JATMA
THE JAPAN AUTOMOBILE TYRE MANUFACTURERS ASSOCIATION, INC.

TYRE INDUSTRY OF JAPAN

2020

TYRE INDUSTRY OF JAPAN *2020*

Contents

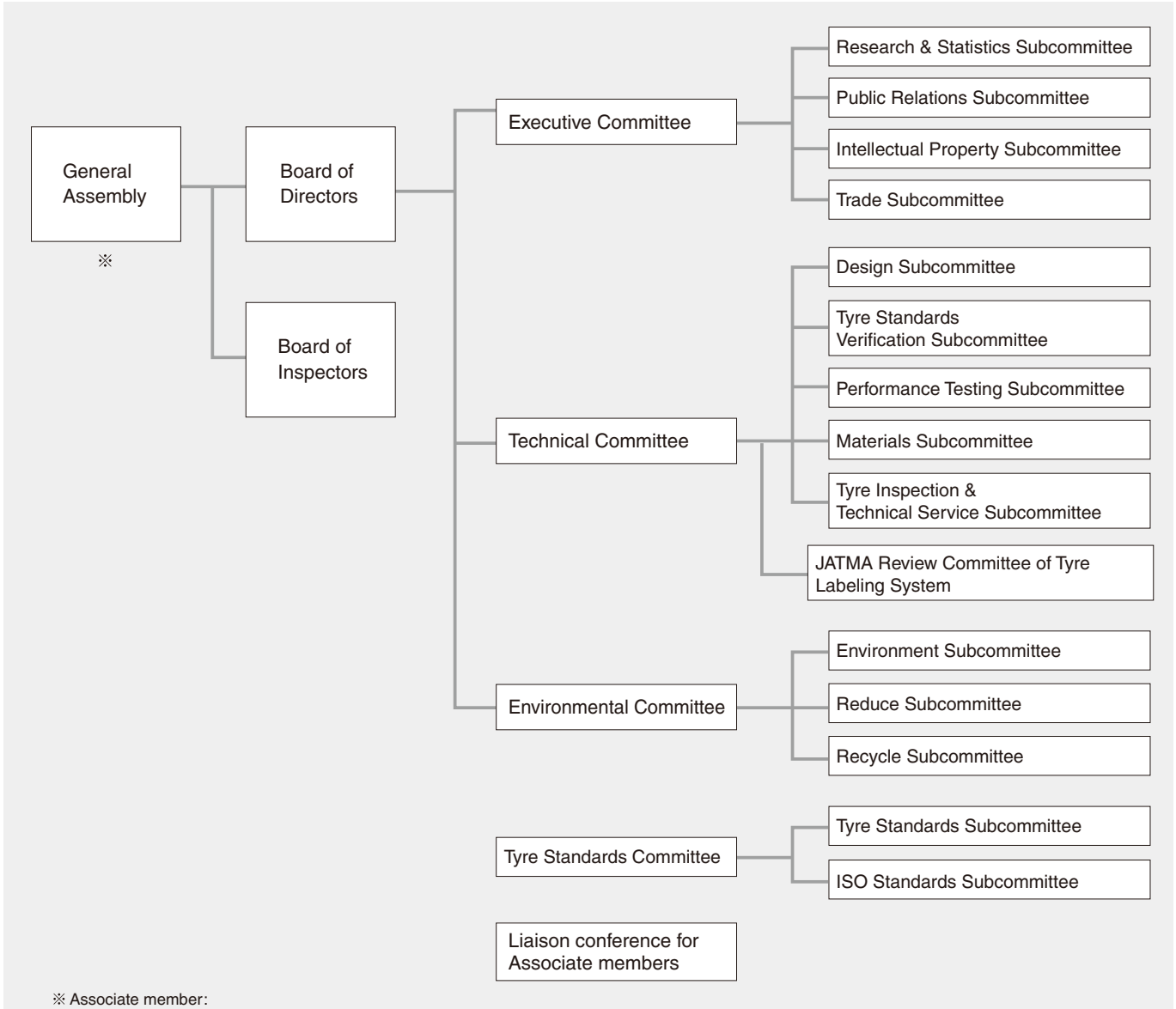
The Japan Automobile Tyre Manufacturers Association, Inc.

Chairman: Masahiro Higashi, Global COO and Representative Executive Officer, Bridgestone Corporation
Vice-Chairman: Masataka Yamaishi, President, Chairman of the Board, The Yokohama Rubber Co., Ltd.
Executive Director: Kenji Kurata
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:
[Full member]
Bridgestone Corporation
Sumitomo Rubber Industries, Ltd.
The Yokohama Rubber Co., Ltd.
Toyo Tire Corporation
[Associate member]
Nihon Michelin Tire Co., Ltd.
Goodyear Japan, Ltd.

Organization

Under General Assembly and Board of Directors, three committees are established: Executive Committee, Technical Committee, and Environmental Committee. The committees have relevant subcommittees which promoting their activities such as surveys and studies.



※ Associate member:
By getting certification of the Board of Directors, an Associate member can attend the General Assembly Meeting as an observer without voting right.

JATMA Member Firms

[Full member]

Bridgestone Corporation

President Masahiro Higashi

Established: March 1, 1931

Capital: ¥126,354 million
(as of the end of December 2019)

Annual sales: (consolidated) ¥3,525,600 million
(fiscal year ending December 2019)

Employees: (consolidated) 143,589
(as of the end of December 2019)

Head office: 1-1, Kyobashi 3-chome,
Chuo-ku, Tokyo 104-8340
Tel.: 03 (6836) 3001
https://www.bridgestone.com/

Sumitomo Rubber Industries, Ltd.

President Satoru Yamamoto

Established: March 6, 1917

Capital: ¥42,658 million
(as of the end of December 2019)

Annual sales: revenue* (consolidated) ¥893,310 million
(fiscal year ending December 2019)

Employees: (consolidated) 39,233
(as of the end of December 2019)

Head office: 6-9, Wakinohama-cho 3-chome, Chuo-ku,
Kobe, Hyogo Prefecture 651-0072
Tel.: 078 (265) 3000
https://www.srigroup.co.jp/english/

*International Financial Reporting Standards (IFRS) has been applied from 2016.

The Yokohama Rubber Co., Ltd.

President Masataka Yamaishi

Established: October 13, 1917

Capital: ¥38,909 million
(as of the end of December 2019)

Annual sales: (consolidated) ¥650,462 million
(fiscal year ending December 2019)

Employees: (consolidated) 27,428
(as of the end of December 2019)

Head office: 36-11, Shimbashi 5-chome,
Minato-ku, Tokyo 105-8685
Tel.: 03 (5400) 4531
https://www.y-yokohama.com/global/

Toyo Tire Corporation

President Takashi Shimizu

Established: August 1, 1945

Capital: ¥55,935 million
(as of the end of December 2019)

Annual sales: (consolidated) ¥377,457 million
(fiscal year ending December 2019)

Employees: (consolidated) 13,132
(as of the end of December 2019)

Head office: 2-13, Fujinoki 2-chome, Itami,
Hyogo Prefecture 664-0847
Tel.: 072 (789) 9100
https://www.toyotires-global.com/

[Associate member]

Nihon Michelin Tire Co., Ltd.

President Paul Perriniaux

Established: June 10, 1975

Capital: ¥100 million
(as of the end of December 2019)

Employees: 600
(as of the end of December 2019)

Head office: 13F., Shinjuku Park Tower, 7-1,
Nishi-Shinjuku 3-chome, Shinjuku-ku,
Tokyo 163-1073
Tel.: 03 (5990) 5600
https://www.michelin.co.jp/

Goodyear Japan, Ltd.

President Yujiro Kanahara

Established: January 10, 1952

Capital: ¥2,336 million
(as of the end of December 2019)

Employees: 189
(as of the end of December 2019)

Head office: 3F., Sankaido Bldg., 9-13,
Akasaka 1-chome, Minato-ku,
Tokyo 107-0052
Tel.: 03 (5572) 8235
https://www.goodyear.co.jp/

I History of the Japanese Tyre Industry

1. Brief History of the Japanese Tyre Industry

The production scale (newly produced rubber) of the automobile tyre industry of Japan steadily increased from the second half of 1990s to 2008, supported by generally firm demand in the domestic market and active export. It declined severely in 2009 due to the world economic crisis. Though it was recovered to a certain extent in 2010, thereafter it has been gradually decreasing and one of the causes is globalization of the production system, however, from 2017, it has increased from the previous year for the three consecutive year.

Number of tyre production in 2019 was 146.55 million (tyres). This is the amount of 1.07 million tons of rubber, which accounts for more than 80% of the domestic rubber production (newly produced rubber).

Brief history of the tyre industry of Japan in chronological order is as below:

(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) 2000s

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. Global economy continued strong as a whole until 2007 owing to supports by the robust economy of the United States, Europe, Middle East and BRICs countries, and tyre rubber production volume marked a record high every year from 2002 and it reached 1.36 million tons in 2007.

However, tyre production volume took a downward turn in 2008 after seven years due to the serious worldwide economic crisis from September 2008 and decreased by 360,000 tons, then declined to 990,000 tons under 1 million tons after fifteen years.

(7) 2010-2019

Although Japanese economy recovered, supported by the government's economic policies etc, it turned in negative growth in 2011 due to the Great East Japan Earthquake and the record appreciation of the yen. After 2013, due to the impact of twice consumption tax increases, the growth has been weakened temporarily, it has continued its gradually increase by the effect of high stock prices and depreciation of the yen. The world economy was gradually recovering from the after effect of the financial crisis. In addition to the United States where stable growth continues, and Europe that turned into positive growth since the second half of 2013, emerging economies also remained robust in general due to recovery in resource prices and other factors, however, growth slowed in many countries and regions since the middle of the 2018. In this environment of demand, tyre production amount in Japan has increased from the previous year for three consecutive years to 1.07 million tons in rubber consumption in 2019.

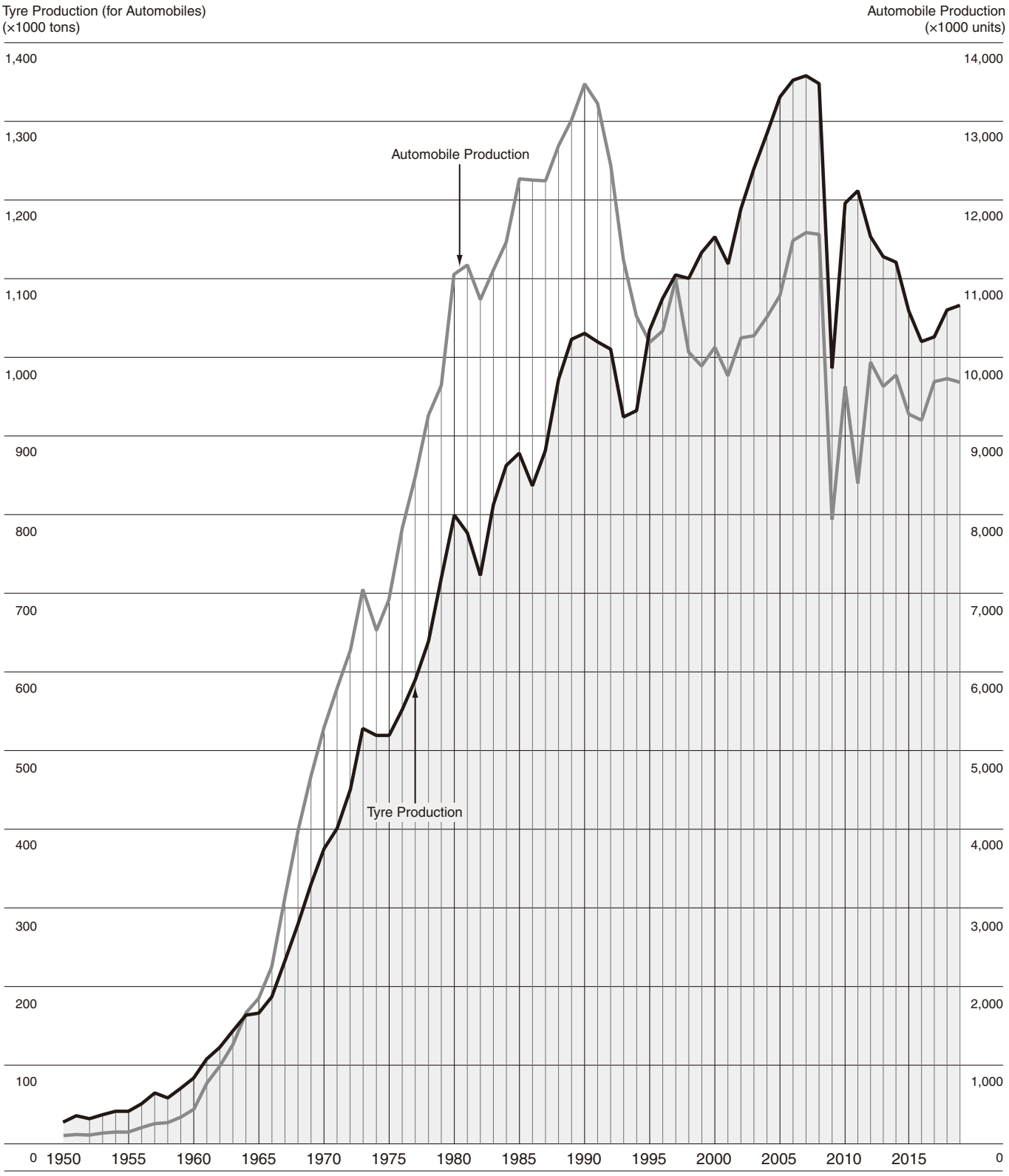
2. Changes in Production Volume of Tyres and Automobiles

Table 1: Changes in Production Volume of Tyres and Automobiles

	1950	1960	1970	1980	1990	2000	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Tyre Production (for Automobiles) (×1000 tons)(quantity of rubber)	14	83	369	784	1,031	1,153	1,196	1,212	1,147	1,128	1,121	1,058	1,020	1,026	1,060	1,066
Automobile Production (×1000 units)	32	482	5,289	11,043	13,487	10,141	9,629	8,399	9,943	9,630	9,775	9,278	9,205	9,691	9,730	9,684

Source: JATMA

Figure 1: Changes in Production Volume of Tyres and Automobiles



II The Japanese Tyre Industry Today

1. Overview

The proportion of tyre production (fig. 2 and 3) in the rubber product industry increased by 0.8 points from the previous year to 80.3% in raw material consumption (the amount of newly produced rubber) and increased by 0.9 point from the previous year to 52.9% in the sales amount. (Source: Ministry of Economy, Trade and Industry current survey of production)

The proportion of tyre production in the rubber product industry in 2019 (excluding cart tyres, tubes and flaps)

Figure 2: Raw material consumption (the amount of newly produced rubber)

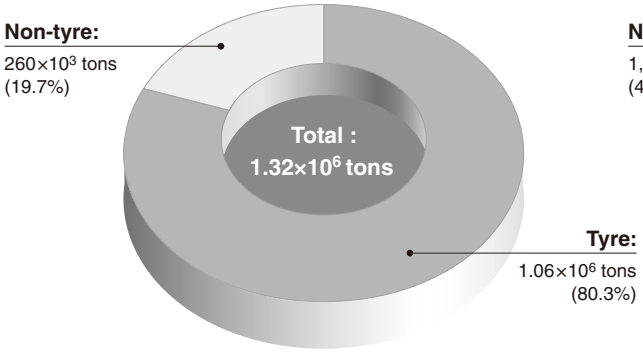
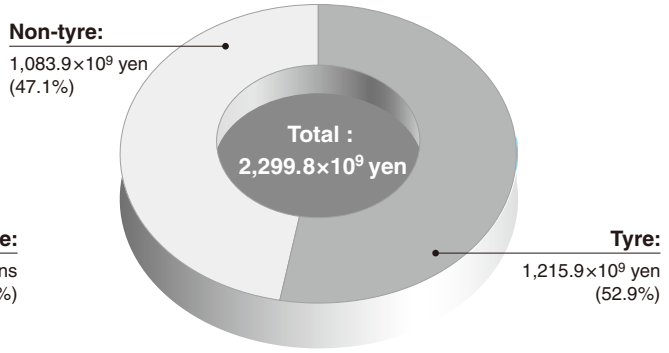
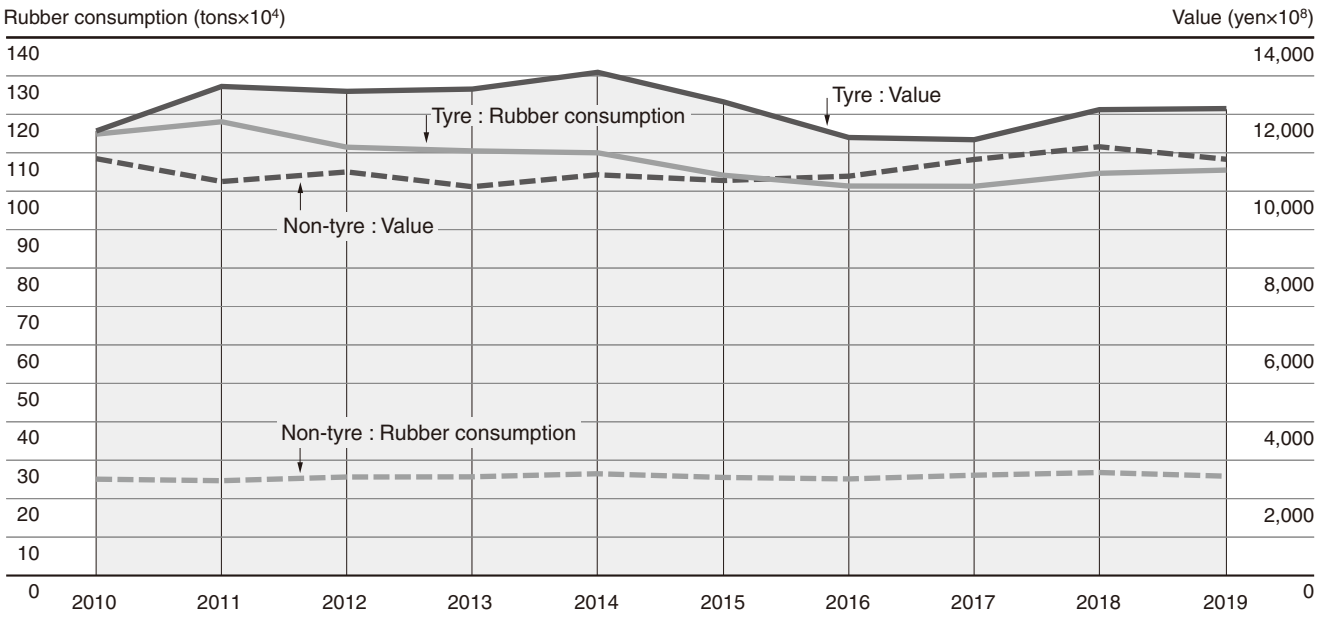


Figure 3: The sales amount



Source: Ministry of Economy, Trade and Industry current survey of production

Figure 4: Trends in the raw material consumption (the amount of newly produced rubber) and the sales amount of the tyre industry of Japan



Source: Ministry of Economy, Trade and Industry current survey of production

2. Trends in Production by Tyre Category

The production volume of automobile tyres decreased by 0.1% to 146.55 million tyres in 2019, have kept almost the same level as the previous year. Passenger car tyres have kept almost the same level as the previous year, however, light truck tyres and truck & bus tyres slightly increased from the previous year due to the increase in export.

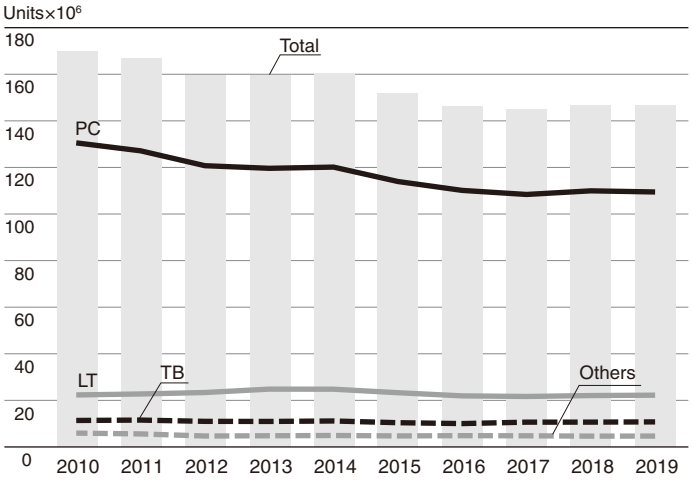
Table 2: Automobile tyre production in 2019

	Production	
	Units(×10³)	2019/2018(%)
Passenger car tyres	109,327	99.6
Light truck tyres	22,081	100.7
Truck and bus tyres	10,614	101.0
Others	4,523	100.5
Total	146,545	99.9

N.B.: 1. "Others" are off-the-road tyres, industrial tyres, agricultural tyres, cart tyres, and motorcycle tyres.
2. Figures of some domestic manufacturers that are non-member of JATMA are included.

Source: JATMA

Figure 5: Trends in automobile tyre production



3. Trends in Sales of Original Equipment Tyres

The sales volume of original equipment tyres decreased by 1.3% to 45.62 million tyres in 2019, decreased from the previous year for two consecutive years.

Due to the increase in domestic new car sales, the sales volume of light truck tyres increased by 1.0% from the previous year, however, passenger car tyres decreased by 1.1% from the previous year, truck & bus tyres decreased by 1.3% from the previous year.

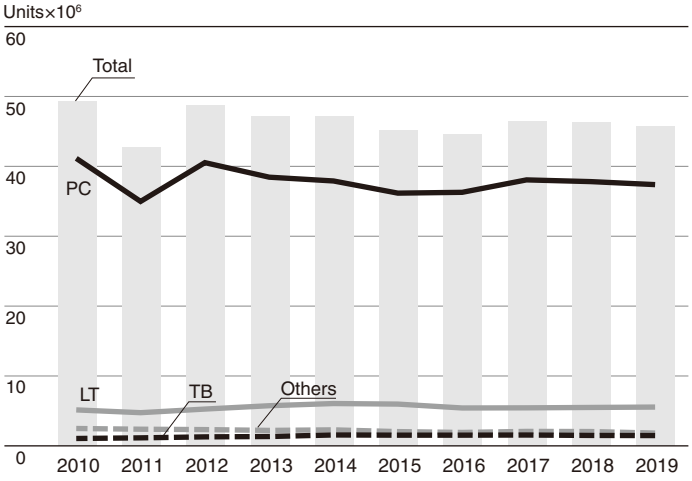
Table 3: Sales of original equipment tyres in 2019

	Sales	
	Units(×10³)	2019/2018(%)
Passenger car tyres	37,231	98.9
Light truck tyres	5,396	101.0
Truck and bus tyres	1,316	98.7
Special vehicle tyres	738	89.9
Motorcycle tyres	936	87.3
Total	45,617	98.7

N.B.: 1. Special vehicle tyres include off-the-road, industrial, agricultural, and cart tyres.
2. Figures of some domestic manufacturers that are non-member of JATMA are included.
3. Imported tyres manufactured outside Japan by Japanese manufacturers are included.

Source: JATMA

Figure 6: Trends in sales of original equipment tyres



4. Trends in Sales of Replacement Tyres

The sales volume of replacement tyres decreased by 1.5% from the previous year to 73.19 million tyres in 2019.

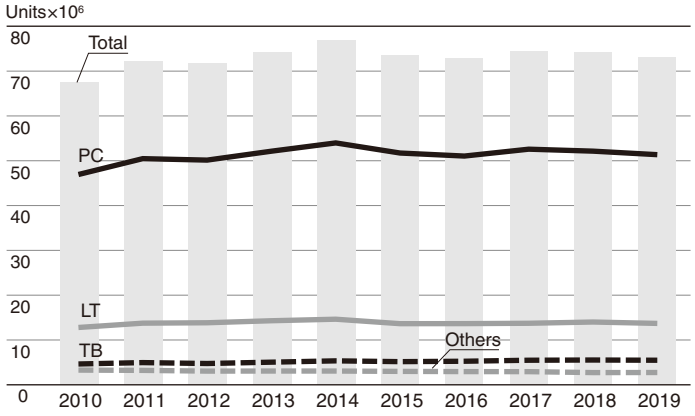
Table 4: Sales of replacement tyres in 2019

	Sales	
	Units($\times 10^3$)	2019/2018(%)
Passenger car tyres	51,332	98.5
Light truck tyres	13,676	97.8
Truck and bus tyres	5,458	99.1
Special vehicle tyres	759	97.2
Motorcycle tyres	1,960	102.1
Total	73,185	98.5

N.B.: 1. Special vehicle tyres include off-the-road, industrial, agricultural, and cart tyres.
2. Figures of some domestic manufacturers that are non-member of JATMA are included.
3. Imported tyres manufactured outside Japan by Japanese manufacturers are included.

Source: JATMA

Figure 7: Trends in sales of replacement tyres



Trends in Sales of Summer Tyres and Winter Tyres for Replacement (for Four-Wheeled Vehicles)

The sales volume of summer tyres (normal tyres except snow tyres) increased by 1.9% from the previous year to 46.7 million tyres in 2019. Passenger car tyres increased by 2.4% from the previous year, light truck tyres increased by 0.8% from the previous year, and truck & bus tyres increased by 0.3%, from the previous year.

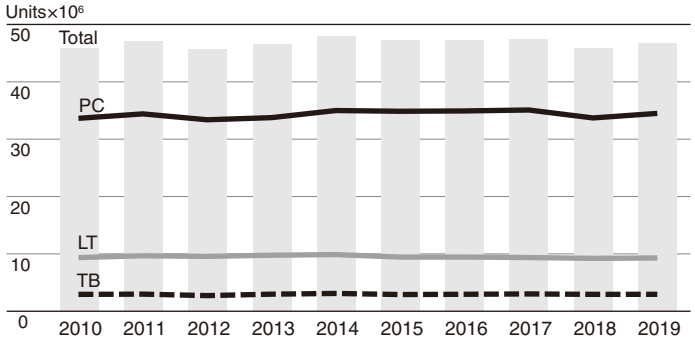
Table 5-1:
Sales of summer tyres for replacement (for four-wheeled vehicles) in 2019

	Summer tyres		
	Units($\times 10^3$)	2019/2018(%)	Summer tyre rate(%)
Passenger car tyres	34,481	102.4	67.2
Light truck tyres	9,279	100.8	67.8
Truck and bus tyres	2,937	100.3	53.8
Total	46,697	101.9	66.3

N.B.: 1. "Summer tyre rate" indicates a percentage of summer tyres in total number of replacement tyre sales.
2. Imported tyres manufactured outside Japan by Japanese manufacturers are included.
3. All-season tyres are included in this category.

Source: JATMA

Figure 8-1: Trends in sales of summer tyres for replacement (for four-wheeled vehicles)



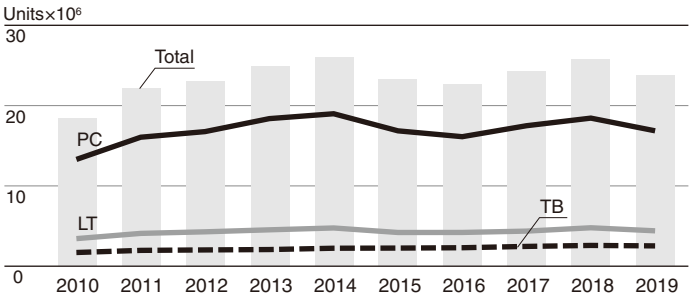
The sales volume of winter tyres decreased by 7.8% to 23.77 million tyres in 2019, decreased from the previous year for the first time in three years.
Due to effect of the mild winter, the sales volume of the all types decreased from the previous year, respectively, passenger car tyres, light truck tyres, and truck & bus tyres decreased by 8.6%, by 8.0%, and by 2.2%.

Table 5-2:
Sales of winter tyres for replacement (for four-wheeled vehicles) in 2019

	Winter tyres		
	Units($\times 10^3$)	2019/2018(%)	Winter tyre rate(%)
Passenger car tyres	16,851	91.4	32.8
Light truck tyres	4,397	92.0	32.2
Truck and bus tyres	2,521	97.8	46.2
Total	23,769	92.2	33.7

N.B.: 1. "Winter tyre rate" indicates the percentage of winter tyres in total number of replacement tyre sales.
2. Imported tyres manufactured outside Japan by Japanese manufacturers are included.
Source: JATMA

Figure 8-2: Trends in sales of winter tyres for replacement (for four-wheeled vehicles)



5. Trends in Sales of Export Tyres

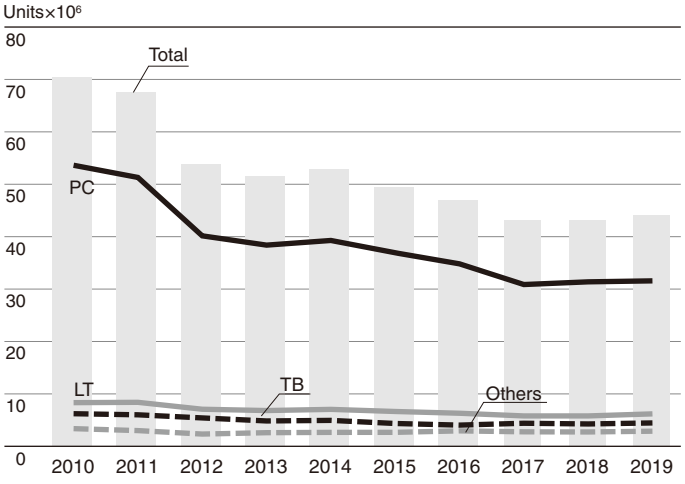
The export volume of automobile tyres increased by 2.1% from the previous year to 44.27 million tyres in 2019. The export volume of the all types increased from the previous year, respectively, passenger car tyres, light truck tyres, and truck & bus tyres increased by 0.6%, by 7.0%, and by 4.8%.

Table 6: Sales of export tyres in 2019

	Sales	
	Units($\times 10^3$)	2019/2018(%)
Passenger car tyres	31,362	100.6
Light truck tyres	5,981	107.0
Truck and bus tyres	4,251	104.8
Others	2,677	105.8
Total	44,271	102.1

N.B.: 1. "Others" are off-the-road tyres, industrial tyres, agricultural tyres, cart tyres, and motorcycle tyres.
2. Figures of some domestic manufacturers that are non-member of JATMA are included.
Source: JATMA

Figure 9: Trends in sales of export tyres



6. Exports by Region of Destination

The export volume of automobile tyres in 2019 (on customs clearance basis of Ministry of Finance) increased by 0.9% to 45.31 million tyres in quantity basis from the previous year, decreased by 0.1% to 546.5 billion yen amount of money from the previous year, and increased by 3.2% to 1.15 million tons in product weight basis from the previous year.
By region (in quantity basis), Europe exports decreased but export to North America and Middle East, etc. increased, and resulted in increase from the previous year in total.

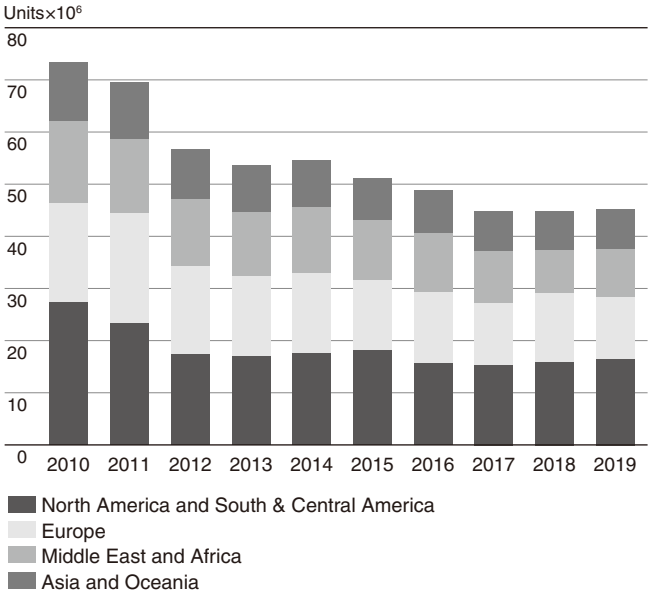
Table 7: Exports by region of destination in 2019

	Tyre Units($\times10^3$)				2019/2018 (%)	Value (FOB) (yen$\times10^6$)	2019/2018 (%)
	PC	TB&LT	Others	Total			
North America	11,445	1,857	393	13,695	103.5	146,568	103.4
South & Central America	1,870	858	260	2,988	105.5	57,136	93.8
Europe	9,243	942	1,556	11,741	89.8	110,016	91.1
Middle East	4,927	2,310	29	7,266	113.2	60,604	108.6
Africa	974	886	55	1,915	97.4	25,947	92.0
Asia	4,709	777	342	5,828	105.7	83,770	104.2
Oceania	1,301	456	118	1,875	101.4	62,431	104.9
Total	34,469	8,086	2,753	45,308	100.9	546,472	99.9
Weight(tons)	435,219	329,401	384,328	1,148,948	103.2		

N.B.: 1. Exchange rates are averages of spot rates for Tokyo interbank trade.
2018: 1dollar = 110yen
2019: 1dollar = 109yen
2."Others" doesn't include Aircraft tyres and Bicycle tyres.

Source: Ministry of Finance customs records

Figure 10: Export trend by region



7. Imports by Region of Origin

The import volume of automobile tyres in 2019 (on customs clearance basis of Ministry of Finance) increased by 1.7% to 30.48 million tyres in quantity basis from the previous year, increased by 0.3% to 129.8 billion yen amount of money from the previous year, and increased by 2.9% to 0.28 million tons in product weight basis from the previous year.
By region (in quantity basis), imports from Asia which account for about 90% of the total increased and resulted in increase from the previous year in total.

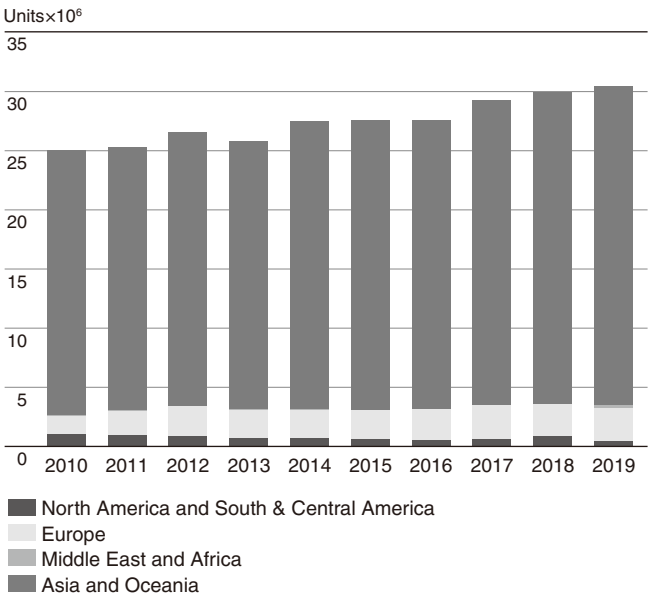
Table 8: Imports by region of origin in 2019

	Tyre Units($\times10^3$)				2019/2018 (%)	Value (CIF) (yen$\times10^6$)	2019/2018 (%)
	PC	TB&LT	Others	Total			
North America	344	42	25	411	48.8	4,627	54.4
South & Central America	38	2	29	69	97.8	1,073	87.8
Europe	2,451	89	207	2,747	102.8	25,741	101.9
Middle East	34	0	0	34	80.4	504	79.6
Africa	225	3	0	228	2,054.2	877	827.4
Asia	21,107	2,782	3,098	26,987	102.5	97,008	103.6
Oceania	0	0	0	0	9.5	1	14.6
Total	24,199	2,918	3,359	30,476	101.7	129,831	100.3
Weight(tons)	193,210	56,299	29,195	278,704	102.9		

N.B.: "Others" doesn't include Aircraft tyres and Bicycle tyres.

Source: Ministry of Finance customs records

Figure 11: Import trends by region



III 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 Regulations for Road Vehicles and their detailed items, enacted by the Ministry of Land, Infrastructure, Transport and Tourism.

In addition to these regulations, the guidelines for the items to be complied in usage and maintenance of automobile tyres are specified in "Standards for Selection, Usage and Maintenance of Automobile Tyres" by JATMA to ensure and enlighten the tyre safety.

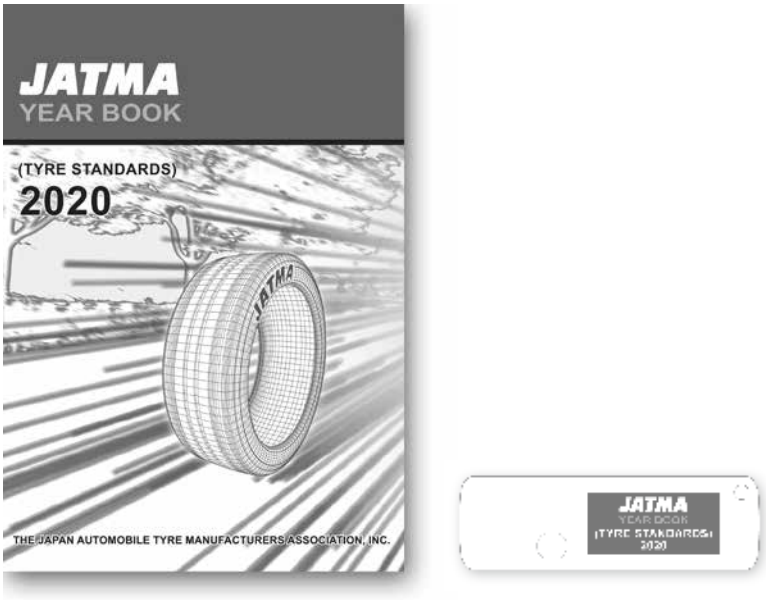
2. Tyre Standards

Besides the safety standards, standards for specifications of automobile tyres, rims and valves are set by the Tyre Standards Committee which comprises representatives from tyre manufacturers and vehicle manufacturers, and government ministries concerned and published in book form as JATMA YEAR BOOK annually by JATMA. JATMA YEAR BOOK is designed to promote standardization, simplification, and unification of tyre use within Japan, and is contributing to rationalization of production and use of fair tyres while ensuring the interchangeability.

The JATMA standards are quoted in the Federal Motor Vehicle Safety Standards and Regulations of U.S., applied to tyres exporting to Canada, Australia and so on; and recognized as one of authoritative guidelines such as the ETRTO standards of Europe and TRA standards of US.

The JATMA standards cover the following tyre categories:

- passenger car tyres,
- light truck tyres,
- truck and bus tyres,
- off-road vehicle tyres,
- agricultural equipment tyres,
- industrial vehicle tyres, and
- motorcycle tyres.



3. Legal Limits on Tread Wear

Worn tyres could be a threat to road safety. They're easier to slip especially on wet roads because of the degradation of their braking performance, comparing to new tyres. Thus the Ministry of Land, Infrastructure, Transport and Tourism prescribed requirements for tyre groove depth (minimum groove depth) in its Safety Regulations for Road Vehicles, and proscribed the use of tyres of insufficient groove depth on roads. (see table 9 and 10 (table 10 for high-speed driving)). Shown in figure 12 is the result of actual inspection on in-service vehicles conducted by JATMA. As it is shown, the number of improper inflation pressure tyres, uneven wear tyres, and insufficient groove depth tyres are notably high.

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 six 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

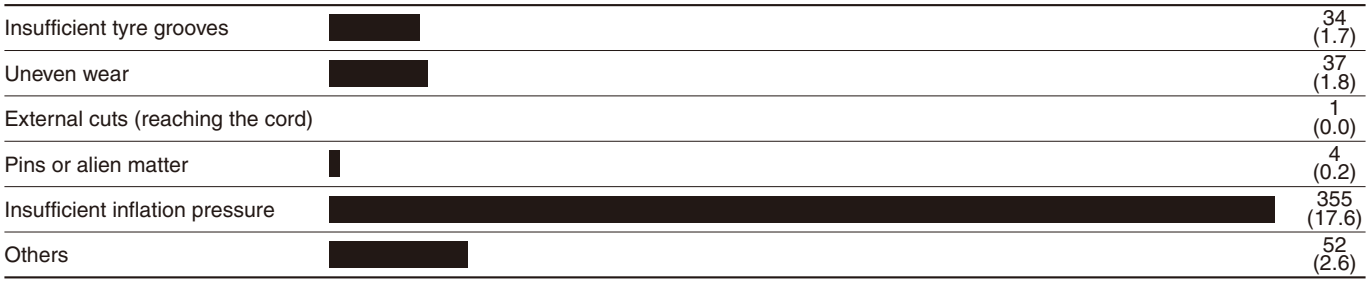
Tyre type	Groove depth limit
Passenger car tyres	1.6 mm
Light truck tyres	1.6 mm
Truck and bus tyres	1.6 mm
Motorcycle tyres	0.8 mm

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: Breakdown of tyre defects

(Parentheses show defect rates)



Notes:
1. Multiple tyre defects per vehicle are possible, thus the number of tyre defects does not correspond to the number of vehicles with tyre defects.
2. The defect rate is the number of defects divided by the number of vehicles inspected.
3. Tyre inspections were carried out a total of 37 times (18 times on expressways and 19 times on ordinary roads) in 2019.

Ⅳ Consideration for Environment

1. Tyre Labeling System

For the purpose of providing consumers with easy-to-understand and more appropriate information, it has been in operation since January 2010.

A system established as an industry voluntary standard to classify rolling resistance performance and wet grip performance based on a grading system and label them.

Principal contents of the system

- **Scope :** Summer tyres for passenger car that are purchased as replacement tyres by consumers at tyre dealers etc.
- **Grading System :**

  Rolling Resistance Coefficient (RRC)

  ·····A range of five grades (Grade AAA to C)

  Wet Grip Performance

  ·····A range of four grades (Grade a to d)

Unit (N/kN)

RRC	Grade
RRC ≦ 6.5	AAA
6.6 ≦ RRC ≦ 7.7	AA
7.8 ≦ RRC ≦ 9.0	A
9.1 ≦ RRC ≦ 10.5	B
10.6 ≦ RRC ≦ 12.0	C

Unit (%)

Wet Grip Performance (G)	Grade
155 ≦ G	a
140 ≦ G ≦ 154	b
125 ≦ G ≦ 139	c
110 ≦ G ≦ 124	d

- **Performance requirements for fuel efficient tyres :**

  Rolling Resistance Coefficient

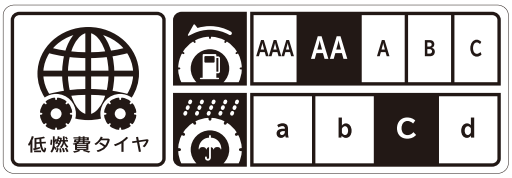
  ·····9.0 and below (Grade AAA to A)

  Wet Grip Performance

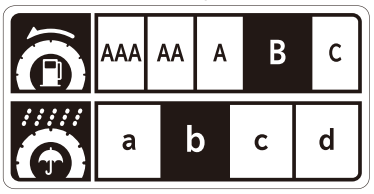
  ·····110 and above (Grade a to d)

- **Labeling method (Display)**

(Fuel efficient tyre)



(Non fuel efficient tyre)



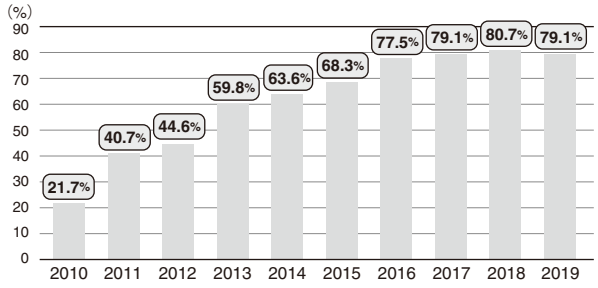
: Uniform mark of fuel efficient tyres

: Rolling Resistance Performance

: Wet Grip Performance

- **The spread of fuel efficient tyres :**

The labeling system started in 2010. After that, the spread advances, and in recent years it has reached the 80% level.



2. Approach to Reduce CO_2 Emissions

In the lifecycle of a tyre (raw material procurement, manufacturing, distribution, usage, recycling and disposal), over 80% of CO_2 emissions occur in the usage stage. By decreasing rolling resistance of tyres, fuel efficiency is improved and lead to the reduction of CO_2 emissions of automobile.

According to the results of investigating CO_2 emissions in the usage stage for all passenger car tyres (including both original equipment and replacement tyres, available as summer and winter tyres) sold domestically by JATMA members in 2016, total amount of the reduction in CO_2 emission compared with 2006 was 2,972,000 tons, 34.1kg (13.9%) per tyre.

*Above calculations are made according to “Tyre $LCCO_2$ calculation guidelines Ver. 2.0”

Figure 13: CO_2 emission amount during tyre usage stage (per tyre)

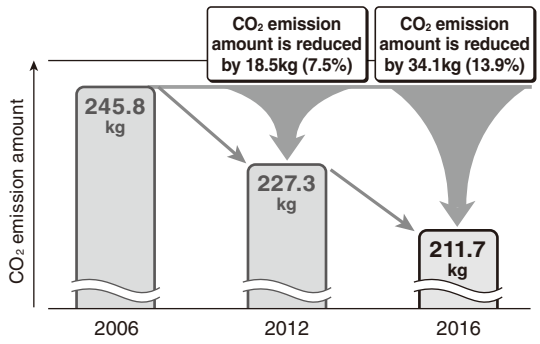
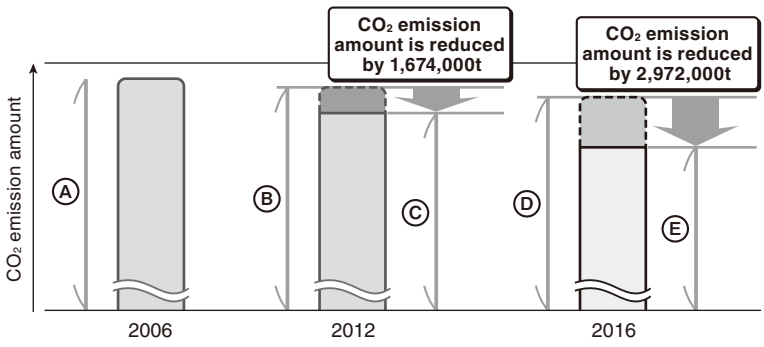


Figure 14: Reduction in CO_2 emission amount during tyre usage stage



Ⓐ : CO_2 emission amount of tyres sold in 2006 (245.8kg/tyre) × number of tyres sold in 2006
Ⓑ : CO_2 emission amount of tyres sold in 2006 (245.8kg/tyre) × number of tyres sold in 2012
Ⓒ : CO_2 emission amount of tyres sold in 2012 (227.3kg/tyre) × number of tyres sold in 2012
Ⓓ : CO_2 emission amount of tyres sold in 2006 (245.8kg/tyre) × number of tyres sold in 2016
Ⓔ : CO_2 emission amount of tyres sold in 2016 (211.7kg/tyre) × number of tyres sold in 2016

3. Effort to Reduce

In 2005, JATMA adopted a new concept of reduce coefficient, which focuses on both longer tyres life and lighter weight tyres.

We are promoting the monitoring of the reduce achievement rate aiming at the benchmark effect in designing new products.

By this promoting, we effort to reduce the amount of ELT (End-of-Life Tyres) generated (target 10%, effective 3-5%).

Table 11: Monitoring of reduce achievement rates

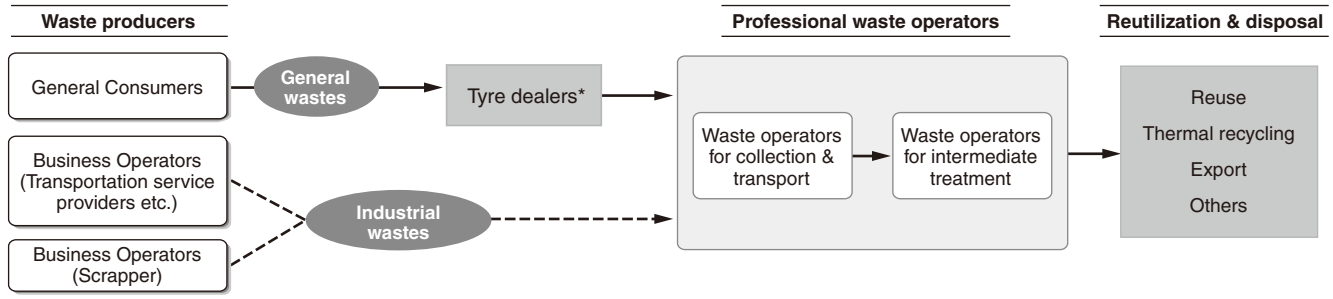
Category	Tyre size	Classification	Reduce achievement rates				
			2015	2016	2017	2018	2019
Passenger car tyres	155/65R13	Summer tyres	120	111	114	–	144
		Studless tyres	97	100	111	102	–
Passenger car tyres	175/65R14	Summer tyres	104	105	113	95	124
		Studless tyres	97	103	111	103	–
Passenger car tyres	195/65R15	Summer tyres	108	126	107	102	114
		Studless tyres	96	103	111	99	–
Passenger car tyres	215/45R17	Summer tyres	101	123	107	101	120
		Studless tyres	97	102	111	97	–
Light truck tyres	145R12 (145/80R12)	Summer tyres	–	–	126	–	110
		Studless tyres	105	–	–	–	–
Light truck tyres	185R14 (185/80R14)	Summer tyres	–	–	–	–	124
		Studless tyres	104	–	–	–	–
Light truck tyres	205/70R16	Summer tyres	–	125	–	–	101
		Studless tyres	105	–	–	–	–
Truck and bus tyres	225/80R17.5	Summer tyres	100	100	126	118	109
		Studless tyres	–	–	106	87	–
Truck and bus tyres	245/70R19.5	Summer tyres	100	100	122	117	107
		Studless tyres	–	–	100	93	–
Truck and bus tyres	11R22.5	Summer tyres	100	96	119	118	106
		Studless tyres	–	–	100	87	–

N.B.: 1. Wear Life Index (L) = Wear life on design specification of new product (km) ÷ Wear life on design specification of old product (km)
Weight Index (W) = Weight of new product (kg) ÷ Weight of old product (kg)
Reduce Index = Wear Life Index (L) ÷ Weight Index (W)
Reduce Achievement Rate = Reduce Index ×100
2. 245/70R19.5 is adopted for monitoring as the replacement of 7.50R16 from 2007.

Source: JATMA

4. Current Status on ELT (End-of-Life Tyres) Recycling

Figure 15: Processing flow of ELT recycling



*Any tyre sellers such as tyre retailers, tyre shops, auto-supply shops, gas stations, car dealers, car repair shops, and so on.

(1) Volume of ELT generated

In 2019 (January to December), the sum of ELT generated by replacing tyres and the quantity generated by scrapped vehicles in Japan was 96 million tyres and 1,026,000 tons by weight. Compared with the previous year, the number is the same and the weight is reduced by 6,000 tons.

① The amount generated by replacing tyres.
The amount of ELT generated by replacing tyres was 81 million in number and 884,000 tons in weight. Both the number and the weight decreased from the previous year.

② The amount generated by scrapped vehicles.
The amount of ELT generated by scrapped vehicles was 15 million in number and 142,000 tons in weight. Both the number and the weight slightly increased from the previous year.

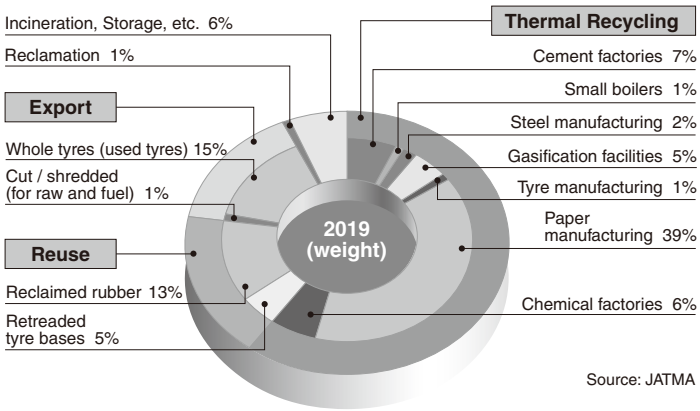
(2) Current status of the ELT recycling

The amount of ELT recycled in 2019 was 966,000 tons, down 31,000 tons from the previous year. The recycling rate was 94%, down 3 points from the previous year.
In particular, the amount used at paper manufacturing decreased by 44,000 tons compared with the previous year. This is considered to be caused by a decrease in paper production due to the effects of the progressing paperless. In addition, the price when domestic thermal recycling users purchase cut / shredded has been on a downward trend in recent years due to competition with other waste-derived fuels.

(3) Others

In recent years, domestic thermal recycling users have been importing purchase cut / shredded for value.
The annual import volume in 2019 was about 96,000 tons, an increase of about 6,000 tons from the previous year.
Although the recycling status on ELT published by JATMA is intended to grasp the processing status of ELT generated in Japan, so the import amount of ELT is not included in the total amount.

Figure 16: Recycling of ELT in 2019



Source: JATMA

Table 12: Volume of ELT

(Tyres: millions; Weight: kt)

	2017				2018				2019					
	tyres	weight	distribution (%)		tyres	weight	distribution (%)		tyres	weight	distribution (%)		2019/2018 (%)	
			tyres	weight			tyres	weight			tyres	weight	tyres	weight
The amount generated by replacing tyres	83	897	86	87	82	892	85	86	81	884	84	86	99	99
The amount generated by scrapped vehicles	14	137	14	13	14	140	15	14	15	142	16	14	107	101
Total	97	1,034	100	100	96	1,032	100	100	96	1,026	100	100	100	99

Source: JATMA

Table 13: Status of ELT

(Weight: kt)

				2017		2018		2019		
				weight	distribution(%)	weight	distribution(%)	weight	distribution(%)	2019/2018(%)
Kind of recycling	Domestic	Reuse	Retreaded tyre bases	54	5	51	5	51	5	100
			Reclaimed rubber	118	11	120	12	132	13	110
			Other reuse	6	1	1	1	0	0	–
			Subtotal (A)	178	17	172	17	183	18	106
		Thermal Recycling	Paper manufacturing	436	42	446	43	402	39	90
			Chemical factories	47	5	66	6	66	6	100
			Cement factories	70	7	64	6	70	7	109
			Steel manufacturing	17	2	14	1	18	2	129
			Gasification facilities	58	6	61	6	56	5	92
			Tyre manufacturing	21	2	20	2	9	1	45
			Small boilers	3	1	3	1	2	1	67
			Subtotal (B)	652	63	674	65	623	61	92
	Abroad	Export	Whole tyres (used tyres)	131	13	148	14	158	15	107
			Cut / shredded (for raw and fuel)	4	1	3	1	2	1	67
			Subtotal (C)	135	13	151	15	160	16	106
Total recycling (A+B+C)				965	93	997	97	966	94	97
Reclamation				1	1	1	1	1	1	100
Incineration, Storage, etc.				68	7	34	3	59	6	174
Subtotal (D)				69	7	35	3	60	6	171
Total (A+B+C+D)				1,034	100	1,032	100	1,026	100	99

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

5. The Status of Illegal Dumping of ELT

The total quantity as of February 2020 was 70 cases, 26,991 tons.

Compared with the previous year, the number of cases decreased by 5 (breakdown: 6 cases decreased, 1 new case), and the total weight decreased by 686 tons.

6. JATMA Support Program

JATMA established the support program for illegal dumping site removal in 2005 and has been operating it in order to reduce illegal dumping of ELT.

In the total of 15 years, from 2005 to 2019, for 22 cases, JATMA supported 362.13 million yen and removed 2,966,306 tyres /29,867 tons of ELT.

JATMA will continue this support program.

Note: See the following URL for more information:
https://www.jatma.or.jp/english/tyrerecycling/report03.html

V References

1. Automobiles and Tyres

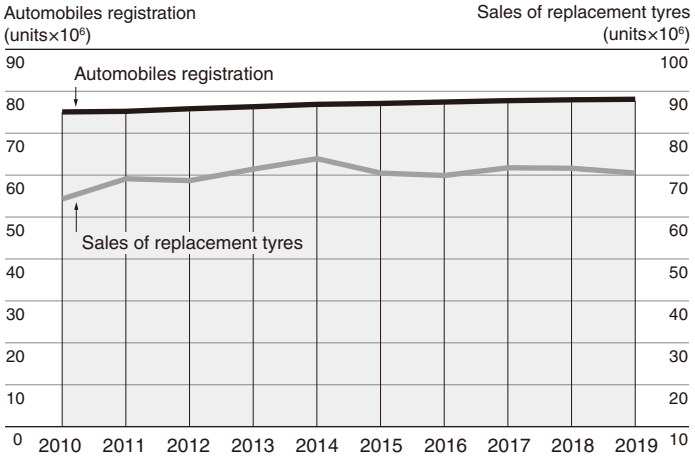
①The number of registered automobiles as of the end of December 2019 increased by 0.2% from the previous year to 78.07 million. The sales volume of replacement tyres (for four-wheeled vehicles) is 70.47 million, which decreased by 1.6% from the previous year.

Table 14: Automobile registrations and sales of replacement tyres in 2019

Automobile	Registrations($\times 10^3$)	2019/2018(%)
Passenger cars	62,140	100.2
Trucks and buses	15,925	100.1
Total	78,065	100.2
Replacement tyres	Sales($\times 10^3$)	2019/2018(%)
Passenger car tyres	51,332	98.5
Commercial vehicle tyres	19,134	98.2
Total	70,466	98.4

Source: Ministry of Land, Infrastructure, Transport and Tourism, JATMA

Figure 17: Trends in automobile registrations and sales of replacement tyres



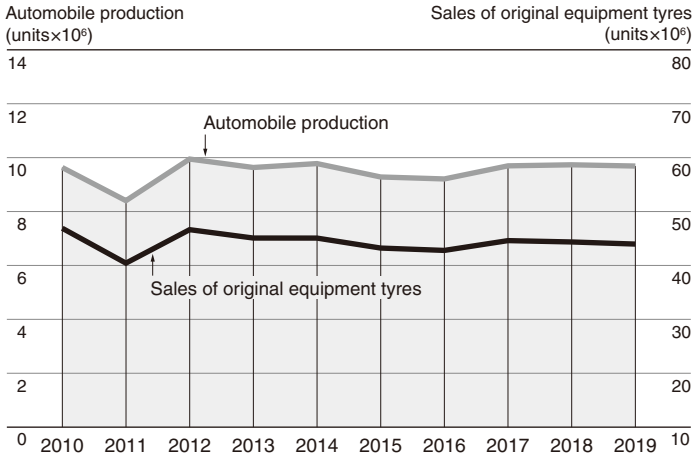
②The volume of domestic production of automobile in 2019 decreased by 0.5% from the previous year to 9.68 million. The sales volume of original equipment tyres (for four-wheeled vehicles) decreased by 0.9% from the previous year to 43.94 million tyres.

Table 15: Automobile production and sales of original equipment tyres in 2019

Automobile	Productions($\times 10^3$)	2019/2018(%)
Passenger cars	8,329	99.6
Trucks and buses	1,355	98.8
Total	9,684	99.5
Original equipment tyres	Sales($\times 10^3$)	2019/2018(%)
Passenger car tyres	37,231	98.9
Commercial vehicle tyres	6,712	100.6
Total	43,943	99.1

Source: Japan Automobile Manufacturers Association, JATMA

Figure 18: 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. The channel for replacement is particularly wide-ranging with distributors as key stations as shown in Figure 19. The routes for the 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 tyre dealers supply tyres to end users. About 90 distributors and approximately about 110,000 tyre dealers supply replacement tyres. In addition, the component ratio (quantity) of sales for each channel in 2019 is 28.0% for original equipment, 44.9% for replacements and 27.1% for exports.

Figure 19: Distribution channels

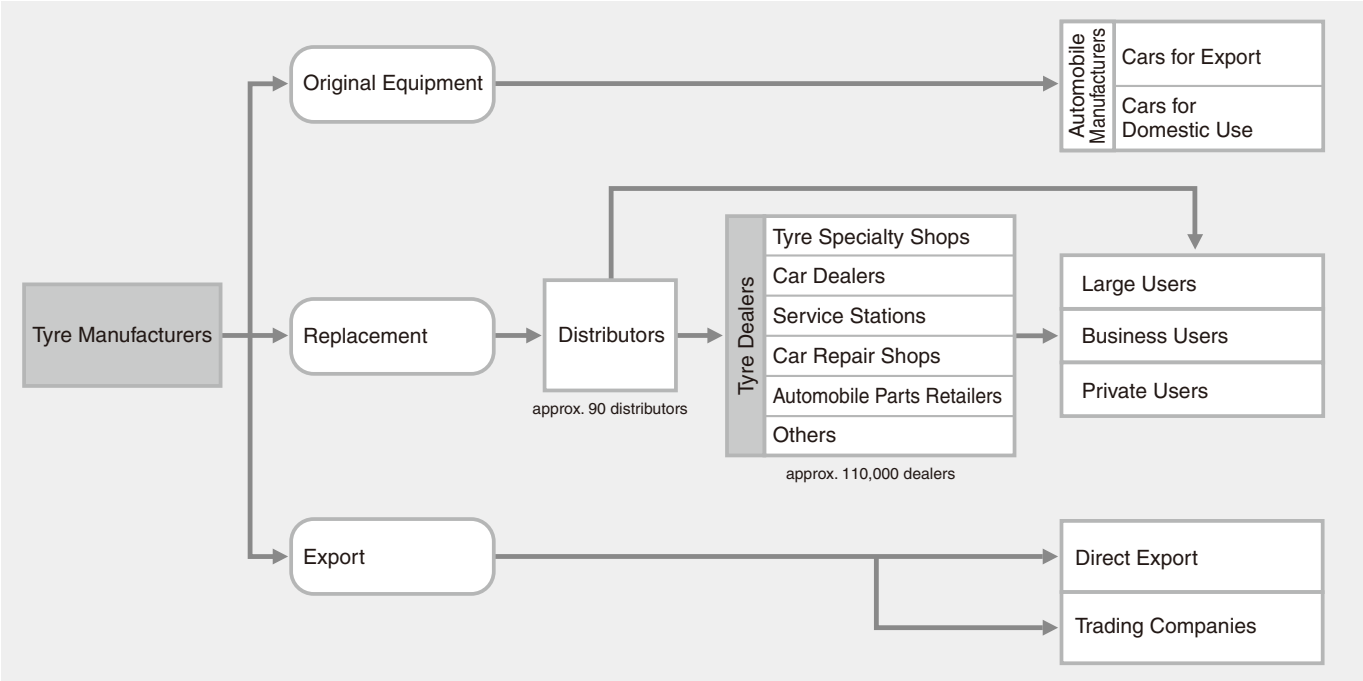
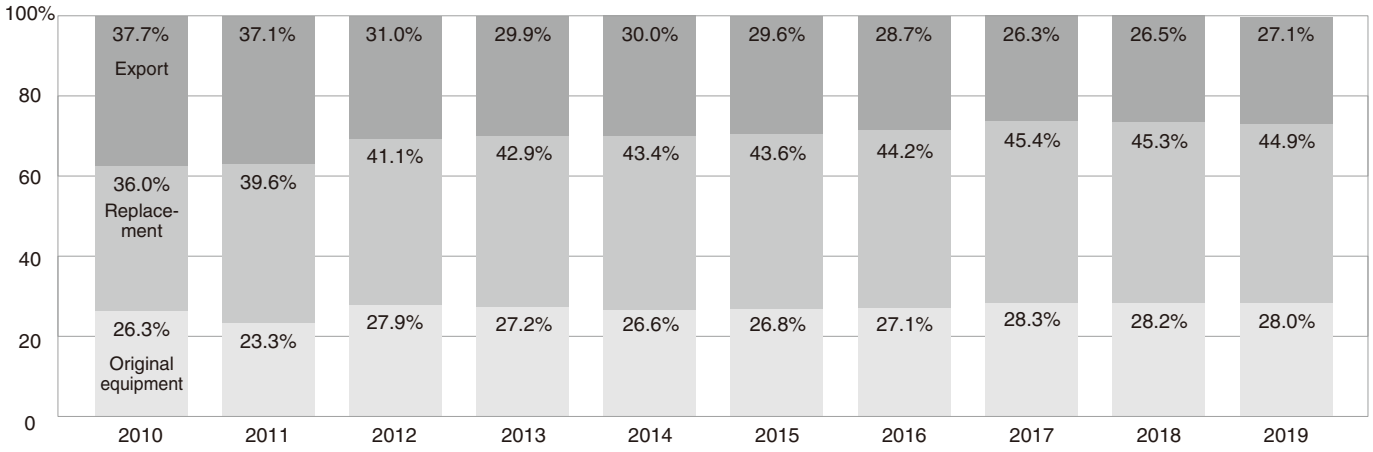


Figure 20: Trends in sales share of automobile tyres

(based on unit)



3. Raw Materials

More than 100 raw materials are used in the production of automobile tyres, including rubber, reinforcing agent, tyre cord, compounding ingredients and bead wire.

The percent distribution in weight of raw materials varied depending on the tyre category, it used in tyres was approximately the same as the previous year, rubber constituting about half of a tyre (natural rubber 31% and synthetic rubber 21%), next comes reinforcing agent (carbon black) 25%, and then tyre cord 14%.

Table 16: Basic composition

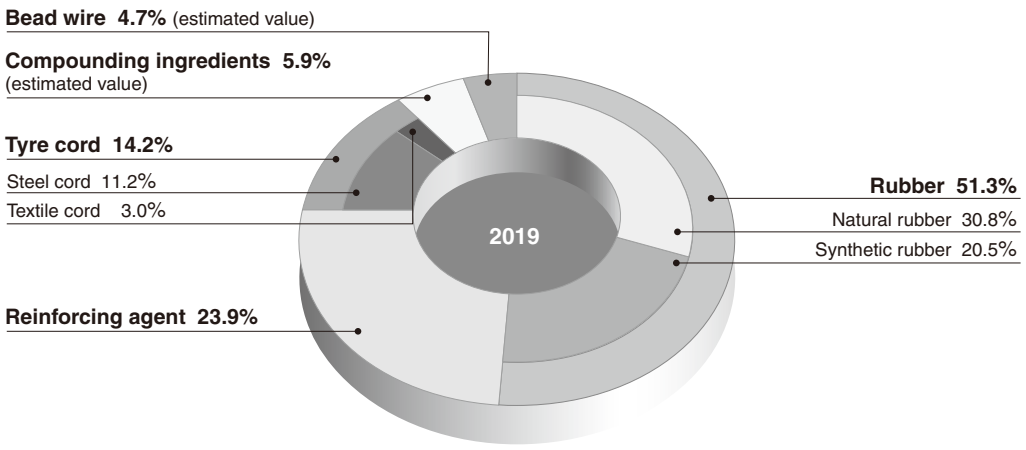
Composition	Examples
Rubber	Natural rubber, Synthetic rubber
Reinforcing agent	Carbon black, Silica
Tyre cord	Steel cord, Textile cord (Nylon, Polyester, Rayon, etc.)
Compounding ingredients	Vulcanizing agent, Vulcanizing accelerator, Vulcanizing accelerator aid, Antioxidant, Filler, Softener etc.
Bead wire	

Table 17: Consumption of main raw materials used in automobile tyres in 2019

Raw Materials			Consumption (tons)	2019/2018(%)
Rubber	Natural rubber		632,616	101.8
	Synthetic rubber		422,001	99.3
	Total		1,054,617	100.8
Reinforcing agent (Carbon black)			490,592	99.6
Tyre cord	Steel		230,144	101.1
	Textile	Nylon	15,713	101.6
		Polyester	42,846	102.0
		Rayon	2,640	83.1
		Others	378	98.4
	Total		291,721	101.0

Source: JATMA

Figure 21: Tyre raw material weight composition



4. Tyre Production Worldwide

According to IRSG (International Rubber Study Group) research, it is estimated that the total production of tyres of the world in 2019 was 16.86 million tons, decreased by 1% from the previous year.

By region it is estimated that the Asia and Oceania region takes up 67% of the world production, in which China accounts for 40% and Japan accounts for 6%.

Table 18: Share of world tyre production by geographic region

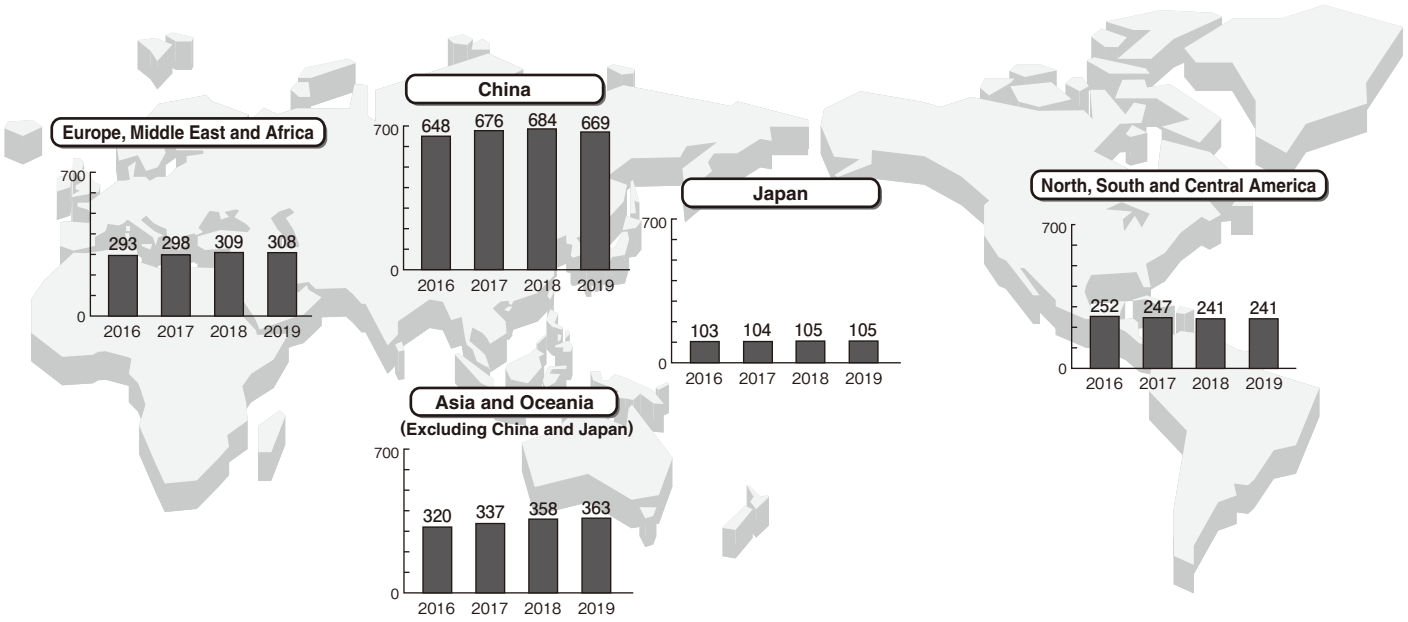
(units×10^3 tons (produced rubber))

	2016	2016/2015(%)	2017	2017/2016(%)	2018	2018/2017(%)	2019	2019/2018(%)	composition ratio(%)
Asia and Oceania	10,719	106	11,165	104	11,470	103	11,369	99	67
(China)	(6,484)	(108)	(6,760)	(104)	(6,835)	(101)	(6,686)	(98)	(40)
(Japan)	(1,032)	(98)	(1,038)	(101)	(1,052)	(101)	(1,054)	(100)	(6)
Europe, Middle East and Africa	2,931	103	2,978	102	3,085	104	3,080	100	18
North, South and Central America	2,524	100	2,471	98	2,413	98	2,413	100	14
Total	16,175	104	16,614	103	16,967	102	16,862	99	100

N.B.: Each value is rounded, so the total doesn't match.

Source: IRSG (International Rubber Study Group)

Figure 22: Tyre Production Worldwide

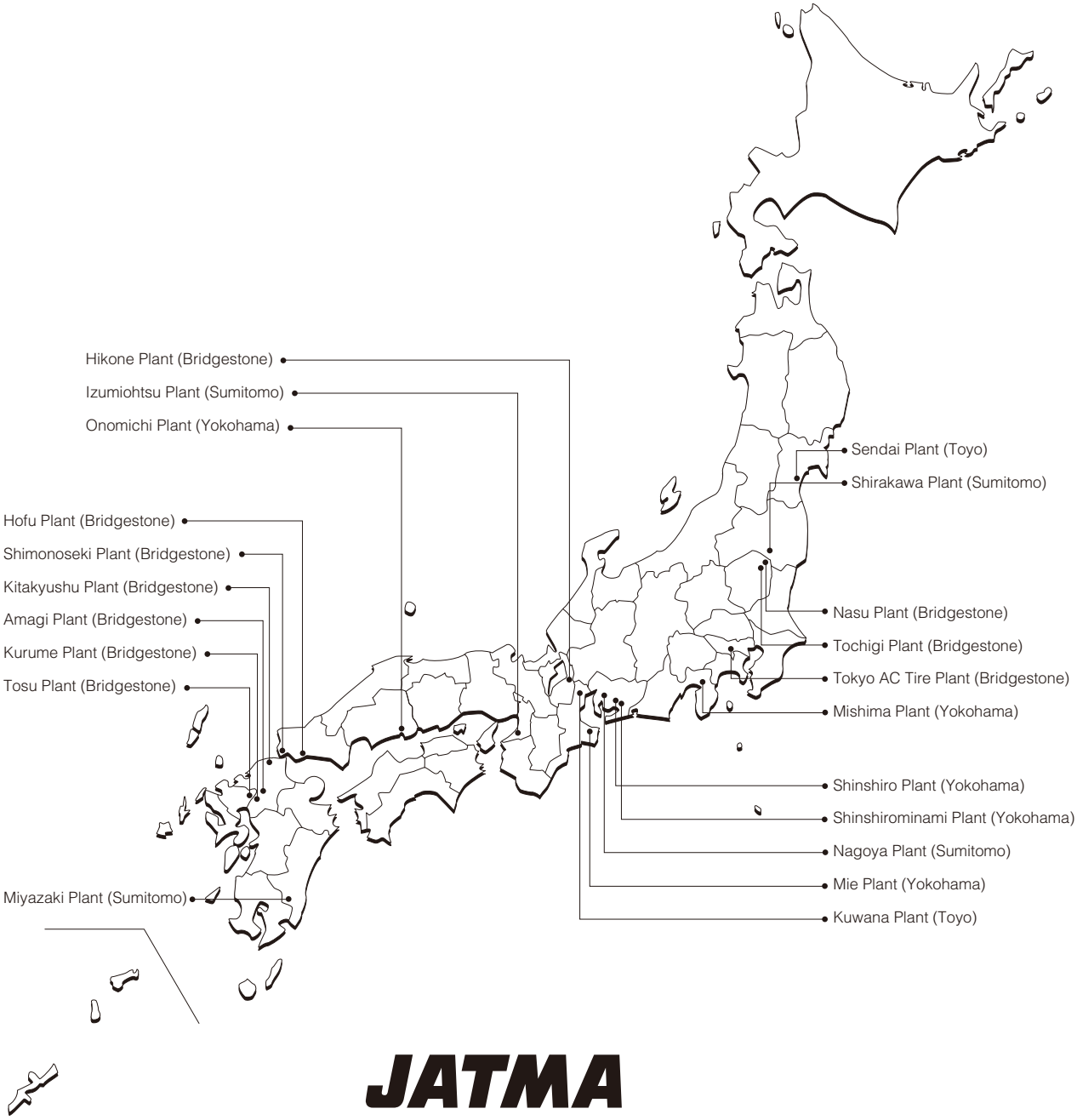


N.B.: 1. Unit: x10,000 tons (produced rubber)
2. Including tyres other than vehicle tyres.

Source: IRSG (International Rubber Study Group)

Distribution of Member Firms' (Full Member) Automobile Tyre Plants

(July 2020)



JATMA

The Japan Automobile Tyre Manufacturers Association, Inc.
https://www.jatma.or.jp/english/about/

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

General Affairs Department	(General Affairs, Accounting)	Phone. 03-3435-9091	Fax. 03-3435-9097
	(Research and Statistics)	Phone. 03-3435-9095	Fax. 03-3435-9097
	(Public Relations)	Phone. 03-3435-9095	Fax. 03-3435-9097
Technical Department	(Inspection • Accident Prevention)	Phone. 03-3435-9092	Fax. 03-3435-9097
Technical Department		Phone. 03-3435-9094	Fax. 03-3435-9097
International Affairs Department		Phone. 03-3435-9094	Fax. 03-3435-9097
Environmental Department		Phone. 03-5408-5051	Fax. 03-3435-9097
	FAX for application to the scrap tyre manifest forms		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
Kyushu Branch	2-20-4 Higashihie, Hakata-Ku, Fukuoka, Fukuoka, JAPAN 812-0007	Phone. 092-411-3536	Fax. 092-411-7781

Jul. 2020

JATMA

THE JAPAN AUTOMOBILE TYRE MANUFACTURERS ASSOCIATION,INC.

Time-series Statistical Tables

【Contents 】

Production of automobile tyres and tubes

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

		2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Truck and bus tyres	Tyres	11,208	11,387	10,843	10,808	11,001	10,266	9,888	10,499	10,513	10,614
		(118.6)	(101.6)	(95.2)	(99.7)	(101.8)	(93.3)	(96.3)	(106.2)	(100.1)	(101.0)
	Rubber	281,604	282,053	263,370	259,638	263,082	239,596	229,072	241,319	241,150	243,713
		(117.0)	(100.2)	(93.4)	(98.6)	(101.3)	(91.1)	(95.6)	(105.3)	(99.9)	(101.1)
Light truck tyres	Tyres	22,176	22,604	23,194	24,682	24,649	23,141	21,783	21,527	21,921	22,081
		(117.2)	(101.9)	(102.6)	(106.4)	(99.9)	(93.9)	(94.1)	(98.8)	(101.8)	(100.7)
	Rubber	141,588	144,734	142,125	146,561	148,518	139,477	130,183	127,179	129,239	132,489
		(115.9)	(102.2)	(98.2)	(103.1)	(101.3)	(93.9)	(93.3)	(97.7)	(101.6)	(102.5)
Passenger car tyres	Tyres	130,530	126,998	120,609	119,485	120,005	113,821	110,002	108,258	109,816	109,327
		(121.5)	(97.3)	(95.0)	(99.1)	(100.4)	(94.8)	(96.6)	(98.4)	(101.4)	(99.6)
	Rubber	599,075	583,792	535,354	523,064	526,341	505,586	486,732	471,774	477,617	475,369
		(123.4)	(97.4)	(91.7)	(97.7)	(100.6)	(96.1)	(96.3)	(96.9)	(101.2)	(99.5)
Off-the-road tyres	Tyres	438	525	504	453	479	446	440	459	500	484
		(149.5)	(119.9)	(96.0)	(89.9)	(105.7)	(93.1)	(98.7)	(104.3)	(108.9)	(96.8)
	Rubber	152,870	181,585	188,224	181,232	164,831	155,453	156,083	168,892	194,701	197,590
		(129.9)	(118.8)	(103.7)	(96.3)	(91.0)	(94.3)	(100.4)	(108.2)	(115.3)	(101.5)
Industrial tyres	Tyres	449	476	442	399	453	415	429	397	400	374
		(104.7)	(106.0)	(92.9)	(90.3)	(113.5)	(91.6)	(103.4)	(92.5)	(100.8)	(93.5)
	Rubber	5,451	5,899	5,744	4,864	5,761	5,380	5,766	5,464	5,586	5,177
		(116.1)	(108.2)	(97.4)	(84.7)	(118.4)	(93.4)	(107.2)	(94.8)	(102.2)	(92.7)
Others	Tyres	4,906	4,452	3,607	3,804	3,838	3,726	3,833	3,783	3,599	3,665
		(105.7)	(90.7)	(81.0)	(105.5)	(100.9)	(97.1)	(102.9)	(98.7)	(95.1)	(101.8)
	Rubber	15,123	13,900	12,088	12,591	12,529	12,078	11,965	11,822	11,385	11,254
		(99.0)	(91.9)	(87.0)	(104.2)	(99.5)	(96.4)	(99.1)	(98.8)	(96.3)	(98.8)
Total	Tyres	169,707	166,442	159,199	159,631	160,425	151,815	146,375	144,923	146,749	146,545
		(120.2)	(98.1)	(95.6)	(100.3)	(100.5)	(94.6)	(96.4)	(99.0)	(101.3)	(99.9)
	Rubber	1,195,711	1,211,963	1,146,905	1,127,950	1,121,062	1,057,570	1,019,801	1,026,450	1,059,678	1,065,592
		(121.3)	(101.4)	(94.6)	(98.3)	(99.4)	(94.3)	(96.4)	(100.7)	(103.2)	(100.6)

N.B.: 1. Source : JATMA

N.B.: 2. "Others" are "agricultural tyres", "motorcycle tyres", "cart tyres", and "flaps and rim-bands"*. (*"Rubber" only)

N.B.: 3. 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 %

		2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Truck and bus tyres	Tyres	5,166	5,647	5,611	6,051	6,294	6,102	6,041	6,313	6,424	6,288
		(119.6)	(109.3)	(99.4)	(107.8)	(104.0)	(96.9)	(99.0)	(104.5)	(101.8)	(97.9)
	Rubber	111,821	121,806	118,001	128,194	132,039	125,959	124,704	130,028	132,567	129,035
		(118.9)	(108.9)	(96.9)	(108.6)	(103.0)	(95.4)	(99.0)	(104.3)	(102.0)	(97.3)
Light truck tyres	Tyres	14,130	14,576	16,313	18,034	17,766	16,913	15,574	15,805	16,208	16,088
		(119.1)	(103.2)	(111.9)	(110.5)	(98.5)	(95.2)	(92.1)	(101.5)	(102.5)	(99.3)
	Rubber	74,287	76,891	84,184	89,746	90,023	84,935	77,304	77,367	78,836	78,264
		(115.8)	(103.5)	(109.5)	(106.6)	(100.3)	(94.3)	(91.0)	(100.1)	(101.9)	(99.3)
Passenger car tyres	Tyres	77,274	76,304	81,640	81,411	81,736	77,441	75,960	78,407	78,825	78,607
		(120.0)	(98.7)	(107.0)	(99.7)	(100.4)	(94.7)	(98.1)	(103.2)	(100.5)	(99.7)
	Rubber	315,780	304,580	319,184	318,344	319,414	304,460	298,886	305,837	307,633	305,841
		(121.1)	(96.5)	(104.8)	(99.7)	(100.3)	(95.3)	(98.2)	(102.3)	(100.6)	(99.4)
Off-the-road tyres	Tyres	140	172	169	188	199	194	163	170	175	167
		(137.3)	(122.9)	(98.3)	(111.2)	(105.9)	(97.5)	(84.0)	(104.3)	(102.9)	(95.4)
	Rubber	12,757	16,152	14,985	12,823	14,406	12,889	11,841	13,962	15,381	13,583
		(169.8)	(126.6)	(92.8)	(85.6)	(112.3)	(89.5)	(91.9)	(117.9)	(110.2)	(88.3)
Industrial tyres	Tyres	556	608	545	539	568	541	528	538	508	474
		(118.3)	(109.4)	(89.6)	(98.9)	(105.4)	(95.2)	(97.6)	(101.9)	(94.4)	(93.3)
	Rubber	6,230	6,825	6,157	6,124	6,414	6,111	6,008	6,125	5,915	5,477
		(120.2)	(109.6)	(90.2)	(99.5)	(104.7)	(95.3)	(98.3)	(101.9)	(96.6)	(92.6)
Others	Tyres	2,641	2,528	2,261	2,097	2,091	1,988	1,857	1,875	1,758	1,657
		(98.7)	(95.7)	(89.4)	(92.8)	(99.7)	(95.1)	(93.4)	(101.0)	(93.8)	(94.3)
	Rubber	9,971	9,464	8,961	8,786	8,797	8,490	7,502	7,472	7,248	6,740
		(100.6)	(94.9)	(94.7)	(98.1)	(100.1)	(96.5)	(88.4)	(99.6)	(97.0)	(93.0)
Total	Tyres	99,907	99,835	106,539	108,320	108,654	103,179	100,123	103,108	103,898	103,281
		(119.2)	(99.9)	(106.7)	(101.7)	(100.3)	(95.0)	(97.0)	(103.0)	(100.8)	(99.4)
	Rubber	530,846	535,718	551,472	564,017	571,093	542,844	526,245	540,791	547,580	538,940
		(120.2)	(100.9)	(102.9)	(102.3)	(101.3)	(95.1)	(96.9)	(102.8)	(101.3)	(98.4)

N.B.: 1. Source : JATMA

N.B.: 2. "Others" are "agricultural tyres", "motorcycle tyres", "cart tyres", and "flaps and rim-bands"*. (*"Rubber" only)

N.B.: 3. 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 %

		2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Truck and bus tyres	Tyres	6,011	5,803	5,208	4,630	4,739	4,146	3,837	4,192	4,057	4,251
		(113.7)	(96.5)	(89.7)	(88.9)	(102.4)	(87.5)	(92.5)	(109.3)	(96.8)	(104.8)
	Rubber	171,056	163,608	146,529	129,486	133,266	114,516	104,618	112,045	109,036	113,994
		(112.3)	(95.6)	(89.6)	(88.4)	(102.9)	(85.9)	(91.4)	(107.1)	(97.3)	(104.5)
Light truck tyres	Tyres	8,122	8,184	6,867	6,616	6,840	6,437	6,101	5,891	5,589	5,981
		(110.5)	(100.8)	(83.9)	(96.3)	(103.4)	(94.1)	(94.8)	(96.6)	(94.9)	(107.0)
	Rubber	68,985	69,691	59,288	57,844	59,719	56,596	52,947	51,659	50,610	54,738
		(112.5)	(101.0)	(85.1)	(97.6)	(103.2)	(94.8)	(93.6)	(97.6)	(98.0)	(108.2)
Passenger car tyres	Tyres	53,420	51,097	39,953	38,182	39,070	36,717	34,608	30,661	31,176	31,362
		(121.0)	(95.7)	(78.2)	(95.6)	(102.3)	(94.0)	(94.3)	(88.6)	(101.7)	(100.6)
	Rubber	280,881	274,091	216,362	204,849	209,103	201,221	189,369	167,617	168,884	170,512
		(122.2)	(97.6)	(78.9)	(94.7)	(102.1)	(96.2)	(94.1)	(88.5)	(100.8)	(101.0)
Off-the-road tyres	Tyres	350	408	388	335	346	326	324	337	375	377
		(145.2)	(116.6)	(95.1)	(86.3)	(103.3)	(94.2)	(99.4)	(104.0)	(111.3)	(100.5)
	Rubber	140,328	166,756	174,104	170,369	151,308	143,992	144,645	155,024	179,128	185,744
		(124.7)	(118.8)	(104.4)	(97.9)	(88.8)	(95.2)	(100.5)	(107.2)	(115.5)	(103.7)
Industrial tyres	Tyres	109	78	59	56	70	65	85	50	57	46
		(100.9)	(71.6)	(75.6)	(94.9)	(125.0)	(92.9)	(130.8)	(58.8)	(114.0)	(80.7)
	Rubber	2,044	1,866	1,840	1,355	1,841	1,832	2,112	1,757	1,877	1,753
		(120.8)	(91.3)	(98.6)	(73.6)	(135.9)	(99.5)	(115.3)	(83.2)	(106.8)	(93.4)
Others	Tyres	2,704	2,304	1,682	2,000	2,035	2,066	2,328	2,171	2,098	2,254
		(114.9)	(85.2)	(73.0)	(118.9)	(101.8)	(101.5)	(112.7)	(93.3)	(96.6)	(107.4)
	Rubber	10,514	8,985	7,163	7,678	7,763	7,468	7,734	7,314	6,997	7,528
		(106.4)	(85.5)	(79.7)	(107.2)	(101.1)	(96.2)	(103.6)	(94.6)	(95.7)	(107.6)
Total	Tyres	70,716	67,874	54,157	51,819	53,100	49,757	47,283	43,302	43,352	44,271
		(118.9)	(96.0)	(79.8)	(95.7)	(102.5)	(93.7)	(95.0)	(91.6)	(100.1)	(102.1)
	Rubber	673,808	684,997	605,286	571,581	563,000	525,625	501,425	495,416	516,532	534,269
		(118.7)	(101.7)	(88.4)	(94.4)	(98.5)	(93.4)	(95.4)	(98.8)	(104.3)	(103.4)

N.B.: 1. Source : JATMA

N.B.: "Others" are "agricultural tyres", "motorcycle tyres", "cart tyres", and "flaps and rim-bands"*. (*"Rubber" only)

N.B.: 3. 2001 and following years had a category shift between truck and bus tyres and light truck tyres.

Sales of original equipment tyres

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

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Truck and bus tyres	900	989	1,131	1,180	1,402	1,372	1,373	1,393	1,334	1,316
	(154.6)	(109.9)	(114.4)	(104.3)	(118.8)	(97.9)	(100.1)	(101.5)	(95.8)	(98.7)
Light truck tyres	4,990	4,591	5,109	5,588	5,900	5,821	5,265	5,285	5,340	5,396
	(116.3)	(92.0)	(111.3)	(109.4)	(105.6)	(98.7)	(90.4)	(100.4)	(101.0)	(101.0)
Passenger car tyres	40,989	34,827	40,376	38,295	37,752	36,012	36,129	37,907	37,661	37,231
	(122.2)	(85.0)	(115.9)	(94.8)	(98.6)	(95.4)	(100.3)	(104.9)	(99.4)	(98.9)
Total for four-wheeled vehicle tyres	46,879	40,407	46,616	45,063	45,054	43,205	42,767	44,585	44,335	43,943
	(122.0)	(86.2)	(115.4)	(96.7)	(100.0)	(95.9)	(99.0)	(104.3)	(99.4)	(99.1)
Off-the-road tyres	65	83	90	101	108	106	82	92	100	91
	(175.7)	(127.7)	(108.4)	(112.2)	(106.9)	(98.1)	(77.4)	(112.2)	(108.7)	(91.0)
Industrial tyres	223	245	248	230	244	238	207	221	234	198
	(149.7)	(109.9)	(101.2)	(92.7)	(106.1)	(97.5)	(87.0)	(106.8)	(105.9)	(84.6)
Agricultural tyres	519	566	556	524	537	533	483	493	487	449
	(99.4)	(109.1)	(98.2)	(94.2)	(102.5)	(99.3)	(90.6)	(100.8)	(98.8)	(92.2)
Motorcycle tyres	996	951	960	986	1,039	928	889	986	947	842
	(102.7)	(95.5)	(100.9)	(102.7)	(105.4)	(89.3)	(95.8)	(110.9)	(96.0)	(88.9)
Cart tyres	279	137	56	24	31	6	6	-	-	-
	(126.2)	(49.1)	(40.9)	(42.9)	(129.2)	(19.4)	(100.0)	-	-	-
Total	48,961	42,389	48,526	46,928	47,013	45,016	44,434	46,377	46,103	45,523
	(121.4)	(86.6)	(114.5)	(96.7)	(100.2)	(95.8)	(98.7)	(104.4)	(99.4)	(98.7)

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.

N.B.: 4 2017 and following years, cart tyres are included for agricultural tyres.

Sales of replacement tyres

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

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Truck and bus tyres	4,620	4,931	4,727	5,026	5,319	5,143	5,233	5,458	5,506	5,458
	(114.3)	(106.7)	(95.9)	(106.3)	(105.8)	(96.7)	(101.7)	(104.3)	(100.9)	(99.1)
Light truck tyres	12,769	13,731	13,820	14,272	14,615	13,615	13,628	13,707	13,985	13,676
	(106.8)	(107.5)	(100.6)	(103.3)	(102.4)	(93.2)	(100.1)	(100.6)	(102.0)	(97.8)
Passenger car tyres	46,908	50,448	50,119	52,109	53,956	51,699	51,023	52,558	52,119	51,332
	(108.8)	(107.5)	(99.3)	(104.0)	(103.5)	(95.8)	(98.7)	(103.0)	(99.2)	(98.5)
Total for four-wheeled vehicle tyres	64,297	69,110	68,666	71,407	73,890	70,457	69,884	71,723	71,610	70,466
	(108.7)	(107.5)	(99.4)	(104.0)	(103.5)	(95.4)	(99.2)	(102.6)	(99.8)	(98.4)
Off-the-road tyres	87	102	94	101	105	103	93	93	94	92
	(114.5)	(117.2)	(92.2)	(107.4)	(104.0)	(98.1)	(90.3)	(100.0)	(101.1)	(97.9)
Industrial tyres	593	635	565	583	597	581	580	589	573	551
	(111.9)	(107.1)	(89.0)	(103.2)	(102.4)	(97.3)	(99.8)	(101.6)	(97.3)	(96.2)
Agricultural tyres	114	109	103	100	93	86	88	91	89	92
	(103.6)	(95.6)	(94.5)	(97.1)	(93.0)	(92.5)	(102.3)	(103.4)	(97.8)	(103.4)
Motorcycle tyres	1,908	1,702	1,637	1,604	1,551	1,510	1,503	1,456	1,334	1,348
	(101.7)	(89.2)	(96.2)	(98.0)	(96.7)	(97.4)	(99.5)	(96.9)	(91.6)	(101.0)
Cart tyres	29	28	27	30	28	29	27	27	25	24
	(87.9)	(96.6)	(96.4)	(111.1)	(93.3)	(103.6)	(93.1)	(100.0)	(92.6)	(96.0)
Total	67,028	71,686	71,092	73,825	76,264	72,766	72,175	73,979	73,725	72,573
	(108.5)	(106.9)	(99.2)	(103.8)	(103.3)	(95.4)	(99.2)	(102.5)	(99.7)	(98.4)

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)

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

		2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Truck and bus tyres	Total	4,620	4,931	4,727	5,026	5,319	5,143	5,233	5,458	5,506	5,458
		(114.3)	(106.7)	(95.9)	(106.3)	(105.8)	(96.7)	(101.7)	(104.3)	(100.9)	(99.1)
	Summer	2,923	2,969	2,710	2,961	3,090	2,896	2,943	3,002	2,929	2,937
		(113.0)	(101.6)	(91.3)	(109.3)	(104.4)	(93.7)	(101.6)	(102.0)	(97.6)	(100.3)
	Winter	1,697	1,962	2,017	2,065	2,229	2,247	2,290	2,456	2,577	2,521
		(116.6)	(115.6)	(102.8)	(102.4)	(107.9)	(100.8)	(101.9)	(107.2)	(104.9)	(97.8)
Light truck tyres	Total	12,769	13,731	13,820	14,272	14,615	13,615	13,628	13,707	13,985	13,676
		(106.8)	(107.5)	(100.6)	(103.3)	(102.4)	(93.2)	(100.1)	(100.6)	(102.0)	(97.8)
	Summer	9,344	9,654	9,547	9,750	9,863	9,426	9,434	9,346	9,208	9,279
		(105.0)	(103.3)	(98.9)	(102.1)	(101.2)	(95.6)	(100.1)	(99.1)	(98.5)	(100.8)
	Winter	3,425	4,077	4,273	4,522	4,752	4,189	4,194	4,361	4,777	4,397
		(112.0)	(119.0)	(104.8)	(105.8)	(105.1)	(88.2)	(100.1)	(104.0)	(109.5)	(92.0)
Passenger car tyres	Total	46,908	50,448	50,119	52,109	53,956	51,699	51,023	52,558	52,119	51,332
		(108.8)	(107.5)	(99.3)	(104.0)	(103.5)	(95.8)	(98.7)	(103.0)	(99.2)	(98.5)
	Summer	33,620	34,394	33,366	33,738	34,979	34,851	34,907	35,072	33,686	34,481
		(107.8)	(102.3)	(97.0)	(101.1)	(103.7)	(99.6)	(100.2)	(100.5)	(96.0)	(102.4)
	Winter	13,288	16,054	16,753	18,371	18,977	16,848	16,116	17,486	18,433	16,851
		(111.3)	(120.8)	(104.4)	(109.7)	(103.3)	(88.8)	(95.7)	(108.5)	(105.4)	(91.4)
Total	Total	64,297	69,110	68,666	71,407	73,890	70,457	69,884	71,723	71,610	70,466
		(108.7)	(107.5)	(99.4)	(104.0)	(103.5)	(95.4)	(99.2)	(102.6)	(99.8)	(98.4)
	Summer	45,887	47,017	45,623	46,449	47,932	47,173	47,284	47,420	45,823	46,697
		(107.5)	(102.5)	(97.0)	(101.8)	(103.2)	(98.4)	(100.2)	(100.3)	(96.6)	(101.9)
	Winter	18,410	22,093	23,043	24,958	25,958	23,284	22,600	24,303	25,787	23,769
		(111.9)	(120.0)	(104.3)	(108.3)	(104.0)	(89.7)	(97.1)	(107.5)	(106.1)	(92.2)

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

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

		2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Asia	Tyres	7,560	7,827	6,477	5,985	6,356	5,180	5,579	5,556	5,513	5,828
		(108.0)	(103.5)	(82.8)	(92.4)	(106.2)	(81.5)	(107.7)	(99.6)	(99.2)	(105.7)
	Value	808,485	1,031,338	1,054,305	962,418	836,093	631,309	597,200	677,938	728,272	767,914
		(119.8)	(127.6)	(102.2)	(91.3)	(86.9)	(75.5)	(94.6)	(113.5)	(107.4)	(105.4)
Middle East	Tyres	13,627	12,031	10,606	10,333	10,370	9,180	9,040	7,787	6,420	7,266
		(101.6)	(88.3)	(88.2)	(97.4)	(100.4)	(88.5)	(98.5)	(86.1)	(82.4)	(113.2)
	Value	1,173,872	1,263,993	1,234,746	1,087,672	977,794	763,439	672,015	589,771	507,044	555,562
		(106.0)	(107.7)	(97.7)	(88.1)	(89.9)	(78.1)	(88.0)	(87.8)	(86.0)	(109.6)
Europe	Tyres	18,908	21,108	17,057	15,392	15,324	13,570	13,507	11,741	13,073	11,741
		(125.5)	(111.6)	(80.8)	(90.2)	(99.6)	(88.6)	(99.5)	(86.9)	(111.3)	(89.8)
	Value	1,486,981	1,928,789	1,725,179	1,509,561	1,377,041	988,576	967,527	938,779	1,094,734	1,008,222
		(127.9)	(129.7)	(89.4)	(87.5)	(91.2)	(71.8)	(97.9)	(97.0)	(116.6)	(92.1)
North America	Tyres	23,016	19,353	14,152	13,599	13,996	14,972	13,122	12,514	13,232	13,695
		(132.6)	(84.1)	(73.1)	(96.1)	(102.9)	(107.0)	(87.6)	(95.4)	(105.7)	(103.5)
	Value	1,870,321	2,064,587	1,907,040	1,674,369	1,608,169	1,543,873	1,244,632	1,204,854	1,284,224	1,344,181
		(137.6)	(110.4)	(92.4)	(87.8)	(96.0)	(96.0)	(80.6)	(96.8)	(106.6)	(104.7)
South and Central America	Tyres	4,365	3,993	3,160	3,407	3,556	3,113	2,630	3,008	2,833	2,988
		(141.4)	(91.5)	(79.1)	(107.8)	(104.4)	(87.5)	(84.5)	(114.4)	(94.2)	(105.5)
	Value	573,743	727,322	817,381	806,013	675,734	595,299	461,168	517,028	551,739	523,685
		(139.7)	(126.8)	(112.4)	(98.6)	(83.8)	(88.1)	(77.5)	(112.1)	(106.7)	(94.9)
Africa	Tyres	2,274	2,085	2,146	1,868	2,284	2,303	2,296	2,193	1,966	1,915
		(128.4)	(91.7)	(102.9)	(87.0)	(122.3)	(100.8)	(99.7)	(95.5)	(89.6)	(97.4)
	Value	338,985	369,284	433,173	408,086	357,368	303,212	259,719	252,438	255,713	237,978
		(123.8)	(108.9)	(117.3)	(94.2)	(87.6)	(84.8)	(85.7)	(97.2)	(101.3)	(93.1)
Oceania	Tyres	3,697	3,243	3,093	3,029	2,747	2,686	2,704	2,160	1,850	1,875
		(111.0)	(87.7)	(95.4)	(97.9)	(90.7)	(97.8)	(100.7)	(79.9)	(85.6)	(101.4)
	Value	589,773	763,649	802,393	697,401	537,353	416,188	430,784	517,591	539,035	572,592
		(133.3)	(129.5)	(105.1)	(86.9)	(77.1)	(77.5)	(103.5)	(120.2)	(104.1)	(106.2)
Total	Tyres	73,447	69,640	56,691	53,613	54,633	51,004	48,878	44,959	44,887	45,308
		(120.4)	(94.8)	(81.4)	(94.6)	(101.9)	(93.4)	(95.8)	(92.0)	(99.8)	(100.9)
	Value	6,842,160	8,148,962	7,974,217	7,145,520	6,369,552	5,241,896	4,633,045	4,698,399	4,960,761	5,010,134
		(126.0)	(119.1)	(97.9)	(89.6)	(89.1)	(82.3)	(88.4)	(101.4)	(105.6)	(101.0)

Source: Ministry of Finance customs export records

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

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

		2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Passenger car tyres	Tyres	19,346	19,401	20,920	20,267	21,304	21,924	21,918	23,857	24,376	24,199
		(100.2)	(100.3)	(107.8)	(96.9)	(105.1)	(102.9)	(100.0)	(108.8)	(102.2)	(99.3)
	Value	5,527,743	6,247,210	7,293,639	8,034,798	9,126,658	9,101,192	7,901,000	9,114,454	9,673,978	9,484,550
		(104.5)	(113.0)	(116.8)	(110.2)	(113.6)	(99.7)	(86.8)	(115.4)	(106.1)	(98.0)
Commercial vehicle tyres	Tyres	2,617	2,577	2,170	2,245	2,639	2,322	2,300	1,994	2,273	2,918
		(90.9)	(98.5)	(84.2)	(103.5)	(117.6)	(88.0)	(99.1)	(86.7)	(114.0)	(128.4)
	Value	947,069	1,081,932	1,149,559	1,151,719	1,713,412	1,757,492	1,483,087	1,633,063	1,785,747	2,043,765
		(103.9)	(114.2)	(106.3)	(100.2)	(148.8)	(102.6)	(84.4)	(110.1)	(109.3)	(114.4)
Motorcycle tyres	Tyres	2,595	2,743	2,931	2,841	3,009	2,768	2,889	2,934	2,759	2,801
		(109.9)	(105.7)	(106.9)	(96.9)	(105.9)	(92.0)	(104.4)	(101.6)	(94.0)	(101.5)
	Value	385,462	416,944	469,834	514,251	558,067	540,554	521,073	539,436	496,091	501,608
		(116.7)	(108.2)	(112.7)	(109.5)	(108.5)	(96.9)	(96.4)	(103.5)	(92.0)	(101.1)
Others	Tyres	556	593	557	532	592	584	498	520	561	558
		(138.7)	(106.7)	(93.9)	(95.5)	(111.3)	(98.6)	(85.3)	(104.4)	(107.9)	(99.5)
	Value	701,082	777,141	821,736	833,951	728,744	725,961	667,630	674,037	752,549	708,875
		(177.2)	(110.8)	(105.7)	(101.5)	(87.4)	(99.6)	(92.0)	(101.0)	(111.6)	(94.2)
Tubes	Value	351,526	272,805	300,251	302,412	328,625	323,553	249,739	239,755	232,223	244,297
		(112.5)	(77.6)	(110.1)	(100.7)	(108.7)	(98.5)	(77.2)	(96.0)	(96.9)	(105.2)
Total	Tyres	25,114	25,314	26,578	25,885	27,544	27,598	27,605	29,305	29,969	30,476
		(100.7)	(100.8)	(105.0)	(97.4)	(106.4)	(100.2)	(100.0)	(106.2)	(102.3)	(101.7)
	Value	7,912,882	8,796,032	10,035,019	10,837,131	12,455,506	12,448,752	10,822,529	12,200,745	12,940,588	12,983,095
		(109.3)	(111.2)	(114.1)	(108.0)	(114.9)	(99.9)	(86.9)	(112.7)	(106.1)	(100.3)

Source: Ministry of Finance customs import records