4. Transportation Machine Sector

4.1. Automobiles

4.1.1 Supply and demand trend

(1) Outline

The Lehman shock that struck a heavy blow globally in the fall of 2008 caused a grave crisis to the automobile industry not only in Japan but also in the rest of the world. In the U.S., that had had a strong presence in the market, the three big players, GM, Ford and Chrysler, were faced with a management crisis one after another, and the North American market, which had expected to continue growing, shrunk. The Japanese automakers, which had brought foreign currencies to Japan by exporting their products to the market in North America, were hard hit naturally, suffering a sharp decline in export.

In the supply-demand trend of the automobile industry in 2009, when the industry had a major turning point, the domestic production experienced a big fall of about 38% from 2008, totaling to ¥15,144.2 billion (Ministry of Economy, Trade and Industry, "Annual Report of Machinery Statistics 2009"). Considering that the output was over ¥24 trillion in 2007 and 2008 when the industry enjoyed a global boom in automobiles, the situation in 2009 may well be expressed by the words a "sudden plunge."

The number of automobiles produced and sold at home showed a downward trend: 7.93 million (down 31.5% year on year) and 4.609 million cars (down 9.3%), respectively.

(2) Production and demand

Fig. 4.1.1 Trend of domestic automobile production by the type of vehicle

No. of cars

	Passenger cars				Trucks			
Year	Standard-sized	Small-sized	Light motor	Subtotal	Standard-sized	Small-sized	Light motor	Subtotal
2005	4,191,360	3,416,622	1,408,753	9,016,735	723,663	436,763	546,185	1,706,611
2006	4,915,428	3,302,265	1,537,210	9,754,903	699,410	419,404	521,879	1,640,693
2007	5,864,354	2,638,842	1,441,441	9,944,637	718,901	365,532	453,587	1,538,020
2008	5,786,333	2,714,413	1,427,397	9,928,143	734,923	329,758	443,718	1,508,399
2009	3,459,589	2,145,279	1,257,293	6,862,161	371,685	215,139	398,276	985,100

	Buses			Total
Year	Large-sized	Small-sized	Subtotal	
2005	11,763	64,550	76,313	10,799,659
2006	11,063	77,574	88,637	11,484,233
2007	11,516	102,154	113,670	11,596,327
2008	11,660	127,442	139,102	11,575,644
2009	9,243	78,012	87,255	7,934,516

Note: Of passenger cars, "standard-sized cars" mean the cars with a cylinder volume over 2,000ml, "small-sized cars," the cars with a cylinder volume over 660ml but less than 2,000ml and "light motor cars," the cars with a cylinder volume less than 660ml.

Source: Based on the Japan Automobile Manufacturers Association, "Automobile Industry in Japan 2010" (May 2010).

The domestic production of four-wheeled vehicles continued to increase in 2002 and after, followed by a slight drop in 2008, and this upward trend stopped in 2009 with about 7.934 million (Fig. 4.1.1). The production of passenger cars, trucks and buses all decreased: that of passenger cars was 6.862 million (down 30.9% year on year), that of trucks, 985,000 (down 34.7%) and that of buses, 87,000 (down 37.3%) Standard-sized trucks had an especially sharp decline of 49.4% year on year with 372,000, accompanied by standard-sized passenger cars with 3.460 million (down 40.2%). Smaller trucks and passenger cars showed a relatively slow fall: the output of light trucks was 398,000 (down 10.2%) and that of light passenger cars, 1.257 million (down 11.9%). This reflected the tendency for drivers to prefer light vehicles in Japan. The situation of the number of passenger cars produced until 2007 shows an upward trend of the output of standard-sized cars and a slight declining tendency and a small increase and then a little fall for small-sized and light vehicles. The results in 2009 suggest that the size of automobile production in Japan in the future will depend on the output of small and light cars.

Fig. 4.1.2 Trend of domestic automobile production by manufacturer

No. of cars

Year	Toyota	Nissan	Mazda	Mitsubishi	Isuzu	Daihatsu	Honda	Fuji
2005	3,789,582	1,451,212	864,929	664,900	210,253	724,509	1,261,994	469,497
2006	4,194,188	1,234,400	966,547	758,478	230,807	791,291	1,332,866	482,283
2007	4,226,137	1,179,080	995,511	846,083	240,287	786,601	1,331,845	475,850
2008	4,012,388	1,293,082	1,078,690	853,943	253,913	793,257	1,264,381	524,916
2009	2,792,274	894,575	717,175	426,530	120,110	684,255	840,924	408,399

Year	UD Trucks	Hino	Suzuki	Mitsubishi Fuso	Others	All automakers, total
2005	41,071	96,985	1,090,786	132,274	1,667	10,799,659
2006	42,833	100,122	1,206,805	141,503	2,110	11,484,233
2007	45,993	106,893	1,218,297	141,280	2,470	11,596,327
2008	47,960	106,216	1,218,235	126,184	2,479	11,575,644
2009	19,831	66,670	908,302	54,467	545	7,934,057

Note: The figure for the “All automakers, total” for 2009 differs from that in Figure 4.1.1 but the data of the source was shown here as it is.

Source: Based on the statistical data on the website of the Japan Automobile Manufacturers Association (http://www.jama.or.jp/).

Fig. 4.1.2 shows that the size of decrease differs from manufacturer to manufacturer. The automaker that experienced the biggest drop was UD Trucks Corp.[1] with a decline of 58.7% year on year with 20,000, accompanied by Mitsubishi Fuso with a 56.8% fell with 54,000. It can thus be pointed out that the manufacturers focusing on the truck segment got damaged most. By contrast, the size of decrease was the smallest at Daihatsu Motor Co. that has concentrated on light cars: down 13.7% (684,000). It can be considered that as stated above, the output of small-sized and light-weight cars remained relatively stable at the time of recession.

Now let’s look at the trend of domestic sales of automobiles (Fig. 4.1.3). The number of automobiles sold in Japan in 2009 was 4.609 million or a decline of 9.3% from the previous year;

[1] This company changed its name from Nissan Diesel into UD Trucks in February 2010.

this was the drop for the sixth consecutive year after 2003 when the figure was 5.828 million. As in the previous years, the sales of trucks fell most of all to 673,000 (down 19.8% year on year), and this probably reflected the reluctance of businesses to buy trucks. In addition, considering the fact that, of the 11.56 million cars produced in 2008, those sold at home were 5.082 million, it can be seen that as much as nearly 60% of automobiles were made for overseas markets. In 2009, the total automobile production was 7.934 million, of which 4.609 million or 58.1% were sold in Japan; these figures tell us how difficult the export market in 2009 was for Japanese automakers.

Fig. 4.1.3 Trend of domestic automobile sales by the type of vehicle

No. of cars

	Passenger cars				Trucks			
Year	Standard-sized	Small-sized	Light motor	Subtotal	Standard-sized	Small-sized	Light motor	Subtotal
2005	1,271,349	2,089,992	1,387,068	4,748,409	197,548	351,708	536,648	1,085,904
2006	1,225,867	1,908,267	1,507,598	4,641,732	209,283	354,870	516,021	1,080,174
2007	1,299,168	1,654,025	1,447,106	4,400,299	171,998	293,021	472,713	937,732
2008	1,250,987	1,549,677	1,426,979	4,227,643	146,690	249,655	442,914	839,259
2009	1,160,175	1,480,137	1,283,429	3,923,741	87,692	180,509	404,742	672,943

	Buses			Total
Year	Large-sized	Small-sized	Subtotal	
2005	5,856	11,898	17,754	5,852,067
2006	6,064	11,536	17,600	5,739,506
2007	5,153	10,464	15,617	5,353,648
2008	5,357	9,976	15,333	5,082,235
2009	4,234	8,338	12,572	4,609,256

Source: Same as that for Figure 4.1.1.

Fig. 4.1.4 Trend of domestic automobile sales by manufacturer

No. of cars

Year	Toyota	Nissan	Mazda	Mitsubishi	Isuzu	Daihatsu	Honda	Fuji
2005	1,703,185	866,226	286,919	244,251	84,197	601,154	714,115	258,217
2006	1,660,380	766,763	269,152	263,488	91,982	622,484	702,291	245,234
2007	1,551,876	721,025	254,061	226,913	69,723	626,847	621,935	225,818
2008	1,443,335	678,160	244,532	189,943	59,696	642,464	624,547	206,743
2009	1,346,419	599,466	204,296	159,815	36,695	596,215	625,510	173,488

Year	UD Trucks	Hino	Suzuki	Mitsubishi Fuso	Lexus	Others	All automakers, total
2005	21,407	54,528	695,787	61,171	10,293	250,617	5,852,067
2006	19,754	53,952	691,033	71,414	31,097	250,482	5,739,506
2007	14,988	47,310	671,264	50,520	34,803	236,565	5,353,648
2008	12,562	40,666	670,485	40,522	25,945	202,735	5,082,335
2009	6,939	24,434	617,229	22,104	28,167	168,479	4,609,256

Source: Same as that for Fig. 4.1.2.

Figure 4.1.4 shows the automobile sales in Japan by manufacturer. In 2009, a year-on-year increase was recorded only by Honda (626,000; up 0.2%) and Lexus (28,000; up 8.6%), while all the other manufacturers suffered a negative growth. What is noteworthy is the figures of this Honda and Toyota (1.347 million; down 6.7%): these automakers registered a slight increase or decrease in sales

as compared with Nissan and Mazda, which sell cars of a similar class to Honda and Toyota. The good performance of the two companies was highly dependent on the large sales of their models, including Toyota's Prius that achieved the greatest number of cars sold in the passenger car market in 2009, Honda's FIT and Toyota's Vitz. The sales of Prius in 2009 totaled to 209,000, up 285.7% year on year, and those of FIT and Vitz slightly decreased with 157,000 or down 10.1% and 118,000 or down 4.6%, respectively; the remarkable growth of Prius and even the small fall of FIT and Vitz greatly contributed to the performance of the two automakers in the dull market as a whole. In addition, Insight, the model ranking fifth in sales in 2009, is the hybrid electric vehicle (HEV) Honda first introduced into the Japanese market; its sales totaled to 93,000, recording a higher growth than Toyota's Carolla.[2]

The subsidy program for eco-friendly cars implemented from April 2009 to the end of September 2010 probably helped expand replacement demand for HEVs, such as Prius and Insight. The tax cut policy will be continued after September 2010, too, and this trend is likely to continue for some time.

(3) Export and import

Fig. 4.1.5 Trend of automobile export by the type of vehicle

No. of cars

	Passenger cars				Trucks			
Year	Standard-sized	Small-sized	Light motor	Subtotal	Standard-sized	Small-sized	Light motor	Subtotal
2005	3,164,603	1,198,273	292	4,363,168	521,856	89,938	162	611,956
2006	3,843,387	1,451,302	808	5,295,497	488,644	89,189	141	577,974
2007	4,305,067	1,505,281	1,611	5,811,959	527,060	89,078	312	616,450
2008	4,187,227	1,727,317	885	5,915,429	567,596	90,581	41	658,218
2009	2,403,359	804,980	300	3,208,639	267,060	48,447	0	315,507

	Buses			Total
Year	Large-sized	Small-sized	Subtotal	
2005	9,953	67,984	77,937	5,053,061
2006	11,565	81,636	93,201	5,966,672
2007	13,868	107,663	121,531	6,549,940
2008	17,527	135,917	153,444	6,727,091
2009	11,106	80,916	92,022	3,616,168

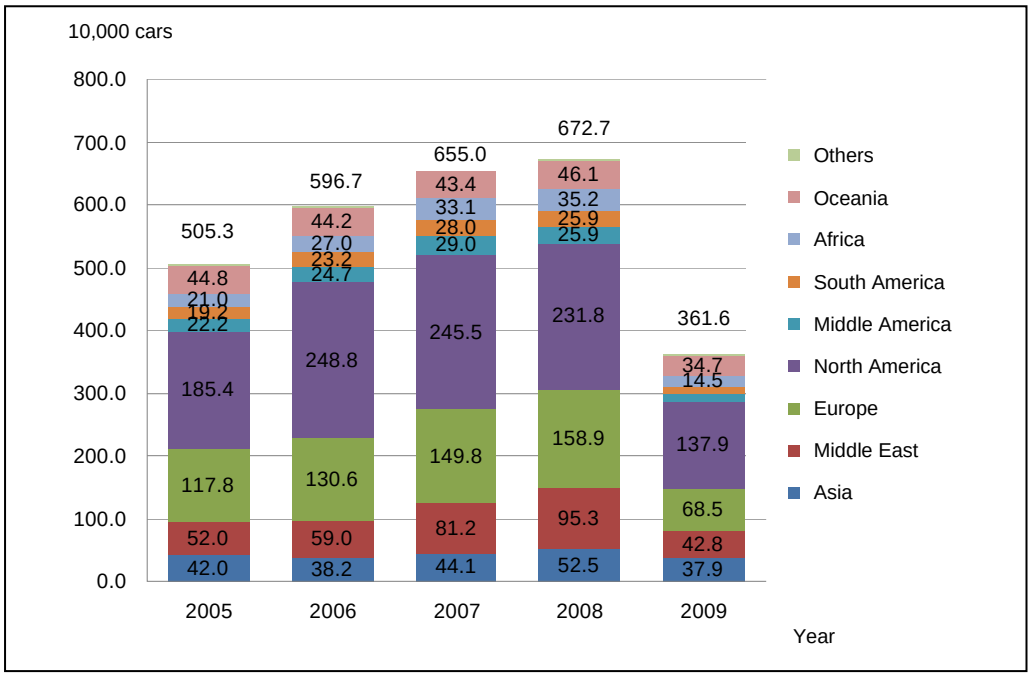
Source: Same as that for Fig. 4.1.1.

While the domestic production and sales of automobiles were on the decrease, automobile export suffered a big fall of 46.2% with 3.616 million as shown in Fig. 4.1.5. This means that the rising trend of export since 2002 ended. By the type of vehicle, the export of passenger cars dropped by 45.8% year on year to 3.209 million cars, that of trucks, 316,000 or a 52.1% decline and that of buses, 92,000 or a decline of 40.0%. It is supposed that the decrease in automobile export was caused mainly by the impact of the recession due to the Lehman shock and also by the strong yen tendency after 2007. It can readily be imagined that increasing overseas production by Japanese

[2] The sales of automobiles in 2009 shown thus far are quoted from the web site of the Japan Automobile Dealers Association (http://www.jada.re.jp/ index. html).

automakers in an attempt to minimize the influence of strong yen will continue to be a major factor contributing to the growth rate of automobile export in the years ahead.

Fig. 4.1.6 Trend of Japan's automobile export by the type of vehicle and by destination



Source: Same as that for Fig. 4.1.2.

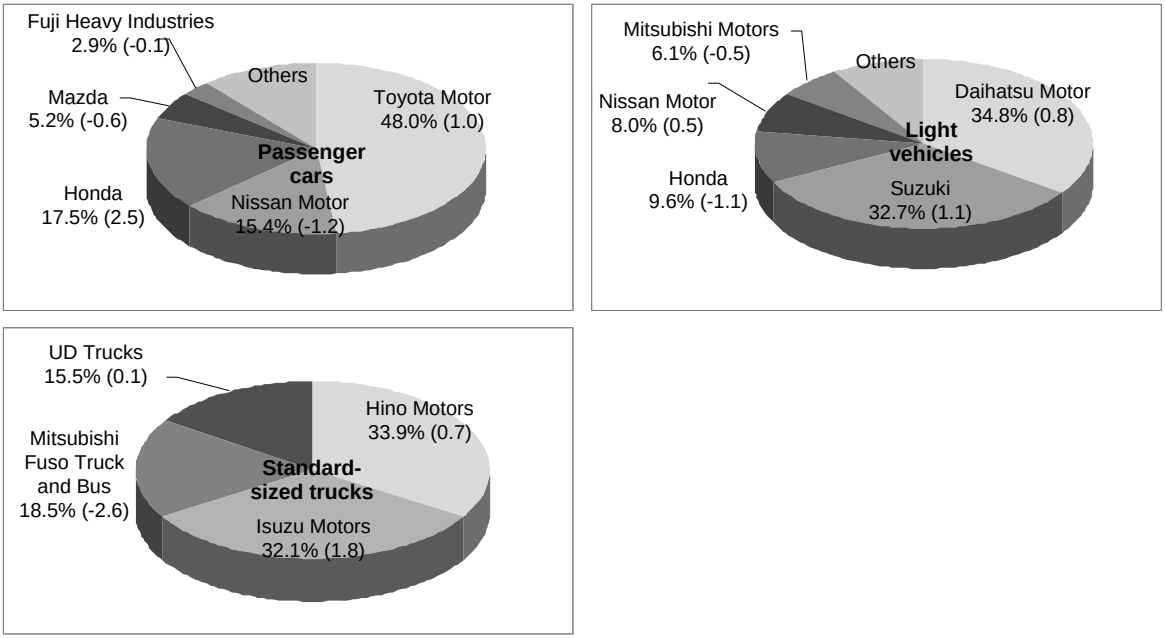
By destination, the export to North America was still the largest: 1.379 million or 38.1% of all the export (Fig. 4.1.6). But it is expected that in the future, Asia, whose market is growing rapidly, will become an increasingly important destination for automobile export from Japan relative to North America. The export to Asia in 2009 accounted for 10.5% of all, an increase of 2.7 percentage points from 7.8% in 2008, while that to Oceania also grew by 2.8 percentage points to 9.6% from 6.8% in the previous year. The share of all the other regions fell, and that of Europe was 18.9%, down 4.7 percentage points from 23.6% in 2008.

The import of automobiles in 2009 declined by 39.2% year on year to ¥452.56 billion: that of passenger cars, which showed the largest figure, amounted to ¥427.65 billion (down 39.2%), that of trucks, ¥14.62 billion (down 43.8%) and that of special-purpose vehicles, ¥9.43 billion (down 37.6%). Noteworthy is the import of buses, which increased by 619.0% year on year to ¥100 million, although the amount was small (Ministry of Finance, "Trade Statistics of Japan"). By the number of imported automobiles registered, Volkswagen, Germany, led all the other brands for the tenth consecutive year, accounting for 20% of all, with 161,000 cars (down 17.0% year on year) (data of the Japan Automobile Importers' Association).

4.1.2 Results of operations and the trend of the automobile industry

(1) Trend of management and overseas business

Fig. 4.1.7 Share of automakers in domestic automobile sales by the type of vehicle



Note: Figures in parentheses are year-on-year ratios (" – " indicates negative figures).

Source: Based on the "Nikkei Sangyo Shimbun," July 28, 2010 for passenger cars, ibid., July 29, 2010 for light vehicles and ibid., August 4, 2010 for standard-sized trucks. The figures for standard-sized trucks are those of the share of the number of vehicles registered.

Figure 4.1.7 shows the share of Japanese automakers in domestic sales for passenger cars (standard-sized and small-sized passenger cars), light vehicles (light motor cars and light trucks) and standard-sized trucks.

In 2009, the domestic sales of passenger cars (here the standard-sized and small-sized cars) decreased by 5.7% from the previous year to 2.640 million. As stated already, the automakers who introduced HEV, whose replacement demand was increased by the subsidy program for eco-friendly cars, and small-sized vehicles popular in cities, too, achieved a better performance than other manufacturers. Honda Motor, which took third in the research conducted by the Nikkei Sangyo Shimbun in 2008, attained a good result and went up to second place in 2009, taking the place of Nissan Motor. Nissan introduced Serena, whose sales were the largest of minivans (sales in 2009: 79,000, ranking eighth in the sales of passenger cars in Japan in 2009), Note, a small-sized car (66,000, ranking tenth) and Cube, another small-sized car (60,000, ranking 12th)[3], but the fact that the company did not sell any HEV was probably the reason for its failure in battles for market shares. Fourth-ranking Mazda and Fuji Heavy Industries put new models, such as Axela and Legacy, on the market, but did not succeed in increasing their sales.

[3] The number of cars sold and ranking are the data of the Japan Automobile Dealers Association.

The sales of light vehicles in Japan in 2009 were 1.689 million or a 9.7% drop from the previous year, and the battles between Daihatsu and Suzuki came to an end. Since 2007, Daihatsu has taken first in the light vehicle market but the gap between Daihatsu and Suzuki has been very narrow, and thus what type of models they introduce in a year will be an effective strategy for them. Especially in 2009, the introduction of Mira Cocoa, a model for women, in August and TANTO Exe, a model with a tall figure popular among young men, in December is the probable reason for Daihatsu's victory. By contrast, Honda has reduced its share in light vehicles but it is supposed that the company had many customers who switched to Fit, its small-sized model, taking advantage of the subsidies for eco-friendly cars. Thus, the subsidy program affected the consumer's car selection in the segment of light vehicles and small-sized cars, too.

The number of standard-sized trucks registered in Japan decreased by 46.4% year on year to 39,000. Hino Motors has ranked first for 37 years running since 1973 when it took the place of Mitsubishi Motors (at that time). The market of standard-sized trucks is strongly affected by the reduction of investment by distribution industries, and in September 2010, the Post New Control on Automobile Emissions for diesel engine vehicles will be applied to large-sized trucks on a full scale. The price of trucks subjected to the control will be raised by about ¥1 million[4] and a last-minute rise in demand for new models is expected to occur. Thus the figures may change greatly in 2010.

As to the trend of management, Toyota, which has the top automobile production and sales in Japan, experienced a decrease in consolidated sales for 2009 as in the previous year: ¥18,950.9 billion or a drop of 7.7% year on year. The company's consolidated sales of cars fell, too, by 4.4% to 7.237 million, seriously affected by the global financial crisis (Fig. 4.1.8).

Fig. 4.1.8 Consolidated sales of automobiles of the top three automakers

Unit: 1,000 cars

	Toyota Motor		Nissan Motor		Honda Motor	
	2008	2009	2008	2009	2008	2009
Japan	1,945	2,163	612	630	556	646
North America	2,212	2,098	1,133	1,067	1,496	1,297
Europe	1,062	858	530	517	350	249
Asia	905	979	1,136	1,301	793	950
Others	1,443	1,139			322	250
Total	7,567	7,237	3,411	3,515	3,517	3,392

Note: Nissan Motor classifies the regions into four: Japan, North America, Europe and other overseas markets.
Source: Based on the brief statement of accounts of each company.

Just as Toyota, Nissan registered a fall in consolidated sales as in 2008: ¥7,517.3 billion or a decrease of 10.9%. But the consolidated number of cars sold increased by 3.0% year on year to 3.515 million, which is probably because greater sales in the Chinese market, on which Nissan has concentrated its efforts, continued to make an important contribution to its sales. As in 2008, Nissan

[4] The "Nikkei Sangyo Shimbun," August 4, 2010.

achieved an all-time high in China, selling 756,000 cars, a growth of as much as 38.7% year on year. Sylphy, Teana and Livina contributed to the company's larger sales in China, and the sales of the Infiniti model reached 546,000 or a 43.9% rise over the previous year, too.

The consolidated sales of Honda Motor (four-wheeled vehicle business) in 2009 were ¥6,554.8 billion or down 14.6% and the number of cars sold, 3,392,000 or down 3.6%.

(2) Future prospects and problems

It can be pointed out that the automobile industry in Japan is in a major turning point as the market and customers are changing greatly. What type of cars will sell well in the markets of newly industrializing countries where future economic growth and population growth are likely, such as China and India? In the situation where the pace of introduction of environmental regulations is speeding up in all countries, what is the technology to be adopted, and where cars using such technology should be manufactured? How will automakers map out strategies for dealing with these problems? These strategies have been observed in such activities as the licensing of technology and technical cooperation between automobile manufacturers. As of September 2010, the policy of major Japanese automakers for supplying cars differed greatly from that in the past.

Toyota, the top manufacturer in Japan, for example, started to review its light vehicle business at Fuji Heavy Industries after it raised its equity ratio to Fuji to 16.5%. Following Toyota's policy change, Fuji announced that it would discontinue the in-house production of light vehicles, while Toyota began to enter the light vehicle market with its own products and to supply light vehicles and small-sized cars from Daihatsu, its group company, to Fuji on an OEM basis. Toyota plans to develop sports cars in cooperation with Fuji, that has a reputation as the manufacturer of Legacy and other cars for sports use, and to introduce newly developed models into the U.S. market in 2012. As outlined above, the Toyota Group has adopted the strategy of dividing the role according to product categories and increasing the types of cars manufactured. This policy is not limited to Toyota; Nissan, which is affiliated to Renault, for example, is joining hands with Daimler and is working to acquire overseas automakers. Automobile manufacturers are likely to increase these activities not only in Japan but also abroad.

These strategies will provide automakers with more product alternatives of eco-friendly cars requiring high technology, such as electric vehicles (EVs) and HEVs, or low-cost cars (LCCs) having promising markets in newly industrializing nations. However, the industries supporting automakers will have some period of time when they are uncertain which cars would be the main products and would bring a high profit to them. In the years to come, it will be essential for Japanese automobile companies to build up a manufacturing and procurement system taking account of both of the alternatives in preparing for coping with possible great changes in the industry.

4.2. Automobile parts

4.2.1 Supply and demand trend

(1) Outline

As in the case of the automobile industry discussed above, the manufacturers of automobile parts were seriously affected in 2009 by the global business depression caused by the Lehman shock. The management of the automobile parts industry had a great impact of the recession, and the industry's sales and profit suffered a sharp decrease from those in 2007 when all-time highs were recorded, showing a downward trend as in 2008.

(2) Production and demand

Fig. 4.2.1 Trend of production results of automobile parts

Unit: ¥ million

	2004	2005	2006	2007	2008	2009	Year-on-year ratio (%)
Engines	2,564,679	2,689,508	2,842,521	2,891,857	2,864,589	1,737,933	-39.3
Engine parts	974,912	992,398	1,024,332	1,060,740	1,027,584	693,204	-32.5
Motor and steering gear parts	2,180,206	2,404,011	2,560,772	2,766,614	2,731,101	1,997,628	-26.9
Suspension and braking system parts	550,624	554,739	575,434	538,635	504,015	330,546	-34.4
Chassis and car body parts	1,324,251	1,379,349	1,677,960	1,837,865	1,861,397	1,329,932	-28.6
Other automobile parts	508,704	512,625	563,193	587,549	557,726	406,522	-27.1
Related automobile parts	1,381,006	1,487,808	1,543,158	1,618,147	1,623,013	1,218,480	-24.9
Internal combustion engine electric parts	397,539	414,996	430,140	445,054	433,050	286,815	-33.8
Two-wheeled vehicle parts	115,328	125,248	136,416	131,636	114,330	55,499	-51.5
Total	9,997,249	10,560,682	11,353,926	11,878,097	11,716,805	8,056,559	-31.2

Note: Figures for "Engines" are sum of those for automobiles and two-wheeled vehicles.

Source: Based on the Ministry of Economy, Trade and Industry, "Annual Report of Machinery Statistics" and "Statistics of Iron and Steel, Non-ferrous Metal and Metal Products."

The output of automobile parts in Japan was ¥8,056.6 billion or a big fall of 31.2% from the previous year (Fig. 4.2.1). In particular, the production of two-wheeled vehicle parts decreased greatly as in 2009 due to the continued reduction of the production of two-wheeled vehicles with ¥55.5 billion or a drop of 51.5% year on year. The output of engines and other parts also suffered a marked decline of 20-30%. Because demand for automobile parts is created before the production planning of automobiles, negative production figures clearly appeared for automobile parts prior to those for automobiles as a whole.

Figure 4.2.2 shows the trend of shipment of automobile parts by the member firms of the Japan Auto Parts Industries Association by the type of product.[5] The size of the negative growth in production in 2009 was shown in advance in the shipment of automobile parts manufacturers in 2008 and stood at ¥17.9 trillion or a fall of 14.5% from the figure of the previous survey. This survey has been

[5] The "41. Automobile parts and internal combustion electric parts" section in "Annual Report of Machinery Statistics" by the Ministry of Economy, Trade and Industry, shows the quantity and amount of production only. Thus, the data of the Japan Auto Parts Industries Association, "Results of Surveys on Shipment of Automobile Parts," was used here instead. Note that because no figure for 2009 was published as of October 2010, the above table shows the results of the survey in 2008.

conducted on the members of the above-mentioned association only, but because these members are representative automobile parts manufacturers in Japan and it is evident that the shipment trend of all Japanese automobile parts producers was similar to that of these member manufacturers.

Fig. 4.2.2 Trend of shipment of automobile parts by the type of product

Unit: ¥ million

	Year (no. of responding manufacturers)	2004 (405)	2005 (394)	2006 (392)	2007 (386)	2008 (361)
Parts	Engine parts	2,583,878	2,768,356	2,854,106	3,328,368	2,819,255
	Electric and electronic parts	1,424,724	1,586,284	1,913,558	2,073,763	1,760,629
	Electric and electronic parts for lighting apparatus, measuring instruments, etc.	2,210,855	2,593,539	2,958,665	3,160,907	2,697,903
	Driving, transmission and steering system parts	3,065,197	3,323,015	3,666,212	4,123,256	3,656,672
	Suspension and braking system parts	1,028,027	1,021,812	1,079,183	1,218,940	1,075,181
	Car body parts	3,766,155	4,253,604	4,529,608	4,815,138	4,014,216
	Parts, total	14,078,836	15,546,610	17,001,332	18,720,372	16,023,856
Equipment	Car radios and stereos	462,500	453,492	443,870	408,494	295,728
	Cooling and heating equipment	833,625	840,212	836,175	902,059	560,762
	Other equipment	118,575	109,821	116,515	117,631	348,562
	Equipment, total	1,414,700	1,403,525	1,396,560	1,428,184	1,205,052
Others	Information-related parts	520,403	614,898	604,772	767,906	672,468
Total		16,013,939	17,565,033	19,002,664	20,916,462	17,901,376

Note: Note that no simple year-to-year comparison is possible because the number of the manufacturers surveyed differ from year to year. The survey in 2008 covered the 407 regular members of all of the 447 members of the Japan Auto Parts Industries Association (as of October 1, 2008) excluding the 40 non-regular members, with 361 responding companies and an effective response rate of 88.7%.

Source: Based on the Japan Auto Parts Industries Association, “Results of Surveys on Shipment of Automobile Parts” for each year.

Fig. 4.2.3 Trend of shipment of automobile parts by user

Unit: ¥ million

				2005	2006	2007	2008	Year-on-year ratio (%)
Parts for four-wheeled vehicles	For automakers	Assembly	Japan	10,827,642	11,696,517	12,899,648	11,373,413	-11.8%
			Overseas	1,171,859	1,341,433	1,438,495	1,178,177	-18.1%
		Repair	Japan	375,276	361,617	392,664	360,837	-8.1%
			Overseas	36,690	24,576	21,673	20,381	-6.0%
	For car body manufacturers			356,015	280,299	260,222	207,796	-20.1%
	For parts sellers and cooperative sellers			44,206	36,797	39,942	85,283	113.5%
	For parts manufacturers		Japan	2,438,689	2,840,879	3,197,716	2,570,055	-19.6%
			Overseas	742,063	807,747	877,052	640,980	-26.9%
	For direct markets		Japan	400,481	381,256	372,276	347,057	-6.8%
			Overseas	677,845	719,267	911,468	704,495	-22.7%
	Total			17,070,766	18,490,388	20,411,156	17,488,474	-14.3%
Parts for two-wheeled vehicles	Assembly		Japan	380,856	395,034	385,664	294,152	-23.7%
			Overseas	79,797	85,121	97,366	98,771	1.4%
	Repair		Japan	15,764	12,738	8,704	7,169	-17.6%
			Overseas	17,850	19,383	13,572	12,810	-5.6%
	Total			494,267	512,276	505,306	412,902	-18.3%
Grand total				17,565,033	19,002,664	20,916,462	17,901,376	-14.4%

Source: Same as that for Fig. 4.2.2.

For the shipment by user, too, the negative growth trend was prevalent in almost all of the user categories, while the figure for parts for four-wheeled vehicles for parts sellers and cooperative sellers grew by 113.5% to ¥85.3 billion and that for two-wheeled vehicles for assembly factories abroad, by 1.4% to ¥98.8 billion although the amounts were small (Fig. 4.2.3).

(3) Export and import

As a result of the downturn in the automobile industry at home and abroad, the export of automobile parts from Japan suffered a sharp decrease of 27.4% from the previous year (¥4,200 billion) (Fig. 4.2.4). In 2008, a drop in automobile production in the U.S., the source of the subprime loan problems and the Lehman shock, led to a considerable decline in the export of Japanese automobile parts to North America, and in 2009, export to Europe suffered the steepest decline of 42.4% year on year to ¥728.1 billion. Considering that export to Asia, Middle East and South America was on an increasing trend in 2008 but showed a fall, too, in 2009, it must be supposed that the moves unable to be forecast from the situation of export, such as those for local procurement of automobile parts, are expanding. What should also be taken account of in the future is the possibility that Japanese automobile parts manufacturers will quicken the pace of changing their manufacturing bases.

Fig. 4.2.4 Trend of Japan's export of automobile parts by year and by region

Unit: ¥ million

	2005	2006	2007	2008	2009	Year-on-year ratio
Asia	1,608,008	1,734,702	1,977,270	2,028,679	1,780,136	-12.3%
Middle East	179,700	220,320	267,896	287,720	235,654	-18.1%
Europe	972,321	1,109,228	1,351,173	1,264,698	728,093	-42.4%
North America	1,973,889	2,008,872	1,925,516	1,532,711	1,006,630	-34.3%
Middle America	140,836	221,241	255,857	230,015	148,218	-35.6%
South America	147,507	188,737	242,641	264,479	190,077	-28.1%
Africa	129,678	162,193	188,825	171,642	103,256	-39.8%
Oceania	104,025	107,140	127,926	109,377	82,798	-24.3%
Total	5,255,964	5,752,433	6,337,104	5,889,321	4,274,862	-27.4%

Note: No data for 2007 was published, and thus the figures for that year were calculated using the year-on-year ratios in the data of the source shown below.

Source: Based on the export and import data on the website of the Japan Auto Parts Industries Association (searched in October 2010).

On the other hand, the import of automobile parts, which had been in an increasing trend until 2008, turned into a decrease in 2009, with ¥1,000 billion or a drop of 41.8% from the previous year (Fig. 4.2.5). As in the past, the amount of import from Asia was the largest and the scale of decrease was smaller than that for North America and Europe by over 10 percentage points. Behind this is probably the fact that import from Chinese and South Korean manufacturers was in a large amount, and it is considered that the main competitors for automobile parts businesses in Japan are Asian companies.

Fig. 4.2.5 Trend of Japan's import of automobile parts by year and by region

Unit: ¥ million

	2005	2006	2007	2008	2009	Year-on-year ratio
Asia	680,081	931,950	1,127,216	1,177,941	738,851	-37.3%
Middle East	142	185	143	291	286	-1.7%
Europe	288,117	325,029	421,990	414,394	209,159	-49.5%
North America	141,728	168,878	167,171	159,147	73,593	-53.8%
Middle America	19,360	20,209	22,212	16,726	8,630	-48.4%
South America	1,830	1,918	3,183	2,607	1,273	-51.2%
Africa	1,855	2,821	3,075	2,927	1,023	-65.0%
Oceania	4,843	4,675	6,312	6,457	2,588	-59.9%
Total	1,137,956	1,455,666	1,751,303	1,780,490	1,035,403	-41.8%

Note and source: Same as those for Fig. 4.2.4.

4.2.2 Results of operations and the trend of the automobile parts industry

(1) Trend of management and overseas business activities

Fig. 4.2.6 Trend of management of the automobile parts industry

Unit: ¥100 million

	2005		2006		2007		2008		2009		Year-on-year ratio
	Amount	Percentage	Amount	Percentage	Amount	Percentage	Amount	Percentage	Amount	Percentage	
Sales	**163,815**	**100.0%**	**207,520**	**100.0%**	**228,462**	**100.0%**	**190,899**	**100.0%**	**169,023**	**100.0%**	**-11.5%**
Cost of goods sold	138,103	84.3%	176,115	84.9%	193,251	84.6%	170,569	89.4%	146,722	86.8%	-14.0%
Selling and general administrative expenses	15,625	9.5%	18,547	8.9%	20,119	8.8%	19,059	10.0%	16,393	9.7%	-14.0%
Operating profit	**10,087**	**6.2%**	**12,857**	**6.2%**	**15,091**	**6.6%**	**1,071**	**0.6%**	**5,907**	**3.5%**	**451.5%**
Non-operating income	1,677	1.0%	1,847	0.9%	1,915	0.8%	1,713	0.9%	1,665	1.0%	-2.8%
Non-operating expense	958	0.6%	1,250	0.6%	1,876	0.8%	2,306	1.2%	1,381	0.8%	-40.1%
Ordinary profit	**10,819**	**6.6%**	**13,445**	**6.5%**	**15,131**	**6.6%**	**477**	**0.2%**	**6,191**	**3.7%**	**1197.9%**
Extraordinary profit	646	0.4%	721	0.3%	555	0.2%	350	0.2%	437	0.3%	24.9%
Extraordinary loss	945	0.6%	1,017	0.5%	838	0.4%	3,261	1.7%	1,828	1.1%	-43.9%
Net profit before adjustment for tax, etc.	10,520	6.4%	13,149	6.3%	14,847	6.5%	-2,434	-1.3%	4,800	2.8%	-
Net profit	**6,239**	**3.8%**	**7,727**	**3.7%**	**8,831**	**3.9%**	**-4,768**	**-2.5%**	**2,091**	**1.2%**	**-**

Note: The above figures for 2008 and 2009 are for the 83 specialized automobile parts manufacturers of the 407 member firms of the Japan Auto Parts Industries Association on April 1, 2010, which were listed, whose ratio of sales of automobile parts to the total sales was 50% or more and whose figures were comparable with those for previous years.

Source: The Japan Auto Parts Industries Association, "Trend of Management of Auto Parts Industries," yearly editions.

According to the Japan Auto Parts Industries Association, the business results of the 83 main automobile parts manufacturers in 2009 continued to fall as in 2008 when the performance suffered a substantial decline from 2007 when both sales and profits were all-time high (Fig. 4.2.6). But the operating profit increased as compared with 2008 when the production was reduced greatly thanks to the review of "cost reduction measures"[6] and reforms by each manufacturer.

[6] Quoted from the Outline section of the Japan Auto Parts Industries Association, "Trends of Management of the Automobile Parts Industry in 2009."

By region, sales in Japan amounted to ¥11,800 billion or down 9.6% year on year, those in North, Central and South America, ¥2,800 billion (down 17.0%) and those in Europe, ¥1,400 billion (down 18.4%), experiencing a two-digit fall, while sales in Asia was ¥3,100 billion or a one-digit drop of 5.7% (Fig. 4.2.7). Of the 83 member companies, 82 experienced lower sales in 2009, but because of the above-mentioned efforts to review manufacturing activities, the number of the members having a decrease in operating profit, ordinary profit or net profit was much smaller: 21, 21 or 17.

Fig. 4.2.7 Sales and profits of Automobile Parts Manufacturers by region

Unit: ¥100 million, %

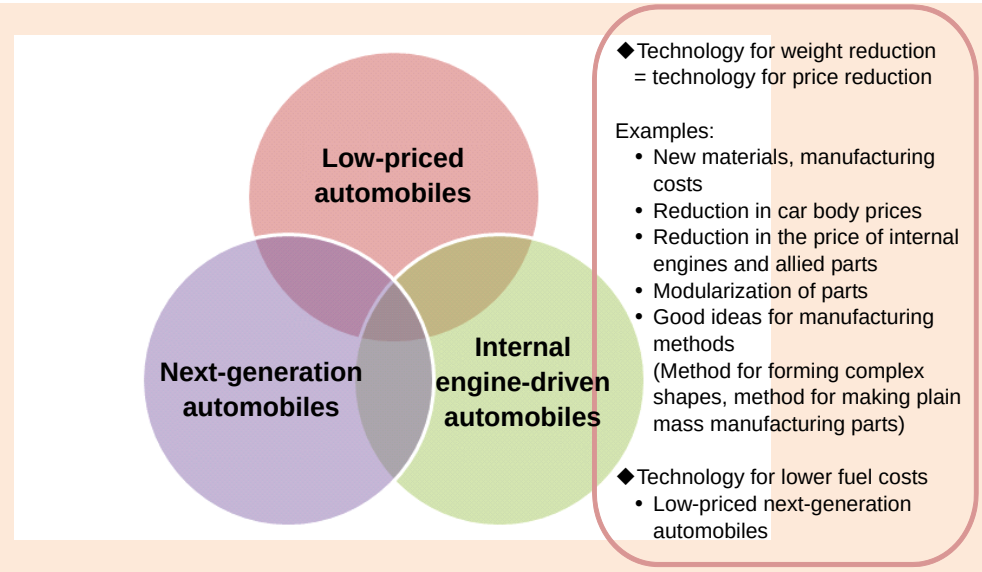
Region		Sales *1	Year-on-year ratio	Operating profit	Year-on-year ratio	Profit ratio
Japan		118,375	-9.6	2,411	-	2.0
Overseas	North, Central and South America	28,090	-17.1	70	-	0.2
	Europe	14,754	-18.4	202	153.1	1.4
	Asia	31,746	-5.7	3356	0	10.6
	Not classifiable, etc.	2,974	-26.2	166	-44.5	5.6
(Elimination) *2		(-26,916)	-	(-298)	-	-
Total		169,203	-11.5	5907	451.6	3.5

Notes: 1. The figures for sales overseas are those of the sales of consolidated subsidiaries in each region. For example, the direct sales to overseas customers from Japan (sales not through subsidiaries) are counted as sales in Japan.
2. The figures for elimination show the sales between different regions.

Source: Same as that for Fig. 4.2.6.

(2) Technological innovation and the business environment

Fig. 4.2.8 Viewpoints that automobile parts manufacturers are required to have



Source: Prepared by the authors.

The model that had the largest presence in the number of cars sold in Japan in 2009 was Prius, Toyota's hybrid electric vehicle (HEV).[7] Insight, another HEV Honda introduced in Japan in 2009, ranked higher, too. As shown in the case of these models, eco-friendly cars accounted for nearly 20% of the total sales in 2009, partly supported by the subsidy program for these cars, making the year the "first year of eco-friendly vehicles." Although the subsidy program ended at the end of September 2010, the tax reduction system for eco-friendly cars will be continued, and thus demand for these HEVs is expected to remain large. Leaf, the electric car (EV) Nissan will start to sell at the end of December, 2010, has got into the news, too, and much attention will be paid to the market of eco-friendly cars in Japan.

On the other hand, the enlarging market of low-priced cars in India and China cannot be neglected either, and it will also be essential for automobile parts manufacturers to supply inexpensive products for these cars. Japanese automobile parts industries in Japan will thus be required to have the technology not only for making high-quality and highly accurate parts necessary for eco-friendly vehicles but also for producing inexpensive parts, as well as the technology for innovating automobile parts themselves. But the strategy needed now will not be blindly pursuing the technology but identifying the viewpoint necessary for all types of automobile parts. Denso Corp., for example, is working on the project named "DP-EM (DENSO Project for Emerging Markets),"[8] by carrying out the program for reinforcing local procurement by locally deciding on the optimum specifications for vehicles made abroad and by simplifying the functions and specifications of parts for low-priced cars. What is behind the project will be an attitude of the company trying to respond flexibly to the requests for functions and specifications from each automaker without lowering the quality needed for cars.

As seen in the case of Denso mentioned above, automobile parts manufacturers will need, instead of developing the technology necessary for each car individually, to polish the skills required in the overlapped stages whose examples are shown in Fig. 4.2.8, such as the modularization of parts and the innovation of manufacturing methods.

(3) Future prospects and problems

In 2010, the automobile parts industry will have recovery to some extent because the automobile industry is expected to improve. As described above, as Japanese automakers have shifted their manufacturing bases to overseas one after another, automobile parts manufacturers will be faced with the question, "Where can we earn profits?", in 2010. The members of the Japan Auto Parts Industries Association expect that in 2010, they will be able to secure better sales and profits than 2009, but this positive forecast is based on their recognition of too difficult business situations in 2009. The domestic sales of cars are likely to decrease in 2010 due to the end of the subsidy program for eco-friendly cars in the second half of the year, and the environment of the automobile parts industry will perhaps remain unfavorable.

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[7] For more detail, see 4.1 Automobiles.

[8] See Denso Corp. "Materials for the Briefing Meeting of the Settlement of Accounts for the Year Ended in March 2010."

In such a circumstance, the problems facing Japanese automobile parts manufacturers are those of strengthening their overseas presence, such as business activities abroad and global strategies. As seen in the labor problems at the Japanese subsidies in China, including the labor disputes where Chinese workers demanded wage hikes, business management abroad has a number of difficult management issues. Shrinking domestic market is now posing a serious problem, and automobile parts manufacturers should turn their eyes to overseas markets, too, and plan strategies for segmenting their activities into those in Japan and in foreign markets.

4.3. Aircraft

4.3.1 Supply and demand trend

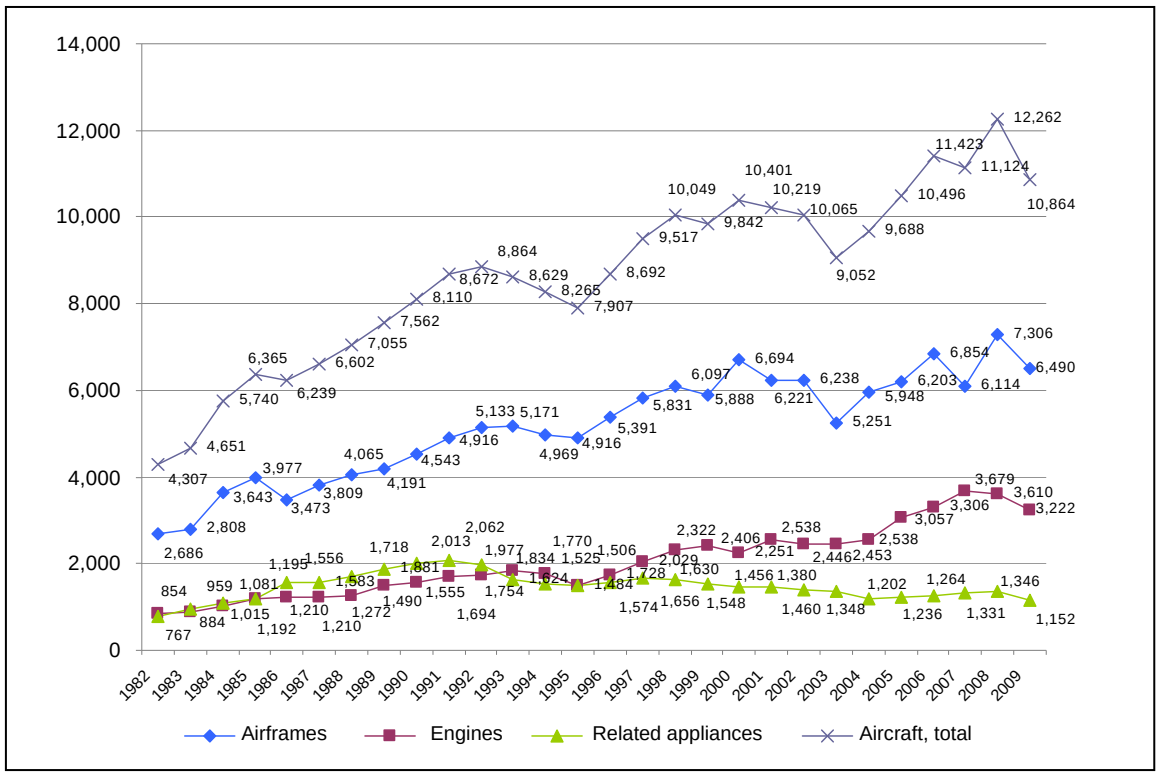
(1) Outline

The production of aircraft in 2009 (calendar year; final report) was ¥1,103.7 billion or a decrease of 7.0% from the previous year, affected by the stagnant production of the aircraft industry.

On December 15, 2009, Boeing 787, the next-generation main medium-sized aircraft, made the first flight over two years behind schedule. This made it almost certain that the delivery of the first 787 to All Nippon Airways (ANA), the launch customer for the aircraft, will be made in the fourth quarter of 2010. The output of this aircraft after this will be about ten a month, and thus demand for the product will increase among the aircraft industry in Japan, too, which is expected to help aircraft production. The number of orders for the aircraft totaled to 863 as of June 2009 (including 229 option orders), an increase of about 13 orders (option orders down 150), a reversal of the situation in the previous year.

On the other hand, Mitsubishi Aircraft Corp. signed a memorandum on an order for 100 MRJ, which Mitsubishi launched the program for developing, with Trans States Holdings, securing a total of 125 MRJs, but has had no new orders until the Farnborough International Airshow in Britain in July 2010. Not only Brazil’s E-Jets and Canada’s CRJ, which have gone ahead in regional jet planes, but also Russia’s SSJ got new orders for 30 planes for the International Airshow in Farnborough. MRJ will join competition for orders in the months ahead in anticipation of entry of China’s ARJ.

Fig. 4.3.1 Trend of aircraft production amount (fiscal year)



Source: Based on the data of the Society of Japanese Aerospace Companies (SJAC).

(2) Production trend

The results of production (sales) of the aircraft industry in 2009[9] (Fig. 4.3.1) were poorer than those for the previous year by 11.4% with ¥1,086.4 billion. By the type of product, the output of airframes decreased by 11.2% year on year to ¥649.0 billion, that of engines went down by 10.7% to ¥322.3 billion and that of related appliances fell by 14.4% to ¥115.2 billion.

(3) Trend of export and import

According to the Customs Clearance Statistics, the export of aircraft engines, airframes, parts, etc. in 2009 (calendar year) declined by 14.4% year on year to a total of ¥374.8 billion and the import decreased by 22.6% to ¥818.7 billion (Figs. 4.3.2, 4.3.3).

[9] These figures are those of the production of the aircraft and related industries computed independently by the SJAC on the basis of the Ministry of Economy, Trade and Industry, "Annual Report of Machinery Statistics" and is the total of the amount of production and that of repair charges.

Fig. 4.3.2 Export of aircraft in 2009 (calendar year)

Unit: ¥ million

	Export
Aircraft engines (pistons)	548
Parts for aircraft engines (pistons)	1,018
Aircraft engines (turbines, etc.)	747
Parts for aircraft engines (turbines, etc.)	136,089
Balloons and airships and gliders, hang gliders and other aircraft with no engine	503
Helicopters, total	464
Unladen weight: 2,000kg or less	252
Unladen weight: over 2,000kg	212
Aircraft and other airplanes, total	147
Unladen weight: 2,000kg or less	5
Unladen weight: over 2,000kg to 15,000kg	142
Unladen weight: over 15,000kg	
Components, total	235,115
Aircraft propellers and rotors and their components	108
Other components for aircraft or helicopters	226,515
Landing devices and other components	3,478
Others	5,014
Parachutes and rotochutes and their components	94
Aircraft catapults, arresting gears and other similar devices and their components	
Ground training devices for aircraft and their components	62
Aerial battle simulators and their components	4
Other components	12
Total	374,803

Source: Based on the data of the SJAC.

Fig. 4.3.3 Import of aircraft in 2009 (calendar year)

Unit: ¥ million

	Import
Aircraft engines (pistons)	520
Parts for aircraft engines (pistons)	844
Aircraft engines (turbines, etc.)	157,013
Parts for aircraft engines (turbines, etc.)	205,696
Balloons and airships and gliders, hang gliders and other aircraft with no engine	105
Helicopters, total	18,493
Unladen weight: 2,000kg or less	5,057
Unladen weight: over 2,000kg	13,463
Aircraft and other airplanes, total	290,000
Unladen weight: 2,000kg or less	917
Unladen weight: over 2,000kg to 15,000kg	10,043
Unladen weight: over 15,000kg	279,040
Components, total	139,086
Aircraft propellers	933
Helicopter rotors (including blades)	1,930
Other propellers and rotors and their components	3,246
Other components for aircraft or helicopters	111,557
Landing devices and other components	16,603
Others	4,817
Parachutes and rotochutes and their components	1,138
Aircraft catapults, arresting gears and other similar devices and their components	
Ground training devices for aircraft and their components	712
Aerial battle simulators and their components	853
Other components	4268
Total	818,728

Source: Based on the data of the SJAC.

(4) Future prospects

According to the survey on the 25 member firms conducted by the SJAC (Figs. 4.3.4, 4.3.5), the estimated production in 2010 will increase by 4.1% year on year to ¥1,042.0 billion, a growth in production for the first time in three years. By the type of product, the output of airframes is expected to grow to ¥564.2 billion and that of engines, to ¥325.6 billion, as reaction to the falls in output until the previous year due to the Lehman shock. The production of aircraft equipment is estimated at ¥152.2 billion.

The estimated export in 2010 is ¥509.5 billion, as the trend of a slight increase in the previous year continued, although the figure is below the level in 2007. This is composed of ¥257.2 billion for airframes, ¥216.8 billion for engines and ¥35.5 billion for aircraft equipment.

Fig. 4.3.4 Prospects for the production of aircraft in 2010

		Production (¥ million)		
		Results in FY2008	Results in FY2009	Prospects for FY2010
Airframes	Bodies	236,963	174,629	200,084
	Parts	351,381	365,373	364,101
	Subtotal	588,344	540,002	564,185
Engines	Bodies	62,849	69,567	76,920
	Parts	290,617	248,002	248,691
	Subtotal	353,466	317,569	325,611
Equipment		128,941	143,714	152,175
Total		1,070,751	1,001,285	1,041,971

Source: The SJAC, "Prospects for Production, Export and Orders of Aircraft (July 2010)."

Fig. 4.3.5 Prospects for the export of aircraft in 2010

		Export (¥ million)		
		Results in FY2008	Results in FY2009	Prospects for FY2010
Airframes	Bodies	1	1	0
	Parts	230,579	255,455	257,229
	Subtotal	230,580	255,456	257,229
Engines	Bodies	23,259	26,802	26,945
	Parts	216,429	187,140	189,837
	Subtotal	239,688	213,942	216,782
Equipment		21,637	32,482	35,488
Total		491,905	501,880	509,499

Source: The SJAC, "Prospects for Production, Export and Orders of Aircraft (July 2010)."

4.3.2 Results of operations and the trend of the aircraft industry

(1) Results of operations

In the civil aviation-related segment, Mitsubishi Heavy Industries (MHI) experienced a decrease in orders not only for main wings for B787, rear fuselages for B777, etc. but also for engine parts for civil transport planes owing to the inactive demand for aircraft resulting from the global recession. In the self-defense field, the company suffered smaller orders for guided flying objects. By contrast, in the area of space business, which belongs to the same sector as aircraft, MHI enjoyed an increase in orders for launching and transportation service for the H-II A rocket. As a result, MHI's sales dropped by 2.4% year on year to ¥500.3 billion.

Kawasaki Heavy Industries (KHI) had smaller orders for aircraft for the Ministry of Defense, products for Boeing's B777 passenger planes, etc. Because its sales to the Ministry of Defense fell, KHI experienced a decrease in sales of 5.8% year on year to ¥188.8 billion.

IHI had a decline in orders for aircraft engines from private airline companies and the Ministry of Defense and also in orders for aircraft engine parts from the Ministry of Defense, and was affected by strong yen for aircraft engines for the private sector. Thus IHI's sales decreased by 5.6% year on year to ¥281.0 billion.

Fuji Heavy Industries (FHI) achieved larger sales in the self-defense segment due to an increased delivery of pilotless plane-related products, such as unmanned reconnaissance planes and pilotless plane research systems. In the area of civilian aviation, FHI's sales for B777, which had been adversely influenced by the strikes at Boeing, recovered, and the production of B787, the next-generation main medium-sized plane for mass manufacture, was started; these factors contributed to FHI's good performance. As a result, FHI achieved a 15.3% growth in sales totaling to ¥93.2 billion.

In the self-defense segment, ShinMaywa Industries received orders for the No. 3 search-and-rescue amphibian plane for mass manufacture for the Maritime Self-Defense Force and also for the next-generation fixed wing patrol plane XP-1 for mass manufacture. The company had larger orders for regular repair service for search-and-rescue amphibian planes but its airframe manufacturing work decreased. In the civilian aviation field, ShinMaywa suffered smaller orders for wing-body fairing for Boeing B777 and a fall in the delivery of components for Gulfstream's G550 and main wing spars for Boeing B787. Affected by strong yen as well as the situations referred to above, the company's sales fell by 7.0% year on year to ¥22.9 billion.

Fig. 4.3.6 Financial situation of the five main aircraft industries (consolidated)

Unit: ¥100 million, %

		Mar. '05	Mar. '06	Mar. '07	Mar. '08	Mar. '09	Mar. '10	Year-on-year ratio
Mitsubishi Heavy Industries	Sales	25,907	27,921	30,685	32,030	33,756	29,408	-12.9%
	of which the aerospace segment	4,079	4,459	4,950	5,005	5,123	5,003	-2.3%
	Operating profit	147	709	1,089	1,360	1,058	656	-38.0%
	Ordinary profit	125	503	830	1,095	753	240	-68.1%
	Operation profit to sales ratio	0.6%	2.5%	3.5%	4.2%	3.1%	2.2%	-
Kawasaki Heavy Industries	Sales	12,415	13,224	14,386	15,010	13,385	11,734	-12.3%
	of which the aerospace segment	1,882	2,185	2,691	2,373	2,004	1,888	-5.8%
	Operating profit	247	417	691	769	287	-13	-104.5%
	Ordinary profit	210	308	490	639	387	142	-63.3%
	Operation profit to sales ratio	2.0%	3.2%	4.8%	5.1%	2.1%	-0.1%	-
IHI	Sales	10,890	11,271	12,349	13,505	13,880	12,427	-10.5%
	of which the aerospace segment	2,383	2,695	2,979	3,134	2,978	2,811	-5.6%
	Operating profit	106	218	246	-168	257	472	83.7%
	Ordinary profit	42	159	215	-308	135	330	144.4%
	Operation profit to sales ratio	1.0%	1.9%	2.0%	-1.2%	1.9%	3.8%	-
Fuji Heavy Industries	Sales	14,464	14,764	14,948	15,723	14,457	14,287	-1.2%
	of which the aerospace segment	595	818	940	996	809	932	15.2%
	Operating profit	420	583	479	456	-58	274	372.4%
	Ordinary profit	435	468	422	454	-46	224	317.9%
	Operation profit to sales ratio	2.9%	3.9%	3.2%	2.9%	-0.4%	1.9%	-
ShinMaywa Industries	Sales	1,279	1,297	1,444	1,389	1,277	1,104	-13.5%
	of which the aerospace segment	208	207	246	285	246	246	0.0%
	Operating profit	60	49	53	50	10	31	210.0%
	Ordinary profit	61	52	54	47	10	31	210.0%
	Operation profit to sales ratio	4.7%	3.8%	3.7%	3.6%	0.8%	2.8%	-

Source: Based on the quick reports on the settlement of accounts and financial statements of these companies.

Due to the slow economic recovery after the Lehman shock, airline companies put off orders for new aircraft models and renewal orders, making the growth of new orders for aircraft products

stagnant. As a result, the orders received by the manufacturers of aircraft equipment failed to increase, and most of them continued to suffer lower sales than in the previous year (Fig. 4.3.7). More specifically, the mass manufacture of B787, the next-generation medium-sized aircraft having many orders, was finally started, but decrease in government demand, including the demand of the Self-Defense Force, has continued as in the past (Fig. 4.3.7). If demand for aircraft equipment is to grow, it is essential that demand for aviation rise and orders for aircraft pick up. In particular, the production of Airbus S.A.S. and Boeing, the major aircraft manufacturers, is the factor that determines the quantity of orders for aircraft equipment, and aircraft equipment companies in Japan are likely to be greatly affected by the manufacturing activities of the two aircraft producers.

Fig. 4.3.7 Financial situation of aircraft equipment manufacturers

	Sales of segments including aircraft (¥100 million)		Year-on-year ratio	Consolidated sales (¥100 million)	Percentage of consolidated sales
	FY2009 (¥100 million)	FY2010 (¥100 million)			
Toray Industries	711	514	-27.7%	13,596	3.8%
Teijin	2,732	2,526	-7.5%	7,658	33.0%
Mitsubishi Rayon	379	237	-37.5%	3,651	6.5%
Yokohama Rubber	1,367	1,103	-19.3%	4,663	23.7%
Nabtesco Corp.	520	418	-19.6%	1,263	33.1%
Sumitomo Precision Products	206	191	-7.3%	428	44.6%
Nikkiso	350	372	6.3%	780	47.7%
Koito Industries	350	262	-25.1%	515	50.9%
Japan Aviation Electronics Industry	144	105	-27.1%	1,230	8.5%
Kayaba Industry	60	59	-1.7%	2,520	2.3%
Koito Mfg.	387	267	-31.0%	4,084	6.5%
Showa Aircraft Industry	78	64	-17.9%	213	30.0%
Jamco Corp.	418	402	-3.8%	402	100.0%
Shimadzu Corp.	632	479	-24.2%	2,382	20.1%

Source: Based on the quick reports on the settlement of accounts of these companies.

(2) Future prospects and problems

The global economy after the Lehman shock has not yet freed itself from uncertainties about recovery as shown in the financial crisis in Greece. But growth in demand for aviation has been remarkable in newly industrializing countries. In particular, low cost carriers (LCCs) have appeared recently and are becoming important orderers for aircraft equivalent to major carriers. The absolute necessity of LCCs is to provide service at lower fares by minimizing the operation cost of the aircraft and maximizing the operation efficiency. Because of this, LCCs have standardized their aircraft models in an effort to make the procurement of parts easier and save costs. Because LCCs adopt the policy of high-frequency operation, few LCCs will purchase large-sized aircraft. Best-selling aircraft models for LCCs are generally those with about 150 seats, such as Boeing B737 and Airbus's B320 series. Thus far, aircraft production for major airline companies known as national flags has been the main activities of aircraft manufacturers. But recently, LCCs and the businesses intending to lease to LCCs have placed orders of relatively large lots, and Japanese aircraft companies should pay attention to this tendency, too.

However, the situation where aircraft industry in Japan is highly dependent on Boeing is unchanged. The mass production of B787, the next-generation medium-sized aircraft, is good news for Japanese aircraft manufacturers who have long suffered smaller orders. In addition, if the manufacture of MRJ, which is scheduled to be placed in service in 2014, has good effects on Japanese aircraft industries, that will run in their favor. If aircraft manufacturers in Japan are to enlarge the range of their business, they will need to add new markets for aircraft to their existing markets. Japanese manufacturers have some records of orders for the aircraft parts for Airbus, EMBRAER and Bombardier, but these orders have not been very large. Considering their track record as for Boeing, it is supposed that Japanese manufacturers have the capacity to supply their products to the three aircraft companies mentioned above but the political and strategic factors are great and hard for them to deal with. It is a tough problem for them to secure these markets, but solving this problem will certainly be a big leap for the aircraft industry in Japan.