JATMA
THE JAPAN AUTOMOBILE TYRE MANUFACTURERS ASSOCIATION, INC.

TYRE INDUSTRY OF JAPAN

2025

TYRE INDUSTRY OF JAPAN *2025*

Contents

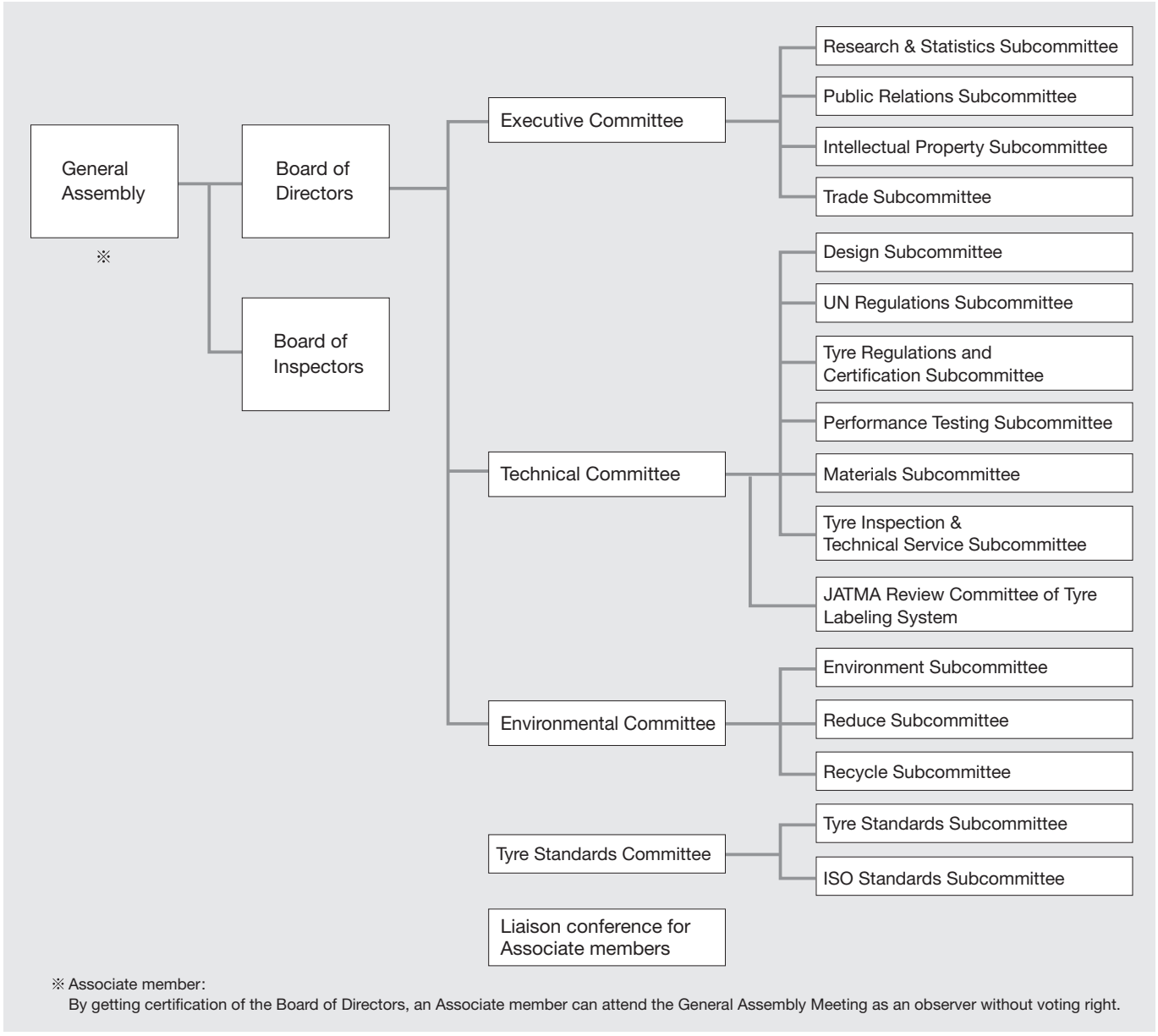
The Japan Automobile Tyre Manufacturers Association, Inc.

Chairman: Satoru Yamamoto, President and CEO, Representative Director, Sumitomo Rubber Industries, Ltd.
Vice-Chairman: Takashi Shimizu, Representative Director, President & CEO, Toyo Tire Corporation
Executive Director: Kentaro Endo
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 members]
Bridgestone Corporation
Sumitomo Rubber Industries, Ltd.
The Yokohama Rubber Co., Ltd.
Toyo Tire Corporation
[Associate members]
Nihon Michelin Tire Co., Ltd.
Goodyear Japan, Ltd.
PIRELLI JAPAN K.K.

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 Companies

[Full members]

Bridgestone Corporation

Representative Nobuyuki Tamura

Established: March 1, 1931

Capital: ¥126,354 million
(as of the end of December 2024)

Annual sales: revenue[*1] (consolidated) ¥4,430,096 million
(fiscal year ending December 2024)

Employees: (consolidated) 121,464
(as of the end of December 2024)

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

*1 International Financial Reporting Standards (IFRS) has been applied from 2020

Sumitomo Rubber Industries, Ltd.

Representative Satoru Yamamoto

Established: March 6, 1917

Capital: ¥42,658 million
(as of the end of December 2024)

Annual sales: revenue[*2] (consolidated) ¥1,211,856 million
(fiscal year ending December 2024)

Employees: (consolidated) 37,995
(as of the end of December 2024)

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/

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

The Yokohama Rubber Co., Ltd.

Representative Shinji Seimiya

Established: October 13, 1917

Capital: ¥38,909 million
(as of the end of December 2024)

Annual sales: revenue (consolidated) ¥1,094,746 million
(fiscal year ending December 2024)

Employees: (consolidated) 34,198
(as of the end of December 2024)

Head office: 2-1 Oiwake, Hiratsuka City,
Kanagawa Prefecture, 254-8601
Tel.: 0463 (63) 0400
https://www.y-yokohama.com/global/profile/company/

Toyo Tire Corporation

Representative Takashi Shimizu

Established: August 1, 1945

Capital: ¥55,935 million
(as of the end of December 2024)

Annual sales: (consolidated) ¥565,358 million
(fiscal year ending December 2024)

Employees: (consolidated) 11,202
(as of the end of December 2024)

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

[Associate members]

Nihon Michelin Tire Co., Ltd.

Representative Gen Sudo

Established: June 10, 1975

Capital: ¥100 million
(as of the end of December 2024)

Employees: 500
(as of the end of December 2024)

Head office: 880 Uekinocho, Ota City,
Gunma Prefecture 373-8668
Tel.: 0276-25-4321
https://www.michelin.co.jp/

Goodyear Japan, Ltd.

Representative Ramy Elsabee

Established: January 10, 1952

Capital: ¥2,336 million
(as of the end of December 2024)

Employees: 175
(as of the end of December 2024)

Head office: Ark Hills South Tower 7F,
1-4-5 Roppongi, Minato-ku,
Tokyo 106-0032
https://www.goodyear.co.jp/

Pirelli Japan K.K.

Representative Filippo Cibrario

Established: December 28, 2004

Capital: ¥2.2 billion
(as of the end of December 2024)

Employees: 60
(as of the end of December 2024)

Head office: 20F Sumitomo Realty Shiba Koen First Building,
3-8-2 Shiba, Minato-ku, Tokyo 105-0014
Tel.: 03-5418-6500
www.pirelli.co.jp

I 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 2008, supported by almost steady demand in the domestic market and active export. It declined severely in 2009 due to the world economic crisis. Though it recovered to a certain extent in 2010, it gradually decreased thereafter, and one of the causes is globalization of the production system. It was considerably lower than the previous year due to the spread of COVID-19 around the world in 2020. The number of tyre production in 2024 was 122.36 million units, and the amount of rubber consumption was 0.93 million tons. Both figures were lower than the previous year, and did not reach the level of 2019, before the spread of COVID-19.

The tyre industry of Japan accounts for about 80% of the domestic rubber industry in terms of rubber consumption, and its trend by decade is 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) 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) 2010s

The economy of Japan recovered, supported by the government's economic policies etc, but stagnated in 2011 due to the Great East Japan Earthquake and the record appreciation of the yen. After 2013, it continued its gradual increase by the effect of high stock prices and the depreciation of the yen, but since 2018, due to the effect of the global economic slowdown, it experienced a negative growth in 2019. The world economy also gradually recovered from the financial crisis, and 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. The losing momentum of growth led to the decrease of the tyre volume for export from Japan, and the tyre production amount on a rubber consumption basis in Japan has decreased from 1.20 million tons in 2010 to 1.07 million tons in 2019.

(8) 2020-2024

The Japanese economy was sluggish throughout the year in 2020 due to the impact of COVID-19. Since 2021, effect to the relaxation of behavioral restrictions, it turned to positive but continued to lack strength due to the turmoil in the global supply network and high prices of commodities. The world economy was also affected by COVID-19, and had negative growth in many countries and regions in 2020. Although the economic activities were normalized and economic recovery trend continued in 2021, but since 2022, the world economy was an inflationary trend in many countries due to high prices of raw materials and soaring energy costs. Under such circumstances, the rubber amount used for tyre production in Japan for both domestic and export decreased from the previous year in 2024, did not reach 1.00 million tons for two consecutive years.

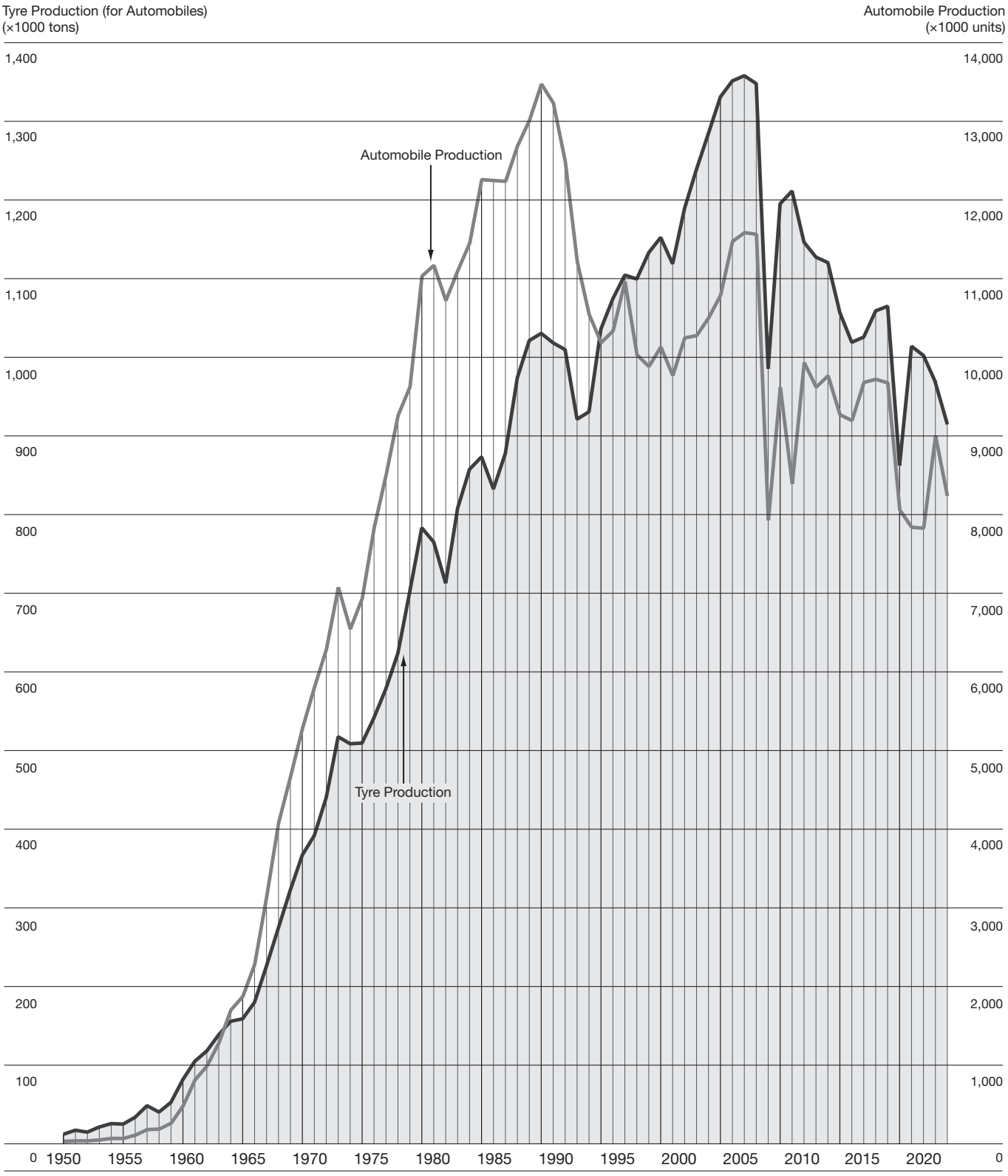
2. Changes in Production Volume of Tyres and Automobiles

Table 1: Changes in Production Volume of Tyres and Automobiles

	1950	1960	1970	1980	1990	2000	2010	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Tyre Production (for Automobiles) (×1000 tons)(quantity of rubber)	14	83	369	784	1,031	1,153	1,196	1,058	1,020	1,026	1,060	1,066	863	1,015	1,003	968	926
Automobile Production (×1000 units)	32	482	5,289	11,043	13,487	10,141	9,629	9,278	9,205	9,691	9,730	9,684	8,068	7,847	7,835	9,000	8,235

Source: JATMA

Figure 1: Changes in Production Volume of Tyres and Automobiles



II The Japanese Tyre Industry Today

1. Overview

The proportion of the tyre industry (fig. 2 and 3) in the rubber industry in terms of consumption of raw materials (natural rubber and synthetic rubber) decreased by 0.2 percentage points from the previous year to 80.0%. The amount of sales value increased by 0.5 percentage points from the previous year to 56.1%.

The proportion of the tyre industry in the rubber industry in 2024 (excluding cart tyres, tubes and flaps)

Figure 2: Raw material consumption
(the amount of natural rubber and synthetic rubber)

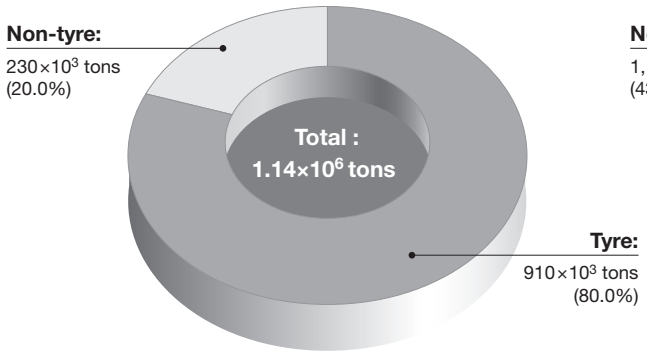
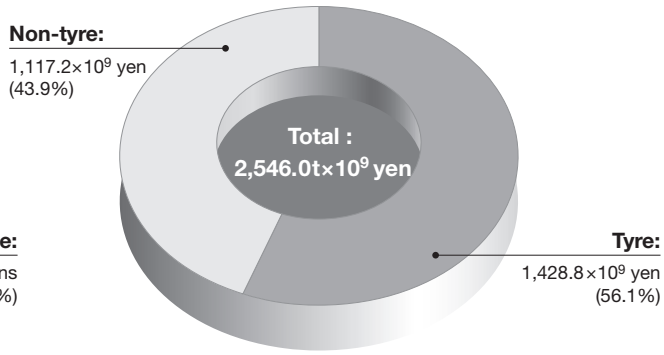
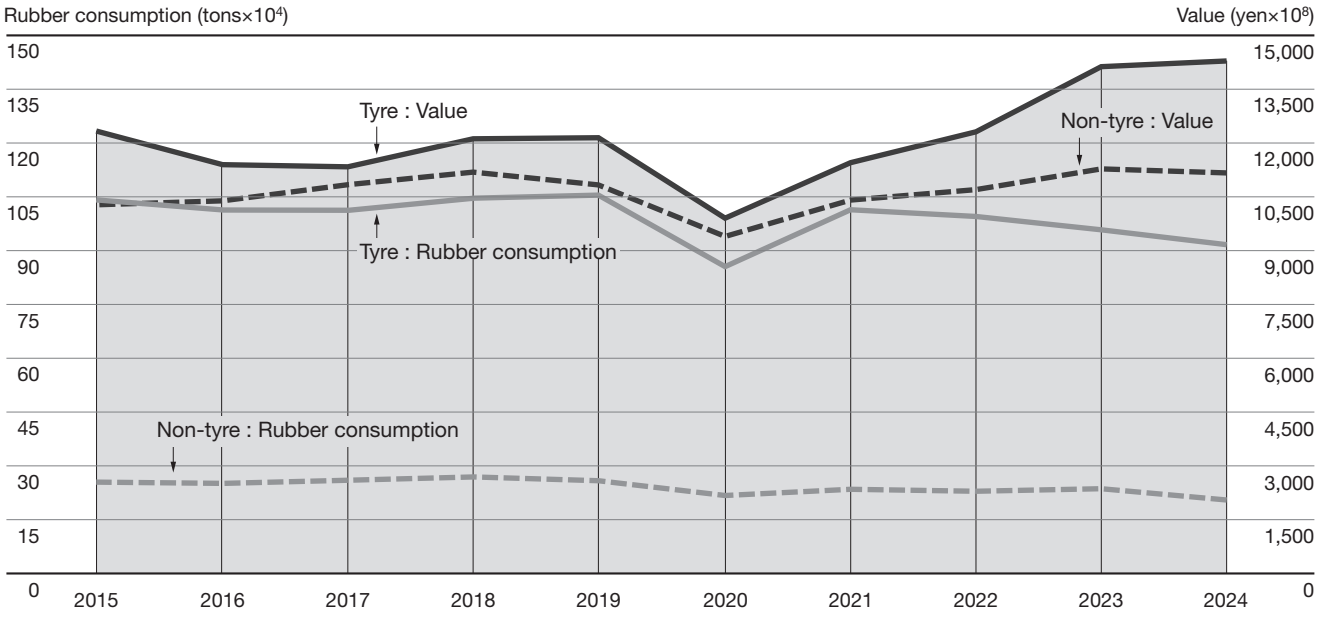


Figure 3: The sales amount



Source: Current Production Statistics by the Ministry of Economy, Trade and Industry

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



Source: Current Production Statistics by the Ministry of Economy, Trade and Industry

2. Trends in Production by Tyre Category

The production volume of automobile tyres decreased by 5.8% from the previous year to 122.36 million tyres in 2024, which was a decrease for three consecutive years. The production volume of all categories decreased from the previous year, as passenger car tyres, light truck tyres, and truck & bus tyres decreased by 6.1%, 4.9%, and 5.6%, respectively.

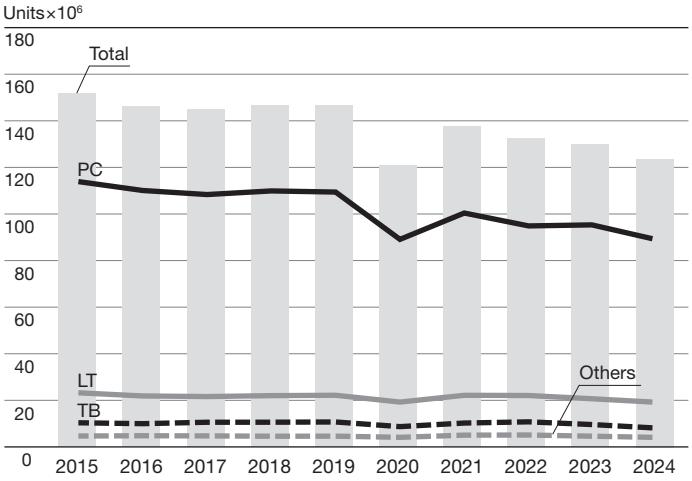
Table 2: Automobile tyre production in 2024

	Production	
	Units($\times 10^3$)	2024/2023(%)
Passenger car tyres	89,422	93.9
Light truck tyres	19,584	95.1
Truck and bus tyres	8,976	94.4
Others	4,379	97.1
Total	122,361	94.2

Note: "Others" are off-the-road tyres, industrial tyres, agricultural tyres, cart tyres, and motorcycle tyres.

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 8.5% from the previous year to 38.05 million tyres in 2024. Because of decreasing production volume of cars, which halted for those of some models by some automobile manufacturers, the sales volume of passenger car tyres decreased by 8.6% from the previous year. Light truck tyres decreased by 8.3% as well due to the same reason as passenger car tyres. Because of decreasing export volume of standard trucks, the sales volume of truck & bus tyres decreased by 4.2% from the previous year.

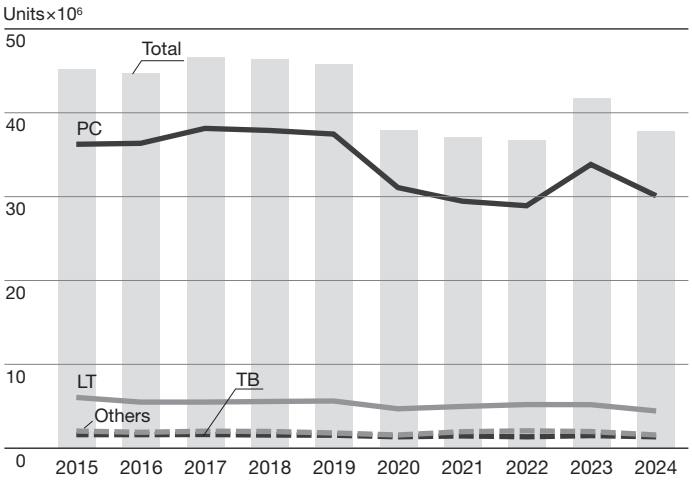
Table 3: Sales of original equipment tyres in 2024

	Sales	
	Units($\times 10^3$)	2024/2023(%)
Passenger car tyres	30,727	91.4
Light truck tyres	4,546	91.7
Truck and bus tyres	1,215	95.8
Others	1,558	88.9
Total	38,046	91.5

Note: 1. "Others" are off-the-road tyres, industrial tyres, agricultural tyres, cart tyres, and motorcycle tyres.
2. Imported tyres 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 1.2% from the previous year to 66.28 million tyres in 2024, which was a decrease for two consecutive years.

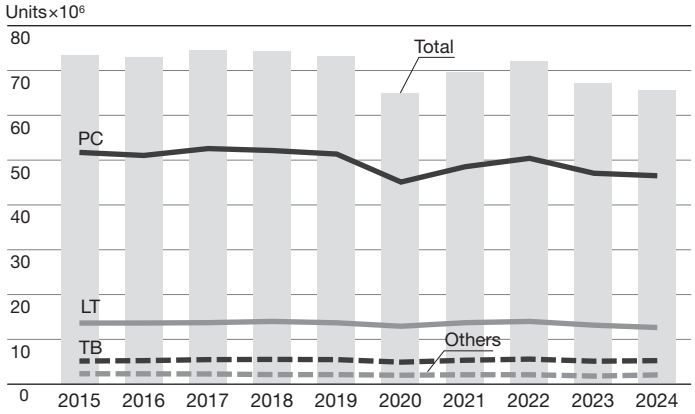
Table 4: Sales of replacement tyres in 2024

	Sales	
	Units(×10³)	2024/2023(%)
Passenger car tyres	46,420	98.7
Light truck tyres	12,911	98.2
Truck and bus tyres	5,056	99.0
Others	1,893	105.9
Total	66,280	98.8

Note: 1. "Others" are off-the-road tyres, industrial tyres, agricultural tyres, cart tyres, and motorcycle tyres.
2. Imported tyres 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 replacement summer tyres (normal tyres except snow tyres) increased by 1.5% from the previous year to 43.20 million tyres in 2024. The sales volume of two categories increased from the previous year, as passenger car tyres, light truck tyres increased by 1.7%, 1.6%, respectively. However, truck & bus tyres decreased by 1.0% from the previous year.

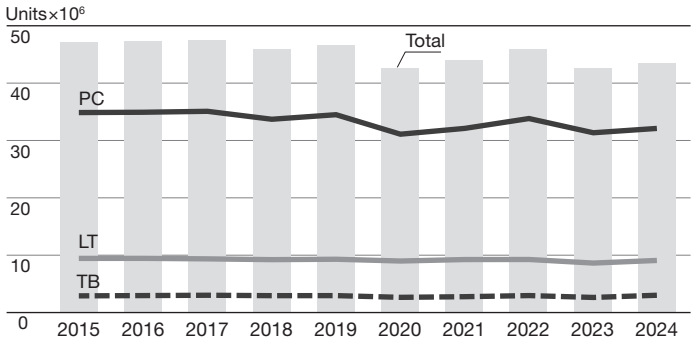
Table 5-1: Sales of summer tyres for replacement (for four-wheeled vehicles) in 2024

	Summer tyres		
	Units(×10³)	2024/2023(%)	Summer tyre rate(%)
Passenger car tyres	31,864	101.7	68.6
Light truck tyres	8,748	101.6	67.8
Truck and bus tyres	2,592	99.0	51.3
Total	43,204	101.5	67.1

Note: 1. "Summer tyre rate" indicates a percentage of summer tyres in total number of replacement tyre sales.
2. Imported tyres 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)



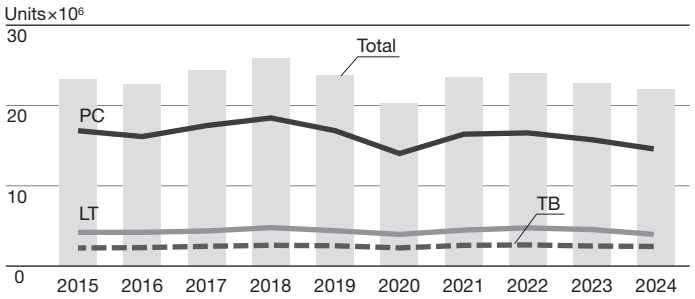
The sales volume of replacement winter tyres decreased by 6.8% from the previous year to 21.18 million tyres in 2024, which was a decrease for two consecutive years. The sales volume of all categories decreased from the previous year, due to a warm winter, etc, as passenger car tyres, light truck tyres, and truck & bus tyres decreased by 7.4%, 8.2%, and 0.9%, respectively.

Table 5-2:
Sales of winter tyres for replacement (for four-wheeled vehicles) in 2024

	Winter tyres		
	Units(×10³)	2024/2023(%)	Winter tyre rate(%)
Passenger car tyres	14,556	92.6	31.4
Light truck tyres	4,163	91.8	32.2
Truck and bus tyres	2,464	99.1	48.7
Total	21,183	93.2	32.9

Note: 1. "Winter tyre rate" indicates the percentage of winter tyres in total number of replacement tyre sales.
2. Imported tyres 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

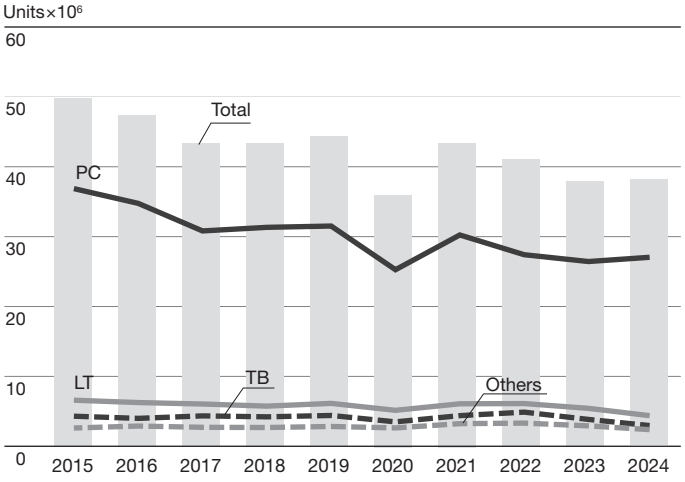
The export volume of automobile tyres increased by 0.9% from the previous year to 38.34 million tyres in 2024, which was an increase for the first time in three years. Passenger car tyres increased by 3.3% from the previous year, but light truck tyres, truck & bus tyres decreased by 2.9%, truck & bus tyres decreased by 8.2%.

Table 6: Sales of export tyres in 2024

	Sales	
	Units(×10³)	2024/2023(%)
Passenger car tyres	27,151	103.3
Light truck tyres	5,120	97.1
Truck and bus tyres	3,382	91.8
Others	2,688	97.2
Total	38,341	100.9

Note: "Others" are off-the-road tyres, industrial tyres, agricultural tyres, cart tyres, and motorcycle tyres.
Source: JATMA

Figure 9: Trends in sales of export tyres



6. Exports by Region of Destination

The export volume of automobile tyres in 2024 increased by 0.3% from the previous year to 38.93 million tyres on a unit basis, it increased on a value basis by 0.4% from the previous year to 760.0 billion yen. The total of product weight for export decreased by 3.2% from the previous year to 1.01 million tons.

By region (on a unit basis) export volume from Europe and Asia increased, but North America decreased, and the total volume almost stayed at the same level as the previous year.

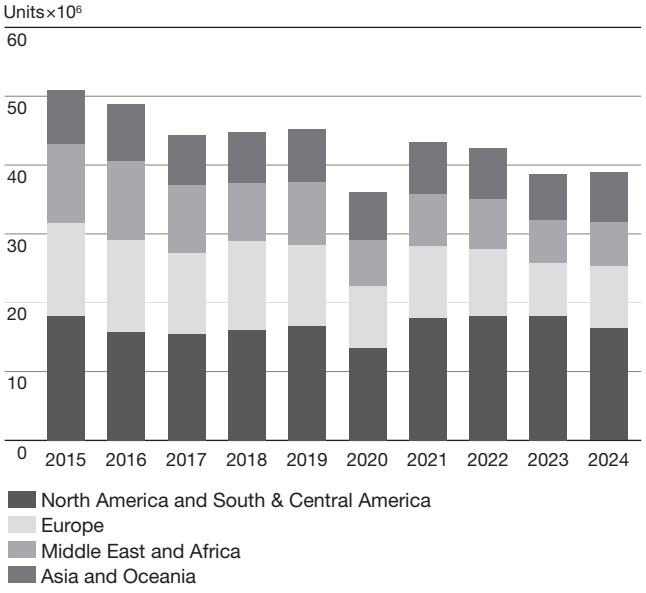
Table 7: Exports by region of destination in 2024

	Tyre Units(×10³)				2024/2023 (%)	Value (FOB) (yen×10⁶)	2024/2023 (%)
	PC	TB&LT	Others	Total			
North America	11,583	2,332	481	14,396	91.6	239,840	89.5
South & Central America	1,884	407	276	2,567	108.8	82,598	98.8
Europe	6,322	477	1,497	8,296	105.9	104,763	111.4
Middle East	3,720	1,391	32	5,143	100.6	67,824	98.8
Africa	499	613	42	1,154	103.9	40,402	105.5
Asia	4,550	742	347	5,639	110.0	122,085	105.8
Oceania	1,158	447	125	1,730	112.8	102,459	114.8
Total	29,716	6,409	2,800	38,925	100.3	759,971	100.4
Weight(tons)	394,944	250,253	363,104	1,008,301	96.8		

Source: Trade Statistics of Japan

Note: 1. Exchange rates are averages of Tokyo InterBank offered spot exchange rate.
2023: 1USD = 140yen
2024: 1USD = 151yen
2."Others" doesn't include Aircraft tyres and Bicycle tyres.
3. Weight and Value include tubes.

Figure 10: Export trend by region



7. Imports by Region of Origin

The import volume of automobile tyres in 2024 increased by 0.1% from the previous year to 30.59 million tyres on a unit basis, and increased on a value basis by 3.7% from the previous year to 184.2 billion yen. Product weight total of import decreased by 2.3% from the previous year to 0.28 million tons.

By region (on a unit basis), import volume from Asia slightly increased which account for more than 90% of the total, but Europe decreased, and the total volume almost stayed at the same level as the previous year.

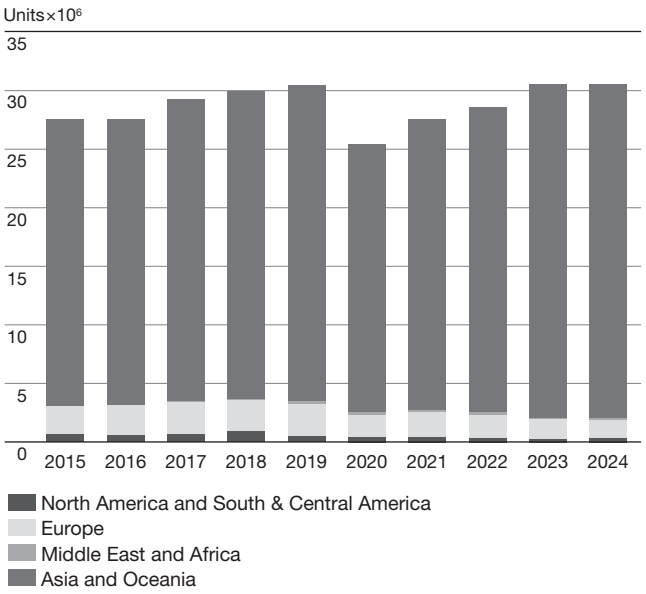
Table 8: Imports by region of origin in 2024

	Tyre Units(×10³)				2024/2023 (%)	Value (CIF) (yen×10⁶)	2024/2023 (%)
	PC	TB&LT	Others	Total			
North America	224	34	16	274	129.2	5,391	138.8
South & Central America	58	1	4	63	110.5	1,342	62.2
Europe	1,347	45	141	1,533	91.0	24,291	104.5
Middle East	12	1	0	13	86.7	406	89.8
Africa	9	1	0	10	8.2	138	16.4
Asia	23,424	2,481	2,788	28,693	100.8	152,581	103.8
Oceania	0	0	0	0	–	1	384.0
Total	25,074	2,563	2,949	30,586	100.1	184,150	103.7
Weight(tons)	210,623	50,957	22,679	284,259	97.7		

Source: Trade Statistics of Japan

Note: 1."Others" doesn't include Aircraft tyres and Bicycle tyres.
2. Weight and Value include tubes.

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.

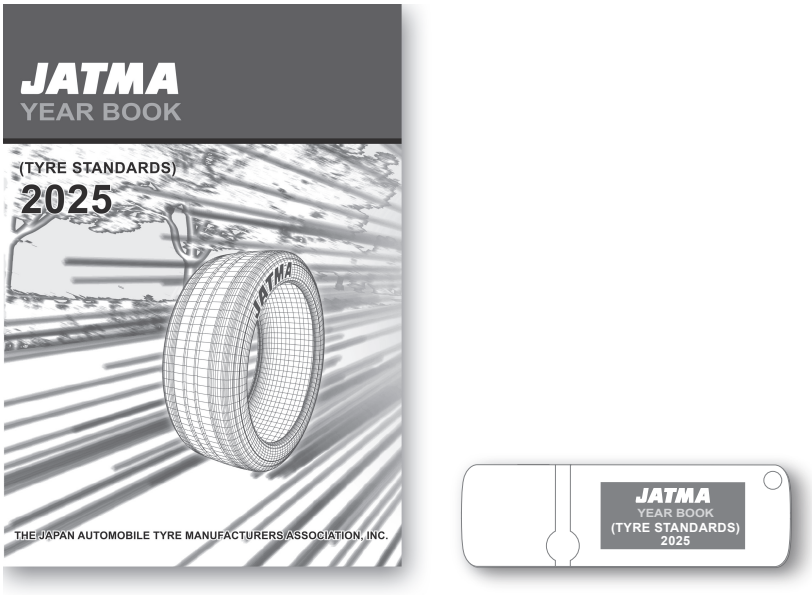
2. Tyre Standards

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 tread depth (minimum tread depth) in its Safety Regulations for Road Vehicles, and proscribed the use of tyres of insufficient tread depth on roads. (see table 9 and 10 (table 10 for high-speed driving (above 80km/h))). 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 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 five 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

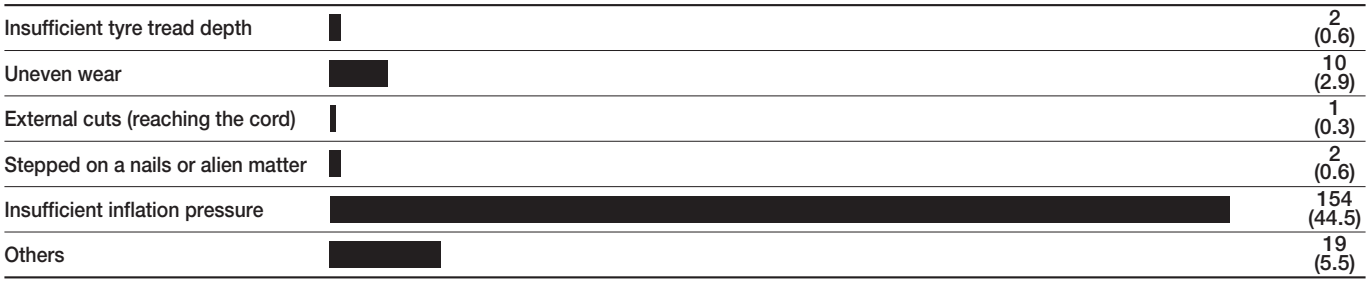
Tyre type	Tread depth limit
Passenger car tyres	1.6 mm
Light truck tyres	1.6 mm
Truck and bus tyres	1.6 mm
Motorcycle tyres	0.8 mm

Table 10: Wear limit for automobile tyres in high-speed driving(above 80km/h)

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

Figure 12: Causes of damages

(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 18 times (13 times on expressways and 5 times on ordinary roads) in 2024.

Ⅳ Consideration for Environment

1. Tyre Labeling System for Low Car Exterior Sound Tyres

The purpose of this system is to contribute to the reduction of vehicle traffic noise from the tyre sector. The operation started from January 2023.

This is an industry voluntary system established to clarify “Low Car Exterior Sound Tyres”, which are tyres that meet a certain standard level on rolling sound emissions of tyres from a travelling vehicle, and how to display the labels.

• Scope

Replacement summer and winter tyres for passenger cars, light trucks, and trucks & buses.

• Performance Requirements

The limits of rolling sound emissions stipulated in UN R117-02.

• How to Display the Labels

Display the name and/or the label (shown on the right) representing “Low Car Exterior Sound Tyres”.

2. Tyre Labeling System for Fuel-Efficient Tyres

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.

• Scope

Replacement tyres for passenger cars

Note : excluding tyres sold as “studless tyres”.

• 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

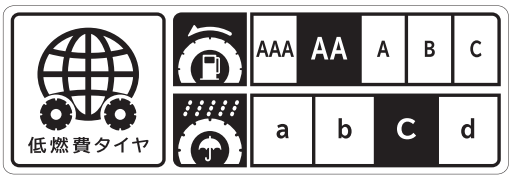
·····9.0 and below (Grade AAA to A)

Wet Grip Performance

·····110 and above (Grade a to d)

• How to Display the Labels

(example)



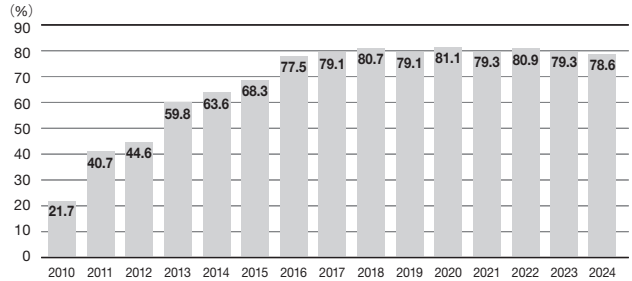
: Mark of fuel efficient tyres

: Rolling Resistance Performance

: Wet Grip Performance

• The spread of fuel efficient tyres :

The labeling system started in 2010, and in recent years, it is widely used and more than 80% is “Fuel Efficient Tyres”.



3. Preventing Global Warming

The tyre industry has been working to reduce GHG emissions throughout the entire life cycle of tyres.
To encourage consumer's cooperation to reduce CO_2 emissions during the "use stage", which accounts for over 80% of emissions during the lifecycle, JATMA started a tyre labeling system which includes information on RRC.
In 2012, JATMA developed "Tyre $LCCO_2$ Calculation Guidelines Ver.2.0" which explains how to calculate greenhouse gases throughout the entire lifecycle showing some examples. In 2021, JATMA developed "Tyre $LCCO_2$ Calculation Guidelines Ver.3.0", which complies with international standards and includes the latest data.
We also use this guideline to publicize the effects on resource usage saving and CO_2 emissions reduction. Together with our stakeholders, we are working to contribute to the prevention of global warming.

- Reduction Effect of CO_2 Emissions by Reducing Rolling Resistance of Passenger Car Tyres
- Effects on resource usage saving and CO_2 emissions reduction through the spread of retread tyres for trucks and buses

(https://www.jatma.or.jp/english/environment_recycle/globalwarming.html)

4. Efforts to Reduce TRWP

The Japanese tyre industry is working to reduce the amount of tyre wear particles by improving abrasion performance. In cooperation with the WBCSD (World Business Council for Sustainable Development)/TIP (Tire Industry Project), which is composed of the world's leading tyre manufacturers, we are working to understand the essence of tyre and road wear particles (TRWP) through scientific research and to study their impact on the environment and human health and mitigation measures. The four full members of JATMA are all members of WBCSD/TIP.
TRWP is an acronym for Tyre and Road Wear Particles. Tyres are the only parts of a car that come into contact with the road surface, and friction between the road surface and the tyres is physically essential for the tyres to support the vehicle's load while driving, turning, and stopping. The particles generated by friction between the tyres and the road surface are called TRWP, which are a mixture of tyre tread and road pavement material. Most TRWP have a size of 100 μm or less (1 μm = 0.001 mm). Tyre tread rubber consists mainly of natural rubber and synthetic rubber (SBR, BR, etc.), but it also contains reinforcing materials such as carbon black and silica, as well as compounding ingredients such as vulcanizing agents, vulcanizing accelerators, vulcanizing accelerator aids, and antioxidants.

5. Effort to Reduce

In order to promote longer lasting and lighter tyres, we publish the "Reduction Achievement Rate" calculated from the life index and weight index of the new product compared to the old product every year.
A reduction achievement rate above 100 indicates improvement, and below 100 indicates deterioration.

- Reduction Achievement Rate = Reduction Coefficient x 100
- Reduction Coefficient = Life Index / Weight Index
- Life index = (Wear life of new product based on design specification (km) / Wear life of old product based on design specification (km)) x 100
- Weight index = (weight of new product (kg) / weight of old product (kg)) x 100

In recent years, the performance required of tyres has become more diverse, such as reducing exterior noise, wet grip, rolling resistance, etc., and it is important to consider the balance between these, but by promoting longer life and lighter weight, we aim to reduce the amount of ELT generated and the amount of raw materials used.

Table 11: Reduction achievement rate

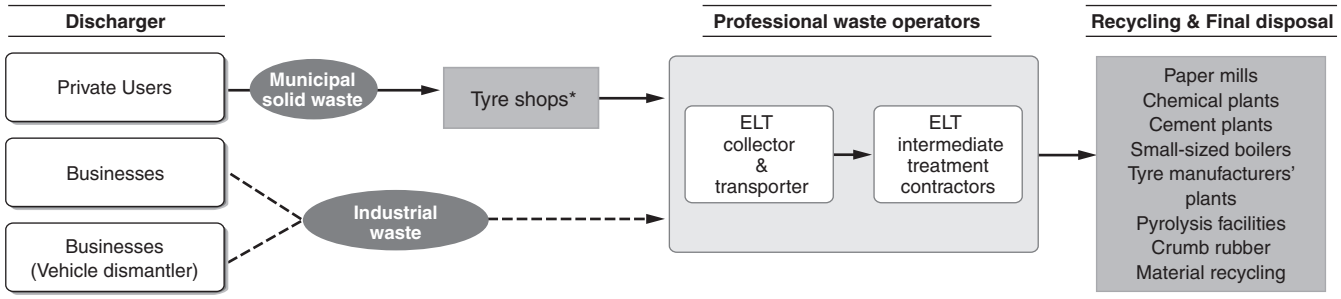
Category	Tyre size	Classification	Reduction achievement rate				
			2020	2021	2022	2023	2024
Passenger car tyres	155/65R13	Summer tyres	–	96	106	–	102
		Studless tyres	85	98	–	–	98
Passenger car tyres	175/65R14	Summer tyres	–	98	108	–	106
		Studless tyres	85	99	100	–	101
Passenger car tyres	195/65R15	Summer tyres	–	108	110	106	104
		Studless tyres	95	100	–	–	97
Passenger car tyres	215/45R17	Summer tyres	–	118	115	108	99
		Studless tyres	72	102	–	–	96
Light truck tyres	145R12 (145/80R12)	Summer tyres	–	–	100	–	–
		Studless tyres	–	97	121	–	107
Light truck tyres	185R14 (185/80R14)	Summer tyres	–	–	98	–	–
		Studless tyres	–	97	–	–	114
Light truck tyres	205/70R16	Summer tyres	115	133	–	–	132
		Studless tyres	96	–	122	116	104
Truck and bus tyres	225/80R17.5	Summer tyres	100	–	113	–	113
		Studless tyres	–	111	100	120	–
Truck and bus tyres	245/70R19.5	Summer tyres	–	–	113	–	110
		Studless tyres	–	107	107	107	–
Truck and bus tyres	11R22.5	Summer tyres	100	–	141	–	117
		Studless tyres	100	110	114	120	–

Note: 7.50R16 has been replaced by 245/70R19.5 since 2007.

Source: JATMA

6. Amount of ELT Generated and Effectively Utilized

Figure 13: Processing flow of ELTs



*Tyre shops such as tyre dealers, tyre shops, car accessory stores, gas stations, car dealers, car maintenance shops, etc.

(1) Amount of ELT generated

The amount of ELT generated in Japan in 2024 was 89 million tyres, including tyres replaced and those from scrapped vehicles. This is a decrease of 1 million units from the previous year.

① Amount of ELT generated by replacing tyres

The amount of ELT generated by replacing tyres was 78 million tyres. Since the sales of replacement tyres remained unchanged from the previous year, the amount of ELT generated also remained at the same level as the previous year.

② Amount of ELT generated from scrapped vehicles

The amount of ELT generated from scrapped vehicles was 11 million units. The number of scrapped vehicles decreased by 4.5% from the previous year to 2.608 million, marking the lowest level in the past 10 years. As a result, the amount of ELT generated also declined by approximately 1 million tyres compared to the previous year.

Table 12: Trends in ELT generation

Tyres: millions

	2021	2022	2023	2024
The amount generated by replacing tyres *1	76	79	78	78
The amount generated from scrapped vehicles *2	14	12	12	11
Total	90	91	90	89

*1 Estimated based on the sales of commercial tyres and trade statistics of Japan by the Ministry of Finance.
*2 Estimated based on the amount of scrapped vehicles by Japan Automobile Recycling Promotion Center.

Source: JATMA

Retreaded tyres are excluded because they do not become ELTs while in use and do not affect the amount of ELT generated nor effectively used. The figures in the table above do not include retreaded tyres. Other countries use a similar approach to organize their data.

(2) Effective utilization of ELTs

The amount of effectively utilized ELT in 2024 was 692,000 tons, with an effective utilization rate of 99.6%.

Table 13: Trends in ELTs utilized effectively

Weight: kt

	2021	2022	2023	2024
Paper mills	425	433	476	413
Chemical plants	112	136	113	104
Cement plants	73	81	67	60
Small-sized boilers	3	5	5	2
Tyre manufacturers' plants	2	3	2	1
Pyrolysis facilities	1	2	1	3
Crumb rubber	84	85	88	89
Material recycling	1	15	24	20
Steel plants	17	0	0	0
Effective utilization amount	718	760	776	692
Amount of ineffective final disposal	11	14	6	3
Effective utilization rate	98.5%	98.2%	99.2%	99.6%

Source: JATMA

(3) Others

- The effective utilization rate is calculated as "effectively utilized amount" / "effectively utilized amount + ineffectively utilized final disposal amount" x 100.
- For the purpose of calculating the domestic effective utilization rate, this calculation does not include exports of ELTs, and exports of cut/shredded ELTs, and imports cut/shredded ELTs.
- The annual import weight of cut/shredded ELT in 2024 was approximately 170,240 tons.This represents an increase of about 30,000 tons compared to the previous year, marking the highest level since data collection began. Domestic energy recovery facilities for ELT continue to purchase cut/shredded ELT from overseas, and this trend remains unchanged.

7. Status of Illegal Dumping of ELTs

At the time of investigation in February 2025, there were 79 cases and 23,880 tons of illegal dumping of ELTs in Japan.

8. JATMA Support Program

To reduce illegal dumping of ELTs, JATMA has been operating a restoration support system since 2005.

In the total of 20 years, from 2005 to 2024, JATMA supported 379.26 million yen for 23 cases, and removed 2,993,013 tyres /30,117 tons of ELTs.

V References

1. Automobiles and Tyres

①The number of registered automobiles as of the end of December 2024 almost stayed at the same level as the previous year to 78.38 million units. The sales volume of replacement tyres (for four-wheeled vehicles) were 64.39 million tyres, which decreased by 1.4% from the previous year.

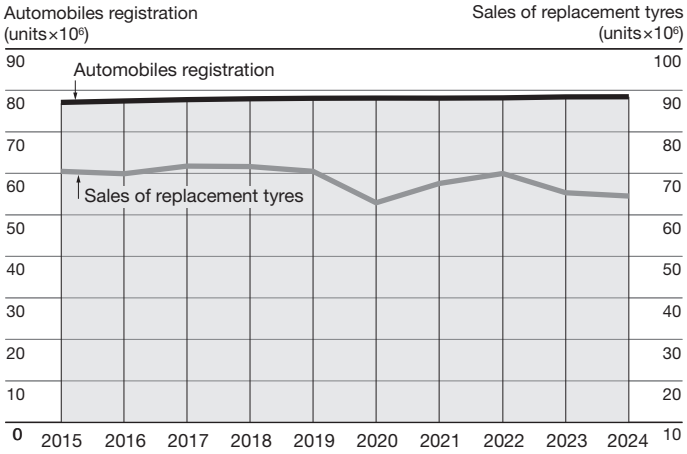
Table 14: Automobile registrations and sales of replacement tyres in 2024

Automobile	Registrations($\times 10^3$)	2024/2023(%)
Passenger cars	62,321	100.0
Trucks and buses	16,058	99.9
Total	78,379	100.0
Replacement tyres	**Sales($\times 10^3$)**	**2024/2023(%)**
Passenger car tyres	46,420	98.7
Commercial vehicle tyres	17,967	98.4
Total	64,387	98.6

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

Note: The number of automobile registrations does not include tricycles, towed vehicles, and large special vehicles.

Figure 14: Trends in automobile registrations and sales of replacement tyres



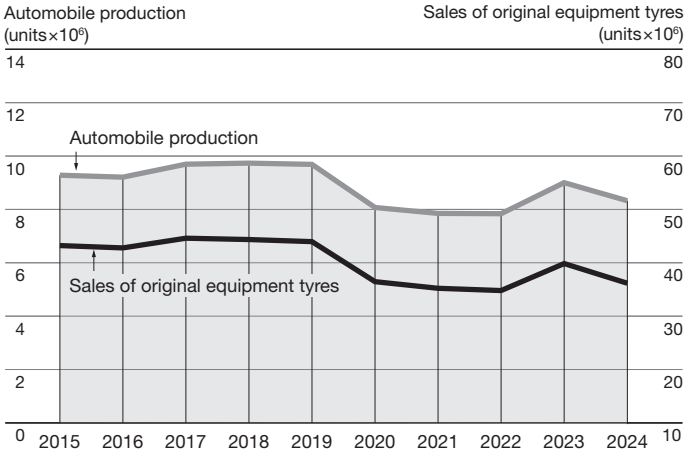
②The volume of domestic production of automobile in 2024 decreased by 8.5% from the previous year to 8.24 million units. The sales volume of original equipment tyres (for four-wheeled vehicles) decreased by 8.4% from the previous year to 36.49 million tyres.

Table 15: Automobile production and sales of original equipment tyres in 2024

Automobile	Productions($\times 10^3$)	2024/2023(%)
Passenger cars	7,139	91.9
Trucks and buses	1,096	89.0
Total	8,235	91.5
Original equipment tyres	**Sales($\times 10^3$)**	**2024/2023(%)**
Passenger car tyres	30,727	91.4
Commercial vehicle tyres	5,761	92.5
Total	36,488	91.6

Source: Japan Automobile Manufacturers Association, JATMA

Figure 15: 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 16. The routes for the channels are roughly divided into two types: the first type is distributors sell tyres directly to logistics, bus and taxi companies, and government and municipal users. The other next is tyre dealers supplying tyres to logistics, bus and taxi companies, government and municipal users, and general customers. In addition, the component ratio (quantity) of sales for each channel in 2024 is 26.7% for original equipment, 46.4% for replacements and 26.9% for exports.

Figure 16: Distribution channels

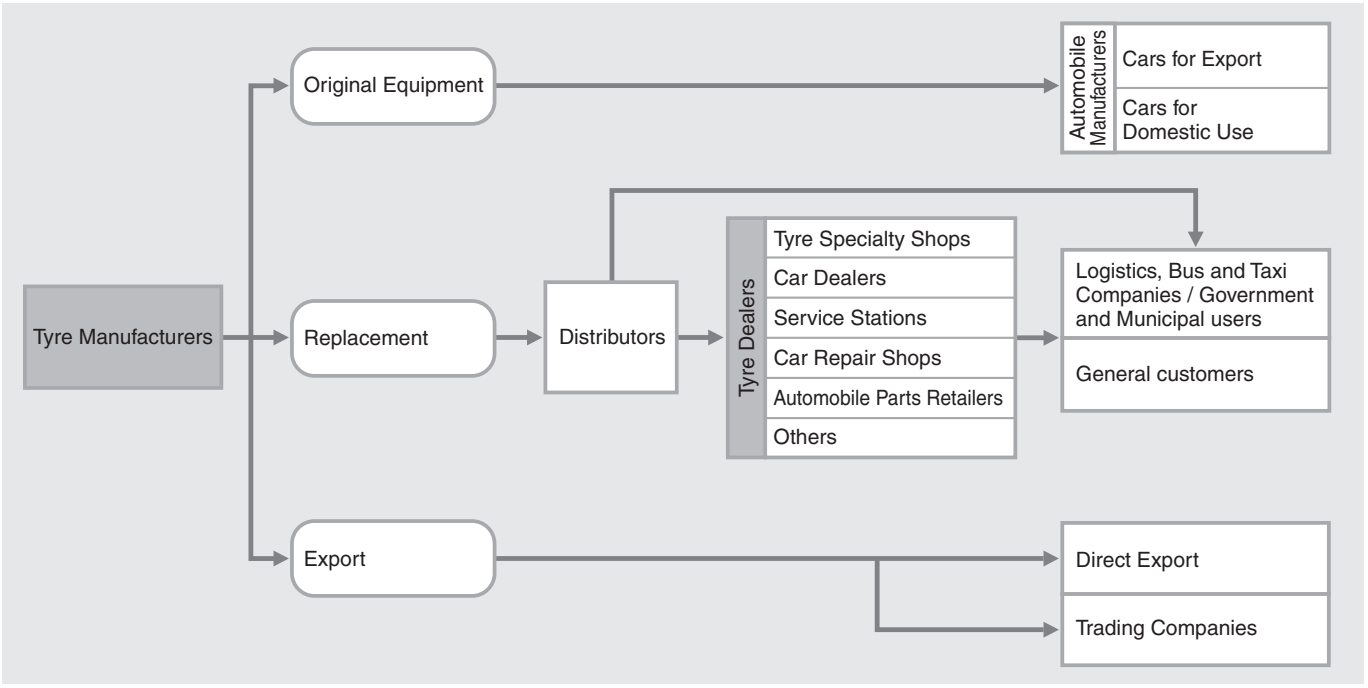
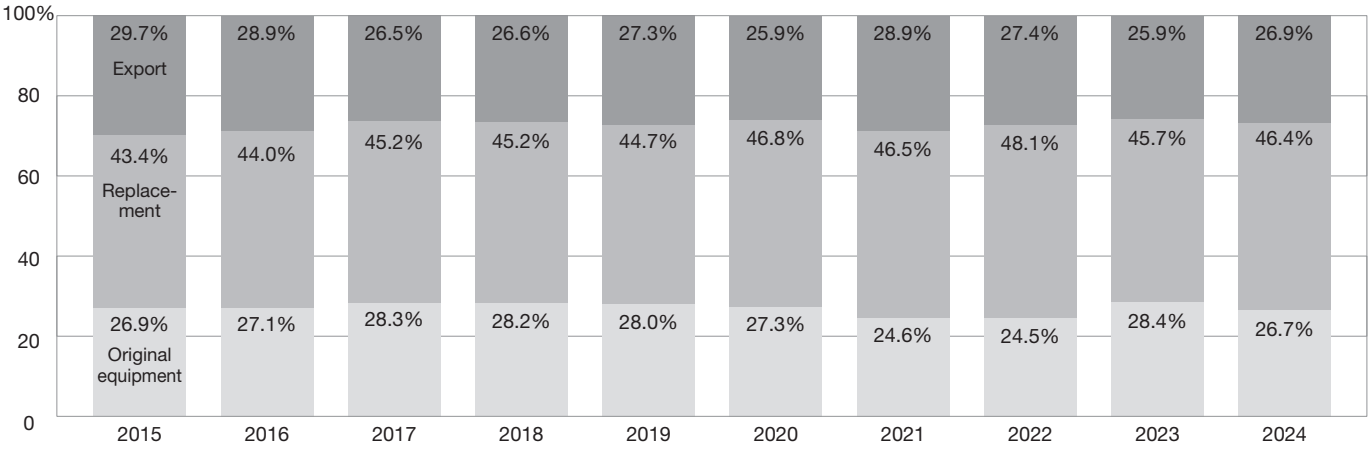


Figure 17: Trends in sales share of automobile tyres

(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 tyre composition in weight varies depending on the tyre category, but approximately half consists of rubber (natural rubber 29% and synthetic rubber 18%), and the others are reinforcing agent at 25%, tyre cord at 13% and so on.

Figure 18: Tyre raw material weight composition

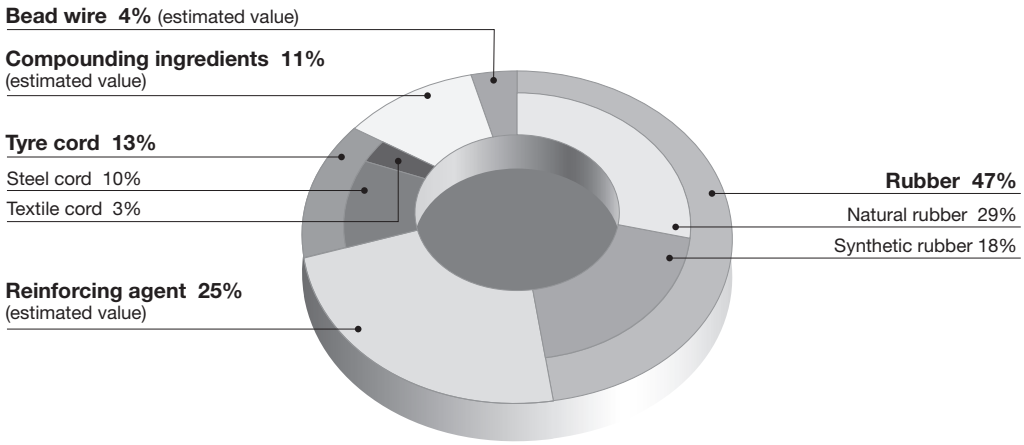


Table 16: Basic composition

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	

4. Consumption of Rubber by Tyre and Tyre Products

According to IRSG (International Rubber Study Group) research, it was estimated that the total rubber consumption by tyre and tyre products of the world in 2024 was 18.04 million tons, increased by 2% from the previous year.

By region, it was estimated that the Asia and Oceania regions account for more than 70% of the world's rubber consumption, among others, China and Japan account for 43% and 5%, respectively.

Table 17: Consumption of Rubber by Tyre and Tyre Products

Unit: ×1,000 tons

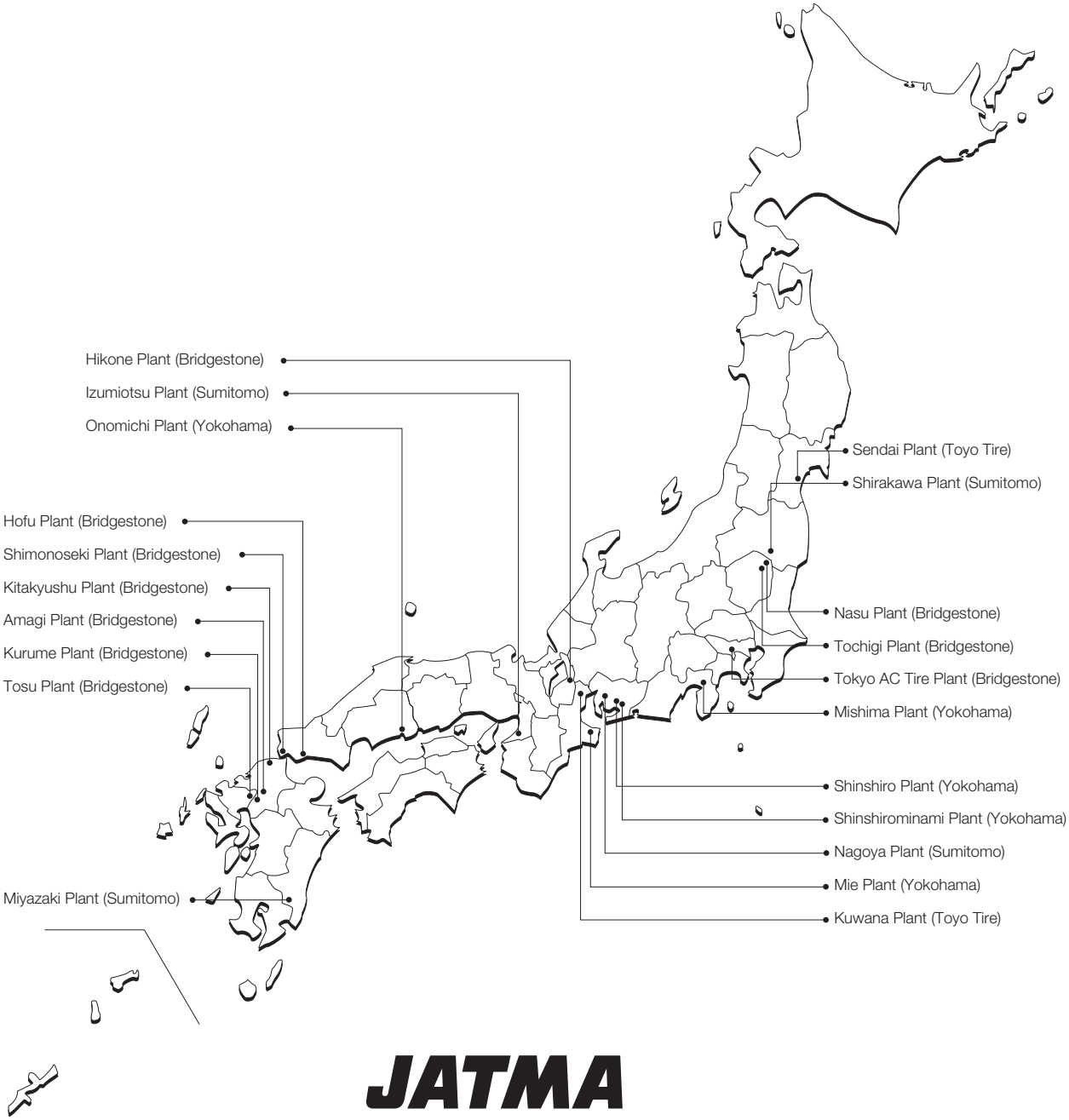
	2022	2023	2024	2024/2023(%)	composition ratio(%)
Asia and Oceania	11,907	12,925	13,210	102	73
(China)	(6,756)	(7,595)	(7,686)	(101)	(43)
(Japan)	(976)	(934)	(885)	(95)	(5)
Europe, Middle East and Africa	2,717	2,594	2,656	102	15
North, South and Central America	2,263	2,167	2,178	101	12
Total	16,887	17,686	18,043	102	100

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

Source: IRSG "The World Rubber Industry Outlook" (December 2024)

Distribution of Member Companies' (Full Members) Automobile Tyre Plants

(July 2025)



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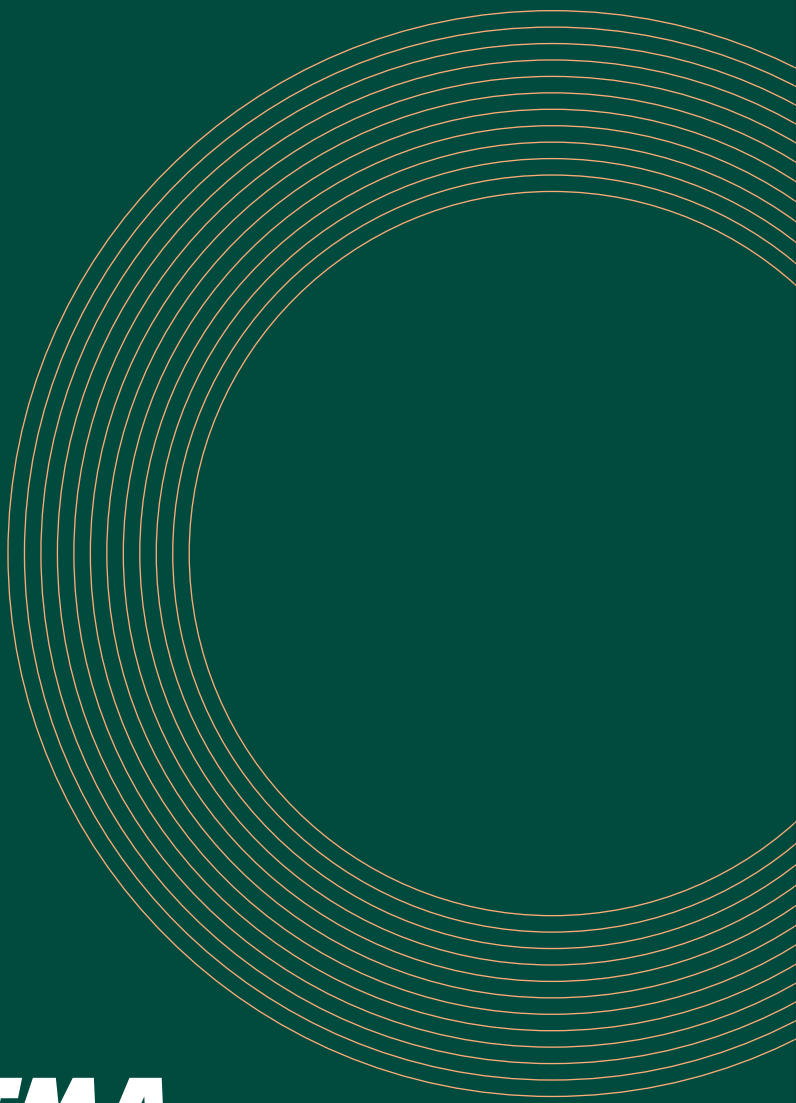

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