

**JATMA**

THE JAPAN AUTOMOBILE TYRE MANUFACTURERS ASSOCIATION, INC.

# TYRE INDUSTRY OF JAPAN

2008



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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 2007, while domestic demands remained at the same level with the previous year on a rubber consumption basis, exports increased, which resulted in the rubber consumption of 1.36 million tons (record high), the number of tyres and the value of 185.83 million units and 1,255.4 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) 2000-2007

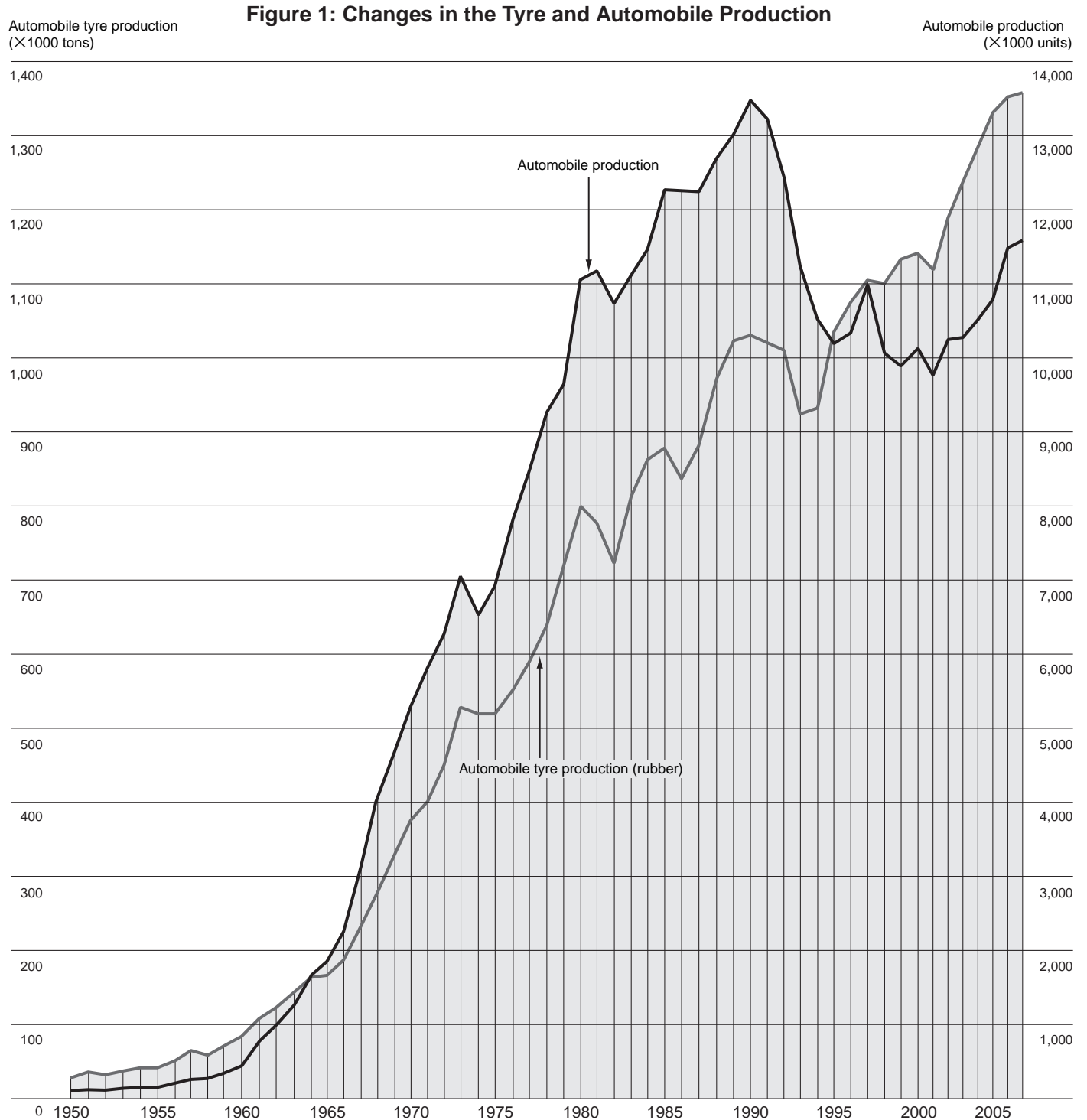
The Japanese economy was on a trend of gentle recovering, and although it was still suffering from such problems as continuing high prices of raw materials, it continued the biggest economic growth after the Second World War owing to improved corporate earnings and increased capital investments. And in the first half of 2007, foreign demand was active due to the undervalued yen exchange rate. However, in the second half of the year, the subprime loan problem led to piecemeal occurrence of worldwide stock market plunge and weakening of the dollar, whose bad influence on the Japanese economy was feared. On the other hand, the global economy as a whole continued to grow supported by the steady European economy and the Middle East countries although the U.S. economic slowdown became serious. In these demand situations, the production of tyres in Japan in 2007 on a rubber consumption basis reached 1.36 million tons, renewing the record high for six 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	2007
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	1,358
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	11,596

Source: JATMA



## 1. Overview

- (1) The production of automobile tyres in 2007 enjoyed the sixth year of renewing consecutive record high supported by the steady increase in export and also the increase in original equipment although the demand for replacement tyres decreased. The production ratio of the tyre industry within the rubber product industry (figures 2 and 3) lowered in rubber consumption from the previous year to 81.0% with 0.4 percentage points down, and remained the same in fiscal value at 50.5%. (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 2007

(excluding cart tyres, tubes and flaps)

Figure 2: Rubber consumption

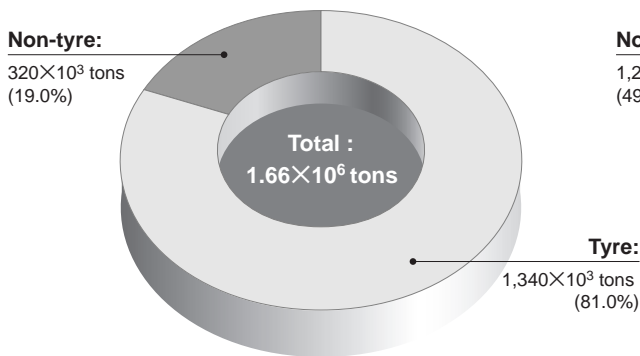
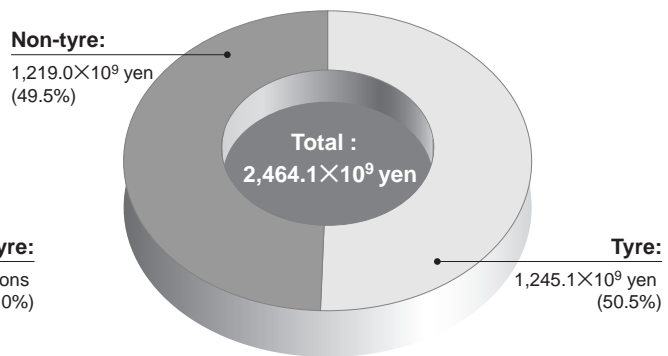
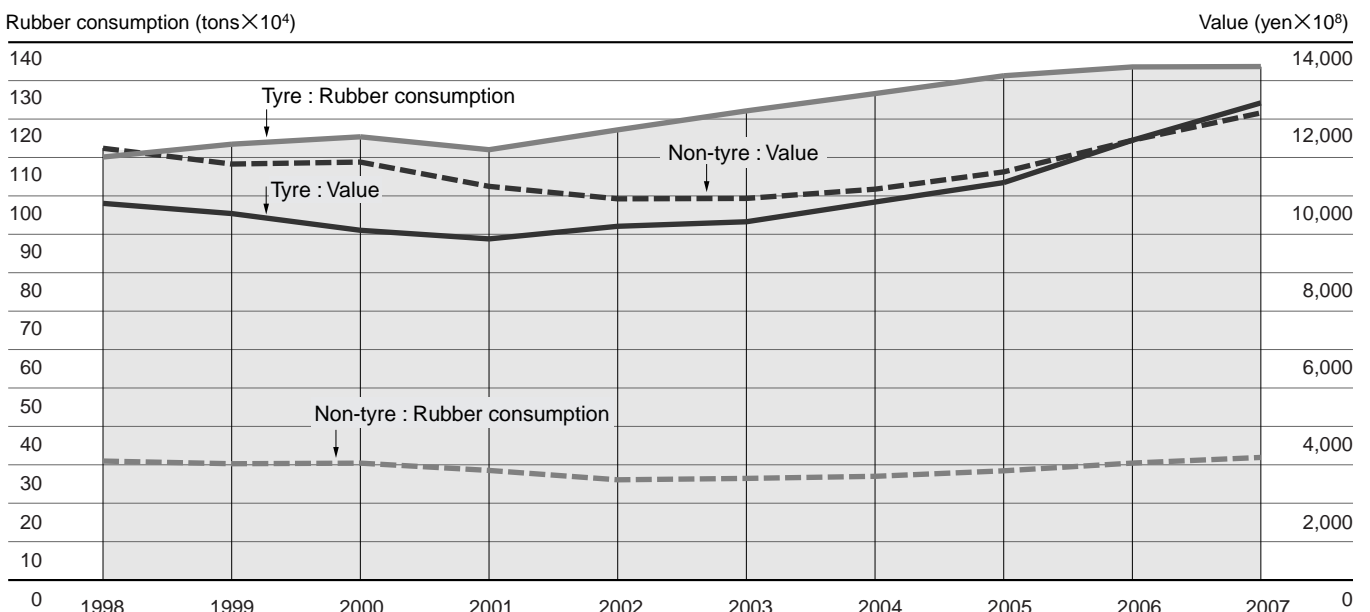


Figure 3: Production value



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 2007 remained broadly flat from the previous year (185.83 million units, up 0.1%). While truck and bus tyres, and light truck tyres decreased from the previous year, down 3.0%, down 5.3%, respectively, passenger car tyres increased 1.6% supported by active exports.

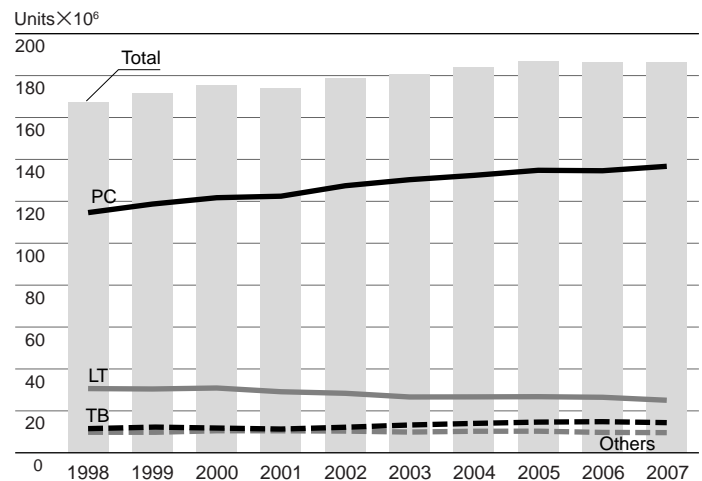
**Table 2: Automobile tyre production in 2007**

	Production	
	Units (× 10 <sup>3</sup> )	2007/2006(%)
Truck and bus tyres	14,394	97.0
Light truck tyres	25,082	94.7
Passenger car tyres	136,731	101.6
Special vehicle tyres	2,977	89.9
Motorcycle tyres	6,645	103.7
<b>Total</b>	<b>185,829</b>	<b>100.1</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 5: Trends in automobile tyre production**



## 3. Trends in Sales of Original Equipment Tyres

The sales of original equipment tyres in 2007 exceeded the previous year to 60.70 million units, up 1.5%. Truck and bus tyres decreased 3.0% from the previous year as a reaction to the increase in the demand caused by the regulation for NO<sub>x</sub> and PM(particulate materials) emitted by vehicles, and light truck tyres also decreased 7.4% due to the decline in the sales of new vehicles in the domestic market. However, passenger car tyres increased 3.9% caused by the rise in the number of vehicle production for export.

**Table 3: Sales of original equipment tyres in 2007**

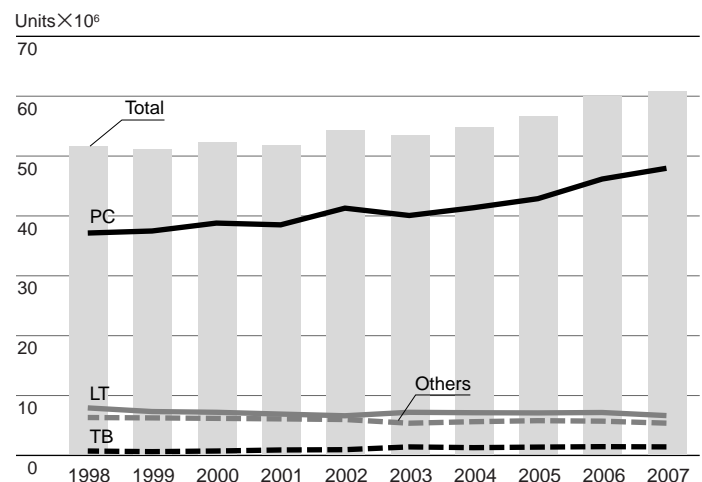
	Sales	
	Units (× 10 <sup>3</sup> )	2007/2006(%)
Truck and bus tyres	1,243	97.0
Light truck tyres	6,471	92.6
Passenger car tyres	47,782	103.9
Special vehicle tyres	2,244	92.2
Motorcycle tyres	2,964	95.4
<b>Total</b>	<b>60,704</b>	<b>101.5</b>

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. Imported tyres are included.

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



## 4. Trends in Sales of Replacement Tyres

In 2007, replacement tyre sales in Japan decreased 3.9% from the previous year, to 72.92 million units. All three categories decreased owing to the decline in the demand for winter tyres; truck and bus tyres down 0.4%, light truck tyres down 2.8%, and passenger car tyres down 4.7%.

**Table 4: Sales of replacement tyres in 2007**

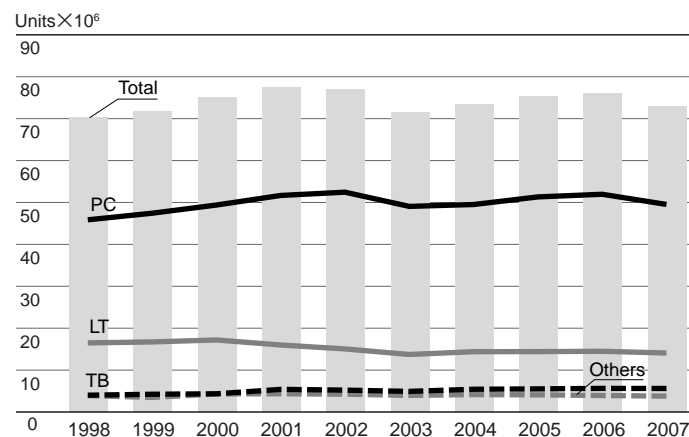
	Sales	
	Units( $\times 10^3$ )	2007/2006(%)
Truck and bus tyres	5,588	99.6
Light truck tyres	14,057	97.2
Passenger car tyres	49,504	95.3
Special vehicle tyres	1,041	95.2
Motorcycle tyres	2,727	96.8
<b>Total</b>	<b>72,917</b>	<b>96.1</b>

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. Imported tyres are included.

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



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

In 2007, summer tyre (i.e. ordinary tyres excluding winter tyres) sales was 48.28 million units, up 1.3% from the previous year, and the ratio of the summer tyre sales to the total was 69.8% with 3.6 percentage points up from the previous year. By tyre category, truck and bus tyres increased 3.2% owing to the demand for replacement tyres for vehicles purchased by the previous year to comply with the regulation for NOx and PM(particulate materials) emitted by vehicles, light truck tyres and passenger car tyres, increased from the previous year, 0.5%, 1.3%, respectively in reaction to the decline in winter tyres.

Winter tyre sales in 2007 decreased for the first time in four years, down 14.2% from the previous year, to 20.87 million units. And the ratio of winter tyre sales to the total was 30.2%, lower than the previous year. By tyre category, truck and bus tyres, light truck tyres and passenger car tyres, all decreased 5.9%, 9.9% and 16.4% from the previous year, respectively. The main reasons for the situation were returns from dealers having high inventories due to the warm winter in the end of the previous year, and effects of the decline in the number of new automobile sales.

**Table 5: Sales of summer tyres and winter tyres for replacement in 2007**

(for four-wheeled vehicles)

	Summer tyres			Winter tyres		
	Units( $\times 10^3$ )	2007/2006(%)	Share of summer tyres in total	Units( $\times 10^3$ )	2007/2006(%)	Share of winter tyres in total
Truck and bus tyres	3,511	103.2	62.8	2,077	94.1	37.2
Light truck tyres	9,911	100.5	70.5	4,146	90.1	29.5
Passenger car tyres	34,859	101.3	70.4	14,645	83.6	29.6
<b>Total</b>	<b>48,281</b>	<b>101.3</b>	<b>69.8</b>	<b>20,868</b>	<b>85.8</b>	<b>30.2</b>

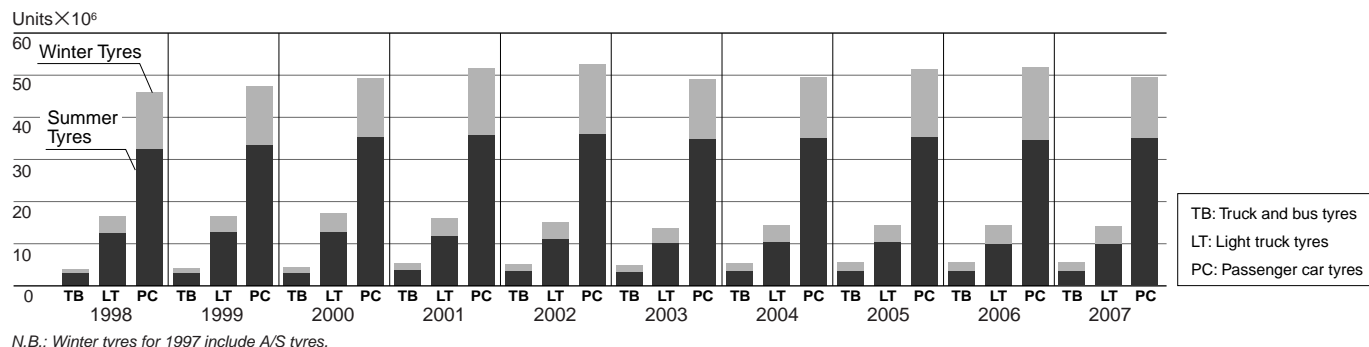
N.B.: 1. The shares of summer and winter tyres indicate the respective percentages in total number of replacement sales.

Source: JATMA

2. Imported tyres are included.

3. All-season tyres are included in summer tyres.

**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 2007 increased for the first time in two years, up 2.7% in unit terms from the previous year, to 74.92 million tyres. While truck and bus tyres, and light truck tyres decreased from the previous year, 3.0% and 6.1%, respectively, mainly due to the decline in the demand in U.S., passenger car tyres sustained the excellent condition and increased 5.3% from the previous year.

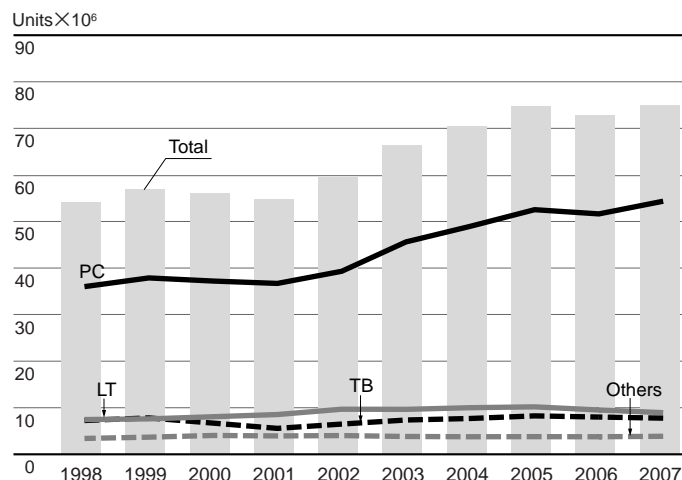
**Table 6: Sales of export tyres in 2007**

	Sales	
	Units (×10 <sup>3</sup> )	2007/2006 (%)
Truck and bus tyres	7,760	97.0
Light truck tyres	8,939	93.9
Passenger car tyres	54,352	105.3
Special vehicle tyres	929	87.1
Motorcycle tyres	2,935	108.7
Total	74,915	102.7

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 2007, exported tyres (Ministry of Finance customs records) increased from the previous year all in units, in the value on a yen basis, and in product weight; 3.0% to 77.60 million tyres, 13.5% to 696.6 billion yen, and 1.8% to 1.55 million tons, respectively.

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

**Table 7: Exports by region of destination in 2007**

	Tyre Units( $\times 10^3$ )				2007/2006 (%)	Value (FOB) (yen $\times 10^6$ )	2007/2006 (%)
	PC	TB&LT	Others	Total			
North America	18,160	2,315	1,615	22,090	89.1	180,119	93.4
South & Central America	2,910	785	120	3,815	103.9	41,167	119.6
Europe	17,668	2,259	2,243	22,170	109.3	196,459	131.2
Middle East	10,444	3,378	99	13,921	118.2	112,517	122.8
Africa	1,259	994	76	2,329	108.7	32,233	112.2
Asia	6,773	1,638	652	9,063	100.7	79,834	109.6
Oceania	3,186	730	298	4,214	114.4	54,287	125.1
Total	60,400	12,099	5,103	77,602	103.0	696,618	113.5
Weight(tons)	701,739	573,791	271,188	1,546,718	101.8		

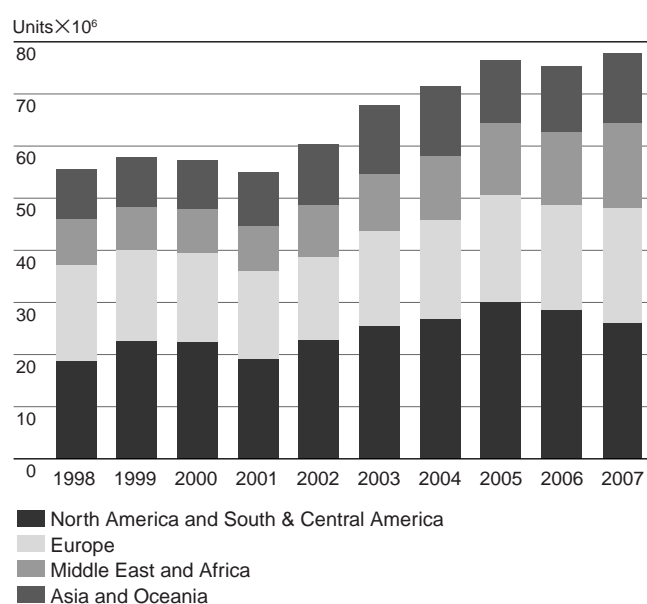
N.B.: 1. Exchange rates are averages of spot rates for Tokyo interbank trade.

2006: 1dollar = 116yen

2007: 1dollar = 118yen

Source: Ministry of Finance customs records

**Figure 10: Export trend by region**



## 7. Imports by Region of Origin

In 2007, import tyres (Ministry of Finance customs records) decreased 4.2% from the previous year, to 30.81 million in units, increased 5.5% to 95.4 billion yen in value, and decreased 3.9% to 230 thousand tons in product weight.

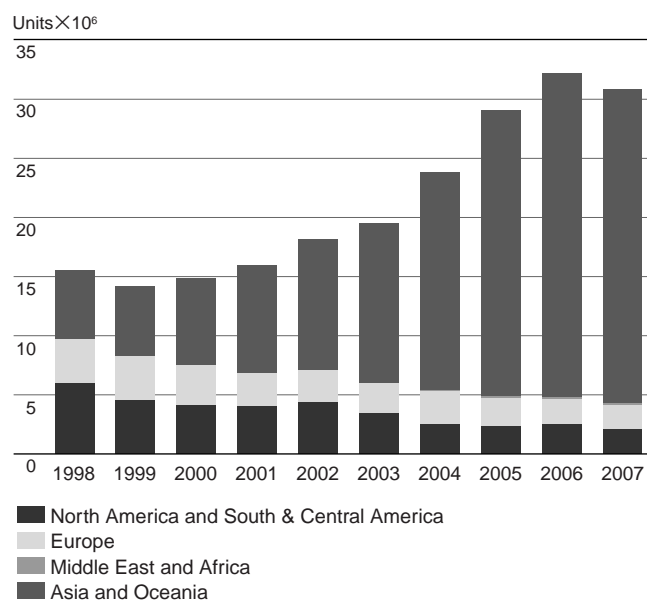
The imports of inexpensive tyres from overseas and tyres from local factories in Asia of Japanese tyre manufacturers decreased due to the growing demand in China and other countries. Those factors resulted in the declines from the previous year in units and product weight after eight years' increase.

**Table 8: Imports by region of origin in 2007**

	Tyre Units( $\times 10^3$ )				2007/2006 (%)	Value (CIF) (yen $\times 10^6$ )	2007/2006 (%)
	PC	TB&LT	Others	Total			
North America	1,836	31	44	1,911	82.8	11,649	100.5
South & Central America	98	0	95	193	131.5	751	146.4
Europe	1,547	135	344	2,026	92.8	16,266	112.6
Middle East	162	0	12	174	96.6	969	84.9
Africa	4	0	0	4	66.6	38	67.6
Asia	20,434	3,041	3,020	26,495	96.9	65,684	104.8
Oceania	8	0	0	8	896.4	57	805.3
Total	24,089	3,207	3,515	30,811	95.8	95,414	105.5
Weight(tons)	171,130	37,934	22,501	231,565	96.1		

Source: Ministry of Finance customs records

**Figure 11: Import trends by region**



## 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 Regulations for Road Vehicles and their detailed items, enacted by The Ministry of Land, Infrastructure and Transport.

In addition to these regulations, 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 Regulations for Road 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.

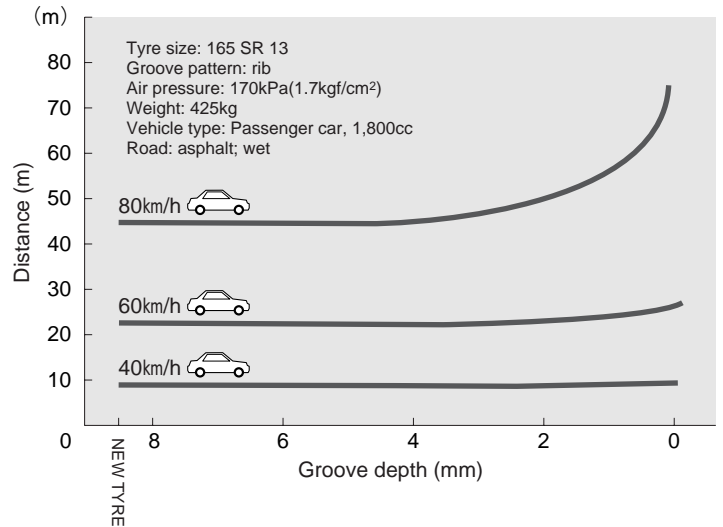
**Table 9: Wear limit for automobile tyres**

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**

Defect Type	Count	Defect Rate (%)
Insufficient tyre grooves	65	(2.8)
Uneven wear	57	(2.5)
External cuts (reaching the cord)	14	(0.6)
Pins or alien matter	18	(0.8)
Improper air pressure	435	(19.1)
Others	85	(3.7)

**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 33 times (22 times on expressways and 11 times on ordinary roads) in 2007.
- 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	2007
Passenger car tyres	155/65R13	Summer tyres	–	107	104	108
		Studless tyres	105	110	100	110
Passenger car tyres	175/65R14	Summer tyres	–	109	99	108
		Studless tyres	–	–	101	110
Passenger car tyres	195/65R15	Summer tyres	110	112	111	102
		Studless tyres	105	105	103	110
Passenger car tyres	215/45R17	Summer tyres	120	135	109	120
		Studless tyres	105	110	95	105
Light truck tyres	145R12	Summer tyres	102	128	122	–
		Studless tyres	–	–	110	121
Light truck tyres	185R14	Summer tyres	105	110	122	–
		Studless tyres	–	–	105	123
Light truck tyres	205/70R16	Summer tyres	–	114	–	110
		Studless tyres	–	–	–	–
Truck and bus tyres	225/80R17.5	Summer tyres	–	–	100	97
		Studless tyres	–	126	87	112
Truck and bus tyres	245/70R19.5	Summer tyres	–	–	–	105
		Studless tyres	–	–	–	–
Truck and bus tyres	11R22.5	Summer tyres	113	110	100	108
		Studless tyres	–	123	100	–

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

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

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

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

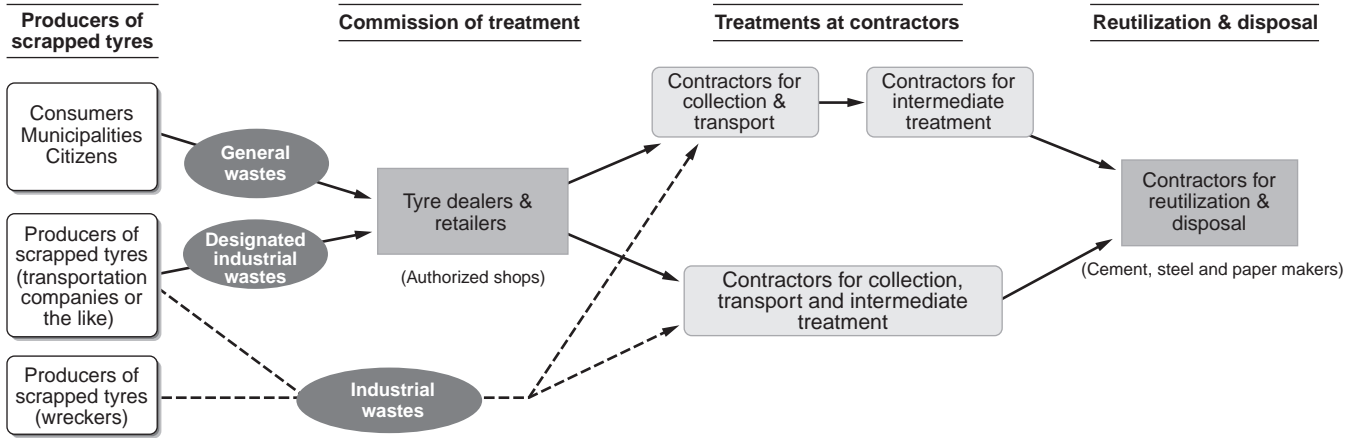
2. Tyres surveyed : Representative sizes selected in advance from replacement tyres for the domestic market.

3. Monitoring of 245/70R19.5 (truck and bus tyres) began instead of former 7.50R16 (light truck tyres) for 2007 and the future.

Source: JATMA

## 2. Recycling Situation

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

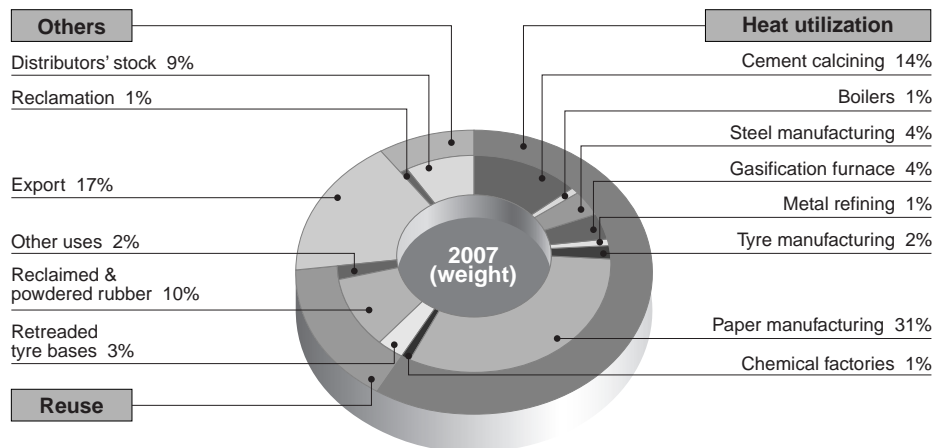


The volume of newly scrapped tyres in 2007 decreased by four million units from the previous year, to 99 million units in total, with 81 million units “on purchase of new tyres” (down three million units from the previous year) and 18 million units “on scrapped automobiles” (down one million units).

Regarding the situation of recycling, demand for scrapped tyres as well as those for other alternative fuels, i.e. wood shavings and RPF (new-type solid fuel made from waste paper and scrapped plastics, abbreviation for Refuse Paper & Plastic Fuel) is heating up due to the continued rise in crude oil prices and the sharp and substantial rise in coal prices, and the result of recycled volume as a whole increased by 18 thousand tons from the previous year and the recycling rate reached 89%. As a feature in recent years, while scrapped tyres for cement calcining continued to decrease (down 12% from the previous year), those for paper manufacturing greatly increased (up 20% from the previous year) due to active operations of biomass boilers at paper mills.

On the other hand, export decreased 8%, which is considered to be the result of changing the application of scrapped tyres from rubber wastes (cut tyres) for export to domestic supply (for paper mills and other facilities).

**Figure 15: Recycling of used tyres in 2007**



**Table 12: Newly scrapped tyres**

(Tyres: millions; Tons: thousands)

		2003	2004	2005	2006	2007		
						units and tons	distribution(%)	2007/2006(%)
On purchase of new tyres	Tyres	78	80	84	84	81	82	96
	Tons	806	827	871	875	901	85	103
On scrapped automobiles	Tyres	25	23	16	19	18	18	95
	Tons	224	216	151	181	163	15	90
Total	Tyres	103	103	100	103	99	100	96
	Tons	1,030	1,043	1,022	1,056	1,064	100	101

Source: JATMA

**Table 13: Recycled tyres**

(Tons: thousands)

			2003	2004	2005	2006	2007			
			tons	tons	tons	tons	tons	distribution(%)	2007/2006(%)	
Kind of recycling	Domestic	Reuse	Retreaded tyre bases	36	33	35	36	37	3	103
			Reclaimed & powdered rubber	97	120	103	107	111	10	104
			Other uses	39	25	22	20	17	2	85
			Subtotal (A)	172	178	160	163	165	16	101
	Heat utilization	Biomass power generation and the like	Paper manufacturing	70	130	210	274	328	31	120
			Chemical factories	8	9	9	9	12	1	133
			Subtotal (B)	78	139	219	283	340	32	120
			For cement, steel and the like	Cement calcining	240	213	181	168	148	14
		Steel manufacturing		48	52	51	49	40	4	82
		Gasification furnace		–	8	27	34	42	4	124
		Tyre manufacturing		42	30	24	22	18	2	82
		Boilers	23	15	12	11	11	1	100	
	Metal refining	20	11	10	8	8	1	100		
	Subtotal (C)	373	329	305	292	267	25	91		
	Subtotal (B+C)	451	468	524	575	607	57	106		
	Export (D)	268	270	213	196	180	17	92		
Total recycling (A+B+C+D)			891	916	897	934	952	89	102	
Others	Reclamation		37	34	32	11	11	1	100	
	Distributors' stock		102	93	93	111	101	9	91	
	Subtotal (E)		139	127	125	122	112	11	92	
Total used tyres (A+B+C+D+E)			1,030	1,043	1,022	1,056	1,064	100	101	

N.B.: There can be some cases that distribution's subtotals and the sums of their constituent items don't match due to the handling of decimals.

Source: JATMA

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

(Tyres: thousands; Rubber consumption: ton)

	2003	2004	2005	2006	2007
Number of tyres	1,105	1,042	1,037	1,078	1,040
Compound rubber consumption	8,699	8,184	8,406	8,596	8,388

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

Source: METI, JATMA

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

As of February, 2008 the number of cases of illegal piling & dumping of scrapped tyres was 186, and the total number of tyres was 9,231 thousand, which means 31 cases and 1,802 thousand tyres increases from the same month of the previous year. The reason for the situation was many newly discovered cases (42 cases). 11 cases were properly processed, five cases of which were managed with the application of JATMA's system to support restoring the original state.

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

(as of Feb., 2008)

	February 2007			February 2008										
	Number of cases	Units (×10 <sup>3</sup> )	Weight (ton)	Number of cases	Units (×10 <sup>3</sup> )	Weight (ton)	Change from Feb.,2007			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	7	235	2,350	31	1,412	14,120	24	1,177	11,770	0	24	275	187	950
Tohoku	51	1,580	15,800	54	1,972	19,720	3	392	3,920	2	5	498	203	1,271
Kanto & Koshinetsu	33	2,473	24,730	33	2,365	23,650	0	-108	-1,080	3	3	1,916	189	260
Metropolitan area	17	637	6,370	17	467	4,670	0	-170	-1,700	1	1	380	61	26
Chubu	6	762	7,620	10	1,021	10,210	4	259	2,590	1	5	810	180	31
Kinki	11	477	4,770	9	483	4,830	-2	6	60	2	0	383	100	0
Chugoku	12	276	2,760	13	652	6,520	1	376	3,760	0	1	566	45	41
Shikoku	7	52	520	7	52	520	0	0	0	0	0	32	20	0
Kyushu	11	937	9,370	12	807	8,070	1	-130	-1,300	2	3	607	150	50
Total	155	7,429	74,290	186	9,231	92,310	31	1,802	18,020	11	42	5,467	1,135	2,629

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.

4. Illegal piling: The handling trader is in bankruptcy, under arrest or missing.

5. Illegal dumping: The man or the group who dumped is not identified.

6. Excessive piling: The piling exceeds the storage standard without any report.

## 1. Automobiles and Tyres

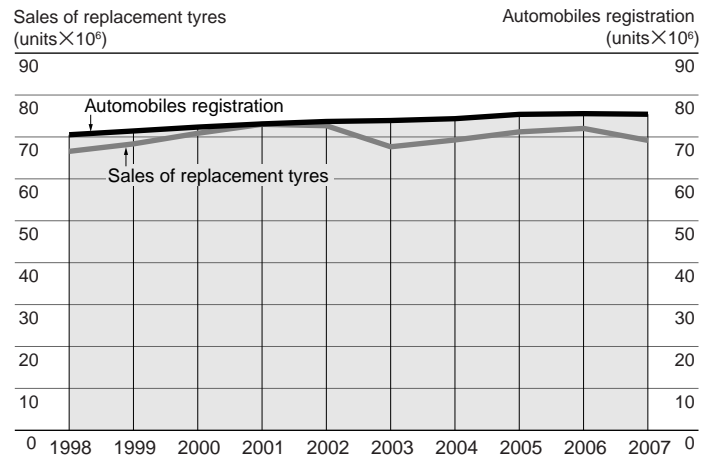
① The number of automobiles registered as of year-end of 2007 was 75.39 million (decreased 0.2% from the previous year), and the tyre industry provided 69.15 million tyres (down 4.0% from the previous year), as replacement for those four-wheeled automobiles.

**Table 16: Automobile registrations and sales of replacement tyres in 2007**

Automobile	Registrations ( $\times 10^3$ )	2007/2006(%)
Passenger cars	57,624	100.2
Trucks and buses	17,764	98.6
Total	75,388	99.8
Replacement tyres	Sales ( $\times 10^3$ )	2007/2006(%)
Passenger car tyres	49,504	95.3
Commercial vehicle tyres	19,645	97.9
Total	69,149	96.0

Source: Ministry of Land, Infrastructure and Transport, JATMA

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



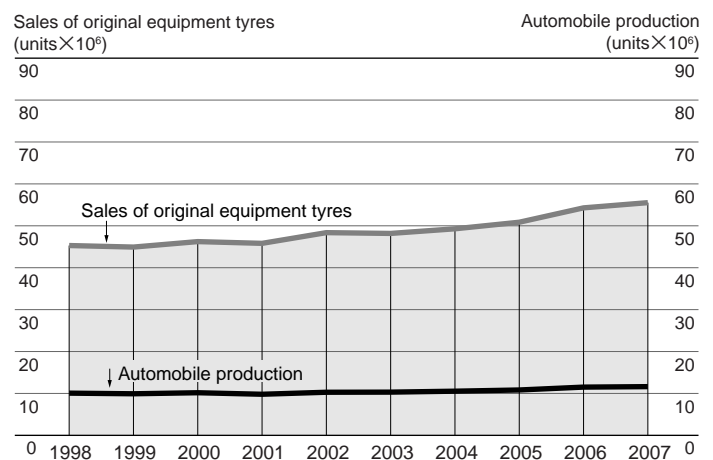
② Automobile production in Japan in 2007 was 11.60 million units (up 1.0% from the previous year) reflecting the continued active demand for fuel-efficient Japanese cars in the overseas market suffering from the steep rise in the price of the crude oil. Under the influence of this situation the sales of original equipment tyres (total for four-wheeled vehicles) increased to reach 55.50 million units (up 2.3% from the previous year).

**Table 17: Automobile production and sales of original equipment tyres in 2007**

Automobile	Productions ( $\times 10^3$ )	2007/2006(%)
Passenger cars	9,945	101.9
Trucks and buses	1,651	95.5
Total	11,596	101.0
Original equipment tyres	Sales ( $\times 10^3$ )	2007/2006(%)
Passenger car tyres	47,782	103.9
Commercial vehicle tyres	7,714	93.3
Total	55,496	102.3

Source: Japan Automobile Manufacturers Association, JATMA

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

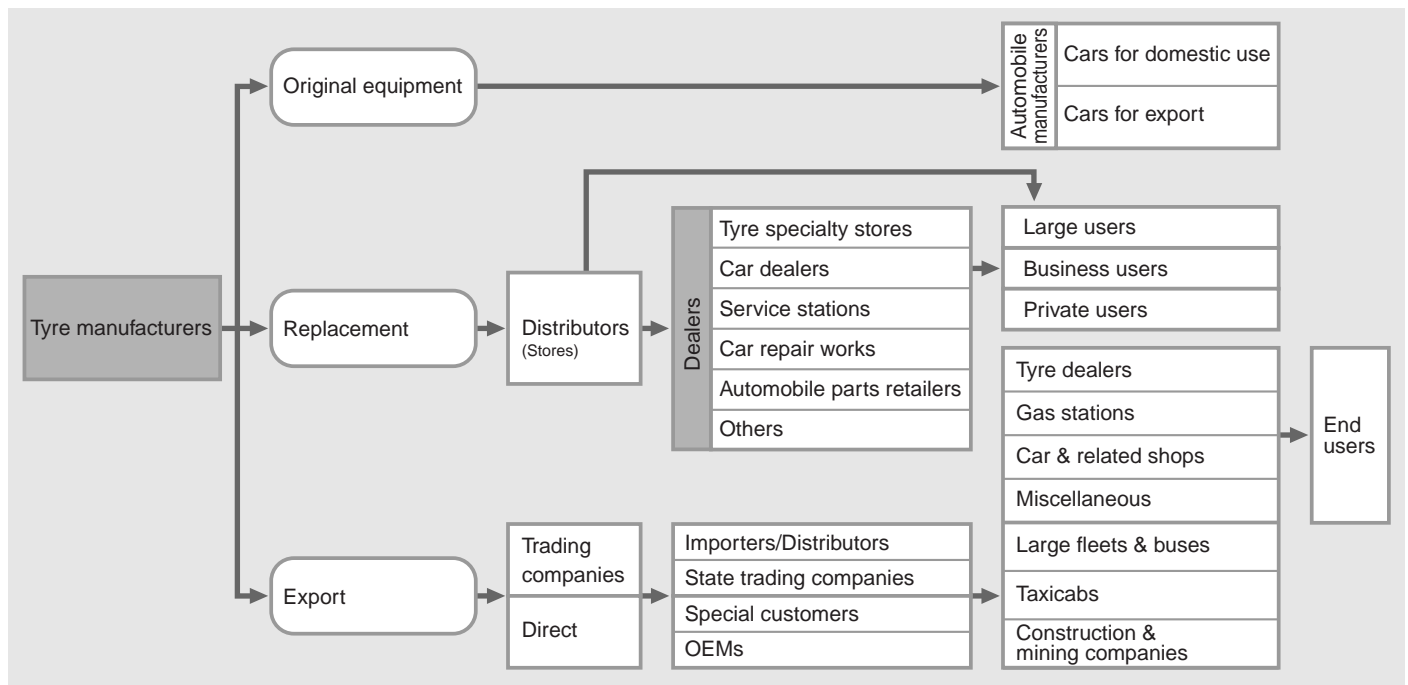


## 2. Distribution Channels

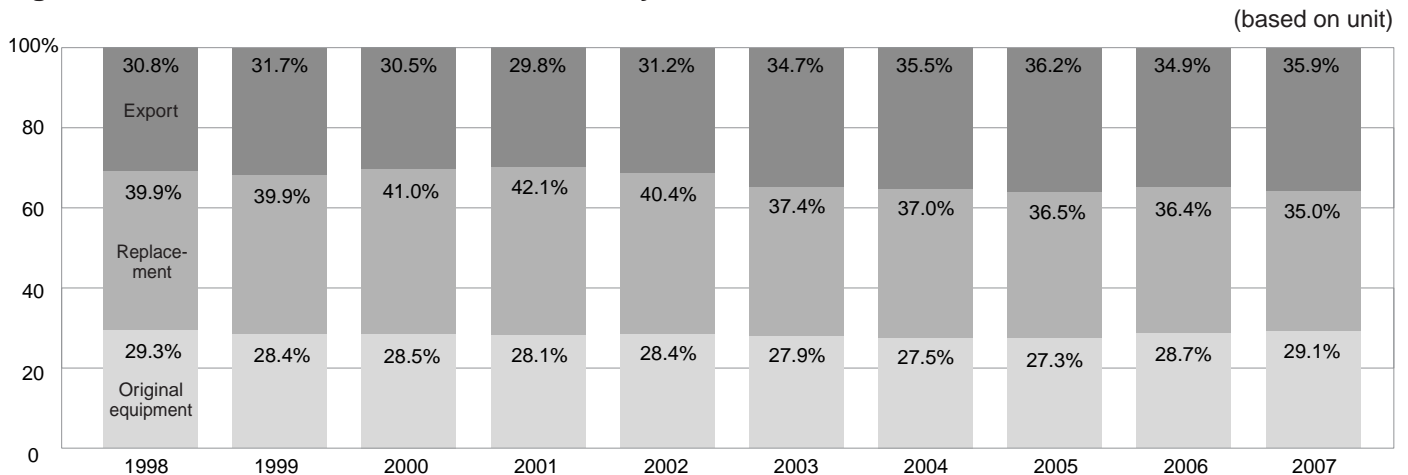
The distribution of automobile tyres is divided into three channels: original equipment, replacement and exports. Distribution channels for replacement tyres are particularly wide-ranging with distributors as key stations.

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 2007 on the basis of units for original equipment accounted for 29.1% of the total, 35.0% for replacement tyres and 35.9% 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 2007 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 25%, and then tyre cord 13%.

**Table 18: Basic composition**

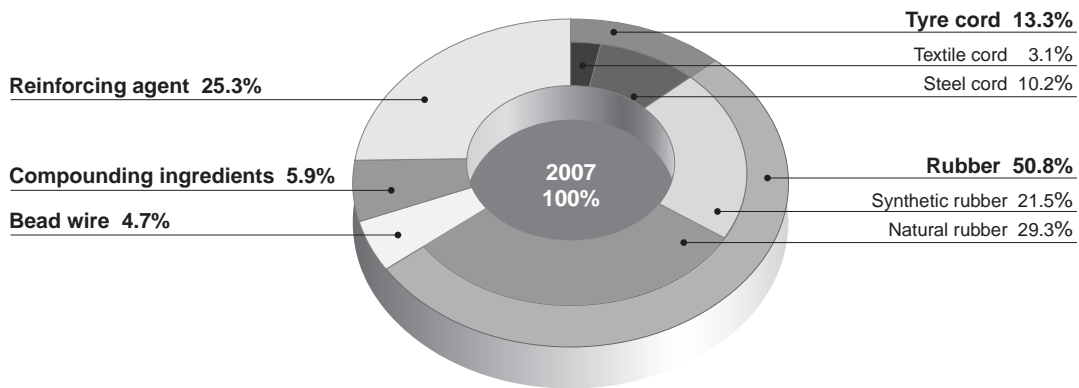
Composition	Examples
Rubber	Natural rubber, Synthetic rubber
Compounding ingredients	Vulcanizing agent, Vulcanizing accelerator, Vulcanizing accelerator aid, Antioxidant, Filler, Softener
Reinforcing agent	Carbon black, Silica
Tyre cord	Steel cord, Textile cord

**Table 19: Consumption of main raw materials used in automobile tyres in 2007**

Raw Materials	Consumption (tons)	2007/2006(%)	
Tyre cord	Steel	270,313	100.1
	Nylon	24,333	97.9
	Polyester	49,351	97.2
	Rayon	4,381	112.1
	Others	835	95.9
	<b>Total</b>	<b>349,213</b>	<b>99.7</b>
Rubber	Natural rubber	774,404	101.8
	Synthetic rubber	566,789	100.6
	<b>Total</b>	<b>1,341,193</b>	<b>101.3</b>
Reinforcing agent	669,022	99.9	

Source: JATMA

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



## 4. Tyre Production Worldwide

Global production of automobile tyres has been demonstrating an upward trend influenced by the active demand for tyres in BRICs and resources powers. The automobile tyre (for four-wheeled vehicles) production of the world in 2006 is estimated to be 1,353 million units (up 2.5% from the previous year). In North America the production decreased, but in other areas mainly Asia it increased, which resulted in the above situation. Looking at each country, the United States, the world's largest tyre-producing country, produced 15%, the second & third were Japan (13%) and China (12%), 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 2006**

	2006			Share			2006/2005(%)		
	PC	CV	Total	PC	CV	Total	PC	CV	Total
North America	181	50	231	18.7	13.1	17.1	89.7	88.3	89.4
South & Central America	50	34	84	5.2	9.0	6.2	96.6	107.2	100.6
Europe	314	91	405	32.4	23.7	30.0	100.0	102.2	100.4
Middle East and Africa	35	16	51	3.6	4.0	3.7	108.3	108.4	108.4
Asia and Oceania	389	192	581	40.1	50.2	43.0	110.7	109.2	110.2
<b>Total</b>	<b>970</b>	<b>383</b>	<b>1,353</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>101.8</b>	<b>104.1</b>	<b>102.5</b>

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>)

	2006			Share			2006/2005(%)		
	PC	CV	Total	PC	CV	Total	PC	CV	Total
U. S. A.	158	42	199	16.3	10.8	14.7	89.7	88.3	89.4
Japan	135	41	176	13.9	10.8	13.0	99.8	99.8	99.8
China	123	41	165	12.7	10.7	12.2	130.6	137.8	132.3
Korea	65	16	82	6.7	4.2	6.0	99.4	102.7	100.0
Germany	64	12	75	6.6	3.0	5.6	99.5	104.5	100.3
France	54	5	59	5.6	1.3	4.4	98.0	100.0	98.2

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

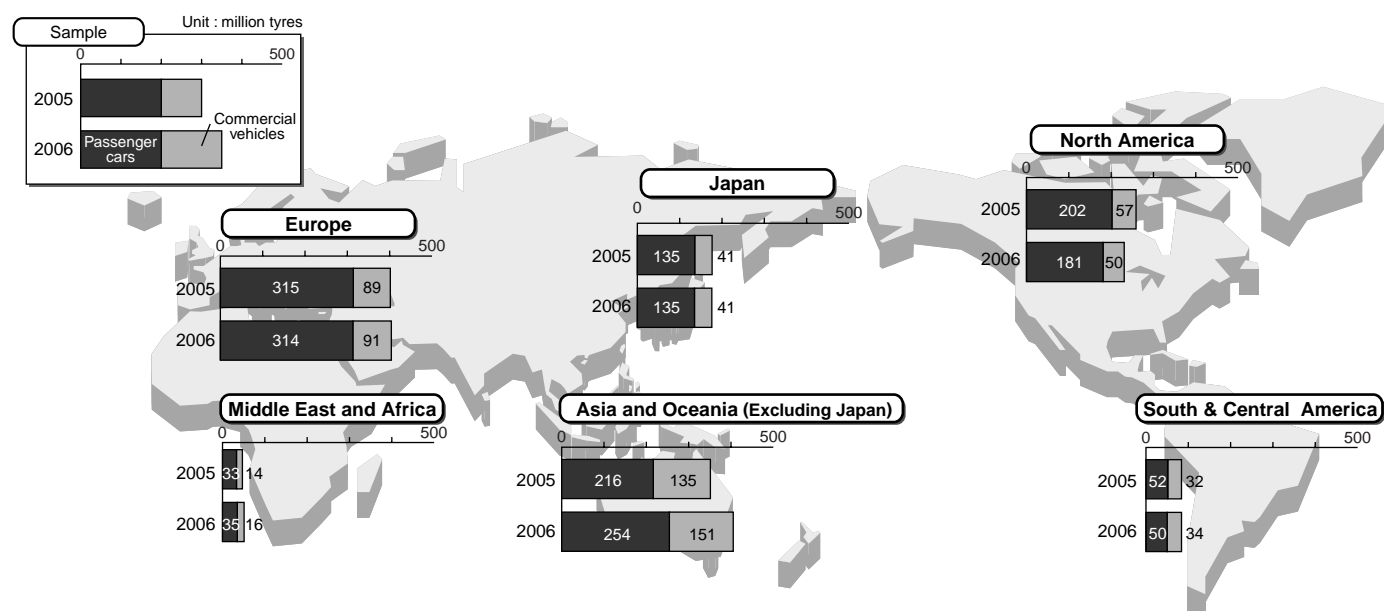
Source: JATMA

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**



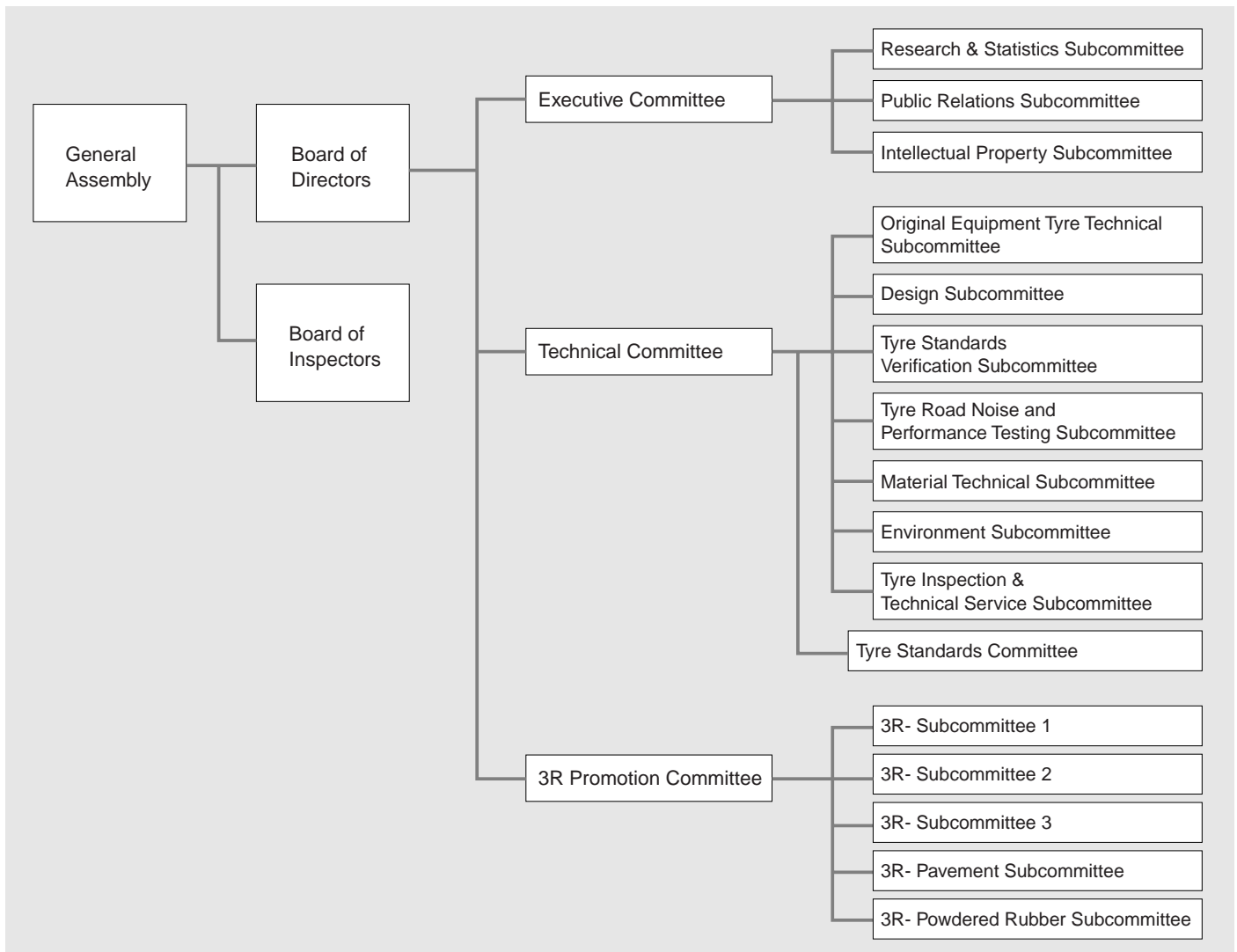
# The Japan Automobile Tyre Manufacturers Association, Inc.

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

**Members:** Bridgestone Corporation  
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, three committees are established; Executive, Technical, 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 2007)  
**Annual sales:** ¥1,052,218 million  
(fiscal year ended December 2007)  
**Employees:** 14,562  
(as of the end of December 2007)  
**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 2007)  
**Annual sales:** ¥287,139 million  
(fiscal year ended December 2007)  
**Employees:** 5,269  
(as of the end of December 2007)  
**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 2008)  
**Annual sales:** ¥364,490 million  
(fiscal year ended March 2008)  
**Employees:** 5,637  
(as of the end of March 2008)  
**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** Kenji Nakakura  
**Established:** August 1, 1945  
**Capital:** ¥23,974 million  
(as of the end of March 2008)  
**Annual sales:** ¥246,221 million  
(fiscal year ended March 2008)  
**Employees:** 3,066  
(as of the end of March 2008)  
**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** Bernard Delmas  
**Established:** June 10, 1975  
**Capital:** ¥100 million  
(as of the end of December 2007)  
**Employees:** 1,254  
(as of the end of December 2007)  
**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 2008)



## 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)

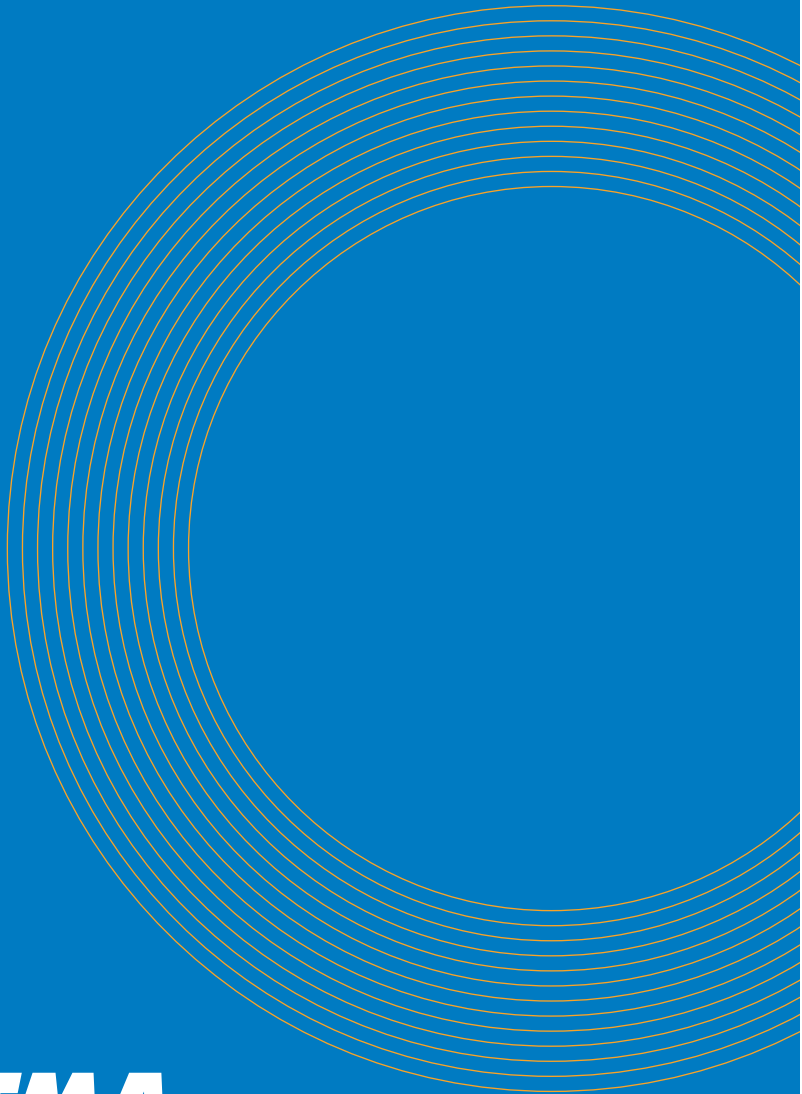
Technical Department  
(Inspection • Accident Prevention)

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

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

## Production of automobile tyres and tubes

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

		1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Truck and bus tyres	Tyres	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)	14,394 (97.0)
	Rubber	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)	370,286 (97.4)
Light truck tyres	Tyres	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)	25,082 (94.7)
	Rubber	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)	164,489 (93.1)
Passenger car tyres	Tyres	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)	136,731 (101.6)
	Rubber	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)	642,881 (102.8)
Off-the-road tyres	Tyres	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)	588 (106.1)
	Rubber	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)	142,492 (109.1)
Industrial tyres	Tyres	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)	748 (103.7)
	Rubber	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)	9,144 (104.9)
Agricultural tyres	Tyres	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)	625 (101.8)
	Rubber	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)	5,552 (100.9)
Motorcycle tyres	Tyres	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)	6,645 (103.7)
	Rubber	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)	16,190 (103.5)
Cart tyres	Tyres	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)	1,016 (71.4)
	Rubber	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)	3,231 (70.0)
Flaps and rim-bands	Rubber	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)	3,863 (87.4)
Total	Tyres	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)	185,829 (100.1)
	Rubber	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)	1,358,128 (100.5)

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

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

		1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Truck and bus tyres	Tyres	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)	6,681 (99.9)
	Rubber	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)	147,205 (99.9)
Light truck tyres	Tyres	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)	16,563 (97.0)
	Rubber	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)	92,450 (97.7)
Passenger car tyres	Tyres	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)	82,986 (99.3)
	Rubber	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)	363,277 (100.9)
Off-the-road tyres	Tyres	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)	217 (100.9)
	Rubber	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)	18,594 (111.0)
Industrial tyres	Tyres	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)	733 (101.0)
	Rubber	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)	8,413 (104.1)
Agricultural tyres	Tyres	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)	577 (97.5)
	Rubber	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)	5,102 (99.6)
Motorcycle tyres	Tyres	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)	2,798 (95.4)
	Rubber	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)	6,694 (94.3)
Cart tyres	Tyres	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)	703 (73.3)
	Rubber	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)	2,104 (72.1)
Flaps and rim-bands	Rubber	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)	1,221 (108.5)
Total	Tyres	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)	111,258 (98.7)
	Rubber	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)	645,060 (100.3)

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.

## Export shipment of automobile tyres and tubes

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

		1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Truck and bus tyres	Tyres	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)	7,760 (97.0)
	Rubber	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)	224,257 (97.7)
Light truck tyres	Tyres	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)	8,939 (93.9)
	Rubber	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)	75,470 (91.7)
Passenger car tyres	Tyres	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)	54,352 (105.3)
	Rubber	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)	282,515 (106.1)
Off-the-road tyres	Tyres	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)	388 (108.1)
	Rubber	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)	122,943 (107.9)
Industrial tyres	Tyres	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)	146 (103.5)
	Rubber	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)	2,304 (103.6)
Agricultural tyres	Tyres	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)	47 (102.2)
	Rubber	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)	357 (97.8)
Motorcycle tyres	Tyres	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)	2,935 (108.7)
	Rubber	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)	7,597 (108.9)
Cart tyres	Tyres	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)	348 (66.8)
	Rubber	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)	1,184 (65.6)
Flaps and rim-bands	Rubber	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)	3,610 (89.1)
Total	Tyres	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)	74,915 (102.7)
	Rubber	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)	720,237 (101.8)

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 %

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Truck and bus tyres	549 (64.9)	449 (81.8)	554 (123.4)	728 (131.4)	776 (106.6)	1,239 (159.7)	1,116 (90.1)	1,207 (108.2)	1,282 (106.2)	1,243 (97.0)
Light truck tyres	7,753 (82.8)	7,146 (92.2)	7,023 (98.3)	6,725 (95.8)	6,443 (95.8)	7,020 (109.0)	6,950 (99.0)	6,919 (99.6)	6,986 (101.0)	6,471 (92.6)
Passenger car tyres	36,964 (95.8)	37,305 (100.9)	38,627 (103.5)	38,333 (99.2)	41,121 (107.3)	39,894 (97.0)	41,191 (103.3)	42,703 (103.7)	45,986 (107.7)	47,782 (103.9)
Total for four-wheeled vehicle tyres	45,266 (92.8)	44,900 (99.2)	46,204 (102.9)	45,786 (99.1)	48,340 (105.6)	48,153 (99.6)	49,257 (102.3)	50,829 (103.2)	54,254 (106.7)	55,496 (102.3)
Off-the-road tyres	67 (71.1)	64 (95.5)	69 (107.8)	67 (97.1)	58 (86.6)	53 (91.4)	67 (126.4)	77 (114.9)	90 (116.9)	96 (106.7)
Industrial tyres	304 (82.7)	274 (90.1)	303 (110.6)	282 (93.1)	259 (91.8)	281 (108.5)	319 (113.5)	403 (126.3)	426 (105.7)	456 (107.0)
Agricultural tyres	717 (84.6)	760 (106.0)	693 (91.2)	598 (86.3)	560 (93.6)	554 (98.9)	581 (104.9)	630 (108.4)	642 (101.9)	627 (97.7)
Motorcycle tyres	2,623 (102.3)	2,405 (91.7)	2,467 (102.6)	2,277 (92.3)	2,158 (94.8)	1,856 (86.0)	2,003 (107.9)	2,346 (117.1)	2,485 (105.9)	2,379 (95.7)
Cart tyres	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)	1,065 (83.5)
Total	49,963 (93.6)	49,606 (99.3)	51,012 (102.8)	50,337 (98.7)	52,893 (105.1)	52,202 (98.7)	53,894 (103.2)	55,816 (103.6)	59,173 (106.0)	60,119 (101.6)

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.

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

## Sales of replacement tyres

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

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Truck and bus tyres	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)	5,588 (99.6)
Light truck tyres	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)	14,057 (97.2)
Passenger car tyres	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)	49,504 (95.3)
Total for four-wheeled vehicle tyres	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)	69,149 (96.0)
Off-the-road tyres	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)	132 (100.8)
Industrial tyres	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)	741 (98.0)
Agricultural tyres	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)	130 (77.8)
Motorcycle tyres	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)	2,096 (97.6)
Cart tyres	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)	38 (95.0)
Total	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)	72,286 (96.1)

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

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

		1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Truck and bus tyres	Total	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)	5,588 (99.6)
	Summer	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)	3,511 (103.2)
	Winter	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)	2,077 (94.1)
Light truck tyres	Total	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)	14,057 (97.2)
	Summer	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)	9,911 (100.5)
	Winter	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)	4,146 (90.1)
Passenger car tyres	Total	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)	49,504 (95.3)
	Summer	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)	34,859 (101.3)
	Winter	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)	14,645 (83.6)
Total	Total	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)	69,149 (96.0)
	Summer	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)	48,281 (101.3)
	Winter	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)	20,868 (85.8)

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

		1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Asia	Tyres	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)	9,063 (100.7)
	Value	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)	680,002 (108.6)
Middle East	Tyres	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)	13,921 (118.2)
	Value	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)	956,237 (121.4)
Europe	Tyres	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)	22,170 (109.3)
	Value	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)	1,668,181 (129.4)
North America	Tyres	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)	22,090 (89.1)
	Value	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)	1,529,500 (92.2)
South and Central America	Tyres	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)	3,815 (103.9)
	Value	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)	351,155 (118.7)
Africa	Tyres	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)	2,329 (108.7)
	Value	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)	274,414 (111.1)
Oceania	Tyres	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)	4,214 (114.4)
	Value	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)	462,104 (123.8)
Total	Tyres	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)	77,602 (103.0)
	Value	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)	5,921,593 (112.2)

Source: Ministry of Finance customs export records

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

tyres :  $\times 10^3$ , value : GIF yen  $\times 10^4$ , ( ) : year to year comparison %

		1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Passenger car tyres	Tyres	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)	24,089 (92.9)
	Value	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)	7,261,682 (101.6)
Commercial vehicle tyres	Tyres	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)	3,207 (118.5)
	Value	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)	1,159,415 (110.8)
Motorcycle tyres	Tyres	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)	3,091 (98.0)
	Value	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)	463,459 (116.2)
Others	Tyres	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)	423 (110.3)
	Value	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)	528,694 (130.4)
Tubes	Value	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)	128,103 (301.3)
Total	Tyres	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)	30,811 (95.8)
	Value	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)	9,541,352 (105.5)

Source: Ministry of Finance customs import records