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JETRO Japanese Market Report

Automobile Assembly Parts

Introduction

Throughout the era of high economic growth, the Japanese automobile parts industry grew consistently. However, the collapse of the bubble economy saw the industry enter a downturn, and with competition in the automobile industry intensifying worldwide, it now finds itself confronting a period of great upheaval. The transition engulfing the automobile parts manufacturing industry can be characterized as follows:

- Production volumes in the parts manufacturing industry are declining as domestic demand for automobiles decreases.
- Demands for price reductions are growing stronger.
- As automobile manufacturers expand their overseas manufacturing operations, they demand that parts manufacturers have an overseas presence.
- As automobile manufacturers seek to optimize their supply chains, they more readily conduct business with companies that do not belong to their conglomerates.
- Environmentally friendly technology is supported.
- Modularization is supported.
- Competition is intensifying as foreign parts manufacturers enter the Japanese market.

In this changing business environment, the differences between Japanese parts manufacturers are being magnified. With companies increasingly willing to do business outside their conglomerates, foreign parts manufacturers are coming in and stirring up the Japanese market, and even eclipsing their Japanese counterparts.

At the same time, Japanese parts manufacturers are being forced to take on their foreign competitors, and are increasingly undertaking mergers with a view to forming companies that can supply integral systems. Hence, it is likely that the on-going shake-up in the automobile parts industry will continue.

This report does not cover all automobile parts, but specifically focuses on assembly parts for new automobiles. It covers the present structure of the market, relevant laws and regulations, and changes in business practices, as well as discussing prospects for the future.

The report also examines foreign parts manufacturers that have already entered the Japanese market and trends in the parts that they have brought to the market. In this way light is shed on the methods by which foreign parts manufacturers enter the Japanese market and the various related issues that arise. In addition, sectors of the

market that show promise for the future are identified, and advice is offered to potential entrants.

This survey was carried out by the Yano Research Institute and the results have been collated by JETRO.

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Summary

In 2003 the Japanese market in automobile parts for assembly was worth ¥10.32 trillion, which represented an increase of 5.1% over the previous year. This rise was due to the recovery of the Japanese economy and to healthy overseas manufacturing by Japanese automobile manufacturers. A breakdown of this total reveals that sales of parts for domestic production rose by 4.4% to ¥9.54 trillion, while parts sales for overseas production jumped by 15% to ¥779.6 billion. Hence, sales of parts for overseas production showed much stronger growth. In Japan there is now one automobile for every 1.7 people. As a result, the domestic market will be subject to the effects of fluctuating business conditions.

As higher levels of automobile performance are required, the amount of money spent to produce a single vehicle is increasing. Notably, there has been an increase over recent years of features designed to enhance the safety and comfort of an automobile, such as air bags and car navigation systems. As a result, the cost of manufacturing a single vehicle is now approximately ¥250,000 more that it was ten years ago.

The Japanese automobile industry resembles a pyramid, with the automobile manufacturers at the apex supported from below by almost 10,000 parts manufacturers. Automobile manufacturers manufacture certain parts such as engines and car bodies themselves, while the remainder are manufactured by first-, second-, and third-tier parts manufacturers. With approximately 70% of parts manufacturers having fewer than 20 employees, the automobile parts manufacturing industry is thus comprised of both large and small- to medium-sized parts manufacturers.

This division-of-labor system came to be the bedrock of the Japanese automobile industry, reducing manufacturing costs and shortening the development cycle. It was a major factor in enabling Japanese automobile manufacturers to develop successfully in the face of competition from abroad. However, as the automobile manufacturers corralled parts manufacturers into their conglomerates, the continuous business between them led to the problem that it was unclear where responsibilities lay. This was eventually manifested in various forms, such as increased parts costs.

Faced with the need to regain their cost competitiveness, automobile manufacturers re-appraised the conglomerate system, and began to conduct more business outside the confines of the conglomerate system in a bid to optimize their supply chains. As automobile parts become more advanced, due to factors such as developments in environmental protection technology, automobile manufacturers have concluded that rigid adherence to the conglomerate system might very well cause them

to lose their competitiveness in these fields. This has lent additional impetus to the pursuit of business outside the conglomerate.

The Japanese automobile market is the second largest in the world, with the domestic automobile industry manufacturing ten million vehicles a year. Consequently, entry to the Japanese automobile parts market is a key component of the Asian strategy of foreign parts manufacturers. As the volume of business conducted outside the confines of the conglomerate system increases (spurred on by increased capital participation in Japanese automobile manufacturers by foreign automobile manufacturers), the barriers to entry to the Japanese parts market are shrinking. In response to this changing landscape, foreign parts manufacturers have been entering the market with renewed vigor since the latter half of the 1990s.

Typically, a foreign parts manufacturer may gain a foothold in the Japanese market by acquiring a stake in an established Japanese manufacturer and making it a subsidiary. Alternatively, the foreign parts manufacturer may establish a joint venture with a Japanese manufacturer. The advantage of these approaches is that the foreign company can make use of the Japanese manufacturer's production facilities and tap in to its existing business with Japanese automobile manufacturers.

The increasing functionality of automobile parts is also boosting the entry of foreign parts manufacturers into the Japanese parts market. In the case of parts which have high added value (as distinct from run-of-the-mill parts) due to the innovative nature of the technologies involved, such as parts related to environmental protection and safety, it is anticipated that new parts manufacturers will win business. Another promising avenue is modularization. Modularization involves the integration of multiple parts into a single system to meet requirements for enhanced functionality. Taking the lead and pitching modularization to Japanese companies represents a golden opportunity for U.S. and European parts manufacturers that have expanded into the Japanese assembly parts market through mergers and acquisitions.

Since the way is now open for Japanese automobile manufacturers to use parts made by manufacturers outside the conglomerate, and since there is also demand for new specialized parts, there are now clearly excellent opportunities for foreign parts manufacturers to enter the Japanese market.

It seems likely that the number of foreign parts manufacturers entering the Japanese market will continue to increase. However, if they are to succeed in establishing a firm foothold in the market, it is vital that these companies learn to understand precisely the individual requirements of each automobile manufacturer. Automobile manufacturers expect parts manufacturers to address certain issues that the parts manufacturer totally unexpected. Under the conglomerate model there is mutual understanding between the two parties and this problem does not arise. If this

mutual understanding is lacking, however, failures of communication may occur, which could jeopardize the parts development process.

To succeed, the foreign parts manufacturer must bridge the gap and develop an understanding with the Japanese automobile manufacturer (while still retaining its characteristic rationality), and thus establish a new form of business relationship that is distinct from the old conglomerate model.

I. Market Overview

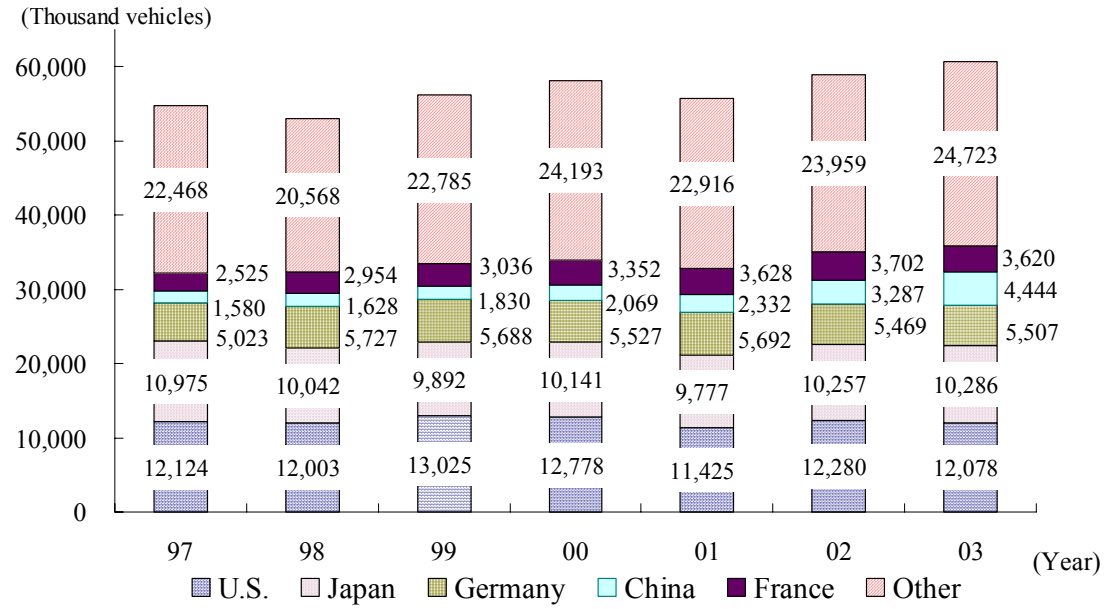
A. Background of the Automobile Assembly Parts Market

1. Trends in the Japanese automobile market

According to the Ministry of Land, Infrastructure and Transport (MLIT), the Ministry of Economy, Trade, and Industry (METI), and the Japan Automobile Manufacturers Association, car-ownership in Japan exceeded 74 million vehicles in 2003, and the Japanese automobile industry annually spends ¥16.5 trillion ($150 billion) on the manufacture of four-wheeled vehicles, for an annual production total of ten million vehicles. This makes Japan the second largest automobile market in the world.

The number of automobiles manufactured worldwide in 2003 was 60.65 million, with the top five car-manufacturing nations (led by the U.S.A.) accounting for approximately 60% of this product total. Japan accounts for 17% of the worldwide production total.

Figure 1. Fluctuations in worldwide automobile production



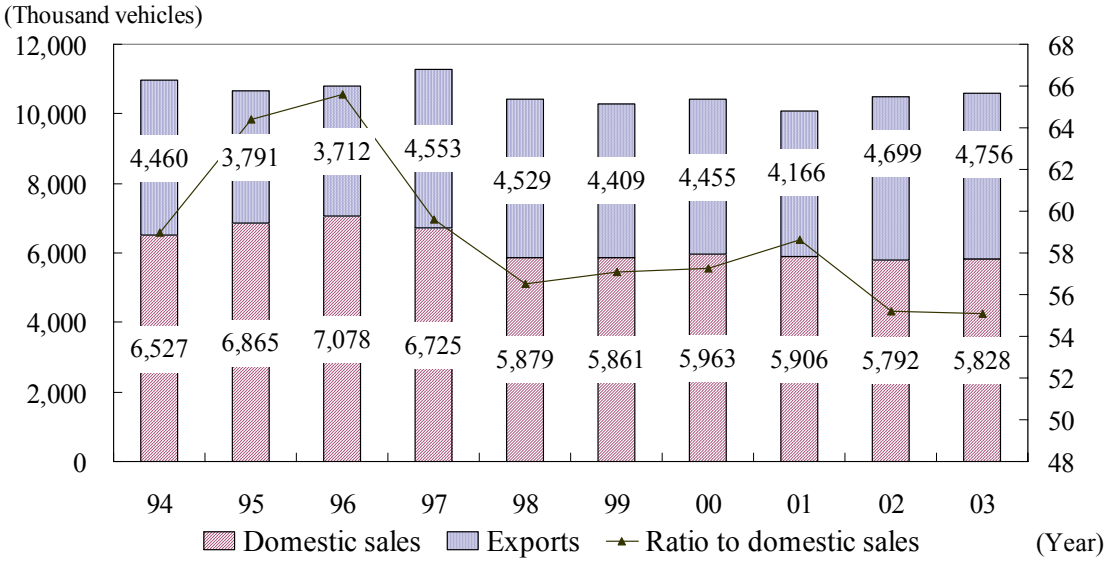
Source: International Organization of Motor Vehicle Manufactures

Japanese automobile production took off in the 1960s. Throughout the era of rapid economic growth, the industry consistently posted increases in production, and this lasted until 1990. However, automobile penetration has grown to such a degree that there is now one vehicle for every 1.7 people. Due to factors such as a decline in the number of young people (who comprise the base of new purchasers), the automobile industry has come to depend on the demand for replacement purchases.

For this reason domestic sales are subject to the effects of fluctuating business conditions. After peaking at 7.8 million vehicles in 1990, sales over the past ten years have either declined or remained flat. In 2003, domestic sales posted the first year-on-year increase in three years, rising to 5.83 million vehicles. However, this was still roughly 2 million vehicles shy of the 1990 demand level.

Meanwhile, since the latter half of the 1990s, export levels have remained firm, the principal destination being North America, where small-sized Japanese cars are prized for their fuel efficiency. However, as automobile manufacturers actively engage in overseas production so as to minimize the effects of exchange rates, there is unlikely to be significant future demand for increases in Japanese exports and export levels may gradually enter a decline.

Figure 2. Fluctuations in domestic sales and export sales for automobiles



Source: The Japan Automobile Dealers Association and the Japan Automobile Manufacturers Association

Domestic production is subject to both domestic sales levels and export levels, and continually fluctuates around the ten-million-vehicle mark. In 2003, production increased by 0.3% over the previous year to 10.27 million vehicles, marking the second straight year that production had exceeded 10 million vehicles. This increase was caused by factors such as demand for trucks due to environmental regulations.

However, given the mature economy and the gathering momentum of localized production overseas, there appears little chance of any large increase in domestic production. Overseas production by Japanese automobile manufacturers registered a major increase in 2003 to a total of 8.61 million vehicles—12.5% more than the figure

for the previous year. This represented a year-on-year rise of almost one million vehicles. With forecasts of production expansion in the Asian region (first and foremost in China), it is perfectly possible that domestic and overseas production levels will soon be moving in opposite directions.

Figure 3. Fluctuations in overseas production figures for Japanese automobile manufacturers

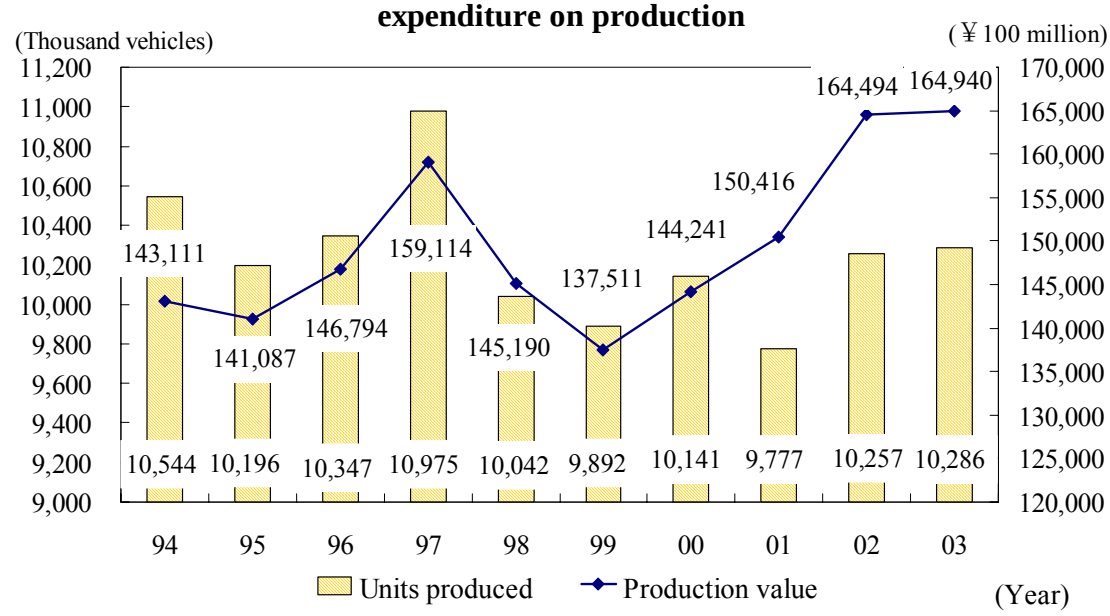
(Unit: 10,000 vehicles, %)

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Number of vehicles manufactured	490	556	578	599	537	578	623	668	765	861
Year-on-year increase	—	13.5	4.0	3.6	–10.4	7.6	7.8	7.2	14.5	12.5

Source: Japan Automobile Manufacturers Association

Although overall production expenditure rises and falls according to production levels, it can be seen that per-vehicle production costs are rising. Compared to ten years ago, the cost of manufacturing a single vehicle has risen by approximately ¥250,000 as demand for safety and comfort features has grown stronger over recent years and new parts like airbags and information devices (such as car navigation systems) have become standard.

Figure 4. Fluctuations in automobile production levels and expenditure on production



Source: Japan Automobile Manufacturers Association, Ministry of Economy, Trade and Industry

Figure 5. Fluctuations in per-vehicle production costs

(Unit: ¥1000)

	1994	1995	1996	1997	1998	1999	2000	2001	2001	2003
Production cost	1,357	1,384	1,419	1,450	1,446	1,390	1,422	1,538	1,604	1,603

Source: The Ministry of Economy, Trade, and Industry

2. Re-organizational trends in the automobile industry

The automobile industry has been swept up in the tide of economic globalization, and international corporate alliances are gaining sway. Sky-rocketing development costs constitute one notable factor that has stimulated this trend. Since the development costs for environmentally friendly technology such as fuel cell cars are enormous, firms attempt to alleviate these costs by collaborating with other companies. A second factor is the desire to attain competitive superiority by conducting operations on an expanded scale and thereby increasing production efficiency, so as to be better able to meet the ever-increasing demand for lower prices.

Corporate alliances come in many forms, such as capital participation (equity investment), technological cooperation, joint development and production, and collaboration on sales. With Japanese automobile manufacturers making ever greater inroads into overseas markets, this collaborative trend looks set to intensify, as they set up a rapid succession of joint ventures with local manufacturers in countries such as China, where the market is expanding at a phenomenal pace.

In July 1971, General Motors invested in Isuzu, embarking on a comprehensive program of collaboration that encompassed investment, technology and sales. GM thereby became the first foreign automobile manufacturer to invest financially in a Japanese automobile manufacturer. This was followed by further capital investments—by Ford, which invested in Mazda in November 1979, Renault, which invested in Nissan in March 1999, and Daimler/Chrysler, which invested in Mitsubishi Motors in March 2000. GM also followed up with further capital investment—in Suzuki Motors in August 1981 and Fuji Heavy Industries (Subaru) in December 1999. With the exceptions of Honda and Toyota (which has a 51.19% stake in Daihatsu and a 50.11% stake in Hino), all Japanese manufacturers of four-wheeled vehicles are currently recipients of investment by foreign automobile manufacturers.

Figure 6 Capital investment relationships between Japanese automobile manufacturers and foreign automobile manufacturers

	Capital investor
Toyota Motor Corporation	–
Nissan Motor Co.,Ltd.	Renault (44.33%)
Honda Motor Co.,Ltd.	–
Mitsubishi Motors Corporation	Daimler/Chrysler (33.70%)
Mazda Motor Corporation	Ford Motor (33.39%)
Suzuki Motor Corporation	General Motors (20.02%)
Daihatsu Motor Co.,Ltd.	–
Fuji Heavy Industries Ltd. (Subaru)	General Motors (20.09%)
Isuzu Motors Limited	General Motors (10.26%)
Nissan Diesel Motor Co.,Ltd.	Renault (17.88%)
Hino Motor Ltd.	–

Note: Figures in brackets denote percentage of equity.
Source: Press releases and financial statements issued by the automobile manufacturers

B Market Trends for Automobile Assembly Parts

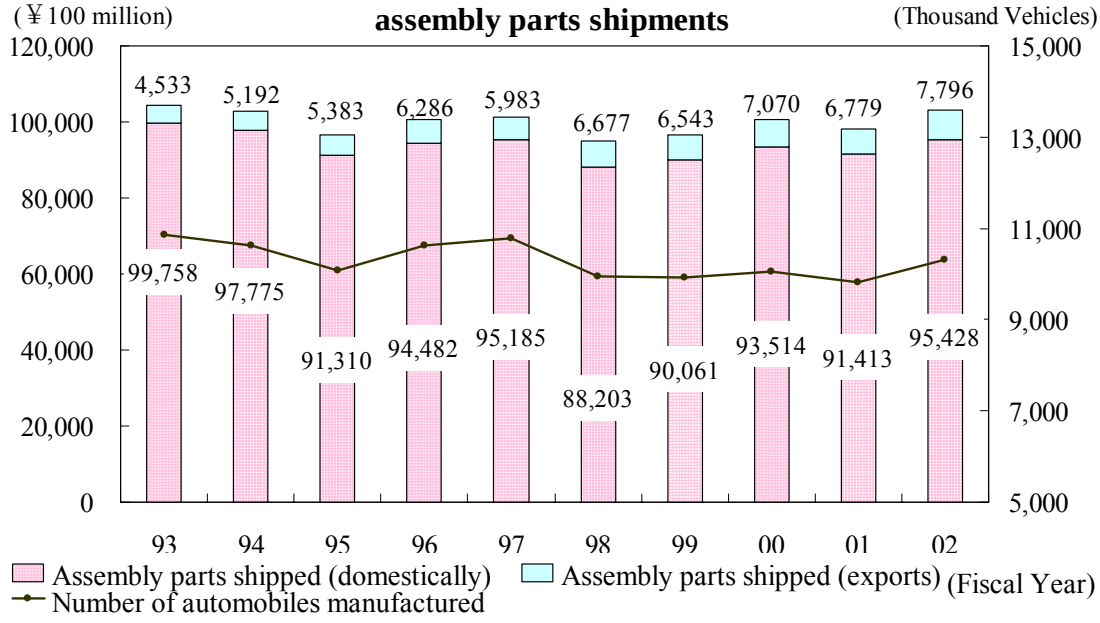
1. Market Trends for Automobile Assembly Parts

Essentially, the demand for automobile assembly parts (from now on referred to as "assembly parts") is driven by automobile production levels. According to the "Survey on Market Trends for Automobile Parts" by the Japan Auto Parts Industries Association, the volume of assembly parts shipped in the past ten years has varied with fluctuations in production levels in the automobile industry and has hovered around the ¥10 trillion mark.

A distinction is made between assembly part shipment levels for the domestic Japanese market and for the overseas market. In FY 2002 (April 2002 to March 2003), domestic shipments accounted for 92.4% of the overall shipment total. These domestic shipments were worth ¥9.54 trillion. The proportion of overseas shipments remained steady at 7.6% of the overall total; however, the volume of overseas shipments increased in real terms, as it kept pace with increasing levels of overseas production by automobile manufacturers. Overseas shipment levels over the past ten years have increased by 72% and have compensated for declining domestic demand.

However, automobile manufacturers are increasingly seeking to procure parts locally for their overseas production operations. In response to this, parts manufacturers are also engaging in production overseas. Yet, since foreign parts manufacturers, which have improved the quality of their products, are also supplying more parts to the overseas production operations of Japanese automobile manufacturers every year, and it remains to be seen whether Japanese parts manufacturers will be able to continue to increase exports in the future.

Figure 7. Fluctuations in automobile production volumes and assembly parts shipments



Source: The Japan Automobile Manufacturers Association and the Japan Auto Parts Industries Association

2. Trends in Assembly Parts Market by Category

In FY 2002, automobile assembly parts shipments recovered once again to break through the ¥10 trillion barrier as the level of automobile production increased.

Figures 8 and 9 below show how the volume of assembly parts shipments has varied over the past five years. In contrast to a 3.6% increase in the level of automobile production over the same period, the total shipment volume of assembly parts has increased by 8.9% on the back of demand for new parts, such as anti-theft devices and telematics-related parts.

Shipment levels have increased for all individual product categories, except for supplies. However, the individual rates of increase for the various categories differ. In addition to the high growth in shipments of electrical parts, which reflects the increasing use of electronics in automobiles over recent years, the category of drive, transmission, and steering parts has also seen a high rate of growth, stimulated by the changeover to automatic transmission (AT) and continuously variable transmission (CVT). It is expected that the disparity will continue to widen between parts that fulfill new demand or add value and parts for which cost reductions are demanded.

Figure 8. Fluctuation in shipment levels of assembly parts by category

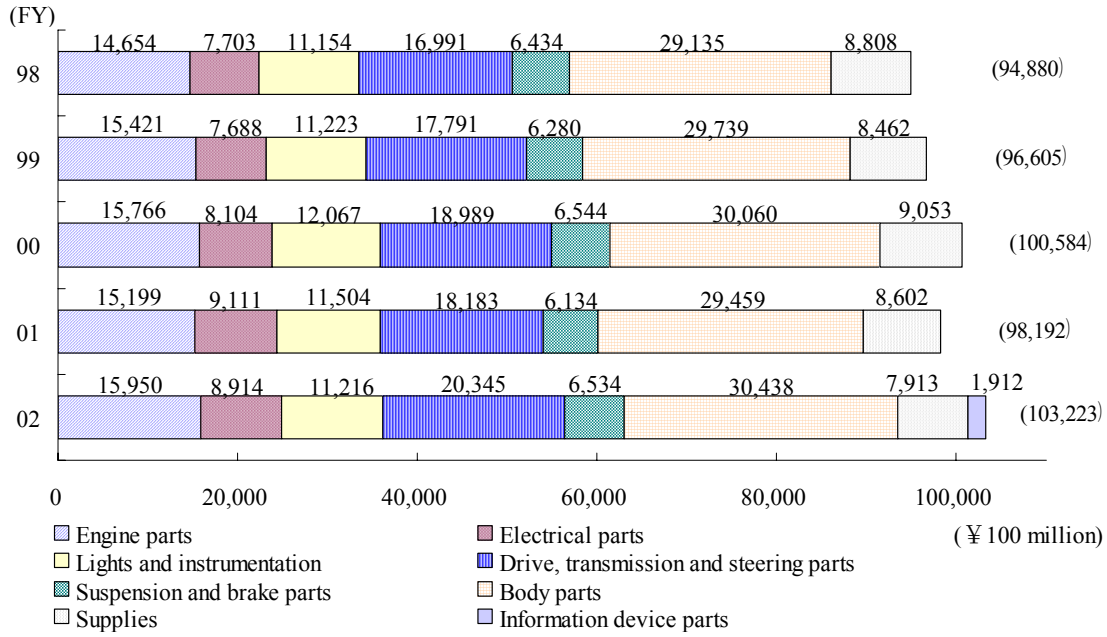
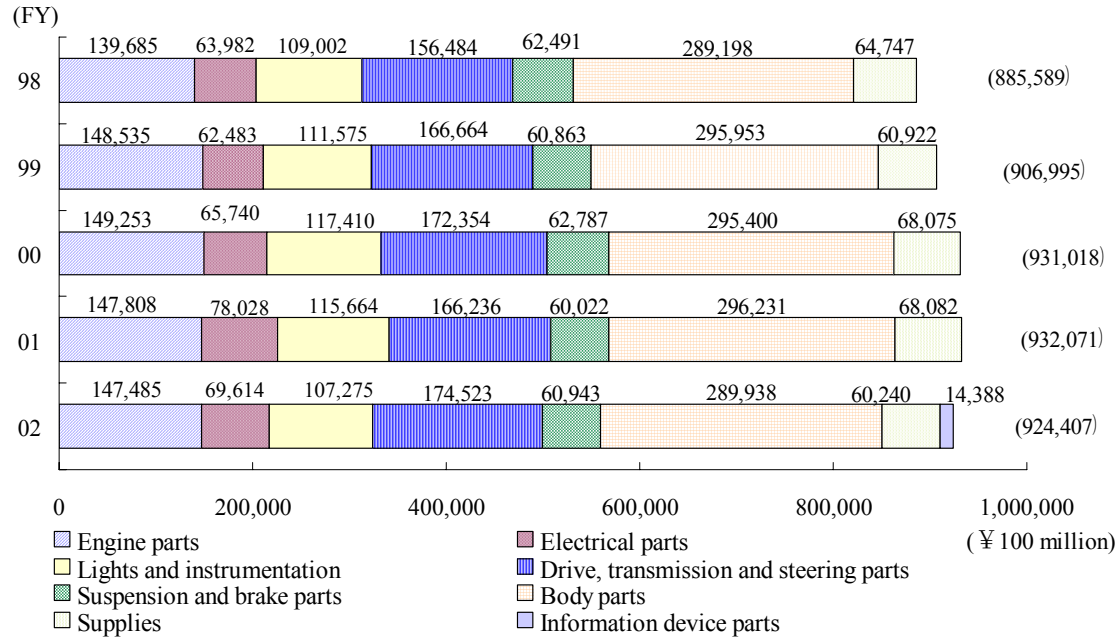


Figure 9. Fluctuation in per vehicle shipment levels by part category



Note: Values in brackets are shipment volume totals.

Source: Figures 8– 10 were compiled from "Results of Survey on Trends in Shipment of Automobile Parts" by the Japan Auto Parts Industries Association

Furthermore, if assembly part shipment levels for each category are calculated on a per-vehicle basis for automobiles manufactured in Japan (excluding assembly parts destined for overseas), it becomes evident that shipments of suspension and

brake parts and of lights and instrumentation are declining. A major factor behind this decline in shipment volumes is the clamor from the automobile manufacturers for cost reductions as they bid to survive in a fiercely competitive global automobile industry. A further reason for the decline is that as low-priced compact cars are becoming more common, there is less use for high-priced high-functionality parts.

3. The Outlook for Parts Manufacturers

Parts manufacturers find themselves in an extremely harsh environment, characterized by factors such as demands for cost reductions and a decline in shipments brought about by the reduction in domestic production levels. The global realignment of the automobile industry that is currently in progress is also having an enormous effect on parts manufacturers.

In order to boost their competitiveness, automobile manufacturers (which purchase 70% of the various parts that they require) tout their procurement operations as the best in the world. As a result, the established practice of trading with other companies that belong to the same conglomerate, which has sustained the Japanese automobile industry up until the present, is falling by the wayside. There is a growing tendency for manufacturers to use the products that are best in terms of cost, technological standards, and quality—irrespective of which conglomerate the supplier belongs to.

The adoption by automobile manufacturers of this kind of parts procurement policy, which cuts across conglomerate lines, represents a chance for parts manufacturers to expand their client base and acquire new customers. Under the traditional system of doing business, whereby parts manufacturers dealt only with designated automobile manufacturers, product requirement information and the like was limited. However, the fact that companies are spreading their wings and pursuing new business opportunities beyond the borders of conglomerate affiliation is enabling the parts development process to be founded to a greater extent on suggestions for improvements. This may well result in a virtuous cycle that spawns even more opportunity beyond the confines of the conglomerate.

Accordingly, the average number of automobile manufacturing companies with which member companies of the Japan Auto Parts Industries Association conduct business has risen from 5.49 companies in FY 1996 to 5.97 in FY 2002. It is clear that they will continue to supply parts to more and more automobile manufacturers.

Figure 10. Number of automobile manufacturers with which member companies conduct business

FY 96	FY 97	FY 98	FY 99	FY 00	FY 01	FY 02
5.49	5.54	5.71	5.64	5.85	5.91	5.97

However, as the conglomerate system breaks down and competition intensifies, a worst-case scenario, in which parts usage might dwindle away to nothing, can be imagined.

Around the year 2000, automobile manufacturers embarked on a major initiative to reduce parts costs by 20–30% with a view to becoming more competitive. Whether or not parts manufacturers can survive will depend on how they respond.

The methods that automobile manufacturers have employed to achieve concrete price reductions are as follows: reducing the number of suppliers used and increasing order volumes for selected suppliers so that economies of scale will encourage them to reduce their prices, altering part designs by adopting different materials and using modularization, and reducing costs by reducing part counts and streamlining work processes.

In addition, quality level requirements have been made stricter. Cost reductions are being sought through the productivity improvements that can be achieved by reducing fault rates to near-zero levels, and through the simplification of inspection processes.

Figure 11. Parts purchasing strategies of automobile manufacturers

Toyota Motor Corporation	• 2000:Launched general price reduction initiative "CCC21" (Construction of Cost Competitiveness 21). Set a target of paying the most globally competitive prices for 170 principal items that comprise over 90% of its overall parts procurement costs. With integration between suppliers, and Toyota's procurement, design, production technology, and manufacturing divisions, a 30% cost reduction over three years is sought. FY 2002 achieves cost reductions of ¥290 billion. • FY 2004 procurement objectives: 1. Quality: Attempt to specify complete product line-up in order to reduce defects in supplier processes to zero. Enhance supplier's management capability by dispatching quality management specialists. 2. Technology: Accelerate implementation of advanced technologies so as to preserve and enhance predominance in sectors such as environmental protection, safety, and communications. Attempt to achieve wider cost reductions and to set de facto standards. 3. Costs: Take CCC21 to a higher level. Conduct a thorough overhaul of manufacturing processes by implementing design reforms and re-inspecting production equipment. Stimulate and develop suppliers' competitive instincts. 4. Globalization: Station quality management specialists in the procurement divisions at overseas facilities and evaluate suppliers according to strict criteria. • Select competitive suppliers and create an organization that will encourage improved competitiveness so as to promote "world-class procurement." 1. International Price Comparison System enabling comparative analysis of cost competitiveness of parts purchased worldwide. 2. New Supplier and New Technology Cultivation Program for unearthing competitive new suppliers and new technologies. 3. Current Supplier Improvement Support Program to help existing suppliers become even more competitive.

Figure 11. Parts purchasing strategies of automobile manufacturers

Nissan Motor Co.,Ltd.	• October 1999: announces the Nissan Revival Plan, a comprehensive plan for reviving the company. Number of suppliers to be reduced from 1,145 companies to 600 by FY2002; dispose of its stock holdings in all but four of its 1,349 affiliates. Nissan Revival Plan cost reduction measures— the Nissan 3.3.3 Plan Conduct tri-polar global procurement in Japan, North America, and Europe through a three-way partnership between Nissan, Renault, and suppliers with the aim of reducing costs by 20% over three years (1999–2001). • April 2001: Establishes Renault-Nissan Purchasing Organization (RNPO), a Renault/Nissan group purchasing organization. Highly competitive levels of quality, cost, and delivery attained in procurement; global management of supplier affairs. • May 2002: announces the Nissan 180 Plan. Aims to reduce parts procurement costs by 15%. • April 2004: announces the Nissan Value-up Plan, a three-year plan scheduled for implementation in FY 2005. Aims for improved cost competitiveness and effective supplier relations, as it is predicted that growth will be mainly in China and other overseas markets.
Honda Motor Co.,Ltd.	• 1992: embarks on initiative to strengthen collaboration with parts manufacturers under the slogan of TQM—"Technology Quality Motivation". • December 2000: announces Honda Green Purchasing Guidelines, intended to promote procurement of environmentally friendly materials and parts. • Rolls out "Made by Global Honda" initiative to promote expansion of its line-up and improved manufacturing efficiency and cost competitiveness through effective global deployment of management resources. Technology (T): watchwords are "early" and "quick"— ascertain the types of advanced technology that users are demanding and implement them without delay. Quality (Q): starting in 2002, spreads activities designed to ensure "Unequalled Quality" to suppliers. Experts are shortly to be deployed to overseas production facilities so as to ensure that standards of excellence are maintained worldwide. Motivation (M): perfect mutual understanding designed to spread objectives to first-tier parts manufacturers and second-tier suppliers, leading to greater collective capability.

Mitsubishi Motors Corporation	• March 2001: announces Mitsubishi Motors Turnaround Plan. Establishes purchasing department to carry out integrated global management of supply, distribution, and supply of indirect materials and services. Introduces the COSMOS concept (Common Supplier and Mitsubishi Motor Corp (MMC) Operation System), with the goal of strengthening collaboration with world-class suppliers in order to reduce purchasing costs. • 2003: stages Mitsubishi Motors Global Supplier Plenum, a conference with suppliers held in order to build more global and open business relationships with them. Also implemented MXP (Mitsubishi Cross-Functional Project) for devising ideas jointly with suppliers. Establishes even-handed and close-knit cooperative relationships with suppliers, so as to enhance one another's profitability. • May 2004, announces Business Regeneration Plan Aims to reduce materials costs 15% by 2006.
Mazda Motor Corpotration	• December 1999: introduces Ford's FSS (Full Service Supplier) parts supply method, in which functions such as planning, design, and quality assurance for the parts are entrusted to parts manufacturers. • May 2002: rolls out ABC Activities, a cost-reduction initiative. Implement design improvements, reduce distribution costs, standardize parts across different vehicle models, deliver to overseas manufacturing facilities, focus on ordering from suppliers capable of supplying parts of standard quality, increase volume of business with each supplier, attempt to secure significant reductions on unit prices for parts.

Source: Compiled from the annual reports of each of the automobile manufacturers, environmental reports and other sources.

As parts manufacturers proceed to do business with companies outside their conglomerates, they become increasingly aware of intensifying competition with foreign parts manufacturers. If foreign parts manufacturers continue to improve in terms of quality and delivery, it is likely that the traditional superiority of Japanese parts manufacturers will be eroded.

From the end of the 1990s onwards, foreign parts manufacturers, such as U.S. firms Lear and Johnson Control, underwent mergers and acquisitions, in step with the realignments taking place in the European and US automobile manufacturing industries, and increased the scale of their operations. Newly enlarged foreign parts manufacturers are making their presence felt in Asian markets, including Japan. The German company Bosch was the first to invade the Japanese market when it acquired

Zexel in 1997. It was followed by the Swedish firm Autoliv, which acquired Izumi Jidosha in 2000, and the German company Mahle, which acquired Tennex in 2001.

The fact that companies are increasingly doing business outside the confines of their own conglomerates represents a golden opportunity for foreign parts manufacturers to enter the Japanese market. With acquisitions representing one method of entry to the market, foreign firms are successfully developing new business with Japanese automobile manufacturers or increasing the volume of their existing business.

In this changing climate, a key factor is that automobile manufacturers are apt to select parts manufacturers that are not only competitive in terms of cost, but that also exhibit a capacity for product development that sets them apart from other companies (for example, in terms of their ability to support modularization and their design capability).

Furthermore, with worldwide advances in environmental regulations, procurement that takes account of the environment and green supply chain management have become prerequisites. The green supply practiced by all automobile manufacturers requires that the parts manufacturers with whom they do business fulfill certain criteria—for example, they must acquire ISO14001 certification and properly manage substances that are potentially harmful to the environment.

With overseas production increasing, automobile manufacturers also require their suppliers to implement global supply systems. Hence, a parts manufacturer that offered outstanding quality in technological terms but could only supply its parts domestically would be very unlikely to meet an automobile manufacturer's criteria for selection as a supplier. In other words, automobile manufacturers are sure to select companies that are capable of supplying parts internationally ahead of companies that can supply products of equal quality, but only in Japan.

Figure 12 Number of overseas facilities operated by automobile parts manufacturers

	1999	2000	2001	2002	2003
Manufacturing	1,057	1,075	1,142	1,182	1,237
Sales	239	253	248	229	243
Technology provision	653	645	630	592	559
Others	85	90	105	109	115
Total	2,034	2,063	2,125	2,112	2,154

Note: "Others" include local general management companies and research and development companies.
Source: "Outline Survey of Overseas Operations—2003" published by the Japan Auto Parts Industries Association.

Parts manufacturers that fail to react to these changes in the landscape cannot remain competitive and the disparities between companies are becoming more pronounced. As a result, a reorganization involving Japanese parts manufacturers is also underway, which has seen mergers geared not only towards technical and sales collaboration, but also towards improved efficiency in system development and manufacturing.

In a recent example of this, on 1 October 2004 Hitachi Ltd. merged with and absorbed its affiliate, Hitachi Unisia Automotive Ltd., and Tokico Ltd. The automotive systems business is one area of a business domain that Hitachi which has dubbed "Global Products Incorporating Advanced Technology" and on which the company is focusing its efforts. Hitachi is combining the technology of the three companies to speed up the implementation of advanced research in areas such as electronic braking and cruise-control systems.

On 1 October (the very same day as the merger described above), the Toyoda Boshoku Corporation, the Araco Corporation and Takanichi Company Ltd. also merged. The new company intends combine the work that each individual company has done to date so that their ideas and development can be pooled.

This kind of merger could be said to be indicative of the trend towards modularization. Functionality can be improved by regarding multiple parts as integral systems at the design stage. This enables companies to reduce costs and become more competitive.

The number of parts manufacturers striving to survive by means of these types of collaboration and merger is expected to increase further.

Figure 13. Recent tie-ups between Japanese automobile parts manufacturers

	Company Name	Type of Tie-up	Details
1999	Kinugawa Rubber Industrial Co.,Ltd	Capital tie-up	Toyo Tire and Rubber Co.,Ltd. acquires 6.5% of Kinugawa Rubber Industrial Co.,Ltd. from Nissan.
2000	Calsonic Kansei Corporation	Merger	A merger between two Nissan affiliates, Calsonic and Kansei.
	Japan Brake Industrial Co.,Ltd.	Capital tie-up	Equity participation by Nissin Kogyo Company Ltd. in Japan Brake Industrial Co.,Ltd.
	Toyoda Boshoku Corporation	Merger	Toyoda Boshoku Corporation acquires Toyota Kako Co.,Ltd.
2001	Keylex Corporation	Merger	A merger between two Mazda affiliates, Kurata Co.,Ltd. and Miura Co.,Ltd.
	Exedy Corporation	Capital tie-up	Aisin Seiki Co.,Ltd. acquires 23.4% of Exedy Corporation from Nissan.

Figure 13. Recent tie-ups between Japanese automobile parts manufacturers

	Company Name	Type of Tie-up	Details
2001	Kiriu Corporation	MBO	Investment company Unison Capital Partners L.P. acquires stock in Kiriu from Nissan after a takeover bid. (In June 2004 Unison Capital Partners LP would transfer all its stock in Kiriu to the Sumitomo Corporation.)
	Fuji Kiko Co.,Ltd.	Capital tie-up	Koyo Seiki Co.,Ltd. acquires 23.7% of Fuji Kiko Co.,Ltd. from Nissan.
	Kasai Kogyo Co.,Ltd.	Capital tie-up	Nagase and Co.,Ltd. acquires 6.7% of Fuji Kiko Co.,Ltd. from Nissan.
2002	Hitachi Unisia Automotive Ltd.	M&A	Hitachi Ltd. buys Nissan affiliate Unisia JECS Corporation and renames it Hitachi Unisia Automotive Ltd., as a Hitachi subsidiary.
	Favess Co.,Ltd.	Joint venture	Established as a joint venture between Toyota, Koyo Seiko Co.,Ltd., Denso and Toyoda Machine Works, Ltd.
	FTS Co.,Ltd.	Joint venture	Established as a joint venture between Toyota, Horie Metal Co.,Ltd. and Toyoda Gosei Co.,Ltd.
	Advics Co.,Ltd.	Joint venture	Established as a joint venture between Toyota, Denso, Aisin Seiki Co.,Ltd. and the Sumitomo Corporation.
	Rhythm Corporation	MBO	U.S. investment company JP Morgan Partners, acquires stock in the Rhythm Corporation from Nissan in an MBO.
	Finesinter Co.,Ltd.	Merger	Merger between Tokyo Sintered Metals Corp and Japan Powder Metallugy Co.,Ltd.
	Ansei Corporation	Capital tie-up	Equity participation by U-Shin Ltd. in Ansei Corporation.
	Unipres Corporation	Capital tie-up	Nippon Steel Corporation acquires 14.4% of Unipres Corporation from Nissan.
2003	Jatco Ltd.	Merger	Jatco Ltd. acquires Diamond Electrical.
	Jidosha Denki Kogyo Co.,Ltd.	Capital tie-up	Mazda affiliate Mitsuba Corporation acquires 35.8% of Nissan affiliate Jidosha Denki Kogyo Co.,Ltd.
	Fuji Univance Corporation	Capital tie-up	I.S. Precision Machinery Inc. acquires 11.6% and Daido Steel Co.,Ltd. acquires 9.3% of Fuji Univance Corporation from Nissan.
2004	Hitachi Ltd.	Merger	Hitachi acquires its affiliates Tokico Ltd. and Hitachi Unisia Automotive Ltd.
	Faltec Co.,Ltd.	Holding company	Business integration between Altia Co.,Ltd. and Hashimoto Forming Industry Co.,Ltd.
	Toyoda Boshoku Corporation	Merger	Toyoda Boshoku Corporation acquires Toyota affiliates Araco Corporation and Takanichi Co.,Ltd.
	Kayaba Industry Co.,Ltd	Merger	Kayaba Industry acquires its subsidiary Nippon Power Steering Co.,Ltd.

Source: Compiled from the press releases of the companies concerned and other documents.

II. Related Laws and Regulations

The spread of automobiles has made travel much more efficient, and has proved extremely pleasant and convenient for the individual. At the same time, however, it has been the cause of severe environmental problems, such as air pollution.

Notable environmental problems attributable to the automobile include carbon dioxide (CO2) emissions (which contribute to global warming) and noise generated when automobiles are driven, pollution of the atmosphere by nitrogen oxide (NOx) and particulate matter (PM), and depletion of the ozone layer caused by emissions of chlorofluorocarbons (CFCs) when automobiles are scrapped. Environmental protection regulations are being strengthened in response to these issues, and automobile manufacturers too recognize that concern for the environment is a requisite for sustained growth.

Figure 14. Authorities responsible for environment-related automobile laws and regulations

	Section Responsible	Laws and Regulations
Ministry of Economy, Trade, and Industry	Automobile Division, Manufacturing Industries Bureau	Automobile Recycling Law
Ministry of Land, Infrastructure and Transport	Engineering and Safety Department, Road Transport Bureau	Fuel consumption regulations
Ministry of the Environment	Atmospheric Environment Section, Central Advisory Council on the Environment Office of Automobile Recycling Measures	Gas emissions regulations Automobile Recycling Law

Source: Compiled from the Web sites of the respective government agencies.

A. Gas emissions regulations

In 1966 gas emissions regulations were introduced governing the levels of carbon monoxide (CO) produced by ordinary and small-size gasoline-powered automobiles. These were the first such regulations designed to curb air atmosphere.

Subsequently, minicars, vehicles powered by LPG (liquefied petroleum gas), and diesel-powered vehicles have come to be regulated, and hydrocarbons (HCs) and nitrogen oxides (NOx) have been added to the list of regulated substances. At present particulate matter (PM) and diesel-emitted particulates (one type of PM) have also been added.

However, pollution of the atmosphere by substances such as suspended particulate matter (SPM) and nitrogen dioxide (NO2) remains a severe problem, particularly in large urban areas. For this reason, new more stringent long-term measures for reducing automobile gas emissions are to come into effect in October 2005 in the wake of the Fifth Report on Recommended Measures for Reducing Automobile Gas Emissions. This report was compiled in April 2004 by the Central Advisory Council on the Environment, an advisory body to the Minister of the Environment.

Figure 15. Regulatory levels for emissions of exhaust gases by automobiles

Vehicle Classification			Existing Regulations				Forthcoming Regulations			
			Test mode	Substance		Regulatory level	Test mode	Substance	Year	Regulatory level
Gasoline- and LPG-powered vehicles	Passenger automobiles		10.15M (g/km)	CO		1.27 (0.67)	10.15M+11M (g/km) (Note 2)	CO	2005	1.92 (1.15)
				HC		0.17 (0.08)				
				NOx		0.17 (0.08)		NMHC		0.08 (0.05)
			11M (g/test)	CO		31.1 (19.0)				
				HC		4.42 (2.20)		NOx		0.08 (0.05)
				NOx		2.50 (1.40)				
	Trucks and Buses	Minicars	10.15M (g/km)	CO		5.11 (3.30)	10.15M+11M (g/km)	CO	2007	6.67 (4.02)
				HC		0.25 (0.13)				
				NOx		0.25 (0.13)		NMHC		0.08 (0.05)
			11M (g/test)	CO		58.9 (38.0)				
				HC		6.40 (3.50)		NOx		0.08 (0.05)
				NOx		3.63 (2.20)				
		Light vehicles (GVW≤1.7t)	10.15M (g/km)	CO		1.27 (0.67)	10.15M+11M (g/km)	CO	2005	1.92 (1.15)
				HC		0.17 (0.08)				
				NOx		0.17 (0.13)		NMHC		0.08 (0.05)
			11M (g/test)	CO		31.1 (19.0)				
				HC		4.42 (2.20)		NOx		0.08 (0.05)
				NOx		2.50 (1.40)				
		Medium vehicles (1.7t <GVW≤3.5t)	10.15M (g/km)	CO		3.36 (2.10)	10.15M+11M (g/km)	CO	2005	4.08 (1.15)
				HC		0.17 (0.08)				
				NOx		0.25 (0.13)		NMHC		0.08 (0.05)
			11M (g/test)	CO		38.5 (24.0)				
				HC		4.42 (2.20)		NOx		0.10 (0.07)
				NOx		2.78 (1.60)				
		Heavy vehicles (3.5t <GVW)	G13M (g/kwh)	CO		26.0 (16.0)	JE05 mode (g/km)	CO	2005	21.3 (16.0)
				HC		0.99 (0.58)		NMHC		0.31 (0.23)
				NOx		2.03 (1.40)		NOx		0.9 (0.7)
Diesel Vehicles	Passenger Automobiles		10.15M (g/km)	CO		0.98 (0.63)	10.15M+11M (g/km)	CO	2005	0.84 (0.63)
				HC		0.24 (0.12)		NMHC		0.032 (0.024)
				NOx	Small-size vehicles	0.43 (0.28)		NOx Small-size vehicles		0.19 (0.14)
					Medium- size vehicles	0.45 (0.30)		Medium-size vehicles		0.20 (0.15)
				PM	Small-size vehicles	0.11 (0.052)		PM Small-size vehicles		0.017 (0.013)
					Medium- size vehicles	0.11 (0.056)		Medium-size vehicles		0.019 (0.014)
	Trucks and Buses	Light vehicles (GVW≤1.7t)	10.15M (g/km)	CO		0.98 (0.63)	10.15M+11M (g/km)	CO	2005	0.84 (0.63)
				HC		0.24 (0.12)		NMHC		0.032 (0.024)
				NOx		0.43 (0.28)		NOx		0.19 (0.14)
				PM		0.11 (0.052)		PM		0.017 (0.013)
		Medium vehicles (1.7t <GVW≤2.5t)	10.15M (g/km	CO		0.98 (0.63)	10.15M+11M (g/km)	CO	2005	0.84 (0.63)
				HC		0.24 (0.12)		NMHC		0.032 (0.024)
				NOx		0.68 (0.49)		NOx		0.33 (0.25)
				PM		0.12 (0.06)		PM		0.020 (0.015)
		Heavy vehicles (2.5t <GVW)	D13M (g/kwh)	CO		3.46 (2.22)	JE05 mode (g/km)	CO	2005	2.95 (2.22)
				HC		1.47 (0.87)		NMHC		0.23 (0.17)
				NOx		4.22 (3.38)		NOx		2.7 (2.0)
				PM		0.35 (0.18)		PM		0.036 (0.027)

Note:
JE05 Mode (M) is a test mode (M) for heavy vehicles (gasoline-powered vehicles of 3.5t and above, and diesel-powered vehicles of 2.5t and above).
Source: The Ministry of the Environment

B. Fuel consumption regulations

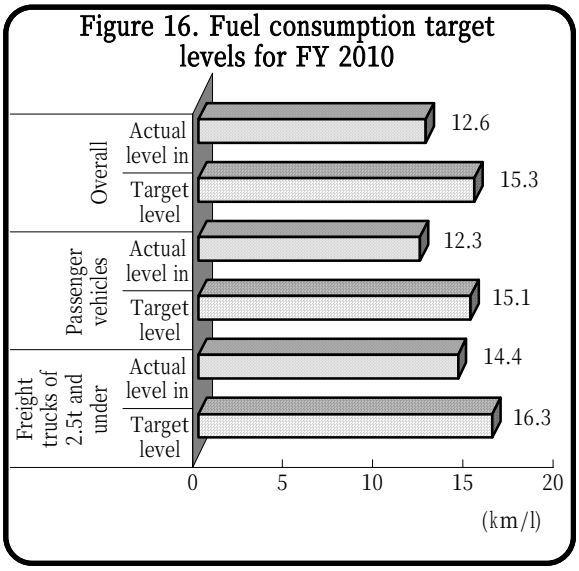
With the need to combat global warming becoming a matter of urgency, parties at the Kyoto Conference staged in Japan in 1997 pledged to reduce greenhouse-effect gas emission levels to 6% below 1990 levels during the first commitment period (2008-2012).

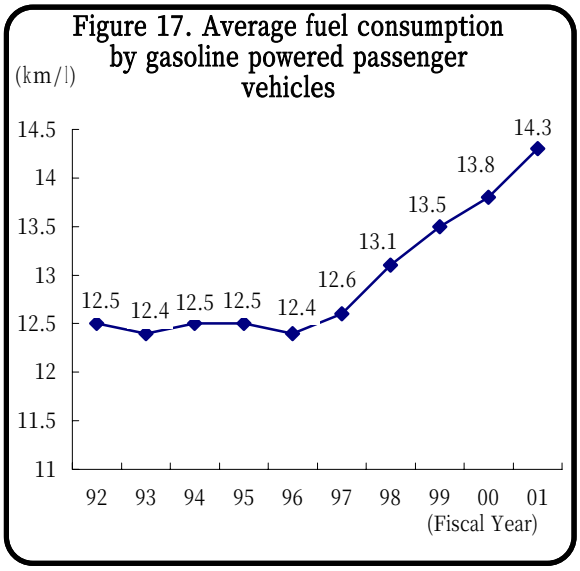
Reducing emission levels of CO2, which accounts for 90% of greenhouse gases, is the key to fulfilling this pledge. Analysis of the various sources of CO2 reveals that the broad transportation category, which includes automobiles, accounts for approximately 20% of CO2 emissions. Since approximately 90% of CO2 emissions that fall within this category are emitted by automobiles, the automobile must play a crucial part in measures to combat global warming.

In the wake of the accord reached at the Seventh Conference of the Parties to the UN Framework Convention on Climate Change (COP7), which established rules relating to the adoption and enforcement of the Kyoto Protocol, the government published a document entitled the Outline for Promotion Effects to Prevent Global Warming in March 2003. This document set a target of pegging emissions generated by the transportation category to 17% more than the level in 1990 (approximately the same as the level for 1995).

Measures for reducing CO2 for the transportation category include measures specifically targeting the automobile, measures for easing traffic flow (such as promotion of the Intelligent Traffic System—ITS—used on expressways), and measures relating to distribution (such as increasing the efficiency of distribution systems). Target emissions reductions for measures that specifically target the automobile account for 41% of the total target emissions reduction for the entire transportation category, with major initiatives being improved fuel consumption and the popularization of low-pollution cars.

Regulation of fuel consumption was first undertaken with the enactment of the Law Regarding the Rationalization of Energy Use (or Energy Conservation Law), which was prompted by the Oil Shock of 1973, and which established target fuel consumption figures for passenger automobiles. Amendments to the revised Energy Conservation Law passed in 2002 established target fuel consumption levels according to vehicle weight and purpose. The revised law stipulated target levels for gasoline-powered automobiles of 21.4% above FY 1995 levels by 2010.





Note: The fuel consumption targets for FY 2010 are averaged standard fuel consumption levels established for each vehicle weight (in kg), assuming that the proportion of vehicles shipped in each category is the same as in 1995.

Source: The Ministry of Economy, Trade, and Industry, the Ministry of Land and Infrastructure, and the Japan Automobile Manufacturers Association

C. Reducing the pollutant load

Various raw materials are used to construct automobiles. Thus, when used automobiles are finally disposed of, there is a danger that the substances that comprise these materials may have a detrimental effect on the environment. After illegal dumping of waste in Kagawa Prefecture in 1990, various substances including dioxins, lead, mercury, arsenic, and organochlorine compounds were detected in the soil, the groundwater, and elsewhere. This became a major social problem.

During the deliberation process leading up to the enactment of the Automobile Recycling Law in July 2002, the Japan Automobile Manufacturers Association announced its intention to voluntarily reduce the use of substances harmful to the environment, as one means of reducing the detrimental effects on the environment of landfills. Four substances whose usage is to be reduced have been identified—lead, mercury, hexavalent chromium, and cadmium—and target usage levels were set for each. At the same time various details were announced, such as the names of parts that contain these four substances and the conditions for achieving reduction targets.

Figure 18. Measures for reducing the effects of substances harmful to the environment

Substance identified for reduced use	Targets for four-wheeled vehicles (vehicles subject to the provisions of the Automobile Recycling Law)	Notes
Lead	From January 2006: No more than 1/10 of 1996 usage levels. No more than 1/4 of 1996 levels for large commercial vehicles (including buses)	As before, the reduction benchmark is relative to the amount of lead used per vehicle in 1996, 1850g (excluding lead in batteries).
Mercury	Starting when the Automobile Recycling Law is enforced: Use prohibited except for the uses listed below (in which microscopic amounts are used in parts essential for traffic safety). • LCD displays such as those used for navigation • Combination meters • Discharge headlamps • Internal fluorescent lighting	Active development of alternative technologies will also be carried out for parts that are excepted (which contain microscopic amounts).
Hexavalent chromium	Use prohibited from January 2008.	Used in long-life rust-proofing of safety parts such as bolts.
Cadmium	Use prohibited from January 2007.	Electrical and electronic parts (such as IC chips) contain microscopic amounts.

Source: The Japan Automobile Manufacturers Association

Figure 19. How automobile manufacturers are dealing with substances harmful to the environment

Toyota Motor Corporation	• Reduction in amounts of vinyl chloride resin used Toyota-developed halogen-free wire harnesses to be used on its cars, starting with the Alphard, announced in May 2002. • Reduction in amounts of lead used On five out of the six car models that were either brand new or fully updated in FY 2003, the Japanese car industry's new voluntary target (reducing the level of lead usage in new cars to no more than 1/10 the 1996 level from 2006 onwards) was achieved.
Nissan Motor Co.,Ltd.	• Reduced use of substances harmful to the environment Announced target reductions of environmentally harmful substances in the Nissan Green Program 2005, and is reducing the use of such substances. On five models released in FY 2002, the target of reducing the level of lead used to no more than 1/3 the 1996 level by the end of 2005 was achieved. Developing alternative technologies for hexavalent chromium.
Honda Motor Co.,Ltd.	• Reduction of lead usage Reduced amounts of lead used in new cars released in 2002 to no more than 1/3 of 1996 levels (through use of unleaded electro-deposition paints and removal of lead from wheel balances). • Reduced use of alternative CFC (HFC134a) Developed air-conditioner that reduces use of HFC134a by approximately 10% compared to 1995 levels, which was used on 17 of the 27 models available in 2002.
Mitsubishi Motors Corporation	• Reduced use of substances harmful to the environment Implementing a policy of eliminating the use of substances harmful to the environment by means such as the development of new materials. Aiming to meet the voluntary new targets set by the Japan Automobile Manufacturers Association (reducing the level of lead usage in new cars to no more than 1/10 the 1996 level, and the level used in new large commercial vehicles, including buses, to no more than 1/4 of the 1996 level from 2006 onwards).
Mazda Motor Corporation	• Reduced use of substances harmful to the environment Discontinued use of lead in electro-deposition paints and on gasoline tanks, as well as in devices such as battery cable terminals and heater cores, on new cars released in 2002 (Demio and Atenza). Reduced lead usage to no more than 1/3 of the 1996 usage level. Will continue to reduce lead usage levels in the future, with efforts focussed on new models. • Reduced use of alternative CFC (HFC134a) Introduced car air-conditioner that used reduced amounts of HFC134a coolant. In FY 2002 this enabled reductions of 16%–38% on four models.

Source: environmental reports issued by the automobile manufacturers.

D. The Automobile Recycling Law

Approximately five million cars are disposed of every year in Japan. These are disassembled so that raw materials such as steel and aluminum can be recycled and parts can be reused.

The current recycling rate for old cars is about 80%; however, the Japan Automobile Manufacturers Association have proposed raising the rate and have set a target level of at least 95% by 2015. At present, the 20% that is not recycled is disposed of in landfills as automobile shredder residue (ASR).

However, the strain on disposal sites is causing landfill disposal costs to soar, and it is feared that illegal dumping will increase if this continues. There is thus a growing need to put in place a new system for recycling used cars.

The Law Relating to Recycling of Used Automobiles (or Automobile Recycling Law) has been announced and will be enacted in January 2005. This law seeks to raise the rate of recycling for used cars by defining the role of the parties involved.

(Refer to the Ministry of Trade, Economy, and Industry's Web site at <http://www.meti.go.jp/policy/automobile/index.html>).

This law puts the onus on automobile manufacturers to collect ASR, CFCs and airbags, and to dispose of them appropriately—by recycling the airbags and ASR, and destroying the CFCs. At the same time, the law also imposes on the manufacturers an obligation to develop automobiles that are easy to recycle by giving due consideration to the process at the design stage, and to facilitate the recycling process by making information available on the construction and materials of automobiles.

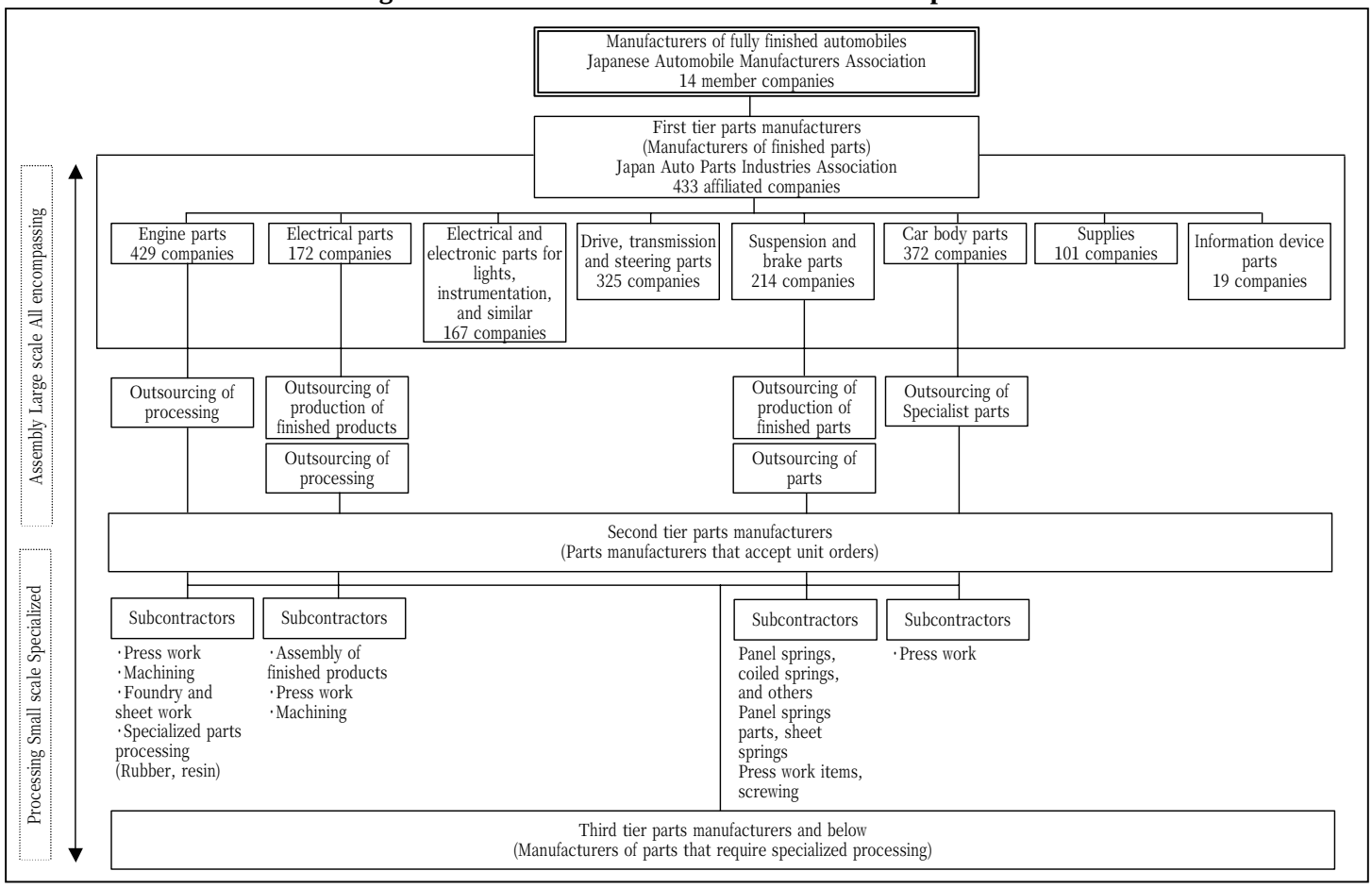
III. Business Models and Business Practices

A. Structure of the Industry

The structure of the automobile industry resembles a pyramid, with the automobile manufacturers at its apex and the frame manufacturers who assemble the car bodies and the parts manufacturers below. As many as 20 to 30 thousand parts are required to construct a single automobile; however, automobile manufacturers only manufacture around 30% of these in-house, and the majority are manufactured by automobile parts manufacturers.

Automobile parts manufacturers are broadly divided into first-tier, second-tier, and third-tier manufacturers. First-tier parts manufacturers supply parts to the automobile manufacturers. First-tier parts manufacturers outsource various tasks such as production of finished parts and processing work to second-tier parts manufacturers on a contract basis. Third-tier parts manufacturers carry out tasks such as press work, machining, and manufacture of smaller components as sub-contractors to second-tier manufacturers, and they also manufacture parts that require little production processing.

Figure 20. Distribution structure for automobile parts



Source: Compiled from the White Paper on Small- and Medium-Size Companies by the Ministry of Economy, Trade, and Industry and other documents

Including all parts manufacturers down to third-tier parts manufacturers, there are approximately 10,000 Japanese companies engaged in the business of automobile parts manufacture. As many as 70% of these firms employ less than 20 people.

The Japan Auto Parts Industries Association (JAPIA), the industry federation for first-tier parts manufacturers, has a mere 433 affiliated companies, which means that the great majority of parts manufacturers are second-tier manufacturers and below. Moreover, although only 35 out of 408 JAPIA affiliates surveyed ship in excess of ¥100 billion in automobile parts, these 35 companies account for 53.7% of the total shipment volume. In short, the automobile parts manufacturing industry is comprised of both large manufacturers and small- to medium-size parts manufacturers.

Figure 21. Breakdown of companies in the automobile and automobile accessories manufacturing industries by total number of regular employees

	Number of companies	Percentage
4 employees and under	3,112	32.1
5-9 employees	1,934	20.0
10-19 employees	1,534	15.8
20-29 employees	758	7.8
30-49 employees	740	7.6
50-99 employees	686	7.1
100-299 employees	604	6.2
300-999 employees	216	2.2
1000-1999 employees	61	0.6
2000-4999 employees	22	0.2
5000 employees and above	22	0.2
Total	9689	100.0

Source: "2001 Survey of Statistics relating to Business Premises and Companies" by the Ministry of Public Management, Home Affairs, Posts, and Telecommunications

Figure 22. Breakdown of shipment volumes for automobile parts manufacturers in FY 2002 by volume

	Number of companies	Shipment volume (x one million yen)	Percentage
Above 200 billion yen	13	4,902,847	34.1
100-200 billion yen	22	2,821,541	19.6
50-100 billion yen	32	2,312,021	16.1
30-50 billion yen	49	1,923,911	13.4
10-30 billion yen	101	1,731,936	12.0
Up to 10 billion yen	191	691,561	4.8
Total	408	14,383,817	100.0

Note: Results of a survey conducted on 408 of the 433 companies affiliated to the Japan Auto Parts Industries Association.
Source: "Results of Survey of Automobile Part Shipment Trends" by the Japan Auto Parts Industries Association, FY 2002.

B. Japanese Business Practices

The Japanese automobile industry is structured like a pyramid, with the automobile manufacturers at its apex. The development and manufacture of many automobile parts are carried out by dividing the labor between different companies. This division-of-labor system (the so-called “keiretsu” or conglomerate system) was built up over the course of the 1960s and mirrored the growth of the automobile industry.

Automobile parts are essentially developed in one of two ways. The automobile manufacturer may carry out design and development of a part and then give the parts manufacturers the blueprints. Alternatively, the parts manufacturer may develop a part based on the specifications laid down by the automobile manufacturer, and then present the resulting product to the automobile manufacturer.

In Japan the latter system is often employed. The parts manufacturer receives technical assistance from the automobile manufacturer and participates in the development process from the product design stage onwards. Through this increased level of outsourcing, automobile manufacturers have succeeded in shortening the development cycle and reducing manufacturing costs.

The conglomerates came to form the basis of the Japanese automobile industry. The symbiotic relationship that grew out of the cooperation between the automobile manufacturers and the parts manufacturers enabled the automobile manufacturers to become highly competitive and the parts manufacturers to enjoy the benefits of stable long-term business. The automobile manufacturers’ holdings in the parts manufacturers made for an even stronger bond of cooperation, underpinned by both capital and personnel.

With the exception of Honda, the automobile manufacturers have all established cooperative associations in order to improve the level of competitiveness and encourage personnel exchange between parts manufacturers. There are currently 11 such cooperative associations in existence, of which the Kyohokai, formed by the Toyota Motor Corporation, was the first. In total, as many as 1700 parts manufacturers are affiliated with these associations.

Furthermore, Mitsubishi Motors is planning to form a new cooperative association in short order to take the place of the Kashiwakai, which abruptly broke off its collaboration with Daimler-Chrysler in June 2002. This is because Mitsubishi judges it essential to rebuild a system of collaboration with suppliers, in the light of the recall problems that have arisen and various other factors.

Figure 23. Automobile manufacturers' cooperative associations

Toyota Motor Corporation	Kyohokai: 205 companies	Established in December 1943
Nissan Motor Co.,Ltd.	Nisshokai: 185 companies	Established in June 1991
Mazda Motor Corporation	Yokokai: 177 companies (West Japan, Kanto, Kansai)	Established in May 1981
Fuji Heavy Industries Ltd. (Subaru)	Subaru Yuhikai: 173 companies	Established in 1986
Daihatsu Motor Co.,Ltd.	Daihatsu Kyoyukai: 199 companies	Established in September 1969
Suzuki Motor Corporation	Suzuki Kyoryokukyodokumiai: 82 companies	
Hino Motors Ltd.	Hino Kyoryokukai: 275 companies	Section I: Unit parts, castings and forged parts, and structural parts Section II: Body parts, chassis parts, electrical parts, and body materials Section III: Equipment and distribution of raw materials
Isuzu Motors Limited	Isuzu Kyowakai: 259 companies	Sections I-VI
Nissan Diesel Motor Co.,Ltd.	Nissan Diesel Shinseikai: 141 companies	

Source: Compiled from "Japan's Auto Parts Industries" by the Japan Auto Parts Industries Association.

The formation of conglomerates played a significant role in the development of the Japanese automobile industry. However, as the automobile manufacturers corralled parts manufacturers, the continuous competition-free business between automobile manufacturers and manufacturers of specific parts gradually induced a certain rigidity and led to the problem that it was unclear where responsibilities lay. This was eventually manifested in various forms, such as increased parts costs.

At the same time, the Japanese automobile market has seen reduced sales volumes as a result of the maturing of domestic demand and the economic downturn that followed the bursting of Japan's economic bubble. As worldwide competition became more intense, the conglomerates that had once been the industry's competitive engine were seen on occasion to have difficulty in responding flexibly to the changes in the landscape of the industry. It came to be recognized that in some senses they were actually weakening the domestic industry's competitiveness.

The automobile manufacturers accordingly reviewed the way that conglomerates should do business. In order to achieve an optimal system of supply, they began to increase business outside the confines of their conglomerates. In tune with the worldwide realignment in the automobile industry, they simultaneously increased their levels of collaboration with foreign automobile manufacturers. This also provided significant impetus for automobile manufacturers to transcend conventional procurement practices—that is, to further promote business with companies outside their conglomerates.

With developments such as ITS and environmentally friendly technology leading to demand for much more technological diversity in automobile parts, companies also fear that they may lose their competitive edge if they restrict themselves to procuring parts only from parts manufacturers that are members of the same conglomerate. This has also been a factor in inducing companies to increase the amount of business that they conduct with companies outside their conglomerates.

Honda has not formed a cooperative association. Beginning in the mid-1990s the company proceeded with an initiative to achieve optimal global procurement in an effort to reduce supply costs. The revival plan in collaboration with Renault of France that Nissan announced in October 1999 was symbolic of the reappraisal of the conglomerate model. Under this revival plan, Nissan was to dispose of the stock that it held in 1,400 companies in which it had an equity investment, and eventually retain stock in only four companies. At the same time, in the period from 1999 to March 2002 Nissan consolidated its parts and materials purchasing operations by reducing the number of suppliers used from 1,145 companies to 600. In doing so, Nissan reduced its purchasing costs by 20%.

IV. Market Trends for Individual Assembly Parts

A. Radiators

1. Outline Description

The radiator is a heat-exchanger that cools the coolant that circulates inside the engine to absorb heat.

A radiator consists of an upper tank and a lower tank which are connected by tubes to a set of thin fins which are specially designed to radiate heat. The tubes and fins are collectively known as the radiator's core. The radiator is generally positioned at the front of the body of the automobile, so as to make effective use of the on-coming wind during travel. A cooling fan positioned immediately behind the radiator and a thermostat inside the passages through which the coolant flows keep the coolant at a suitable temperature.

2. Scale of the Market

In FY 2002 shipments of radiators for automobile assembly were worth ¥112.8 billion, which represented a year-on-year increase of 10.6%. The per-vehicle sales figure for new automobiles also rose 5.1% to ¥10,927.

Figure 24. Radiator shipment volumes

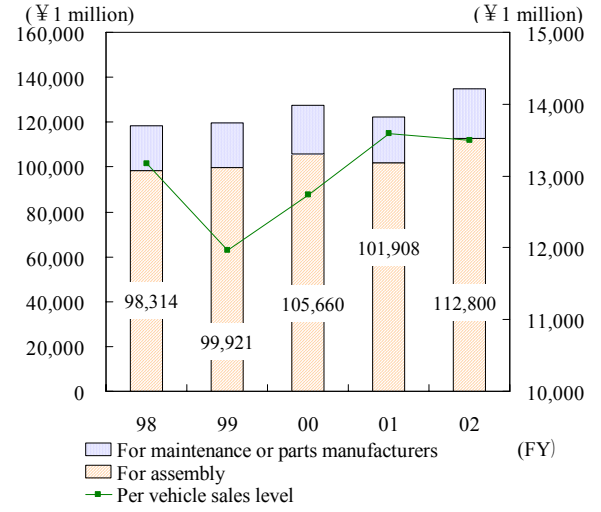
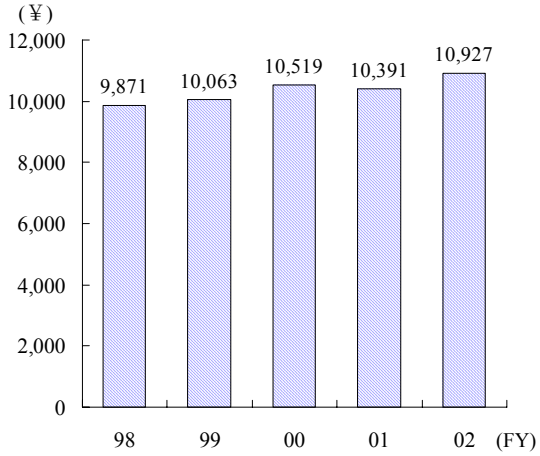


Figure 25. Per vehicle sales levels for radiators



Source: Figures 24-44 are compiled from "Results of Survey of Automobile Part Shipment Trends" for FY 2002 published by the Japan Auto Parts Industries Association.

3. Manufacturers That Supply Parts for Assembly (in alphabetical order)

Calsonic Kansei Corporation, Delphi(U.S.A.), Denso, Halla Climate Control(Korea), Sankyo Radiator Co.,Ltd., Showa Denko K.K., Tokyo Radiator Mfg. Co.,Ltd., Toyo Radiator Co.,Ltd., and Valeo(France).

4. Distribution Structure and Market Share

Among Japanese manufacturers, the three leading companies enjoy a combined 90% share of the market—Toyota affiliate Denso, Nissan affiliate Calsonic Kansei, and Toyo Radiator, which is independent. Denso's share of the market is approximately 50%.

Foreign manufacturers with a market presence are Delphi of the U.S.A., South Korean firm HCC (in which Visteon of the U.S.A. has an equity stake), and Valeo of France.

5. Market Trends

Key issues for radiators —and all automobile parts—are improved recyclability and the building of lighter vehicles. Over the past few years there have been moves to make all radiator components aluminum. Even radiator tanks, which have conventionally been made out of resin, are being converted to aluminum. Switching to a single material (aluminum) as the principle construction material improves recyclability, results in radiators that are 30% to 50% lighter than traditional brass radiators, and allows construction costs to be reduced.

Switching over to aluminum also means that soldering is no longer required and therefore that no lead need be used. Unlike brass radiators, aluminum radiators are little prone to suffering performance degradation due to fin or solder corrosion.

In addition, progress is being made in the development of a single hybrid device to integrate the separate functions of the radiator and the air-conditioner's heat exchanger. Combining these two components into one greatly reduces overall size, weight, and part count. As a result of the progress of this development, the radiator is becoming an essential multi-function component of the front-end module.

B. Piston Rings

1. Outline Description

A piston ring is a ring-shaped spring that is fitted around the circumference of a piston to plug the gap between the piston and the cylinder in an internal combustion engine, so as to prevent combustion gas from leaking out.

Normally, three rings are used on each piston: the top ring, the second ring, and the oil ring. The top ring and second ring prevent leakage of combustion gas and discharge the heat of the piston to the cylinder. The oil ring rakes off the film of oil formed by the engine oil and stops oil getting into the combustion chamber.

2. Scale of the Market

In FY 2002 shipments of piston rings for automobile assembly were worth ¥28.57 billion, which represented a year-on-year increase of 10.4%. The per-vehicle sales figure for new automobiles also rose 1.2% to ¥2,129.

Figure 26. Piston ring shipment volumes

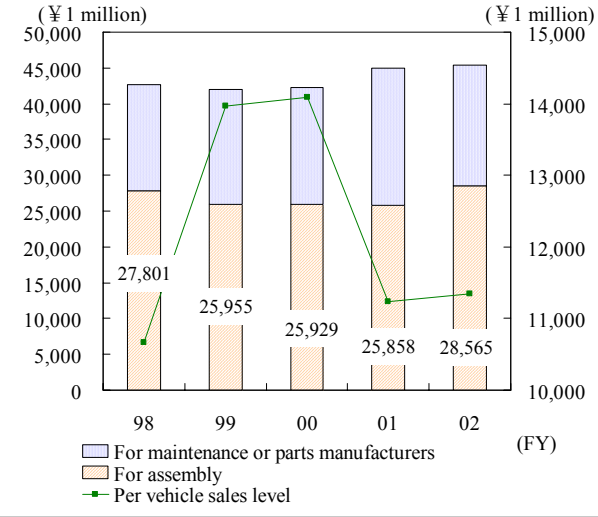
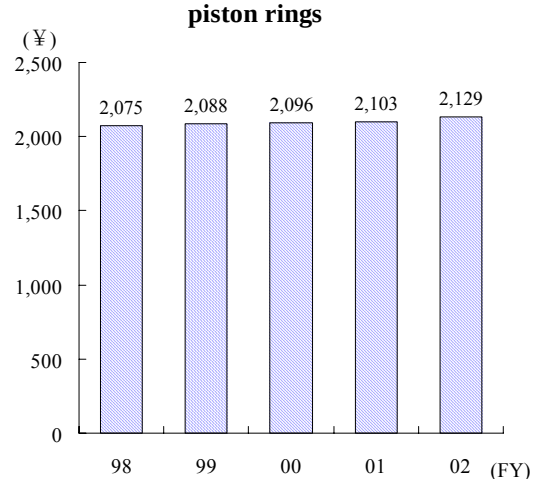


Figure 27. Per vehicle sales levels for piston rings



3. Manufacturers That Supply Parts for Assembly (in alphabetical order)

Nippon Piston Ring Co.,Ltd., Riken Corporation, and Teikoku Piston Ring Co.,Ltd.

4. Distribution Structure and Market Share

Three companies—Riken, Teikoku Piston Ring, and Nihon Piston Ring—have cornered the market for piston rings for assembly. Riken's share of the market is approximately 50%, followed by Teikoku Piston Rings with approximately 30% and Nihon Piston Rings with approximately 20%. Each of these three companies supplies piston rings to all of the automobile manufacturers.

5. Market Trends

Goals in the design of the engine (the heart of the automobile) include lighter weight, lower fuel consumption, and reduced emissions of NOx and CO2. As a part of the engine, the piston ring has a role to play in addressing these issues. Requirements for piston rings include reduced friction, reduced fuel consumption, ability to withstand higher loads, and minimization of blow-by gases.

Basic properties of a piston ring include durability (so as to withstand reciprocal motion of 2000–3000 strokes per minute) and the capacity to seal off combustion gases, hold back the lubricating oil, radiate combustion heat, maintain piston stability, and retain a perfectly circular shape so that there is no gap between the piston and the cylinder wall.

In keeping with the quest for greater engine efficiency, piston rings are now being made of steel rather than the traditional cast iron in an attempt to make them lighter.

In addition, piston rings are exposed to unusually high levels of friction—even for an engine part—and thus require excellent frictional characteristics. Development is progressing on a new coating technology to supersede conventional hard chrome plating, in which a film coating is applied to the perimeter surface of the piston ring. The objectives of this process include significantly improved durability and hardness, and a significantly lower coefficient of friction. In the wake of this development, chromium nitride coating is starting to be introduced as a surface coating for piston rings. Chromium nitride coating is superior to hard chrome plating by virtue of its excellent friction-resistance characteristics. It also has a low coefficient of friction and a high degree of hardness.

C. Wiring Harnesses

1. Outline Description

A wiring harness consists of electrical wires encased in tape. These wires supply electrical power or convey signals to the various electrical devices installed in an automobile. A wiring harness is also comprised of additional components such as pins and connectors. As improvements are made to automobile safety and comfort, and increasing use is made of electronic systems such as car navigation systems, the use of wiring harnesses is proliferating. A single automobile can have over one thousand wires installed, with the combined length of the wiring harnesses totaling up to 1,500 meters.

2. Scale of the Market

In FY 2002 shipments of wiring harnesses for automobile assembly were worth ¥264.36 billion, down 35.5% from the previous year. The per-vehicle sales figure for new automobiles also fell 38.0% to ¥35,592.

Figure 28. Wiring harness shipment volumes

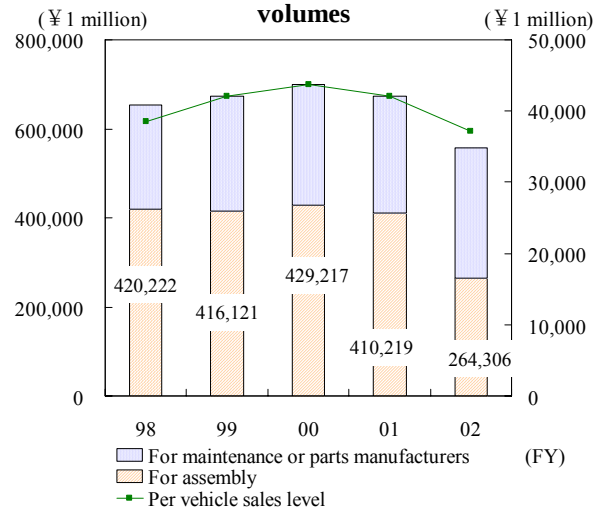
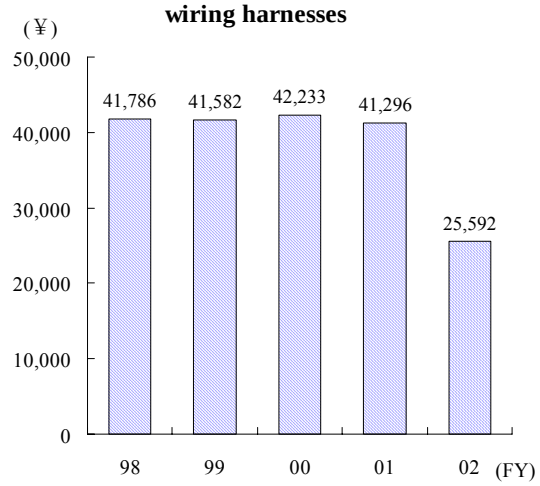


Figure 29. Per vehicle sales levels for wiring harnesses



3. Manufacturers That Supply Parts for Assembly (in alphabetical order)

ASTI Corporation, Delphi (U.S.A.), Fujikura Ltd., Furukawa Electric Co.,Ltd., Lear Corporation (U.S.A), Mitsubishi Cable Industries Ltd., Sumitomo Electric Industries Ltd., and Yazaki Corporation.

4. Distribution Structure and Market Share

In many cases, production and sales of wiring harness are handled by separate companies. Among others, Yazaki, Sumitomo Electric, Furukawa Electric, Fujikura, and Mitsubishi Cable Industries all have wiring harnesses manufactured by subsidiaries.

Among the Japanese manufacturers, two companies enjoy a 75% share of the market—Yazaki (with approximately 40%) and Sumitomo Electric (with approximately 35%). In July 2002 the latter of these two, Sumitomo Electric, and Sumitomo Wiring Systems Ltd. acquired stock in Kyoritsu Hiparts Co. Ltd., the wiring harness manufacturing subsidiary belonging to Calsonic Kansei, and turned it into a subsidiary of their own in a bid to strengthen their customer base.

Two foreign parts manufacturers have established joint ventures with Japanese companies. In 2002 the Lear Corporation established a wiring harness enterprise, Lear Diamond Electro-Circuit Systems, in collaboration with Mitsubishi Cable Industries. Likewise, in a collaboration that began in 2003, Valeo and Furukawa Electric established a joint venture in France, named Valeo Furukawa Wiring Systems, in September 2004, and have unveiled plans to establish further facilities in Japan and the U.S.A.

5. Market Trends

Increasing use is made of electronics in automobiles, as electronic control systems for devices such as airbags and ABS are introduced to improve automobile comfort and safety. As a consequence, the use of wiring harnesses has increased. At the same time, the market-leading compact car has in recent years been designed with more passenger space, thus restricting the space for installation of wiring harnesses. As a result, the problem has arisen that installation of wiring harnesses in these vehicles has become less efficient. Also, since increased vehicle weight hinders attempts to improve fuel consumption, efforts to make wiring harnesses lighter are required.

Attempts to reduce weight include switching to thin or flat cables and reducing the number of wiring harnesses required (for example, by using multiplexing communications systems). These attempts have also led to more economical use of space, greater ease of assembly in confined spaces, and productivity improvements that have contributed to cost reductions.

Wiring harnesses also pose a stiff challenge with regard to environmental protection. Specific measures to overcome this include changing the material used to cover wiring harnesses from vinyl chloride resin to polyolefin resin, and making

wiring harnesses halogen-free so as to avoid the used of bromine-based anti-combustion agents.

There is also the problem that when an automobile is disposed of and dismantled, it is difficult to remove its wiring harnesses, with the result that they end up as ASR. Not only is the discarded copper wire quite valuable, there is also the problem that the presence of the copper can result in damage to the electric furnace when the ASR is incinerated. Thus, a higher proportion of wiring harnesses should be recycled, and development of wiring harnesses that are easier to remove when an automobile is dismantled is underway.

D. Headlights

1. Outline Description

The front headlamps illuminate the area in front of the automobile. According to safety standards, headlamps must be bright enough to illuminate an obstacle 100 meters ahead when switched to long-range beam (high beam), and 40 meters ahead when dimmed or switched to driving beam (dipped beam), which is used when passing on-coming vehicles. The prescribed colors for front headlamps are white and pale yellow.

2. Scale of the Market

In FY 2002 shipments of front headlamps for automobile assembly were worth ¥132.88 billion, which represented a year-on-year increase of 7.4%. The per-vehicle sales figure for new automobiles also rose 2.0% to ¥12,864.

Figure 30. Front headlamp shipment volumes

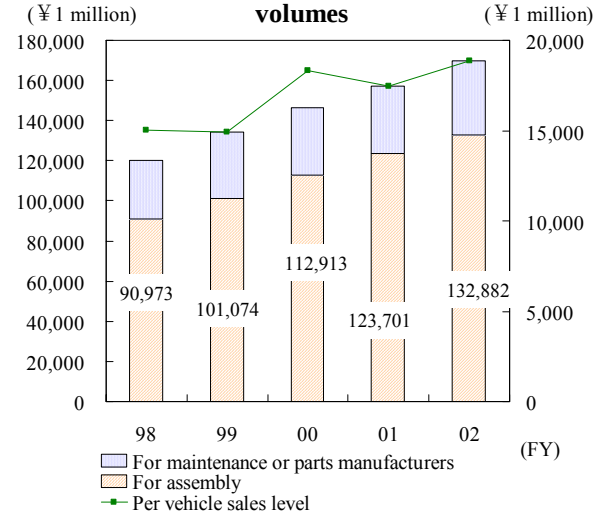
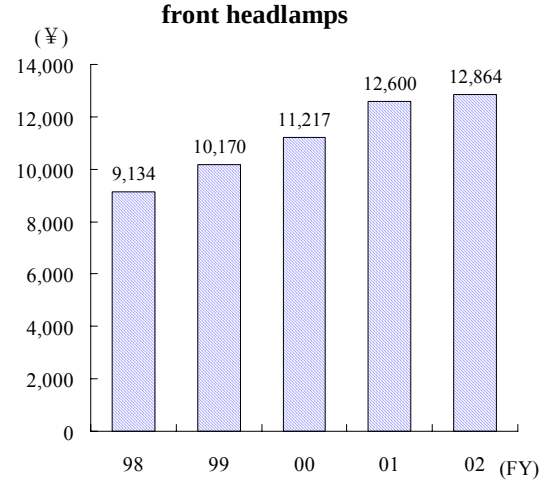


Figure 31. Per vehicle sales levels for front headlamps



3. Manufacturers That Supply Parts for Assembly (in alphabetical order)

Ichiko Industries, Ltd., Koito Manufacturing Co.,Ltd., Oshima Electric Works Co.,Ltd., Stanley Electric Co.,Ltd., (U.S.A.), and Valeo (France).

4. Distribution Structure and Market Share

Three companies—Koito Manufacturing, Stanley Electric, and Ichiko Industries—dominate the market, with a combined share of approximately 90%. Toyota Motors has a 20% equity stake in Koito Manufacturing, whose share of the domestic market is approximately 50%. Toyota accounts for 50% of Koito Manufacturing's sales; however, despite its status as a Toyota affiliate, it supplies headlamps to all the Japanese manufacturers.

Foreign parts manufacturers are also involved. Valeo has a 21.6% equity stake in Ichiko Industries and uses the company as a local outlet for its headlamp business in Japan. Visteon(U.S.A.) also has a presence in the market.

5. Market Trends

In addition to their primary function of illuminating the area in front of the vehicle, front headlamps also feature as an important element in automobile design. A certain flexibility is demanded in the design of front headlamps, which is so influential on vehicle sales performance. With the emphasis on appearance, designers have made headlamps larger in recent years. Other lights such as sidelights and indicators have been integrated into the front headlamps, and some headlamps even feature built-in fog lamps.

As a result of increasing safety needs, a high degree of functionality and effective illumination are also required. Accordingly, the rate of installation of high-intensity discharge (HID) headlamps has been rising, and by 2003 they had replaced halogen lamps on 20% of new automobiles. A discharge headlamp uses a discharge bulb which applies an arc discharge to its light source. Since the light source oscillates, there is no fixed filament and discharge headlamps boast three times the brightness and twice the lifespan of conventional halogen lamps. Since they are also three to five times the price of halogen lamps, they have so far mainly been installed on luxury automobiles. However, they are gradually starting to appear on ordinary automobiles as well, and it is estimated that by FY 2007 50% of new vehicles will come equipped with discharge headlamps.

White LEDs are potentially viewed as the principal next-generation light source in headlamps. The use of LEDs as a light source in front headlamps is currently under consideration by various public organizations, and it is anticipated that the law will not be amended to permit the installation of LED headlamps until around 2006 at the earliest. Using LEDs would allow fuel consumption to be improved (as they would use less electrical power), maintenance to be eliminated, and headlamps to be made slimmer. The emergence of new front headlamp designs that make use of the characteristics of LEDs is also anticipated. One point of issue is that the luminous efficacy of white LEDs is low. However, as development progresses, the luminous efficacy should gradually rise, and it is thought likely that practical implementation will be possible by 2006 or 2007.

Similarly, from the perspective of improved automobile safety, one technology that has been attracting attention is AFS (adaptive front lighting system). The development of AFS began in 2002 as a result of a revision to the safety standards of the Road Traffic Law, which permitted the use of an adaptive front lighting system for

frontal illumination during cornering. In February 2003, Toyota Motors released the Harrier, the first car in the world to feature AFS. However, the system is still confined to certain luxury automobiles. It is predicted that the percentage of automobiles with AFS installed will rise from 1% in FY 2004 to 8% by FY 2007. In response to the increasing need for enhanced safety in an environment of changing speeds, roads, and weather conditions, the development of various new light projection methods will continue to progress.

E. Transmissions

1. Outline Description

The transmission conveys the appropriate level of motive power from the engine to the drive wheels, in accordance with the running conditions. The different types of transmission are manual transmission (MT), automatic transmission (AT), and continuously variable transmission (CVT). Since fuel consumption varies according to transmission efficiency, general trends include lighter transmissions and transmissions with more stages.

2. Scale of the Market

In FY 2002 shipments of manual transmissions for automobile assembly were worth ¥36.63 billion, which represented a sharp year-on-year increase of 34.6%. The per-vehicle sales figure for new automobiles also rose 19.7% to ¥2,972. Shipments of automatic transmissions for assembly were worth ¥766.63 billion, which represented a year-on-year increase of 18.1%. The per-vehicle sales figure for new automobiles also rose 8.3% to ¥55,428.

Figure 32. MT shipment volumes

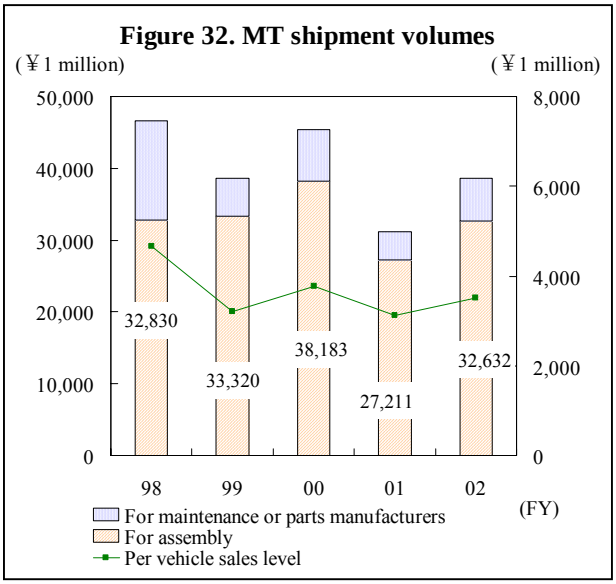
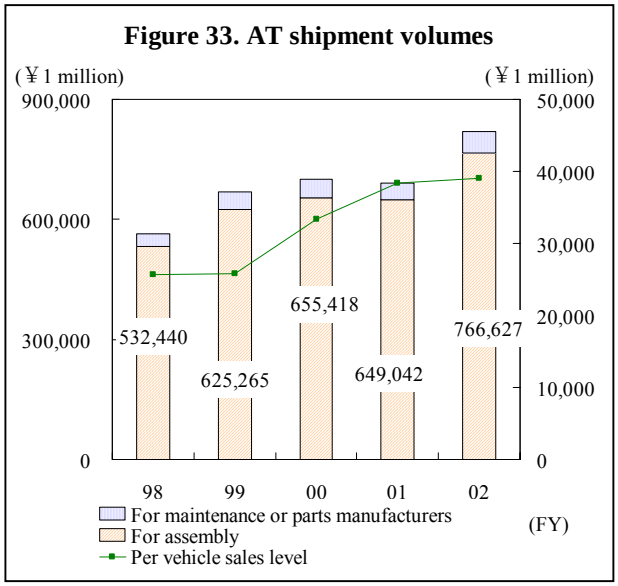


Figure 33. AT shipment volumes



3. Manufacturers That Supply Parts for Assembly (in alphabetical order)

MT: Aichi Machine Industry Co.,Ltd., Aisin AI Co.,Ltd., Fuji Machine Mfg. Co.,Ltd., Fuji Univance Corporation, Getrag GmbH and Cie KG (Germany), Kanda Corporation, Kawasaki Heavy Industries, Ltd., Taiyo Machinery Co.,Ltd., and Yanagawa Seiki Co.,Ltd.

AT: Aisin AW Co.,Ltd., Aisin GM Alison Co.,Ltd. (U.S.A.), Aisin Seiki Co.,Ltd., Exedy Corporation, Jatco Ltd., and ZF DriveTec Japan (Germany).

4. Distribution Structure and Market Share

Two companies—Aisin AI and Aichi Machine Industry—together account for approximately 40% of domestic MT production. In-house MT manufacturing by automobile manufacturers also accounts for as much as 40%.

Likewise, AT two companies—Toyota affiliate Aisin AW and Jatco—together account for approximately 50% of domestic production. Again, in-house AT manufacturing by automobile manufacturers also accounts for as much as a further 40%.

Foreign manufacturers with a market presence are ZF DriveTech Japan, a wholly owned subsidiary of ZF of Germany, and Aisin GM Alison.

5. Market Trends

General trends in the on-going technical development of transmissions are: improved fuel consumption, low emissions, and improved drivability.

One advance in the field of MT is the development of the automated manual transmission. Automated manual transmission is an MT system in which the gear-shifting equipment and driver clutch operation are automated. The system resembles conventional MT, but has the addition of an automatic clutch system that does not require the driver to depress the clutch to change gear and an auto-shift function that changes gear automatically.

Unlike AT, which uses a hydraulic device known as a torque converter to transmit torque, an automated manual transmission transmits torque using a conventional gear and clutch system. This manual torque transmission minimizes energy loss and also affords the driver greater freedom while driving. In short, automated manual transmission offers better drivability and fuel consumption than AT.

At the same time, AT designers are aiming to improve fuel consumption and drivability by increasing the number of gear stages and employing a manual shift mode. The use of more gear stages in AT is cited as a principal reason for the emergence of CVT. CVT has a range (the ratio between the deceleration ratios of low gear and high gear) of 5.5–5.6, which is why it offers good fuel consumption. Consequently, an AT system known as 6AT (a 6-speed gear system), which is superior to CVT in range, is being developed so as to enable AT to offer low fuel consumption as well. Since conventional AT is based on a 3AT system, the part count and weight inevitably increase whenever an extra gear speed is added. By contrast, 6AT was designed from the ground up as a 6-speed system, so the system will not get any heavier or larger, irrespective of any functional improvement made.

F. Wheels

1. Outline Description

A wheel consists of a rim (onto which the tire is fitted) and a disc which attaches to the automobile. Wheels are classified into various types, including the one-piece wheel, the two-piece wheel, and the three-piece wheel. In the case of a one-piece wheel, the rim and disc are molded as a single item. On a two-piece wheel the rim and disc are welded together. A three-piece wheel consists of a disc sandwiched between two rims. The monolithic one-piece wheel, which is the least expensive type, is predominant, however.

2. Scale of the Market

Virtually unchanged from the previous year, shipments of steel wheels for automobile assembly in FY 2002 were worth ¥46.71 billion. This represented a year-on-year increase of 0.4%. The per-vehicle sales figure for new automobiles rose 4.5% to ¥4,525.

Shipments of aluminum wheels for assembly were worth ¥74.82 billion, which represented a year-on-year increase of 1.9%. The per-vehicle sales figure for new automobiles fell 3.1% to ¥7,241.

Figure 34. Steel wheel shipment volumes

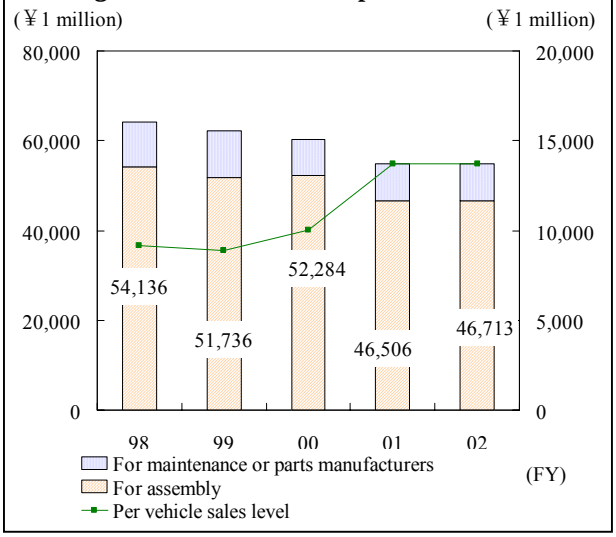
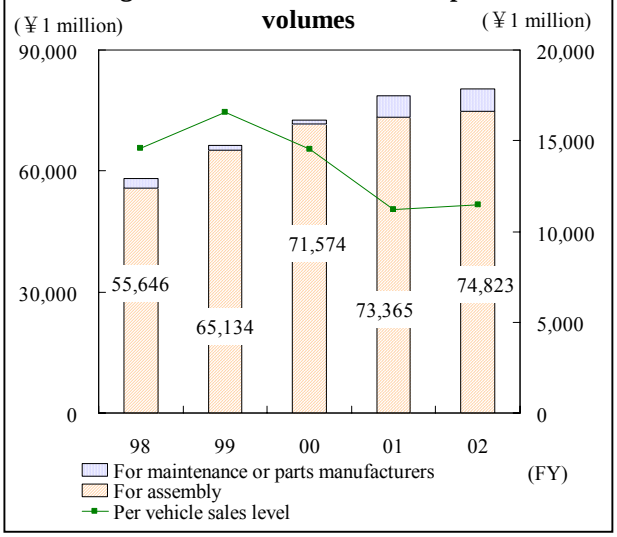


Figure 35. Aluminum wheel shipment volumes



3. Manufacturers That Supply Parts for Assembly (in alphabetical order)

Steel wheels: Chuo Precision Industrial Co.,Ltd., Mazda Parts Industry Co.,Ltd., Ring Techs Co.,Ltd., Topy Industries Ltd., and Yusoki Kogyo K.K.

Aluminum wheels: Asahi Tec Corporation, Chuo Precision Industrial Co.,Ltd., Daihatsu Diesel Mfg. Co.,Ltd., Enkei Corporation, Hitachi Metals, Ltd., Sumitomo Metal Industries, Ltd., Tokyo Light Alloy Company Ltd., Topy Industries Ltd., Ube Industries Ltd., and Washi Beam Co.,Ltd.

4. Distribution Structure and Market Share

Three companies enjoy a combined share of approximately 90% of the domestic market for steel wheels—Topy Industries with approximately 35%, Chuo Precision Industrial with 30%, and Ring Techs with 25%.

In the domestic market for aluminum wheels, Chuo Precision Industrial has a share of approximately 20%, followed by Ube Industries with approximately 15% and Topy Industries with 15%.

5. Market Trends

In order to maintain operational safety, wheels must satisfy a number of requirements. They must be shock-resistant and resistant to fatigue, and they must be manufactured to precise dimensions. Wheels are made out of steel or aluminum alloy. In the quest for lighter automobiles, other materials, such as magnesium alloy, are also now coming into use.

Wheels made out of steel—which has proved to be the most efficient and least expensive manufacturing material—have predominated to date. However, in recent years the use of aluminum has been increasing as manufacturers have sought to build lighter and more attractive automobiles. Aluminum wheels have also featured increasingly on minicars as an apparent sales promotion device. As a result, the proportion of vehicles equipped with aluminum wheels has risen to approximately 40-45%, in a trend that looks set to continue.

One of the reasons why more and more vehicles are now equipped with aluminum wheels is that they are more stylish, come in a greater variety of designs, and feature more intricate styling. Improvements in casting technology have enabled a larger area of the wheel to be stylized, leading to increased demand for large-diameter wheels.

Aluminum wheels are also greatly preferable from the point of vehicle weight reduction since aluminum is only one-third the weight of steel. As well as improving fuel consumption, the use of aluminum wheels reduces the level of vibration transmitted to the suspension, thereby enabling the vehicle to run more safely and smoothly. Progress is being made in efforts to reduce the weight of aluminum wheels even further. Solidification analysis systems, mold designs, and casting methods such as vacuum casting have been devised, which have enabled the thin walling of rims and discs.

In the case of steel wheels, however, only a limited area of the inlay can be stylized, since the inlay must be welded onto the rim and the disc. This is proving to be a sticking point. In an attempt to make steel wheels more stylish, manufacturers are integrating the rim flange and disc into a single item, doing away with the inlay, and

expanding the area of the wheel that can be stylized. They are also devising means to achieve other goals, such as making the wheels stronger and stiffer, increasing the area of the wheel available for decorative holes, and allowing more latitude for design.

In the vital effort to protect the environment, progress is being made on switching to the use of chromium-free preprocessing chemicals in the coating process. Other measures that are underway include the adoption of non-lead wheel balances.

G. Shock Absorbers

1. Outline Description

Shock absorbers are devices installed between the vehicle body and the tires to keep the body of the vehicle stable by attenuating the vibration in the springs caused by shockwaves.

2. Scale of the Market

In FY 2002 shipments of shock absorbers for automobile assembly were worth ¥49.79 billion, down 17.0% from the previous year. The per-vehicle sales figure for new automobiles also fell 19.4% to ¥4,473.

Figure 36. Shock absorber shipment volumes

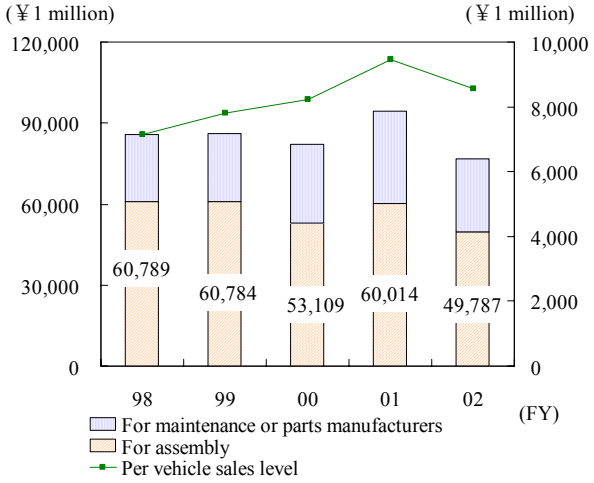
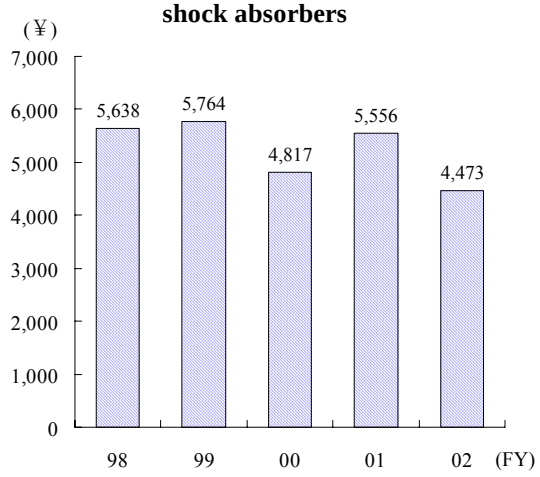


Figure 37. Per vehicle sales levels for shock absorbers



3. Manufacturers That Supply Parts for Assembly (in alphabetical order)

Kayaba Industry Co.,Ltd., Sachs Automotive Japan Corporation (Germany), Showa Corporation, Tenneco Automotive Japan Ltd. (U.S.A.), Hitachi Ltd., and Yamaha Motor Co.,Ltd.

4. Distribution Structure and Market Share

Three companies enjoy a combined share of approximately 80% of the domestic market for shock absorbers—Kayaba, Hitachi, and Honda affiliate Showa.

Foreign manufacturers with a market presence include Tenneco Automotive of the U.S.A. and German companies Bilstein and Sachs.

5. Market Trends

The suspension on an automobile is required to provide an extremely smooth ride and a high level of operational safety. To meet these objectives, manufacturers are promoting the development of lightweight structures that use high-tensile materials to provide a smoother ride and improved fuel efficiency, and of an oil sheet that controls the resistance when the damper is actuated.

Shock absorbers are installed together with springs between the body of the automobile and the tires. Hence, as improvements are made to shock absorbers and springs individually, their functions are being integrated and efforts are underway to develop modular units that offer a high level of added value.

H. Disc pads

1. Outline Description

Disc pads are components of the disc brake system and are made of frictional material. When the driver's foot depresses the brake pedal, the piston inside the disc brake calipers pushes the disc pads, causing them to grip the disc rotor from both sides and stop the rotation of the tire.

The frictional material requires various properties; for example, it must be strong and perform consistently in the face of frictional heat, and must be durable. For this reason, disc pads are manufactured using composite materials formulated from several dozen raw materials. Formerly, asbestos was used as the principal material, since it exhibits excellent heat-insulation properties. Its use was discontinued, however, when it was revealed to be carcinogenic.

The materials used to manufacture disc pads are broadly classified into three types, according to the proportion of steel fiber in their composition. These material types are known as semi-metallic, low-steel, and NAO (non-asbestos organic). The type of disc pad material selected depends on the requirements of a particular market. In Japan, NAO materials are popular since they are comparatively quiet.

2. Scale of the Market

In FY 2002 shipments of disc pads for automobile assembly were worth ¥17.1 billion, which represented a year-on-year increase of 6.3%. The per-vehicle sales figure for new automobiles also rose 4.6% to ¥1,554.

Figure 38. Disc pad shipment volumes

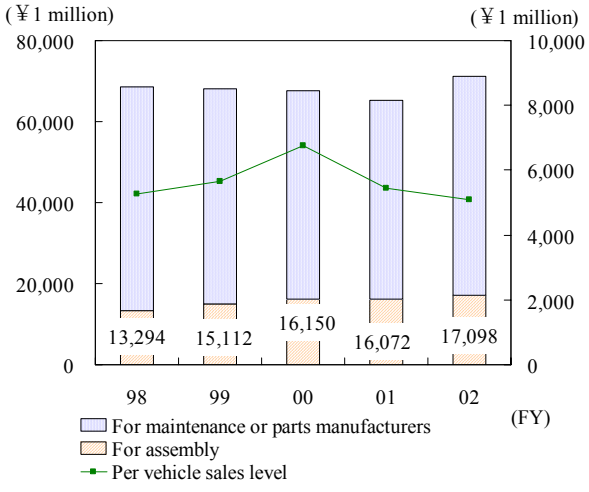
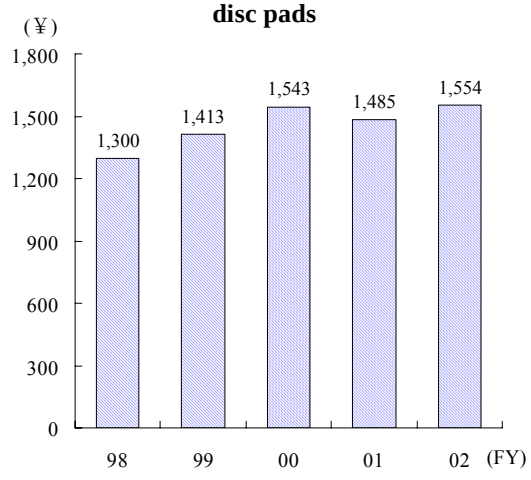


Figure 39. Per vehicle sales levels for disc pads



3. Manufacturers That Supply Parts for Assembly (in alphabetical order)

Aisin Chemical Co.,Ltd., Advics Co.,Ltd., Akebono Brake Industry Co.,Ltd., Continental Teves Inc. (U.S.A.), Fuji Brake Industry Co.,Ltd., Hitachi Chemical Co.,Ltd., Japan Brake Industrial Co.,Ltd., Nisshinbo Industries Inc., TMD Friction Japan K.K. (U.K.), Tokai Material Co.,Ltd., Hitachi Ltd., and Tokyo Buhin Kogyo Co.,Ltd.

4. Distribution Structure and Market Share

Three companies enjoy a combined share of approximately 85% of the domestic market for disc pads for automobile assembly—Akebono Brake Industry, Advics (a sales and development company established by Aisin Chemical and Sumitomo Electrical Brake Systems), and Nisshinbo Industries.

Foreign manufacturers Continental Teves and TMD have a presence in the market. TMD supplies disc pads for Mazda's Demio and Axela, which were developed by Ford of Europe.

5. Market Trends

Brake pads are essential to the safe running of an automobile. The required characteristics for brake pads can be itemized as follows: Suitable efficiency and safety, resistance to wear (long life), satisfactory noise characteristics, and little rotor wear.

In recent years the development of high-quality frictional materials with high coefficients of friction has progressed as the clamor for motoring safety improvements has grown and braking power requirements have increased.

The frictional materials principally used in Japan do not contain steel fiber and generally have a lower coefficient of friction than steel materials. Composites that contain a higher proportion of steel fiber have higher coefficients of friction and can offer superior braking capability, but are problematic in that they exact a greater toll in terms of rotor wear and are quicker to generate noise and "shudder" (or vibration).

There have been attempts to introduce brake pads made of steel materials, and thus with higher frictional coefficients, to the Japanese market. However, abrasion from the steel tends to necessitate changing the disc rotor. Since it is not common in Japan to change the disc rotor, development efforts are focused on the synthesis of NAO materials that can match steel materials in terms of efficiency.

With automobile luxury and comfort currently major considerations, the issues of NVH (noise, vibration, and harshness) are now important issues for brake pads. Thus, brake pad designers must try to suppress noise and shudder, while at the same time meeting the apparently contradictory requirement of trying to attain higher

coefficients of friction. Hence, during the design and development of a new model of automobile, the composite that is to be used as the disc pad material will be determined in accordance with the precise characteristics required by the model. This composite will consist of dozens of different materials and its formulation will be based on data for tens of thousands.

When materials are developed, due consideration must also be given to protection of the environment. Certain materials may be potentially harmful to the environment (like asbestos, as cited earlier) and "greener" frictional materials are being promoted. Use has already ceased of certain substances (such as lead and mercury) that the automobile manufacturers have designated as chemicals whose use is to be reduced. Various alternatives to hexavalent chromium (as used in processes such as galvanization) are being adopted, including the relatively benign trivalent chromium and substances that are chromium-free. In the case of the coating for disc pads, measures include abandoning organic solvents. In addition, research and development is progressing on alternative substances—both for chemicals whose use has been slated for reduction and for other chemicals for which regulation is anticipated in the future.

I. Fuel tanks

1. Outline Description

The fuel tank holds the gasoline or diesel oil that an automobile uses as fuel. The inside of a fuel tank is usually made out of galvanized steel plates or some other form of rust-proof steel plating. However, fuel tanks made from resin are becoming increasingly common as automobile manufacturers seek to make vehicles lighter.

2. Scale of the Market

In FY 2002 shipments of fuel tanks for automobile assembly were worth ¥69.77 billion, down 12.1% from the previous year. The per-vehicle sales figure for new automobiles also fell 16.3% to ¥6,758.

Figure 40. Fuel tank shipment volumes

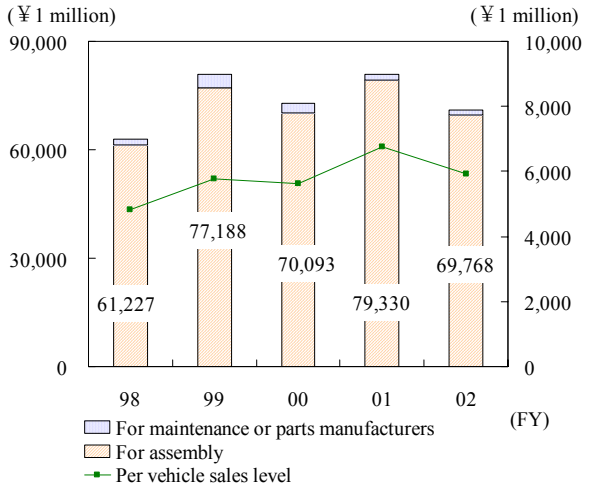
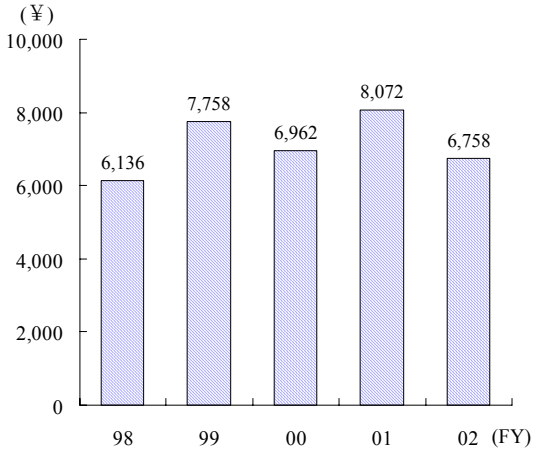


Figure 41. Per vehicle sales levels for fuel tanks



3. Manufacturers That Supply Parts for Assembly (in alphabetical order)

FTS Co.,Ltd., Hoei Industries Ltd., Horie Metal Industry Ltd., Inergy Automotive Systems K.K. (France), Kautex Textron Keylex Corporation (Germany), Musashi Pressworking Co.,Ltd., Okamoto Press Industry Co.,Ltd., Sakamoto Industry Co.,Ltd., Sankei Industries Co.,Ltd., Shinwa Kogyo, Sueyoshi Kogyo K.K., Sunmec Corporation, Tokyo Radiator Mfg. Co.,Ltd., Unipres Corporation, Yachiyo Industry Co.,Ltd., Mataltech Ltd., and Yusoki Kogyo K.K.

4. Distribution Structure and Market Share

Numerous fuel tank manufacturers have a presence in the market. Additional manufacturers are entering the market as automobile manufacturers switch over to resin fuel tanks.

Although Toyota affiliate Horie Metal Industry enjoys a share of approximately 20% of the Japanese fuel tank market, no single company is dominant.

Foreign manufacturers Inergy Automotive Systems of France and Kautex Textron Keylex of Germany have a presence in the market. Inergy supplies Nissan and Kautex Textron Keylex supplies Mazda.

5. Market Trends

Resin fuel tanks are becoming increasingly popular. This is not simply the result of the trend towards lighter vehicles. With compact cars now a mainstay of the automobile industry, manufacturers also need to be able to make the most efficient use of limited space when determining the placement of parts. In this respect, resin fuel tanks allow the automobile designer more freedom. Honda Motors opted for a resin fuel tank on the Fit, which it released in June 2001, and took advantage of the freedom to select different tank shapes to position the tank in the middle of the vehicle rather than in the rear, thereby maintaining a uniform height of 1280 mm throughout the passenger space. In addition, the adoption of the resin fuel tank helps to reduce the use of environmentally harmful substances (such as lead), since it does not need to be soldered together or galvanized to make it rust-proof. Also, to further protect a conventional steel-plate fuel tank from the risk of corrosion from the chlorine in substances such as snow remover, the surface of the steel must be subjected to a special rust-proofing treatment to enhance its durability. There is no such risk with a resin fuel tank, since resin is not prone to rusting. Hence, resin fuel tanks also compare favorably in terms of their ability to withstand corrosion.

In Europe, 90% of the fuel tanks used are made of resin, while in North America the penetration level is around 70%. In Japan, however, penetration remains at approximately 25%. All the automobile manufacturers are progressively switching over to resin fuel tanks, and it is anticipated that the proportion of resin tanks will rise.

Figure 42. Trends in switching to resin fuel tanks at various automobile manufacturers

Toyota Motor Corporation	• Established resin fuel tank company FTS in February 2002 as a joint venture with Horie Metal Industry and Toyoda Gosei. Emphasis is placed on ability of FTS to develop integrated fuel tank systems that include peripheral components, rather than simply fuel tanks in isolation. Aiming to pool the three companies' technology and promote FTS as international parts manufacturer. • First adopted resin fuel tank in November 2002 on updated Hilux Surf. Mass production of models such as Land Cruiser with resin fuel tanks.
Nissan Motor Co.,Ltd.	• Adopted on March, Cube, and others. • Resin tank suppliers: Inergy Automotive.
Honda Motor Co.,Ltd.	• First adopted resin fuel tank in November 1999 with release of Insight, a hybrid car. Increased level of usage in September 2000 with start of production of Civic. • Adopted on Fit, Civic, Accord, Mobilio, and others. • Resin tank suppliers: Yachiyo Industry and Sakamoto Industry.
Mitsubishi Motors Corporation	• Adopted resin fuel tank in 1991 on Galant (four-wheel drive vehicle). • Adopted on Galant and Diamante (both four-wheel drive vehicles)/ • Resin tank suppliers: Yachiyo Industry. • Promoting superiority of resin fuel tanks and giving consideration to alcohol fuel.
Mazda Motor Corporation	• Adopted on Atenza, Demio and others. • Resin tank suppliers: Kautex Textron Keylex

Source: Compiled from the manufacturers' own data and other materials.

J. Seatbelts

1. Outline Description

The seatbelt is a protective device that holds the occupant of a vehicle securely in his seat in the event of a collision. A similar restraining device is the air bag; however, since the airbag is intended to serve as a supplementary device on the assumption that people are already wearing seatbelts, the seatbelt is regarded as the primary safety device for protecting people in a crash.

Seatbelts were first installed in passenger vehicles in the U.S.A. in the 1950s. Nowadays, the seat belt is ubiquitous worldwide and its installation is mandatory.

Seatbelts are classified according to the number of attachment points featured, and range from the two-point seatbelt to the six-point variety installed in racing cars. The three-point seatbelt, which restrains the upper body and the waist, is highly effective in protecting the motorist in a collision and is also easy to use. Many automobiles are now equipped with three-point seatbelts for every seat except the rear passenger seat.

In addition to meeting the obvious requirement for vehicle occupant safety, seatbelts should also integrate naturally into the vehicle and not pose a hindrance to driving. The materials, type of weave to be used, and other manufacturing details must be devised accordingly.

2. Scale of the Market

In FY 2002 shipments of seat belts for automobile assembly were worth ¥105.42 billion, which represented a year-on-year increase of 10.0%. The per-vehicle sales figure for new automobiles also rose 5.2% to ¥9,595.

Figure 43. Seatbelt shipment volumes

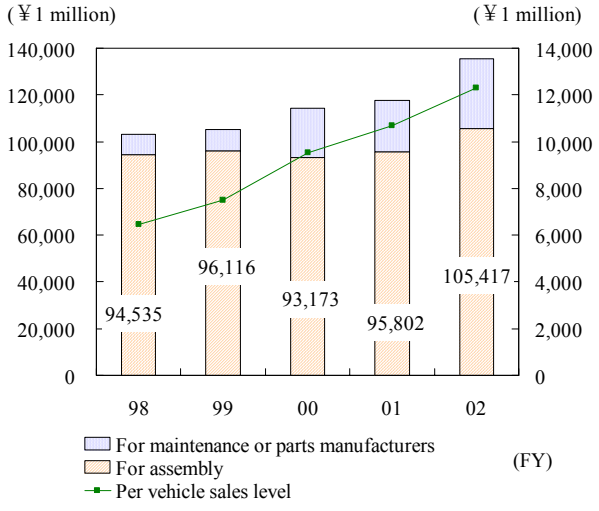
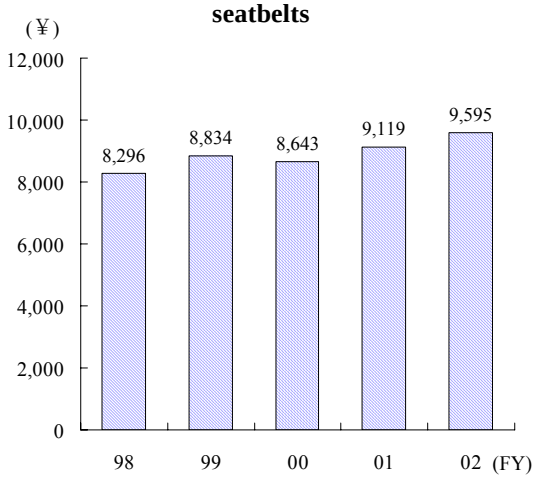


Figure 44. Per vehicle sales levels for seatbelts



3. Manufacturers That Supply Parts for Assembly (in alphabetical order)

Ashimori Industry Co.,Ltd., Johnson Controls Automotive Systems Corporation (U.S.A.), Autoliv K.K. (Sweden), Takata Corporation, and Tokai Rika Co.,Ltd.

4. Distribution Structure and Market Share

Takata enjoys a share of approximately 45% of the domestic market for seatbelts, followed by Tokai Rika with approximately 25% and Autoliv with approximately 20%.

Foreign manufacturers with a market presence are Autoliv (a subsidiary of Autoliv) and Johnson Controls Automotive.

5. Market Trends

The seatbelt is one item of automobile safety equipment that cannot be allowed to fail. Seatbelt development is focussed on how best to protect the vehicle occupant as well as on aspects such as the degree of restraint and ease of installation.

There is also the fear, however, that in a collision the seatbelt itself will compress the wearer's chest and cause injury. Hence, the requirements for a seatbelt are that it be capable of alleviating the impact of a collision and that compression by the belt be minimized.

The pre-tensioner and the energy-absorbing seatbelt are two devices that have been developed to meet these requirements. The pre-tensioner senses an impact and begins to restrain the vehicle occupant ahead of time. As soon as it senses the impact, it emits gas from a high-pressure gas generator. The gas pushes downs a piston attached to a wire, which in turn pulls the seatbelt tight.

In contrast, the energy-absorbing seatbelt lessens the impact by mitigating the restraining force. When the wearer is thrown forward by the force of a collision, the load on the seatbelt increases. When the load reaches a pre-determined value, the energy-absorbing seatbelt maintains the load at that value, thereby easing the restraining force and lessening the impact. If these two devices are used in concert, they can reduce the impact of the seatbelt on the wearer's chest in a collision by reducing chest movement.

A seatbelt known as the "pre-crash seatbelt" is also being developed as a feature of the advanced safety vehicle, which reduces the injuries when a collision cannot be avoided. The pre-crash seatbelt is a system which tightens the seatbelt with varying degrees of force. The system uses radar to sense a vehicle or obstacle on the road ahead, senses the velocity at which the brake pedal is depressed during emergency braking, predicts vehicle conditions and the motion of the seatbelt wearer, and then tightens the seatbelt accordingly. Toyota became the first Japanese manufacturer to

sell a vehicle equipped with this system when it released the Harrier in February 2003. Tokai Rika was responsible for development of the seatbelt on this model. Since then, the system has principally been offered on deluxe automobiles.

V. Examples of Foreign Entry

A. Entry to the Japanese Automobile Assembly Parts Market by Foreign Parts Manufacturers

Foreign parts manufacturers are expanding aggressively into Asian markets in line with the actions of automobile manufacturers. With an annual production level of ten million vehicles, the Japanese automobile market (the second largest in the world) remains appealing, despite its reliance on replacement purchase demand. Capital participation in Japanese automobile manufacturers by foreign automobile manufacturers—coupled with a re-evaluation of the traditional business practices associated with the conglomerate system—have lent impetus to market entry by foreign firms. In many cases, foreign parts manufacturers have made their initial foray into the Japanese market by establishing a Japanese corporation. Since the latter half of the 1990s, however, increasing numbers of Japanese parts manufacturers have teamed up with foreign parts manufacturers as a means of survival, and the number of foreign companies establishing joint ventures and entering the market is also on the increase.

Figure 45. Principal examples of market entry by foreign companies

Year	Name of Company	Nationality	Form of Entry
1912	Bosch	Germany	General dealership
1970	TRW	U.S.A.	Japanese corporation
1972	GKN	U.K.	Japanese corporation
1973	Tenneco	U.S.A.	Japanese corporation
1975	Michelin	France	Japanese corporation
1978	Eaton	U.S.A.	Japanese corporation
1979	Siemens	Germany	Japanese corporation
1981	Visteon	U.S.A.	Japanese corporation
1985	Valeo	France	Japanese corporation
	Delphi	U.S.A.	Japanese corporation
1993	Brose	Germany	Japanese corporation
1994	Johnson Controls	U.S.A.	Japanese corporation
1998	Autoliv	Sweden	Mergers and acquisitions
	Mann-Hummel	Germany	Japanese corporation
	Mahle	Germany	Capital tie-up
1999	Lear	U.S.A.	Japanese corporation
2000	Tower Automotive	U.S.A.	Capital tie-up
	Inergy Automotive Systems	France	Japanese corporation
	Continental Teves	Germany	Joint venture
	Dalphi Metal	Spain	Capital tie-up
2001	Automotive Lighting	Germany	Japanese corporation
	Kautex Textron	Germany	Joint venture
	Hella	Germany	Business tie-up
	Fergat	Italy	Business tie-up
	Faurecia	France	Joint venture

Source: compiled from the Web sites of the various automobile parts manufacturers, newspaper articles, and other materials.

B. Factors in Successful Entry to the Japanese Market by Foreign Parts manufacturers

Companies entering the Japanese market for assembly parts must be able to deliver their products on time and in sufficient volume, and must have high standards of quality and assurance. Accordingly, there is a strong tendency for automobile manufacturers to attach great importance to a parts supplier's track record. However, while the new willingness of automobile manufacturers to conduct business with companies outside of their conglomerates is a hopeful sign, it is still not easy for new parts manufacturers to break into the market.

This is true for foreign parts manufacturers as well—even for world-renowned manufacturers. So far only a limited number have entered the Japanese market, and the volume of their business is low.

The table below shows the ways in which foreign parts manufacturers have gained entry to the Japanese market.

Figure 46. How foreign parts manufacturers have entered the Japanese market

	Method of Entry to the Market
Bosch (Germany)	Established a corporation in Japan to serve as a sales base. As well as selling parts to automobile manufacturers, concluded agreement with a parts manufacturer to provide it with technology, and built co-operative relationship. Expanded this collaboration through a capital tie-up, established joint venture, and secured production base and sales channels. Eventually acquired stock in collaborating parts manufacturer and made it a subsidiary.
Valeo (France)	Traditionally a major supplier to Renault. Took advantage of Nissan Revival Plan launched in April 2000 to enter into capital participation in—and establish joint venture with—Nissan-affiliated parts manufacturers (Unisia JECS and Ichiko Industries), thereby securing production bases. In this way, became a supplier to Nissan.
Autoliv (Sweden)	Bought an independent parts manufacturer and a manufacturer of seatbelt and airbag parts. As well as securing production and development facilities, secured sales channels to automobile manufacturers. Soon established a market presence through aggressive mergers and acquisitions with a view to modularization.
Mahle (Germany)	Engine component sector: acquired a stake in Izumi Industrial, which had provided it with piston design and manufacturing technology, and secured sales channels. Filter sector: entered into capital participation in Tennex when Nissan disposed of its stock as part of the Nissan Revival Plan, thereby securing a sales channel to Nissan.
Inergy Automotive Systems (France)	Entered the Japanese market when its parent company passed on a fuel tank production process acquired from Nissan under the Nissan Revival Plan. In this way, became a supplier to Nissan.

In each case the foreign company entered the Japanese market by acquiring a stake in a Japanese parts manufacturer, thus securing a sales channel to the automobile manufacturers with whom the Japanese parts manufacturer was already doing business.

Cases differ, however, in the manner of capital participation. In some instances a company will engage in capital participation in a company to which it is supplying technology (as Bosch has done); in other cases a company will carry out mergers and acquisitions in line with it own modularization strategy (as Autoliv has done).

Similarly, from the perspective of the Japanese parts manufacturers that are the targets of this capital investment, the disposal of stock by automobile manufacturers that is being carried out in tandem with the general realignment within the industry represents a golden opportunity to come under the wing of a foreign parts manufacturer. As business within the conglomerate slumps and the necessity for increased development in areas such as environmentally friendly technologies is foreseen, the view that it will be hard for companies to survive independently is gaining currency. This common interest between Japanese parts manufacturers and foreign parts manufacturers that are aiming to enter the Japanese market is a key factor for success.

C. Case Studies of Foreign Parts Manufacturers

1. Bosch

1-1 Outline

With numerous subsidiaries and affiliates in over 50 countries worldwide, Bosch is expanding its global business in the following three principal sectors: automotive technology, industrial technology, and consumer goods and building technology.

Bosch deals in various types of equipment such as communications devices and consumer electronics, as well as in automobile parts (mainly electrical and electronic parts), and is actively engaged in entering business and capital tie-ups with, or purchasing, foreign automobile parts manufacturers.

1-2 Main products

Brake-related (such as ABS), engine-related (such as fuel injectors), and body-related

1-3 Development of business in Japan

Bosch first entered the Japanese market way back in 1912 when it opened a dealership in Yokohama.

1939: Issues diesel fuel injector license to Diesel Kiki Co.,Ltd. (renamed Zexel in 1990).

1972: Establishes Japanese corporation, Robert Bosch Japan Ltd., in Tokyo.

1992: Establishes Asuko (renamed Bosch Electronics Corporation in October 2000), an airbag and seatbelt tensioner company, as a joint venture with Zexel.

1997: Acquires part of Isuzu Motor’s stake in Zexel to become the largest shareholder with 30.1%.

1999: Acquires a 50.04% stake in Zexel and makes it a subsidiary. Consolidates passenger car brake businesses of Jidosha Kiki Co.,Ltd., Nippon ABS Ltd., and NABCo.,Ltd., establishing Bosch Braking Systems Co.,Ltd.

2000: Renames Zexel as Bosch Automotive Systems Corporation.

2002: Establishes joint venture with Aisin AW to manufacture metal belts for use in CVT.

2003: Bosch Braking Systems and Bosch Electronics are merged with Bosch Automotive Systems, bringing all Bosch automotive original equipment (OE) activities in Japan together under the auspices of a single company.

1-4 Assembly parts used by Japanese automobile manufacturers

Gasoline and diesel injection systems, brake systems, electronic control units (ECUs), various types of sensors, and transmission control parts.

1-5 Affiliations with cooperative associations of Japanese automobile manufacturers

Kyohokai, Nisshokai, Yokokai, Subaru Yuhikai, Isuzu Kyowakai, Hino Kyoryokukai, and Nissan Diesel Shinseikai.

2. Autoliv

2-1 Outline

Automobile safety systems manufacturer Autoliv was established in 1997 as a amalgamated company between the seatbelt manufacturer Autoliv AB and the airbag manufacturer Morton ASP. The company's headquarters are located in Stockholm, Sweden, and it has 80 branch offices and joint ventures in 30 countries around the world.

As well as boasting a major share of worldwide sales of seatbelts and airbags (its core business), Autoliv also deals in products such as steering systems and safety seats, and is expanding its business activities globally.

2-2 Main products

Airbag-related, seatbelt-related, steering wheels, electronics-related, and seat-related.

2-3 Development of business in Japan

Autoliv first entered the Japanese market in 1988 when, as the pre-merger Morton ASP, it established an airbag joint venture, Morton Nichiyu, with NOF. (After the merger of Autoliv AB and Morton ASP, Morton Nichiyu was renamed Autoliv Nichiyu in 1999.)

Autoliv, the product of this merger, strove to secure production facilities in Japan in a bid to lend impetus to its sales to Japanese automobile manufacturers.

1998: Buys airbag manufacturer Sensor Technologies, renames it Autoliv Japan, and makes it a subsidiary.

2000: Buys steering wheel manufacturer Izumi Jidosha, renames it Autoliv Izumi, and makes it a subsidiary.
Acquires 40% stake in seatbelt manufacturer NSK Safety Systems from NSK. (Subsequently acquires 100% stake in April 2003.) Renames it NSK Autoliv and secures seatbelt production facilities.

2001: Establishes Autoliv, bringing all Autoliv activities in Japan together under the auspices of a single company.

2003: Buys Nippon Steering Industries, renames it Autoliv Hiroshima, and makes it a subsidiary.

2-4 Assembly parts used by Japanese automobile manufacturers

Seatbelts, airbags, steering wheels, shift knobs, and plastic molded products.

2-5 Affiliations with cooperative associations of Japanese automobile manufacturers

Kyohokai, Daihatsu Kyoyukai, Hino Kyoryokukai, and Nissan Diesel Shinseikai.

3. Inergy Automotive Systems

3-1 Outline

Global fuel systems supplier headquartered in Paris.

Established in August 2000 as a fuel tank joint venture by French companies Solvay Automotive and Plastic Omnium.

Despite the 25% penetration of resin fuel tanks in Japan (much lower than in Europe and North America), Inergy is expanding aggressively in the Japanese market in order to take advantage of the increase in the uptake of resin fuel tanks driven by the industry trend towards lighter vehicles.

3-2 Main products

Fuel tanks, fuel pumps, fuel filters, wiring harnesses, and others.

3-3 Development of business in Japan

August 2000: Parent company Solvay passes on to Inergy Automotive Systems a resin fuel tank production process which it has acquired from Nissan Motors.

September 2000: Start of business with Nissan. Inergy also begins supplying resin fuel tanks to French company Renault, which has an alliance with Nissan.

October 2003: Strengthens cooperative relationship with Nissan. Establishes new factory in Kitakyushu in a bid to cultivate relationships with other Japanese automobile manufacturers.

3-4 Assembly parts used by Japanese automobile manufacturers

Resin fuel tanks

4. Mahle

4-1 Outline

Headquartered in Stuttgart, Germany, Mahle is expanding its business widely in Europe, North America, and Asia. Mahle is involved in three different business sectors: pistons and engine components, filter systems, and valve train systems. The company has established major research and development centers focused on automobile manufacturing on four continents (in Stuttgart, Detroit, Sao Paulo, and Tokyo) and has established a system of cooperation with automobile manufacturers. Mahle is aggressively pursuing modularization in every business field.

4-2 Main products

Piston engine components (such as pistons and cylinders), filter systems (such as oil filters and air filters), and valve trains.

4-3 Development of business in Japan

1998: Acquires stock in Izumi Industries by means of a capital increase through a third-party allocation of newly issued shares.

2001: Acquires a 33.3% stake in Tennex from Nissan and becomes the largest shareholder. Renames it Mahle-Tennex in 2002.

2003: Converts Izumi Industries to a wholly owned subsidiary by means of a capital increase through a third-party allocation of newly issued shares and renames it Mahle-Izumi. Makes Mahle-Izumi and Mahle-Tennex Asian regional headquarters for piston engine components sector and filter sector respectively. Becomes development and sales base for Japanese automobile manufacturers in Europe and North America.

4-4 Assembly parts used by Japanese automobile manufacturers

Air-intake systems, intake manifolds, resin head covers, resin engine covers, carbon canisters, oil-coolers and oil-warmers, exhaust gas recyclers (EGRs), coolers, oil filters, and fuel filters.

4-5 Affiliations with cooperative associations of Japanese automobile manufacturers

Nisshokai, Subaru Yuhikai, and Nissan Diesel Shinseikai.

5. Valeo

5-1 Outline

Leading independent automobile parts manufacturer headquartered in Paris, France.

Valeo carries out development of products such as engines (key to the working of an automobile), chassis, transmission, bodies, styling, compartments, security systems, electronics, and electric motors.

As part of its commitment to the modularization of automobile parts, Valeo has established a module department, which brings together all the parties concerned. The firm is also actively engaging in mergers and acquisitions all over the world as it seeks to establish itself as a global supplier.

5-2 Main products

Engine parts (such as radiators and oil-coolers); electric equipment parts (such as alternators and starters); electrical and electronic parts (such as wiring harnesses and front headlamps); drive, transmission, and steering parts (such as clutches); and modules (such as top-column modules and front-end modules).

5-3 Growth of business in Japan

1985:	Establishes Japanese corporation, Valeo Japan, in Tokyo.
2000:	With the priority on securing production facilities in Japan in order to increase its volume of business with Japanese automobile manufacturers, establishes transmission joint venture (Valeo Unisia Transmissions) with Unisia JECS (then Hitachi Unisia Automotive).
2000:	Acquires 40% stake in Zexel Air-Conditioning, an air-conditioner subsidiary spun off from Zexel (then Bosch Automotive Systems). Renames it Zexel-Valeo Climate Control.
2000:	Collaborates in lighting business with Ichiko Industries. (Acquires 20.67% stake in Ichiko Industries.)
2003:	Enters into automobile wiring harness business tie-up with Furukawa Electric.

5-4 Assembly parts used by Japanese automobile manufacturers

Alternators, radiators, clutches, front headlamps, and wiring harnesses.

5-5 Affiliations with cooperative associations of Japanese automobile manufacturers

Nisshokai, Yokokai, Subaru Yuhikai, and Isuzu Kyowakai.

VI. Advice Market on Market Access

A. Promising Markets for Foreign Parts Manufacturers

As consumers demand ever greater functionality from automobiles, the requirements placed on automobile parts increase correspondingly. More specifically, the trend towards more stringent environmental and safety requirements over recent years has had a profound effect on the automobile parts used in vehicle assembly, particularly on the materials used. Some parts and materials have become obsolete, while certain new parts and technologies have become essential.

This naturally affects parts distribution channels as well, and the breakdown of the conglomerate system represents an opportunity for foreign parts manufacturers to win new customers. Notably, parts that incorporate advanced technology offer a high degree of added value and offer the chance to develop lucrative new business.

The markets which are viewed as the most promising for foreign parts manufacturers are covered in the following sections.

1. Environmentally friendly products

Automobile manufacturers recognize that dealing with environmental problems is a prerequisite to sustainable growth. In response to stricter environmental regulation, they are accelerating the development of relevant technologies.

Figure 47. Environmental problems related to automobiles and measures to counter them

Environmental Issue	Measures
Improvement of fuel efficiency	• Make vehicles lighter (by using high-tension steel plates, aluminum, magnesium, and resin, and by making parts smaller, thin-walling parts and using modularization). • Improve efficiency of engines (direct-injection gasoline engines, variable valve timing, common-rail fuel injection equipment, and other techniques). • Improve transmission efficiency (for example, by use of automatic continuously variable transmission). • Develop low-pollution cars (such as hybrid automobiles and fuel cell automobiles).

Figure 47. Environmental problems related to automobiles and measures to counter them

Reduced use of substances harmful to the environment	• Reduce amounts of heavy metals (lead, hexavalent chromium, cadmium, and mercury) used. • Reduce amount of vinyl chloride resin used. • Eliminate use of controlled CFCs and reduce use of HFC134a as an alternative CFC. • Make engine coolant (LLC) amine-free.
Purification of gas emissions	• Improve fuel injection systems. • Purify gases using chemical reactions.
Improved recyclability	• Develop materials with a longer lifetime (for example, through development of anti-corrosion technologies). • Use thermoplastic resin and synthesize materials. • Use natural materials. • Develop and use recyclable materials. • Design parts that are easy to dispose of.

Source: compiled from the environmental reports of automobile manufacturers.

2. Safety products

The Study Group for ASV(Advanced Safety Vehicle) Promotion was established under the auspices of the Ministry of Land, Infrastructure, and Transport. The aim of this body is to advance development of the ASV so as to improve motoring safety. The ASV concept embodies the use of electronics to construct “intelligent” vehicles. The electronic systems are designed to compensate for lapses in attention and judgment on the part of the motorist, thereby making vehicles safer.

The ASV Promotion Project was launched in FY 1991. The first phase of the project consisted of promoting research and development for 20 different passenger car systems under four categories: Preventative Safety Technologies, Accident Avoidance Technologies, Damage-Mitigating Technologies, and Post-Collision Injury Mitigation and Prevention Technologies.

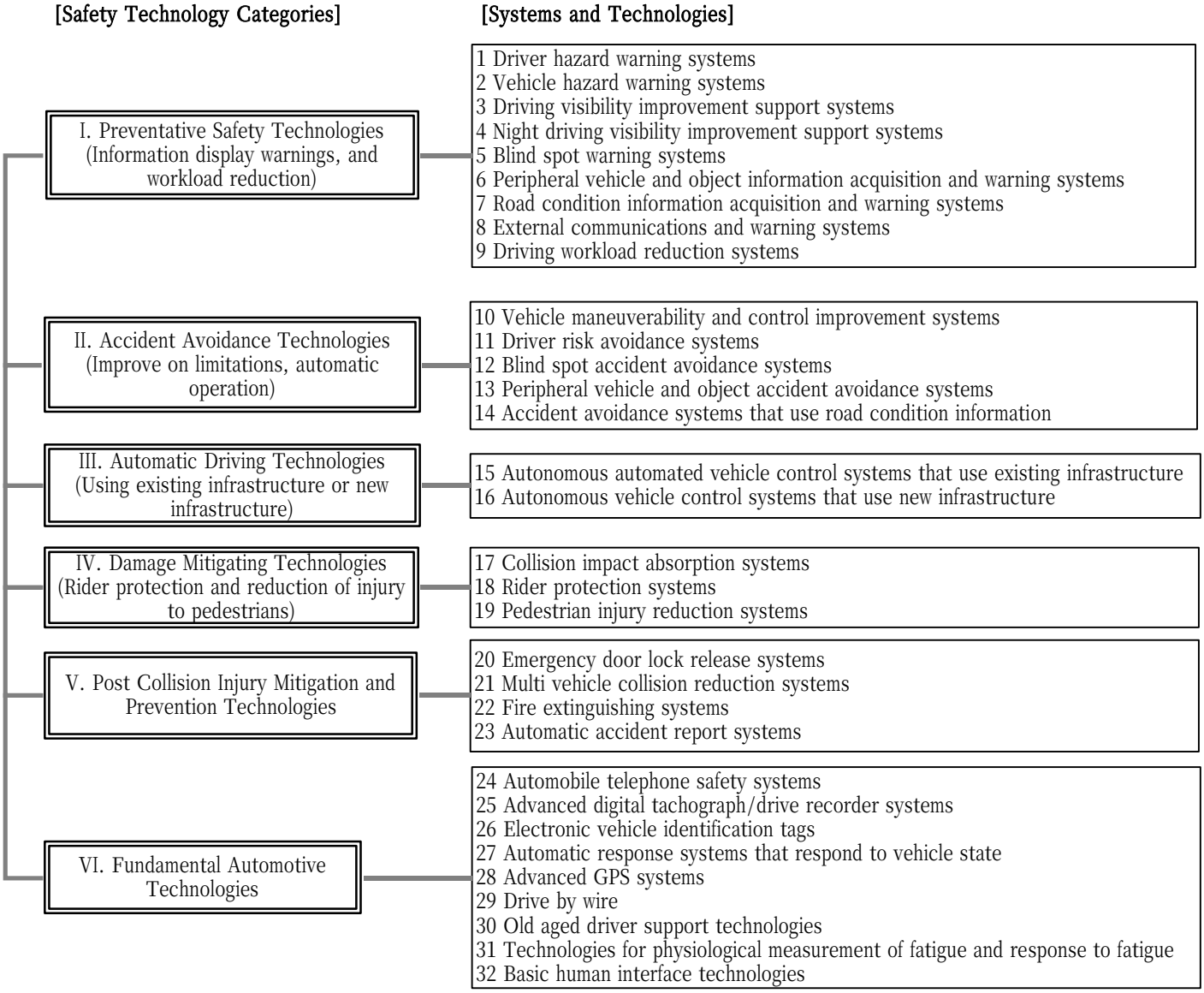
During the project’s second phase, which concluded in FY 2000, research and development in communications technology and “intelligent” technology that could enhance safety was promoted even more vigorously and two new categories were added: Automatic Driving Technologies and Fundamental Automotive Technologies. In addition, the scope of the project was enlarged to include trucks, buses, and two-wheeled vehicles.

During the third phase of the project, which began in FY 2001, automobile manufacturers have built on the fruits of the second-phase research and made further

advances in research and development. At the same time, a study is being made of how best to encourage and facilitate the implementation and diffusion of ASV technologies. ASV is intended to become the automobile platform for ITS technology and it is anticipated that numerous soon-to-emerge technologies will be adopted.

Already some technologies developed under the ASV Promotion Project have been put into practice. For example, a night vision system that uses an infrared camera to detect pedestrians at night has been implemented on some high-end vehicles.

Figure 48. Systems developed in the second-phase of the ASV study



Source: Ministry of Land, Infrastructure, and

B. Issues Relating to Entry to the Japanese Market

Even as Japanese automobile manufacturers seek to optimize their supply chains, not all foreign parts manufacturers who have tried to enter the Japanese market have been successful—despite the fact that automobile manufacturers are conducting less business with companies within the same conglomerate.

The underlying reasons for this are that failures of communication between the Japanese automobile manufacturers and foreign parts manufacturers can occur and that problems can arise at the product design and development stages due to differing notions of product quality and conflicting development philosophies.

There is also the problem that a foreign parts manufacturer must tailor an individual approach to each of the automobile manufacturers it supports. The degree of involvement in the parts development process is also different for each automobile manufacturer, and it seems that for the foreign parts manufacturers some demands are totally unexpected. This is a by-product of the old conglomerate-style relationship between automobile manufacturer and parts manufacturer, in which the parts manufacturer also benefited from the long-term business relationship and accordingly adapted to the wishes of the automobile manufacturer. Although it is claimed that business methods have evolved, it appears that this old tendency still endures to some degree. Accordingly, the first priority is for the automobile manufacturer and the foreign parts manufacturer to try and bridge the gap and establish a working relationship based on mutual understanding.

On the other hand, business dealings outside the confines of conglomerates are increasing steadily. Manufacturers can find parts suppliers and providers of other services by means such as the Internet, and the way is clearing for parts manufacturers from outside the conglomerate.

In 1993 Toyota published a Supplier's Guide—a bilingual Japanese-English business operations manual—in order to explain its basic policies regarding supply and its development and procurement processes. In this manual Toyota touted its basic "open-door policy" for procurement, and urged procurement from suppliers outside the conglomerate, irrespective of nationality, size, or track record. In the selection of suppliers, factors such as a company's overall structure and whether or not its management style is geared towards continuous improvement are to be taken into account, in addition to more standard considerations such as quality, price, technology, and ability to meet delivery deadlines. Toyota also stages trade shows and international design competitions through which it can identify potential new suppliers. As part of this effort, in March 1998 Toyota built a Suppliers' Center at its headquarters to provide a venue at which parts manufacturers could present new parts to the company.

Since 1999 Toyota Motors has also held an annual general meeting for its international suppliers, at which it expounds the key points of its procurement policy. The most recent such event was held in February 2004 and drew 400 parts manufacturers, including 67 companies from overseas. Suppliers that offer outstanding service in areas such as quality, price, and technological development are acknowledged at these meetings, which provide a forum for close-quarters communication between Toyota and its suppliers for the purpose of establishing a relationship of mutual trust.

Policies to boost new business are also being employed. In FY 2004, the Japan Auto Parts Industries Association began staging product exhibitions in order to provide an opportunity for parts manufacturers to exhibit their individual technologies and demonstrate the particular quality levels of which they are capable to people such as buyers from automobile manufacturers. The first such exhibition was hosted by Toyota Motors in October 2004. It is planned that each automobile manufacturer will take a turn staging these annual product exhibitions.

In addition, the Motor and Equipment Manufacturers Association (MEMA) is scheduled to hold a Suppliers' Forum in Detroit in 2005. This event is aimed at people such as manufacturers' development and procurement representatives and is intended to create opportunities for business between U.S. parts manufacturers and Japanese automobile manufacturers.

Taking full advantage of such opportunities in order to gain an understanding of how to meet the requirements of Japanese companies is thus a key issue.

C. Promising Methods of Entry to the Market

The principal methods by which foreign parts manufacturers enter the Japanese market for automobile assembly parts are the acquisition of a stake in a Japanese parts manufacturer and the establishment of a joint venture.

The automobile assembly parts market differs markedly from the aftermarket in that the demands of the automobile manufacturers regarding volume and delivery deadlines are considerable. Furthermore, building a close relationship with a Japanese automobile manufacturer and increasing the volume of business with it requires that production facilities be secured.

Using existing facilities belonging to a Japanese automobile parts manufacturer represents a convenient alternative to setting up new production facilities in Japan from scratch. This is a major reason why foreign companies enter into capital participation in Japanese parts manufacturers.

At the same time, entering into capital participation in a Japanese parts manufacturer also offers other major advantages. It grants the investor access to technology that has been developed in collaboration with automobile manufacturers and to expertise in quality and cost issues, and enables the investor to secure a link with automobile manufacturers. A further major benefit is that it is hard for a foreign parts manufacturer working on its own to comprehend the design ideas and philosophy of a Japanese automobile manufacturer, and capital participation will bring personnel familiar with this type of issue into the company's fold.

Figure 49. Collaboration by principle foreign parts manufacturers

Year	Company Name	Japanese Company	Details	Notes (Name of Joint Venture)
1985	GKN	Tochigi Fuji Industrial	Established joint venture.	Viscodrive Japan Ltd.
1986	Delphi	Calsonic *Now Calsonic Kansei	Established joint venture.	Calsonic Harrison
1988	Autoliv	NOF	Established joint venture.	Morton Nichiyu * Renamed Autoliv Nichiyu in 1999
1997	Bosch	Zexel	Acquired 30.1% stake to become largest shareholder.	Renamed Bosch Automotive Systems
	Delphi	NSK	Established joint venture.	Delphi-Saginaw-NSK
		Akebono Brake Industry	Acquired 5.85% stake.	
1998	Autoliv	Sensor Technologies	M&A	Renamed Autoliv Japan
	Mahle	Izumi Industries	Capital increase through third-party allocation of newly issued shares.	Renamed Mahle-Izumi

1999	GKN	Toyoda Machine Works	Established joint venture.	GKN-Toyoda Driveshafts Ltd.
	Visteon	Naldeck	M&A	Merged with Japanese company.
2000	Siemens	Keihin	Established joint venture.	KARE * Joint venture corporation dissolved in December 2002.
	Valeo	Hitachi Unisia Automotive *merged with Hitachi in 2004	Established joint venture.	Valeo Unisia Transmissions
		Zexel Air-Conditioning	Acquired 40% stake.	Renamed Zexel-Valeo Climate Control
		Ichiko Industries	Acquired 26.67% stake.	
	Autoliv	Izumi Jidosha	M&A	Renamed Autoliv Izumi
		NSK Safety Systems	Acquired 40% stake.	Acquired 100% stake in April 2004. Company renamed NSK Autoliv.
	Johnson Controls	Ikeda Corporation	Takeover bid	Renamed Johnson Controls Automotive Systems.
	Tower	Yorozu	Acquired 17% stake. *Alliance dissolved in March 2004.	Alliance dissolved to enable Tower to focus on its core business of car body parts.
	Dalphi Metal	Nihon Plast	Acquired 14% stake.	
2001	Faurecia	NHK Spring	Established joint ventures.	Faurecia Nippatsu
				Faurecia Nippatsu Kyushu
	Mahle	Tennex	M&A	Renamed Mahle Tennex
2002	Lear	Mitsubishi Cable Industries Ltd.	Established joint venture.	Lear Diamond Electro-Circuit Systems
	Brose	Shiroki Corporation	Established joint venture.	Shiroki Brose
	Bosch	Aisin AW	Established joint venture.	CVTEC
		Bosch Brake Systems, Bosch Electronics	Merged with Bosch Automotive Systems	Consolidation of all Bosch business in Japan into one company.
	GKN	Tochigi Fuji Sangyo	Acquired 20.4% stake.	Acquired majority share of this company in May 2004, and made it a subsidiary.
2003	Autoliv	Nippon Steering Industries	M&A	Renamed Autoliv Hiroshima
2004	Valeo	Furukawa Electric Co. Ltd.	Established joint venture.	Wiring harness design and sales company
	Mann +Hummel	Wako Industrial Co. Ltd.	Established joint venture.	Mann+Hummel Wako Co. Ltd.

Source: compiled from the Web sites of the automobile manufacturers and from newspaper articles.

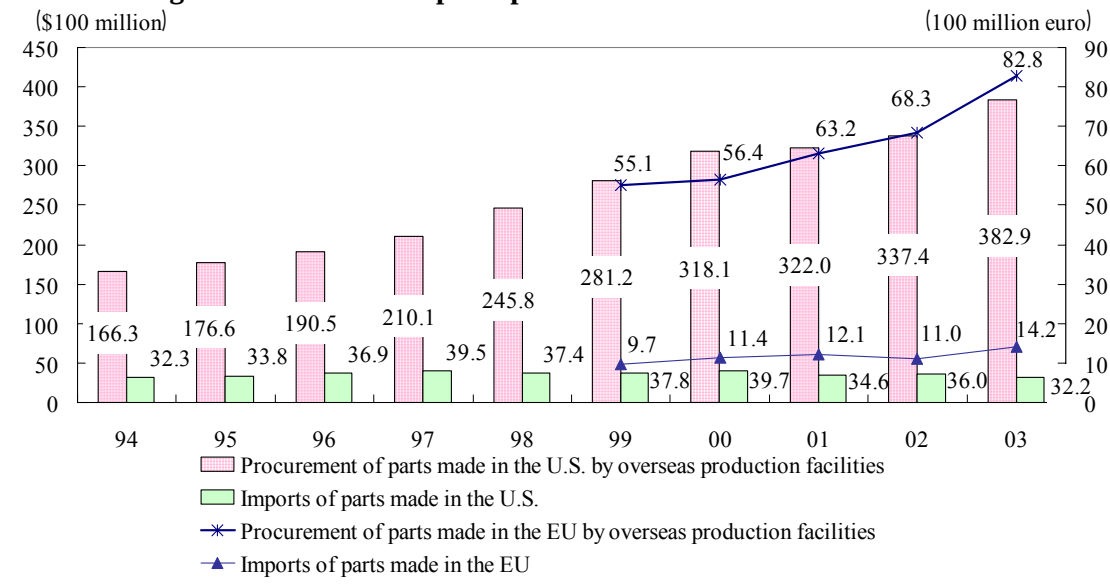
Meanwhile, a number of prefectures around Japan are devising policies to attract foreign companies to invest there, and the necessary infrastructure is steadily being improved. By way of example, in 2002 Fukuoka Prefecture established Fukuoka Foreign Investment Promotion Centers in Fukuoka and Tokyo, and is staging activities to attract foreign companies to the prefecture. A number of firms have set up factories in the region, including resin fuel tank manufacturers Inergy Automotive Systems and seat manufacturers Faurecia, NHK Spring Co. Ltd., and their joint venture, Faurecia Nippatsu. Similarly, prefectures in which automobile manufacturers' headquarters are located, such as Aichi, Hiroshima, Tochigi, Gunma, and Shizuoka Prefectures, are actively seeking to attract foreign parts manufacturers.

Capital participation in Japanese parts manufacturers, enabling acquisition of production facilities and expertise regarding automobile manufacturers, will remain the principal method of entry to the Japanese market for foreign firms.

From the point of view of shipping costs and deadlines, it is still difficult for companies that do not have production facilities in Japan to supply parts to Japanese automobile manufacturers, as they are forced to resort to importing them from their overseas production facilities.

If the volumes of parts made in the U.S. and the EU that are purchased by Japanese automobile manufacturers are considered, it is evident that although purchasing levels for locally procured parts have increased steadily in line with rising overseas automobile production levels, import levels for parts have not increased to the same extent.

Figure 50. Automobile parts purchased from the U.S. and the EU



Source: "Purchasing of Automobile Parts Manufactured in the U.S. and the EU" by the Japan Automobile Manufacturers Association.

However, as automobile technology becomes more advanced, these limitations cease to apply, for example, in the case of parts which have high added value due to the fact that the technologies involved are only in the possession of certain parts manufacturers. In particular, parts that make use of technologies in fields where technological innovation is required, such as environmental protection and safety, may come to the fore.

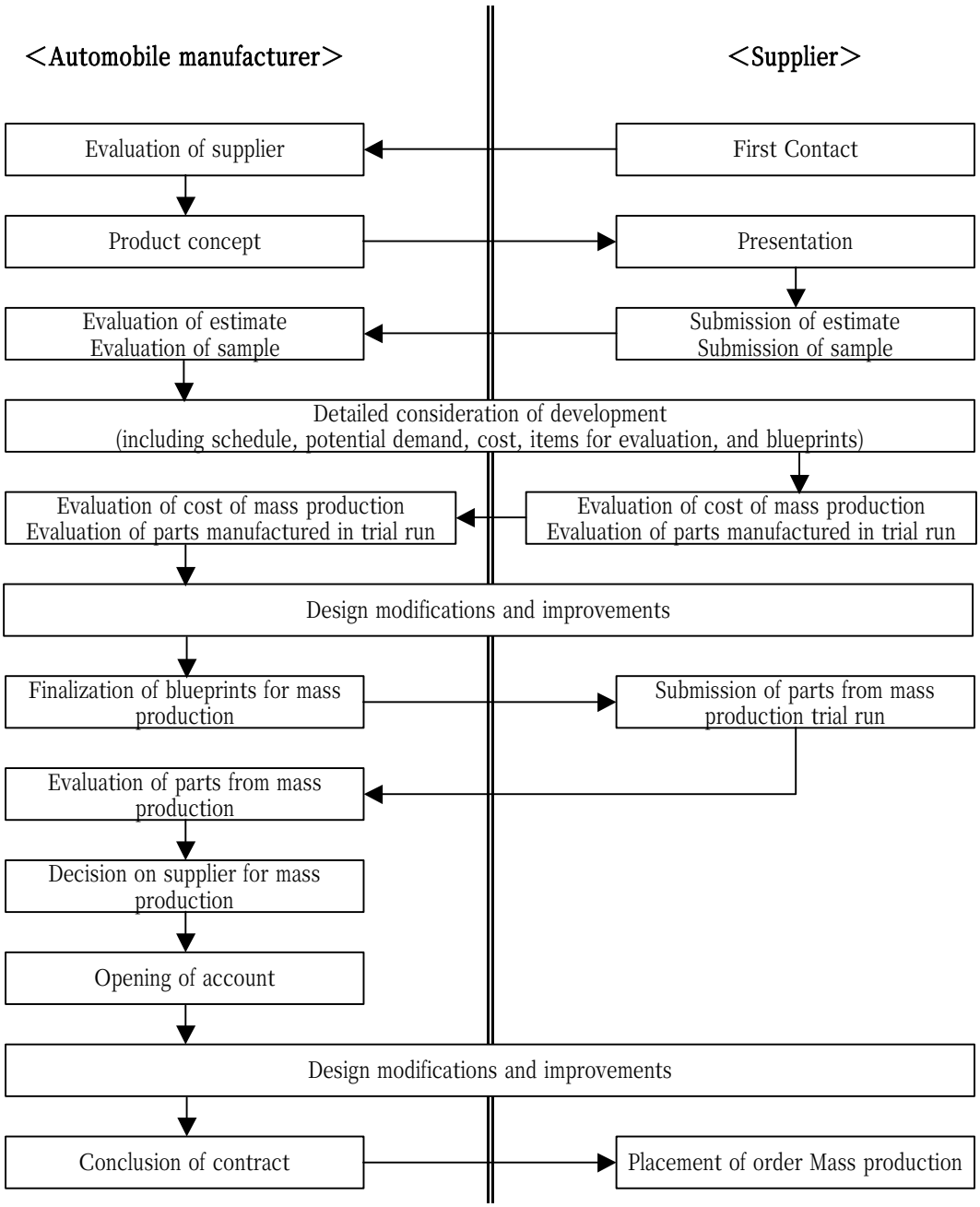
Advances in parts modularization also represent an opportunity for foreign manufacturers to enter the Japanese market. Modularization is not simply a matter of integrating multiple parts in order to reduce part and assembly costs. Rather, it also requires that functionality be improved by regarding multiple parts as integral systems at the design stage. Hence, it is vital to integrate the various parts technologies properly and to proceed with advance development and implementation. Thus, foreign parts manufacturers that have expanded through mergers and acquisitions can be said to be in a strong position to engage in modularization.

In the competitive global environment, Japanese automobile manufacturers also frequently collaborate with foreign automobile manufacturers, and are attempting to take advantage of this collaboration by standardizing platform and engine designs. There are even instances where parts are designed by a collaborating foreign automobile manufacturer, manufactured by a foreign parts manufacturer, and then supplied by the foreign parts manufacturer for vehicles manufactured in Japan.

Figure 51. Issues relating to entry to the Japanese market and means for doing so

Issue	Means
Securing production facilities in Japan	• Establish a joint venture with a Japanese automobile parts manufacturer. • Purchase a Japanese automobile parts manufacturer.
Establishing a relationship of trust with a Japanese automobile manufacturer	• Join the cooperative association run by the manufacturer. • Buy an automobile parts manufacturer that is doing business with the Japanese automobile manufacturer.
Adoption of new parts	• Collaborate with—or make a proposal to—a foreign automobile manufacturer that is collaborating with a Japanese automobile manufacturer. • Propose new technologies in fields such as environmentally friendly technology and safety technology. • Make proposals for modularization.

Figure 52. Transaction flow for parts



VII. Appendices

A. Related Organizations

Related ministries

Ministry Name	Address, Telephone Number, and URL
Ministry of Economy, Trade, and Industry	1-3-1, Kasumigaseki, Chiyoda-ku, Tokyo 100-8901 Tel.: 03-3501-1511 <http://www.meti.go.jp/>
Ministry of Land, Infrastructure, and Transport	Building 3, Central Government Offices 2-1-3, Kasumigaseki, Chiyoda-ku, Tokyo 100-8918 Tel.: 03-5253-8111 <http://www.mlit.go.jp/>
Ministry of the Environment	Building 5, Central Government Offices 1-2-2, Kasumigaseki, Chiyoda-ku, Tokyo 100-8975 Tel.: 03-3581-3351 <http://www.env.go.jp/>

Industry organizations

Organization Name	Address, Telephone Number, and URL
Japan Automobile Manufacturers Association	Nihon Jidosha Kaikan 1-1-30, Shiba Daimon, Minato-ku, Tokyo 105-0012 Tel.: 03-5405-6118 <http://www.jama.or.jp/>
Japan Auto Parts Industries Association	1-16-15, Takanawa, Minato-ku, Tokyo 108-0074 Tel.: 03-3445-4211 <http://www.japia.or.jp/>
Japan Auto Body Industries Association	Nihon Jidosha Kaikan 1-1-30, Shiba Daimon, Minato-ku, Tokyo 105-0012 Tel.: 03-3578-1681 <http://www.jabia.or.jp/>
Japan Automotive Machinery and Tool Manufacturers Association	Kikai Shinko Kaikan 3-5-8, Shiba-Koen, Minato-ku, Tokyo 105-0011 Tel.: 03-3431-3773 <http://www.jamta.com/>
Society of Automotive Engineers of Japan	Goban-cho Center Building 10-2, Goban-cho, Chiyoda-ku, Tokyo 102-0076 Tel.: 03-3262-8211 <http://www.jsae.or.jp/>

Organization Name	Address, Telephone Number, and URL
Japan Automobile Research Institute	2530 Karima, Tsukuba City, Ibaraki 305-0822 Tel.: 029-856-1111 <http://www.jari.or.jp/>
JNX Center, Japan Automobile Research Institute	Nihon Jidosha kaikan 1-1-30, Shiba Daimon, Minato-ku, Tokyo 105-0012 Tel.: 03-5733-7933 <http://www.jnx.ne.jp/>
Automobile Inspection and Registration Association	35 Sankyo Building 3-7-2, Irifune, Chuo-ku, Tokyo 104-0042 Tel.: 03-5542-5101 <http://www.aira.or.jp/>
Japan Vehicle Inspection Association	7-26-28, Toshima, Kita-ku, Tokyo 114-0003 Tel.: 03-5902-3455 <http://www.jvia.or.jp/>
Japan Automobile Dealers Association	Nihon Jidosha kaikan 1-1-30, Shiba Daimon, Minato-ku, Tokyo 105-0012 Tel.: 03-5733-3100 <http://www.jada.or.jp/>
Japan Mini Vehicles Association	Nihon Jidosha Kaikan 1-1-30, Shiba Daimon, Minato-ku, Tokyo 105-0012 Tel.: 03-5472-7861 <http://www.zenkeijikyo.or.jp/>
Japan Automobile Importers Association	Shuwaki Kioi-cho TBR Building 5-7, Kojimachi, Chiyoda-ku, Tokyo 102-0083 Tel.: 03-3222-5421 <http://www.jaia-jp.org/>
Japan Auto Appraisal Institute	Shimbashi Annex 5-35-10, Shimbashi, Minato-ku, Tokyo 105-0004 Tel.: 03-5776-0901 <http://www.jaai.or.jp/>
Automobile Fair Trade Council	1-9-3, Hirakawa-cho, Chiyoda-ku, Tokyo 102-0093 Tel.: 03-3265-7975 <http://www.aftc.or.jp/>
Japan Automobile Service Promotion Association	Roppongi Hills Mori Tower 6-10-1, Roppongi, Minato-ku, Tokyo 106-6177 Tel.: 03-3404-6141 <http://www.jaspa.or.jp/>

Organization Name	Address, Telephone Number, and URL
Japan Automobile Education Foundation	Nihon Jidosha Kaikan 1-1-30, Shiba Daimon, Minato-ku, Tokyo 105-0012 Tel.: 03-5733-3841 <http://www.jaef.or.jp/>
Japan Automobile Transport Technology Association	Shuwaki Kioi-cho TBR Building 5-7, Kojimachi, Chiyoda-ku, Tokyo 102-0083 Tel.: 03-3556-2161 <http://www.ataj.or.jp/>
Japan Industrial Vehicles Association	Tobu Building 1-5-26, Moto-Akasaka, Minato-ku, Tokyo 107-0051 Tel.: 03-3403-5556 <http://www.jiva.or.jp/>
Japan Automobile Federation (JAF)	Nihon Jidosha Kaikan 1-1-30, Shiba Daimon, Minato-ku, Tokyo 105-0012 Tel.: 03-3436-2811 <http://www.jaf.or.jp/>
Automobile Business Association of Japan	Nihon Jidosha Kaikan 1-1-30, Shiba Daimon, Minato-ku, Tokyo 105-0012 Tel.: 03-3578-3880 <http://www.aba-j.or.jp/>
Japan Trucking Association	Shinjuku L-Tower 1-6-1, Nishi-Shinjuku, Shinjuku-ku, Tokyo 163-1519 Tel.: 03-5323-7109 <http://www.jta.or.jp/>
Japan Bus Association	Shin Kokusai Building 3-4-1, Marunouchi, Chiyoda-ku, Tokyo 100-0005 Tel.: 03-3216-4011 <http://www.bus.or.jp/>
Japan Automobile Tyre Manufacturers Association	33 Mori Building 3-8-21, Toranomon, Minato-ku, Tokyo 105-0001 Tel.: 03-3435-9091 <http://www.jatma.or.jp/>
Japan Automobile Product Liability Consultation Center	Toranomon 1-chome Mori Building 1-19-5, Toranomon, Minato-ku, Tokyo 105-0001 Tel.: 03-3502-0282 <http://www.adr.or.jp/>

Organization Name	Address, Telephone Number, and URL
Japan Automobile Recycling Promotion Center	Nihon Jidosha Kaikan 1-1-30, Shiba Daimon, Minato-ku, Tokyo 105-0012 Tel.: 03-5733-8300 <http://www.jarc.or.jp/>
Japan Auto Recycling Partnership	Nihon Jidosha Kaikan 1-1-30, Shiba Daimon, Minato-ku, Tokyo 105-0012 Tel.: 03-5405-6155 <http://www.jarp.org/>

B. Automobile Manufacturers

Company Name	Address, Telephone Number, and URL
Isuzu Motors Limited	Omori Bellport, A Building 6-26-1, Minami-Oi, Shinagawa-ku, Tokyo 140-8722 Tel.: 03-5471-1141 <http://www.isuzu.co.jp/>
Suzuki Motor Corporation	300, Takatsuka-cho, Hamamatsu City, Shizuoka 432-8611 Tel.: 053-440-2061 <http://www.suzuki.co.jp/>
Daihatsu Motor Co.,Ltd.	1-1, Daihatsu-cho, Ikeda City, Osaka 563-8651 Tel.: 072-751-8811 <http://www.daihatsu.co.jp/>
Toyota Motor Corporation	1, Toyota-cho, Toyota City, Aichi 471-8571 Tel.: 0565-28-2121 <http://www.toyota.co.jp/>
Nissan Motor Co., Ltd.	6-17-1, Ginza, Chuo-ku, Tokyo 104-8023 Tel.: 03-3543-5523 <http://www.nissan.co.jp/>
Nissan Diesel Motor Co., Ltd.	1-1, Ageo City, Saitama 362-8523 Tel.: 048-726-7601 <http://www.nissandiesel.co.jp/>
Hino Motors, Ltd.	3-1-1, Hinodai, Hino City, Tokyo 191-8660 Tel.: 042-586-5111 <http://www.hino.co.jp/>
Fuji Heavy Industries Ltd.	1-7-2, Nishi-Shinjuku, Shinjuku-ku, Tokyo 160-8316 Tel.: 03-3347-2111 <http://www.fhi.co.jp/>

Company Name	Address, Telephone Number, and URL
Honda Motor Co., Ltd.	2-1-1, Minami Aoyama, Minato-ku, Tokyo 107-8556 Tel.:03-3423-1111 <http://www.honda.co.jp/>
Mazda Motor Corporation	3-1, Shinchi, Fuchu-cho, Aki-gun, Hiroshima 730-8670 Tel.: 082-282-1111 <http://www.mazda.co.jp/>
Mitsubishi Motors Corporation	2-16-4, Konan, Minato-ku, Tokyo 108-8410 Tel.: 03-6719-2111 <http://www.mitsubishi-motors.co.jp/>
Mitsubishi Fuso Truck and Bus Corporation	2-16-4, Konan, Minato-ku, Tokyo 108-8258 Tel.: 03-6719-4601 <http://www.mitsubishi-fuso.com/>

C. Leading Parts Manufacturers

Company Name	Address, Telephone Number, and URL	Annual Sales FY Ending (Non-consolidated basis) (Unit:¥1 million)
Denso Corporation	1-1, Showa-machi, Kariya City, Aichi 448-8661 Tel.: 0566-25-5511 <http://www.denso.co.jp/>	March 2004 1,708,505
Aisin Seiki Co., Ltd.	2-1, Asahi-machi, Kariya City, Aichi 448-8650 Tel.: 0566-24-8441 <http://www.aisin.co.jp/>	March 2004 601,872
Aisin AW Co., Ltd.	10, Takane, Fujii-cho, Anjo City, Aichi 444-1192 Tel.: 0566-73-1111 <http://www.aisin-aw.co.jp/>	December 2003 555,800
Yazaki Corporation	Mita Kokusai Building 1-4-28, Mita, Minato-ku, Tokyo 108-8333 Tel.: 03-3455-8811 <http://www.yazaki-group.com/>	June 2004 540,300
Jatco Ltd.	700-1, Imaizumi, Fuji City, Shizuoka 417-8585 Tel.: 0545-51-0047 <http://www.jatco.co.jp/>	March 2004 416,506
NSK Ltd.	1-6-3, Osaki, Shinagawa-ku, Tokyo 141-8560 Tel.: 03-3779-7111 <http://www.jp.nsk.com/jp/>	March 2004 348,842

Company Name	Address, Telephone Number, and URL	Annual Sales FY Ending (Non-consolidated basis) (Unit:¥1 million)
Calsonic Kansei Corporation	5-24-15, Minamidai, Nakano-ku, Tokyo 164-8602 Tel.: 03-5385-0111 <http://www.calsonickansei.co.jp/>	March 2004 331,992
Koyo Co., Ltd.	3-5-8, Minami-Semba, Chuo-ku, Osaka City,Osaka 542-8502 Tel.: 06-6271-8451 <http://www.koyo-seiko.co.jp/>	March 2004 317,687
Toyoda Gosei Co., Ltd.	1, Nagahata, Haruhi-machi, Nishikasugai-gun, Aichi 452-8564 Tel.: 052-400-1055 <http://www.toyoda-gosei.co.jp/>	March 2004 290,666
Sumitomo Wiring Systems, Ltd.	1-14, Nishi-Suehiro-cho, Yokkaichi City, Mie 510-8503 Tel.: 0593-54-6200 <http://www.sws.co.jp/>	March 2004 273,382
NOK Corporation	Seiwa Building 1-12-15, Shiba Daimon, Minato-ku, Tokyo 105-8585 Tel.: 03-3432-4211 <http://www.nok.co.jp/>	March 2004 266,985
NTN Corporation	1-3-17, Kyomachibori, Nishi-ku, Osaka 550-0003 Tel.: 06-6443-5001 <http://www.ntn.co.jp/>	March 2004 261,710
Bosch Automotive Systems Corporation	3-6-7, Shibuya, Shibuya-ku, Tokyo 150-8360 Tel.: 03-3400-1551 <http://www.bosch.co.jp/jp/companies/rbaj.html>	December 2003 245,404
Tokai Rika Co., Ltd.	3-260, Toyota, Oguchi-cho, Niwa-gun, Aichi 480-0195 Tel.: 0587-95-5211 <http://www.tokai-rika.co.jp/>	March 2004 241,895
Alpine Electronics, Inc.	1-1-8, Nishigotanda, Shinagawa-ku, Tokyo 141-8501 Tel.: 03-3494-1101 <http://www.alpine.com/>	March 2004 159,810
Stanley Electric Co., Ltd.	2-9-13, Nakameguro, Meguro-ku, Tokyo 153-8636 Tel.: 03-3710-2222 <http://www.stanley.co.jp/>	March 2004 208,648

Company Name	Address, Telephone Number, and URL	Annual Sales FY Ending (Non-consolidated basis) (Unit:¥1 million)
Yachiyo Industry Co., Ltd.	393, Kashiwahara, Sayama City, Saitama 350-1335 Tel.: 04-2955-1211 <http://www.yachiyo-ind.co.jp/>	June 2004 203,353
NGK Spark Plug Co., Ltd.	14-18, Takatsuji-cho, Mizuho-ku, Nagoya City, Aichi 467-8525 Tel.: 052-872-5915 <http://www.ngkntk.co.jp/>	March 2004 195,784
Futaba Industrial Co., Ltd.	1, Ochaya, Aza, Hashime-cho, Okazaki City, Aichi 444-8558 Tel.: 0564-31-2211 <http://www.futabasangyo.com/>	March 2004 195,076
Advics Co., Ltd.	2-1, Showa-machi, Kariya City, Aichi 448-8688 Tel.: 0566-63-8000 <http://www.advics.co.jp/>	March 2004 211,800
Kayaba Industry Co., Ltd.	World Trade Center Building 2-4-1, Hamamatsu-cho, Minato-ku, Tokyo 105-6111 Tel.: 03-3435-3580 <http://www.kyb.co.jp/>	March 2004 187,487
NHK Spring Co., Ltd.	3-10, Fukuura, Kanazawa-ku, Yokohama City 236-0004 Tel.: 045-786-7511 <http://www.nhkspg.co.jp/>	March 2004 172,566
Koito Manufacturing Co., Ltd.	4-8-3, Takanawa, Minato-ku, Tokyo 108-8711 Tel.: 03-3443-7111 <http://www.koito.co.jp/>	March 2004 170,115
Toyoda Machine Works, Ltd.	1-1, Asahi-machi, Kariya City, Aichi 448-8652 Tel.: 0566-25-5111 <http://www.toyoda-kouki.co.jp/>	March 2004 168,339
Asmo Co., Ltd.	390, Umeda, Kosai City, Shizuoka 431-0493 Tel.: 053-572-3311 <http://www.asmo.co.jp/>	March 2004 165,134
Keihin Corporation	Shinjuku Nomura Building 1-26-2, Nishi-Shinjuku, Shinjuku-ku, Tokyo 163-0539 Tel.: 03-3345-3411 <http://www.keihin-corp.co.jp/>	March 2004 154,391

Company Name	Address, Telephone Number, and URL	Annual Sales FY Ending (Non-consolidated basis) (Unit:¥1 million)
Topy Industries, Ltd.	5-9, Yonban-cho, Chiyoda-ku, Tokyo 102-8448 Tel.: 03-3265-0111 <http://www.topy.co.jp/>	March 2004 148,468
Sanden Corporation	20, Kotobuki-cho, Isesaki City, Gunma 372-8502 Tel.: 0270-24-1211 <http://www.sanden.co.jp/>	March 2004 143,552
TS Tech Co., Ltd.	3-7-27, Sakae-cho, Asaka City, Saitama 351-0012 Tel.: 048-462-1121 <http://www.tstech.co.jp/>	March 2004 131,928

D. Related Trade Fairs and Exhibitions (regular events)

Tokyo Auto Salon 2005 with NAPAC

Organizer:	Secretariat of the Tokyo Auto Salon Association
Date:	Friday 14 January–Sunday 16 January 2005
Location:	Makuhari Messe (Nippon Convention Center)
Inquiries:	Secretariat of the Tokyo Auto Salon Association c/o Sanei-Shobo Publishing Co.,Ltd. 4-8-16, Kita-Shinjuku, Shinjuku-ku, Tokyo 169-8588 Tel.: 03-3369-9125 e-mail: info@e-autosalon.net <http://www.e-autosalon.net/>

Automotive Electronic Components 2005

Organizer:	Japan Management Association
Date:	Wednesday 20 April–Friday 22 April 2005
Location:	Makuhari Messe (Nippon Convention Center)
Inquiries:	The Secretariat of TECHNO-FRONTIER c/o Japan Management Association 3-1-22, Shiba-Koen, Minato-ku, Tokyo 105-8522 Tel.: 03-3434-1391 e-mail: tf@convention.jma.or.jp <http://www.jma.or.jp/TF/index.html>

Automotive Engineering Exposition 2005

Organizer:	Society of Automotive Engineers of Japan
Date:	Wednesday 18 May–Friday 20 May 2005
Location:	Pacifico Yokohama
Inquiries:	Taiseisha Ltd., Exposition Management Coordinator Kyobashi Mihama Building., 2-5-21, Kyobashi, Chuo-ku, Tokyo 104-0031 Tel.:03-3563-3366 e-mail: jsae-expo@taiseisha.co.jp <http://www.taiseisha.co.jp/>

2005 Automotive Parts Product Solutions Fair

Organizer:	Nikkan Kogyo Shimbun, Ltd.
Date:	Wednesday 15 June–Saturday 18 June 2005
Location:	Tokyo Big Sight (International Convention Center)
Inquiries:	Secretariat of the 2005 Automotive Parts Product Solutions Fair c/o Act International Inc. Ishibashi Building 2-6-2, Shinkawa, Chuo-ku, Tokyo 104-0033 <http://www.nikkan.co.jp/eve/05apps/>

Mobile Electronics Show

Organizer:	Mobile Electronics Show Executive Committee
Date:	Saturday 18 June–Sunday 19 June 2005
Location:	Makuhari Messe (Nippon Convention Center)
Inquiries:	Secretariat of the Mobile Electronics Show Executive Committee c/o Car Audio Planning Office, Kotsu Times K.K. 4th Fl. Uchikanda Shibuya Building 2-16-11, Uchikanda, Chiyoda-ku, Tokyo 101-8524 Tel.: 03-5294-1741 e-mail: info@mes-web.com <http://www.mes-web.com/>

2005 Tokyo Truck Show Biennial

Organizer:	Nissin Co.,Ltd.
Date:	Scheduled for mid-October 2005
Inquiries:	Nissin Co.,Ltd. Tel: 03-3542-7009 e-mail: y-okuda@nissin-news.co.jp <http://www.truck-x.com/>

39th Tokyo Motor Show (2005 Edition)

Organizer:	Japan Automobile Manufacturers Association
Date:	Saturday 21 October–Sunday 6 November 2005
Location:	Makuhari Messe (Nippon Convention Center)
Inquiries:	Japan Automobile Manufacturers Association Nihon Jidosha Kaikan 1-1-30, Shiba Daimon, Minato-ku, Tokyo 105-0012 Tel.: 03-5405-6127 e-mail: webmaster@tokyo-motorshow.com <http://www.tokyo-motorshow.com/>

Procedures for Investing in Japan

I. Summary and Procedures for Establishing a Base in Japan

Figure 1 shows the steps a company must take to establish a base in Japan, from the initial planning stage to the actual establishment of a company. It focuses in detail on the procedures for establishing a company.

More information on each of the necessary procedures (such as documents to be submitted and where to submit them) can be obtained by consulting with a specialist, contacting the appropriate authorities listed in Section II, or checking JETRO publications and the "Investing in Japan" page on the JETRO Web site <http://www.jetro.go.jp/investjapan/index.html>.

A. Establishing a Base in Japan

1. Start-up Types

Table 1 shows each start-up type and the associated requirements. Generally, foreign companies use one of three business structures when establishing a base in Japan: a joint-stock company (*kabushiki gaisha*), a limited liability company (*yugen gaisha*), or a branch (*shiten*) of the parent company.

Of these three, the joint-stock company is most often chosen because of the limited liability to investors, the higher credibility in society, and the advantages in financing, but it also requires a minimum capitalization of ¥10 million. Thus, small-to-medium-size enterprises sometimes choose to establish a limited liability company, with a minimum capital requirement of ¥3 million, or even a branch office, which does not have a minimum capital requirement (see the next section for exceptions to the minimum capitalization requirements).

There are two ways to create a joint-stock company: promotive incorporation (*hokki setsuritsu*), in which the promoters of the company hold all the issued shares, and subscriptive incorporation (*boshu setsuritsu*), in which a public offer is made to attract outside investors. Each method has its own procedures and documents to be submitted. Figure 1 covers only promotive incorporation as it is more common for foreign businesses directly investing in Japan.

Table 1. Start-up Types and Requirements

Start-up type	Business activity	Registration	Minimum capital requirement	Directors required	Internal auditors required	Overseas remittance
Representative office	Not allowed	No	None	No	No	—
Branch	Allowed	Required	None	No	No	No tax is imposed
Joint-stock company	Allowed	Required	¥10 million	At least three	At least one	Taxed at the source on profits, dividends, and royalties
Limited liability company	Allowed	Required	¥3 million	At least one	No	Same as above

2. Exceptions to the Minimum Capital Requirements

As an exceptional measure for minimum capital requirements, the government revised a portion of the Law for Facilitating the Creation of New Business on 1 February 2003 and practically abolished the regulations of minimum capital requirements under certain conditions <http://www.meti.go.jp/english/information/data/cMinimumCapitale.html>.

Both a joint-stock company and a limited liability company can be established with capitalization of more than ¥1 under the following conditions: (1) The company must first prepare and get certified the articles of incorporation, after which it must get the approval of the Bureau of Economy, Trade, and Industry located in the area where the company will be established, (2) if the company cannot fulfill the minimum capital requirements within five years of incorporation, the company status will be changed or the company liquidated, (3) corporate dividends are not allowed while the company has not fulfilled the minimum capital requirements, (4) the company must make its financial status available to the public. The most important point to keep in mind is that the company must fulfill the minimum capital requirements (¥10 million for a joint-stock company and ¥3 million for a limited liability company) within five years of incorporation.

Since this law expires on March 31, 2008, the company must get approval from the Bureau of Economy, Trade, and Industry before this date. This law is under the jurisdiction of Office for New Business, Economic and Industrial Policy Bureau, Ministry of Economy, Trade, and Industry.

3. Important Points Concerning Incorporation

Since the company registration and residency application processes are very complicated and require specialized knowledge, foreign companies investing in Japan normally hire Japanese specialists (such as lawyers or public accountants) who can do business in English.[1] It should be

[1] For contact information of qualified specialists and support services, see “Directory for Doing Business in Japan”

noted that in Japan there are very few joint legal and accounting practices that can provide one-stop service, and that some work may be subcontracted to other qualified specialists that do not exist in Europe or North America, such as judicial scriveners and administrative scriveners.

When a company registration is filed at a registry office, a Certificate of Seal Registration for a representative director is required. Promoters or representative directors of a joint-stock company who are not Japanese and do not have an alien registration certificate will not be able to obtain a Certificate of Seal Registration, and in this case documents may be endorsed with a signature instead. However, each time a signature is used it must be notarized by a notary public of the home country of the non-Japanese promoter or representative director.

B. Investment-Related Laws and Regulations

Major investment-related laws and regulations include the Foreign Exchange and Foreign Trade Control Law, the Commercial Code (Corporate Law), and the Antimonopoly Act. There are also regulations under the Labour Law and the Intellectual Property Rights Law that apply to starting and running a business in Japan. Depending on the type of business, it may also be necessary to obtain a license or approval from a competent authority in accordance with applicable laws and regulations.

1. Foreign Exchange and Foreign Trade Control Law (The Foreign Exchange Law)

The Foreign Exchange and Foreign Trade Control Law stipulates rules for proper management of foreign trade based on the principle of freedom of foreign trade. When a foreign company directly invests in Japan, it must follow the procedures for "ex post facto notification in principle, prior permission or notification in part" based on this law.

2. Commercial Code (Corporate Law)

The Commercial Code (Corporate Law) in Japan defines three types of companies, excluding the limited liability company (*yugen gaisha*).[2] In recent years, many revisions and modifications have been made to the law to promote more flexible restructuring of companies. Specifically, these have included simplification and rationalization of M&A laws and regulations, introduction of legislation on stock-swap and stock-transfer systems, establishment of legislation on company split-offs, revision of Corporate Reorganization Law, and the adoption of a system complying with internationally accepted accounting standards.

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on JETRO's "Investing in Japan" Web site <http://www.investjapan.org>.

[2] Rules and regulations related to limited liability companies (*yugen gaisha*) are stipulated in the Limited Liability Company Law (*Yugen Gaisha Hou*).

3. The Act Concerning Prohibition of Private Monopolization and Maintenance of Fair Trade (Antimonopoly Act)

The Antimonopoly Act promotes free and fair competition by restricting private monopoly and unfair trade. In recent years, however, deregulation is underway that essentially lifts the ban on establishing holding companies and simplifies the M&A reporting system, among other things.

C. Preferential Treatment for Investment in Japan

1. Law on Extraordinary Measures Related to the Promotion of Imports and the Facilitation of Inward Investment Activities (Import and Inward Investment Promotion Law, FAZ Law)

Foreign companies that invest in the areas designated as Foreign Access Zones (FAZ) and can also meet the requirements for specific investors in Japan can receive the following preferential treatment. The effective period of this law has been extended to May 2006.

(1) Although the carry-forward period of operating losses is usually five years from the start of business, this law allows investors to carry forward losses up to seven years.
(2) The Organization for Small & Medium Enterprises and Regional Innovation, JAPAN (SMRJ) guarantees loans for capital investment and working capital for businesses.
(3) When a small- or medium-size foreign private company obtains loans, the Japan Small and Medium Enterprise Corporation (JASMEC) guarantees the loans.
(4) The Development Bank of Japan (DBJ) and the Japan Finance Corporation for Small and Medium Enterprise (JASME) offer low-interest loans.

As of December 2004, there are 22 areas designated as FAZ. For further information on each FAZ, see the JETRO Web site <http://www.jetro.go.jp/en/jetro/activities/region/faz>.

2. Low-Interest Loans from the Development Bank of Japan (DBJ)

The DBJ offers low-interest, long-term loans to foreign companies making serious investment in Japan for the first time, or to those whose investment is expected to contribute to advances in Japan's industrial structure, create new industries, or increase employment.[3]

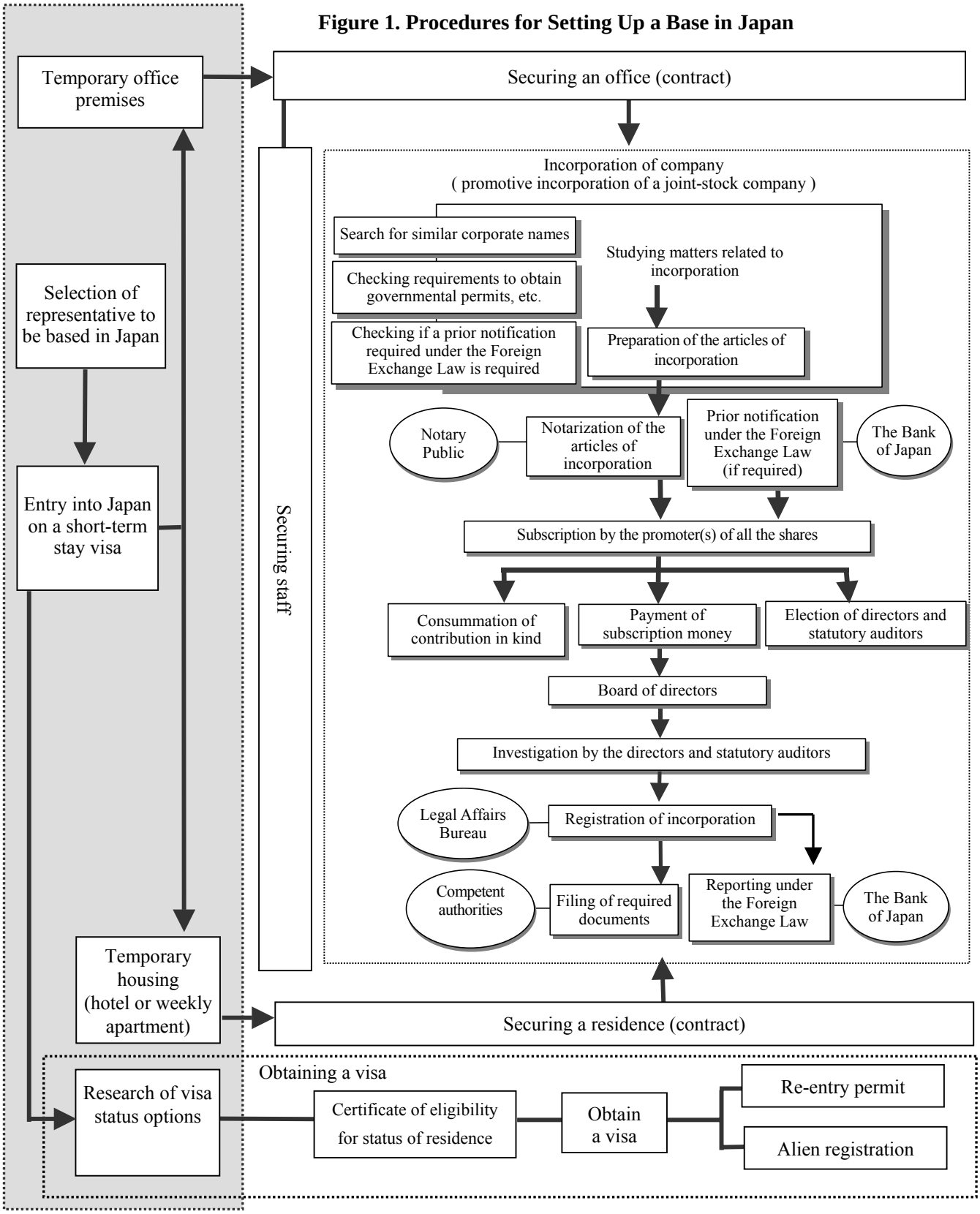
3. Subsidies, Tax Exemptions, and Low-Interest Loans from Prefectural Governments

Prefectural governments also offer various forms of support to foreign businesses investing in Japan. The type and degree of support differs between prefectures. Interested companies can obtain more information by contacting each prefecture directly, reading the Regional

[3]To inquire about the DBJ's low-interest loan program, see the Development Bank of Japan in Section II-A for contact information.

Information on JETRO's Web site <http://www.jetro.go.jp/en/invest/region>, or visiting a local JETRO Trade Information Center. See <http://www.jetro.go.jp/en/jetro/network> for information on JETRO Trade Information Centers.

Figure 1. Procedures for Setting Up a Base in Japan



Note 1: Application for certificate of eligibility for status of residence and opening of a bank account should be made after establishing an office and a residence (i.e. after signing lease contracts for an office or residence).

Note 2: For inquiries about incorporation procedures and visa applications, please refer to Section II of this reference.

Source: *"Setting Up Enterprises in Japan"* by JETRO (2003) and *"The Japan Start-up Handbook: Procedures and Costs for Foreign Companies Establishing a Japanese Base"* by JETRO (1999)

II. Sources of Information on Investment in Japan

A. Governmental Offices for the Invest Japan Program

	Organization	Division	Contact	Web site
1	Cabinet Office	Office of Foreign Direct Investment Promotion	03-3581-8950 (direct) invest-japan@mfs.cao.go.jp	http://www.investment-japan.net/jp/index.htm (Japanese) http://www.investment-japan.net/index.htm (English)
2	Financial Service Agency	Planning and Coordination Bureau, International Affairs Division	03-3506-6049 (direct) invest-japan@fsa.go.jp	http://www.fsa.go.jp/invest/20030603.html (Japanese) http://www.fsa.go.jp/invest/20030603e.html (English)
3	Ministry of Internal Affairs and Communications	Minister's Secretariat, Policy Planning Division	03-5253-5156 (direct) invest-japan@soumu.go.jp	http://www.soumu.go.jp/kyoutsuu/tainiti.html (Japanese)
4	Ministry of Justice	Minister's Secretariat, Secretarial Division	03-3580-4111 ext. 2087 invest-japan@moj.go.jp	http://www.moj.go.jp/KANBOU/TAINICHI/tainichi01.html (Japanese)
5	Ministry of Foreign Affairs	Economic Affairs Bureau, Second International Economic Affairs Division	03-3580-3311 ext. 5055 invest-japan@mofa.go.jp	http://www.mofa.go.jp/mofaj/gaiko/tn_toshi/madoguchi/ (Japanese)
6	Ministry of Finance	International Bureau, Research Division	03-3581-8015 (direct) invest-japan@mof.go.jp	http://www.mof.go.jp/invest_japan (Japanese) http://www.mof.go.jp/invest_japan/index_e.htm (English)
7	Ministry of Education, Culture, Sports, Science and Technology	Minister's Secretariat, Policy Division	03-5253-4111 ext. 3472 invest-japan@mext.go.jp	http://www.mext.go.jp/a_menu/tainichi/main.htm (Japanese)
8	Ministry of Health, Labour and Welfare	Counsellor's Office (Labour Policy) to Director-General for Policy Planning and Evaluation	03-5253-1111 ext. 7718 invest-japan@mhlw.go.jp	http://www.mhlw.go.jp/general/seido/toukatsu/tousi/ (Japanese)
9	Ministry of Agriculture, Forestry and Fishery	General Food Policy Bureau, Food Industry Policy Division	03-3502-8111 ext. 3222,3194 invest_japan@nm.maff.go.jp	http://www.maff.go.jp/sogo_shokuryo/toushi.htm (Japanese)
10	Ministry of Economy, Trade and Industry	The Invest Japan Office	03-3501-1774 (direct) invest-japan@meti.go.jp	http://www.meti.go.jp/policy/investment (Japanese) For English, please click "English page" of the above URL.
11	Ministry of Land, Infrastructure and Transport	Policy Bureau, International Planning Division, International Transport Policy Office	03-5253-8313 (direct) invest-japan@mlit.go.jp	http://www.mlit.go.jp/sogoseisaku/invest/index_.html (Japanese)

12	Ministry of the Environment	Environmental Policy Bureau, Environment and Economy Division	03-5521-8324 (direct) invest-japan@env.go.jp	http://www.env.go.jp/policy/invest_j (Japanese)
13	Japan External Trade Organization (JETRO)	Invest Japan Business Support Center (IBSC)[*1]	03-3582 4685 (direct) invest-japan@jetro.go.jp	http://www.jetro.go.jp/invest/services/ibsc.html (Japanese) http://www.jetro.go.jp/en/invest/investmentservices/facility.html (English)
14	Development Bank of Japan	International Department, Center for the Promotion of Direct Investment in Japan	03-3244-1770 (direct) dbjmail@dbj.go.jp	http://www.dbj.go.jp (Japanese) http://www.dbj.go.jp/english/index.html (English)

Note 1: JETRO IBSC provides comprehensive information on the administrative procedures for foreign companies looking to invest in a business in Japan.

B. Sources of Information in Investment in Japan

	Information	Organization	Division	Contact	Web site
Applicable Laws and Regulations					
1	Foreign Exchange and Foreign Trade Law	Bank of Japan	Balance of Payment Division, International Department	03-3277-2107 (direct) post.ind6@boj.or.jp	http://www.boj.or.jp/about/tame/tameindex.htm (Japanese)
2	Commercial Code	Ministry of Justice	Commercial and Corporation Registration and Deposit Division, Civil Affairs Bureau	03-3580-4111 (main) webmaster@moj.go.jp (main)	http://www.moj.go.jp/MINJI/index.html (Japanese)
3	Antimonopoly Act	Japan Fair Trade Commission		03-3581-5471 (main)	http://www.jftc.go.jp/dokusen/index.htm (Japanese)
Preferential Treatment for Investors in Japan					
4	Law for Facilitating the Creation of New Business, Law for Supporting for the Challenge of SMEs *(Chusho kigyou Chosen Sien Hou)*	Ministry of Economy, Trade and Industry	Office for New Business, Economic and Industrial Policy Bureau	03-3501-1569 (main)	http://www.meti.go.jp/policy/mincap/index.html (Japanese) http://www.meti.go.jp/english/information/data/cMinimumCapitale.html (English)
	Same as above	Same as above	Regional Bureaus of Economy, Trade and Industry	webmail@meti.go.jp (main)	http://www.meti.go.jp/policy/mincap/index.html (information on regional bureaus, in Japanese)

5	Law on Extraordinary Measures for the Promotion of Import and the Facilitation of Foreign Direct Investment in Japan (FAZ Law)	The Organization for Small & Medium Enterprises and Regional Innovation, JAPAN		03-3433-8811 (main) webmaster@isif.go.jp (main)	http://www.smrj.go.jp/keiei/saimu/law/000288.html (Japanese)
	Same as above	Ministry of Economy, Trade and Industry	Regional Bureaus of Economy, Trade and Industry	webmail@meti.go.jp (main)	http://www.meti.go.jp/network/data/b100001j.html (information on regional bureaus, in Japanese)
	Same as above	Japan Finance Corporation for Small and Medium Enterprise		03-3270-1266 (General Affairs Department)	http://www.jasme.go.jp (Japanese) http://www.jasme.go.jp/indexe.html (English)
6	Special loan program for the promotion of direct investment in Japan	Development Bank of Japan	International Department	03-3244-1900 (General Affairs Department)	http://www.dbj.go.jp (Japanese) http://www.dbj.go.jp/english/index.html (English)
Procedures for Incorporation					
7	Procedures for Incorporation - Registration of joint-stock company - Obtaining a certified copy of company registration - Certificate of Seal Registration for a representative director	Regional Legal Affairs Bureau and Registry Office in the relevant area			http://www.moj.go.jp/MINJI/minji10.html (a list of Legal Affairs Bureaus in each area is available, in Japanese)
	- Notification of articles of incorporation	Notary Office in the relevant area			http://www.koshonin.gr.jp/address.htm (a list of notary offices in each area is available, in Japanese)
Procedures after Incorporation					
8	Procedures after incorporation - Notification of establishment of corporation - Notification of consumption tax payer etc.	Tax Office in the relevant area*[2]			http://www.nta.go.jp/category/syoukai/syozaiti.htm (a list of tax offices in each area is available, in Japanese)
9	Filing of notifications related to the corporation (within Tokyo's 23 wards)	Local Tax Office in Tokyo			http://www.tax.metro.tokyo.jp/jimusho (a list of tax offices in Tokyo)

	Filing of notifications related to the corporation (outside of Tokyo's 23 wards)	Local Tax Office or City Office in the relevant area			http://www.soumu.go.jp/czaisei/czaisei_seido/ichiran07.html (a list of local tax offices in each area is available, in Japanese) - For information on city offices see the Web site for the prefecture where the city is located
10	Distribution of a free guidebook on metropolitan taxes in English, Chinese, and Korean (postage paid by the recipient)	Bureau of Taxation, Tokyo Metropolitan Government	General Affairs Division, General Affairs Department	03-5388-2927 (direct)	http://www.tax.metro.tokyo.jp/oshirase/2003/200309a.htm (information in English, Chinese, and Korean on distribution of the 2003 guidebook)
Procedures for Social Insurance					
11	Procedures related to industrial insurance - Business report - Employment policy - Labor insurance- related notifications	Labor Standards Bureau in the relevant area			http://www.mhlw.go.jp/general/sosiki/chihou/ (a list of Labor Standards Bureaus in each area is available, in Japanese)
12	Notification of establishment of relationship between an insurer and the insured under the industrial insurance and employment insurance system - Notification of establishment of relationship between an insurer and the insured under the employment insurance system	Public Employment Security Office in the relevant area			Same as above
13	Procedures related to health insurance and social security pension	Social Insurance Office in the relevant area			http://www.sia.go.jp/seido/index.htm (Web site on health insurance and social security pension provided by the Social Insurance Agency, in Japanese)
Other Useful Sources of Information					
14	Search for telephone numbers and addresses	Town Page (Japan's telephone directory)			http://itp.ne.jp (Japanese) http://english.itp.ne.jp/ (English)
15	Information on investment in Japan	Japan External Trade Organization (JETRO)		03-3505-1854 (main) webmaster@jetro.go.jp (main)	http://www.jetro.go.jp/

Note 2: Only the Tokyo Taxation Bureau has set up a dedicated counter for non-Japanese people. Telephone: 03-3821-9070.

III. JETRO Services

A. JETRO Invest Japan Business Support Center (IBSC)

JETRO IBSC provides foreign companies with information necessary for investment in Japan.
<http://www.jetro.go.jp/en/invest/investmentservices/facility.html>

IBSC provides office space free of charge to foreign companies, and the advisors and JETRO staff provide useful information and consultation.

For further information or to submit an application, please contact the nearest JETRO office . <http://www.jetro.go.jp/en/jetro/network>

1. Providing Office Space

IBSC has office space free of charge for foreigners hoping to enter the Japanese market or develop business operations in Japan. The Center's office space is equipped with all the tools necessary to immediately launch business activities in Japan.

2. Consultation with Investment Advisors

IBSC has highly specialized resident advisors (market- and industry-specific advisors, and corporate management advisors) who can help you with the market information and investment consulting necessary to enter the market. Investment advisors are also available at some JETRO overseas offices to provide information and consultation regarding direct investment in Japan to potential investors.

3. Information on Government Forms and Procedures

Backed by the Japanese government, the IBSC serves as a centralized contact point for the administrative procedures required of foreign companies looking to do business in Japan.

4. Introducing Support Companies and Arranging Visits to Potential Properties

IBSC can introduce agents, recruiting companies, real estate companies, and other companies that can help foreign companies investing in Japan. Through its contacts with local governments, IBSC also gathers information on real estate in specific regions, arranges visits to potential properties, and sets up meetings with local government representatives.

B. Providing Information on Investment in Japan

1. The “Investing in Japan” Web Site

For foreign businesses interested in investing in Japan, The JETRO Web site ”Investing in Japan” provides comprehensive information and data on Japan’s investment environment. This includes macro economic data, related laws and regulations, and examples of foreign companies that have been successful in establishing their business in Japan. <http://www.investjapan.org>

2. Publications

JETRO publishes many books that summarize laws and procedures concerning investment in Japan.

For information on JETRO publications, see the JETRO Web page below.
<http://www.jnews.jetro.go.jp/en/index.html>

3. Seminars on Investment in Japan

JETRO organizes seminars and individual consultations in various countries to provide information on a variety of themes, such as trends in the Japanese market, investment climate, and laws and procedures concerning investment in Japan.

4. Library

At the JETRO Business Library, visitors can look through JETRO publications and trade and investment-related information from other countries as well.
<http://www.jetro.go.jp/en/jetro/facilities/library>

List of Published Reports

JETRO Japanese Market Report series is designed to give an outline of the Japanese market and thereby assist foreign companies in promoting the investment to Japan.

The following is a list of titles with publication dates of the market studies that have been conducted. These reports are available on our website at <http://www.jetro.go.jp/en/market/reports/>.

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