and it has agreements with 14 automakers.⁵¹ A lack of automotive financing is also a serious hindrance to the development of the market in China.

Although the Chinese market is far from reaching its potential in terms of motor vehicle sales and individual ownership, the infrastructure required to support increased sales is already showing signs of strain. Compared with U.S. and Western European cities, China's urban areas have a higher population density but only about 1 percent of the expressways and thoroughfares, and very few parking structures.⁵² By 2000, it is likely that the vehicle fleet will have increased by over 1,000 percent from the 1980 level⁵³ (from 1.8 million to 20 million vehicles), but the road network is projected to have increased by only 40 percent.⁵⁴ A reported 60,000 miles of national and provincial highways in China are beyond their designated service life and in need of major repairs. China's plan to develop its highways using foreign capital in build-operate-transfer projects⁵⁵ has not been very successful,⁵⁶ and China does not possess advanced road repair and maintenance technology. In fact, most road

⁴⁸ "Overproduction and Protectionism in China's Auto and Refrigeration Industries," *China Watcher (PRC)*, Mar. 14, 1997, as presented in US&FCS and USDOS, *China Commercial Daily Brief*, Mar. 19, 1997, found at Internet address <http://www.stat-usa.gov>.

⁴⁹ "China Press Summary: 1997 Retail Sales Seen at 2.91 Trln Yuan," *Bridge News*, found at Internet address <http://www.newsedge>, posted Aug. 15, 1997.

⁵⁰ "Long March to Mass Market," *Financial Times*, received by NewsEdge/LAN, June 24, 1997; G. Mustafa Mohatarem, Chief Economist, General Motors Corp., written statement submitted to Trade Policy Staff Committee, Office of the United States Trade Representative (USTR), Mar. 14, 1997.

⁵¹ "Automobile Sales Chain Opens in China," Xinhua, found at Internet address <http://www.newsedge>, posted Sept. 21, 1997.

⁵² In mid-1997, the Ministry of Public Security and the Ministry of Construction began drafting regulations to address the problem of inadequate parking in China's largest cities. "China: More Parking Lots Needed To Handle All Those Cars," *China Daily*, found at Internet address <http://www.newsedge>, posted July 18, 1997.

⁵³ Private vehicle ownership was not permitted in 1980.

⁵⁴ *China Automotive Technology Workshop Recommendations*, p. 37.

⁵⁵ In this case, "build-operate-transfer" refers to the arrangement whereby a civil engineering firm would build a highway, operate the highway (including any toll collecting and maintenance required), and then after a specified period of time, turn operation of the highway over to local authorities.

⁵⁶ USDOC, ITA, "China--Automotive Industry--ISA9506."

work is still performed by hand.⁵⁷ The Chinese Government reportedly is considering a significant gasoline tax and/or a value-added tax to generate revenue for road construction.⁵⁸

Chinese Government Production Projections, Production, and Foreign Investment

Production Projections and Current Motor Vehicle Production

China's plan for the automotive industry includes raising annual motor vehicle production to 2.7 million vehicles by 2000;⁵⁹ 1.35 million of these would be passenger cars. By 2010, annual production is projected to reach 6 million vehicles, 4 million of which would be passenger cars.⁶⁰ However, recent overcapacity problems resulting from the slowed rate of increased sales in recent years have caused some observers to question whether this will occur.

Production reached 1.5 million vehicles in 1996 (table 3), making China the 11th-largest producer in the world, with 2.9 percent of global production. Official statistics report that production in the first 6 months of 1997 reached 813,600 vehicles, up 7 percent over output in the corresponding period of 1996.⁶¹ Some 238,000 of these vehicles were passenger cars, representing an increase of 23 percent over the number in the first 6 months of 1996; heavy trucks and buses also registered production increases during the first half of 1997.⁶² Production for 1997 was forecast to reach 1.6 million vehicles--450,000 sedans, 720,000 trucks, and 450,000 buses⁶³--and reportedly totaled 1.23 million through September 1997.⁶⁴ In 1996, the capacity utilization rate for passenger car production reportedly reached only 45 percent;⁶⁵ it was forecast that the capacity utilization rate in 1997 would be 40 percent for passenger cars, and 70 percent for the entire automotive industry.⁶⁶

⁵⁷ "China: Fast Lane for Road Repairs," *China Daily*, found at Internet address <http://www.newsedge>, posted Aug. 18, 1997.

⁵⁸ *China Automotive Technology Workshop Recommendations*, p. 37.

⁵⁹ "China To Raise Annual Auto Production to 2.7 Million by 2000," China Newspaper Summary, *Guangming Daily*, p. 4, received by NewsEdge/LAN, Feb. 12, 1996.

⁶⁰ Sumitomo Bank, "Flash Report on Industry," found at Internet address <http://www.jri.co.jp/sumitmobank/Asia/Economy/industry.html>, retrieved Aug. 25, 1996.

⁶¹ "China Auto Market Flat."

⁶² Ibid.

⁶³ James B. Treece, "China Takes Hard Road To a Market Economy," *Automotive News*, July 14, 1997, p. 1.

⁶⁴ "China's Automobile Output," *The Asian Wall Street Journal*, Dec. 9, 1997, as presented in US&FCS and USDOS, *China Commercial Brief*, Dec. 10, 1997, found at Internet address <http://www.stat-usa.gov>.

⁶⁵ "Major Chinese Auto Maker Calls for a Stop to New Projects," AFP, received by NewsEdge/LAN, Mar. 26, 1997.

⁶⁶ "China Car Market To Remain Sluggish in '97," *The Autoparts Report*, Jan. 2, 1997, p. 7.

Table 3
Motor vehicle production in China, 1992-96

Item	1992	1993	1994	1995	1996
Passenger cars (1,000)	172	253	259	324	403
Commercial vehicles (1,000)	800	850	1,005	1,127	1,143
Total (1,000)	972	1,103	1,264	1,451	1,546
Percentage change	--	13	15	15	7

Source: Pemberton and Puckering, *Ward's/Pemberton World Auto Atlas and Directory 1997*, p. 57

Production in the Chinese automotive industry is concentrated, with a proliferation of small and unviable producers. There are currently 112 automakers registered with the Ministry of Machine-Building Industry,⁶⁷ reportedly producing over 100 distinct models; however, aggregate output is just a fraction of that of GM, Ford, and Chrysler.⁶⁸ The leading three producers reportedly account for over 40 percent of total motor vehicle production in China, and the leading seven reportedly account for two-thirds; the top 6 passenger car producers reportedly account for over 90 percent of the domestic market.⁶⁹ All production of considerable scale and quality has come from Chinese joint ventures with foreign partners,⁷⁰ and foreign brands made by joint-venture operations account for nearly all passenger vehicle sales.⁷¹ Industry observers note that automakers in China must produce 150,000 vehicles per year to be viable; reportedly, only Shanghai-Volkswagen has done so to date.⁷²

China has three principal national automakers--First Automotive Works (FAW), which reportedly is the only automaker in China capable of producing a full range of light- and heavy-duty trucks, as well as passenger vehicles;⁷³ Shanghai Automotive Industrial Corp.; and Second Automotive Works, or Dongfeng. FAW's total annual vehicle capacity is 400,000 units. Production during the first 10 months of 1997 reportedly reached 217,734 vehicles, or 17 percent of total production in China.⁷⁴ FAW reportedly is working on China's first national car model developed without a foreign partner. The car, called Red Flag, is due to reach the Chinese market in 1998.⁷⁵ Shanghai is the leading producer of passenger cars in China.⁷⁶ Production during the first 10 months of 1997 reportedly reached 195,780 vehicles,

⁶⁷ "Forecast of China's Auto Market in Second Half of 1997," China Economic Information, Sept. 10, 1997, as presented in US&FCS and USDOS, *China Commercial Brief*, Sept. 16, 1997, found at Internet address <http://www.stat-usa.gov>.

⁶⁸ USDOC, ITA, "China--Auto Industry Overview--IMI960112," *Market Research Reports*, Jan. 12, 1996, NTDB, Mar. 2, 1996.

⁶⁹ EIU, "Asia-Pacific: automotive prospects in China," pp. 56-57.

⁷⁰ USDOC, ITA, "China--Automotive Industry--ISA9506."

⁷¹ "Long March to Mass Market."

⁷² Ibid.

⁷³ "China No. 1 Automobile Producer Doing Well," Xinhua, received by NewsEdge/LAN, Jan. 7, 1996.

⁷⁴ EIU, "Asia-Pacific: automotive prospects in China," p. 57.

⁷⁵ Ibid.

⁷⁶ "GM-Chinese Government Announce N.A. Export Purchase," PRNewswire, found at Internet address <http://www.newsedge>, posted Oct. 22, 1997.

accounting for 15 percent of total motor vehicle production in China.⁷⁷ Dongfeng produced 142,991 vehicles during the first 10 months of 1997, accounting for 11 percent of total motor vehicle production in China.⁷⁸

Current guidelines for motor vehicle and parts production are for 40 percent local content at startup, 60 percent the following year, and 80 percent the third year; the ultimate goal is for all components to have a local content of 60 percent by the end of the decade.⁷⁹ Several joint-venture products have achieved high local content levels, including Shanghai Volkswagen (Santana model, 92 percent), Tianjin Auto (Charade model, 90 percent), FAW-Volkswagen (Audi model, 82 percent; and Jetta model, 80 percent), Beijing Jeep (Jeep Cherokee model, 82 percent), and Suzuki-China North Industries Corp. (Alto model, 80 percent).⁸⁰

Local content requirements for vehicle and component manufacture in China are complex. Major components such as engines and transmissions are credited with local content based on the actual amount of local product in the component, while smaller components receive 100-percent credit for merely being assembled in China. In turn, local automakers can get 100-percent credit for a part that itself has only 40 percent local content. Moreover, in certain instances, 100-percent credit may be granted even if the part falls below 40-percent local content.⁸¹

China is not yet a major exporter of motor vehicles. According to industry analysts, poor quality and manufacturing inefficiency will keep the Chinese industry from becoming globally competitive for decades.⁸² Exports rose each year during 1993-95, and then declined slightly in 1996 (table 4). Principal markets are in southeast Asia, Africa, and the Middle East. Commercial vehicles (trucks, buses, special-purpose vehicles, and road tractors) are the leading segment of motor vehicle exports from China.

Table 4
Motor vehicle exports from China, by vehicle type, 1992-96

Vehicle type	1992	1993	1994	1995	1996
Buses	346	424	460	411	800
Passenger cars	1,942	4,202	2,133	3,123	2,001
Trucks	2,224	4,484	10,609	9,733	9,446
Total	4,512	9,110	13,202	13,267	12,247

Source: China Chamber of Commerce for Import and Export of Machinery and Electronics Products.

⁷⁷ EIU, "Asia-Pacific: automotive prospects in China," p. 57.

⁷⁸ Ibid.

⁷⁹ USDOC, ITA, "China--Automotive Industry --ISA9506."

⁸⁰ Li Rongxia, "China: Home-Made Sedans: From Debate To Independent Development," *Beijing Review*, vol. 40, No. 30, July-28-Aug. 3, 1997, received by NewsEdge/LAN, July 22, 1997.

⁸¹ USDOC, ITA, "China--Automotive Industry--ISA9506."

⁸² James B. Treece, "China, Too, Wants To Sell Cars to the World," *Automotive News*, July 21, 1997, p. 3.

Foreign Investment

Through its automotive policy, the Chinese Government is encouraging domestic automotive industry enterprises to take advantage of foreign investment to develop China's automotive industry; however, the Government has stated that Chinese partners are to hold at least 50 percent of an automotive joint venture.⁸³ Official policy describes the ideal foreign partner as one with--

- Independent product patents and trademarks
- Transferable world-class product design and manufacturing technology
- Independent international sales networks
- Sufficient capital-raising capability⁸⁴

Additionally, the following conditions must be agreed upon before the Chinese Government will permit the establishment of a Sino-foreign automotive joint venture:

- A technology research institute shall be set up within the enterprise with capability to develop the next generation of product.
- The enterprise should manufacture its product at the current international technology level.
- The enterprise will be responsible for balancing foreign exchange, relying mainly on the export of its own products.
- Joint ventures should give priority to local components of quality comparable to that of imports.⁸⁵

Because China is among the more promising motor vehicle markets in the world and its industry is heavily protected from vehicle imports, foreign-owned automakers and suppliers are eager to establish joint-venture operations with Chinese manufacturers. China's principal automotive enterprises are paired up with a variety of foreign partners in order to gain technological know-how and capital (table 5). Volkswagen has been the most successful automaker to penetrate the Chinese manufacturing industry and market; its models accounting for nearly 60 percent of passenger car sales. Japanese automakers, dominant in other Asian markets, have not been quite as successful in establishing relationships with Chinese passenger vehicle enterprises as their U.S. and Western European counterparts, largely because of historical political and military animosity between China and Japan.⁸⁶

⁸³ Excerpt from China's auto industry industrial policy, found in USDOC, ITA, "China--Automotive Industry--ISA9406," *Market Research Reports*, Mar. 21, 1995, NTDB, Jan. 2, 1996.

⁸⁴ Ibid.

⁸⁵ Ibid.

⁸⁶ Maxton, p. 16.

Table 5
Selected passenger car, light truck, and van manufacturing joint ventures between Chinese and foreign automakers

Foreign automaker	Principal Chinese partner	Model(s) produced	Estimated annual capacity¹	Status
General Motors Corp.	Shanghai Automotive Industrial Corp.	Buick	100,000 at 1998 start	Contract signed March 1997.
General Motors Corp.	Jinbei Automotive Co., Ltd. (owned by First Automotive Works)	Chevrolet Blazer sport-utility vehicle, S-10 crew cab pickup	30,000 startup production	In final negotiation stage at end of 1997 (GM and Jinbei built pickup trucks in the early 1990s).
Ford Motor Co.	Jiangxi Jiangling Auto Co.	Transit van (9-12 seats)	120,000 (including Isuzu and Jiangling models)	Production began late 1997; Ford increased its share of the venture to 30 percent in 1997. A 15-seat model will be launched in 1998.
Ford Motor Co. and Nissan Motor Co. Ltd.	Guangzhou JA Coulded Leopard Automobile	Version of Nissan Quest/Mercury Villager van	4,000 startup production	Intent to form joint venture announced January 1998.
Chrysler Corp.	Beijing Automotive Co.	Jeep Cherokee, BJ2020, BJ6396	50,000	Negotiating 20-year extension of joint-venture agreement to expire in 1998; plans to add BJ2022, a multipurpose vehicle, are under discussion.
Volkswagen AG	Shanghai Automotive Industrial Corp.	Santana 2000	230,000	Began operations in 1984.
Volkswagen AG	First Automotive Works	Audi 100, Jetta	150,000 Jettas, 30,000 Audi 200s by 1998	Joint venture initiated and production began in 1991; final state approval of the joint venture granted August 1997.
Honda Motor Co. Ltd.	Guangzhou Automobile Manufacturing Co.	Accord	50,000 startup production	PSA Peugeot-Citroën divested itself of this venture, begun in 1986, in 1997; Honda was chosen to take up partnership with Guangzhou; basic agreement signed November 1997; production to start in 1999.
PSA Peugeot-Citroën	Dongfeng Automotive Group	Citroën ZX compact sedan, may add updated Peugeot models	40,000	Began operations in 1992.

See footnote at end of table.

Table 5—Continued

Selected passenger car, light truck, and van manufacturing joint ventures between Chinese and foreign automakers

Foreign automaker	Principal Chinese partner	Model(s) produced	Estimated annual capacity ¹	Status
Mercedes-Benz AG	Nanfeng Auto	Viano luxury van	30,000-60,000	Negotiations between Mercedes-Benz and Chinese partner stalled owing in part to changes in foreign-investment incentives.
Daihatsu Motor Co. Ltd.	Tianjin Automotive Industry Corp.	Charade sedan, Hi-Jet minivan	150,000	Licensing agreement since 1986.
Suzuki Motor Corp.	China North Industries Corp. subsidiary Jiangnan Automobile Co.	Alto passenger car	50,000	Began operations in 1993.
Fuji Heavy Industries Ltd. ...	China Guizhou Aviation	Subaru Rex minicar	10,000	Production of Rex began in 1992; letter of intent for production of an additional model, the Lark compact car signed May 1997 - initial capacity of 10,000 vehicles per year.

¹ Unless otherwise noted, capacity does not necessarily indicate actual production.Source: *Ward's/Pemberton World Auto Atlas and Directory 1997*; and various industry publications.

Several major developments in 1997 are noteworthy:

- # **GENERAL MOTORS**, which won a heavily contested bid to form a joint venture to produce sedans with Shanghai in 1995, signed the contract with Chinese officials in March 1997. This 50-50 joint venture will produce Buick sedans with 2.5-liter and 3.0-liter engines, with initial local content of 40 percent. Startup capacity is said to be 100,000 units, along with 100,000 V-6 engines. Production is scheduled to begin in late 1998, with exports (at 6 percent of production) beginning 2 years after.⁸⁷ GM is targeting the executive car market, admitting that its mid-luxury sedans are beyond the reach of individual buyers.⁸⁸ In October 1997, GM and Shanghai agreed that the joint venture would import 18,000 component sets worth \$200 million from GM's North American operations. These imports will support prelaunch and startup

⁸⁷ "New GM Shanghai Venture To Roll Out First Sedans in Late 1998: Official," AFP, found at Internet address <http://www.newsedge>, posted Sept. 3, 1997. Initial input is said to be "pre-production," and production of cars for sale will begin in April 1999. "Buick Regal: GM's China Car," *Ward's Auto World*, Nov. 1997, p. 26.

⁸⁸ "Long March to Mass Market."

efforts.⁸⁹ The venture is projected to import \$1.6 billion in goods from North America over a 5-year period.⁹⁰

- # **PSA PEUGEOT-CITROËN** sold its 22-percent stake in its venture with Guangzhou Automobile Manufacturing Co., in order to consolidate Citroën and Peugeot activities in China. Peugeot 504 pickups and 505 sedans were formerly manufactured in the Guangzhou facility; Peugeot reportedly hopes to manufacture cars in Citroën's Wuhan factory.⁹¹ Although GM signed a Memorandum of Understanding (MOU) in May 1997 for its Adam Opel division to take PSA's position in the Guangzhou venture, it was reported in November 1997 that Honda would in fact be the successor to Peugeot. If Honda wins formal approval from Beijing, it will become the first Japanese automaker to manufacture autos in China. Honda is reportedly contributing half of the \$200 million capitalization for the project, which will produce 30,000 Accords per year beginning in 1999. A feasibility study must first be completed and approved by the Chinese Government.⁹² Honda and Guangzhou are to be 50-50 partners, with Dongfeng bowing out of the venture.⁹³
- # **FORD** increased its stake in Jiangxi Jiangling Motors in 1997 by \$54.5 million from 20 percent to 30 percent, for its first vehicle to be produced in China, a minivan. While Ford believes minivans are an appropriate vehicle for the current Chinese market, it hopes to be building passenger cars by 2005.⁹⁴ It was announced in January 1998 that Ford is entering into another Chinese joint venture with partner Nissan to produce a version of the Nissan Quest/Mercury Villager van. This is the first U.S.-Japanese automotive joint venture in China. Reportedly, engines, transmissions, and other mechanical components will be supplied from Japan, and stampings and other fittings will come from the United States.⁹⁵
- # **CHRYSLER** closed its Beijing office in 1997. According to a Chrysler representative, this move is not an indication that the company is losing confidence in the Chinese market, but rather results from the central government's policy against new passenger car ventures during the next several years. The principal function of this Beijing office reportedly was to bid on joint-venture projects.⁹⁶ Chrysler's joint-venture agreement will expire in 1998, and the two partners are working to extend the

⁸⁹ "GM-Chinese Government Announce N.A. Export Purchase."

⁹⁰ "Ford Motor Co.," *The Washington Times*, found at Internet address <http://www.newsedge>, posted Oct. 23, 1997.

⁹¹ "PSA Peugeot-Citroën Close To Chinese Production Restructure," AFP, found at Internet address <http://www.newsedge>, posted Aug. 21, 1997.

⁹² Kim Willenson, "Honda Beats GM to Replace Peugeot in Guangzhou Venture," *The Japan Automotive Digest*, Nov. 17, 1997, p. 1.

⁹³ "Dongfeng rejects partner plan," *Ward's Automotive International*, Apr. 1998, p. 5.

⁹⁴ "Long March to Mass Market."

⁹⁵ "Nissan, Ford Will Set Up a Minivan Production Venture in Guangdong," *Japan Automotive Digest*, Jan. 12, 1998, p. 5.

⁹⁶ "China: Jeep Project To Remain; Rep Office Could Close," *China Daily*, found at Internet address <http://www.newsedge>, posted Aug. 5, 1997.

agreement for an additional 20 years. The venture is considering adding a multipurpose vehicle, the BJ2022, to the plant's lineup, and will introduce a two-door Cherokee with a longer wheelbase in August 1998.⁹⁷

Even though recent reports concerning the long lead-time for development of the Chinese market for passenger vehicles are not encouraging, automakers are still anxious to secure their position in the industry. For example, at least six major automakers reportedly were interested in taking over Peugeot's share of Guangzhou Peugeot. According to the general manager of GM's Shanghai project, "Some day, China is going to be the single biggest market, without a doubt." GM's total investment in China tops \$2 billion, and includes 14 joint ventures and 2 wholly owned affiliated organizations.⁹⁸ The president of Ford China believes that, by 2010, China will have "a market volume of between 5 million and 6 million vehicles, the fourth largest in the world after North America, Europe, and Japan." This Ford official also expressed positive impressions of China's manufacturing capabilities, stating, "By 2010, after substantial consolidation, this industry will have a highly educated, skilled and industrious workforce. In essence, China will have everything necessary to become a primary, if not the primary, manufacturing nation in Asia."⁹⁹ A leading auto analyst sums up industry opinion of the Chinese market as follows: "Nobody has gone into the Chinese market on the basis of any reliable forecast . . . At some point, the Chinese market will be 2, 3, or 10 million car sales a year."¹⁰⁰

Moreover, restrictive conditions put on foreign investments, while sometimes preventing joint ventures from reaching fruition, do not appear to deter foreign automakers from attempting to invest in this sector. A prime example of a foundering yet sustained proposed venture is Mercedes-Benz's attempt, since 1995, to build minivans with South China Motor Corp. Mercedes-Benz has indicated that it is "still interested in realizing the project if . . . the Chinese side provides the necessary basis for a commercially viable project."¹⁰¹ In particular, Mercedes-Benz noted that the loss of tariff exemption for imported heavy equipment, which has since been reinstated, made the venture an unattractive investment. Mercedes-Benz reportedly also noted that during its 2 years of negotiations, the Provincial Governments of Guangdong and Hainan repeatedly demanded concessions from the automaker. Chrysler showed an interest when this venture was initially proposed, but withdrew when no agreement on cost and technology transfer issues could be reached after 2 years of negotiations.¹⁰²

Perhaps the most pervasive restrictive condition placed on existing investments is related to trading rights. Foreign automakers operating in China are required to import vehicles and parts through authorized Chinese trading companies. Participation in motor vehicle and component manufacturing, sales, and after-sales service requires separate Chinese business

⁹⁷ Ralph Kiesel, "Chrysler, Chinese Discuss 20-year Beijing Jeep Deal," *Automotive News*, Nov. 3, 1997, p. 8.

⁹⁸ "General Motors Confident in China," *AsiaInfo China Daily News*, found at Internet address <http://www.newsedge>, posted Aug. 8, 1997.

⁹⁹ "Long March to Mass Market."

¹⁰⁰ Hsu, "Growing Chinese Sector Offers Rewards for Foreign Automakers."

¹⁰¹ David Murphy, "Mercedes Backs Away From China Deal," *Automotive News*, May 19, 1997, p. 6.

¹⁰² *Ibid.*

licenses, and typically, these functions are performed by separate entities. Foreign automakers are permitted to operate showrooms, but may not sell the products in these showrooms directly to purchasers. This system is counterproductive in terms of the development of brand loyalty, quality, and customer satisfaction.¹⁰³

Foreign automakers have a relatively small presence in the commercial vehicle sector as compared with the passenger car sector. The Chinese Government has invested nearly 50 years in building its commercial vehicle industry and, since most truck producers are state-run, Government-supported operations, prices for fully domestic vehicles are far more affordable than joint-venture-manufactured vehicles, or imports.¹⁰⁴ The commercial vehicle segment of the industry is consolidating; there are projected to be about 10 major truck and bus producers after the year 2000.¹⁰⁵ Currently, commercial vehicle manufacture is dominated by FAW and Dongfeng/Second Automotive Works, both of which manufacture trucks without the assistance of a joint-venture partner.¹⁰⁶ Dongfeng dominates the market for medium- and heavy-duty trucks in China.¹⁰⁷ However, some foreign companies have joint-venture or licensing arrangements in this sector, including Nissan Diesel, Iveco, Volvo, Isuzu, Hino, and Steyr.

There are some 2,000 to 3,000 parts and components manufacturers in China, most of which reportedly are small and technologically unsophisticated. A foreign delegation reported after a September 1996 visit to China that China-owned auto parts plants are operating at just 10-12 percent capacity, and are able to maintain such inefficient operations only because of government support.¹⁰⁸ Because the Chinese Government has made it clear to foreign automakers that the path to approval for car assembly operations is through participation in the development of China's components sector,¹⁰⁹ it is the most dynamic in the automotive industry in terms of Sino-foreign joint ventures, with many of the world's major automakers having joint ventures with Chinese partners for the manufacture of engines and other automotive components.

Market Access for U.S. Exports

Import substitution, a strategy designed to protect infant industries from foreign competition, has been a longstanding Chinese trade policy. Such strategies attempt to foster domestic industrial growth and self-sufficiency by replacing imported consumer goods with domestically-produced goods and providing government support to domestic industries.

¹⁰³ Mohatarem.

¹⁰⁴ EIU, "Iveco Awaits Final Approval for a Joint Venture in Nanjing in China," *Business China*, Jan. 9, 1995.

¹⁰⁵ Maxton, *The Automotive Sector of the Pacific Rim and China*, p. 33.

¹⁰⁶ FAW recently reported the first major export shipment of Chinese motor vehicles: 1,525 'Jiefang' trucks to Myanmar. "China Exports Trucks to Myanmar," Xinhua, received by NewsEdge/LAN, Apr. 2, 1996.

¹⁰⁷ EIU, "Industry Monitor: Automotive in China," *Business China*, Sept. 18, 1995.

¹⁰⁸ N. Vasuki Rao, "China's Auto Parts Progress Jolts Indian Producers," *Journal of Commerce*, Sept. 5, 1996.

¹⁰⁹ USDOC, ITA, "China--Automotive Industry--ISA9506."

Measures used to protect domestic automobile industries include prohibitive tariffs on the importation of finished vehicles and/or parts, quotas, voluntary restraint agreements, and domestic content rules. Many economists agree that, in general, import substitution strategies tend to reinforce the dependence on imported inputs; impede structural changes required for self-sustaining development, both at the industry sector level and the national level; and, by raising the costs of production, hinder the ability to penetrate export markets.¹¹⁰ Since automobile production is an industry with substantial economies of scale, it has often been argued that import substitution policies raise the costs of production, lower productivity, and substantially raise domestic prices.¹¹¹

Upon signing the U.S.-China market access MOU in 1992, China claimed that it had eliminated all import substitution regulations, guidelines, and policies, and that it would not subject any products to import substitution measures in the future.¹¹² This constituted a commitment that a Chinese Government agency would no longer deny permission to import a foreign product because a domestic alternative existed. Despite this commitment, in mid-1994 China announced its automotive industrial policy that included import substitution requirements.

Chinese imports of motor vehicles rose during the early 1990s, but began to decline after 1994 as a result of Chinese Government efforts to stem the tide through the 1994 auto policy and other independent actions (table 6). By 2010, the Chinese Government would like its production capacity to satisfy 100 percent of domestic demand, with a 10-percent surplus for export.¹¹³

Table 6
Motor vehicle imports into China from all sources, by vehicle type, 1992-96

Vehicle type	1992	1993	1994	1995	1996
Buses	5,227	6,263	20,086	1,277	1,254
Passenger cars	180,719	222,349	188,099	139,972	63,857
Trucks	42,282	48,079	69,110	12,132	6,386
Total	228,228	276,691	277,295	153,381	71,497

Source: China Chamber of Commerce for Import and Export of Machinery and Electronics Products.

Reportedly by government edict, foreign joint-venture corporations and embassies, the principal market in China for imported vehicles, lost their import duty exemption status as of

¹¹⁰ Anne O. Krueger, *Policy Lessons From Development Experience Since the Second World War*, Handbook of Development Economics, Vol. III, 1995.

¹¹¹ Leonard Waverman and Steven Murphy, "Total Factor Productivity in Automobile Production in Argentina, Mexico, Korea, and Canada: The Impact of Protection," in Gerald K. Helleiner, ed., *Trade Policy, Industrialization, and Development: New Perspectives* (London: Clarendon Press, 1992), p. 279.

¹¹² USTR, "People's Republic of China," 1996 *National Trade Estimate*, found at Internet address <http://www.ustr.gov/reports/nte/1996/china.html>, retrieved June 30, 1996.

¹¹³ EIU, "China's Auto Plans: Dream Machines," *Business China*, Jan. 22, 1996.

April 1994,¹¹⁴ and the Chinese Government has continued to clamp down on foreign joint ventures set up to import cars.¹¹⁵ In 1995, for example, government officials were prohibited from purchasing imported luxury cars in anticorruption campaigns,¹¹⁶ and in 1996, state officials were directed to forgo their imported luxury cars for locally built vehicles to decrease vehicle imports.¹¹⁷ However, it is reported that thousands of small companies sell imported cars through barter trade or black market activity.¹¹⁸ Despite the stated goal of decreasing motor vehicle imports and the persistent high tariffs on these products, the demand for imported passenger cars and commercial vehicles is expected to increase because market needs are not currently served by the types of vehicles available from domestic producers.¹¹⁹ China approved the Shanghai-GM joint venture (table 5) in hopes that planned production will serve as an import substitute by meeting the domestic need for luxury vehicles.

As part of its bid to join the WTO, as of October 1, 1997, China's 120-percent tariff on luxury cars with engines over 3.0 liters was reduced to 100 percent. Tariffs on autos with engines less than 3.0 liters were lowered from 100 percent to 80 percent. Nevertheless, Chinese officials have stated that automotive tariffs will remain high as part of China's strategy to develop the auto industry into a pillar of the national economy.¹²⁰ Consistent with import substitution strategies, tariffs on components are lower than on finished vehicle imports. Most of the parts-making operations in China are small and do not manufacture to the quality specifications of the world's major automakers.¹²¹ As such, imports are more prevalent in this sector than in the finished vehicle sector.¹²²

Preferential import duty policies are based on the degree of local content. For passenger car manufacturers, import duties vary on the basis of 40-percent, 60-percent, and 80-percent local content rates; i.e., if their locally produced vehicles meet the base of 40-percent local content, they pay higher duties on their imports than if such vehicles met the 60 percent or 80 percent standard. For example, in July 1997, two automakers received a duty reduction to 20 percent for certain imported parts based on the fact that local content for these automakers' sedans

¹¹⁴ Maxton, *The Automotive Sector of the Pacific Rim and China*, p. 18.

¹¹⁵ EIU, "China Trade: Government Policy Inhibits Car Imports," *EIU ViewsWire*, Apr. 9, 1996.

¹¹⁶ USDOC, ITA, "China--Automotive Industry--ISA9506."

¹¹⁷ EIU, "China Trade: Government Policy Inhibits Car Imports."

¹¹⁸ "China: Slack Sales Drive Record Low Car Imports," *China Daily*, found at Internet address <http://www.newsedge>, posted Aug. 25, 1997.

¹¹⁹ "China's Entry to WTO To Help Market Share of Import Cars," Xinhua, received by NewsEdge/LAN, Apr. 27, 1997.

¹²⁰ "China Details Cuts on Farm Products, Autos, TVs as Part of WTO Accession Effort," article No. 42721007, *International Trade Daily*, Bureau of National Affairs, Legi-Slate Report for the 105th Congress, Sept. 29, 1997.

¹²¹ Maxton, p. 34.

¹²² USDOC, ITA, "China: Leading Sectors for U.S. Exports and Investments," *Country Commercial Guides*, Aug. 23, 1995, NTDB, Jan. 2, 1996.

exceeded 80 percent.¹²³ For cargo vehicle and automotive components producers, there are different duties at 50 percent, 70 percent, and 90 percent rates of local content.¹²⁴

The U.S. automotive industry has indicated that its investment in China is severely limited by its inability to import and distribute its own products freely.¹²⁵ As part of its WTO accession offer, China stated that it would maintain nontariff barriers in the auto sector until 2005.¹²⁶ U.S. industry sources report the following nontariff barriers: (1) limitations on the right of foreign companies to directly access China's wholesale and retail markets through local offices or directly hired sales forces; (2) lack of transparency in laws, rules, and regulations; (3) inadequate protection of intellectual property; and (4) nonuniform application of customs regulations.¹²⁷

Outlook

China's goal of acquiring capital and technology from world class automakers is being met, as many of the world's leading automakers have engaged in joint ventures with a Chinese partner or are interested in establishing such a venture. However, as has been the case historically, China's import substitution strategies are causing major inefficiencies in an already fragmented industry. China's automakers are among the most inefficient in the world; auto plant production is below minimum efficient levels, and annual production volume fluctuates greatly because the major domestic markets are susceptible to wide swings in domestic macroeconomic policy and credit conditions.¹²⁸ The president of FAW, for example, recently has expressed concerns over this issue, stating that "the two old problems of irrational industrial structure and . . . economic inefficiency which result from a small production scale have not been markedly improved."¹²⁹

China's policy of encouraging industry consolidation and emphasizing technology transfer from foreign investors would seem to be important steps toward increased industry efficiency and improved cost structures.¹³⁰ But the aim of producing entirely for the domestic market,

¹²³ Office of the United States Trade Representative, *1998 National Trade Estimate Report on Foreign Trade Barriers* (Washington, DC: Office of the United States Trade Representative, 1998), p. 46.

¹²⁴ USDOC, ITA, "China--Automotive Industry--ISA9406."

¹²⁵ USDOS telegram No. 03887, "China/WTO: Comments on Trading Rights, National Treatment, Customs, TRIMs, Industrial Policies, Tariff and NTM Data," prepared by U.S. Embassy, Beijing, Oct. 1996.

¹²⁶ "Negotiators Say New China WTO Offer Could Lead to Deal on Goods," *Inside U.S. Trade*, vol. 15, No. 49, Dec. 5, 1997.

¹²⁷ Mohatarem.

¹²⁸ Waverman and Murphy, "Total Factor Productivity," p. 280.

¹²⁹ "Major Chinese Auto Maker Calls for a Stop to New Projects," AFP, received by NewsEdge/LAN, Mar. 26, 1997.

¹³⁰ Although official Government policy is strict control over new foreign joint-venture approval, the president of FAW was recently quoted as saying that "certain provinces have dodged limitations by wooing state approval for engine projects with the unspoken motive of building a new auto-making venture. . . To fully tackle the problem, the central government should fully

(continued...)

substituting for imports, with eventual surplus exported, relies solely on the virtual unknown of how much demand will arise from the personal-use sector? Chinese Government forecasts are optimistic, but the actual demand is yet to be seen and many countervailing forces noted in this article pose a stiff challenge. Moreover, the current severely underdeveloped state of China's infrastructure is incapable of handling the demand that the Government projects.

Market reform and an increased export-oriented focus¹³¹ would appear to be important keys to rationalizing the Chinese automotive industry, achieving economies of scale, and improving quality so as to approach world standards. However, China's auto industry is not ready to enter the export market for a number of reasons, not the least of which are serious quality problems. Moreover, competition is intense in other Asian markets, the most likely destination for a first foray into exporting for the Chinese auto industry, and these nations impose high tariffs and enforce significant nontariff barriers to protect their own budding auto industries.

If the plans and projections that the Chinese Government has made for its automotive industry are all brought to fruition, the industry could potentially become a global player. However, protection from foreign competition could continue to foster a scenario of high profit margins, underutilization of capacity, and poor quality. A deliberate policy of liberalization of the Chinese automotive industry and market are generally believed by industry observers to be the best path for China to take toward becoming a world-class producer of automobiles.#

¹³⁰ (...continued)

assume power of project approval and stop giving the green light to any new auto-making or engine projects before the year 2000." "Major Chinese Auto Maker Calls for a Stop to New Projects," AFP, received by NewsEdge/LAN, Mar. 26, 1997.

¹³¹ However, a GM official has asserted, with respect to China's offer for WTO accession, that "ample transition periods will be required to ease the potential short and medium-term economic and social dislocations that could result in China from too rapid exposure in some sectors to global competitive pressures." Mohatarem.

Canadian Involvement in Mexico's Maquiladora Industry

Ruben Mata
(202) 205-3403
mata@usitc.gov

The North American Free Trade Agreement (NAFTA) resulted in new opportunities for Canadian firms to forge a closer trade and economic relationship with Mexico. The number of Canadian production-sharing (maquiladora) operations in Mexico has nearly tripled since NAFTA entered into force on January 1, 1994. Prior to NAFTA, nearly all trade between Mexico and Canada was performed by U.S. multinationals and their subsidiaries, chiefly motor vehicle producers and their parts suppliers.¹ By 1997, several small-and-medium-sized Canadian companies representing a variety of industries (including apparel, telecommunications, electronic/electrical products, and auto parts) had invested in assembly plants in Mexico. This article examines the experiences of Canadian firms engaged in production-sharing prior to NAFTA, as well as the rapid growth in the number of Canadian firms which established maquiladoras in Mexico after NAFTA. Many of the same factors influencing Canadian use of assembly plants in Mexico also affect investments from other countries.

Prior to NAFTA, only a small number of Canadian firms with little or no experience in manufacturing investment abroad were active in Mexico's maquiladora program. Canadian and other non-Mexican firms were initially drawn to Mexico's maquiladora program because it permitted up to 100 percent direct ownership and enabled the establishment of a plant anywhere in the country.² Additionally, Canadian firms benefited both from shifting the labor-intensive portions of assembly operations to Mexico, and from the use of U.S.-made components to reduce the price (or increase the profitability) of their goods, particularly when serving the U.S. market. Canadian firms who were initially drawn to Mexico established production-sharing facilities primarily to remain cost competitive with other U.S. suppliers to the Big Three auto producers serving the highly competitive U.S. market (table 1). Furthermore, an expanding Mexican consumer market with its distinct preference for North American products presented Canadian firms with increased market opportunities to benefit from a growing market for consumer and industrial products.

¹ Integration of the North American motor vehicle industry was greatly facilitated by the Automotive Products Trade Act of 1965 (APTA), which provided for free trade between the United States and Canada for most motor vehicles and parts (Public Law 89-283, 79 stat. 1016).

² Canada does not have a tariff incentive program comparable to the U.S. production-sharing tariff provisions of HTS Chapter 98. Guy Beaumier, *Free Trade in North America: The Maquiladora Factor* (Ottawa: Canadian Library of Parliament Research Branch: BP-247E, Dec. 1990), p.5.

Table 1
Canadian firms with assembly plants in Mexico as of September 1997

Canadian affiliated company (location)	Maquila subsidiary (location)	Type of product	Number of employees	Start up
American Sensors (Toronto, Ontario)	Dicon Safety Products (Cd. Juarez, Chihuahua)	Smoke alarms	160	1994
A.P.S. Canada Automotive Parts (Mississauga, Ontario)	Autopartes y Manufacturas de Mexico (Manijita, Chihuahua)	Automotive components	200	1997
Bauerhin Electro (Montreal, Quebec)	Bauerhin Tecnologia S.A. (Cd. Acuna, Coahuila)	Baby seats	75	1993
Bay Mills Ltd. (Oakville, Ontario)	Bay Mills S.A. (Chihuahua City, Chihuahua)	Decorative window panels	70	1996
Bay Mills Co. (Oakville, Ontario)	Dor Seal, S.A. (Nogales, Sonora)	Ornamental glass windows	75	1995
Beck Electric (Concord, Ontario)	Sistemas y Conexiones (Imuris, Sonora)	Automotive wire harnesses	400	1993
Celestica International (Toronto, Ontario)	Celestica de Monterrey (Monterrey, Nuevo Leon)	Electronics components for telecommunica- tions equipment	400	1998
Conformex Inc. of Canada (Montreal, Quebec)	Accesorios Decorativos de Mexico (Puebla, Puebla)	Decorative pillows/cushions	⁽¹⁾	⁽¹⁾
Conross Corp. (Scarborough, Ontario)	American Fire Logs (Cd. Juarez, Chihuahua)	Fire logs	75	1988
Company Resentel (Quebec, Quebec)	Corporacion Resentel, S.A. (Saltillo, Coahuila)	Bicycle parts	50	² 1994
Custom Trim Ltd. (Waterloo, Ontario)	Auto Trim de Mexico (Matamoros, Tamaulipas)	Leather wheel covers	2,800	1984
DOT Plastic Ltd. (Winston, Ontario)	Winston de Mexico (Agua Prieta, Sonora)	Plastic injection molding	45	1989
IFS (Aurora, Ontario)	Missalla Manfred Friedreich (San Luis Potosi, San Luis Potosi)	Metal frame parts	9	⁽³⁾
La Compagnie Rosentel Ltd. (Mariville, Quebec)	Corporacion Resentel, S.A. (Reynosa, Tamaulipas)	Plastic articles	⁽¹⁾	⁴ 1994
Neozum Manufacturing (Langley, British Columbia)	Industria Nauticas de Noreste (Ensenada, Baja California)	Scuba diving suits	90	1991
Northern Telecom (Montreal, Quebec)	Nortel de Mexico (Monterrey, Nuevo Leon)	Digital telephone sets/pay telephones	1,600	1994

See footnotes at end of table.

Table 1—Continued
Canadian firms with assembly plants in Mexico as of September 1997

Canadian affiliated company (location)	Maquila subsidiary (location)	Type of product	Number of employees	Start up
Noma Industries Ltd. (Tillsonburg, Ontario)	Noma Appliances (Nogales, Sonora)	Appliance wire harnesses	2,000	1994
Noma Industries Ltd. (Tillsonburg, Ontario)	Noma de Mexico (Cd. Juarez, Chihuahua)	Christmas trees and lights	(¹)	(¹)
Pilgrim Live Aboard Yachts Inc. (Toronto, Ontario)	Manufacturera Internacional Marina, S.A. (Merida, Yucatan)	Fiber glass pleasure craft	(¹)	(¹)
Siemens Electric (Chatham, Ontario)	Siemens Automotive (Cd. Juarez, Chihuahua)	Automotive sensors & bulbs	560	1994
Span Manufacturing Ltd. (Markham, Ontario)	Span de Mexico (Chihuahua City, Chihuahua)	Electrical, metal, and electric components	250	1991
Stuard Entertainment Inc. (St Catherine, Ontario)	Stuard Entertainment, S.A. (Reynosa, Tamaulipas)	Bingo cards	275	1991
Tan-Jay/Alia Div. of Nygard International (Winnipeg, Manitoba)	Majilosa Tehuazan (Puebla, Puebla)	Apparel for women	250	1994
Tan-Jay/Alia Div. of Nygard International (Winnipeg, Manitoba)	Zhalpulco Agro Industrias (Puebla, Puebla)	Apparel	250	1994
TecTrol Inc. (Toronto, Ontario)	Industrias Techtrol de Mexico (Nogales, Sonora)	Wire harnesses and cable	420	1993
Travel Way Group International (Saint-Laurent, Quebec)	Three Way S.A. (Puebla, Puebla)	Playera shirts and t-shirts	95	1994
Versatech Ltd. (Mississauga, Ontario)	Gecamex (Villa Acuna, Coahuila)	Automotive parts	240	1994
Vogue Brassiere Inc. (London, Ontario)	Vogue Dessous, S.A. (Merida, Yucatan)	Women's undergarmets	(¹)	(¹)
Ventra Group (Cambridge, Ontario) ⁵	VentraMex (Queretaro, Queretaro)	Automotive parts	50	1994
W.J. Holdings Inc. (Rodney, Ontario)	Emblematico de Mexico (Matamoros, Tamaulipas)	Metallic broaches	(¹)	(¹)

¹ Not available.

² Declared Canadian bankruptcy in Nov. 1996.

³ Sold to an undisclosed U.S. firm, Feb. 1997.

⁴ Discontinued maquiladora operations in Reynosa, Tamaulipas, and relocated to Saltillo, Coahuila.

⁵ Operates under Program of Temporary Imports to Produce Export Articles (PITEX). The PITEX program allows duty-free imports of inputs, fuels, and lubricants used in the production of exports if a minimum of 30 percent of a firm's production is exported. Additionally, PITEX provides exemptions from Mexican value-added taxes on purchases of inputs that go into products for export for firms that export a minimum of \$3 million annually.

Sources: Solunet Inc. of El Paso, Texas; Consejo Nacional de la Industria Maquiladora de Exportacion, Mexico City, Library of the Embassy of Canada in Washington, DC; and USITC staff telephone conversations with listed companies.

Canadian interest in Mexico's maquiladora industry increased significantly when the United States, Canada, and Mexico ratified NAFTA in late 1992. Prior to the conclusion of the NAFTA negotiations, Canada traditionally accounted for about 1 percent of Mexico's total export market and provided approximately 2 percent of Mexican imports. During 1992, Canada's principal exports to Mexico were seeds, motor vehicles and parts, cereals, paper and pulp, ores, machinery and mechanical appliances, and engines; Mexico's primary exports to Canada were motor vehicles and parts, machinery, mechanical appliances and engines, and electrical equipment. The bulk of motor vehicle parts exported by Canada to Mexico were destined for the maquiladora industry.³

Several of the first Canadian firms with investment in Mexico's maquiladora program prior to NAFTA were automotive accessory and apparel firms seeking to maintain their price competitiveness and their strategic customer base in the U.S. market. Nearly all of the first Canadian firms to establish maquiladora operations were low- technology, labor-intensive assembly firms. Several of these Canadian firms indicated that they purchased their plants from U.S. firms who were moving their manufacturing operations to plants in Mexico's interior where labor was more abundant.

By 1993, there were a total of nine Canadian maquiladoras operating in Mexico, principally small- to medium-sized companies that produced products ranging from electrical and electronic components to scuba diving suits. These Canadian firms were primarily located along the U.S.-Mexico border to benefit from established distribution channels and warehousing facilities, which were less available in Mexico's interior. Six of the nine Canadian firms were situated along the U.S.-Mexico border, with the remainder situated within 250 miles from the border.

Under NAFTA, Mexico agreed to eliminate its Maquiladora Program on January 1, 2001.⁴ As of that date, export processing plants in Mexico would no longer be allowed to import components and machinery free of duty. Assembly plants would also forfeit their exemption to certain corporate taxes in Mexico. However, during the phase-out of the Program, maquiladora firms would be permitted to direct an increasingly larger proportion of their production to the Mexican domestic market. In 1994, maquiladora operations were permitted to sell up to the equivalent of 55 percent of their previous year's production to the domestic market. That amount is scheduled to rise to 100 percent in the year 2001. Although most of the contacted Canadian maquiladora operations have postponed selling directly to the

³ According to Statistics Canada officials, Canadian merchandise exports to Mexico may be understated by as much as 40 percent due to significant transshipments of goods via the United States.

⁴ The Government of Mexico on May 22, 1998, announced that it would extend by two years the special tax and tariff treatment for all maquiladoras until Jan. 1, 2003. In anticipation of the termination of preferential tariff treatment under the Maquiladora Program, Japanese and Korean-owned maquiladoras have encouraged their Asian-based component suppliers to establish production facilities in the United States and Mexico. The current financial crisis in Asia has made it difficult for many of these component suppliers to get financial backing for these investments in Mexico. By postponing termination of the Maquiladora Program, Mexico is allowing Asian and European -owned assembly plants more time to develop component suppliers in North America in order to avoid paying duties on components when the Program ends.

domestic Mexican market due to the large amount of documentation required to gain permission from the approving authorities in Mexico, several Canadian firms have indicated that they plan to explore ways to increase their sales to the domestic market or to other maquiladora operations.⁵

Since implementation of NAFTA, the number of Canadian firms making use of Mexico's maquiladora program has increased from 9 to 29. Canadian firms and U.S. companies were attracted to the maquiladora industry for the same reasons. Several Canadian firms established maquiladora operations in Mexico to maintain their supplier relationships with the Big Three automotive producers. Other important factors were the elimination of U.S. quotas and duties on apparel and textile products sewn in Mexico making use of U.S. formed and cut fabric. Additionally, various Canadian and U.S. firms established maquiladora operations in the interior of Mexico to take advantage of a more suitable labor supply for production of labor-intensive articles that do not require advanced labor skills.⁶ Additionally, various state governments in Mexico have actively sought to lure foreign firms away from the U.S.-Mexico border by providing assistance with worker training, moratoriums in real estate taxes, and providing exemptions on sales taxes to firms that make use of local suppliers.⁷ Finally, devaluation of the Mexican peso in December 1994 was influential in attracting a record amount of new investment in Mexico's maquiladora program as foreign assembly operations benefited from lower labor costs and the improved price competitiveness of Mexican exports to world markets.

Profile of Selected Canadian Maquiladoras

In 1997, there were a total of 29 Canadian maquiladoras operating in Mexico. Of these, 54 percent were located in the interior, away from the U.S.-Mexico border where the majority of the maquiladora industry is located. Automotive and apparel assembly were the leading sectors attracting Canadian maquiladora operations (figure 1). Nearly all Canadian automotive components maquiladoras are in Mexico because local producers in Mexico have yet to make significant inroads in providing inputs to the Big Three U.S. producers,⁸ and because of the Mexican peso devaluation in December 1994. Canadian apparel firms have been attracted to Mexico's maquiladora program because of the absence of quotas and duty-

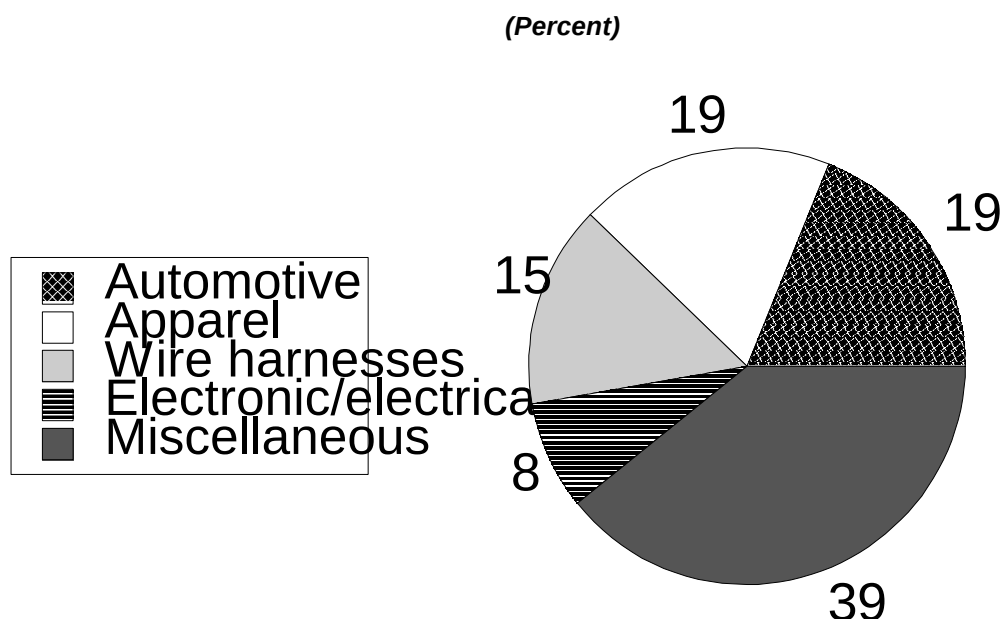
⁵ Industry sources report that, on the whole, the bureaucratic process for gaining approval of applications to sell directly from maquiladora operations into Mexico has improved. Although reporting and performance requirements have been added, procedures are now more transparent, and the treatment of applications is more consistent. Currently, it is less difficult to obtain approval for sales between maquiladoras, but industry representatives are optimistic that Government approval to sell to nonmaquiladora customers in Mexico will come more expeditiously as the domestic economy continues to improve and local producers adapt to increased competition under NAFTA.

⁶ Bureau of National Affairs, "NAFTA Breathes Life Into Maquiladoras," *International Trade Reporter*, Aug. 3, 1995, p. 133.

⁷ "Maquiladoras Change Rules," *North American Free Trade & Investment Report*, Oct. 31, 1996, pp. 3-4.

⁸ U.S. Department of State Telegram, Aug. 9, 1997, Mexico City, Message Reference No. 12356.

Figure 1
Distribution of Canadian companies involved in Mexico's maquiladora industry by sector, 1997



Source: Compiled by the U.S. International Trade Commission from telephone interviews and published sources.

free entry to the U.S. market. Wire harness producers make up approximately 8 percent of all Canadian maquiladoras operating in Mexico in 1997. The labor-intensive manufacturing processes in this industry make it essential that Canadian firms operate in Mexico to remain price competitive. Practically all wiring harnesses for the U.S. motor vehicle market are assembled in Mexico.

The following company profiles provide a cross section of Canadian firms with assembly plants in Mexico.

Northern Telecom (Nortel de Mexico)⁹

In 1994, Nortel commenced operations in Mexico and presently employs 1,600 workers in its Monterrey, Nuevo Leon, establishment. The facility produces digital telephone sets, pay telephones, advanced power systems, and cable harnesses primarily for export to the United States and Canada. Ten percent of total production is currently marked for the Mexican market. Mexico's Avantel (telephone company) is one of Nortel de Mexico's largest Mexican clients. Principal competitors in Mexico include Lucent Technologies, Motorola, and AT&T. In 1998, Nortel de

⁹ USITC staff telephone interview with officials of Nortel de Mexico on Aug. 29, 1997.

Mexico plans to introduce digital wireless products (e.g., cellular telephones) and to divert a much larger share of its total product line to the Mexican and Latin American markets to benefit from Mexico's preferential trade agreements with several Latin American markets for products "made in Mexico." Thus, Nortel de Mexico has established operations in Mexico to benefit from duty-free entry into the U.S. market for their products, and to gain long-term access to the Mexican and Latin American domestic markets.

According to company officials, Monterrey's highly rated educational system was a primary factor influencing the selection of this location by Northern Telecom. Monterrey's location near the U.S.-Mexico border, relatively new infrastructure, flexible labor unions, and strong business environment were other major factors cited. Nortel's Monterrey facility is ISO 9000 certified¹⁰ as are all of its vendors, including local suppliers. The bulk (90 percent) of all components and parts are purchased from firms in the United States and Canada, with a very small amount provided by companies in the Far East. Nortel makes use of just-in-time (JIT) inventory practices. Local suppliers in the Monterrey area include Kemet (South Carolina) for capacitors, MPS (Connecticut) for plastic components, and Thomas and Betts (Tennessee) for electronic connectors. Mexican suppliers outside the maquiladora sector account for less than 3 percent of the value of all parts and components used. Nortel's suppliers include wholly owned Mexican producers of plastics, metal components, and packaging materials.

Nygard International, Tan Jay Division (Nygard S.A.)¹¹

Nygard International of Winnipeg, Canada, is reportedly the largest women's apparel producer in Canada. Nygard has several operating divisions: Bianca, Bianca Signature, Tan-Jay, and Tan-Jay/Alia, each of which operates as a profit center. The Tan-Jay/Alia division of Nygard operates several contract manufacturing facilities in Mexico and exports approximately 75 percent of its production of women's trousers to the United States primarily by truck to the Los Angeles and Southern California areas. The remaining 25 percent of apparel production is shipped to Canada (the duty rate in Canada for these products is very high, whereas qualifying U.S. imports are free of duty). Tan-Jay/Alia women's trousers are marketed in the low-to-medium price range of \$20 to \$40. Presently, Tan-Jay/Alia procures its raw materials such as zippers and threads in the domestic market. The company currently does not sell in the local market, but it plans to do so within the next 2 years. Major competitors in Mexico are Hagger and Cheloid. The availability of a stable low-cost labor force was the principal factor in locating in Mexico's interior.

¹⁰ A discussion of the global trend to adopt International Organization for Standardization (ISO) quality standards is contained in USITC "Emerging Focus on Quality Systems Registration Enhances Market Prospects...", *Industry, Trade, and Technology Review*, Oct. 1994.

¹¹ USITC staff interview with officials of Nygard International on Aug. 15 and Aug. 27, 1997.

Noma Appliance and Electronics (Noma Appliances)¹²

Noma Appliance and Electronics operates two maquiladora facilities.¹³ Noma Appliance and Electronics exports nearly all of its Mexican wire harnesses production to U.S. producers of major household appliances such as Whirlpool, Maytag, and Frigidaire. Noma also sells a very small amount of its production to other Mexican maquiladora operations. Noma has two principal raw material suppliers in the United States, Aircraft Marine Products (Harrisburg, PA) and Molex Inc. (Chicago, IL). Noma also has a facility in Ciudad Juarez that produces artificial Christmas lights and trees.

Beck Electric Co., subsidiary of Noma Industries (Sistemas y Conexiones)¹⁴

In 1994, Noma Industries acquired Beck Electric from Fleck Industries. Beck employs 400 workers at its plant in Imuris, Sonora. Beck Electric ships all of its production of automotive wiring harnesses to the Big Three U.S. auto producers. Major U.S. competitors include SysMex of Chrysler, Cincinnati Electronics, and Delphi Electronics. Beck's wire harnesses typically go into a single car model assembly line. Because of the long lead times required to bid on an automotive contract (on average 18 to 24 months including the time involved in producing a prototype), the Big Three U.S. producers require Beck to have a JIT facility in Mexico. Beck's maquiladora plant does not sell any of its products in the Mexican market, but plans to do so within the next 2 years if market opening continues.

Outlook

The structure of Canadian maquiladoras is likely to change substantially after Mexico's maquiladora program is legally phased out. As of January 1, 2001, assembly plants will be placed on an equal footing with the domestic industry in Mexico, and will no longer be able to import components, materials, and machinery duty-free from non-NAFTA member nations. At the same time, foreign-owned assembly plants will have unrestricted access to the Mexican market. Consequently, both foreign-owned assembly plants and the domestic industry will have an incentive to import required inputs from the United States and Canada rather than from Europe or Asia because of duty-free (or reduced duty) treatment under NAFTA. In addition, Canadian companies (as well as U.S. firms) may find opportunities as suppliers to assembly plants in Mexico that are trying to increase their North American-origin content. This is especially true for operations that have relocated to Mexico from Asia in order to qualify under NAFTA's rules of origin for duty-free treatment when goods enter the United States or Canada.¹⁵#

¹² USITC staff interview with officials of Noma Appliances and Electronics on Aug. 22, 1997.

¹³ Prior to 1994, the maquiladora facilities were owned by Fleck Industries. Noma purchased Fleck in 1994 and continues to use the Fleck name in Canada. Noma operates in the United States as Electronic Systems Inc.

¹⁴ USITC staff interview with officials of Beck Electric Co., on Aug. 26, 1997.

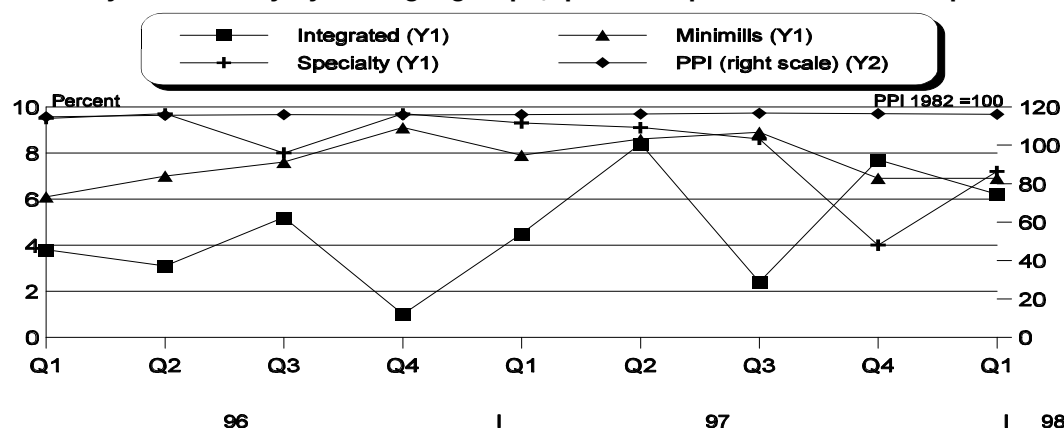
¹⁵ Joel Millman, "Asian Investment Floods Into Mexican Border Region: Access to U.S. Markets Draws Makers of Televisions, Toys,---and Shabu-Shabu," *Wall Street Journal*, Sept. 6, 1996, p. 10.

APPENDIX A
KEY PERFORMANCE INDICATORS OF SELECTED
INDUSTRIES

- ☐ **STEEL** (Tracy Quilter, 202-205-3437/tquilter@usitc.gov)
- ☐ **AUTOMOBILES** (Laura A. Polly, 202-205-3408/polly@usitc.gov)
- ☐ **ALUMINUM** (Karl S. Tsuji, 202-205-3434/tsuji@usitc.gov)
- ☐ **FLAT GLASS** (James Lukes, 202-205-3426/luke@usitc.gov)
- ☐ **SERVICES** (Christopher Melly, 202-205-3461/melly@usitc.gov)

STEEL

Figure A-1
Steel industry: Profitability by strategic groups,¹ producer price index for steel products



PPI = Producer Price Index

¹ Operating profit as a percent of sales. Integrated group contains 9 firms. Minimill group contains 8 firms. Specialty group contains 5 firms.

Source: Individual company financial statements and U.S. Bureau of Labor Statistics.

- ! Steel pricing during the quarter sent mixed signals about the direction of the market. Although the producer price index for a basket of steel products declined slightly, several firms either raised prices (e.g. Weirton) or announced plans to raise prices (e.g., U.S. Steel Group).
- ! Overall, integrated steelmakers' profitability declined slightly, citing lower average selling prices despite lower production costs. Mini-mills' profitability remained steady, while specialty steelmakers improved 3 percentage points to 7 percent.
- ! Inland Steel Industries (ISI) and Ispat International announced an agreement in March by which Ispat will acquire Inland Steel Co. for \$1.43 billion. ISI's Ryerson Tull metals distribution company is not included in the deal.¹ The deal will make Ispat the 8th largest steelmaker in the world, based on the companies' combined 1997 shipments. WHX Corp. will acquire Handy & Harman for \$645 million to combine their pension funds and to generate cash flows through a reduction in pension funding, taxes, and inventory liquidations.²

¹ "Inland Steel to Sell Steel Making Unit to Ispat Intl.," Yahoo finance, Mar. 17, 1998, found at Internet address http://biz.yahoo.com/snp/980317/iad_stl_m_1.html, retrieved Mar. 17, 1998.

² "WHX successful on second try to acquire Handy & Harman," *New Steel*, Apr. 1998, p. 22.

Table A-1
Steel mill products, all grade

Item	Q1 1998	Percentage change, Q1 1998 from		Percentage change, Q1 1998 from	
		Q4 1997	YTD 1998	Q1 1997 ¹	Q1 1997 ¹
Producers' shipments (1,000 short tons)	27,320	2.9	27,320	8.2	
Imports (1,000 short tons)	7,650	8.1	7,650	-4.8	
Exports (1,000 short tons)	1,620	2.4	1,620	16.5	
Apparent supply (1,000 short tons)	33,351	4.1	33,351	4.6	
Ratio of import to apparent supply (percent)	22.9	² 0.8	22.9	² -2.2	

¹ Based on unrounded numbers.

² Percentage point change.

Note.—Because of rounding, figures may not add to the totals shown.

Source: American Iron and Steel Institute.

STEEL

Table A-2
Steel service centers

Item	Mar. 1998	Percentage change, Mar. 1998 from Dec. 1997 ¹	1st Quarter 1998	1st Quarter 1997
Shipments (1,000 net tons)	2,669	19.0	7,666	7,090
Ending inventories (1,000 net tons)	7,435	2.3	7,435	7,068
Inventories on hand (months)	2.9	(²)	3.2	2.9

¹ Based on unrounded numbers² Not applicable

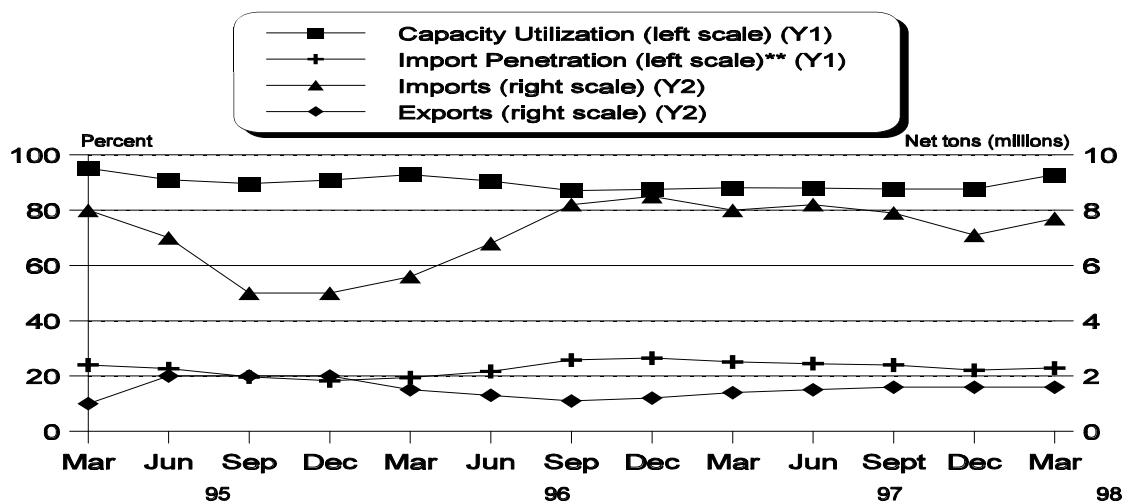
Note.—Because of rounding, figures may not add to the totals shown.

Source: Steel Service Center Institute.

! The first three months of 1998 were marked by steel service center shipments exceeding 120,000 tons per day. In March 1998, stainless products reached the highest daily shipping rate since May 1997. The Steel Service Center Institute reported that carbon plate and carbon structurals led the improvement in first quarter shipping rates from 1997 to 1998. The ending inventories for March decreased for the first time since November 1997, while the inventories on hand remained at 2.9 months for the third consecutive month.¹

! After two consecutive quarterly decreases, steel imports increased 8 percent in Q1 of 1998 from Q4 1997; however, they are down when compared with first quarter 1997 levels. Imports of stainless steel products continue to be strong, led by plate and bar. Exports of all steel mill products were 17 percent higher than last year, based on quantity. Key export markets continue to include Canada and Mexico.

! Capacity utilization was 95.2 percent in February and 92.8 percent for the first quarter of 1998, the highest rates since reaching 96.0 percent in March 1995.²

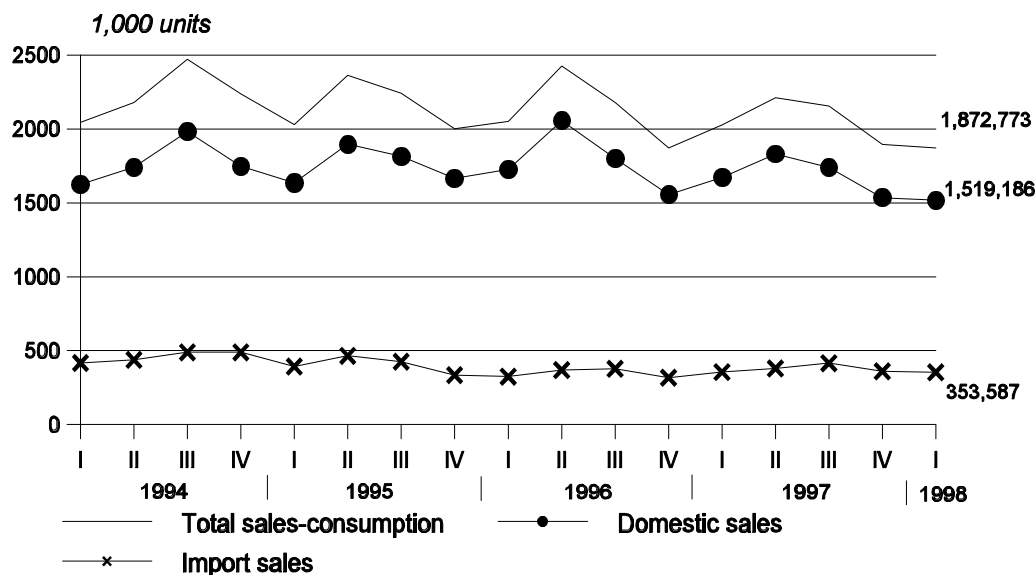
¹ SSCI, news release, "U.S. Steel Service Centers Continue Torrid Pace," Apr. 22, 1998.² AISI monthly reports for Jan., Feb., and Mar. 1998.**Figure A-2**
Steel mill products, all grades: Selected industry conditions

**Import share of apparent open market supply.

Source: American Iron and Steel Institute.

AUTOMOBILES

Figure A-3
U.S. sales of new passenger automobiles, by quarter



Note.—Domestic sales include all automobiles assembled in Canada and imported into the United States under the United States-Canadian automobile agreement; these same units are not included in import sales.

Source: *Automotive News*; prepared by the Office of Industries.

Table A-3
U.S. sales of new automobiles, domestic and imported, and share of U.S. market accounted for by sales of total imports and Japanese imports, by specified periods, January 1997-March 1998

Item	Jan.-Mar. 1998	Percentage change-	
		Jan.-Mar. 1998 from Oct.-Dec. 1997	Jan.-Mar. 1998 from Jan.-Mar. 1997
U.S. sales of domestic autos (1,000 units) ¹	1,519	-1.0	-9.6
U.S. sales of imported autos (1,000 units) ²	354	-1.9	2.2
Total U.S. sales (1,000 units) ^{1,2}	1,873	-1.2	-7.6
Ratio of U.S. sales of imported autos to total U.S. sales (percent) ^{1,2}	18.9	-0.7	10.5
U.S. sales of Japanese imports as a share of the total U.S. market (percent) ^{1,2}	8.7	-5.5	-5.5

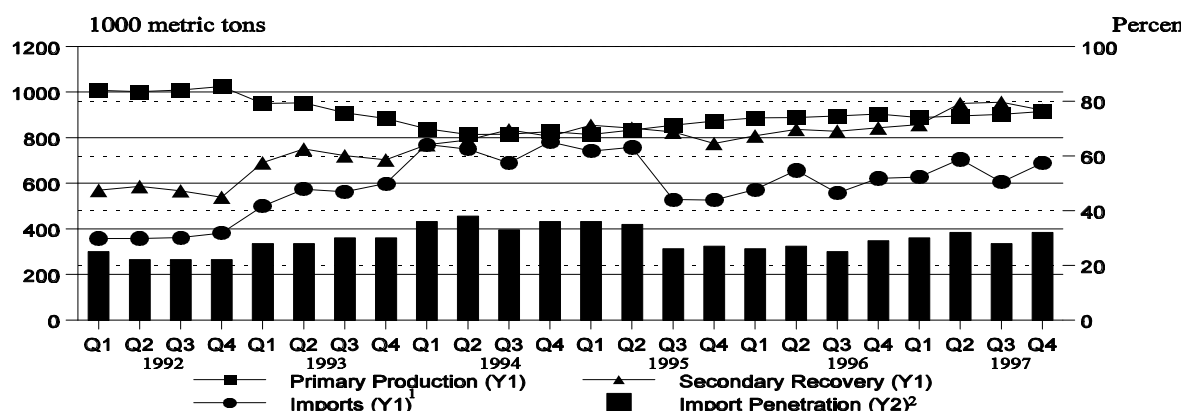
¹ Domestic automobile sales include U.S.-, Canadian-, and Mexican-built automobiles sold in the United States.

² Does not include automobiles imported from Canada and Mexico.

Source: Compiled from data obtained from *Automotive News*.

ALUMINUM

Figure A-4
Aluminum: Selected U.S. industry conditions



¹Crude forms (metals and alloys) and mill products (e.g. plates, sheets, and bars) for consumption.

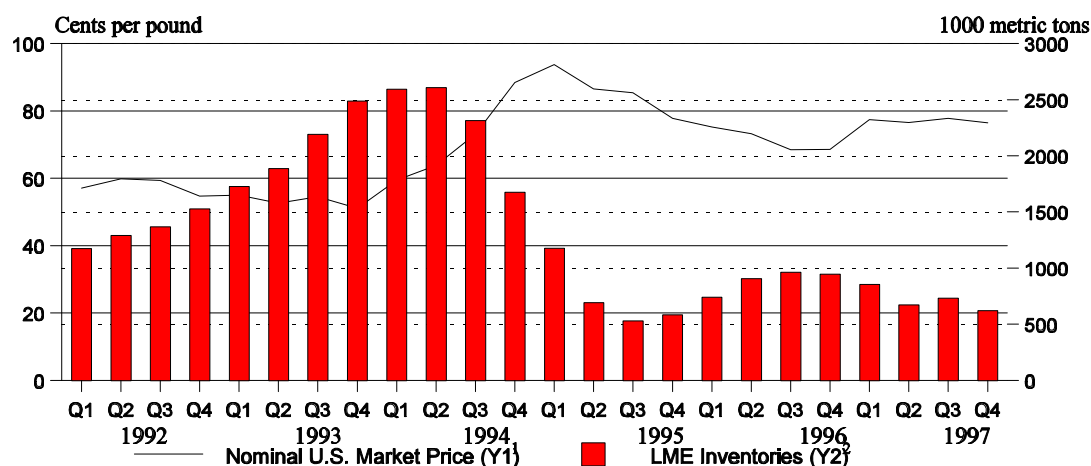
²Percent share of imports to apparent domestic supply.

Source: U.S. Geological Survey.

! The global aluminum market softened slightly in the fourth quarter 1997, with strong demand in the United States and Europe only partially offsetting the impact of the East Asian financial crisis. LME stocks declined 15 percent to 622,025 metric tons at the end of the fourth quarter. However, this decrease in stocks did not lead to a rise in prices. The LME spot price fell from \$1,667.00 per metric ton on October 1, 1997, to \$1,535.50 on December 31, 1997. Reportedly, investors and consumers remained confident of future supply due to decreased Asian demand and restarts of idled capacity.

! The U.S. aluminum market saw slight shifts in supply and demand conditions from the previous quarter. On the supply side, primary production and secondary recovery of unwrought aluminum fell slightly (about 1 percent) to a combined output of approximately 1.8 million metric tons. However, total apparent consumption increased over the previous quarter, also by about 1 percent. Exports increased 2 percent to 309,000 metric tons and identifiable inventories increased by about 3 percent to 1.9 million metric tons. U.S. imports rose 14 percent to 689,000 metric tons and import penetration rose 4-percentage points from the previous quarter to 32 percent. These figures illustrate the diversion of aluminum shipments away from East Asian markets to the United States. The fourth quarter average U.S. primary aluminum price fell 2 cents from the previous quarter to 76 cents per pound.

Figure A-5
Aluminum: Price and inventory levels



¹Quarterly average of the monthly U.S. market price of primary aluminum ingots.

²End of quarter inventories.

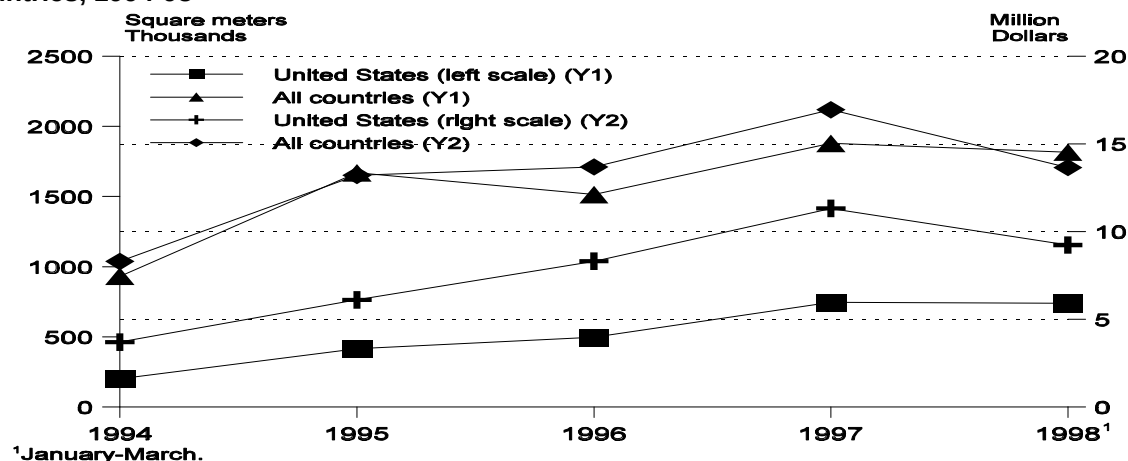
Sources: U.S. Geological Survey, World Bureau of Metal Statistics, and Metals Week.

FLAT GLASS

Background

Figure A-6

Average monthly Japanese imports of flat glass, by quantity and value, from the United States and all countries, 1994-98



Source: Compiled from official statistics of the Ministry of Trade and Industry, Japan.

! The U.S.-Japanese agreement on Japanese market access for imports of flat glass¹ for the period 1995-99 seeks to increase access and sales of foreign flat glass in Japan through such means as increased adoption of nondiscriminatory standards and expanded promotion of safety and insulating glass.² Average monthly Japanese imports from all countries doubled under the agreement to 1.9 million square meters (\$17 million) in 1997, with imports from the United States more than tripling in volume to 750,000 square meters (\$11.3 million). However, the United States has not been pleased with the lack of progress made in opening the Japanese market and the low volume of foreign glass in the Japanese distribution system and has been unsuccessful in attempts to have the Japanese Government address these concerns.³

! Japanese demand for imported glass began weakening in the second half of 1997, with the Asian financial crisis and an increase in the Japanese consumption tax from 3 to 5 percent⁴ likely contributing factors.

Current

! Japanese demand for imported glass has continued to weaken in 1998. The average monthly quantity and value of Japanese imports from all countries decreased by 3 and 19 percent for the first three months of 1998 to 1.8 million square meters (\$13.7 million), respectively, compared with declines of 1 and 18 percent to 740,000 square meters (\$9.2 million), respectively, for imports from the United States.

! The third annual review of the agreement was held in Washington, DC, May 27-28, 1998. At the review, Japan opposed a U.S. proposal to have Japanese manufacturers and distributors devise an Anti-Monopoly Act compliance manual.⁵

¹ Flat glass is largely unworked; safety glass (tempered or laminated) and insulating glass are also covered under the U.S.-Japanese agreement on flat glass.

² USITC, "Flat glass," *Industry, Trade, and Technology Review*, Oct. 1997, p. 42.

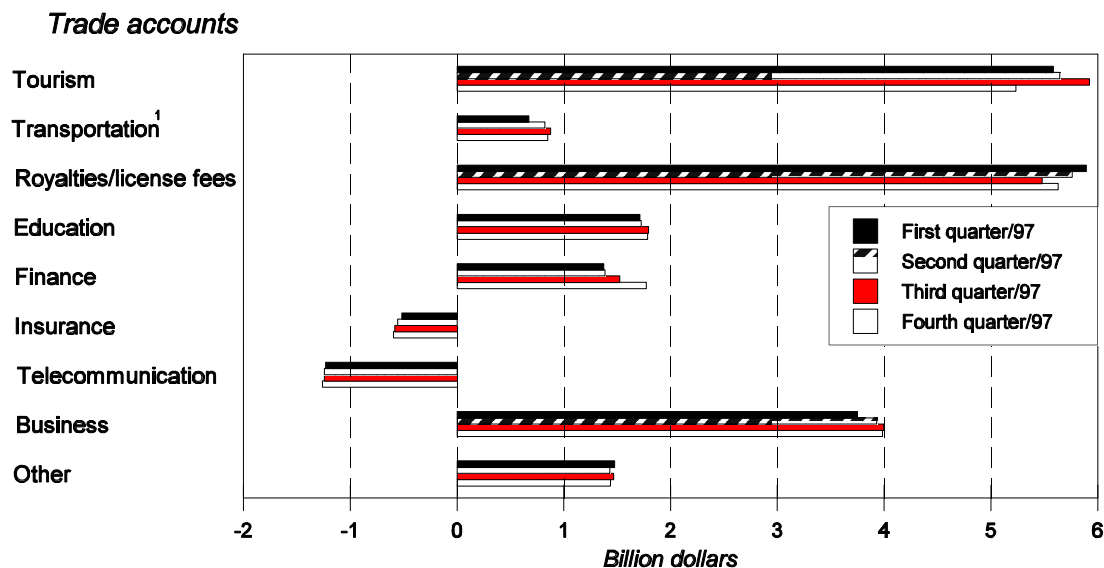
³ USITC, "Flat glass," *Industry, Trade, and Technology Review*, Mar. 1998, p. 40.

⁴ U.S. Department of State telegram (USDOS), "Embassy Update of National Trade Estimate," prepared by U.S. Embassy Tokyo, Feb. 4, 1998, retrieved from NewsEdge/Web June 4, 1998, and "Glass: Update on Developments in Hokkaido," prepared by American Consul in Sapporo, May 21, 1998, retrieved from NewsEdge/Web June 4, 1998.

⁵ USDOS telegram, "Glass: Press Report on the May 27-28 Flat Glass Review," prepared by U.S. Embassy Tokyo, June 3, 1998, retrieved from NewsEdge/Web June 5, 1998.

SERVICES

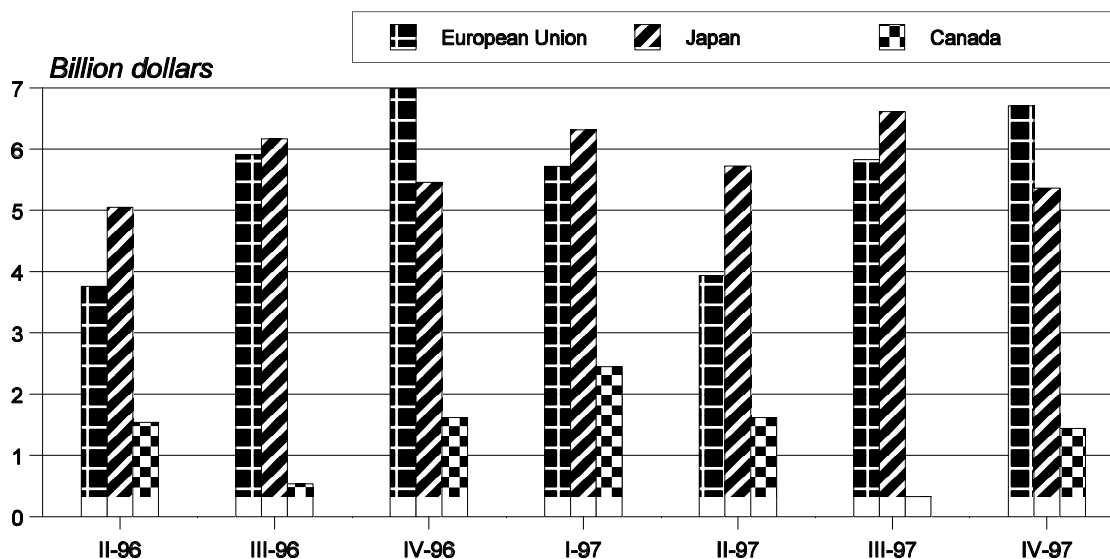
Figure A-7
Balance on U.S. service trade accounts, first quarter 1997 through fourth quarter 1997



¹ Includes port fees.

Source: Bureau of Economic Analysis, *Survey of Current Business*, Apr. 1998, table 3, p. 84.

Figure A-8
Surpluses on cross-border U.S. service transactions with selected trading partners, by quarter, 1996-97¹



¹ Figures reflect private-sector transactions only; military shipments and other public-sector transactions have been excluded.

Source: Bureau of Economic Analysis, *Survey of Current Business*, Apr. 1998, table 10, pp. 92-97.