

**JATMA**

THE JAPAN AUTOMOBILE TYRE MANUFACTURERS ASSOCIATION, INC.

# TYRE INDUSTRY OF JAPAN

2007



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# History of the Japanese Tyre Industry

## 1. Brief History of the Japanese Tyre Industry

The production scale of the automobile tyre industry of Japan steadily increased from the second half of 1990s to 2000, supported by generally firm demand in the domestic market and active export. Demand slowed for a period in 2001 due to the decline in export mainly for U.S., but afterward the production generally increased steadily. In 2006, while exports remained at the same level with the previous year on a rubber consumption basis, domestic demands increased, which resulted in the rubber consumption of 1.35 million tons (record high), the number of tyres and the value of 185.63 million units and 1,177.9 billion yen, respectively. The rubber consumption accounts for over 80% of the rubber industry of Japan. Those situations in the past can be surveyed with some steps as follows:

### (1) 1940s-1950s

The industry restructured after World War II, following the destruction of facilities and equipment. In the early 1950s, after the long-term government regulation and during the Korean War, the industry enjoyed special procurement and improved tyre demand. However, after the Korean War, deflationary pressures affected the Japanese economy. Demand for tyres decreased sharply, and the tyre market experienced considerable difficulty.

### (2) 1960s

Around 1960, full-fledged motorization, including increased automobiles on the road and the advent of expressways, spurred the industry toward a technological revolution, including expansion and automation of equipment, as well as changes in the raw materials for tyres, and enjoyed a high-growth phase.

### (3) 1970s

From 1970, the industry suffered demand downturns temporarily as a result of the first oil crisis. However, exports led the growing Japanese economy. Tyre production expanded, as a result of an increase in the number of vehicles produced and registered, and product diversification spurred demand.

### (4) 1980s

Low economic growth under the worldwide recession following the second oil crisis (1979) combined with the progress of radial tyres, which caused demand downturns, forcing the Japanese tyre industry into a period of extreme difficulty. In 1983, however, a turnaround was seen owing to economic recovery in Japan and in principal nations worldwide. In September 1985, however, tyre demand dropped, influenced by the strong yen. Then in December 1986, the Japanese economy started to grow steadily, backed by solid consumer spending and capital investment. As a result, the volume of rubber consumption reached the 1-million-ton mark in 1989.

### (5) 1990s

With the collapse of Japan's "bubble economy," the stock market crashed, corporate profits declined, the job environment became uncertain, consumer spending and capital investment slowed, and the yen appreciated causing further deepening of economic stagnation. Signs of recovery were seen in 1995, but in 1997 Japan entered a recession. In 1998 and 1999, large-scale restructuring in the financial sector and the introduction of foreign capital into the automotive industry arose as serious concerns. On the other hand, the global economy in general remained steady despite economic difficulties in Southeast Asia, supported by the robust U.S. economy. In this environment, the Japanese tyre industry grew overall, although rubber consumption fell below the 1-million-ton mark in 1993. Supported by brisk exports, Japanese tyre production volume increased to 1.13 million tons in 1999, a record high.

### (6) 2000-2006

The Japanese economy was on a trend of gentle recovering, practically completed writing off of bad loans although it was still suffering from 1990s problems. In such situation, the year of 2006, although there were some problems such as continuing high prices of raw materials, enjoyed the term of the biggest economic growth after the second world war owing to improved corporate earnings and increased capital investments. On the other hand, the global economy as a whole continued to grow supported by the steady European economy and the expanding BRICs although U.S. economy showed a decline. In these situations, the demand for tyres in Japan in 2006 on a rubber consumption basis reached over 1.35 million tons, renewing the record high for five consecutive years.

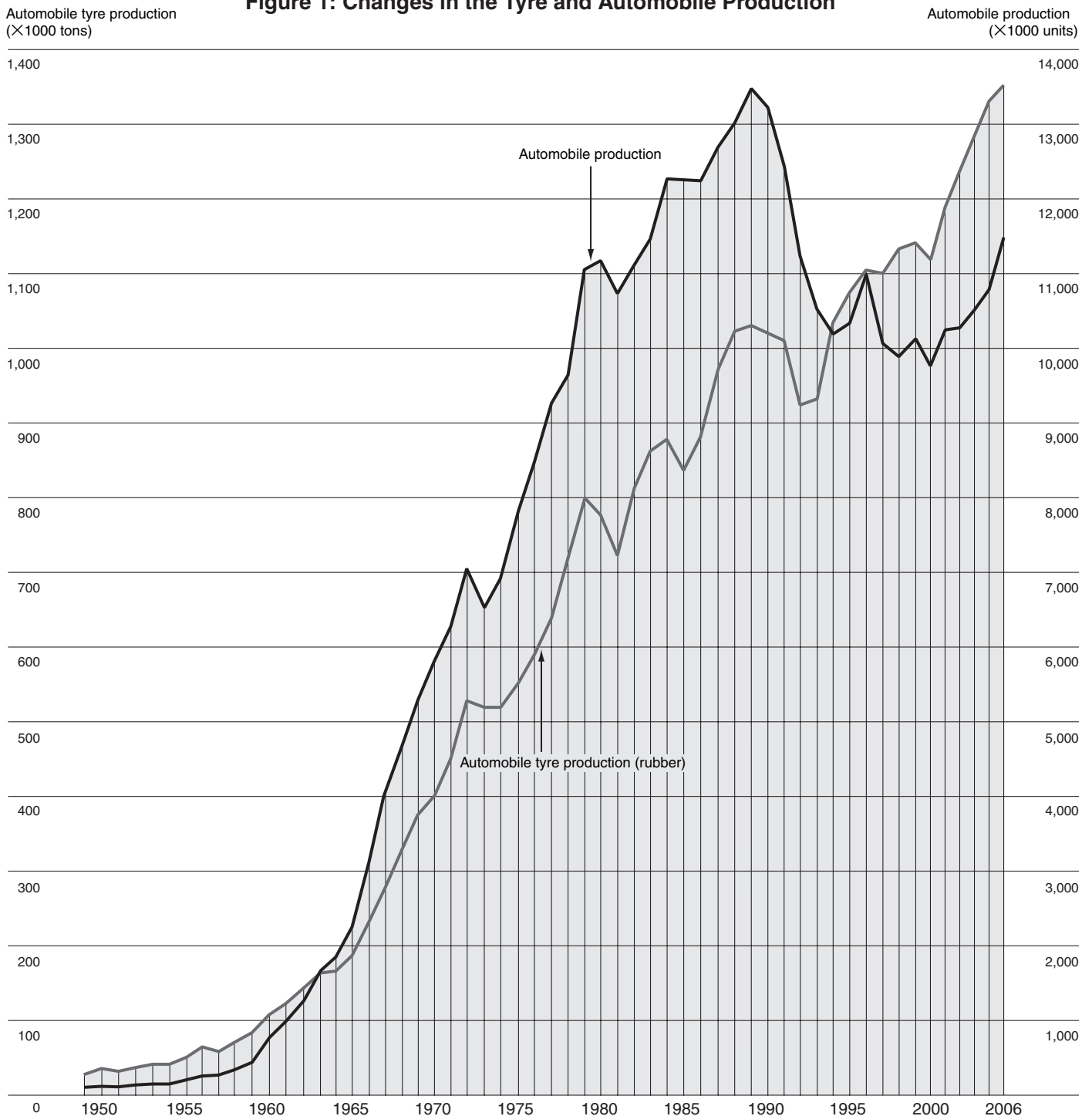
## 2. Changes in the Tyre and Automobile Production

**Table 1: Changes in the Tyre and Automobile Production**

	1950	1960	1970	1980	1990	2000	2001	2002	2003	2004	2005	2006
Automobile Tyre Production (1000 tons of rubber)	14	83	369	784	1,031	1,153	1,119	1,190	1,240	1,285	1,331	1,352
Automobile Production (1000 units)	32	482	5,289	11,043	13,487	10,141	9,777	10,257	10,286	10,512	10,800	11,484

Source: JATMA

**Figure 1: Changes in the Tyre and Automobile Production**



## 1. Overview

(1) The production of automobile tyres in 2006 on a rubber consumption basis enjoyed the fifth year of renewing consecutive record high supported by the increases in original equipment and replacement tyres although tyres for exports remained at the same level with the previous year.

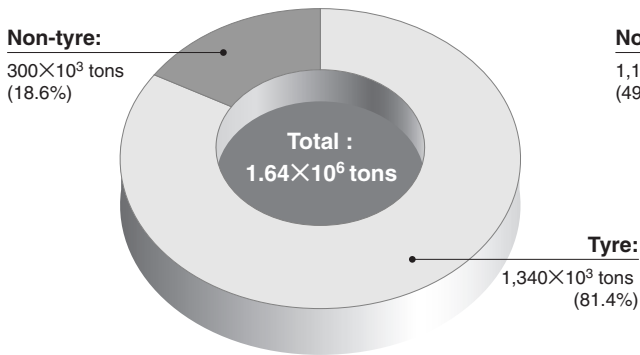
The production ratio of the tyre industry within the rubber product industry (figures 2 and 3) lowered in rubber consumption and expanded in fiscal value from the previous year, to 81.4% with 0.8 percentage points down and to 50.5% with 1.2 points up, respectively. (Ministry of Economy, Trade and Industry's dynamic statistics)

(2) The Japanese tyre industry, has been promoting in Japan the establishment of appropriate disposal of scrapped tyres from 3R (Reduce, Reuse and Recycle) activities point of view and the reinforcement of various educational activities for safety, and in the world, taking part in discussions aiming for CO<sub>2</sub> reduction as a measure for environment issue and also tackling other matters such as developing activities for early realization of global harmonization of safety standards.

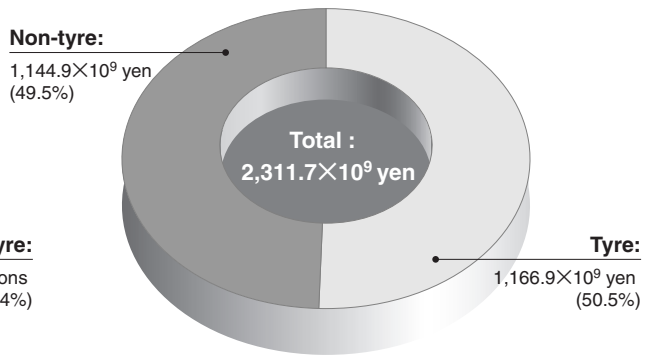
### The production ratio of the tyre industry, within the rubber product industry in 2006

(excluding cart tyres, tubes and flaps)

**Figure 2: Rubber consumption**

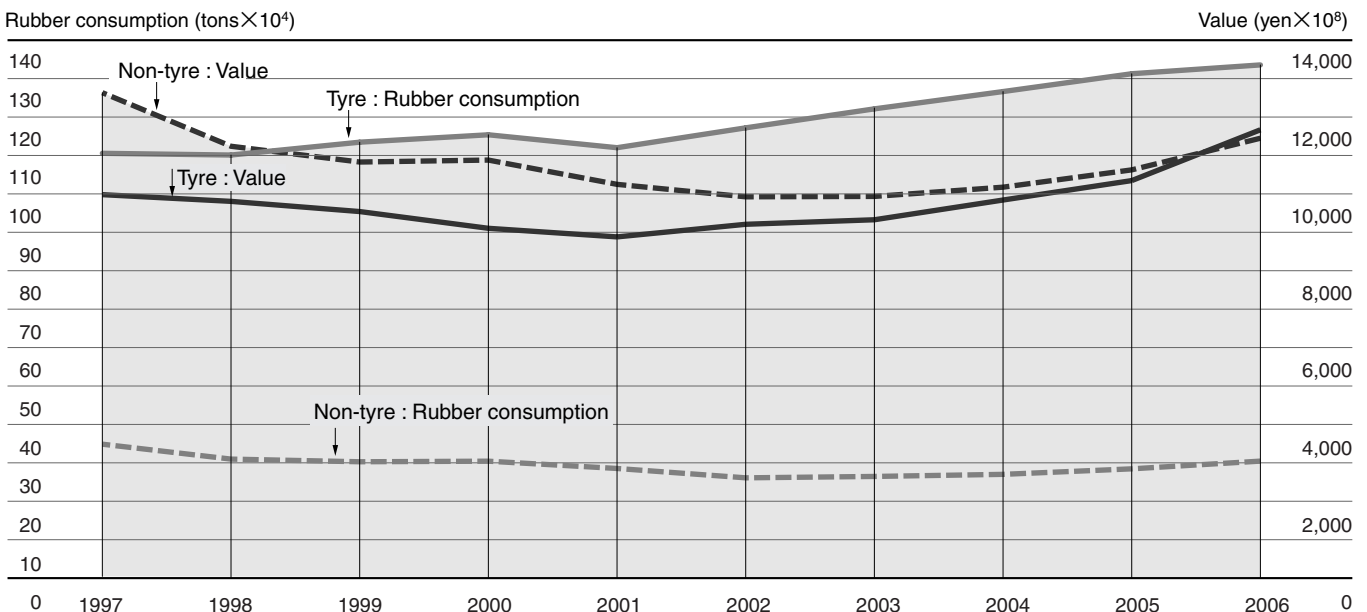


**Figure 3: Production value**



Source: Ministry of Economy, Trade and Industry dynamic statistics

### Figure 4: Changes in production of Japan's rubber products - rubber consumption and value



Source: Ministry of Economy, Trade and Industry dynamic statistics

## 2. Production Trends by Tyre Category

The total production of each category of automobile tyres in 2006 remained broadly flat from the previous year (185.63 million units, down 0.5%). By tyre category for four-wheeled vehicles, while truck and bus tyres increased 1.4% from the previous year, light truck tyres and passenger car tyres slightly decreased, down 1.1%, down 0.2%, respectively.

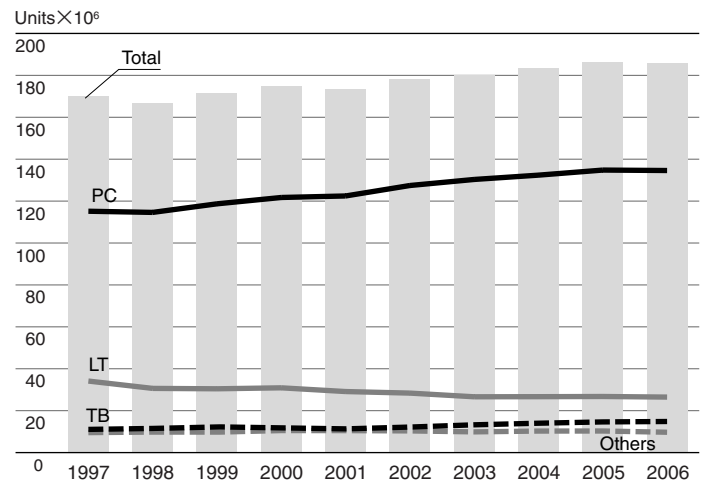
**Table 2: Automobile tyre production in 2006**

	Production	
	Units (×10 <sup>3</sup> )	2006/2005(%)
Truck and bus tyres	14,837	101.4
Light truck tyres	26,485	98.9
Passenger car tyres	134,594	99.8
Special vehicle tyres	3,311	83.5
Motorcycle tyres	6,405	101.1
Total	185,632	99.5

N.B.: 1. Special vehicle tyres' includes off-the-road, industrial, agricultural, and cart tyres. Source: JATMA

2. The figures above are the total of only JATMA members.

**Figure 5: Trends in automobile tyre production**



## 3. Trends in Sales of Original Equipment Tyres

The sales of original equipment tyres in 2006 substantially exceeded the previous year to 54.01 million units, up 4.2%. Truck and bus tyres increased 6.2% from the previous year due to the expansion of target vehicles of regulation for NOx and PM(particulate materials) emitted by vehicles, but light truck tyres decreased 1.1%, and passenger car tyres increased 5.8% caused by the rise in the number of vehicles for export.

**Table 3: Sales of original equipment tyres in 2006**

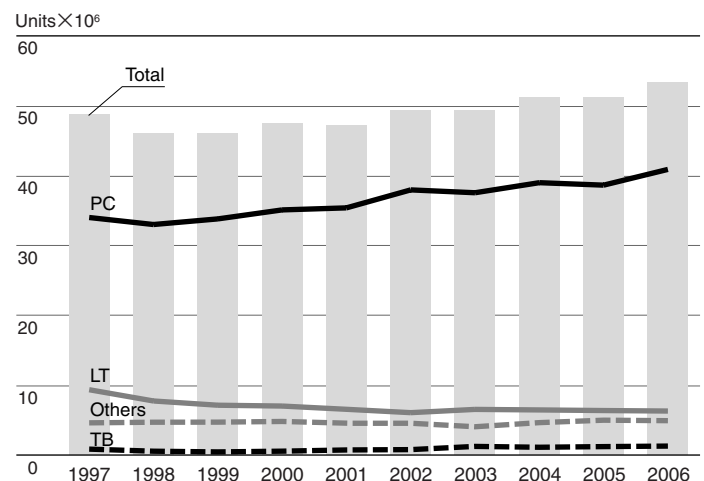
	Sales	
	Units (×10 <sup>3</sup> )	2006/2005(%)
Truck and bus tyres	1,282	106.2
Light truck tyres	6,299	98.9
Passenger car tyres	40,887	105.8
Special vehicle tyres	2,434	92.1
Motorcycle tyres	3,106	104.3
Total	54,008	104.2

N.B.: 1. Special vehicle tyres' includes off-the-road, industrial, agricultural, and cart tyres. Source: JATMA

2. The figures above include other domestic manufacturers than JATMA members.

3. Exported tyres are excluded.

**Figure 6: Trends in sales of original equipment tyres**



## 4. Trends in Sales of Replacement Tyres

In 2006, replacement tyre sales in Japan remained broadly flat from the previous year (75.91 million units, up 0.9%). While truck and bus tyres increased 2.1% owing to the moderate economic recovery, light truck tyres and passenger car tyres remained broadly flat, which resulted in the above total situation.

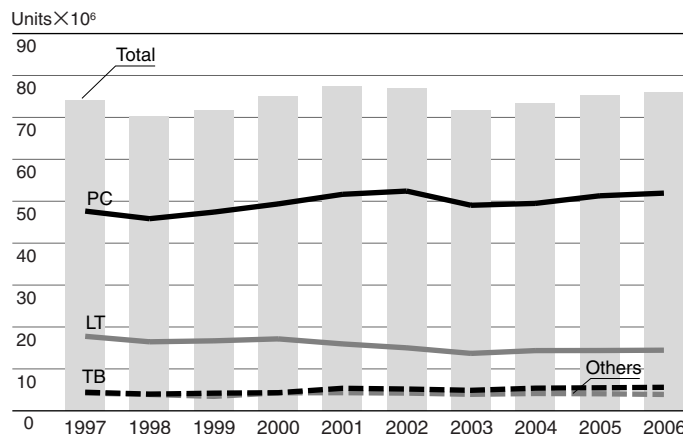
**Table 4: Sales of replacement tyres in 2006**

	Sales	
	Units( $\times 10^3$ )	2006/2005(%)
Truck and bus tyres	5,608	102.1
Light truck tyres	14,462	100.5
Passenger car tyres	51,931	101.2
Special vehicle tyres	1,094	96.0
Motorcycle tyres	2,816	96.1
Total	75,911	100.9

N.B.: 1. Special vehicle tyres' includes off-the-road, industrial, agricultural, and cart tyres. Source: JATMA

2. The figures above include other domestic manufacturers than JATMA members.

**Figure 7: Trends in sales of replacement tyres**



### Trends in sales of summer tyres and winter tyres for replacement (for four-wheeled vehicles)

In 2006, summer tyre (i.e. ordinary tyres excluding winter tyres) sales was 47.68 million units, down 2.8% from the previous year, and the ratio of the summer tyre sales to the total decreased from the previous year. By tyre category, truck and bus tyres, light truck tyres and passenger car tyres, all of them decreased from the previous year, 1.8%, 3.8% and 2.6%, respectively. The situation was induced by prolonged tenure of use of tyres, rise in tyres imported by non-members, and increase in winter tyres.

Winter tyre sales in 2006 was 24.33 million units, up 9.9% from the previous year, reaching the record high with three consecutive years of increase. And the ratio of winter tyre sales to the total exceeded the previous year by 2.7 points to 33.8%. Truck and bus tyres increased 8.8% due to the influence of increased studless tyres to be used even after the season until worn-out, and light truck tyres and passenger car tyres also increased, 11.1% and 9.8%, respectively due to increased deliveries for insufficient stock induced by the previous year's heavy snowfall.

**Table 5: Sales of summer tyres and winter tyres for replacement in 2006**

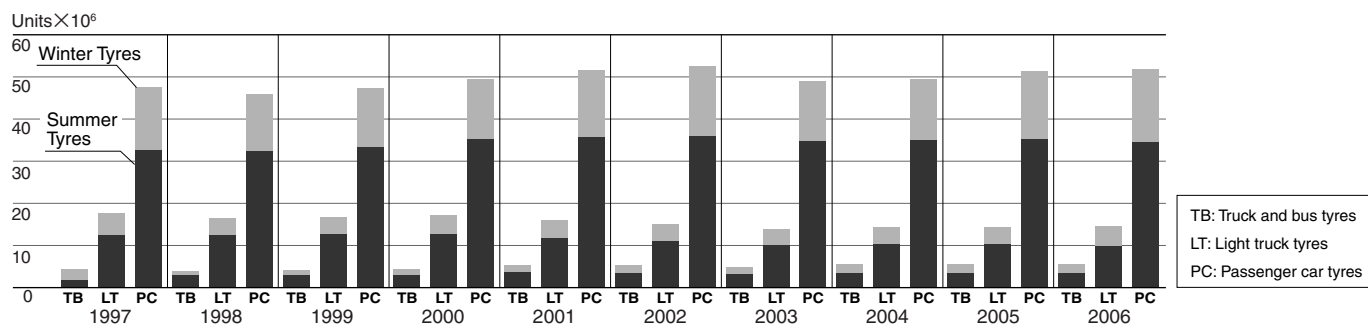
(for four-wheeled vehicles)

	Summer tyres			Winter tyres		
	Units( $\times 10^3$ )	2006/2005(%)	Share of summer tyres in total	Units( $\times 10^3$ )	2006/2005(%)	Share of winter tyres in total
Truck and bus tyres	3,401	98.2	60.6	2,207	108.8	39.4
Light truck tyres	9,858	96.2	68.2	4,604	111.1	31.8
Passenger car tyres	34,417	97.4	66.3	17,514	109.8	33.7
Total	47,675	97.2	66.2	24,326	109.9	33.8

N.B.: The shares of summer and winter tyres indicate the respective percentages in total number of replacement sales.

Source: JATMA

**Figure 8: Trends in sales of summer tyres and winter tyres for replacement (for four-wheeled vehicles)**



### 5. Trends in Sales of Export Tyres

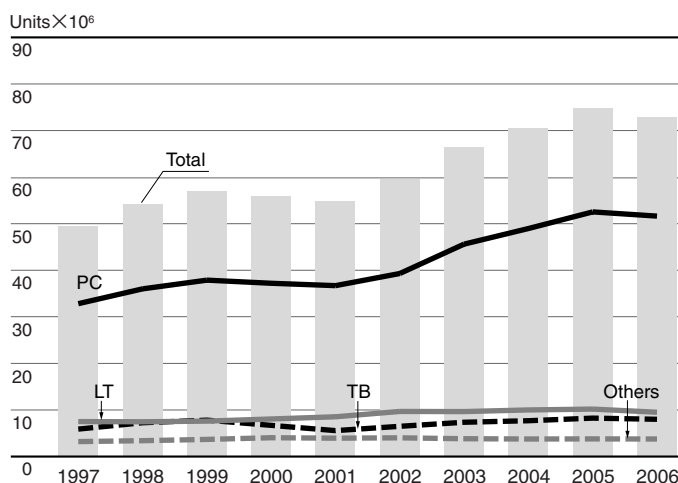
Exports of automobile tyres in 2006 decreased for the first time in five years, down 2.5% in unit terms from the previous year, to 72.91 million tyres. All of the three main categories decreased from the previous year, mainly due to the increase in the locally-based production by Japanese tyre manufacturers, down 3.0% in truck and bus tyres, down 6.6% in light truck tyres, and down 1.7% in passenger car tyres. On the other hand, exports of off-the-road, industrial and agricultural tyres increased 2.3% from the previous year due to the rise in exports of large off-the-road tyres to China and other countries.

**Table 6: Sales of export tyres in 2006**

	Sales	
	Units (×10 <sup>3</sup> )	2006/2005 (%)
Truck and bus tyres	8,002	97.0
Light truck tyres	9,516	93.4
Passenger car tyres	51,627	98.3
Special vehicle tyres	1,067	102.3
Motorcycle tyres	2,701	98.3
<b>Total</b>	<b>72,913</b>	<b>97.5</b>

N.B.: 1. Special vehicle tyres' includes off-the-road, industrial, agricultural, and cart tyres. Source: JATMA  
 2. The figures above are the total of only JATMA members.

**Figure 9: Trends in sales of export tyres**





## 6. Exports by Region of Destination

In 2006, exported tyres (Ministry of Finance customs records) decreased 1.6% from the previous year, to 75.34 million in units, however the value in yen increased 13.1%, to 613.7 billion yen, and the production weight also increased 1.0% from the previous year, to 1.52 million tons.

When analyzed by region of destination on a unit basis, exports to South and Central America, the Middle East and Asia exceeded the previous year although those to North America and Europe decreased.

**Table 7: Exports by region of destination in 2006**

	Tyre Units( $\times 10^3$ )				2006/ 2005 (%)	Value (FOB) (yen $\times 10^8$ )	2006/ 2005 (%)
	PC	TB&LT	Others	Total			
North America	19,466	3,606	1,720	24,792	93.6	192,846	109.1
South & Central America	2,813	741	119	3,673	103.2	34,415	122.2
Europe	16,471	1,916	1,888	20,275	98.6	149,790	111.5
Middle East	8,526	3,156	93	11,775	103.1	91,643	120.7
Africa	1,171	908	63	2,142	95.1	28,733	106.8
Asia	6,723	1,764	515	9,002	105.3	72,819	120.9
Oceania	2,645	767	271	3,683	99.2	43,403	108.5
Total	57,815	12,858	4,669	75,342	98.4	613,650	113.1
Weight(tons)	675,102	593,309	251,029	1,519,440	101.0		

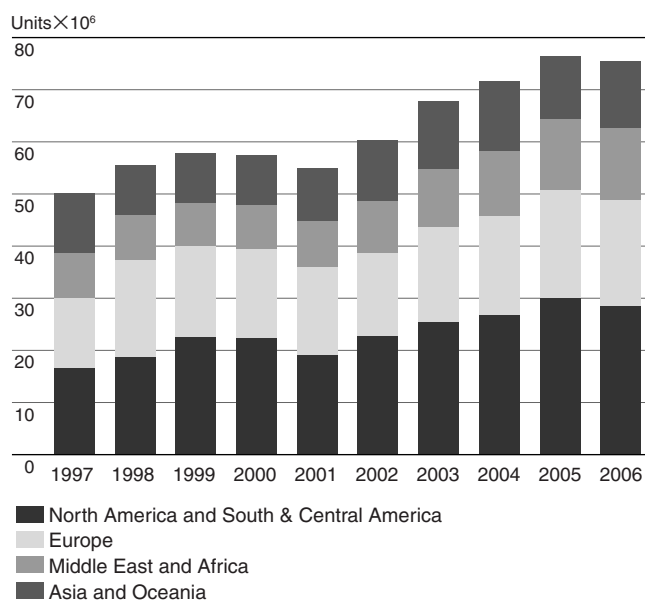
N.B.: 1. Exchange rates are averages of spot rates for Tokyo interbank trade.

2005: 1dollar = 110yen

2006: 1dollar = 116yen

Source: Ministry of Finance customs records

**Figure 10: Export trend by region**



## 7. Imports by Region of Origin

In 2006, import tyres (Ministry of Finance customs records) increased 10.5% from the previous year, to 32.17 million in units, up 23.2% to 90.4 billion yen in value, and up 11.0% to 240 thousand tons in product weight.

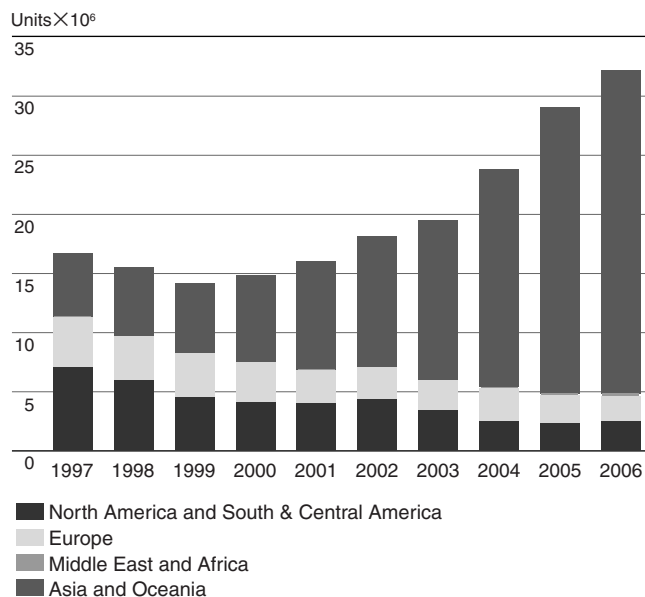
The imports from local factories in Asia of Japanese tyre manufacturers increased both for the replacement market in Japan and for the original equipment market, and inexpensive tyres from overseas also increased. Those factors resulted in the consecutive record high of import in 2006.

**Table 8: Imports by region of origin in 2006**

	Tyre Units( $\times 10^3$ )				2006/ 2005 (%)	Value (CIF) (yen $\times 10^8$ )	2006/ 2005 (%)
	PC	TB&LT	Others	Total			
North America	2,270	9	28	2,307	102.7	11,591	111.9
South & Central America	97	0	50	147	151.0	513	141.7
Europe	1,678	159	345	2,182	91.6	14,446	101.8
Middle East	171	0	9	180	137.8	1,141	127.1
Africa	6	0	0	6	145.4	57	220.3
Asia	21,702	2,539	3,107	27,348	112.8	62,647	131.8
Oceania	1	0	0	1	16.3	7	28.2
Total	25,925	2,707	3,539	32,171	110.5	90,402	123.2
Weight(tons)	184,880	37,841	18,283	241,004	111.0		

Source: Ministry of Finance customs records

**Figure 11: Import trends by region**





# Measures for Tyre Safety

## 1. Safety Standards for Automobile Tyres

Various standards have been specified regarding tyres from the viewpoint of automobile safety because tyres are automobile's important parts.

Each individual state has its own legislation specifying the standards and the tyres are requested to satisfy the standards of the state where the tyres are to be used. In Japan we have the safety standards for road trucking vehicles and their detailed items, enacted by the Ministry of National Land and Transportation.

In addition to these national standards, JATMA specifies guideline items for usage and maintenance in "Standards for Selection, Usage and Maintenance" in an effort to enlighten those involved for securing safety.

## 2. Tyre Standards

In addition to safety standards, JATMA publishes a definitive set of tyre standards in the annual JATMA Year Book. Setting these standards is the responsibility of the Tyre Standards Committee, mainly comprised of representatives of tyre makers, automakers, and related ministries and agencies in the Japanese government.

The standards cover tyres, rims and valves in seven categories: passenger cars, light trucks, trucks and buses, off-road vehicles, agricultural equipment, industrial vehicles and motorcycles.

The Japanese Ministry of Land, Infrastructure and Transport has incorporated JATMA's Tyre Standards in its vehicle inspection procedures since 1982. Internationally, the standards rank as authoritative guidelines together with the ETRTO standards of Europe and TRA standards of the United States. The JATMA standards are also mentioned in the U.S. Department of Transportation's Federal Motor Vehicle Safety Standards and are mutually recognized standards for tyres exported from Japan to Canada and Australia.



### 3. Legal Limits on Tread Wear

Balding tyres are a threat to traffic safety, especially on wet roads. The Ministry of Land, Infrastructure and Transport prescribes skidproof requirements in terms of minimum groove depth in its Safety Standards for Road Transportation Vehicles. These requirements, which include wear limits for high-speed and ordinary driving (see table 9,10), proscribe the use of tyres with a groove depth shallower than that specified. Inspection often catch tyres with improper air pressures, uneven wear or insufficient grooves (see figure 13).

### 4. Product Inspection

In 1954, JATMA started its tyre inspection activity at its branch offices.

Defective or damaged tyres are now observed and checked at seven offices according to the requests from their consumers to find causes of the damages and to provide advice to them regarding correct usage of tyres.

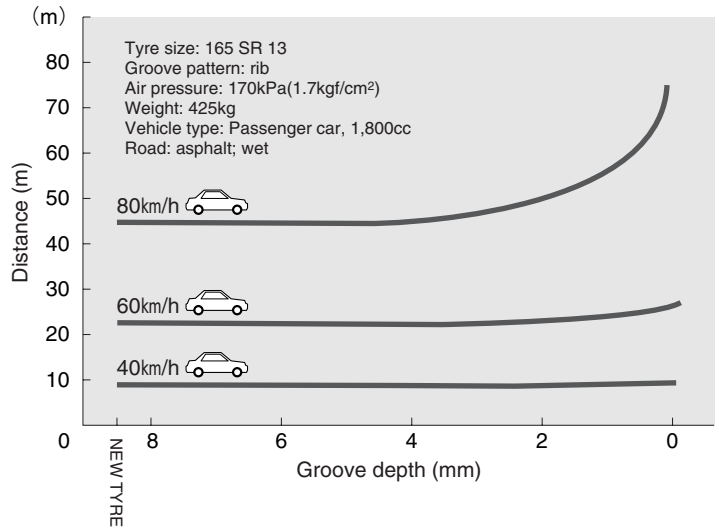
**Table 9: Wear limit for automobile tyres**

Tyre type	Groove depth limit
Passenger car tyres	1.6 mm
Light truck tyres	1.6 mm
Truck and bus tyres	1.6 mm
Motorcycle tyres	0.8 mm

**Table 10: Wear limit for automobile tyres in high-speed driving**

Tyre type	Groove depth limit
Passenger car tyres	1.6 mm
Light truck tyres	2.4 mm
Truck and bus tyres	3.2 mm

**Figure 12: Tyre groove depth and braking distance**



**Figure 13: Breakdown of tyre defects**

(Parentheses show defect rates)

Insufficient tyre grooves	████████████████████	72 (3.4)
Uneven wear	████████████████████	76 (3.6)
External cuts (reaching the cord)	██	7 (0.3)
Pins or alien matter	██	9 (0.4)
Improper air pressure	██	283 (13.5)
Others	██	105 (5.0)

**Notes:**

- Multiple tyre defects per vehicle are possible, thus the number of tyre defects does not correspond to the number of vehicles with tyre defects.
- The defect rate is the number of defects divided by the number of vehicles inspected.
- Tyre inspections were carried out a total of 44 times (22 times on expressways and 22 times on ordinary roads) in 2005.
- In the breakdown of tyre defects, the item "improper air pressure" includes insufficient pressure and excessive pressure.

## 1. Approach to “Reduce”

A new concept of “Reduce Index (Re Index)” focused on longer (wear) life and weight saving has been adopted. The industry is making efforts aiming at an effect of 10% (expecting 3-5% of actual reduction).

**Table 11: Monitoring of Re Achievement Rates**

Category	Monitored Size	Classification	Re Achievement Rate			
			2004	2005	2006	Average
Passenger car tyres	155/65R13	Summer tyres	–	107	104	106
		Studless tyres	105	110	100	105
Passenger car tyres	175/65R14	Summer tyres	–	109	99	104
		Studless tyres	–	–	101	101
Passenger car tyres	195/65R15	Summer tyres	110	112	111	111
		Studless tyres	105	105	103	104
Passenger car tyres	215/45R17	Summer tyres	120	135	109	121
		Studless tyres	105	110	95	103
Light truck tyres	145R12	Summer tyres	102	128	122	117
		Studless tyres	–	–	110	110
Light truck tyres	185R14	Summer tyres	105	110	122	112
		Studless tyres	–	–	105	105
Light truck tyres	205/70R16	Summer tyres	–	114	–	114
		Studless tyres	–	–	–	–
Light truck tyres	7.50R16	Summer tyres	–	–	–	–
		Studless tyres	–	–	–	–
Truck and bus tyres	225/80R17.5	Summer tyres	–	–	100	100
		Studless tyres	–	126	87	107
Truck and bus tyres	11R22.5	Summer tyres	113	110	100	108
		Studless tyres	–	123	100	112

N.B.: 1.  $Re\ Index = L \div M$

$Re\ Achievement\ Rate = Re\ Index \times 100$

where  $L = \text{Wear Life Index (life index for the present model based on the previous model assumed as 100)}$

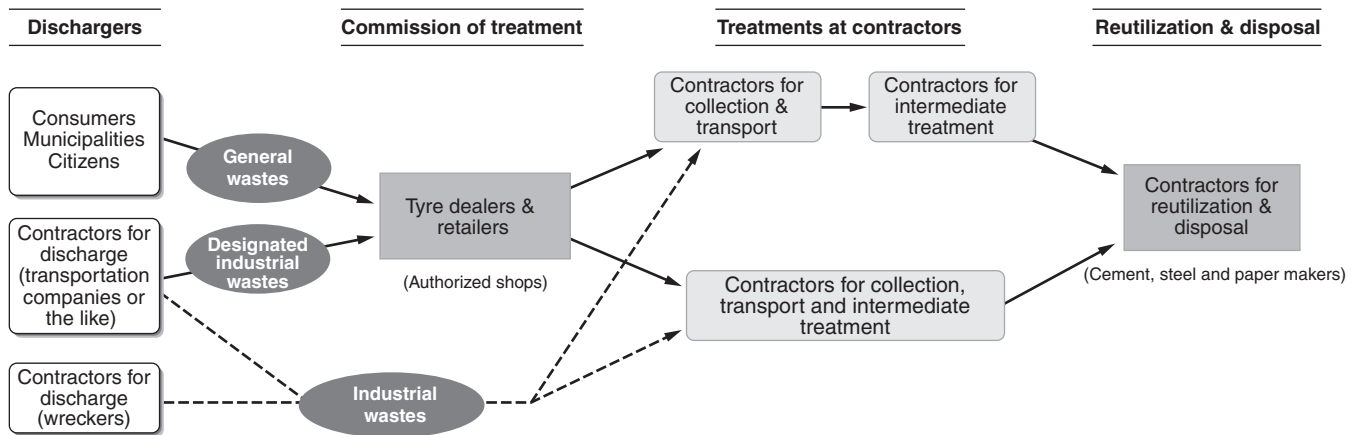
$M = \text{Weight Index (Weight index for the present model based on the previous model assumed as 100)}$

2. Tyres surveyed : Representative sizes selected in advance from replacement tyres for the domestic market.

Source: JATMA

## 2. Recycling Situation

**Figure 14: Flow of scrapped tyres, from generation to treatment and recycling**



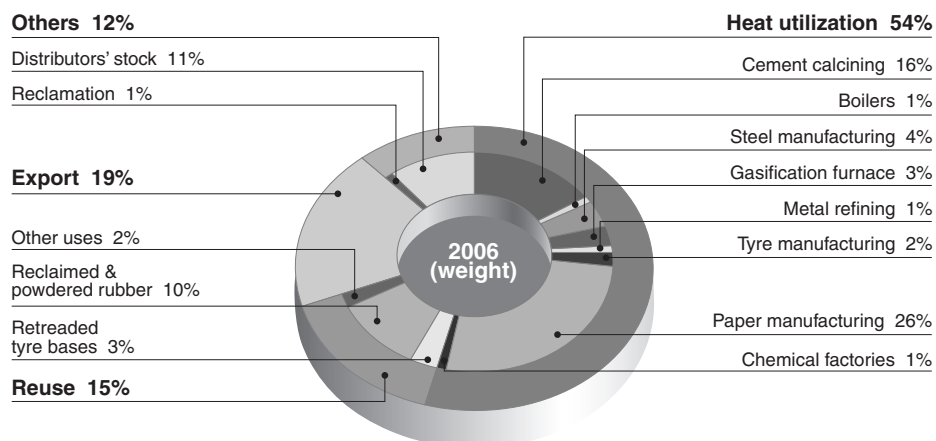
The volume of newly scrapped tyres in 2006 increased by 34 thousand tons in total from the previous year, with the increase in “on scrapped automobiles” (up 30 thousand tons).

The situation seems to be induced by the great increase in the number of acceptance of scrapped automobiles with the collection and processing system firmly fixed two years after the End-of-Life Vehicle Recycling Law became fully effective.

For several years the volume of newly scrapped tyres has remained at the level of one hundred million units and one million tons. As a situation around scrapped tyres, the demand for alternative fuels such as wood shavings, RPF (new-type solid fuel made from waste paper and scrapped plastics, abbreviation for Refuse Paper & Plastic Fuel) and scrapped tyres is heating up due to the rise in crude oil prices in recent years. Especially in scrapped tyres, the balance between supply and demand has been significantly disrupted, and the scrapped tyre market is now in confusion. Resultantly, the total recycling rate was 88%, less than the industry’s expectation, staying at the same level as the previous year. Therefore, taking hold of the routes for collecting scrapped tyres more clearly and making every effort to raise the recycling rate will become important challenges.

Regarding the situation of recycling, while *Fuel for Cement* calcining continued to decrease from the previous year, use of scrapped tyres in *Paper manufacturing* greatly increased (up 30% from the previous year) due to active operations of biomass boilers at paper mills. On the other hand, *Exported* statistics on customs clearance basis (Ministry of Finance) indicates a slight decrease in used tyres and in rubber wastes from the previous year. This situation is considered to have arisen because scrapped tyres to be cut into rubber wastes for exports were passed on to paper mills and other facilities.

**Figure 15: Recycling of used tyres in 2006**



**Table 12: Newly scrapped tyres**

(Tyres: millions; Tons: thousands; % of total)

		2002	2003	2004	2005	2006		
						units and tons	distribution	2006/2005
On purchase of new tyres	Tyres	82	78	80	84	84	82	100
	Tons	835	806	827	871	875	83	100
On scrapped automobiles	Tyres	24	25	23	16	19	18	119
	Tons	205	224	216	151	181	17	120
Total	Tyres	106	103	103	100	103	100	103
	Tons	1,040	1,030	1,043	1,022	1,056	100	103

Source: JATMA

**Table 13: Recycled tyres**

(Tons: thousands; % of total)

			2002	2003	2004	2005	2006			
			tons	tons	tons	tons	tons	distribution	2006/2005	
Kind of recycling	Domestic	Reuse	Retreaded tyre bases	41	36	33	35	36	3	103
			Reclaimed & powdered rubber	93	97	120	103	107	10	104
			Other uses	40	39	25	22	20	2	91
			Subtotal (A)	174	172	178	160	163	15	102
	Heat utilization	Biomass power generation and the like	Paper manufacturing	86	70	130	210	274	26	130
			Chemical factories	6	8	9	9	9	1	100
			Subtotal (B)	92	78	139	219	283	27	129
		For cement, steel and the like	Cement calcining	284	240	213	181	168	16	93
			Steel manufacturing	55	48	52	51	49	4	96
			Gasification furnace	-	-	8	27	34	3	126
			Tyre manufacturing	56	42	30	24	22	2	92
	Boilers	66	23	15	12	11	1	92		
	Metal refining	26	20	11	10	8	1	80		
	Subtotal (C)	487	373	329	305	292	27	96		
	Subtotal (B+C)	579	451	468	524	575	54	110		
	Export (D)	148	268	270	213	196	19	92		
	Total recycling (A+B+C+D)			901	891	916	897	934	88	104
Others	Reclamation	31	37	34	32	11	1	34		
	Distributors' stock	108	102	93	93	111	11	119		
	Subtotal (E)	139	139	127	125	122	12	98		
Total used tyres (A+B+C+D+E)			1,040	1,030	1,043	1,022	1,056	100	103	

Source: JATMA

**Table 14: Changes in production of retreaded tyres**

(Tyres: thousands; Rubber consumption: ton)

	2002	2003	2004	2005	2006
Number of tyres	1,203	1,105	1,042	1,037	1,078
Compound rubber consumption	9,345	8,699	8,184	8,406	8,596

N.B.: Figures include imports of compound rubber.

Source: METI, JATMA

### 3. Situation in illegal piling & dumping of scrapped tyres

As of February, 2007 the number of cases of illegal piling & dumping of scrapped tyres was 155, and the total number of tyres was 7,429 thousand, down 8 cases (after 24 cases properly processed and 16 cases newly discovered) and 1,159 tyres from the same month of last year.

This situation is considered as a result of ① strengthened penalties and increase in exposure of illegal piling & dumping, ② promotion activities by the tyre industry on proper processing of scrapped tyres, and ③ application of JATMA's system to support restoring the original state.

**Table 15: Situation in illegal piling & dumping of scrapped tyres**

(as of Feb., 2007)

	February 2006			February 2007										
	Number of cases	Units (×10 <sup>3</sup> )	Weight (ton)	Number of cases	Units (×10 <sup>3</sup> )	Weight (ton)	Change from Feb.,2006			Number of cases properly processed	Number of cases newly discovered	Break down		
							Number of cases	Units (×10 <sup>3</sup> )	Weight (ton)			Illegal piling (units×10 <sup>3</sup> )	Illegal dumping (units×10 <sup>3</sup> )	Excessive piling (units×10 <sup>3</sup> )
Hokkaido	11	369	3,690	7	235	2,350	-4	-134	-1,340	5	1	59	176	0
Tohoku	56	1,757	17,570	51	1,580	15,800	-5	-177	-1,770	8	3	1,006	228	346
Kanto & Koshinetsu	38	2,971	29,710	33	2,473	24,730	-5	-498	-4,980	6	1	1,992	201	280
Metropolitan area	18	787	7,870	17	637	6,370	-1	-150	-1,500	1	0	461	51	125
Chubu	5	655	6,550	6	762	7,620	1	107	1,070	0	1	750	0	12
Kinki	6	489	4,890	11	477	4,770	5	-12	-120	1	6	375	102	0
Chugoku	12	603	6,030	12	276	2,760	0	-327	-3,270	3	3	188	47	41
Shikoku	7	57	570	7	52	520	0	-5	-50	0	0	35	17	0
Kyushu	10	900	9,000	11	937	9,370	1	37	370	0	1	800	87	50
Total	163	8,588	85,880	155	7,429	74,290	-8	-1,159	-11,590	24	16	5,666	909	854

N.B.: 1. Weight is based on 10kg per tyre.

2. Cases having 1000 tyres are intended.

3. Any case with possibility of illegality is included.

#### [Remark]

- The total was 7,429 tyres. Illegal piling, illegal dumping and excessive piling were 76%, 12% and 12%, respectively. The ratio of illegal piling increased from last year (66→76%), main reasons for which is considered to be a classification shift from illegal dumping to illegal piling, and newly discovered cases.
  - ◆Illegal piling: The handling trader is in bankruptcy, under arrest or missing.
  - ◆Illegal dumping: The man or the group who dumped is not identified.
  - ◆Excessive piling: The piling exceeds the storage standard without any report.
- The reduction of 8 cases and 1,159 tyres compared with the survey in February, 2006 is considered to be induced by ① strengthened penalties and raised social movement toward proper handling of waste materials such as the increase in exposure of illegal piling & dumping ② promotion activities in the tyre industry on proper processing of scrapped tyres, and ③ the full-scale operation of development projects for a wide area and the promotion of recycle use.
- Of the above 24 cases completed in proper handling, two cases shown below were implemented with the application in 2006 of the system of JATMA to support restoring the original state.
  - Sano City, Tochigi Prefecture : 225 thousand tyres
  - Kobe City, Hyogo Prefecture : 47 thousand tyres



## 1. Automobiles and Tyres

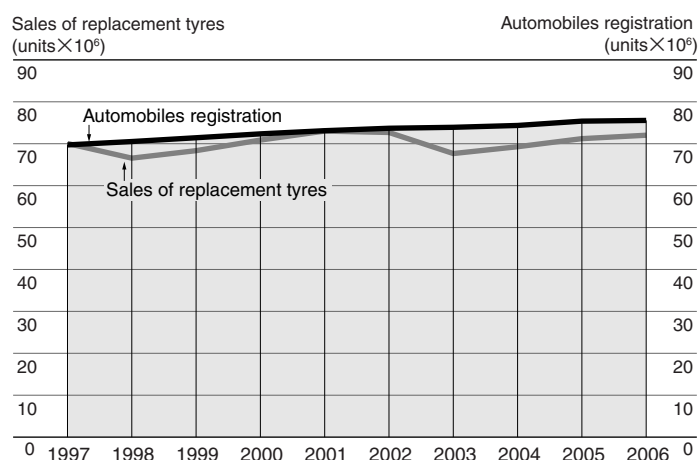
① The number of automobiles registered as of year-end of 2006 was 75.53 million (increased 0.2% from the previous year), and the tyre industry provided 72.01 million tyres (up 1.2% from the previous year), as replacement for those four-wheeled automobiles.

**Table 16: Automobile registrations and sales of replacement tyres in 2006**

Automobile	Registrations ( $\times 10^3$ )	2006/2005(%)
Passenger cars	57,521	100.8
Trucks and buses	18,011	98.6
Total	75,532	100.2
Replacement tyres	Sales ( $\times 10^3$ )	2006/2005(%)
Passenger car tyres	51,931	101.2
Commercial vehicle tyres	20,070	100.9
Total	72,001	101.2

Source: Ministry of Land, Infrastructure and Transport, JATMA

**Figure 16: Trends in automobile registrations sales of replacement tyres**



② Automobile production in Japan in 2006 was 11.48 million units (up 6.3% from the previous year) reflecting the continued active demand for fuel-efficient Japanese cars in the overseas market suffering from the steep rise in the price of the crude oil. The situation resulted in the increased sales of original equipment tyres (total for four-wheeled vehicles) to reach 48.47 million units (up 4.9% from the previous year).

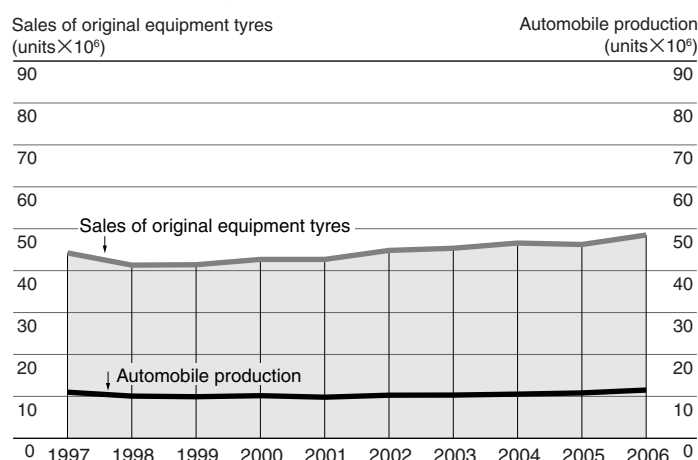
**Table 17: Automobile production and sales of original equipment tyres in 2006**

Automobile	Productions ( $\times 10^3$ )	2006/2005(%)
Passenger cars	9,756	108.2
Trucks and buses	1,728	96.9
Total	11,484	106.3
Original equipment tyres	Sales ( $\times 10^3$ )	2006/2005(%)
Passenger car tyres	40,887	105.8
Commercial vehicle tyres	7,581	100.1
Total	48,468	104.9

Source: Japan Automobile Manufacturers Association, JATMA

N.B.: Imported tyres are not included in the original equipment tyres

**Figure 17: Trends in automobile production and sales of original equipment tyres**



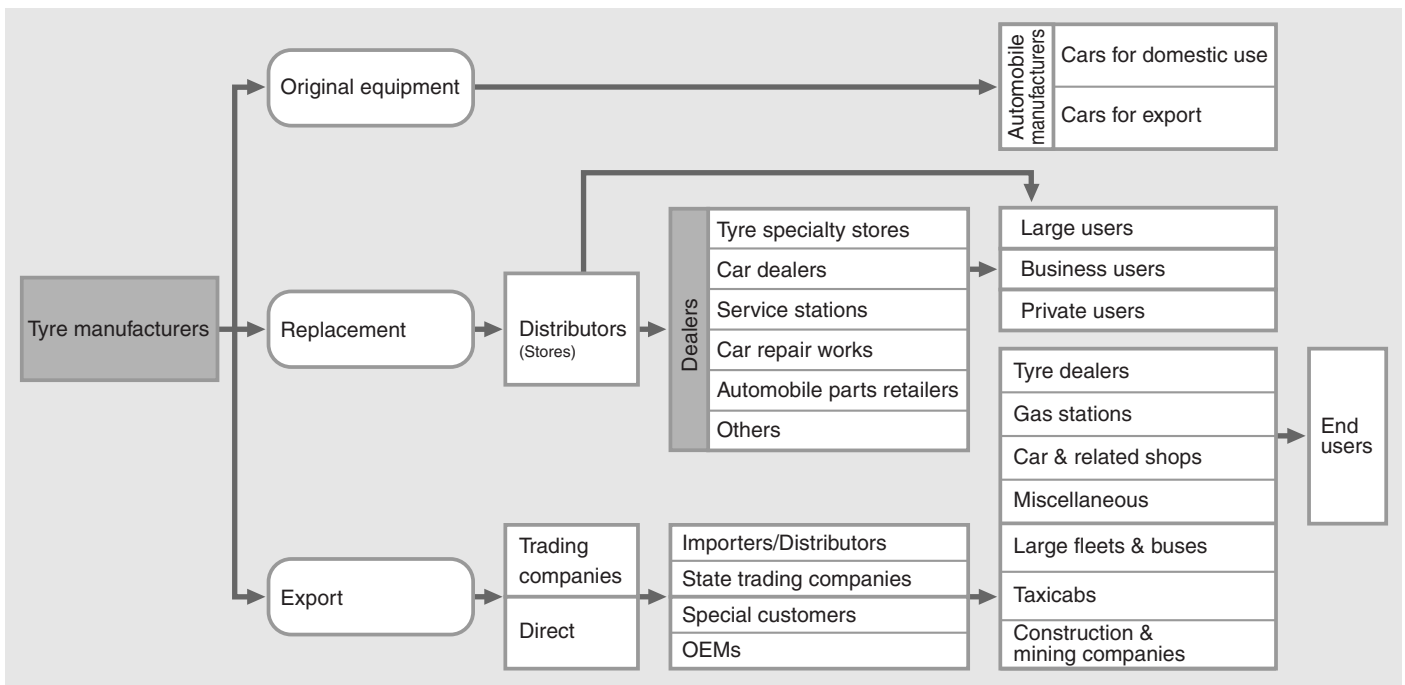


## 2. Distribution Channels

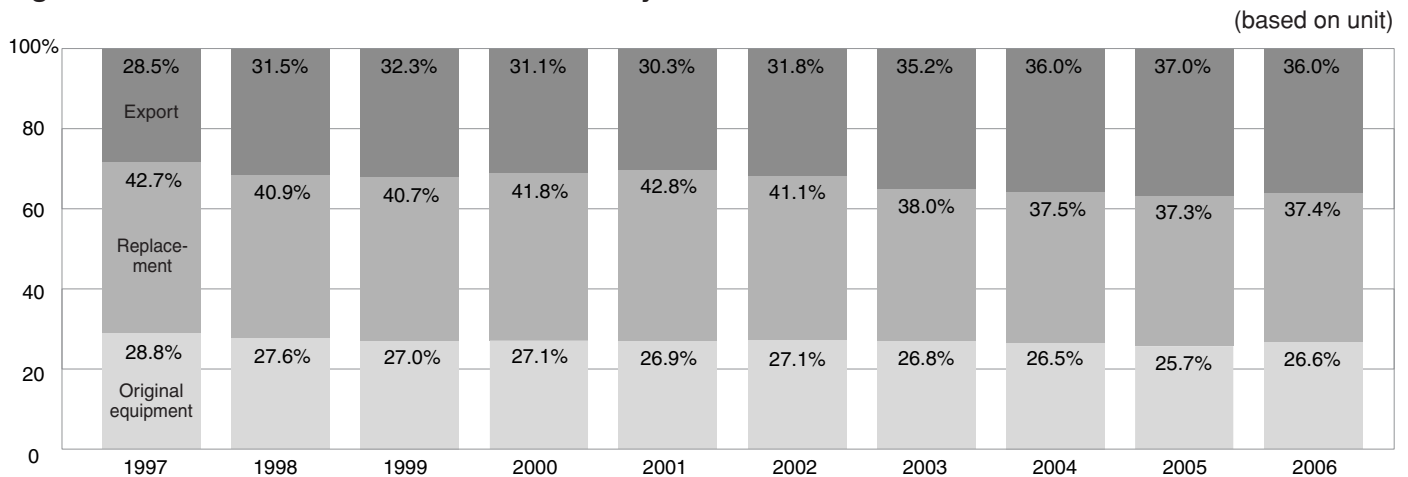
The distribution of automobile tyres is divided into three channels: original equipment, replacement and exports. Distribution channels for replacement tyres are particularly wide-ranging with distributors as key stations.

The chief distribution channels are roughly divided into two types: direct sales and indirect sales. Direct sales are those under which distributors sell tyres directly to some large users, such as transport, bus and taxi companies, and government and municipal users. Indirect sales are those under which dealers supply tyres to endusers. Some 300 distributors and about 150 thousand dealers supply replacement tyres. The sales of tyres in 2006 on the basis of units for original equipment accounted for 26.6% of the total, 37.4% for replacement tyres and 36.6% for exports. The ratio of original equipment increased.

**Figure 18: Distribution channels**



**Figure 19: Trends in sales share of automobile tyres**



### 3. Raw Materials

More than 100 raw materials are used in the production of automobile tyres, including raw rubber, tyre cord, carbon black, bead wire and compounding ingredients. Approximately 60% of these materials are based on petroleum products, principally naphtha. As a result, the tyre industry is highly dependent on petroleum.

The percent distribution of raw materials used in tyres in 2006 was approximately the same as the previous year, rubber constituting about half of a tyre (natural rubber 29% and synthetic rubber 22%), next comes reinforcing agent 26%, and then tyre cord 13%.

**Table 18: Basic composition**

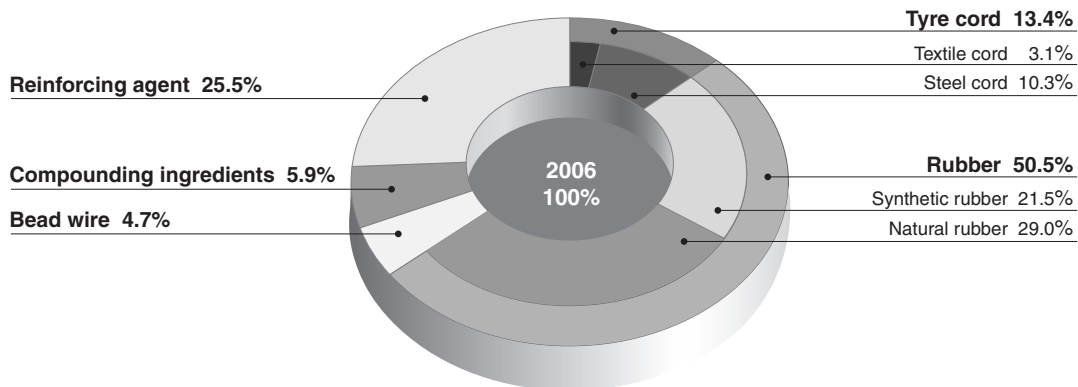
Composition	Examples
Rubber	Natural rubber, Synthetic rubber
Compounding ingredients	Vulcanizing agent, Vulcanizing accelerator, Vulcanizing accelerator aid, Antioxidant, Filler, Softener
Reinforcing agent	Carbon black, Silica
Tyre cord	Steel cord, Textile cord

**Table 19: Consumption of main raw materials used in automobile tyres in 2006**

Raw Materials	Consumption (tons)	2006/2005(%)	
Tyre cord	Steel	269,970	102.9
	Nylon	24,843	102.2
	Polyester	50,758	98.3
	Rayon	3,909	108.9
	Others	871	104.9
	<b>Total</b>	<b>350,351</b>	<b>102.3</b>
Rubber	Natural rubber	761,028	102.7
	Synthetic rubber	563,200	102.6
	<b>Total</b>	<b>1,324,228</b>	<b>102.7</b>
Reinforcing agent	669,799	101.1	

Source: JATMA

**Figure 20: Tyre raw material weight composition**



## 4. Tyre Production Worldwide

Global production of automobile tyres has been demonstrating an upward trend every year influenced by the active demand for tyres in developing countries starting with BRICs. The automobile tyre (for four-wheeled vehicles) production of the world in 2005 is estimated to be 1,320 million units (up 4% from the previous year).

Looking at each country, the United States, the world's largest tyre-producing country, produced 17%, the second & third were Japan (13%) and China (9%), followed by South Korea, Germany and France. The upper three countries account for about 40% of the total production worldwide.

**Table 20: Share of world tyre production by geographic region in 2005**

	2005			Share			2005/2004(%)		
	PC	CV	Total	PC	CV	Total	PC	CV	Total
North America	202	57	259	21.2	15.5	19.6	95.6	97.1	95.9
South & Central America	52	32	84	5.4	8.7	6.4	102.4	106.4	103.9
Europe	315	89	403	33.0	24.1	30.6	102.6	88.0	99.0
Middle East and Africa	33	14	47	3.5	3.9	3.5	114.6	114.7	114.6
Asia and Oceania	351	176	528	36.9	47.8	39.9	111.7	110.4	111.3
Total	952	368	1,320	100.0	100.0	100.0	104.5	101.8	103.7

N.B.: 1. PC : Passenger car tyres.

Source: JATMA

2. CV : Commercial vehicle tyres including truck, bus and light truck tyres.

3. Totals were calculated in thousands and indicated in millions.

4. Including some estimates.

**Table 21: Tyre production by leading manufacturing countries**

(units × 10<sup>6</sup>)

	2005			Share			2005/2004(%)		
	PC	CV	Total	PC	CV	Total	PC	CV	Total
U. S. A.	176	47	223	18.5	12.8	16.9	95.4	96.6	95.7
Japan	135	41	176	14.2	11.2	13.3	101.8	101.7	101.8
China	95	30	124	9.9	8.1	9.4	143.4	105.6	132.0
Korea	66	16	81	6.9	4.3	6.2	106.7	105.1	106.4
Germany	64	11	75	6.7	3.0	5.7	95.9	95.3	95.8
France	55	5	60	5.8	1.4	4.6	99.7	64.6	95.3

N.B.: 1. PC : Passenger car tyres.

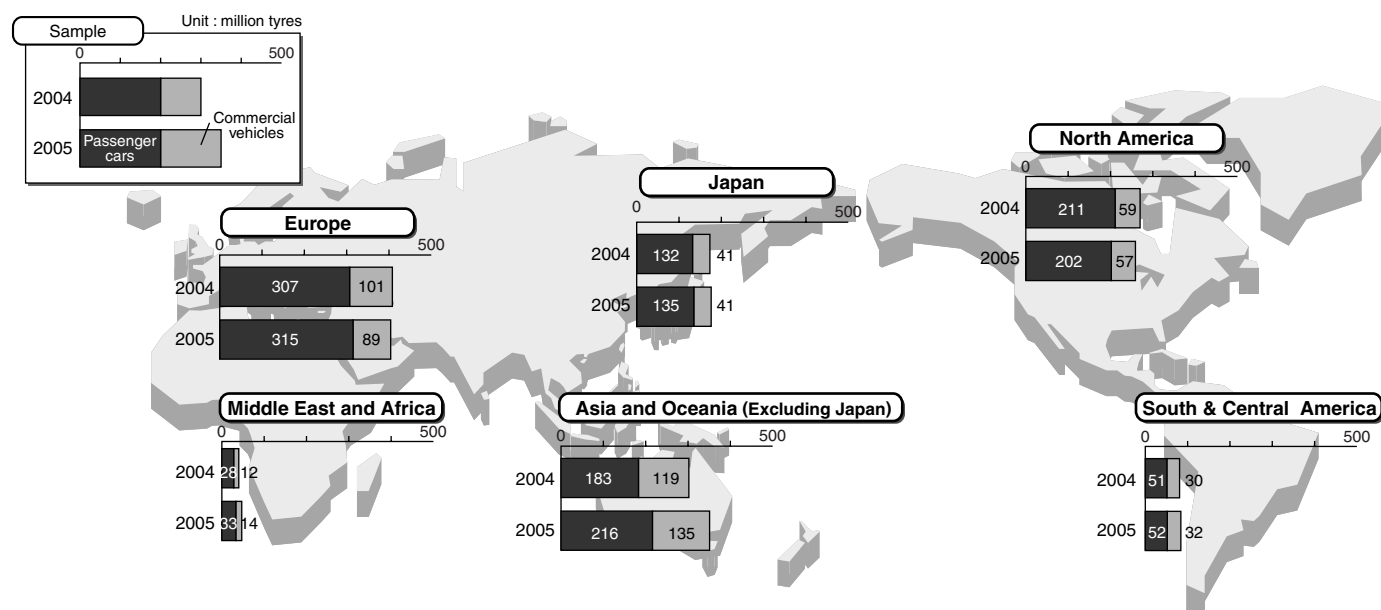
Source: JATMA

2. CV : Commercial vehicle tyres including truck, bus and light truck tyres.

3. Totals were calculated in thousands and indicated in millions. 2005/2004 percentages were calculated in thousands.

4. The figures for china are estimate.

**Figure 20: Tyre Production Worldwide**

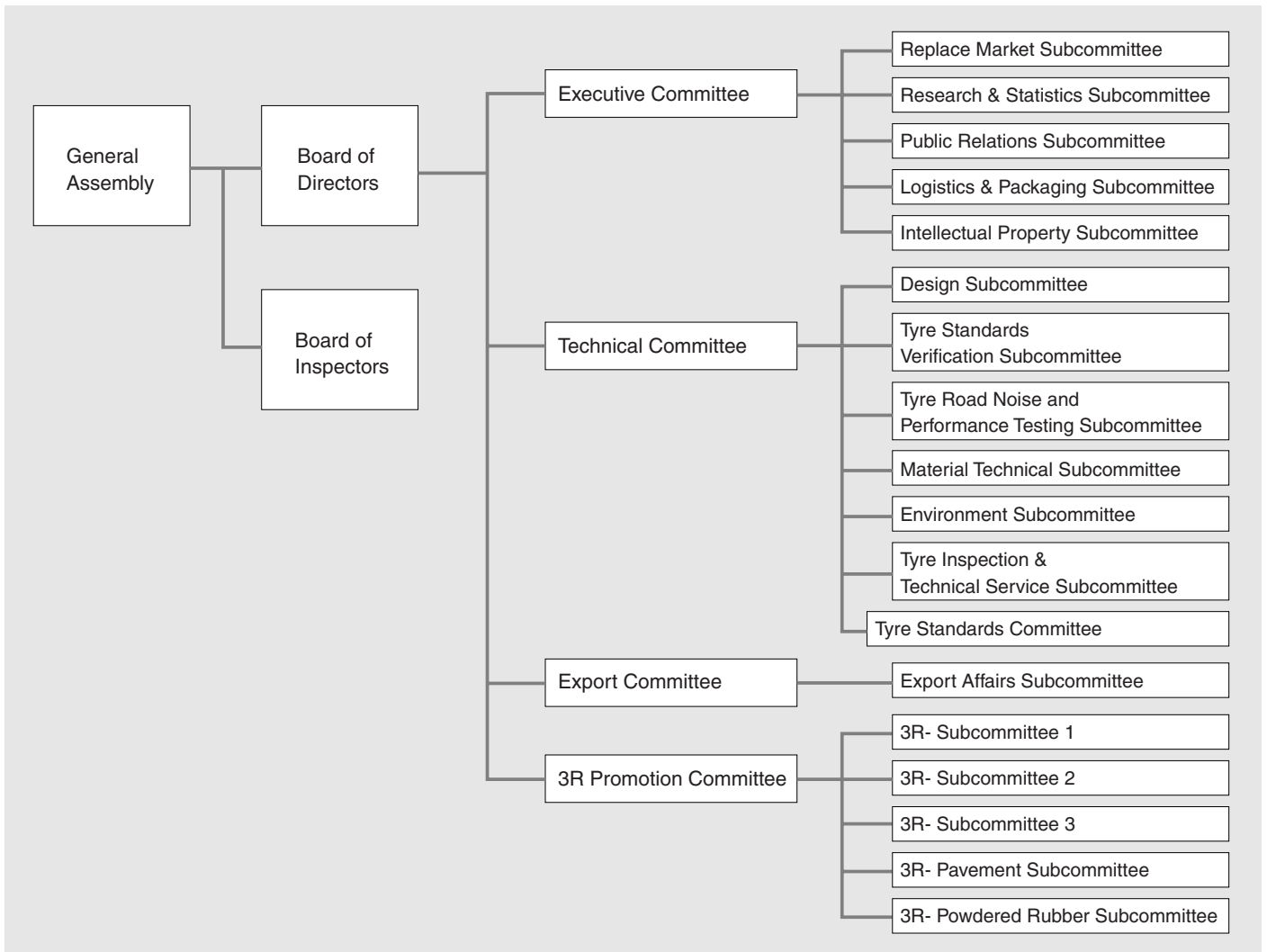


# The Japan Automobile Tyre Manufacturers Association, Inc.

**Chairman:** Tadanobu Nagumo, President, The Yokohama Rubber Co., Ltd.  
**Vice-Chairman:** Tetsuji Mino, President, Sumitomo Rubber Industries, Ltd.  
**Executive Director:** Ichiro Shimizu  
**Established:** September 1947 (incorporated in December 1968)  
**Head Office:** Toranomom No. 33 Mori Bldg., 8F, 8-21, Toranomom 3-chome, Minato-ku, Tokyo 105-0001, Japan  
Tel.: 03 (3435) 9091 Fax: 03 (3435) 9097  
Bridgestone Corporation  
**Members:** Sumitomo Rubber Industries, Ltd.  
The Yokohama Rubber Co., Ltd.  
Toyo Tire & Rubber Co., Ltd.  
Nihon Michelin Tire Co., Ltd.

## Organization

Under General Assembly and Board of Directors, four committees are established; Executive, Technical, Export, and 3R Promotion. The committees have relevant subcommittees which promoting their activities such as surveys and studies.



# JATMA Member Firms

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## Bridgestone Corporation

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**President** Shoshi Arakawa  
**Established:** March 1, 1931  
**Capital:** ¥126,354 million  
(as of the end of December 2006)  
**Annual sales:** ¥945,892 million  
(fiscal year ended December 2006)  
**Employees:** 13,778  
(as of the end of December 2006)  
**Head office:** 10-1, Kyobashi 1-chome,  
Chuo-ku, Tokyo 104-8340  
Tel.: 03 (3567) 0111  
<http://www.bridgestone.co.jp/>

## Sumitomo Rubber Industries, Ltd.

---

**President** Tetsuji Mino  
**Established:** March 6, 1917  
**Capital:** ¥42,658 million  
(as of the end of December 2006)  
**Annual sales:** ¥272,628 million  
(fiscal year ended December 2006)  
**Employees:** 5,287  
(as of the end of December 2006)  
**Head office:** 6-9, Wakinohama-cho 3-chome,  
Chuo-ku, Kobe,  
Hyogo Prefecture 651-0072  
Tel.: 078 (265) 3000  
<http://www.srigroup.co.jp/>

## The Yokohama Rubber Co., Ltd.

---

**President** Tadanobu Nagumo  
**Established:** October 13, 1917  
**Capital:** ¥38,909 million  
(as of the end of March 2007)  
**Annual sales:** ¥327,826 million  
(fiscal year ended March 2007)  
**Employees:** 5,123  
(as of the end of March 2007)  
**Head office:** 36-11, Shimbashi 5-chome,  
Minato-ku, Tokyo 105-8685  
Tel.: 03 (5400) 4531  
<http://www.yrc.co.jp/>

## Toyo Tire & Rubber Co., Ltd.

---

**President** Yoshio Kataoka  
**Established:** August 1, 1945  
**Capital:** ¥23,974 million  
(as of the end of March 2007)  
**Annual sales:** ¥244,158 million  
(fiscal year ended March 2007)  
**Employees:** 3,254  
(as of the end of March 2007)  
**Head office:** 17-18, Edobori 1-chome,  
Nishi-ku, Osaka,  
Osaka Prefecture 550-8661  
Tel.: 06 (6441) 8801  
<http://www.toyo-rubber.co.jp/>

## Nihon Michelin Tire Co., Ltd.

---

**President** François Busson  
**Established:** June 10, 1975  
**Capital:** ¥100 million  
(as of the end of December 2006)  
**Employees:** 1,382  
(as of the end of December 2006)  
**Head office:** 6-1, Fujimi 1-chome,  
Chiyoda-ku, Tokyo 102-8176  
Tel.: 03 (5210) 2700  
<http://www.michelin.co.jp/>

# Distribution of Member Firms' Automobile Tyre Plants

(May 2007)



## JATMA

The Japan Automobile Tyre Manufacturers Association, Inc.

<http://www.jatma.or.jp>

### Head Office

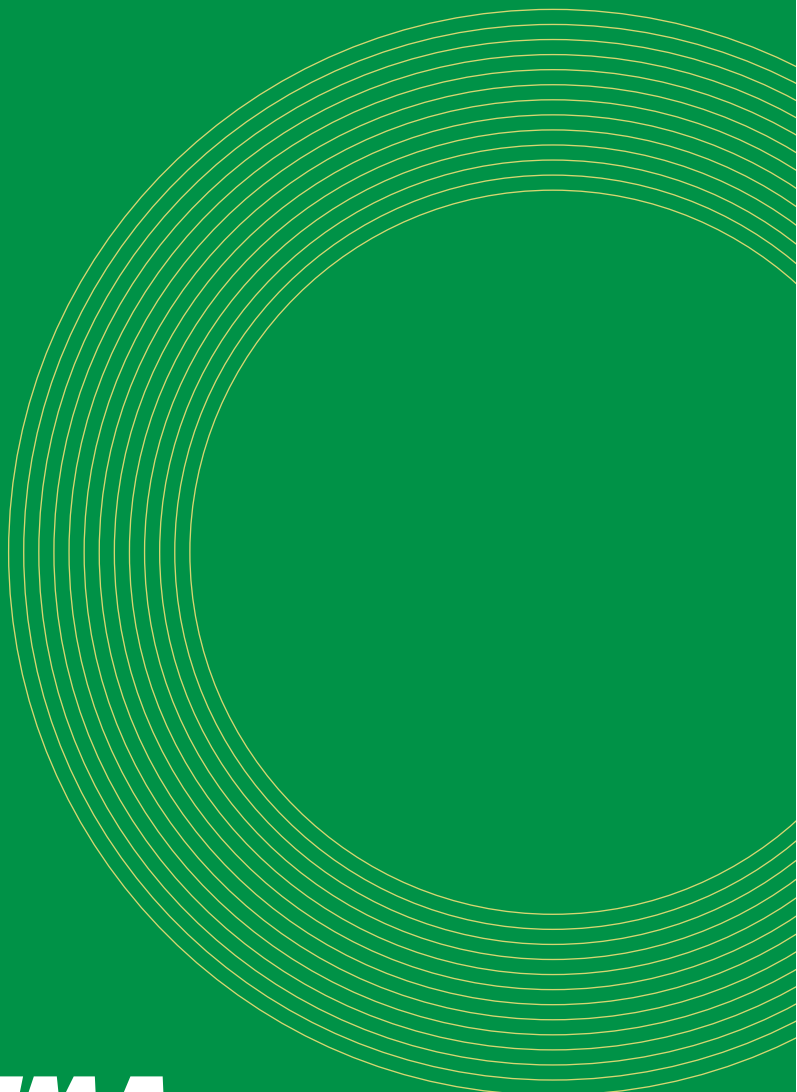
No.33 Mori Bldg. 8Floor  
3-8-21 Toranomon, Minato-ku, Tokyo, JAPAN 105-0001

General Affairs Department (General Affairs, Accounting)  
(Public Relations)  
Technical Department  
(Inspection • Accident Prevention)  
Business Affairs Department  
Recycling Division

Phone. 03-3435-9091 Fax. 03-3435-9097  
Phone. 03-3435-9092 Fax. 03-3435-9097  
Phone. 03-3435-9094 Fax. 03-3435-9097  
Phone. 03-3435-9092 Fax. 03-3435-9097  
Phone. 03-3435-9095 Fax. 03-3435-9097  
Phone. 03-5408-5051 Fax. 03-5408-5053

### Branches

Hokkaido Branch	2-13 Higashi, Ohdori, Chuo-ku, Sapporo, Hokkaido, JAPAN 060-0041	Phone. 011-281-3671	Fax. 011-241-4889
Tohoku Branch	1-7-8 Ichiban-cho, Aoba-ku, Sendai, Miyagi, JAPAN 980-0811	Phone. 022-227-8118	Fax. 022-222-6979
Kanto Branch	1-9-6 Higashiueno, Taito-ku, Tokyo, JAPAN 110-0015	Phone. 03-3832-8661	Fax. 03-3832-8663
Chubu Branch	28-15 Takebashi-cho, Nakamura-ku, Nagoya, Aichi, JAPAN 453-0016	Phone. 052-452-3907	Fax. 052-452-3908
Kinki Branch	1-9-20 Dohshin, Kita-ku, Osaka, Osaka, JAPAN 530-0035	Phone. 06-6351-6747	Fax. 06-6351-2519
Chugoku Branch	8-18 Fukuro-machi, Naka-ku, Hiroshima, Hiroshima, JAPAN 730-0036	Phone. 082-247-1524	Fax. 082-247-9541
Kyushu Branch	2-20-4 Higashihie, Hakata-Ku, Fukuoka, Fukuoka, JAPAN 812-0007	Phone. 092-411-3536	Fax. 092-411-7781



**JATMA**

THE JAPAN AUTOMOBILE TYRE MANUFACTURERS ASSOCIATION, INC.

# History Tables of Statistics

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7. Exports of tyres and tubes based on Ministry of Finance customs statistics
8. Imports of tyres and tubes based on Ministry of Finance customs statistics



## Production of automobile tyres and tubes

t yres : ×10<sup>3</sup>, rubber : tons, ( ) : year to year comparison %

		1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Truck and bus tyres	Tyres	11,067 (99.5)	11,528 (104.2)	12,276 (106.5)	11,801 (96.1)	11,324 (96.0)	12,184 (107.6)	13,256 (108.8)	14,020 (105.8)	14,639 (104.4)	14,837 (101.4)
	Rubber	287,380 (98.0)	302,575 (105.3)	323,307 (106.9)	306,806 (94.9)	286,237 (93.3)	310,704 (108.5)	341,463 (109.9)	358,109 (104.9)	371,681 (103.8)	380,344 (102.3)
Light truck tyres	Tyres	34,136 (101.5)	30,632 (89.7)	30,444 (99.4)	30,906 (101.5)	29,130 (94.3)	28,386 (97.4)	26,628 (93.8)	26,681 (100.2)	26,771 (100.3)	26,485 (98.9)
	Rubber	207,352 (102.9)	187,984 (90.7)	185,883 (98.9)	189,080 (101.7)	175,918 (93.0)	178,442 (101.4)	171,628 (96.2)	176,267 (102.7)	178,709 (101.4)	176,636 (98.8)
Passenger car tyres	Tyres	115,162 (104.2)	114,607 (99.5)	118,697 (103.6)	121,725 (102.6)	122,449 (100.6)	127,441 (104.1)	130,328 (102.3)	132,386 (101.6)	134,806 (101.8)	134,594 (99.8)
	Rubber	458,015 (106.1)	462,991 (101.1)	483,890 (104.5)	504,915 (104.3)	511,242 (101.3)	550,647 (107.7)	572,596 (104.0)	592,779 (103.5)	617,709 (104.2)	625,274 (101.2)
Off-the-road tyres	Tyres	597 (108.3)	515 (86.3)	500 (97.1)	513 (102.6)	509 (99.2)	495 (97.2)	497 (100.4)	512 (103.0)	519 (101.4)	554 (106.7)
	Rubber	110,900 (102.9)	108,228 (97.6)	101,540 (93.8)	112,138 (110.4)	107,354 (95.7)	111,489 (103.9)	115,655 (103.7)	118,107 (102.1)	122,949 (104.1)	130,611 (106.2)
Industrial tyres	Tyres	1,227 (106.3)	1,053 (85.8)	1,041 (98.9)	1,094 (105.1)	1,040 (95.1)	972 (93.5)	982 (101.0)	936 (95.3)	827 (88.4)	721 (87.2)
	Rubber	11,971 (108.9)	10,202 (85.2)	9,887 (96.9)	11,239 (113.7)	10,583 (94.2)	10,113 (95.6)	10,209 (100.9)	9,864 (96.6)	9,395 (95.2)	8,721 (92.8)
Agricultural tyres	Tyres	836 (91.5)	681 (81.5)	772 (113.4)	692 (89.6)	605 (87.4)	549 (90.7)	582 (106.0)	608 (104.5)	630 (103.6)	614 (97.5)
	Rubber	6,680 (96.8)	5,232 (78.3)	6,200 (118.5)	5,030 (81.1)	4,323 (85.9)	4,344 (100.5)	4,615 (106.2)	5,153 (111.7)	5,486 (106.5)	5,503 (100.3)
Motorcycle tyres	Tyres	5,741 (100.1)	6,072 (105.8)	5,975 (98.4)	6,618 (110.8)	6,697 (101.2)	6,376 (95.2)	6,158 (96.6)	6,120 (99.4)	6,334 (103.5)	6,405 (101.1)
	Rubber	12,043 (101.7)	12,958 (107.6)	12,964 (100.0)	14,823 (114.3)	15,230 (102.7)	14,311 (94.0)	14,187 (99.1)	14,328 (101.0)	15,147 (105.7)	15,649 (103.3)
Cart tyres	Tyres	1,131 (105.0)	1,467 (129.7)	1,610 (109.7)	1,594 (99.0)	1,637 (102.7)	1,954 (119.4)	1,670 (85.5)	2,096 (125.5)	1,989 (94.9)	1,422 (71.5)
	Rubber	3,538 (106.8)	4,691 (132.6)	5,025 (107.1)	4,791 (95.3)	4,925 (102.8)	5,877 (119.3)	5,155 (87.7)	6,713 (130.2)	6,380 (95.0)	4,615 (72.3)
Flaps and rim-bands	Rubber	7,236 (91.4)	5,322 (73.5)	4,892 (91.9)	4,110 (84.0)	3,632 (88.4)	3,883 (106.9)	4,100 (105.6)	3,846 (93.8)	3,948 (102.7)	4,420 (112.0)
Total	Tyres	169,897 (103.2)	166,555 (98.0)	171,315 (102.9)	174,943 (102.1)	173,391 (99.1)	178,357 (102.9)	180,101 (101.0)	183,359 (101.8)	186,515 (101.7)	185,632 (99.5)
	Rubber	1,105,115 (102.8)	1,100,183 (99.6)	1,133,588 (103.0)	1,152,932 (101.7)	1,119,444 (97.1)	1,189,810 (106.3)	1,239,608 (104.2)	1,285,166 (103.7)	1,331,404 (103.6)	1,351,773 (101.5)

N.B.: 1. Source : JATMA (Total of members only)

N.B.: 2. 2001 and following years had a category shift between truck and bus tyres and light truck tyres

## Domestics shipment of automobile tyres and tubes

t yres :  $\times 10^3$ , rubber : tons, ( ) : year to year comparison %

		1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Truck and bus tyres	Tyres	5,146 (100.4)	4,348 (84.5)	4,520 (104.0)	5,050 (111.7)	5,763 (114.1)	5,735 (99.5)	5,884 (102.6)	6,317 (107.4)	6,441 (102.0)	6,687 (103.8)
	Rubber	124,954 (98.6)	106,622 (85.3)	112,118 (105.2)	123,644 (110.3)	130,391 (105.5)	128,834 (98.8)	131,007 (101.7)	139,788 (106.7)	141,192 (101.0)	147,320 (104.3)
Light truck tyres	Tyres	26,859 (100.0)	23,610 (87.9)	23,081 (97.8)	22,980 (99.6)	20,593 (89.6)	18,839 (91.5)	17,446 (92.6)	17,288 (99.1)	16,934 (98.0)	17,070 (100.8)
	Rubber	151,162 (100.8)	131,981 (87.3)	127,465 (96.6)	127,344 (99.9)	109,093 (85.7)	100,336 (92.0)	94,121 (93.8)	96,668 (102.7)	93,992 (97.2)	94,671 (100.7)
Passenger car tyres	Tyres	82,832 (102.8)	79,187 (95.6)	81,270 (102.6)	84,258 (103.7)	85,618 (101.6)	87,860 (102.6)	84,587 (96.3)	84,140 (99.5)	81,326 (96.7)	83,538 (102.7)
	Rubber	321,142 (104.3)	311,095 (96.9)	319,523 (102.7)	331,732 (103.8)	343,109 (103.4)	360,881 (105.2)	348,198 (96.5)	349,752 (100.4)	342,992 (98.1)	360,177 (105.0)
Off-the-road tyres	Tyres	236 (97.1)	177 (75.0)	178 (100.6)	184 (103.4)	183 (99.5)	165 (90.2)	168 (101.8)	192 (114.3)	207 (107.8)	215 (103.9)
	Rubber	14,755 (96.1)	11,207 (76.0)	11,275 (100.6)	11,805 (104.7)	11,323 (95.9)	10,732 (94.8)	12,696 (118.3)	15,573 (122.7)	17,208 (110.5)	16,758 (97.4)
Industrial tyres	Tyres	952 (103.5)	841 (88.3)	815 (96.9)	871 (106.9)	818 (93.9)	778 (95.1)	789 (101.4)	855 (108.4)	785 (91.8)	726 (92.5)
	Rubber	8,444 (105.8)	7,392 (87.5)	7,087 (95.9)	7,724 (109.0)	7,333 (94.9)	7,048 (96.1)	7,715 (109.5)	8,437 (109.4)	8,267 (98.0)	8,079 (97.7)
Agricultural tyres	Tyres	752 (95.4)	615 (81.8)	674 (109.6)	663 (98.4)	575 (86.7)	534 (92.9)	550 (103.0)	553 (100.5)	602 (108.9)	592 (98.3)
	Rubber	6,040 (103.7)	4,766 (78.9)	5,396 (113.2)	4,745 (87.9)	3,989 (84.1)	4,014 (100.6)	4,202 (104.7)	4,693 (111.7)	5,027 (107.1)	5,124 (101.9)
Motorcycle tyres	Tyres	3,649 (102.8)	3,701 (101.4)	3,486 (94.2)	3,574 (102.5)	3,563 (99.7)	3,373 (94.7)	2,744 (81.4)	2,733 (99.6)	2,904 (106.3)	2,934 (101.0)
	Rubber	7,227 (106.2)	7,497 (103.7)	7,208 (96.1)	7,542 (104.6)	7,440 (98.6)	6,941 (93.3)	6,158 (88.7)	6,299 (102.3)	6,866 (109.0)	7,101 (103.4)
Cart tyres	Tyres	825 (117.0)	1,037 (125.7)	1,259 (121.4)	1,328 (105.5)	1,379 (103.8)	1,577 (114.4)	1,313 (83.3)	1,710 (130.2)	1,469 (85.9)	959 (65.3)
	Rubber	2,537 (118.7)	3,308 (130.4)	3,942 (119.2)	4,054 (102.8)	4,191 (103.4)	4,714 (112.5)	3,944 (83.7)	5,314 (134.7)	4,546 (85.5)	2,919 (64.2)
Flaps and rim-bands	Rubber	2,337 (89.7)	1,742 (74.5)	1,502 (86.2)	1,405 (93.5)	1,245 (88.6)	1,265 (101.6)	1,117 (88.3)	1,088 (97.4)	1,058 (97.2)	1,125 (106.3)
Total	Tyres	121,251 (102.1)	113,516 (93.6)	115,283 (101.6)	118,908 (103.1)	118,492 (99.7)	118,861 (100.3)	113,481 (95.5)	113,788 (100.3)	110,668 (97.3)	112,721 (101.9)
	Rubber	638,598 (102.1)	585,610 (91.7)	595,516 (101.7)	619,995 (104.1)	618,114 (99.7)	624,765 (101.1)	609,158 (97.5)	627,612 (103.0)	621,148 (99.0)	643,274 (103.6)

N.B.: 1. Source : JATMA (Total of members only)

N.B.: 2. 2001 and following years had a category shift between truck and bus tyres and light truck tyres.

## Export shipment of automobile tyres and tubes

t tyres :  $\times 10^3$ , rubber : tons, ( ) : year to year comparison %

		1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Truck and bus tyres	Tyres	5,894 (99.6)	7,266 (123.3)	7,817 (107.6)	6,699 (85.7)	5,569 (83.1)	6,491 (116.6)	7,364 (113.4)	7,693 (104.5)	8,252 (107.3)	8,002 (97.0)
	Rubber	162,005 (98.4)	197,492 (121.9)	212,340 (107.5)	182,795 (86.1)	155,823 (85.2)	182,398 (117.1)	210,140 (115.2)	217,848 (103.7)	232,049 (106.5)	229,625 (99.0)
Light truck tyres	Tyres	7,503 (113.5)	7,458 (99.4)	7,607 (102.0)	8,071 (106.1)	8,540 (105.8)	9,684 (113.4)	9,654 (99.7)	10,008 (103.7)	10,192 (101.8)	9,516 (93.4)
	Rubber	57,267 (111.6)	58,672 (102.5)	60,640 (103.4)	63,837 (105.3)	67,302 (105.4)	79,073 (117.5)	80,387 (101.7)	83,921 (104.4)	86,924 (103.6)	82,301 (94.7)
Passenger car tyres	Tyres	32,818 (110.4)	36,004 (109.7)	37,877 (105.2)	37,207 (98.2)	36,697 (98.6)	39,303 (107.1)	45,611 (116.0)	48,961 (107.3)	52,531 (107.3)	51,627 (98.3)
	Rubber	138,528 (112.9)	153,779 (111.0)	165,777 (107.8)	170,049 (102.6)	167,554 (98.5)	187,375 (111.8)	223,786 (119.4)	245,576 (109.7)	267,417 (108.9)	266,372 (99.6)
Off-the-road tyres	Tyres	345 (112.4)	349 (101.2)	327 (93.7)	334 (102.1)	329 (98.5)	335 (101.8)	339 (101.2)	332 (97.9)	327 (98.5)	359 (109.8)
	Rubber	95,803 (104.1)	98,074 (102.4)	90,899 (92.7)	99,940 (109.9)	96,772 (96.8)	100,271 (103.6)	103,091 (102.8)	102,809 (99.7)	105,961 (103.1)	113,909 (107.5)
Industrial tyres	Tyres	263 (112.9)	217 (82.5)	233 (107.4)	225 (96.6)	200 (88.9)	206 (103.0)	189 (91.7)	177 (93.7)	151 (85.3)	141 (93.4)
	Rubber	3,339 (113.6)	2,937 (88.0)	3,111 (105.9)	3,618 (116.3)	3,176 (87.8)	3,171 (99.8)	2,699 (85.1)	2,284 (84.6)	2,078 (91.0)	2,225 (107.1)
Agricultural tyres	Tyres	108 (97.3)	114 (105.6)	97 (85.1)	86 (88.7)	66 (76.7)	69 (104.5)	61 (88.4)	70 (114.8)	51 (72.9)	46 (90.2)
	Rubber	657 (87.7)	716 (109.0)	676 (94.4)	474 (70.1)	470 (99.2)	488 (103.8)	414 (84.8)	490 (118.4)	420 (85.7)	365 (86.9)
Motorcycle tyres	Tyres	2,188 (100.7)	2,312 (105.7)	2,535 (109.6)	3,043 (120.0)	3,100 (101.9)	3,036 (97.9)	2,861 (94.2)	2,798 (97.8)	2,747 (98.2)	2,701 (98.3)
	Rubber	4,938 (99.4)	5,328 (107.9)	5,818 (109.2)	7,249 (124.6)	7,505 (103.5)	7,313 (97.4)	6,982 (95.5)	6,870 (98.4)	6,916 (100.7)	6,978 (100.9)
Cart tyres	Tyres	317 (85.4)	424 (133.8)	358 (84.4)	261 (72.9)	253 (96.9)	375 (148.2)	379 (101.1)	393 (103.7)	514 (130.8)	521 (101.4)
	Rubber	1,022 (87.8)	1,346 (131.7)	1,091 (81.1)	717 (65.7)	711 (99.2)	1,135 (159.6)	1,262 (111.2)	1,365 (108.2)	1,754 (128.5)	1,805 (102.9)
Flaps and rim-bands	Rubber	4,744 (88.8)	3,835 (80.8)	3,459 (90.2)	3,098 (89.6)	3,263 (105.3)	3,438 (105.4)	3,756 (109.2)	3,575 (95.2)	3,835 (107.3)	4,052 (105.7)
Total	Tyres	49,436 (108.8)	54,144 (109.5)	56,851 (105.0)	55,926 (98.4)	54,754 (97.9)	59,499 (108.7)	66,458 (111.7)	70,432 (106.0)	74,765 (106.2)	72,913 (97.5)
	Rubber	468,303 (105.0)	522,179 (111.5)	543,811 (104.1)	531,777 (97.8)	502,576 (94.5)	564,662 (112.4)	632,517 (112.0)	664,738 (105.1)	707,354 (106.4)	707,632 (100.0)

N.B.: 1. Source : JATMA (Total of members only)

N.B.: 2. 2001 and following years had a category shift between truck and bus tyres and light truck tyres.

## Sales of original equipment tyres

t tyres :  $\times 10^3$ , ( ) : year to year comparison %

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Truck and bus tyres	846 (106.5)	549 (64.9)	449 (81.8)	554 (123.4)	728 (131.4)	776 (106.6)	1,236 (159.3)	1,115 (90.2)	1,207 (108.3)	1,282 (106.2)
Light truck tyres	9,351 (99.4)	7,739 (82.8)	7,131 (92.1)	7,013 (98.3)	6,547 (93.4)	6,066 (92.7)	6,533 (107.7)	6,457 (98.8)	6,370 (98.7)	6,299 (98.9)
Passenger car tyres	34,001 (107.7)	32,997 (97.0)	33,801 (102.4)	35,088 (103.8)	35,380 (100.8)	37,954 (107.3)	37,546 (98.9)	38,986 (103.8)	38,633 (99.1)	40,887 (105.8)
Total for four-wheeled vehicle tyres	44,198 (105.8)	41,285 (93.4)	41,381 (100.2)	42,655 (103.1)	42,655 (100.0)	44,796 (105.0)	45,315 (101.2)	46,558 (102.7)	46,210 (99.3)	48,468 (104.9)
Off-the-road tyres	94 (92.2)	67 (71.3)	64 (95.5)	68 (106.3)	66 (97.1)	58 (87.9)	54 (93.1)	67 (124.1)	77 (114.9)	90 (116.9)
Industrial tyres	368 (103.7)	304 (82.6)	275 (90.5)	303 (110.2)	281 (92.7)	259 (92.2)	281 (108.5)	319 (113.5)	403 (126.3)	426 (105.7)
Agricultural tyres	848 (95.9)	718 (84.7)	761 (106.0)	693 (91.1)	598 (86.3)	560 (93.6)	554 (98.9)	581 (104.9)	631 (108.6)	642 (101.7)
Motorcycle tyres	2,563 (103.6)	2,623 (102.3)	2,406 (91.7)	2,467 (102.5)	2,277 (92.3)	2,158 (94.8)	1,856 (86.0)	2,004 (108.0)	2,346 (117.1)	2,485 (105.9)
Cart tyres	735 (115.6)	986 (134.1)	1,203 (122.0)	1,276 (106.1)	1,327 (104.0)	1,518 (114.4)	1,305 (86.0)	1,667 (127.7)	1,531 (91.8)	1,276 (83.3)
Total	48,806 (105.6)	45,983 (94.2)	46,090 (100.2)	47,462 (103.0)	47,204 (99.5)	49,349 (104.5)	49,365 (100.0)	51,196 (103.7)	51,198 (100.0)	53,387 (104.3)

N.B.: 1. Source : JATMA (Total of members only)

N.B.: 2. 2001 and following years had a category shift between truck and bus tyres and light truck tyres.

N.B.: 3. The figures don't include imported tyres.

## Sales of replacement tyres

t tyres :  $\times 10^3$ , ( ) : year to year comparison %

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Truck and bus tyres	4,433 (100.6)	3,983 (89.8)	4,214 (105.8)	4,322 (102.6)	5,375 (124.4)	5,200 (96.7)	4,893 (94.1)	5,401 (110.4)	5,494 (101.7)	5,608 (102.1)
Light truck tyres	17,777 (189.0)	16,465 (92.6)	16,697 (101.4)	17,163 (102.8)	15,965 (93.0)	15,027 (94.1)	13,701 (91.2)	14,368 (104.9)	14,389 (100.1)	14,462 (100.5)
Passenger car tyres	47,650 (100.4)	45,836 (96.2)	47,407 (103.4)	49,361 (104.1)	51,648 (104.6)	52,426 (101.5)	49,037 (93.5)	49,486 (100.9)	51,299 (103.7)	51,931 (101.2)
Total for four-wheeled vehicle tyres	69,860 (114.0)	66,284 (94.9)	68,318 (103.1)	70,846 (103.7)	72,988 (103.0)	72,653 (99.5)	67,631 (93.1)	69,255 (102.4)	71,182 (102.8)	72,001 (101.2)
Off-the-road tyres	140 (97.2)	117 (83.6)	119 (101.7)	124 (104.2)	120 (96.8)	113 (94.2)	113 (100.0)	118 (104.4)	128 (108.5)	131 (102.3)
Industrial tyres	845 (104.2)	763 (90.3)	765 (100.3)	800 (104.6)	767 (95.9)	738 (96.2)	742 (100.5)	771 (103.9)	770 (99.9)	756 (98.2)
Agricultural tyres	208 (100.0)	177 (85.1)	182 (102.8)	214 (117.6)	203 (94.9)	197 (97.0)	200 (101.5)	204 (102.0)	195 (95.6)	167 (85.6)
Motorcycle tyres	2,250 (106.0)	2,257 (100.3)	2,324 (103.0)	2,406 (103.5)	2,393 (99.5)	2,341 (97.8)	2,155 (92.1)	2,239 (103.9)	2,198 (98.2)	2,147 (97.7)
Cart tyres	79 (91.9)	64 (81.0)	60 (93.8)	55 (91.7)	54 (98.2)	50 (92.6)	45 (90.0)	47 (104.4)	46 (97.9)	40 (87.0)
Total	73,382 (113.5)	69,662 (94.9)	71,768 (103.0)	74,445 (103.7)	76,525 (102.8)	76,092 (99.4)	70,886 (93.2)	72,634 (102.5)	74,519 (102.6)	75,242 (101.0)

N.B.: 1. Source : JATMA (Total of members only)

N.B.: 2. 2001 and following years had a category shift between truck and bus tyres and light truck tyres.

N.B.: 3. The figures include imported tyres.

## Sales of summer tyres and winter tyres for replacement (for four-wheeled vehicles)

t yres :  $\times 10^3$ , ( ) : year to year comparison %

		1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Truck and bus tyres	Total	4,433 (100.6)	3,983 (89.8)	4,214 (105.8)	4,322 (102.6)	5,375 (124.4)	5,200 (96.7)	4,893 (94.1)	5,401 (110.4)	5,494 (101.7)	5,608 (102.1)
	Summer	1,755 (95.9)	2,936 (167.3)	3,036 (103.4)	3,025 (99.6)	3,634 (120.1)	3,494 (96.1)	3,248 (93.0)	3,490 (107.5)	3,465 (99.3)	3,401 (98.2)
	Winter	2,678 (103.9)	1,047 (39.1)	1,178 (112.5)	1,297 (110.1)	1,741 (134.2)	1,706 (98.0)	1,645 (96.4)	1,911 (116.2)	2,029 (106.2)	2,207 (108.8)
Light truck tyres	Total	17,777 (99.6)	16,465 (92.6)	16,697 (101.4)	17,163 (102.8)	15,965 (93.0)	15,027 (94.1)	13,701 (91.2)	14,368 (104.9)	14,389 (100.1)	14,462 (100.5)
	Summer	12,345 (99.6)	12,505 (101.3)	12,666 (101.3)	12,696 (100.2)	11,668 (91.9)	10,975 (94.1)	10,112 (92.1)	10,297 (101.8)	10,245 (99.5)	9,858 (96.2)
	Winter	5,432 (99.7)	3,960 (72.9)	4,031 (101.8)	4,467 (110.8)	4,297 (96.2)	4,052 (94.3)	3,589 (88.6)	4,071 (113.4)	4,144 (101.8)	4,604 (111.1)
Passenger car tyres	Total	47,650 (100.4)	45,836 (96.2)	47,407 (103.4)	49,361 (104.1)	51,648 (104.6)	52,426 (101.5)	49,037 (93.5)	49,486 (100.9)	51,299 (103.7)	51,931 (101.2)
	Summer	32,512 (101.0)	32,466 (99.9)	33,303 (102.6)	35,246 (105.8)	35,727 (101.4)	36,048 (100.9)	34,761 (96.4)	35,023 (100.8)	35,343 (100.9)	34,417 (97.4)
	Winter	15,138 (99.2)	13,370 (88.3)	14,104 (105.5)	14,115 (100.1)	15,921 (112.8)	16,378 (102.9)	14,276 (87.2)	14,463 (101.3)	15,956 (110.3)	17,514 (109.8)
Total	Total	69,860 (100.2)	66,284 (94.9)	68,318 (103.1)	70,846 (103.7)	72,988 (103.0)	72,653 (99.5)	67,631 (93.1)	69,255 (102.4)	71,182 (102.8)	72,001 (101.2)
	Summer	46,612 (100.4)	47,907 (102.8)	49,005 (102.3)	50,967 (104.0)	51,029 (100.1)	50,517 (99.0)	48,121 (95.3)	48,810 (101.4)	49,053 (100.5)	47,675 (97.2)
	Winter	23,248 (99.8)	18,377 (79.0)	19,313 (105.1)	19,879 (102.9)	21,959 (110.5)	22,136 (100.8)	19,510 (88.1)	20,445 (104.8)	22,129 (108.2)	24,326 (109.9)

N.B.: 1. Source : JATMA (Total of members only)

N.B.: 2. 2001 and following years had a category shift between truck and bus tyres and light truck tyres.

N.B.: 3. 1998 and following years had all season tyres in the summer tyre category.

## Exports of tyres and tubes based on Ministry of Finance customs statistics

t tyres :  $\times 10^3$ , value : FOB dollar  $\times 10^5$ , ( ) : year to year comparison %

		1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Asia	Tyres	9,099 (112.3)	7,044 (77.4)	6,780 (96.3)	6,752 (99.6)	6,955 (103.0)	8,308 (119.5)	9,263 (111.5)	9,718 (104.9)	8,549 (88.0)	9,002 (105.3)
	Value	517,155 (103.7)	369,504 (71.4)	403,460 (109.2)	388,728 (96.3)	362,435 (93.2)	435,717 (120.2)	516,696 (118.6)	560,008 (108.4)	546,351 (97.6)	626,039 (114.6)
Middle East	Tyres	6,421 (96.6)	6,119 (95.3)	6,075 (99.3)	6,429 (105.8)	6,615 (102.9)	7,764 (117.4)	9,093 (117.1)	10,265 (112.9)	11,416 (111.2)	11,775 (103.1)
	Value	477,897 (88.4)	392,844 (82.2)	356,227 (90.7)	362,412 (101.7)	370,692 (102.3)	416,413 (112.3)	492,264 (118.2)	570,464 (115.9)	688,061 (120.6)	787,641 (114.5)
Europe	Tyres	13,565 (107.7)	18,512 (136.5)	17,488 (94.5)	17,004 (97.2)	16,889 (99.3)	16,094 (95.3)	18,240 (113.3)	19,029 (104.3)	20,567 (108.1)	20,275 (98.6)
	Value	677,402 (90.0)	831,506 (122.7)	795,890 (95.7)	739,407 (92.9)	699,251 (94.6)	708,867 (101.4)	959,556 (135.4)	1,094,021 (114.0)	1,222,552 (111.7)	1,288,941 (105.4)
North America	Tyres	14,259 (108.4)	16,245 (113.9)	20,390 (125.5)	19,996 (98.1)	16,368 (81.9)	20,589 (125.8)	22,929 (111.4)	23,714 (103.4)	26,484 (111.7)	24,792 (93.6)
	Value	879,854 (107.5)	1,021,786 (116.1)	1,180,331 (115.5)	1,152,867 (97.7)	899,766 (78.0)	1,131,111 (125.7)	1,261,722 (111.5)	1,397,852 (110.8)	1,604,256 (114.8)	1,659,175 (103.4)
South and Central America	Tyres	2,257 (123.4)	2,473 (109.6)	2,065 (83.5)	2,443 (118.3)	2,689 (110.1)	2,074 (77.1)	2,448 (118.0)	2,978 (121.7)	3,559 (119.5)	3,673 (103.2)
	Value	238,915 (117.1)	240,628 (100.7)	184,932 (76.9)	209,371 (113.2)	192,740 (92.1)	160,502 (83.3)	180,845 (112.7)	213,858 (118.3)	255,035 (119.3)	295,779 (116.0)
Africa	Tyres	2,194 (132.8)	2,565 (116.9)	2,295 (89.5)	1,968 (85.8)	2,150 (109.2)	2,063 (96.0)	2,012 (97.5)	2,171 (107.9)	2,253 (103.7)	2,142 (95.1)
	Value	208,945 (117.2)	208,131 (99.6)	188,965 (90.8)	149,739 (79.2)	153,593 (102.6)	161,499 (105.1)	198,408 (122.9)	231,973 (116.9)	243,941 (105.2)	247,077 (101.3)
Oceania	Tyres	2,376 (106.4)	2,631 (110.7)	2,739 (104.1)	2,817 (102.8)	3,303 (117.3)	3,516 (106.4)	3,853 (109.6)	3,694 (95.9)	3,711 (100.5)	3,683 (99.2)
	Value	261,320 (97.2)	220,661 (84.4)	220,677 (100.0)	214,053 (97.0)	223,002 (104.2)	245,870 (110.3)	302,139 (122.9)	333,283 (110.3)	363,509 (109.1)	373,273 (102.7)
Total	Tyres	50,171 (108.6)	55,589 (110.8)	57,832 (104.0)	57,409 (99.3)	54,969 (95.7)	60,408 (109.9)	67,838 (112.3)	71,569 (105.5)	76,539 (106.9)	75,342 (98.4)
	Value	3,261,488 (100.0)	3,285,059 (100.7)	3,330,482 (101.4)	3,216,577 (96.6)	2,901,479 (90.2)	3,259,979 (112.4)	3,911,630 (120.0)	4,401,459 (112.5)	4,923,705 (111.9)	5,277,926 (107.2)

Source: Ministry of Finance customs export records



## Imports of tyres and tubes based on Ministry of Finance customs statistics

t yres : ×10<sup>3</sup>, value : CIF yen×10<sup>4</sup>, ( ) : year to year comparison %

		1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Passenger car tyres	Tyres	12,901 (116.2)	11,893 (92.2)	10,334 (86.9)	10,547 (102.1)	11,321 (107.3)	13,618 (120.3)	14,173 (104.1)	18,830 (132.9)	23,810 (126.4)	25,925 (108.9)
	Value	5,426,358 (119.0)	4,717,228 (86.9)	3,605,106 (76.4)	3,264,095 (90.5)	3,603,274 (110.4)	4,030,513 (111.9)	3,852,532 (95.6)	4,685,202 (121.6)	5,908,881 (126.1)	7,147,540 (121.0)
Truck and bus tyres	Tyres	956 (124.3)	1,068 (111.7)	1,270 (118.9)	1,234 (97.2)	1,262 (102.3)	1,301 (103.1)	1,884 (144.8)	1,648 (87.5)	1,657 (100.5)	2,707 (163.4)
	Value	762,709 (125.5)	801,369 (105.1)	807,095 (100.7)	747,136 (92.6)	749,069 (100.3)	594,360 (79.3)	610,127 (102.7)	672,942 (110.3)	708,528 (105.3)	1,046,032 (147.6)
Motorcycle tyres	Tyres	2,607 (114.2)	2,432 (93.3)	2,455 (100.9)	2,899 (118.1)	3,140 (108.3)	2,939 (93.6)	3,129 (106.5)	3,038 (97.1)	3,347 (110.2)	3,155 (94.3)
	Value	340,324 (119.6)	369,825 (108.7)	350,715 (94.8)	370,324 (105.6)	379,351 (102.4)	341,410 (90.0)	358,836 (105.1)	353,929 (98.6)	393,009 (111.0)	398,770 (101.5)
Others	Tyres	283 (95.9)	154 (54.4)	114 (74.0)	152 (133.3)	263 (173.0)	278 (105.7)	299 (107.6)	278 (93.0)	294 (105.8)	384 (130.6)
	Value	139,064 (113.7)	120,335 (86.5)	105,824 (87.9)	129,737 (122.6)	154,449 (119.0)	126,857 (82.1)	188,451 (148.6)	217,732 (115.5)	286,310 (131.5)	405,295 (141.6)
Tubes	Value	45,060 (95.5)	33,192 (73.7)	22,522 (67.9)	20,403 (90.6)	34,608 (169.6)	48,735 (140.8)	47,100 (96.6)	39,957 (84.8)	43,837 (109.7)	42,523 (97.0)
Total	Tyres	16,747 (115.9)	15,547 (92.8)	14,173 (91.2)	14,832 (104.6)	15,986 (107.8)	18,136 (113.4)	19,485 (107.4)	23,794 (122.1)	29,108 (122.3)	32,171 (110.5)
	Value	6,713,515 (119.4)	6,041,949 (90.0)	4,891,262 (81.0)	4,531,695 (92.6)	4,920,751 (108.6)	5,141,875 (104.5)	5,057,046 (98.4)	5,969,762 (118.0)	7,340,565 (123.0)	9,040,160 (123.2)

Source: Ministry of Finance customs import records