

✕ THE MOTOR INDUSTRY ✕  
OF JAPAN

2017

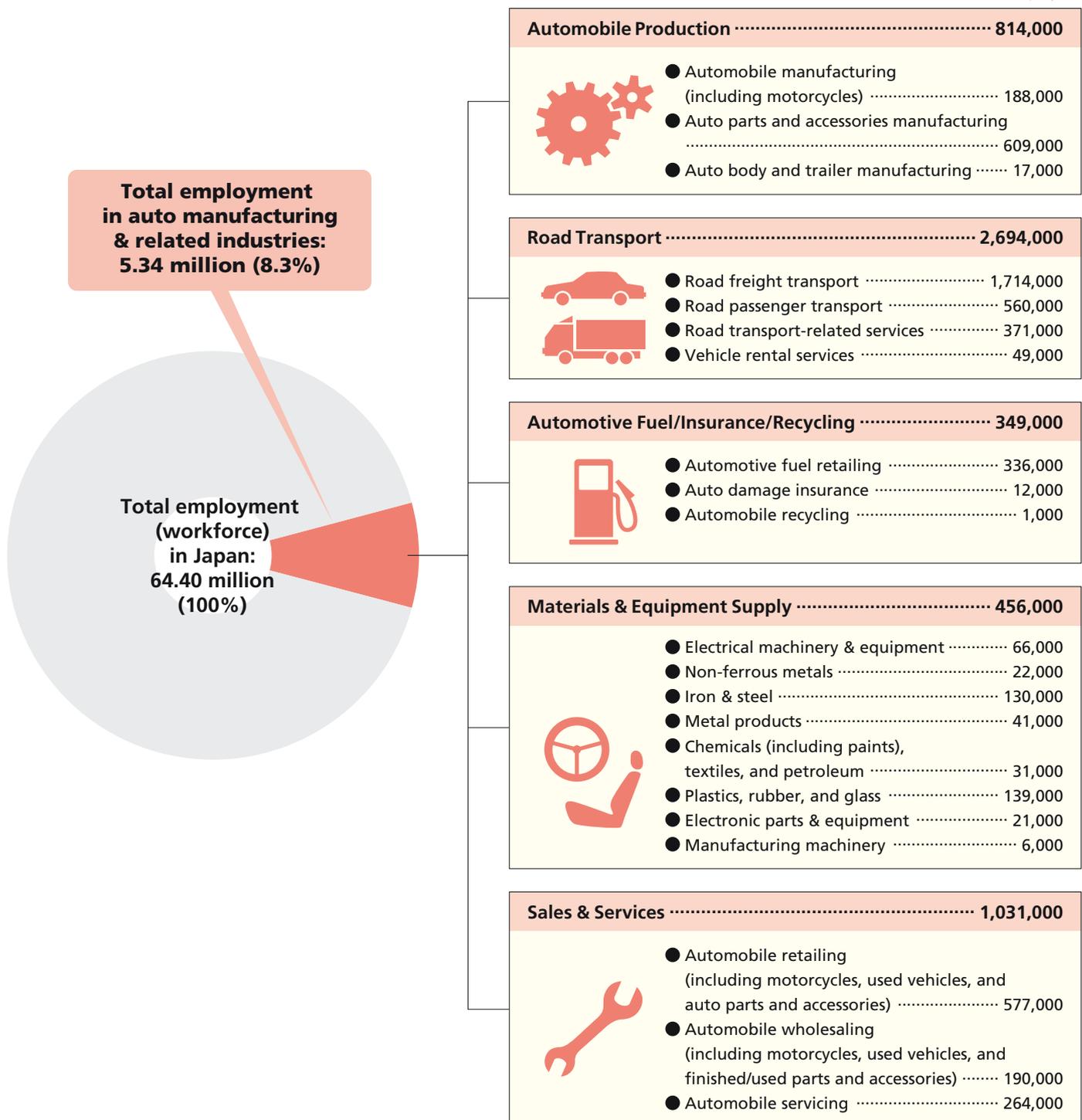
JAPAN AUTOMOBILE MANUFACTURERS ASSOCIATION, INC.

## A Vast Range of Related Industries

Automobiles are the focus of an extremely wide range of industrial and related activity, from materials supply and vehicle production to sales, servicing, freight shipping and other auto-centered operations. Auto-related employment in Japan at present totals 5.34 million people.

### ● EMPLOYMENT IN THE AUTOMOBILE MANUFACTURING AND RELATED INDUSTRIES

Number of employees



Note: Figures are rounded off to the nearest thousand.

# Automobile Manufacturing Is an Integrated Industry

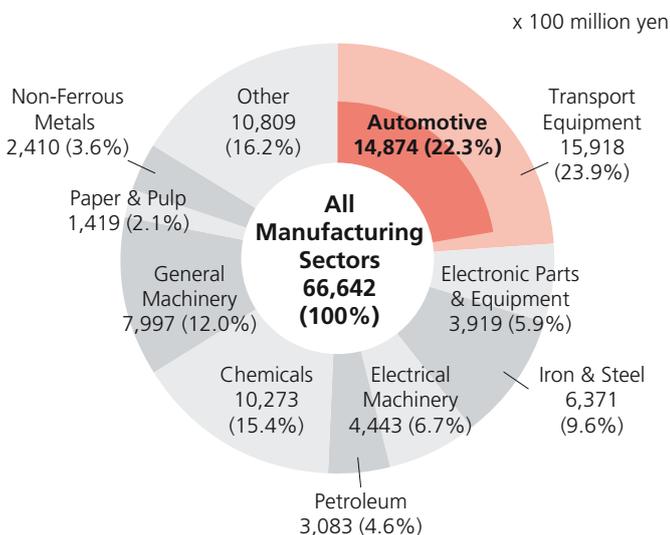
An automobile typically is composed of 20,000 to 30,000 parts, all of which even the largest vehicle manufacturers cannot produce themselves. Automakers therefore either outsource production or purchase finished products (such as tires, batteries, air conditioners and audio systems). Finished products purchased by the automakers include products manufactured abroad, and the volume of imported components increases yearly. Automobile manufacturing is thus an integrated industry because it relies on many supporting industries to produce the great diversity of materials and components it uses. Trends in the automobile industry, which makes huge investments in equipment and research activities, are considered a barometer of the economy.

## ● PRINCIPAL MATERIALS AND COMPONENTS USED IN AUTOMOBILE MANUFACTURING

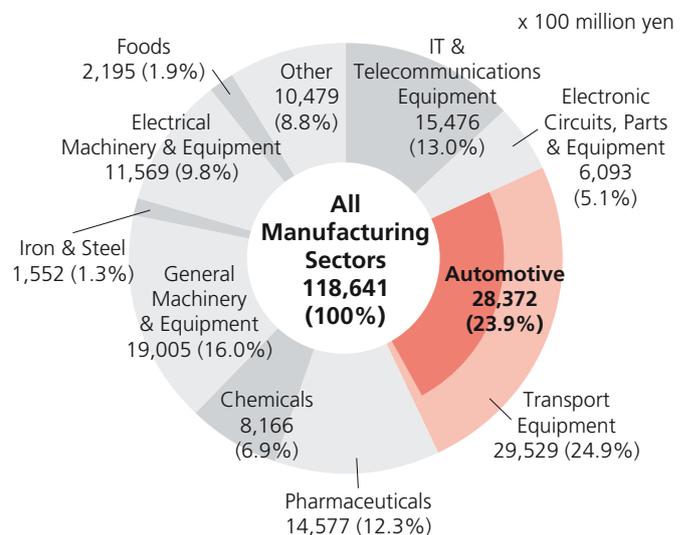
<b>Cast iron</b>	Engine parts, e.g. cylinder blocks
<b>Common steel</b>	Chassis, frames, wheel parts
<b>Special steel</b>	Gears, axle shafts, crankshafts, fuel injection equipment
<b>Copper</b>	Electricals, radiators, cables
<b>Lead, tin, zinc</b>	Engine metals, solder, body varnish, batteries
<b>Aluminum</b>	Engine parts (e.g. pistons, cylinder heads), wheels, chassis
<b>Noble metals</b>	Emissions aftertreatment parts
<b>Other non-ferrous metals</b>	Magnets, plating
<b>Synthetic resin</b>	Steering wheels, bumpers, radiator grilles, body components
<b>Glass</b>	Window glass, mirrors, headlamps
<b>Rubber</b>	Tires, sealing parts, vibration control parts
<b>Ceramics</b>	Plugs, electronic parts, sensors, emissions aftertreatment parts
<b>Textiles</b>	Seats, linings, seatbelts
<b>Leather</b>	Seats, packing
<b>Paper</b>	Filters
<b>Wood</b>	Load-carrying platforms, interior equipment
<b>Paints</b>	Ornamental and rustproof paints
<b>Chemicals</b>	Antifreeze, engine oil, transmission oil, brake oil
<b>Animal and vegetable oils</b>	For casting
<b>Fats and oils</b>	For lubrication, heat treatment, etc.

<b>Springs, dampers</b>	
<b>Turbochargers</b>	
<b>Bearings</b>	
<b>Machined parts, e.g. pumps</b>	
<b>Tires and tubes</b>	
<b>Batteries</b>	
<b>Window glass</b>	
<b>Onboard tools, e.g. jacks</b>	
<b>Supplies, e.g. extinguishers, tire chains</b>	
<b>Electronic parts</b>	Sensors, ECUs, actuators
<b>Lights, cables, optical fibers</b>	
<b>Air conditioners, air cleaners</b>	
<b>Starters, alternators, generators, inverters, meters</b>	
<b>Audio systems, phones, navigation systems</b>	
<b>Safety equipment, e.g. anti-lock brakes, airbags, traction control</b>	
<b>Coke</b>	For casting
<b>Petroleum, electricity, natural gas</b>	Fuel, heat treatment, paint drying, power generation

## ● INVESTMENTS IN EQUIPMENT OF MAJOR MANUFACTURING SECTORS (PROJECTED, FY 2016)



## ● RESEARCH EXPENDITURES OF MAJOR MANUFACTURING SECTORS (FY 2015)



Note: Japan's fiscal year (FY) starts on April 1 and ends on March 31 of the following year.  
Source: Survey on Planned Capital Spending, Development Bank of Japan

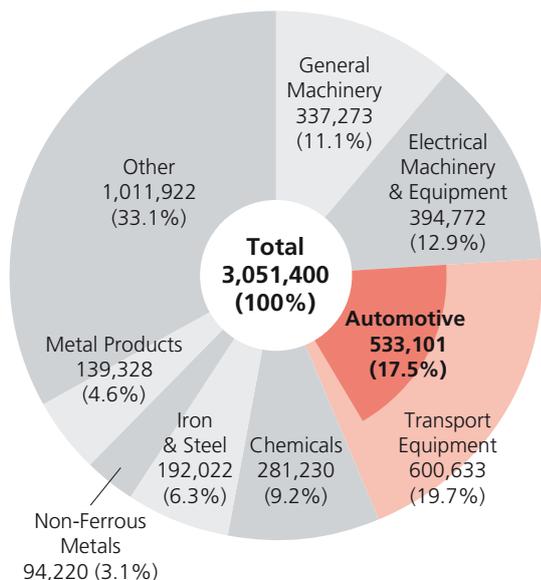
Source: Survey on Research Activities in Science and Technology, Ministry of Internal Affairs and Communications

# Automobile Manufacturing Is a Core Industry

The automotive industry is one of the Japanese economy's core industrial sectors. In 2014 automotive shipments accounted for 17.5% of the total value of Japan's manufacturing shipments, and 40.0% of the value of the machinery industries' combined shipments. Automotive shipments (both domestic and export shipments, including motorcycles, auto parts, etc.) in value terms totalled 53.3 trillion yen in 2014, up 2.6% from the previous year.

## SHIPMENTS OF MAJOR MANUFACTURING SECTORS IN VALUE TERMS (2014)

x 100 million yen

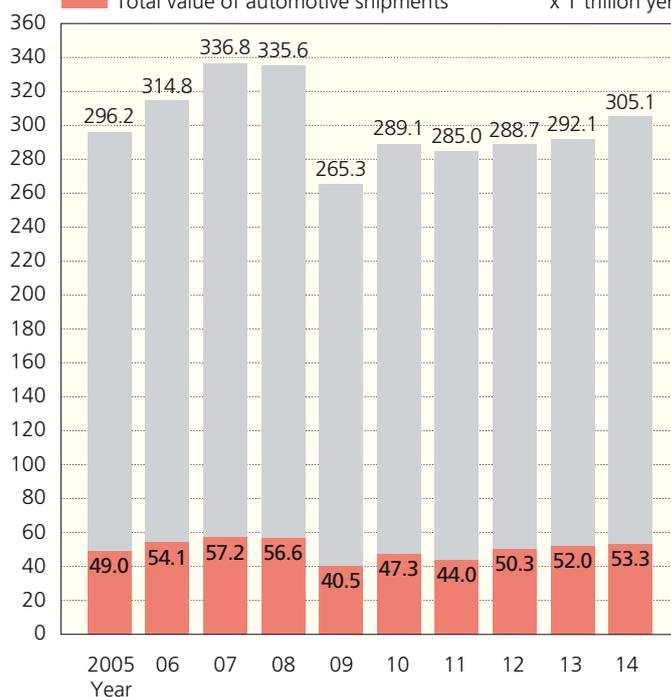


### Breakdown of automotive shipments:

- Automobiles (including motorcycles) ..... 220,293
- Auto bodies and trailers ..... 5,730
- Automotive parts and accessories ..... 307,078

## COMPARISON OF VALUE OF AUTOMOTIVE SHIPMENTS TO TOTAL VALUE OF ALL MANUFACTURING SHIPMENTS

Legend: Total value of all manufacturing shipments (grey), Total value of automotive shipments (red). x 1 trillion yen



## SHIPMENTS OF MAJOR MANUFACTURING SECTORS IN VALUE TERMS

x 100 million yen

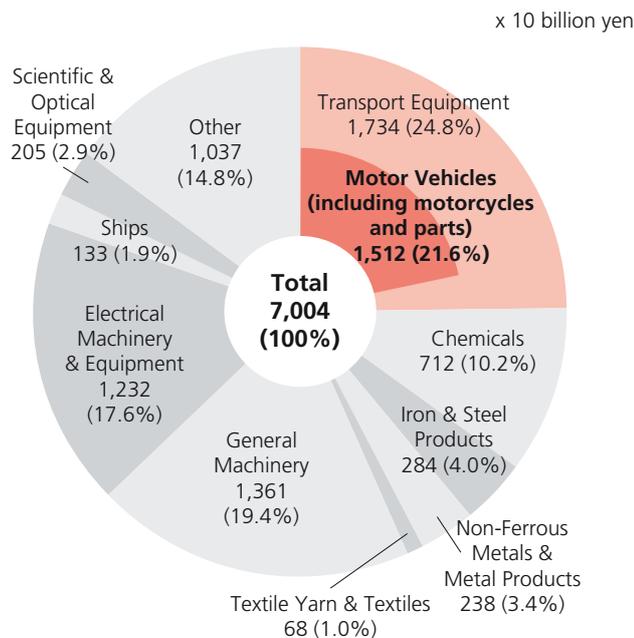
Year	Chemicals	Iron & Steel	Non-Ferrous Metals	Metal Products	Machinery Industries				Other	Total	Automotive Shipments		
					General Machinery	Electrical Machinery & Equipment	Transport Equipment				Subtotal	As % of Value of Machinery Shipments	As % of Total Value of Manufacturing Shipments
							Automotive						
1970	55,402	65,648	30,547	37,277	68,028	73,305	72,758	54,673	223,008	287,383	690,348	24.5	7.9
1975	104,381	113,063	39,087	65,731	106,112	108,213	147,935	105,241	379,551	589,807	1,274,329	27.7	8.3
1980	179,787	178,956	81,186	106,465	175,998	222,346	249,536	212,346	682,457	952,724	2,146,998	31.1	9.9
1985	205,524	177,543	63,836	130,944	241,904	408,422	361,793	276,927	1,055,932	1,063,240	2,653,206	26.2	10.4
1990	235,030	182,687	78,217	185,736	332,249	545,286	468,582	423,106	1,397,439	1,205,939	3,233,726	30.3	13.1
1995	233,625	140,727	64,964	176,465	298,844	548,309	442,145	395,613	1,330,364	1,155,277	3,060,356	29.7	12.9
2000	237,994	119,630	62,189	155,868	304,132	595,817	444,474	400,429	1,385,612	1,115,720	3,035,824	28.9	13.2
2005	250,271	168,964	67,116	140,159	312,108	495,083	539,999	489,548	1,385,037	988,717	2,962,417	35.3	16.5
2006	261,995	184,727	90,162	144,510	333,313	511,634	598,356	541,091	1,484,034	1,023,649	3,148,346	36.5	17.2
2007	282,939	211,917	107,705	151,889	362,734	553,265	639,100	571,848	1,597,840	1,058,017	3,367,566	35.8	17.0
2008	281,299	243,322	104,805	151,492	402,477	518,797	637,666	566,053	1,558,940	1,015,930	3,355,788	36.3	16.9
2009	242,757	159,884	69,400	124,267	289,320	400,593	471,866	404,915	1,161,779	894,503	2,652,590	34.9	15.3
2010	262,120	181,463	89,114	122,920	306,186	442,848	542,136	472,962	1,291,170	944,290	2,891,077	36.6	16.4
2011	263,512	186,656	90,225	121,277	322,495	403,789	505,870	439,592	1,232,154	955,863	2,849,688	35.7	15.4
2012	260,379	180,121	89,228	128,607	330,816	369,426	564,858	502,627	1,265,100	963,841	2,887,276	39.7	17.4
2013	274,092	179,053	88,059	130,606	320,911	368,283	582,032	519,710	1,271,226	977,885	2,920,921	40.9	17.8
2014	281,230	192,022	94,220	139,328	337,273	394,772	600,633	533,101	1,332,678	1,011,922	3,051,400	40.0	17.5

Notes: 1. Shipments from all manufacturing operations with four or more employees are included in this data. 2. Compilation of data on production in value terms was discontinued in 1996 and replaced by data on shipments in value terms. 3. Figures in value terms include domestic consumption tax revenue from shipments. 4. "Electrical Machinery & Equipment" includes IT-related electronic parts and equipment as of 2002. 5. All information here remains unchanged from the 2016 edition of this publication owing to the non-issuance of the *Census of Manufactures* in 2015. Source for all statistical data on this page: *Census of Manufactures, Ministry of Economy, Trade and Industry*

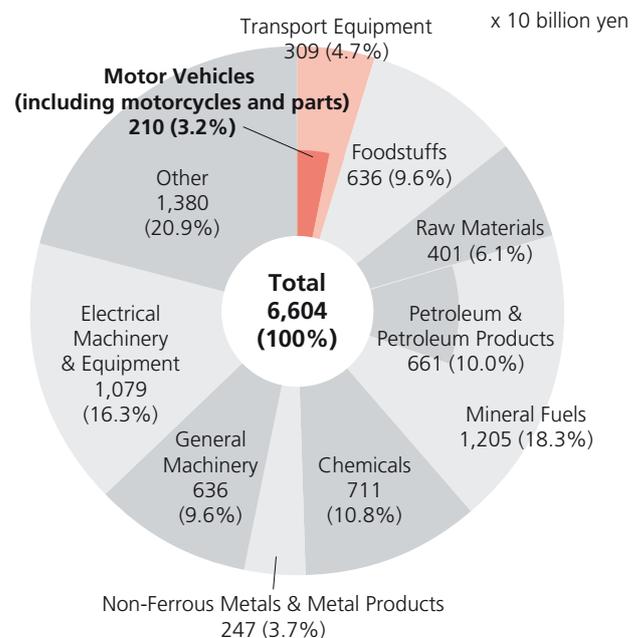
## In Value Terms, Motor Vehicle Exports Total 15 Trillion Yen; Imports, 2 Trillion Yen

In 2016 Japan's gross exports declined 7.4% from the previous year, and imports shrank 15.8%. In value terms, automotive exports decreased 4.9% from 2015 to 15.1 trillion yen, and automotive imports dipped 1.1% year-on-year to 2.1 trillion yen.

### EXPORTS BY PRINCIPAL COMMODITY (FOB) IN 2016



### IMPORTS BY PRINCIPAL COMMODITY (CIF) IN 2016



### AUTOMOTIVE EXPORTS IN VALUE TERMS (FOB)

x 100 million yen

Year	Motor Vehicles				Exports Total		
	Value	Chg. (%)	Passenger Cars, Trucks, Buses	Auto Parts	Motorcycles & Motorcycle Parts	Value	Chg. (%)
2007	185,267	114.5	143,170	33,555	8,543	839,314	111.5
2008	175,126	94.5	137,361	30,655	7,110	810,181	96.5
2009	93,679	53.5	66,933	23,089	3,657	541,706	66.9
2010	125,956	134.5	91,741	30,833	3,382	673,996	124.4
2011	115,417	91.6	82,042	29,972	3,403	655,465	97.3
2012	127,521	110.5	92,250	32,051	3,220	637,476	97.3
2013	142,411	111.7	104,125	34,762	3,524	697,742	109.5
2014	147,849	103.8	109,194	34,750	3,905	730,930	104.8
2015	158,912	107.5	120,463	34,830	3,619	756,139	103.4
2016	151,175	95.1	113,329	34,617	3,229	700,358	92.6

### AUTOMOTIVE IMPORTS IN VALUE TERMS (CIF)

x 100 million yen

Year	Motor Vehicles				Imports Total		
	Value	Chg. (%)	Passenger Cars, Trucks, Buses	Auto Parts	Motorcycles & Motorcycle Parts	Value	Chg. (%)
2007	16,531	108.5	9,294	6,291	945	731,359	108.6
2008	15,138	91.6	7,499	6,662	978	789,548	108.0
2009	8,982	59.3	4,549	3,696	736	514,994	65.2
2010	11,518	128.2	5,958	4,879	682	607,650	118.0
2011	12,805	111.2	7,352	4,717	736	681,112	112.1
2012	15,506	121.1	9,082	5,549	875	706,886	103.8
2013	18,948	122.2	10,857	6,981	1,109	812,425	114.9
2014	20,925	110.4	11,623	8,148	1,154	859,091	105.7
2015	21,261	101.6	11,398	8,770	1,093	784,055	91.3
2016	21,023	98.9	11,781	8,329	913	660,420	84.2

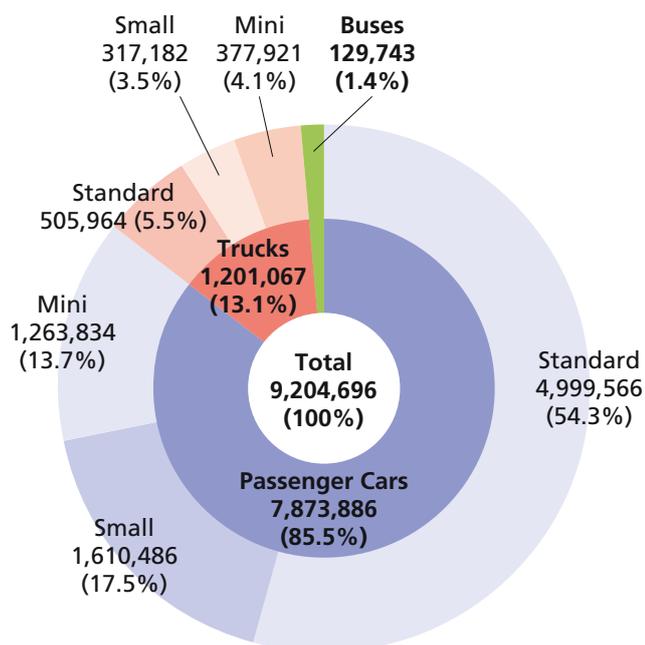
Notes: 1. "Passenger Cars, Trucks, Buses" includes chassis. 2. FOB: Free on board; CIF: Cost, insurance, and freight. 3. "Chg. (%)" means change from the previous year (with the previous year's result indexed at 100).

# A Total of 9.2 Million Motor Vehicles Produced

In 2016 motor vehicle production in Japan totalled 9.20 million units, down 0.8% from the previous year. Passenger car production rose 0.6% to a total of 7.87 million units. Within that category, standard and small car production increased 5.4% and 3.5%, to 5.00 million and 1.61 million units respectively, whereas minicar production declined 17.4% to 1.26 million units. Meanwhile, truck and bus production showed a decrease from 2015, slipping 8.3% to 1.20 million units and 5.9% to 130,000 units, respectively.

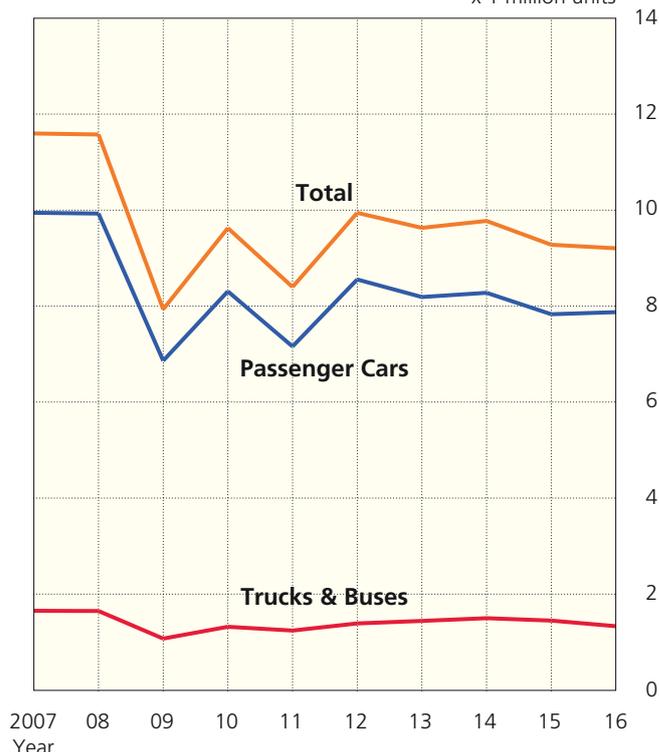
## MOTOR VEHICLE PRODUCTION BY TYPE IN 2016

In vehicle units



## TRENDS IN MOTOR VEHICLE PRODUCTION

x 1 million units



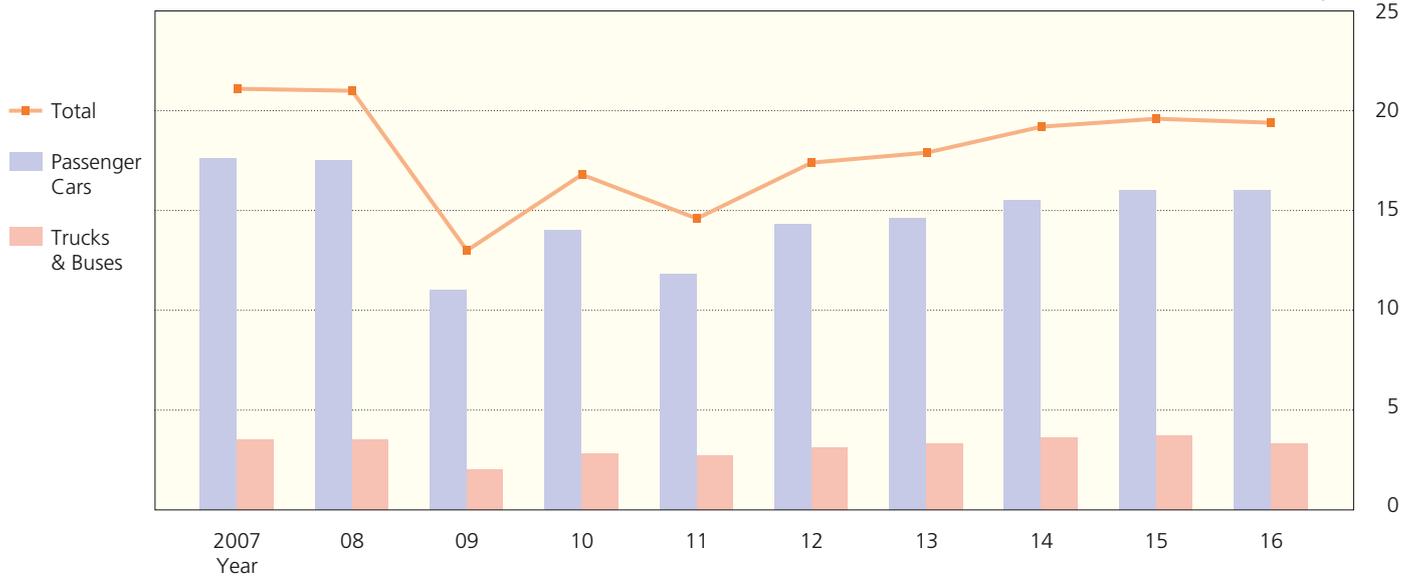
## MOTOR VEHICLE PRODUCTION

Year	Passenger Cars					Standard	Small
	Standard	Small	Mini	Subtotal	Chg. (%)		
1970	51,619	2,377,639	749,450	3,178,708	121.7	258,100	1,253,861
1975	209,032	4,198,550	160,272	4,567,854	116.2	288,170	1,610,475
1980	403,338	6,438,847	195,923	7,038,108	114.0	885,198	2,113,311
1985	494,792	6,991,432	160,592	7,646,816	108.1	1,278,212	1,877,893
1990	1,750,783	7,361,224	835,965	9,947,972	109.9	1,249,525	1,262,943
1995	2,553,703	4,140,629	916,201	7,610,533	97.5	824,140	909,321
2000	3,376,447	3,699,893	1,283,094	8,359,434	103.2	649,180	483,282
2005	4,191,360	3,416,622	1,408,753	9,016,735	103.4	723,663	436,763
2007	5,864,354	2,638,842	1,441,441	9,944,637	101.9	718,901	365,532
2008	5,786,333	2,714,413	1,427,397	9,928,143	99.8	734,923	329,758
2009	3,459,589	2,145,279	1,257,293	6,862,161	69.1	371,686	215,139
2010	4,846,411	2,159,119	1,304,832	8,310,362	121.1	520,627	238,776
2011	4,180,361	1,861,279	1,116,885	7,158,525	86.1	512,260	234,586
2012	4,686,396	2,252,672	1,615,435	8,554,503	119.5	583,156	275,992
2013	4,618,014	1,888,759	1,682,550	8,189,323	95.7	580,012	300,635
2014	4,657,765	1,750,895	1,868,410	8,277,070	101.1	604,768	327,928
2015	4,744,471	1,555,548	1,530,703	7,830,722	94.6	586,645	330,814
2016	4,999,566	1,610,486	1,263,834	7,873,886	100.6	505,964	317,182

Notes: 1. Passenger cars and trucks are classified under Japan's Road Vehicles Act in three categories, based primarily on engine capacity: "standard" (over 2,000cc), "small" (661cc-vehicle and have been treated as components since 1988. 3. "Chg. (%)" means change from the previous year (with the previous year's result indexed at 100).

## TRENDS IN MOTOR VEHICLE PRODUCTION IN VALUE TERMS

x 1 trillion yen



## MOTOR VEHICLE PRODUCTION IN VALUE TERMS

x 1 million yen

Year	Passenger Cars				Trucks					Buses			Total
	Standard	Small	Mini	Subtotal	Standard	Small	Mini	Tractors	Subtotal	Large	Small	Subtotal	
1985	895,041	7,049,323	85,925	8,030,289	1,793,000	1,519,934	679,498	46,745	4,039,177	103,053	101,007	204,060	12,273,526
1990	3,717,356	8,676,715	572,188	12,966,259	1,953,924	1,180,028	591,144	64,913	3,790,009	134,015	66,988	201,003	16,957,271
1995	5,147,637	4,869,427	790,303	10,807,367	1,619,428	849,511	510,579	124,764	3,104,282	107,647	89,441	197,088	14,108,737
2000	6,640,075	4,298,370	1,237,605	12,176,050	1,111,558	543,408	357,765	45,453	2,058,184	80,897	109,007	189,904	14,424,138
2005	9,352,545	4,178,641	1,169,871	14,701,057	1,916,692	588,224	357,615	104,567	2,967,098	127,605	163,069	290,674	17,958,829
2007	13,122,924	3,167,910	1,309,576	17,600,410	2,146,513	512,887	319,400	120,346	3,099,146	129,209	264,477	393,686	21,093,242
2008	13,006,119	3,207,109	1,293,624	17,506,852	2,110,682	463,435	312,374	136,277	3,022,768	136,115	313,594	449,709	20,979,329
2009	7,261,654	2,548,371	1,155,681	10,965,706	1,127,974	312,497	281,888	34,778	1,757,137	109,723	166,115	275,838	12,998,681
2010	10,239,303	2,609,861	1,207,423	14,056,587	1,684,489	358,081	323,800	75,944	2,442,314	118,300	211,359	329,659	16,828,560
2011	8,451,638	2,343,337	1,045,460	11,840,435	1,713,798	351,515	285,454	89,976	2,440,743	97,157	199,301	296,458	14,577,636
2012	9,683,441	3,091,067	1,486,926	14,261,434	1,954,449	422,502	302,836	106,209	2,785,996	120,992	237,199	358,191	17,405,621
2013	10,422,008	2,628,986	1,579,510	14,630,504	1,987,340	479,914	312,959	102,073	2,882,286	119,670	290,001	409,671	17,922,461
2014	11,110,107	2,636,872	1,795,440	15,542,419	2,189,242	546,377	313,522	118,091	3,167,232	124,114	318,410	442,524	19,152,175
2015	12,047,649	2,458,198	1,473,103	15,978,950	2,189,038	576,037	300,368	131,002	3,196,445	139,614	328,498	468,112	19,643,507
2016	12,321,649	2,438,906	1,280,853	16,041,408	1,888,981	566,781	290,991	129,781	2,876,534	172,906	299,220	472,126	19,390,068

Source: Ministry of Economy, Trade and Industry

In vehicle units

Trucks			Buses		Total		Year
Mini	Subtotal	Chg. (%)		Chg. (%)		Chg. (%)	
551,922	2,063,883	102.1	46,566	111.3	5,289,157	113.1	1970
438,987	2,337,632	90.8	36,105	78.8	6,941,591	105.9	1975
914,679	3,913,188	115.2	91,588	146.4	11,042,884	114.6	1980
1,388,583	4,544,688	105.2	79,591	110.2	12,271,095	107.0	1985
986,171	3,498,639	89.0	40,185	95.5	13,486,796	103.5	1990
804,276	2,537,737	93.9	47,266	96.2	10,195,536	96.6	1995
594,356	1,726,818	98.8	54,544	112.7	10,140,796	102.5	2000
546,185	1,706,611	98.6	76,313	126.3	10,799,659	102.7	2005
453,587	1,538,020	93.7	113,670	128.2	11,596,327	101.0	2007
443,718	1,508,399	98.1	139,102	122.4	11,575,644	99.8	2008
398,276	985,101	65.3	86,795	62.4	7,934,057	68.5	2009
449,776	1,209,179	122.7	109,334	126.0	9,628,875	121.4	2010
389,150	1,135,996	93.9	104,109	95.2	8,398,630	87.2	2011
407,206	1,266,354	111.5	122,220	117.4	9,943,077	118.4	2012
427,530	1,308,177	103.3	132,681	108.6	9,630,181	96.9	2013
425,065	1,357,761	103.8	139,834	105.4	9,774,665	101.5	2014
392,290	1,309,749	96.5	137,850	98.6	9,278,321	94.9	2015
377,921	1,201,067	91.7	129,743	94.1	9,204,696	99.2	2016

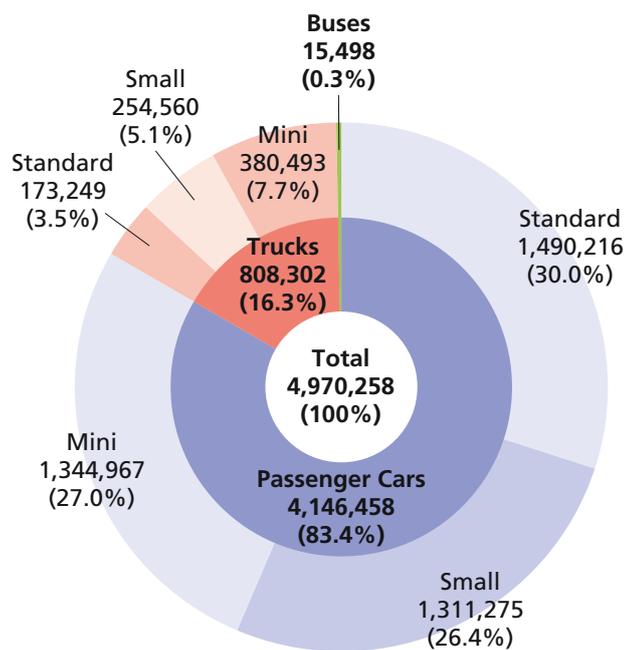
2,000cc), and "mini" (660cc and under); see page 66 for details. 2. KD sets have been excluded since 1979; they represent less than 60% of the cost of compositional components per  
Source: Japan Automobile Manufacturers Association

# Motor Vehicle Sales Total 4.97 Million Units

Passenger car and commercial vehicle demand in Japan in 2016 totalled 4.97 million units, a decrease of 1.5% from the previous year. Total passenger car sales declined 1.6% to 4.15 million units, with standard cars rising 10.0% to 1.49 million units, but small cars and minicars dropping 2.9% to 1.31 million units and 11.0% to 1.35 million units, respectively. Meanwhile, truck sales slipped 1.1% from 2015 to 808,000 units, whereas sales of buses increased 15.8% to 15,000 units.

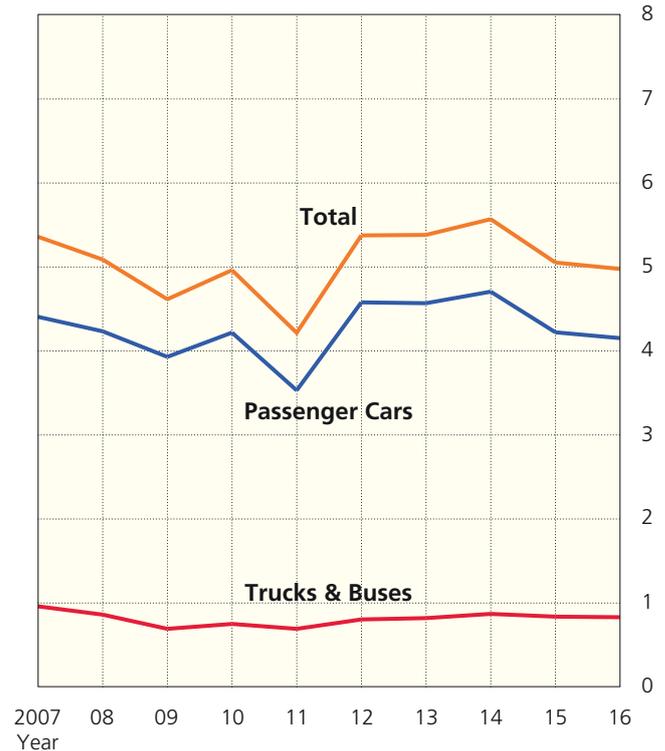
## NEW MOTOR VEHICLE REGISTRATIONS BY TYPE IN 2016

In vehicle units



## TRENDS IN NEW MOTOR VEHICLE REGISTRATIONS

x 1 million units



## NEW MOTOR VEHICLE REGISTRATIONS

Year	Passenger Cars					Trucks				
	Standard	Small	Mini	Subtotal	Chg. (%)	Standard	Small	Mini	Subtotal	Chg. (%)
1970	9,068	1,652,899	717,170	2,379,137	116.8	168,086	986,673	538,743	1,693,502	95.6
1975	49,125	2,531,396	157,120	2,737,641	119.7	121,118	999,155	431,181	1,551,454	100.7
1980	71,931	2,608,215	174,030	2,854,176	94.0	154,472	1,144,167	839,308	2,137,947	102.2
1985	73,539	2,869,527	161,017	3,104,083	100.3	118,009	945,484	1,367,685	2,431,178	104.7
1990	467,490	3,839,221	795,948	5,102,659	115.9	193,775	1,449,678	1,006,456	2,649,909	93.7
1995	889,260	2,654,291	900,355	4,443,906	105.6	177,264	1,411,296	815,265	2,403,825	104.6
2000	770,220	2,208,387	1,281,265	4,259,872	102.5	84,626	1,015,313	586,660	1,686,599	99.6
2005	1,271,349	2,089,992	1,387,068	4,748,409	99.6	197,548	351,708	536,648	1,085,904	101.8
2007	1,299,168	1,654,025	1,447,106	4,400,299	94.8	171,998	293,021	472,713	937,732	86.8
2008	1,250,987	1,549,677	1,426,979	4,227,643	96.1	146,690	249,655	442,914	839,259	89.5
2009	1,160,175	1,480,137	1,283,429	3,923,741	92.8	87,692	180,509	404,742	672,943	80.2
2010	1,419,909	1,507,693	1,284,665	4,212,267	107.4	101,697	187,642	441,755	731,094	108.6
2011	1,139,910	1,246,126	1,138,752	3,524,788	83.7	107,290	185,097	382,393	674,780	92.3
2012	1,411,700	1,602,951	1,557,681	4,572,332	129.7	136,359	227,326	421,765	785,450	116.4
2013	1,399,407	1,472,704	1,690,171	4,562,282	99.8	143,272	235,883	422,820	801,975	102.1
2014	1,437,589	1,422,883	1,839,119	4,699,591	103.0	164,815	252,828	433,671	851,314	106.2
2015	1,354,541	1,349,944	1,511,404	4,215,889	89.7	172,502	259,936	384,796	817,234	96.0
2016	1,490,216	1,311,275	1,344,967	4,146,458	98.4	173,249	254,560	380,493	808,302	98.9

Notes: 1. Chassis-based through 2002, data compilation became vehicle registration number-based as of 2003. 2. Truck figures include special-purpose vehicles (except large ones). 3. Data

## NEW MINI-VEHICLE SALES BY TYPE

In vehicle units

Year	Passenger Cars (Minicars)	Commercial Vehicles ("Bonnet" minivans)	Commercial Vehicles (Cab-over-engine minivans)	Commercial Vehicles (Mini-trucks)	Total	
						Chg. (%)
2000	1,281,805	138,672	177,143	277,295	1,874,915	99.7
2001	1,273,570	120,010	175,594	284,346	1,853,520	98.9
2002	1,307,296	101,789	163,412	258,203	1,830,700	98.8
2003	1,291,889	89,532	172,644	250,690	1,804,755	98.6
2004	1,372,083	77,297	183,995	257,775	1,891,150	104.8
2005	1,387,068	77,547	197,141	261,960	1,923,716	101.7
2006	1,507,598	68,714	204,838	242,469	2,023,619	105.2
2007	1,447,106	57,509	196,040	219,164	1,919,819	94.9
2008	1,426,979	51,622	185,806	205,486	1,869,893	97.4
2009	1,283,429	42,932	167,358	194,452	1,688,171	90.3
2010	1,284,665	41,630	180,505	219,620	1,726,420	102.3
2011	1,138,752	33,023	168,705	180,665	1,521,145	88.1
2012	1,557,681	27,730	198,843	195,192	1,979,446	130.1
2013	1,690,171	25,199	194,728	202,893	2,112,991	106.7
2014	1,839,119	22,929	194,431	216,311	2,272,790	107.6
2015	1,511,404	18,536	184,127	182,133	1,896,200	83.4
2016	1,344,967	19,456	185,927	175,110	1,725,460	91.0

Note: "Chg. (%)" means change from the previous year (with the previous year's result indexed at 100).

Source: Japan Mini Vehicles Association

In vehicle units

Buses				Total	Chg. (%)	Total Vehicle Registrations	Chg. (%)	Total Mini- Vehicles	Chg. (%)	Year
Large	Small	Subtotal	Chg. (%)							
10,256	17,572	27,828	104.2	4,100,467	106.9	2,844,554	104.9	1,255,913	111.7	1970
8,818	11,018	19,836	87.4	4,308,931	111.9	3,720,630	118.8	588,301	82.1	1975
9,414	13,973	23,387	97.5	5,015,510	97.3	4,002,172	93.1	1,013,338	118.3	1980
8,798	12,775	21,573	106.4	5,556,834	102.2	4,028,132	101.3	1,528,702	104.8	1985
9,162	15,763	24,925	105.9	7,777,493	107.2	5,975,089	107.4	1,802,404	106.3	1990
6,475	10,828	17,303	97.0	6,865,034	105.2	5,149,414	104.8	1,715,620	106.2	1995
4,333	12,238	16,571	114.5	5,963,042	101.7	4,095,117	102.7	1,867,925	99.7	2000
5,856	11,898	17,754	97.8	5,852,067	100.0	3,928,351	99.1	1,923,716	101.7	2005
5,153	10,464	15,617	88.7	5,353,648	93.3	3,433,829	92.4	1,919,819	94.9	2007
5,357	9,976	15,333	98.2	5,082,235	94.9	3,212,342	93.5	1,869,893	97.4	2008
4,234	8,338	12,572	82.0	4,609,256	90.7	2,921,085	90.9	1,688,171	90.3	2009
4,777	7,998	12,775	101.6	4,956,136	107.5	3,229,716	110.6	1,726,420	102.3	2010
3,136	7,515	10,651	83.4	4,210,219	84.9	2,689,074	83.3	1,521,145	88.1	2011
4,266	7,672	11,938	112.1	5,369,720	127.5	3,390,274	126.1	1,979,446	130.1	2012
4,181	7,075	11,256	94.3	5,375,513	100.1	3,262,522	96.2	2,112,991	106.7	2013
4,498	7,485	11,983	106.5	5,562,888	103.5	3,290,098	100.8	2,272,790	107.6	2014
5,260	8,127	13,387	111.7	5,046,510	90.7	3,150,310	95.8	1,896,200	83.4	2015
6,543	8,955	15,498	115.8	4,970,258	98.5	3,244,798	103.0	1,725,460	91.0	2016

includes imported cars. 4. "Chg. (%)" means change from the previous year (with the previous year's result indexed at 100).

Sources: Japan Automobile Dealers Association; Japan Mini Vehicles Association

## Sales of Imported Vehicles Show First Increase in 3 Years

Imported vehicle sales in Japan in 2016 totalled 344,000 units, up 4.6% from the previous year, with passenger cars growing 4.6% to 328,000 units and commercial vehicles (trucks and buses) rising 3.4% to 16,000 units. Meanwhile, sales of used imported vehicles increased 3.3% to 531,000 units, with used imported passenger cars and used imported trucks climbing 3.5% to 512,000 units and 2.4% to 16,000 units, respectively.

### TRENDS IN IMPORTED MOTOR VEHICLE SALES

In vehicle units

Year		2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
<b>Vehicles produced by non-Japanese manufacturers</b>	Passenger Cars	230,078	192,317	159,143	180,255	203,800	239,546	278,846	288,830	284,471	294,060
	Commercial Vehicles	1,515	1,585	1,761	1,827	2,057	2,017	1,694	1,366	1,025	1,054
<b>Total</b>		231,593	193,902	160,904	182,082	205,857	241,563	280,540	290,196	285,496	295,114
<b>Vehicles produced by Japanese manufacturers abroad</b>	Passenger Cars	32,918	13,961	8,746	33,028	56,907	61,048	52,440	30,847	28,610	33,547
	Commercial Vehicles	575	11,368	8,877	9,973	12,880	13,382	13,153	14,917	14,516	15,012
<b>Total</b>		33,493	25,329	17,623	43,001	69,787	74,430	65,593	45,764	43,126	48,559
<b>Passenger Cars Total</b>		262,996	206,278	167,889	213,283	260,707	300,594	331,286	319,677	313,081	327,607
<b>Commercial Vehicles Total</b>		2,090	12,953	10,638	11,800	14,937	15,399	14,847	16,283	15,541	16,066
<b>Grand Totals</b>		265,086	219,231	178,527	225,083	275,644	315,993	346,133	335,960	328,622	343,673
<b>Chg. (%)</b>		101.1	82.7	81.4	126.1	122.5	114.6	109.5	97.1	97.8	104.6

Note: "Chg. (%)" means change from the previous year (with the previous year's result indexed at 100).

Source: Japan Automobile Importers Association

### IMPORTED MOTOR VEHICLES (ON CUSTOMS CLEARANCE BASIS)

In vehicle units

Year	Passenger Cars	Chg. (%)	Commercial Vehicles	Other	Total Motor Vehicles	Chg. (%)	Motorcycles
1980	46,285	71.4	547	1,085	47,917	72.2	17,015
1985	52,225	118.3	380	546	53,151	118.4	7,087
1990	251,169	128.6	911	761	252,841	128.6	28,696
1995	401,836	136.0	2,469	390	404,695	130.3	43,936
2000	283,582	109.2	1,470	376	285,428	109.3	74,906
2005	282,654	98.6	1,420	660	284,734	98.4	444,635
2007	291,387	104.5	1,662	708	293,757	104.5	458,722
2008	228,255	78.3	14,288	796	243,339	82.8	413,817
2009	145,687	63.8	9,088	593	155,368	63.8	367,727
2010	230,791	158.4	11,922	780	243,493	156.7	353,260
2011	273,798	118.6	14,185	816	288,799	118.6	386,949
2012	333,380	121.8	15,107	948	349,435	121.0	421,991
2013	343,730	103.1	16,255	1,348	361,333	103.4	438,737
2014	336,764	98.0	16,662	1,278	354,704	98.2	410,143
2015	320,295	95.1	15,873	820	336,988	95.0	353,519
2016	331,207	103.4	17,455	651	349,313	103.7	341,254

Notes: 1. "Other" denotes special-purpose vehicles and engine-mounted chassis. 2. "Chg. (%)" means change from the previous year (with the previous year's result indexed at 100).

Source: Trade Statistics of Japan, Ministry of Finance

### USED IMPORTED VEHICLE SALES

In vehicle units

Year	Passenger Cars	Chg. (%)	Trucks	Chg. (%)	Special-Purpose Vehicles	Chg. (%)	Other	Total	Chg. (%)
2007	543,211	92.6	12,518	112.6	17,574	77.6	204	573,507	92.4
2008	504,710	92.9	12,441	99.4	13,292	75.6	355	530,798	92.6
2009	470,986	93.3	12,547	100.9	10,083	75.9	165	493,781	93.0
2010	461,050	97.9	13,381	106.6	7,878	78.1	182	482,491	97.7
2011	462,435	100.3	14,370	107.4	6,756	85.8	164	483,725	100.3
2012	487,675	105.5	14,636	101.9	5,469	81.0	248	508,028	105.0
2013	487,750	100.0	15,428	105.4	4,724	86.4	220	508,122	100.0
2014	485,055	99.4	15,156	98.2	3,963	83.9	185	504,359	99.3
2015	495,170	102.1	15,373	101.4	3,649	92.1	171	514,363	102.0
2016	512,294	103.5	15,736	102.4	3,103	85.0	202	531,335	103.3

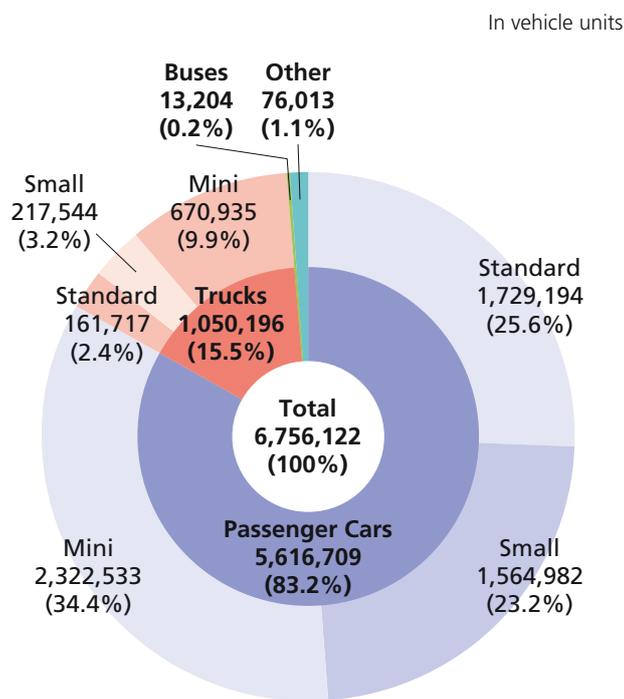
Notes: 1. For motor vehicle classifications in Japan, see page 66. 2. "Other" includes buses, large special-purpose vehicles and small-sized three-wheeled trucks. 3. "Chg. (%)" means change from the previous year (with the previous year's result indexed at 100).

Source: Japan Automobile Importers Association

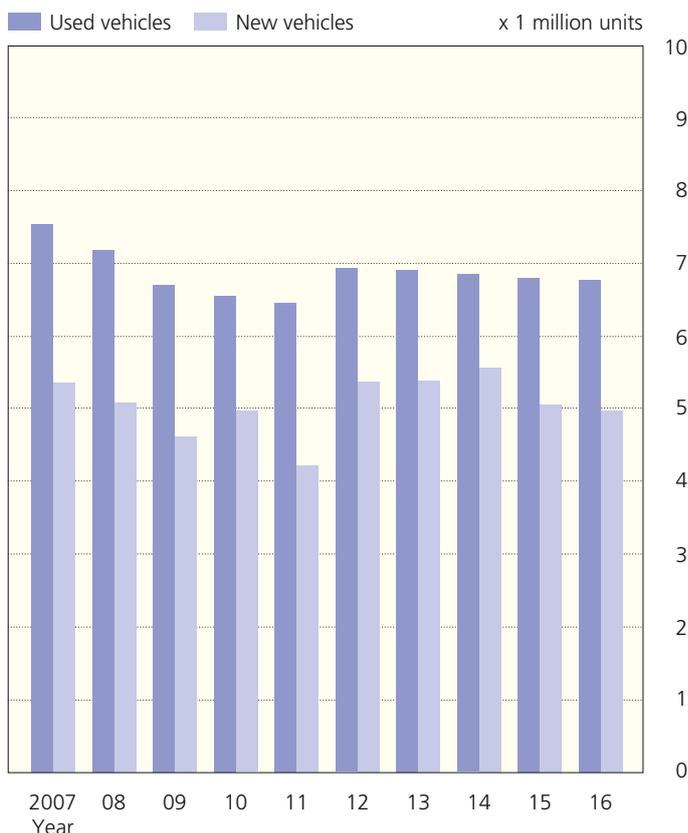
# Used Vehicle Sales Fall for Fourth Consecutive Year

In 2016 sales of used motor vehicles slipped 0.5% from the previous year to total 6.76 million units. Used passenger car sales dipped 0.2% to 5.62 million units, with standard passenger cars rising 3.6% to 1.73 million units, but small cars and minicars dropping 2.4% to 1.57 million units and 1.3% to 2.32 million units, respectively. Sales of used trucks slid 2.2% to 1.05 million units, whereas sales of used buses climbed 0.2% to 13,000 units.

## USED VEHICLE SALES BY TYPE IN 2016



## TRENDS IN NEW AND USED MOTOR VEHICLE SALES



## USED MOTOR VEHICLE SALES

Year	Passenger Cars					Trucks					Buses		Other		Total	Chg. (%)
	Standard	Small	Mini	Subtotal	Chg. (%)	Standard	Small	Mini	Subtotal	Chg. (%)	Chg. (%)	Chg. (%)				
1985	160,150	3,295,092	356,726	3,811,968	100.9	139,459	589,321	1,125,545	1,854,325	108.3	11,655	103.1	44,620	116.7	5,722,568	103.3
1990	304,193	3,945,086	304,782	4,554,061	106.2	185,851	555,634	1,746,495	2,487,980	102.1	13,377	98.3	54,118	107.3	7,109,536	104.7
1995	994,311	3,845,076	727,259	5,566,646	106.6	221,523	521,244	1,538,718	2,281,485	102.2	13,327	105.4	84,409	119.1	7,945,867	105.4
2000	1,742,786	3,050,087	1,448,546	6,241,419	104.8	201,714	412,511	1,169,626	1,783,851	99.1	15,173	102.7	173,475	105.2	8,213,918	103.5
2005	2,002,563	2,460,410	1,890,154	6,353,127	101.0	240,060	368,778	980,714	1,589,552	101.8	18,871	109.5	144,910	106.4	8,106,460	101.3
2007	1,810,596	2,105,122	2,022,866	5,938,584	94.3	220,989	302,043	935,745	1,458,777	90.4	16,418	79.5	116,317	86.1	7,530,096	93.3
2008	1,728,090	1,944,766	1,995,333	5,668,189	95.4	225,848	278,673	884,836	1,389,357	95.2	16,193	98.6	104,516	89.9	7,178,255	95.3
2009	1,619,370	1,855,071	1,864,874	5,339,315	94.2	194,180	266,395	787,957	1,248,532	89.9	15,293	94.4	95,452	91.3	6,698,592	93.3
2010	1,592,110	1,816,696	1,873,466	5,282,272	98.9	177,327	245,642	732,854	1,155,823	92.6	14,163	92.6	87,238	91.4	6,539,496	97.6
2011	1,542,614	1,733,519	1,906,523	5,182,656	98.1	168,470	233,556	769,613	1,171,639	101.4	13,849	97.8	82,007	94.0	6,450,151	98.6
2012	1,688,606	1,826,335	2,133,725	5,648,666	109.0	168,439	235,246	769,469	1,173,154	100.1	14,799	106.9	82,484	100.6	6,919,103	107.3
2013	1,666,732	1,740,725	2,255,560	5,663,017	100.3	167,793	223,734	746,631	1,138,158	97.0	12,830	86.7	81,016	98.2	6,895,021	99.7
2014	1,630,421	1,653,214	2,367,235	5,650,870	99.8	163,536	215,295	721,406	1,100,237	96.7	12,531	97.7	76,536	94.5	6,840,174	99.2
2015	1,668,429	1,602,719	2,354,077	5,625,225	99.5	162,130	211,480	700,589	1,074,199	97.6	13,173	105.1	74,217	97.0	6,786,814	99.2
2016	1,729,194	1,564,982	2,322,533	5,616,709	99.8	161,717	217,544	670,935	1,050,196	97.8	13,204	100.2	76,013	102.4	6,756,122	99.5

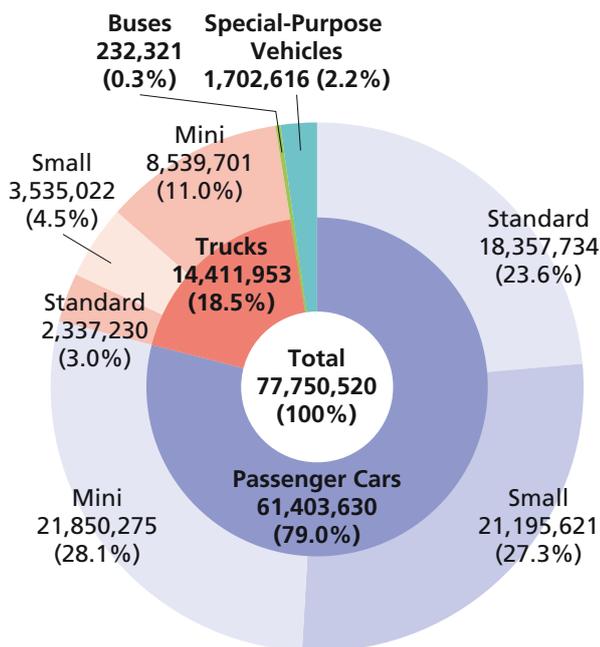
Notes: 1. Passenger cars and trucks are classified under Japan's Road Vehicles Act in three categories, based primarily on engine capacity: "standard" (over 2,000cc), "small" (661cc-2,000cc), and "mini" (660cc and under); see page 66 for details. 2. Includes imported vehicles. 3. "Other" refers to emergency vehicles, special vehicles equipped with beds, refrigerated trucks, tank trucks, tractors, bulldozers, steamrollers, snowplows, snowmobiles, etc., that are assigned special registration numbers. 4. "Chg. (%)" means change from the previous year (with the previous year's result indexed at 100).  
Sources: Japan Automobile Dealers Association; Japan Mini Vehicles Association

# Continued Increase in Number of Motor Vehicles in Use

At the end of December 2016, motor vehicles in use in Japan (excluding motorcycles) totalled 77.8 million units, a 0.4% increase over the previous year. Passenger cars in use increased 0.7% to 61.4 million units, with standard and minicars growing 2.4% and 1.6% to 18.4 million and 21.9 million units respectively, but small cars dropping 1.6% to 21.2 million units. Meanwhile, trucks in use slipped 0.6% from 2015 to 14.4 million units, whereas buses in use rose 1.3% to 232,000 units. At the end of March 2016, the average service life of motor vehicles in Japan was 12.76 years for passenger cars, 13.89 years for trucks, and 16.83 years for buses.

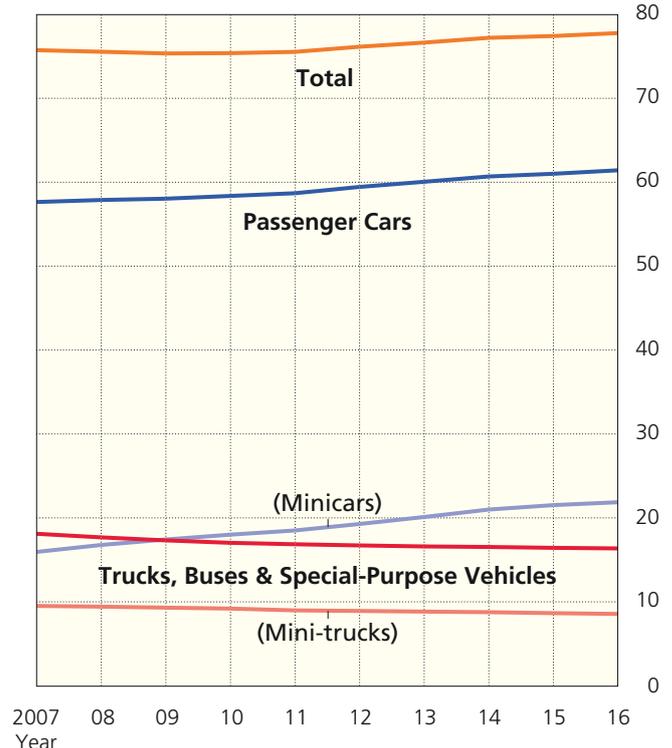
## MOTOR VEHICLES IN USE BY TYPE AT END OF 2016

In vehicle units



## TRENDS IN MOTOR VEHICLES IN USE

x 1 million units



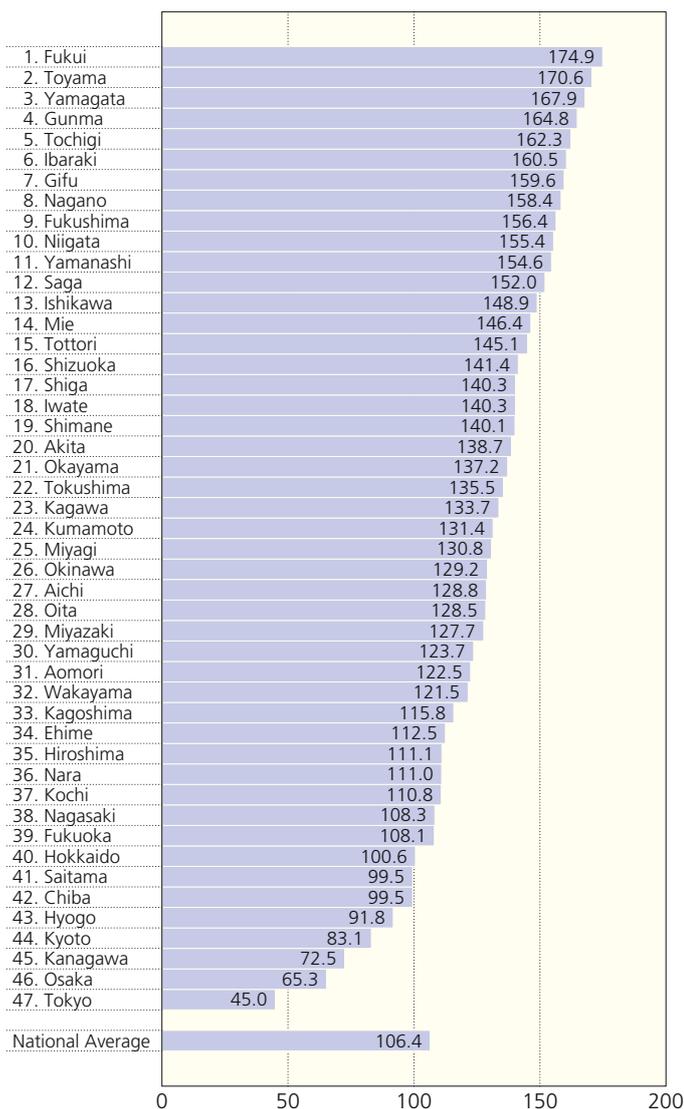
## MOTOR VEHICLES IN USE (at end of every calendar year)

Year	Passenger Cars					Trucks				
	Standard	Small	Mini	Subtotal	Chg. (%)	Standard	Small	Mini	Subtotal	Chg. (%)
1970	77,374	6,457,181	2,244,417	8,778,972	126.6	798,256	4,478,486	3,005,017	8,281,759	107.1
1975	207,511	14,417,680	2,611,130	17,236,321	108.7	1,158,465	6,100,206	2,785,182	10,043,853	98.9
1980	472,314	21,011,096	2,176,110	23,659,520	104.4	1,494,464	7,155,221	4,527,794	13,177,479	104.8
1985	711,914	25,116,179	2,016,487	27,844,580	102.6	1,668,852	6,679,665	8,791,289	17,139,806	105.5
1990	1,784,594	30,554,652	2,584,926	34,924,172	107.1	2,176,488	6,609,536	12,535,415	21,321,439	101.1
1995	7,874,189	31,030,462	5,775,386	44,680,037	104.7	2,574,433	6,213,405	11,642,311	20,430,149	98.9
2000	13,942,626	28,593,491	9,901,258	52,437,375	102.5	2,596,421	5,474,660	10,154,427	18,225,508	97.8
2005	16,634,529	26,254,546	14,201,714	57,090,789	102.0	2,474,378	4,594,363	9,665,130	16,733,871	99.7
2007	16,771,502	24,921,226	15,931,025	57,623,753	100.2	2,455,268	4,323,579	9,495,420	16,274,267	98.6
2008	16,748,373	24,356,113	16,760,486	57,864,972	100.4	2,386,255	4,102,553	9,407,694	15,896,502	97.7
2009	16,688,645	23,919,019	17,412,189	58,019,853	100.3	2,319,612	3,952,534	9,288,679	15,560,825	97.9
2010	16,890,402	23,470,003	17,986,982	58,347,387	100.6	2,281,711	3,825,632	9,177,282	15,284,625	98.2
2011	17,039,684	23,143,892	18,486,738	58,670,314	100.6	2,266,420	3,740,361	8,963,641	14,970,422	97.9
2012	17,294,021	22,868,749	19,258,239	59,421,009	101.3	2,266,836	3,672,649	8,895,635	14,835,120	99.1
2013	17,509,103	22,435,835	20,090,359	60,035,297	101.0	2,270,812	3,614,925	8,818,149	14,703,886	99.1
2014	17,714,352	21,974,741	20,978,424	60,667,517	101.1	2,294,449	3,581,884	8,748,653	14,624,986	99.5
2015	17,935,861	21,547,282	21,504,199	60,987,342	100.5	2,316,208	3,552,373	8,634,637	14,503,218	99.2
2016	18,357,734	21,195,621	21,850,275	61,403,630	100.7	2,337,230	3,535,022	8,539,701	14,411,953	99.4

Notes: 1. "Special-purpose vehicles" refers to emergency vehicles, special vehicles equipped with beds, refrigerated trucks, tank trucks, tractors, bulldozers, steamrollers, snowplows, vehicles. 3. "Chg. (%)" means change from the previous year (with the previous year's result indexed at 100).

## ● PRIVATE PASSENGER CARS IN USE PER 100 HOUSEHOLDS BY PREFECTURE (at March 31, 2016)

In vehicle units



Source: Automobile Inspection & Registration Information Association

## ● PASSENGER CARS IN USE BY YEAR OF FIRST REGISTRATION

At March 31, 2016

Year of First Registration	Vehicles in Use	% of "Vehicles in Use" Total
April 2015-March 2016	2,629,376	6.68
April 2014-March 2015	2,622,658	6.66
April 2013-March 2014	2,920,514	7.42
April 2012-March 2013	2,715,709	6.90
April 2011-March 2012	2,546,180	6.47
April 2010-March 2011	2,366,405	6.01
April 2009-March 2010	2,561,881	6.51
April 2008-March 2009	2,070,457	5.26
April 2007-March 2008	2,357,017	5.99
April 2006-March 2007	2,271,658	5.77
April 2005-March 2006	2,399,626	6.10
April 2004-March 2005	2,124,963	5.40
April 2003-March 2004	1,924,906	4.89
April 2002-March 2003	1,566,714	3.98
-March 2002	6,276,581	15.95
Total "Vehicles in Use"	39,354,645	100.00

## ● AVERAGE AGE BY TYPE

In years

Year	Passenger Cars	Trucks	Buses
2007	7.09	8.68	9.80
2008	7.23	8.98	10.02
2009	7.48	9.16	10.26
2010	7.56	9.62	10.50
2011	7.74	10.04	10.78
2012	7.95	10.43	11.12
2013	8.07	10.73	11.38
2014	8.13	10.93	11.56
2015	8.29	11.09	11.76
2016	8.44	11.23	11.87

## ● AVERAGE SERVICE LIFE BY TYPE

In years

Year	Passenger Cars	Trucks	Buses
2007	11.66	11.92	14.83
2008	11.67	11.72	15.62
2009	11.68	13.50	15.00
2010	12.70	12.72	16.59
2011	12.43	13.04	17.37
2012	12.16	12.81	16.82
2013	12.58	13.24	17.91
2014	12.64	13.31	17.63
2015	12.38	13.72	16.95
2016	12.76	13.89	16.83

Notes: 1. "Average age" means the average number of years elapsed since first registration. 2. "Average service life" means average vehicle lifespan. 3. "Average age" and "average service life" figures are as at the end of every fiscal year. 4. The above three tables exclude mini-vehicles.

Source: Automobile Inspection & Registration Information Association

In vehicle units

Buses				Special-Purpose Vehicles		Total	Chg. (%)	Trailers	Three-Wheeled Vehicles	Year
Large	Small	Subtotal	Chg. (%)		Chg. (%)					
104,895	83,085	187,980	110.5	333,132	110.5	17,581,843	116.2	23,079	243,934	1970
102,186	124,098	226,284	101.7	584,100	101.7	28,090,558	104.9	39,808	47,998	1975
106,633	123,387	230,020	100.4	789,155	100.4	37,856,174	104.5	56,804	17,724	1980
108,967	122,261	231,228	100.5	941,647	100.5	46,157,261	103.7	65,485	6,123	1985
114,819	130,849	245,668	101.6	1,206,390	101.6	57,697,669	104.7	87,359	4,056	1990
114,478	128,617	243,095	99.1	1,500,219	99.1	66,853,500	102.8	120,171	3,621	1995
110,046	125,437	235,483	99.9	1,750,733	99.9	72,649,099	101.3	133,676	3,827	2000
109,917	121,816	231,733	100.3	1,630,062	98.8	75,686,455	101.4	147,626	3,280	2005
109,621	121,307	230,928	99.7	1,585,873	98.7	75,714,821	99.8	154,798	3,201	2007
109,808	120,873	230,681	99.9	1,536,160	96.9	75,528,315	99.8	157,951	3,119	2008
108,760	119,637	228,397	99.0	1,515,411	98.6	75,324,486	99.7	152,381	3,127	2009
108,136	119,135	227,271	99.5	1,502,593	99.2	75,361,876	100.0	152,834	3,120	2010
107,435	118,513	225,948	99.4	1,646,203	109.6	75,512,887	100.2	154,100	3,089	2011
107,528	118,551	226,079	100.1	1,643,325	99.8	76,125,533	100.8	155,835	14,816	2012
107,723	118,204	225,927	99.9	1,653,956	100.6	76,619,066	100.6	157,212	15,478	2013
108,545	118,399	226,944	100.5	1,669,019	100.9	77,188,466	100.7	159,863	16,376	2014
110,096	119,293	229,389	101.1	1,684,382	100.9	77,404,331	100.3	162,350	17,391	2015
112,011	120,310	232,321	101.3	1,702,616	101.1	77,750,520	100.4	165,769	18,494	2016

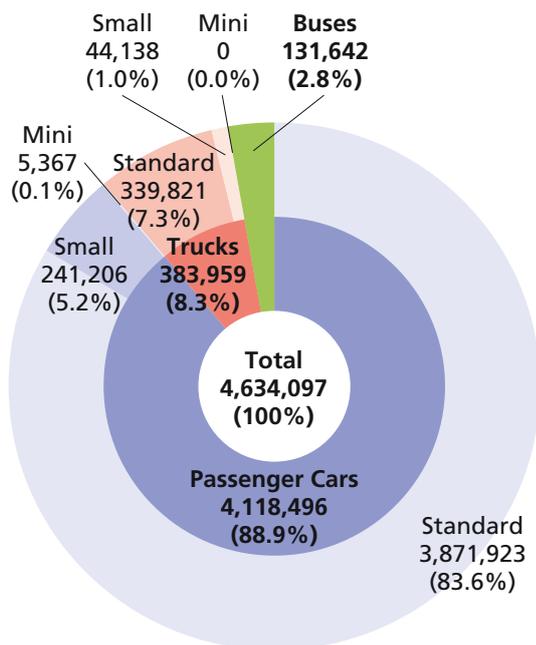
snowmobiles, etc., that are identified as special-purpose vehicles by special registration numbers. 2. "Three-wheeled vehicles" includes three-wheeled passenger cars, trucks, and special-purpose  
Source: Ministry of Land, Infrastructure, Transport and Tourism

# Motor Vehicle Exports Increase for Second Consecutive Year

Exports of motor vehicles in 2016 grew 1.2% from the previous year to 4.63 million units. Passenger car exports rose 3.7% to 4.12 million units, whereas truck exports and bus exports dropped 17.7% and 6.8%, to 384,000 units and 132,000 units respectively.

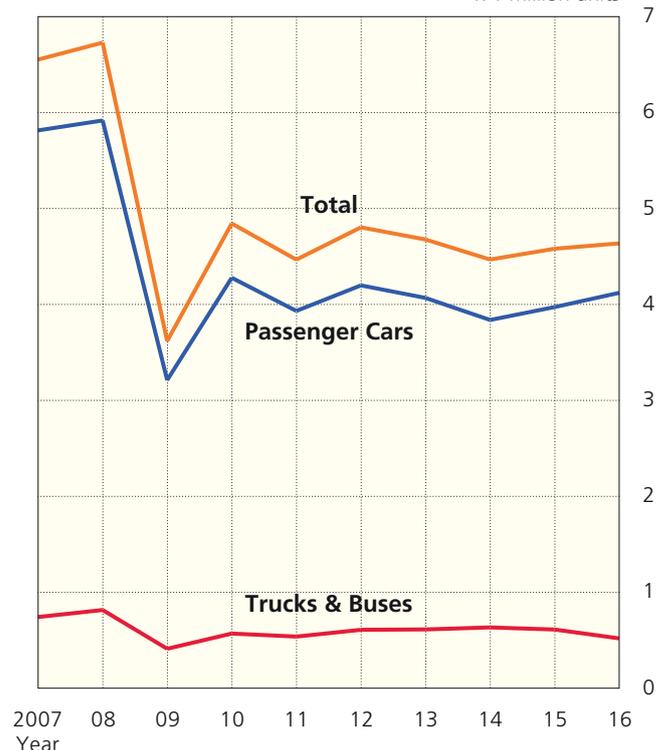
## MOTOR VEHICLE EXPORTS BY TYPE IN 2016

In vehicle units



## TRENDS IN MOTOR VEHICLE EXPORTS

x 1 million units



## MOTOR VEHICLE EXPORTS

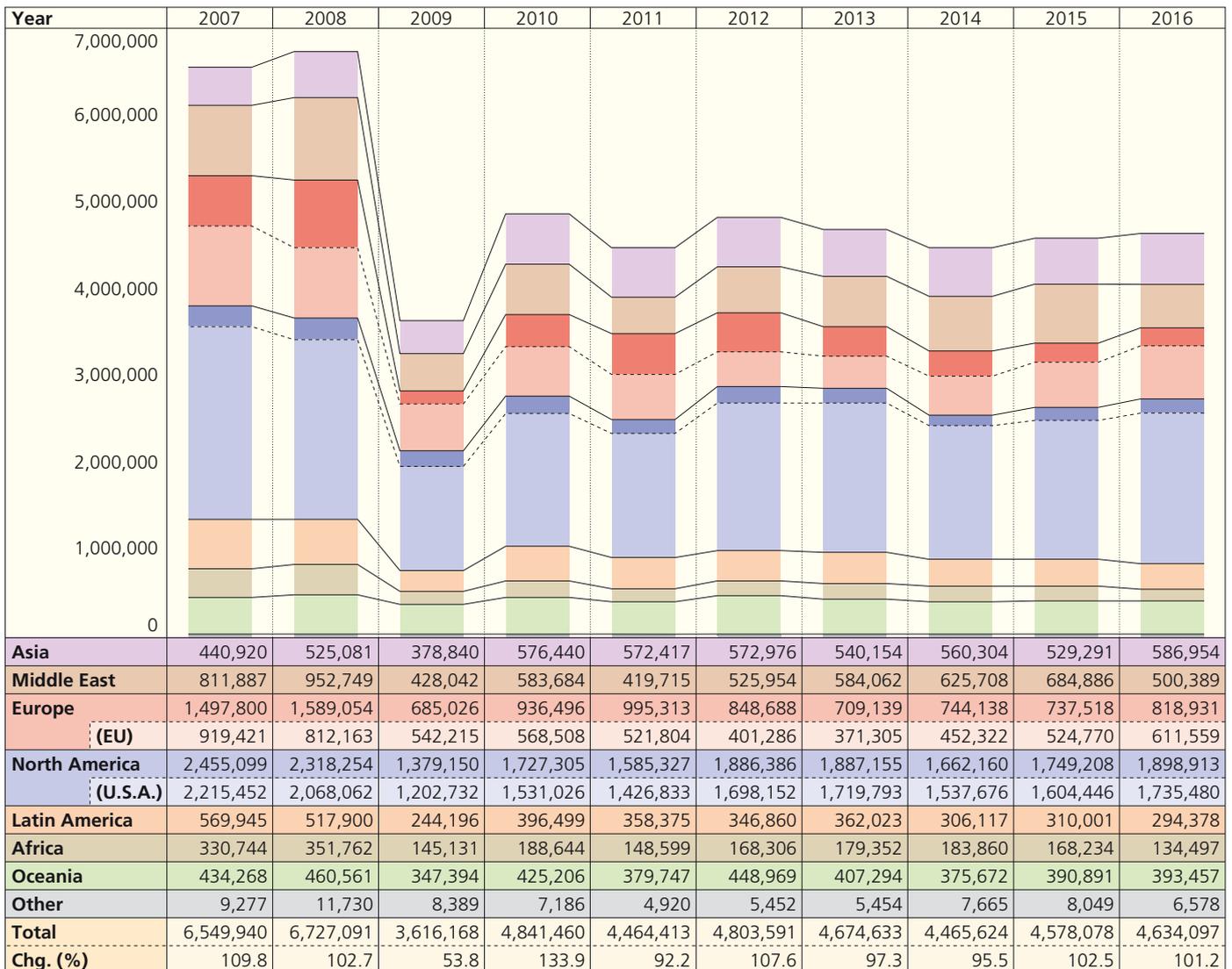
Year	Passenger Cars					Chg. (%)	Standard	Small
	Standard	Small	Mini	Subtotal				
1970		715,450		10,136	725,586	129.5	65,170	272,549
1975		1,821,835		5,451	1,827,286	105.8	168,370	643,232
1980	345,413	3,580,623		21,124	3,947,160	127.2	332,257	1,548,251
1985	493,047	3,932,414		1,301	4,426,762	111.2	1,196,973	1,029,757
1990	1,343,967	3,138,147		16	4,482,130	101.8	944,737	364,376
1995	1,156,122	1,732,050		8,044	2,896,216	86.2	612,654	236,929
2000	2,333,263	1,462,069		520	3,795,852	101.0	530,823	86,329
2005	3,164,603	1,198,273		292	4,363,168	103.5	521,848	89,946
2007	4,450,934	1,359,414		1,611	5,811,959	109.8	527,010	89,128
2008	4,379,569	1,534,975		885	5,915,429	101.8	567,596	90,581
2009	2,403,359	804,980		300	3,208,639	54.2	267,060	48,447
2010	3,453,951	818,660		2,755	4,275,366	133.2	397,404	52,908
2011	3,176,195	743,509		10,200	3,929,904	91.9	369,973	53,786
2012	3,550,010	641,749		6,735	4,198,494	106.8	410,251	66,652
2013	3,564,559	499,541		1,419	4,065,519	96.8	397,694	74,465
2014	3,593,941	239,198		2,456	3,835,595	94.3	408,859	79,614
2015	3,759,771	205,727		4,505	3,970,003	103.5	392,531	74,245
2016	3,871,923	241,206		5,367	4,118,496	103.7	339,821	44,138

Notes: 1. Figures represent ex-factory export shipments of motor vehicles manufactured in Japan, which are classified in the above categories as per Japanese law, including the Road Vehicles Act. compositional components per vehicle and have been treated as components since 1988. 4. "Chg. (%)" means change from the previous year (with the previous year's result indexed at 100).

## MOTOR VEHICLE EXPORT TRENDS BY DESTINATION

■ Asia 
 ■ Middle East 
 ■ Europe (EU) 
 ■ North America (U.S.A.) 
 ■ Latin America 
 ■ Africa 
 ■ Oceania 
 ■ Other

In vehicle units



Note: "Chg. (%)" means change from the previous year (with the previous year's result indexed at 100).

In vehicle units

Trucks			Buses		Total		Year
Mini	Subtotal	Chg. (%)		Chg. (%)		Chg. (%)	
13,892	351,611	120.9	9,579	141.6	1,086,776	126.7	1970
22,071	833,673	95.3	16,653	104.3	2,677,612	102.3	1975
73,177	1,953,685	137.2	66,116	179.4	5,966,961	130.8	1980
11,374	2,238,104	108.0	65,606	116.7	6,730,472	110.2	1985
8	1,309,121	90.6	39,961	113.7	5,831,212	99.1	1990
276	849,859	82.8	44,734	60.8	3,790,809	85.0	1995
718	617,870	100.8	41,163	107.3	4,454,885	101.0	2000
162	611,956	89.0	77,937	139.6	5,053,061	101.9	2005
312	616,450	106.7	121,531	130.4	6,549,940	109.8	2007
41	658,218	106.8	153,444	126.3	6,727,091	102.7	2008
0	315,507	47.9	92,022	60.0	3,616,168	53.8	2009
0	450,312	142.7	115,782	125.8	4,841,460	133.9	2010
8	423,767	94.1	110,742	95.6	4,464,413	92.2	2011
16	476,919	112.5	128,178	115.7	4,803,591	107.6	2012
20	472,179	99.0	136,935	106.8	4,674,633	97.3	2013
0	488,473	103.5	141,556	103.4	4,465,624	95.5	2014
0	466,776	95.6	141,299	99.8	4,578,078	102.5	2015
0	383,959	82.3	131,642	93.2	4,634,097	101.2	2016

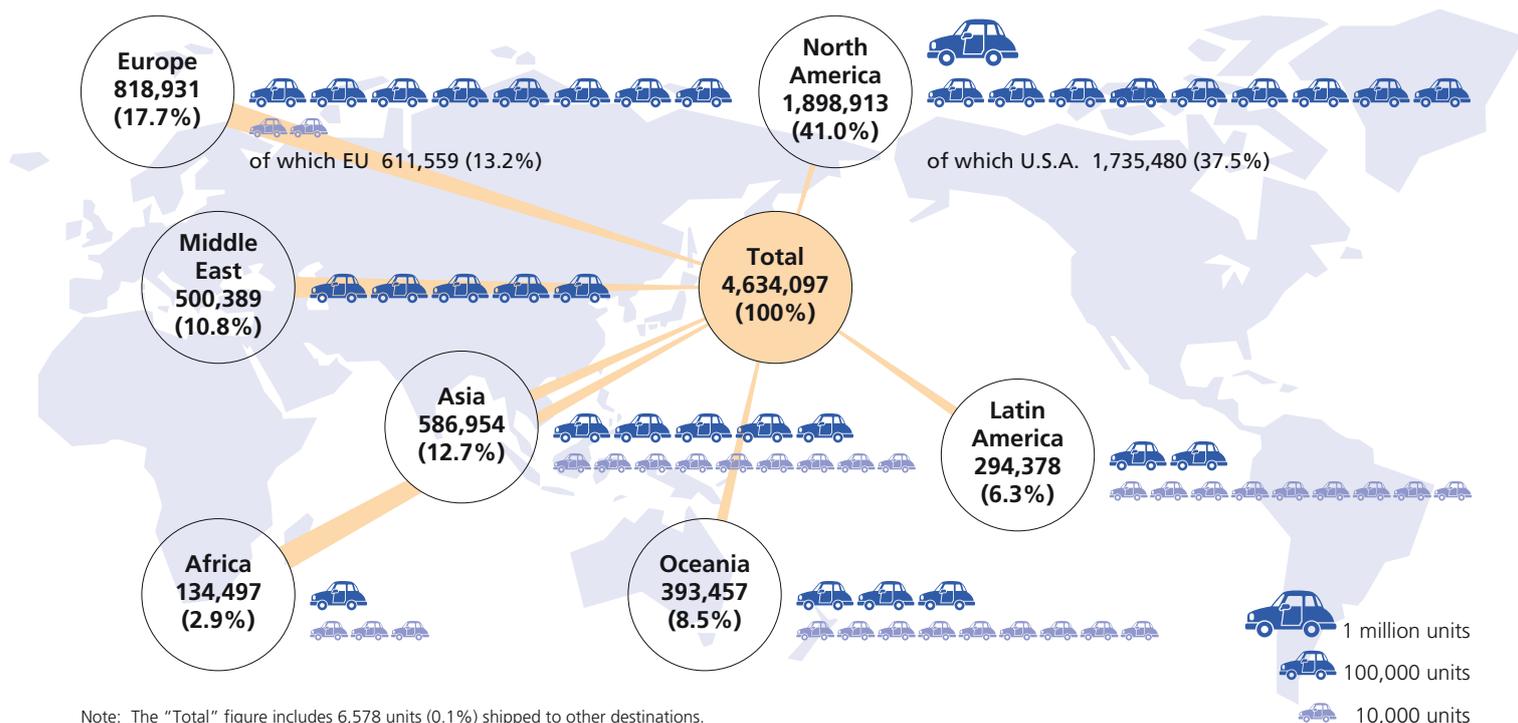
2. Vehicle type classification in this table differs somewhat from that used in Ministry of Finance export data. 3. KD sets have been excluded since 1979; they represent less than 60% of the cost of Source: Japan Automobile Manufacturers Association

# An Increase in Motor Vehicle Exports to Europe, Asia, North America, and Oceania

Compared to the previous year, motor vehicle exports in 2016 climbed 11.0% to Europe, 10.9% to Asia, 8.6% to North America, and 0.7% to Oceania, but declined 26.9% to the Middle East, 20.1% to Africa, and 5.0% to Latin America.

## MOTOR VEHICLE EXPORTS BY DESTINATION IN 2016

In vehicle units



## MOTOR VEHICLE EXPORT TRENDS BY DESTINATION

In %

Destination	2007	08	09	10	11	12	13	14	15	16
Asia	6.7	7.8	10.5	11.9	12.8	11.9	11.6	12.5	11.6	12.7
Middle East	12.4	14.2	11.8	12.1	9.4	11.0	12.5	14.0	15.0	10.8
Europe	22.9	23.6	19.0	19.3	22.3	17.7	15.2	16.7	16.1	17.7
(EU)	(14.0)	(12.1)	(15.0)	(11.7)	(11.7)	(8.4)	(7.9)	(10.1)	(11.5)	(13.2)
North America	37.5	34.5	38.1	35.7	35.5	39.3	40.4	37.2	38.2	41.0
(U.S.A.)	(33.8)	(30.7)	(33.3)	(31.6)	(32.0)	(35.4)	(36.8)	(34.4)	(35.0)	(37.5)
Latin America	8.7	7.7	6.8	8.2	8.0	7.2	7.7	6.9	6.8	6.3
Africa	5.1	5.2	4.0	3.9	3.4	3.5	3.8	4.1	3.7	2.9
Oceania	6.6	6.8	9.6	8.8	8.5	9.3	8.7	8.4	8.5	8.5
Other	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.2	0.1	0.1

# MOTOR VEHICLE EXPORTS BY DESTINATION & BY VEHICLE TYPE IN 2016

In vehicle units

Destination		Passenger Cars				Trucks				Buses	Total	
		Standard	Small	Mini	Subtotal	Standard	Small	Mini	Subtotal			
Asia	South Korea	19,245	0	0	19,245	0	0	0	0	1	19,246	
	China	191,678	3,002	0	194,680	123	0	0	123	456	195,259	
	Taiwan	77,624	2,631	0	80,255	8,015	198	0	8,213	1,111	89,579	
	Hong Kong	9,888	3,396	200	13,484	6,524	248	0	6,772	1,124	21,380	
	Thailand	1,678	9	0	1,687	5,974	0	0	5,974	8,514	16,175	
	Singapore	23,011	3,969	0	26,980	9,884	2,052	0	11,936	359	39,275	
	Malaysia	17,259	2,340	0	19,599	13,192	2,676	0	15,868	3,465	38,932	
	Philippines	15,304	1,055	0	16,359	9,031	1,875	0	10,906	28,284	55,549	
	Indonesia	12,710	1,200	2	13,912	12,185	0	0	12,185	3,423	29,520	
	Pakistan	108	4,005	0	4,113	7,300	156	0	7,456	1,777	13,346	
	Other	43,246	1,131	206	44,583	15,697	4,470	0	20,167	3,943	68,693	
Subtotal		411,751	22,738	408	434,897	87,925	11,675	0	99,600	52,457	586,954	
Middle East	Bahrain	14,310	11	0	14,321	2,135	150	0	2,285	1,593	18,199	
	Saudi Arabia	61,608	50	0	61,658	31,364	900	0	32,264	2,518	96,440	
	Kuwait	34,617	69	0	34,686	2,092	430	0	2,522	1,684	38,892	
	Oman	45,172	199	0	45,371	16,072	1,277	0	17,349	5,925	68,645	
	Israel	41,134	4,301	0	45,435	1,620	0	0	1,620	0	47,055	
	United Arab Emirates	106,959	700	0	107,659	17,248	2,995	0	20,243	9,268	137,170	
	Qatar	23,881	58	0	23,939	1,882	859	0	2,741	3,216	29,896	
	Other	48,476	520	0	48,996	11,996	764	0	12,760	2,336	64,092	
Subtotal		376,157	5,908	0	382,065	84,409	7,375	0	91,784	26,540	500,389	
Europe	Sweden	26,860	304	1	27,165	0	0	0	0	0	27,165	
	Denmark	6,529	625	0	7,154	0	0	0	0	0	7,154	
	UK	104,945	45,490	0	150,435	0	0	0	0	0	150,435	
	Netherlands	13,506	1,226	5	14,737	18	0	0	18	0	14,755	
	Belgium	19,007	1,313	0	20,320	0	0	0	0	0	20,320	
	France	61,487	3,581	4,283	69,351	0	0	0	0	0	69,351	
	Germany	110,935	10,131	60	121,126	0	0	0	0	0	121,126	
	Spain	51,022	1,062	0	52,084	0	0	0	0	0	52,084	
	Italy	46,552	6,802	0	53,354	3,708	0	0	3,708	0	57,062	
	Finland	9,055	37	0	9,092	9	0	0	9	0	9,101	
	Poland	21,208	217	0	21,425	20	0	0	20	0	21,445	
	Austria	14,436	1,604	0	16,040	68	0	0	68	64	16,172	
	Greece	516	589	0	1,105	0	0	0	0	0	1,105	
	Other	40,259	1,472	10	41,741	2,539	4	0	2,543	0	44,284	
	Subtotal		526,317	74,453	4,359	605,129	6,362	4	0	6,366	64	611,559
	Norway		23,623	444	425	24,492	455	0	0	455	0	24,947
	Switzerland		18,788	923	71	19,782	0	0	0	0	0	19,782
	Russia		132,651	169	0	132,820	3,477	144	0	3,621	275	136,716
Turkey		7,320	1,164	0	8,484	3,938	0	0	3,938	0	12,422	
Ukraine		10,691	53	0	10,744	234	0	0	234	0	10,978	
Other		2,180	345	2	2,527	0	0	0	0	0	2,527	
Subtotal		721,570	77,551	4,857	803,978	14,466	148	0	14,614	339	818,931	
North America	Canada	157,397	3,022	85	160,504	2,929	0	0	2,929	0	163,433	
	U.S.A.	1,629,748	78,371	15	1,708,134	26,828	518	0	27,346	0	1,735,480	
	Subtotal		1,787,145	81,393	100	1,868,638	29,757	518	0	30,275	0	1,898,913
Latin America	Mexico	86,995	10,383	0	97,378	18,585	670	0	19,255	8,495	125,128	
	Puerto Rico	6,542	527	0	7,069	4	0	0	4	0	7,073	
	Colombia	14,513	701	0	15,214	10,374	257	0	10,631	1,088	26,933	
	Ecuador	4,236	279	1	4,516	249	182	0	431	896	5,843	
	Peru	12,634	755	0	13,389	2,787	751	0	3,538	2,070	18,997	
	Chile	33,486	5,481	0	38,967	3,469	633	0	4,102	329	43,398	
	Brazil	7,171	0	0	7,171	0	0	0	0	0	7,171	
	Other	34,099	4,346	0	38,445	11,971	1,975	0	13,946	7,444	59,835	
Subtotal		199,676	22,472	1	222,149	47,439	4,468	0	51,907	20,322	294,378	
Africa	Algeria	1,647	0	0	1,647	321	180	0	501	0	2,148	
	Egypt	14,835	0	0	14,835	9,145	14,016	0	23,161	2,761	40,757	
	Nigeria	352	0	0	352	334	0	0	334	174	860	
	Kenya	209	7	0	216	4,933	444	0	5,377	100	5,693	
	South Africa	25,496	1,706	0	27,202	12,512	1,247	0	13,759	17,047	58,008	
	Other	12,527	645	0	13,172	8,148	814	0	8,962	4,897	27,031	
Subtotal		55,066	2,358	0	57,424	35,393	16,701	0	52,094	24,979	134,497	
Oceania	Australia	285,888	21,030	0	306,918	30,281	2,774	0	33,055	2,607	342,580	
	New Zealand	27,124	7,335	1	34,460	4,939	320	0	5,259	650	40,369	
	Other	5,184	416	0	5,600	2,421	159	0	2,580	2,328	10,508	
	Subtotal		318,196	28,781	1	346,978	37,641	3,253	0	40,894	5,585	393,457
Other		2,362	5	0	2,367	2,791	0	0	2,791	1,420	6,578	
<b>Grand Totals</b>		<b>3,871,923</b>	<b>241,206</b>	<b>5,367</b>	<b>4,118,496</b>	<b>339,821</b>	<b>44,138</b>	<b>0</b>	<b>383,959</b>	<b>131,642</b>	<b>4,634,097</b>	

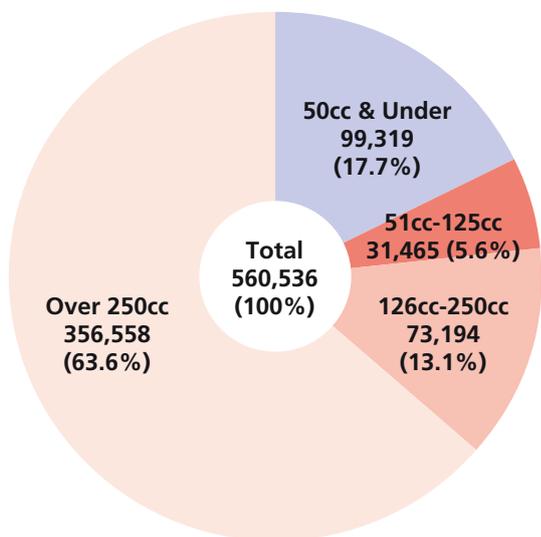
Source: Japan Automobile Manufacturers Association

# Motorcycle Production Shows First Increase in 2 Years

Overall domestic motorcycle production in 2016 rose 7.3% over the previous year to 561,000 units. Class 1 motor-driven cycles (50cc and under) surged 49.5% to 99,000 units, Class 2 motor-driven cycles (51cc to 125cc) grew 1.9% to 31,000 units, and small-sized motorcycles (over 250cc) expanded 2.4% to 357,000 units, whereas mini-sized motorcycles (126cc to 250cc) fell 4.9% to 73,000 units. The combined total for larger motorcycles (all those over 50cc) climbed 1.2% to 461,000 units.

## MOTORCYCLE PRODUCTION BY ENGINE CAPACITY IN 2016

In vehicle units



## TRENDS IN MOTORCYCLE PRODUCTION

x 1 million units



## MOTORCYCLE PRODUCTION

In vehicle units

Year	Motor-Driven Cycles Class 1 (50cc & Under)	Over 50cc				Subtotal	Total	Chg. (%)
		Motor-Driven Cycles Class 2 (51cc-125cc)	Mini-Sized Motorcycles (126cc-250cc)	Small-Sized Motorcycles (Over 250cc)				
1970	895,599	1,407,205	259,145	385,723	2,052,073	2,947,672	114.4	
1975	1,030,822	1,887,701	331,733	552,291	2,771,725	3,802,547	84.3	
1980	2,493,910	2,181,206	660,831	1,098,577	3,940,614	6,434,524	143.8	
1985	2,014,850	1,373,423	469,728	678,346	2,521,497	4,536,347	112.7	
1990	1,343,220	686,734	270,304	506,637	1,463,675	2,806,895	100.4	
1995	951,803	1,038,938	217,738	544,760	1,801,436	2,753,239	101.0	
2000	636,546	630,221	297,433	851,191	1,778,845	2,415,391	107.3	
2005	298,549	260,343	279,274	953,419	1,493,036	1,791,585	103.0	
2007	264,336	178,827	269,689	963,245	1,411,761	1,676,097	94.6	
2008	162,928	128,381	192,863	742,667	1,063,911	1,226,839	73.2	
2009	108,417	57,424	125,384	353,676	536,484	644,901	52.6	
2010	87,513	80,630	108,950	387,082	576,662	664,175	103.0	
2011	104,936	64,507	104,636	365,108	534,251	639,187	96.2	
2012	90,886	39,569	91,925	373,093	504,587	595,473	93.2	
2013	74,940	27,670	88,108	372,591	488,369	563,309	94.6	
2014	76,569	31,529	93,536	395,424	520,489	597,058	106.0	
2015	66,438	30,886	76,945	348,125	455,956	522,394	87.5	
2016	99,319	31,465	73,194	356,558	461,217	560,536	107.3	

Notes: 1. KD sets have been excluded since 1979; they represent less than 60% of the cost of compositional components per vehicle and have been treated as components since 1988. 2. "Chg. (%)" means change from the previous year (with the previous year's result indexed at 100).

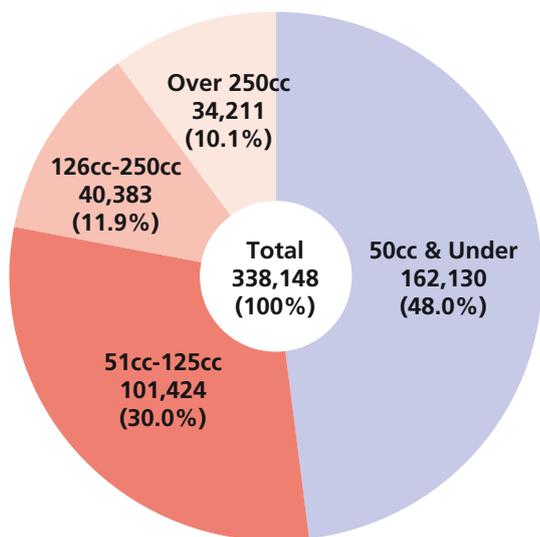
Source: Japan Automobile Manufacturers Association

# Motorcycle Sales Total 338,148 Units

Domestic motorcycle sales (defined here as ex-factory shipments to domestic dealers, not as new registrations) in 2016 totalled 338,000 units, down 9.3% from the previous year. By engine capacity, whereas sales of Class 2 motor-driven cycles (51cc to 125cc) increased 6.9% to 101,000 units, sales of Class 1 motor-driven cycles (50cc and under), mini-sized motorcycles (126cc to 250cc), and small-sized motorcycles (over 250cc) dropped 16.4% to 162,000 units, 16.8% to 40,000 units, and 3.6% to 34,000 units, respectively. Overall sales of motorcycles with engine capacity over 50cc thus totalled 176,000 units, a decrease of 1.6% from 2015.

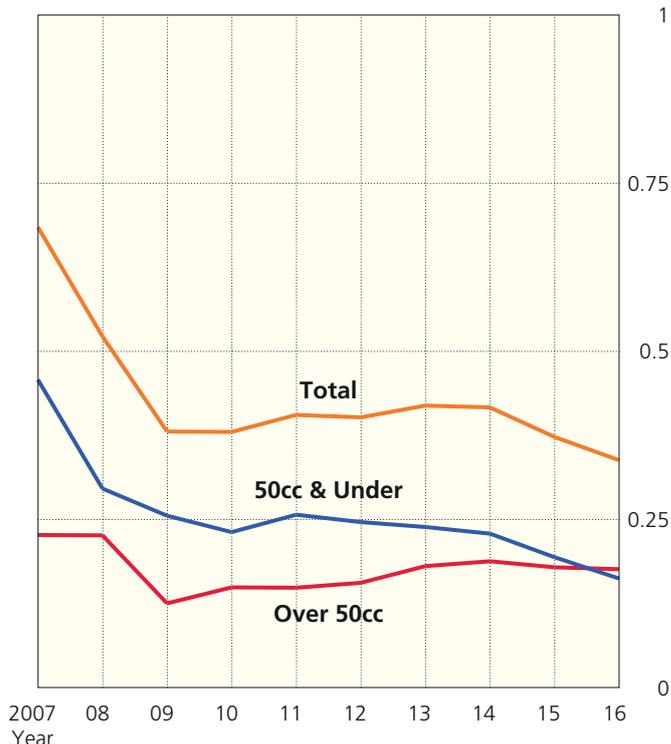
## MOTORCYCLE SALES BY ENGINE CAPACITY IN 2016

In vehicle units



## TRENDS IN MOTORCYCLE SALES

x 1 million units



## MOTORCYCLE SALES (SHIPMENTS TO DOMESTIC DEALERS)

In vehicle units

Year	Motor-Driven Cycles Class 1 (50cc & Under)	Over 50cc				Subtotal	Total	Chg. (%)
		Motor-Driven Cycles Class 2 (51cc-125cc)	Mini-Sized Motorcycles (126cc-250cc)	Small-Sized Motorcycles (Over 250cc)				
1980	1,978,426	200,238	88,188	103,184	391,610	2,370,036	122.7	
1985	1,646,115	130,574	173,887	145,674	450,135	2,096,250	102.6	
1990	1,213,512	169,618	158,882	76,921	405,421	1,618,933	97.6	
1995	884,718	138,115	98,833	91,186	328,134	1,212,852	101.6	
2000	558,459	102,116	72,886	46,416	221,418	779,877	93.2	
2005	470,922	88,747	99,658	47,186	235,591	706,513	100.9	
2007	458,023	100,720	86,081	40,120	226,921	684,944	97.8	
2008	295,908	120,990	55,674	49,743	226,407	522,315	76.3	
2009	255,561	65,888	37,180	22,148	125,216	380,777	72.9	
2010	231,247	96,368	27,275	25,352	148,995	380,242	99.9	
2011	257,045	95,702	31,767	21,019	148,488	405,533	106.7	
2012	246,095	90,291	39,707	25,802	155,800	401,895	99.1	
2013	238,786	100,947	47,788	31,877	180,612	419,398	104.4	
2014	228,918	96,249	53,072	38,484	187,805	416,723	99.4	
2015	193,842	94,851	48,515	35,488	178,854	372,696	89.4	
2016	162,130	101,424	40,383	34,211	176,018	338,148	90.7	

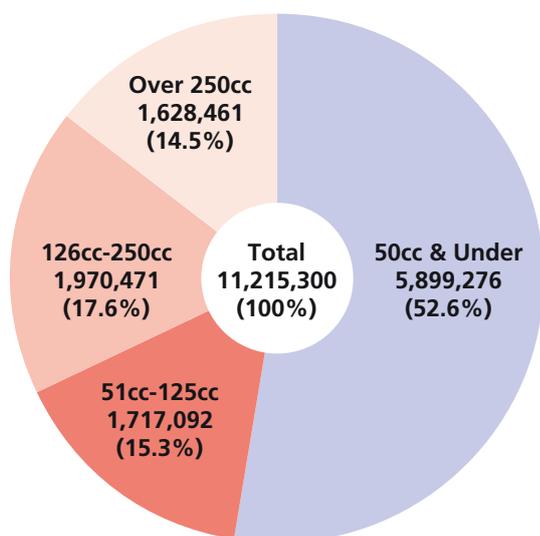
Note: "Chg. (%)" means change from the previous year (with the previous year's result indexed at 100).

## 11.2 Million Motorcycles in Use

At March 31, 2016, motorcycles in use in Japan totalled 11.22 million units, down 2.3% from the previous year. By engine capacity, Class 1 motor-driven cycles, accounting for 52.6% of all motorcycles in use, dropped 4.7% to 5.90 million units and mini-sized motorcycles slipped 0.4% to 1.97 million units in 2016, whereas Class 2 motor-driven cycles and small-sized motorcycles in use rose 0.8% and 1.1%, to 1.72 million and 1.63 million units respectively. Thus, motorcycles over 50cc in use increased 0.4%, to a total of 5.32 million units.

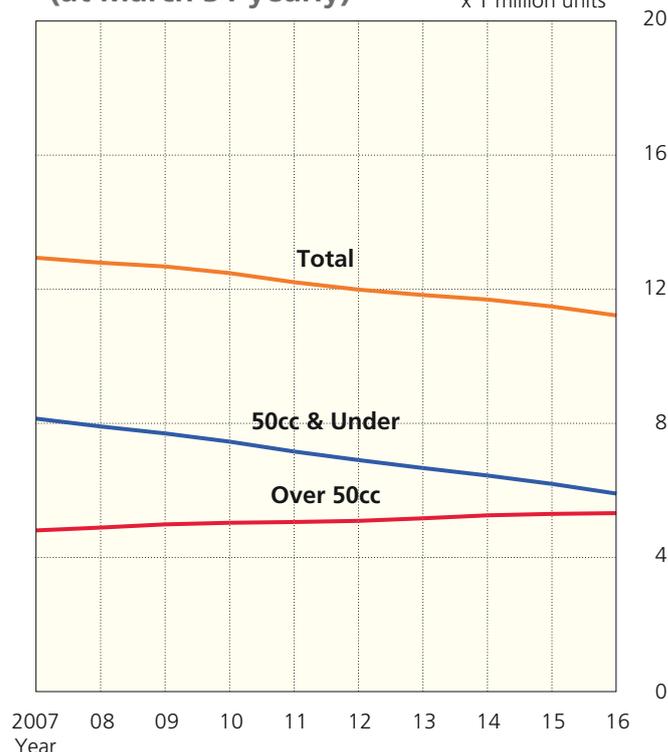
### MOTORCYCLES IN USE BY ENGINE CAPACITY (at March 31, 2016)

In vehicle units



### TRENDS IN MOTORCYCLES IN USE (at March 31 yearly)

x 1 million units



### MOTORCYCLES IN USE (at March 31 yearly)

In vehicle units

Year	Motor-Driven Cycles Class 1 (50cc & Under)	Over 50cc				Total	Chg. (%)
		Motor-Driven Cycles Class 2 (51cc-125cc)	Mini-Sized Motorcycles (126cc-250cc)	Small-Sized Motorcycles (Over 250cc)	Subtotal		
1970	3,727,426	4,431,745	583,316	109,771	5,124,832	8,852,258	100.5
1975	4,851,140	3,132,818	492,307	276,715	3,901,840	8,752,980	101.9
1980	8,794,335	2,281,006	506,567	383,639	3,171,212	11,965,547	109.8
1985	14,609,399	1,747,957	1,047,426	775,627	3,571,010	18,180,409	104.8
1990	13,539,269	1,517,228	1,669,771	1,045,519	4,232,518	17,771,787	97.6
1995	11,165,390	1,421,031	1,823,446	1,177,229	4,421,706	15,587,096	98.0
2000	9,643,487	1,337,395	1,704,522	1,288,399	4,330,316	13,973,803	98.0
2005	8,566,613	1,353,732	1,857,439	1,397,392	4,608,563	13,175,176	99.3
2007	8,134,692	1,397,085	1,950,512	1,452,893	4,800,490	12,935,182	99.0
2008	7,902,051	1,429,738	1,976,829	1,478,724	4,885,291	12,787,342	98.9
2009	7,694,009	1,479,588	1,996,311	1,505,304	4,981,203	12,675,212	99.1
2010	7,448,862	1,511,440	1,992,939	1,524,176	5,028,555	12,477,417	98.4
2011	7,154,455	1,540,667	1,975,623	1,535,181	5,051,471	12,205,926	97.8
2012	6,899,459	1,582,925	1,959,845	1,542,856	5,085,626	11,985,085	98.2
2013	6,661,807	1,626,094	1,969,187	1,566,341	5,161,622	11,823,429	98.7
2014	6,438,002	1,674,884	1,980,411	1,595,335	5,250,630	11,688,632	98.9
2015	6,188,710	1,704,083	1,978,462	1,611,089	5,293,634	11,482,344	98.2
2016	5,899,276	1,717,092	1,970,471	1,628,461	5,316,024	11,215,300	97.7

Notes: 1. Motor-driven cycle data is as at April 1, and since 2006 motorcycles with engine capacity of 125cc and under whose owners fail to pay the mandatory motorcycle ownership tax are not included in this data. 2. "Chg. (%)" means change from the previous year (with the previous year's result indexed at 100).

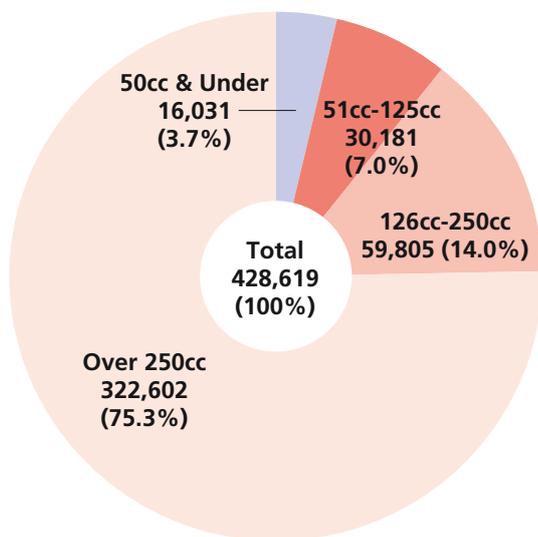
Sources: Ministry of Land, Infrastructure, Transport and Tourism; since 2006 (only for the 125cc-and-under categories), Ministry of Internal Affairs and Communications

# Overall Motorcycle Exports Increase for First Time in 2 Years

Motorcycle exports in 2016 grew 2.6% from the previous year to 429,000 units. By engine capacity, exports of Class 1 motor-driven cycles surged 36.3% to 16,000 units and small-sized motorcycles rose 2.3% to 323,000 units, whereas Class 2 motor-driven cycles and mini-sized motorcycles fell 2.1% and 0.1%, to 30,000 units and 60,000 units respectively.

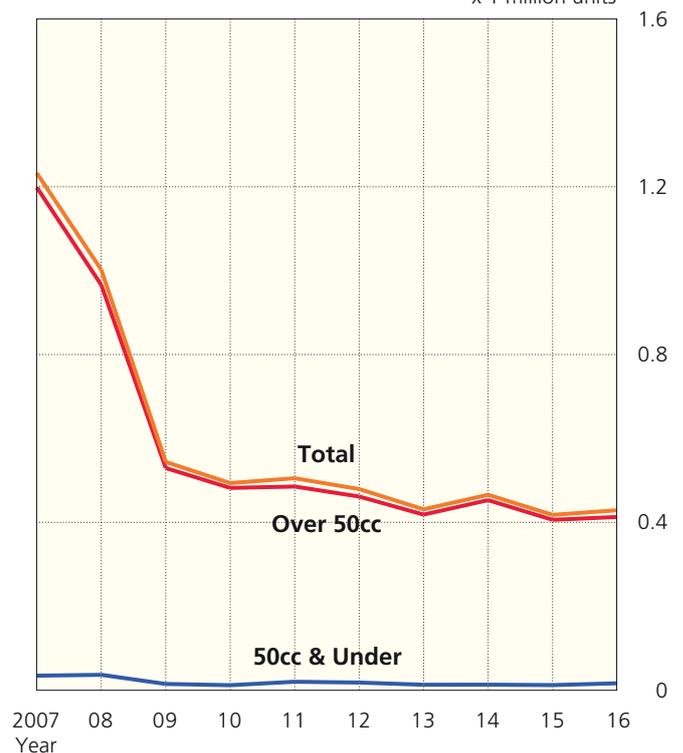
## MOTORCYCLE EXPORTS BY ENGINE CAPACITY IN 2016

In vehicle units



## TRENDS IN MOTORCYCLE EXPORTS

x 1 million units



## MOTORCYCLE EXPORTS

In vehicle units

Year	Motor-Driven Cycles Class 1 (50cc & Under)	Over 50cc				Subtotal	Total	Chg. (%)
		Motor-Driven Cycles Class 2 (51cc-125cc)	Mini-Sized Motorcycles (126cc-250cc)	Small-Sized Motorcycles (Over 250cc)				
1970	326,815	914,325	187,185	309,277	1,410,787	1,737,602	133.8	
1975	288,843	1,546,170	328,313	527,344	2,401,827	2,690,670	83.0	
1980	501,027	1,907,481	548,306	972,226	3,428,013	3,929,040	144.0	
1985	369,167	1,350,412	296,865	525,038	2,172,315	2,541,482	119.7	
1990	147,301	507,840	117,222	411,381	1,036,443	1,183,744	107.3	
1995	61,627	691,433	129,961	442,689	1,264,083	1,325,710	94.2	
2000	82,038	549,040	204,591	805,508	1,559,139	1,641,177	116.1	
2005	57,860	197,378	177,824	899,161	1,274,363	1,332,223	100.4	
2007	34,192	134,570	177,673	886,361	1,198,604	1,232,796	92.4	
2008	36,234	95,114	149,530	721,309	965,953	1,002,187	81.3	
2009	14,493	44,708	101,298	383,380	529,386	543,879	54.3	
2010	11,522	48,976	85,506	347,460	481,942	493,464	90.7	
2011	19,745	45,853	83,594	355,793	485,240	504,985	102.3	
2012	17,794	35,579	69,963	355,827	461,369	479,163	94.9	
2013	12,560	27,676	64,566	326,095	418,337	430,897	89.9	
2014	12,778	29,771	63,891	359,144	452,806	465,584	108.0	
2015	11,761	30,823	59,851	315,214	405,888	417,649	89.7	
2016	16,031	30,181	59,805	322,602	412,588	428,619	102.6	

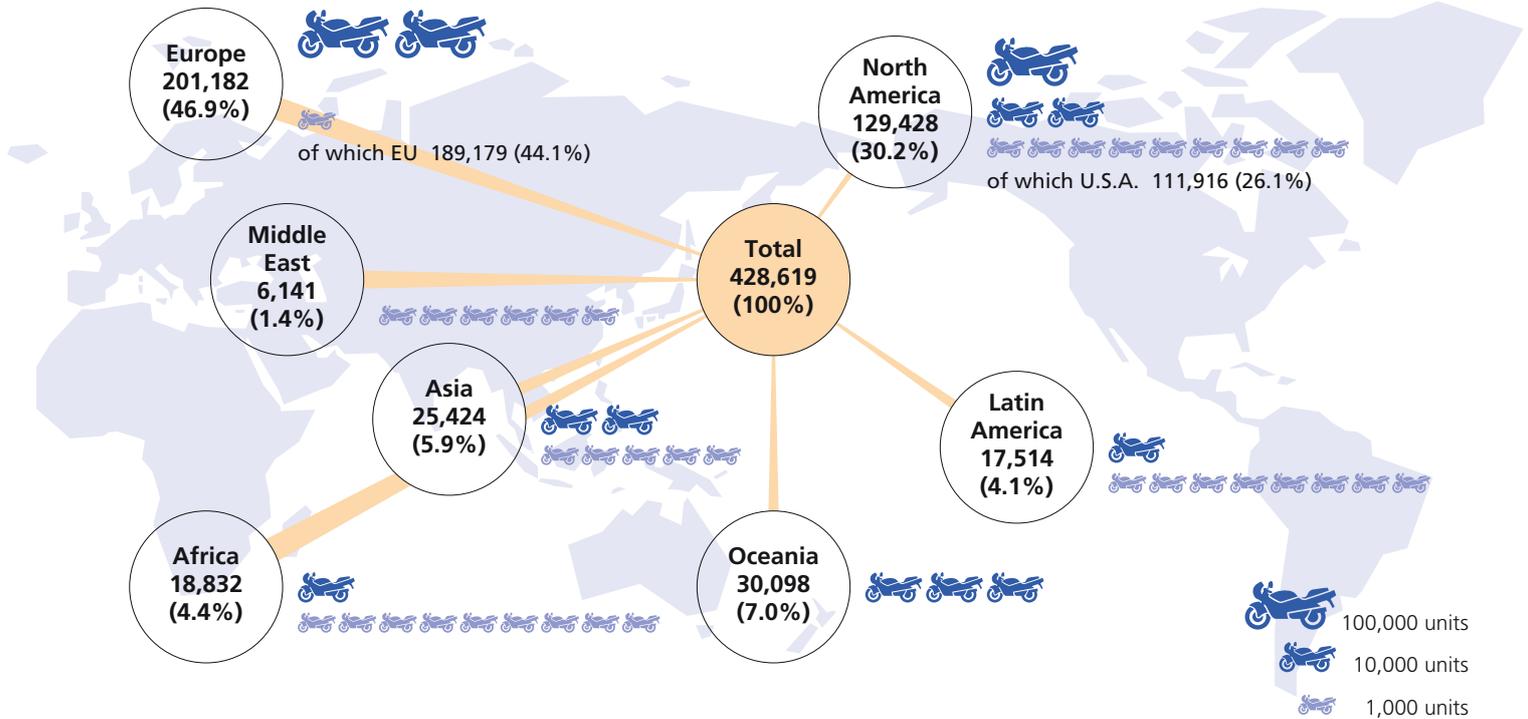
Notes: 1. Figures represent ex-factory export shipments of motorcycles manufactured in Japan. 2. Class 2 motor-driven cycles include three-wheeled motor-driven cycles. 3. KD sets have been excluded since 1979; they represent less than 60% of the cost of compositional components per vehicle and have been treated as components since 1988. 4. "Chg. (%)" means change from the previous year (with the previous year's result indexed at 100).  
 Source: Japan Automobile Manufacturers Association

# An Increase in Motorcycle Exports to the Middle East and Europe

Compared to the previous year, motorcycle exports in 2016 grew 19.6% to the Middle East and 17.8% to Europe, but declined 37.1% to Latin America, 13.9% to Asia, 8.4% to Africa, 3.1% to North America, and 0.4% to Oceania.

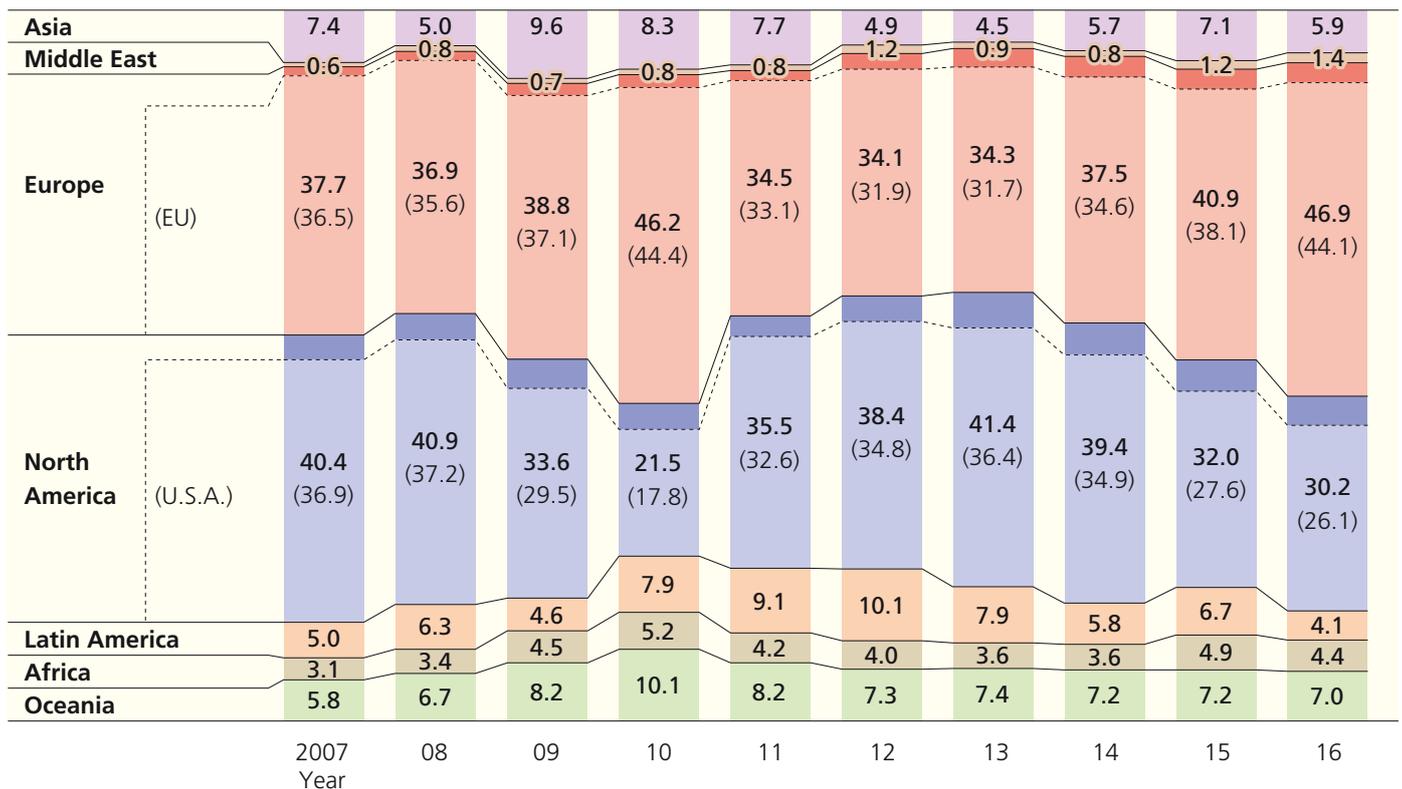
## MOTORCYCLE EXPORTS BY DESTINATION IN 2016

In vehicle units



## MOTORCYCLE EXPORT TRENDS BY DESTINATION

In %



## MOTORCYCLE EXPORTS BY DESTINATION & BY ENGINE CAPACITY IN 2016

In vehicle units

Destination		Motor-Driven Cycles Class 1 (50cc & Under)	Over 50cc				Total	
			Motor-Driven Cycles Class 2 (51cc-125cc)	Mini-Sized Motorcycles (126cc-250cc)	Small-Sized Motorcycles (Over 250cc)	Subtotal		
Asia	South Korea	9	6	12	2,537	2,555	2,564	
	China	0	0	0	969	969	969	
	Taiwan	0	620	0	3,353	3,973	3,973	
	Hong Kong	12	10	63	2,231	2,304	2,316	
	Thailand	0	50	291	3,954	4,295	4,295	
	Singapore	0	135	259	2,750	3,144	3,144	
	Malaysia	0	6	11	3,634	3,651	3,651	
	Philippines	0	0	5	877	882	882	
	Indonesia	0	123	1,735	310	2,168	2,168	
	Other	27	36	265	1,134	1,435	1,462	
Subtotal		48	986	2,641	21,749	25,376	25,424	
Middle East	Saudi Arabia	0	22	2	252	276	276	
	Israel	0	162	438	2,232	2,832	2,832	
	United Arab Emirates	0	615	659	818	2,092	2,092	
	Other	21	0	56	864	920	941	
Subtotal		21	799	1,155	4,166	6,120	6,141	
Europe	Sweden	0	0	58	723	781	781	
	Denmark	0	18	54	612	684	684	
	UK	0	440	884	9,581	10,905	10,905	
	Netherlands	0	787	2,556	18,791	22,134	22,134	
	Belgium	0	30	40	602	672	672	
	France	924	3,498	2,379	60,699	66,576	67,500	
	Germany	375	786	2,222	30,781	33,789	34,164	
	Portugal	0	28	20	1,375	1,423	1,423	
	Spain	180	509	665	12,326	13,500	13,680	
	Italy	132	224	2,713	27,350	30,287	30,419	
	Finland	27	32	154	233	419	446	
	Poland	0	0	46	554	600	600	
	Hungary	0	0	81	1,276	1,357	1,357	
	Greece	6	30	58	1,366	1,454	1,460	
	Slovenia	42	32	110	988	1,130	1,172	
	Czech Republic	0	0	15	866	881	881	
	Other	0	8	77	816	901	901	
	Subtotal		1,686	6,422	12,132	168,939	187,493	189,179
	Norway	0	30	74	604	708	708	
	Switzerland	30	44	263	6,472	6,779	6,809	
Turkey	0	42	92	3,671	3,805	3,805		
Russia	0	26	45	461	532	532		
Other	0	0	6	143	149	149		
Subtotal		1,716	6,564	12,612	180,290	199,466	201,182	
North America	Canada	1,252	1,502	3,288	11,470	16,260	17,512	
	U.S.A.	10,061	7,357	22,040	72,458	101,855	111,916	
Subtotal		11,313	8,859	25,328	83,928	118,115	129,428	
Latin America	Mexico	99	30	291	1,941	2,262	2,361	
	Nicaragua	0	0	779	2	781	781	
	Panama	0	96	131	316	543	543	
	Colombia	0	64	585	2,202	2,851	2,851	
	Peru	9	6	561	86	653	662	
	Chile	33	130	726	1,487	2,343	2,376	
	Brazil	0	44	183	4,848	5,075	5,075	
	Argentina	18	20	176	783	979	997	
	Other	44	133	779	912	1,824	1,868	
Subtotal		203	523	4,211	12,577	17,311	17,514	
Africa	Guinea	0	83	232	0	315	315	
	Togo	0	1,628	450	0	2,078	2,078	
	Mali	0	1,322	588	60	1,970	1,970	
	Niger	0	1,525	240	9	1,774	1,774	
	Dem Rep Congo	0	1,086	105	0	1,191	1,191	
	Ethiopia	0	0	3,602	0	3,602	3,602	
	Kenya	0	281	239	17	537	537	
	Uganda	0	686	14	0	700	700	
	South Africa	54	481	1,080	1,341	2,902	2,956	
	Other	15	2,161	662	871	3,694	3,709	
Subtotal		69	9,253	7,212	2,298	18,763	18,832	
Oceania	Australia	2,202	2,443	5,270	15,853	23,566	25,768	
	New Zealand	453	726	1,250	1,665	3,641	4,094	
	Other	6	28	126	76	230	236	
Subtotal		2,661	3,197	6,646	17,594	27,437	30,098	
<b>Grand Totals</b>		<b>16,031</b>	<b>30,181</b>	<b>59,805</b>	<b>322,602</b>	<b>412,588</b>	<b>428,619</b>	

Source: Japan Automobile Manufacturers Association

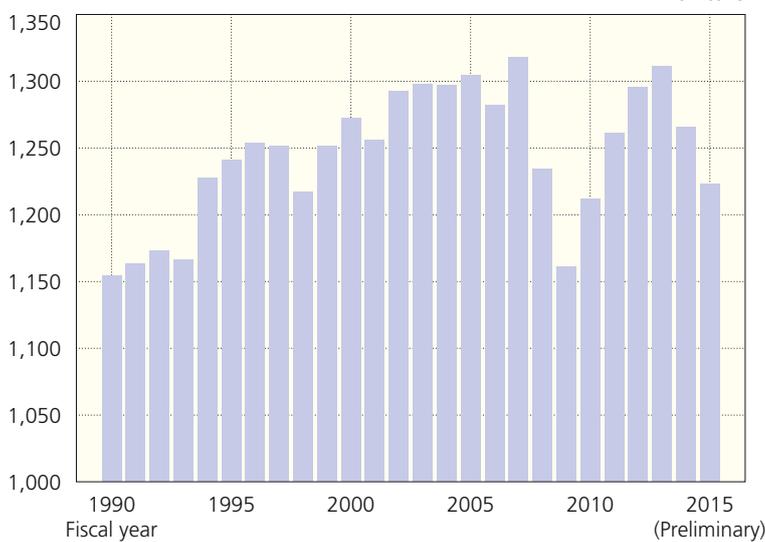
# Climate Change and CO2 Emissions Reduction: The Response of the Transport Sector

In 2015 Japan's CO2 emissions totalled 1.22 billion tons (preliminary figure), of which the transportation sector accounted for 18%. Since peaking in 2001 following a decade of growth, CO2 emission volumes in Japan's transport sector have steadily declined, owing largely to increased fuel efficiency in passenger cars and greater efficiency in goods distribution, although they have not yet reached the level recorded in 1990. The automobile industry will continue to vigorously promote CO2 emissions reduction in road transport by further improving vehicle fuel efficiency and expanding the market supply of next-generation vehicles.

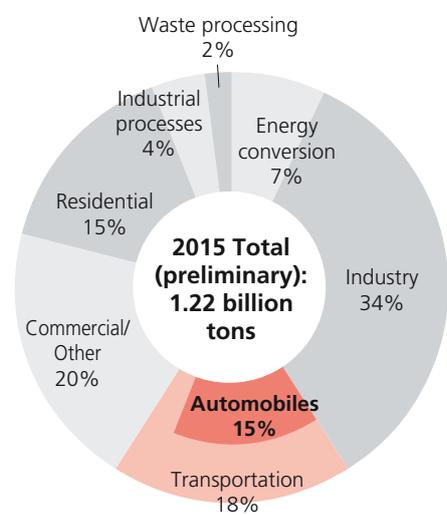
## CO2 EMISSIONS IN JAPAN

The transportation sector accounts for 18% of Japan's total CO2 emissions, which in 2015 amounted to 1.22 billion tons (preliminary figure).

Japan's CO2 Emission Volumes, 1990-2015



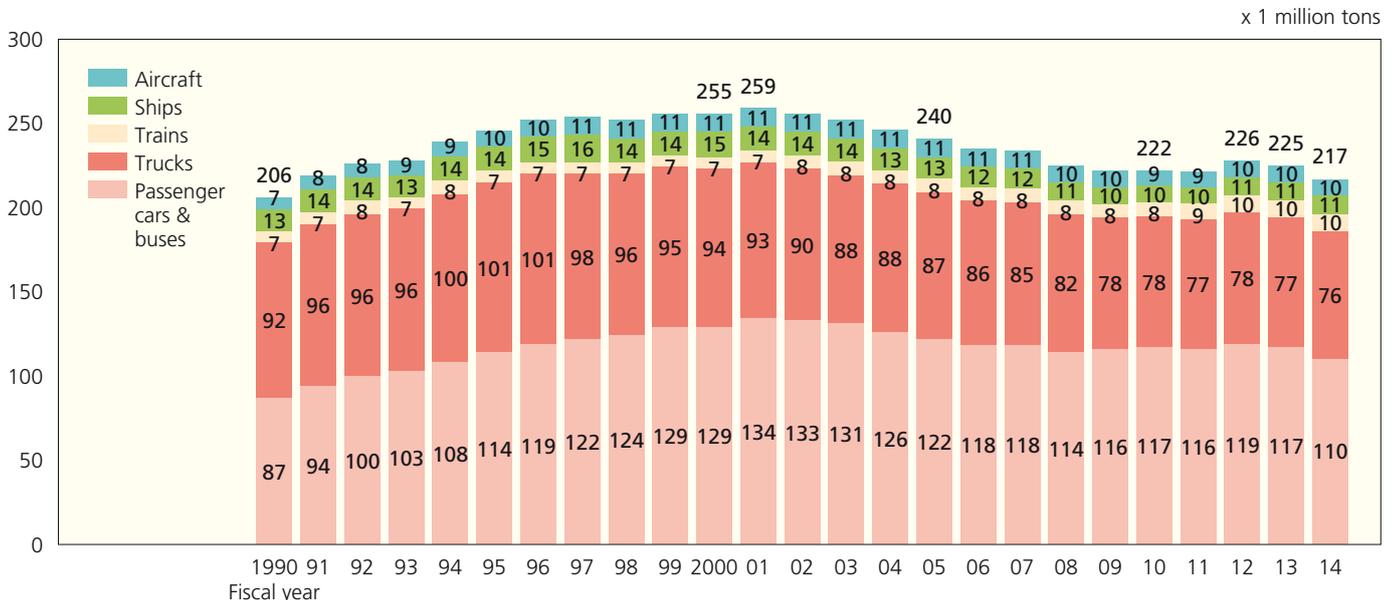
CO2 Emission Shares by Sector in 2015



Source: Ministry of the Environment

## TRENDS IN CO2 EMISSION VOLUMES IN JAPAN'S TRANSPORT SECTOR, BY MODE

Motor vehicle-emitted CO2 accounts for about 90% of the totality of CO2 emitted by Japan's transport sector. CO2 emissions from road transportation in Japan have seen a significant decrease since transport-sector emissions peaked in 2001.

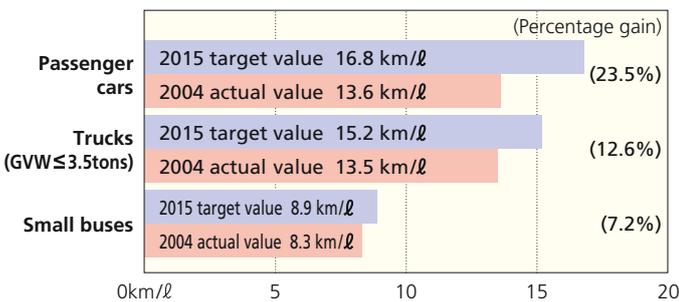


Source: Ministry of the Environment

# CO<sub>2</sub> Emissions Reduction: Improving Vehicle Fuel Efficiency

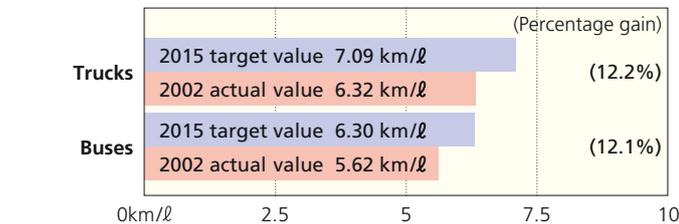
For gasoline-powered passenger cars and trucks weighing 3.5 tons or less, fuel efficiency targets for 2015 were formulated in 2007, applying “top runner” criteria whereby the target value for a given vehicle weight category is established based on the leading fuel efficiency performance to date for that weight category. The 2015 target for passenger cars signifies a nearly 24% increase in average fuel efficiency compared to the 2004 level. For heavy-duty vehicles (trucks and buses with GVW>3.5 tons), fuel efficiency targets—the first in the world—were introduced in 2006 for 2015. Compliance here means a more than 12% increase in average fuel efficiency compared to the 2002 level. As a result of JAMA members’ continuous efforts to increase the fuel efficiency of conventional vehicles and expand the next-generation vehicle supply, an even more stringent fuel efficiency target introduced for passenger cars for 2020 has already been achieved. For small trucks weighing 3.5 tons or less, a fuel efficiency target for 2022 was introduced in July 2015.

## ● 2015 AVERAGE FUEL EFFICIENCY TARGETS FOR NEW PASSENGER CARS & TRUCKS/SMALL BUSES



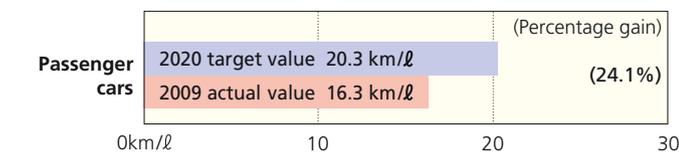
Note: Fuel efficiency here is JC08 test cycle-based (see page 67), and targets were established assuming the same shipment volume ratios by vehicle weight category for 2015 as those recorded in 2004.  
Sources: Ministry of Economy, Trade and Industry; Ministry of Land, Infrastructure, Transport and Tourism

## ● 2015 AVERAGE FUEL EFFICIENCY TARGETS FOR NEW HEAVY-DUTY VEHICLES (GVW>3.5t)



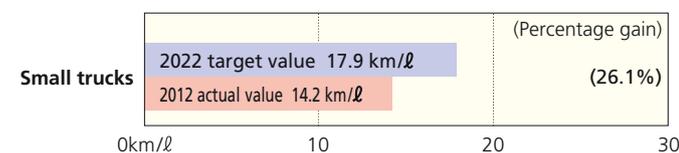
Note: Fuel efficiency here is JE05 test cycle-based (see page 67), and targets were established assuming the same shipment volume ratios by vehicle weight category for 2015 as those recorded in 2002.  
Sources: Ministry of Economy, Trade and Industry; Ministry of Land, Infrastructure, Transport and Tourism

## ● 2020 AVERAGE FUEL EFFICIENCY TARGET FOR NEW PASSENGER CARS



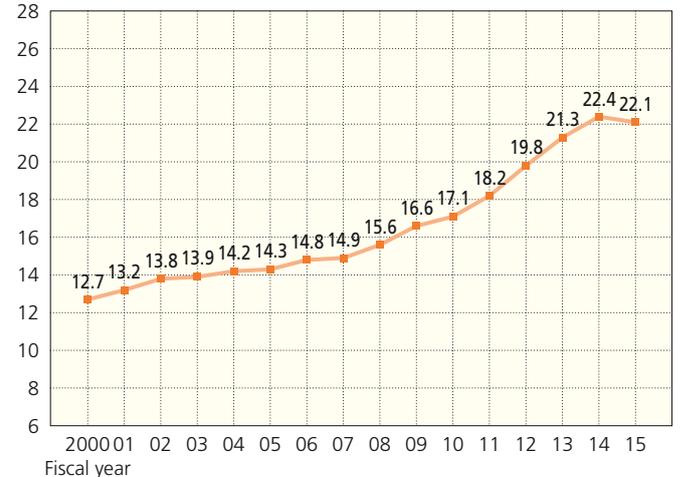
Note: Fuel efficiency here is JC08 test cycle-based (see page 67), and the target was established assuming the same shipment volume ratios by vehicle weight category for 2020 as those recorded in 2009.  
Sources: Ministry of Economy, Trade and Industry; Ministry of Land, Infrastructure, Transport and Tourism

## ● 2022 AVERAGE FUEL EFFICIENCY TARGET FOR NEW SMALL TRUCKS (GVW ≤ 3.5t)



Note: Fuel efficiency here is JC08 test cycle-based (see page 67), and the target was established assuming the same shipment volume ratios by vehicle weight category for 2022 as those recorded in 2012.  
Sources: Ministry of Economy, Trade and Industry; Ministry of Land, Infrastructure, Transport and Tourism

## ● AVERAGE FUEL EFFICIENCY OF DOMESTIC NEW GASOLINE-POWERED PASSENGER CARS



Note: Figures here are JC08 test cycle-based (see page 67).  
Source: Japan Automobile Manufacturers Association

## ● VEHICLE TECHNOLOGIES FOR INCREASED FUEL EFFICIENCY

- Improved engine efficiency**
  - More efficient fuel consumption:
    - Direct injection
    - Variable mechanisms (variable cylinder activation, VVT&L, etc.)
    - Downsized engine supercharging
  - Reduction of friction loss:
    - Reduction of piston & piston ring friction loss
    - Low-viscosity lubricating oil
- Reduced aerodynamic drag**
  - Improved body configuration
- Reduced vehicle weight**
  - Expanded use of lightweight materials
  - Improved body structure
- Improved powertrain performance**
  - Expansion of lock-up area
  - Expanded number of transmission gears
  - Continuously variable transmission
- Reduced rolling resistance**
  - Low rolling-resistance tires
- Other**
  - Electric power steering
  - Idling prevention (stop-start)

## In-Use Status of Next-Generation Vehicles

Beginning in 2009, when the government's tax incentive/subsidy programs for the purchase of eco-friendly vehicles were first introduced, the share of (so-called in Japan) next-generation vehicles—including hybrid, plug-in hybrid, electric, fuel cell, clean diesel, and other new-energy vehicles—in total passenger car sales surged. In 2016 next-generation vehicles accounted for nearly 35% of new passenger car registrations. The more widespread use of these vehicles requires not only further advances in vehicle and related technologies, but also, among other government initiatives, the establishment of the necessary fuel/energy supply infrastructures and the continued provision of purchasing incentives.

### ● NEXT-GENERATION PASSENGER CAR NEW REGISTRATIONS, 2008-2016

In vehicle units

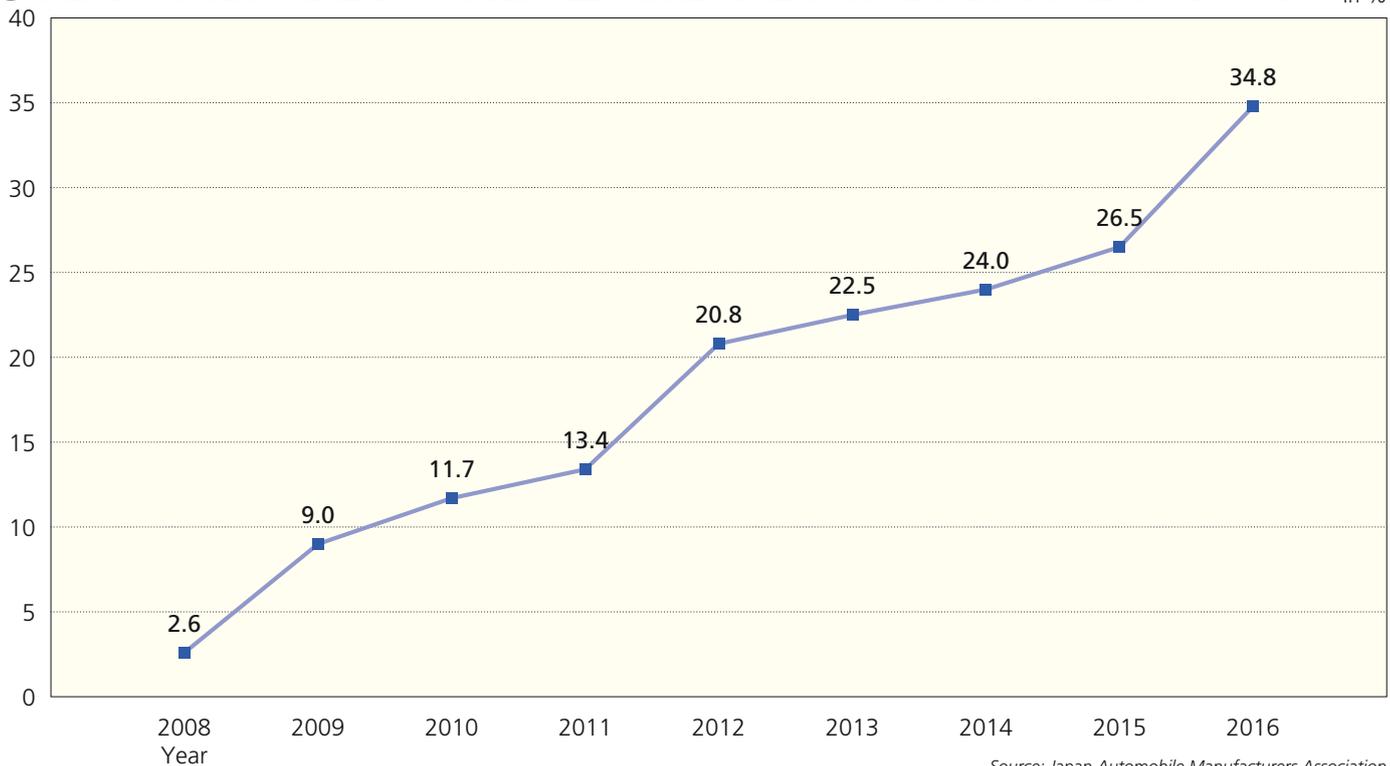
Year	2008	2009	2010	2011	2012	2013	2014	2015	2016
Hybrid vehicles	108,518	347,999	481,221	451,308	887,863	921,045	1,016,757	937,575	1,275,560
Plug-in hybrid vehicles	0	0	0	15	10,968	14,122	16,178	14,188	9,390
Electric vehicles	0	1,078	2,442	12,607	13,469	14,756	16,110	10,467	15,299
Fuel cell vehicles	0	0	0	0	0	0	7	411	1,055
Clean diesel vehicles	0	4,364	8,927	8,797	40,201	75,430	78,822	153,768	143,468
<b>Total</b>	108,518	353,441	492,590	472,727	952,501	1,025,353	1,127,874	1,116,409	1,444,772

Note: "Hybrid vehicles" includes hybrid minicars as of 2016.

Source: Japan Automobile Manufacturers Association

### ● TRENDS IN NEXT-GENERATION VEHICLE SHARE IN NEW PASSENGER CAR REGISTRATIONS

In %



Source: Japan Automobile Manufacturers Association

## Promoting Fuel-Conserving Ecodriving

Individual drivers can increase fuel efficiency and thus help reduce CO<sub>2</sub> emissions by improving their driving habits. JAMA has therefore been conducting an ongoing public-awareness campaign, in collaboration with the government and industry partners, to promote sound, fuel-conserving ecodriving practices, urging drivers to adopt the ten smart tips listed below. While the already widespread use of digital tachographs in truck fleet operations in Japan continues to expand, automakers are equipping more and more passenger cars not only with fuel efficiency gauges and systems for real-time on-screen displays of fuel efficiency performance, but also with idling-prevention (stop-start) systems and “eco-mode” buttons that activate fuel efficiency-promoting functions.

### ● TEN TIPS FOR FUEL-CONSERVING ECODRIVING as promoted in Japan

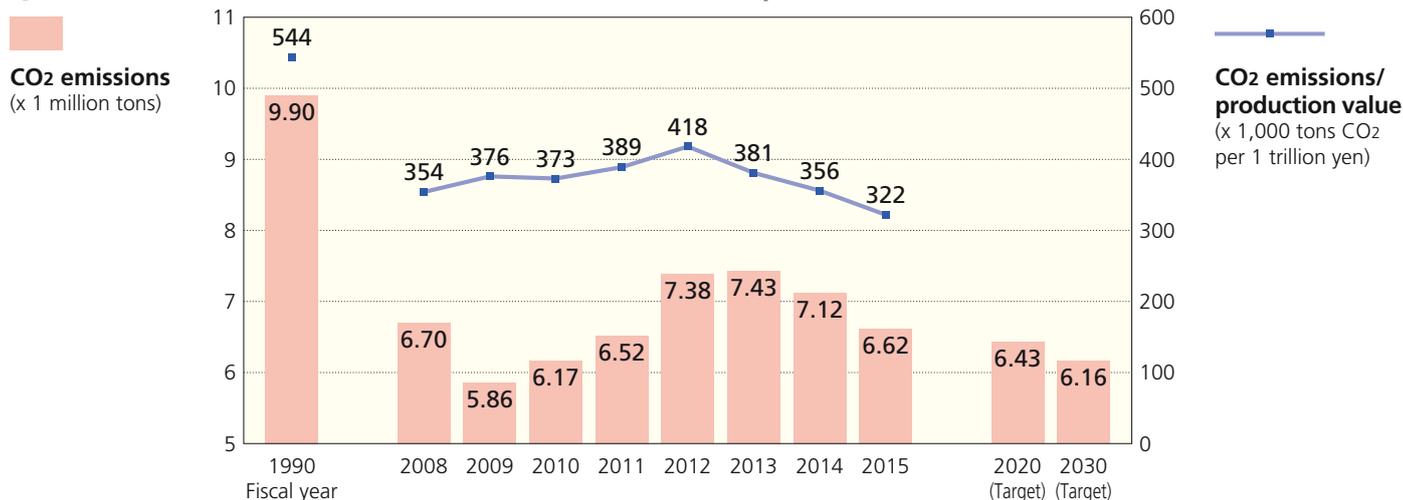
	<p><b>1. Accelerate gently.</b></p> <p>Think “eco-start” when you accelerate—increasing your speed at a relaxed pace, to 20km/h in 5 seconds, boosts fuel efficiency by 10%. Gentle acceleration also contributes to safer driving.</p>		<p><b>6. Plan your itinerary to avoid congested routes.</b></p> <p>Plan the route to your destination using a map or your navigation system before starting off. Check traffic information to avoid congested areas and save time and fuel. Ten minutes of unnecessary driving in a one-hour trip results in a 17% drop in fuel efficiency.</p>
	<p><b>2. Maintain a steady speed and keep your distance.</b></p> <p>Maintain a suitably steady speed for safe and fuel-efficient driving. Tailgating leads to unnecessary acceleration/deceleration, resulting in 2% and 6% lower fuel efficiency in urban and suburban areas, respectively.</p>		<p><b>7. Check your tire pressure regularly.</b></p> <p>Driving on tires whose air pressure is 50kPa (0.5kg/cm<sup>2</sup>) lower than it should be decreases fuel efficiency by 2% in urban areas and 4% in suburban areas. Timely replacement of engine oil and items such as oil filters and air cleaner elements also contributes to increased fuel efficiency.</p>
	<p><b>3. Slow down by releasing the accelerator.</b></p> <p>Releasing the accelerator when recognizing the need to slow down (e.g., at changing traffic lights) stops the fuel supply, resulting in a 2% gain in fuel efficiency. Use your engine’s braking function whenever appropriate, including on downhill descents.</p>		<p><b>8. Reduce your load.</b></p> <p>Onboard weight is a key factor in fuel efficiency performance. Driving with 100kg of unnecessary onboard weight causes a 3% loss in fuel efficiency. Another factor is your vehicle’s aerodynamic drag, which you can reduce by removing exterior rack equipment when not in use.</p>
	<p><b>4. Make appropriate use of your air conditioner.</b></p> <p>The AC function is for cooling and dehumidifying <i>only</i>, so don’t leave your AC on when you’re heating the cabin. When you do use it, be sure not to set it too low. (Continuous use of the AC functioning at 25°C when the outdoor temperature is 25°C results in a fuel efficiency loss of 12%.)</p>		<p><b>9. Respect parking rules and regulations.</b></p> <p>Don’t leave your vehicle where it blocks traffic. Illegal or imprudent on-street parking causes traffic congestion which leads to increased emissions and a greater risk of accident. Roads that are not encumbered by illegally or improperly parked vehicles promote smoother traffic flow and higher fuel efficiency.</p>
	<p><b>5. Don’t warm up or idle your engine.</b></p> <p>Today’s passenger cars don’t require warming up, so start off slowly right after turning on the ignition. When waiting or loading/unloading, make a habit of turning your engine off instead of letting it idle. Ten minutes of engine idling (with the AC off) wastes 130cc of fuel. (See notes below.)</p>		<p><b>10. Check the readings on your fuel efficiency-monitoring equipment.</b></p> <p>Be aware of your vehicle’s fuel efficiency performance by consulting onboard equipment that monitors it.</p>

Notes: 1. Warming up a vehicle engine is necessary only in extremely cold climates (-20°C or colder) or after long periods of non-use. 2. For drivers stopping engine idling manually, i.e. by turning their vehicle’s ignition off and then back on again, caution is advised as follows (but does not apply to drivers of vehicles equipped with idling-prevention systems): 1) Stepping on the brake pedal repeatedly during engine shut-down may diminish braking power; 2) Drivers not accustomed to shutting down their engines and starting them up again may experience slow or faulty restarts; 3) Excessive shutting down and restarting may drain the batteries, resulting in engine start-up failure; 4) Do not use this method when stopped at the head of a line or on a gradient, because turn signals and windshield wipers, as well as airbags and other safety features, will not function during engine shut-down.

## CO<sub>2</sub> Reductions at Manufacturers' Facilities

Japan's automakers, together with the member companies of the Japan Auto-Body Industries Association (JABIA), have for years taken measures to reduce energy consumption and otherwise cut CO<sub>2</sub> emissions at their production plants. Having more recently expanded their voluntary CO<sub>2</sub> reduction activities to also include administrative and research facilities, their combined facility-emitted CO<sub>2</sub> in 2015 totalled 6.62 million tons, down 500,000 tons from the previous year. In line with new targets set in 2016, JAMA and JABIA members now aim to reduce their combined facility-emitted CO<sub>2</sub> to 6.43 million tons (a 35% reduction from the 1990 level) by 2020 and to 6.16 million tons (a 38% reduction from 1990) by 2030.

### ● FACILITY-GENERATED CO<sub>2</sub> EMISSION VOLUMES, 1990-2015



Source: Japan Automobile Manufacturers Association

## Voluntary Initiatives to Reduce the Use of Hazardous Substances in Motor Vehicles

JAMA member manufacturers have, on a voluntary basis, eliminated the use of four so-called substances of concern (SOCs)—lead, mercury, hexavalent chromium and cadmium—in new vehicles to lessen their environmental impact, particularly when they are dismantled and processed at the end of their service life. Separate restrictions on the use of SOC's have been established for motorcycles.

### ● RESTRICTIONS ON THE USE OF SUBSTANCES OF CONCERN IN NEW VEHICLES & COMPLIANCE STATUS

SOC	Restrictions	Compliance Status
<b>Lead</b>	As of January 2006, a 90% decrease or more from the 1996 level of 1,850 grams (i.e., a maximum permissible level of 185 grams); for large commercial vehicles including buses, a 75% decrease or more from the 1996 level (or a maximum level of 462.5 grams). Batteries are exempt.	All models have complied since January 2006.
<b>Mercury</b>	As of January 2005, banned except for trace amounts in safety-related components such as: - Instrument panel displays - Liquid crystal displays in navigation devices - Discharge lamps - Fluorescent cabin lamps	All models have complied since January 2003. Instrument panel displays are now mercury-free in all models, as are fluorescent cabin lamps in passenger cars. Navigation-device liquid crystal displays and discharge lamps will be mercury-free in the near future.
<b>Hexavalent chromium</b>	Banned as of January 2008.	All models have complied since January 2008.
<b>Cadmium</b>	Banned as of January 2007.	All models have complied since January 2006.

## A Voluntary Approach to Reducing Vehicle Cabin VOCs

New-model passenger cars marketed in and after 2007 and new-model commercial vehicles sold in and after 2008 have met the target values established by Japan's Ministry of Health, Labor and Welfare for indoor concentration levels of 13 volatile organic compounds (VOCs). In July 2012, ISO 12219-1 was established as the global standard for restricting the use of in-cabin VOCs in passenger cars. Accordingly, JAMA's previously established VOC test procedure for passenger cars was replaced by the ISO procedure. For trucks and buses not covered by the ISO standard, however, JAMA test methods for measuring in-cabin VOC concentration levels remain in application. Meanwhile, automakers are working to lower in-cabin VOC concentration levels even further. This voluntary initiative applies only to vehicles that are manufactured and sold in Japan.

### ● COMPARISON OF JAMA AND ISO IN-CABIN VOC TEST PROCEDURES

	JAMA Procedure	ISO Procedure (For passenger cars)
<b>Heating method</b>	Radiation lamp heating from above the cabin (No radiation density prescribed.)	Radiation lamp heating from above the cabin (Radiation density: 400±50 W/m <sup>2</sup> )
<b>In-cabin temperature</b>	40°C in driver's breathing zone (Note: 35°C for buses.)	No in-cabin test temperature prescribed. (Presumed to be 40°C in driver's breathing zone [compact car].)
<b>Pre-test conditions</b>	Cabin doors and windows left open for at least 30 minutes.	Cabin doors and windows left open for one hour.
<b>Ambient mode</b>	—	Cabin doors and windows closed for at least 7.5 hours, then cabin air sample-tested over a period of 30 minutes.
<b>Parking mode (airtight state)</b>	Cabin air sample-tested over a period of 30 minutes, 4.5 hours after reaching the prescribed temperature.	Cabin air sample-tested over a period of 30 minutes, 3.5 hours after start of heating.
<b>Driving mode</b>	Cabin air sample-tested over a period of 15 minutes, with engine and AC on (internal air circulation mode). (Note: 30 minutes for trucks and 120 minutes for buses.)	Cabin air sample-tested over a period of 30 minutes, with engine and AC on (external air ventilation mode).
<b>Test procedure schematic</b>	<p>(For passenger cars)</p>	<p>B.G.: "Background" air, i.e., air in test chamber.</p>

Source: ISO 12219-1:2012

### ● TARGET VALUES FOR INDOOR CONCENTRATION LEVELS OF 13 SUBSTANCES (VOCs)

Substance	Target Value for Indoor Concentration Level	Principal Sources
<b>Formaldehyde</b>	100 $\mu\text{g}/\text{m}^3$ (0.08 ppm)	Adhesives for plywood, wallpaper, etc.
<b>Toluene</b>	260 $\mu\text{g}/\text{m}^3$ (0.07 ppm)	Adhesives/paints for interior finishing materials, furniture, etc.
<b>Xylene</b>	870 $\mu\text{g}/\text{m}^3$ (0.20 ppm)	Adhesives/paints for interior finishing materials, furniture, etc.
<b>Paradichlorobenzene</b>	240 $\mu\text{g}/\text{m}^3$ (0.04 ppm)	Moth repellents, lavatory air fresheners
<b>Ethylbenzene</b>	3,800 $\mu\text{g}/\text{m}^3$ (0.88 ppm)	Adhesives/paints for plywood, furniture, etc.
<b>Styrene</b>	220 $\mu\text{g}/\text{m}^3$ (0.05 ppm)	Insulation materials, bath units, tatami-mat core materials
<b>Chlorpyrifos</b>	1 $\mu\text{g}/\text{m}^3$ (0.07 ppb) (see note)	Insecticides (esp. ant exterminators)
<b>Di-n-butyl phthalate</b>	220 $\mu\text{g}/\text{m}^3$ (0.02 ppm)	Paints, pigments, adhesives
<b>Tetradecane</b>	330 $\mu\text{g}/\text{m}^3$ (0.04 ppm)	Kerosene, paints
<b>Di-2-ethylhexyl phthalate</b>	120 $\mu\text{g}/\text{m}^3$ (7.6 ppb)	Wallpaper, flooring materials, wire-coating materials
<b>Diazinon</b>	0.29 $\mu\text{g}/\text{m}^3$ (0.02 ppb)	Pesticides
<b>Acetaldehyde</b>	48 $\mu\text{g}/\text{m}^3$ (0.03 ppm)	Adhesives for construction materials, wallpaper, etc.
<b>Fenobucarb</b>	33 $\mu\text{g}/\text{m}^3$ (3.8 ppb)	Insecticides (esp. termite exterminators)

Note: 0.1  $\mu\text{g}/\text{m}^3$  (0.007 ppb) for children.

# Global Harmonization in the Regulation of Vehicle Exhaust Emissions

Japan's vehicle exhaust emissions regulations have always been among the world's most stringent, and its automakers have worked very hard to develop the advanced technologies required to comply with them. As a result, NOx and other atmospheric pollutant levels have been, even in large urban areas, on a steady decline. Based on the Ministry of the Environment-affiliated Central Environment Council's policy recommendations for future reductions in motor vehicle exhaust emissions (released in April 2005), comprehensive and even stricter new regulations, covering both gasoline and diesel vehicles, were implemented by the Japanese government in 2009. Japan has participated in international discussions on the global harmonization of emission test cycles and in 2010 introduced the UN test cycle for motorcycle emissions. In 2018 Japan will adopt the UN "WLTP" test cycle to measure emissions from new gasoline-powered passenger cars and light commercial vehicles, following its adoption in 2016 of the UN "WHTC" test cycle for measuring diesel exhaust emissions from new heavy-duty vehicles (see page 67).

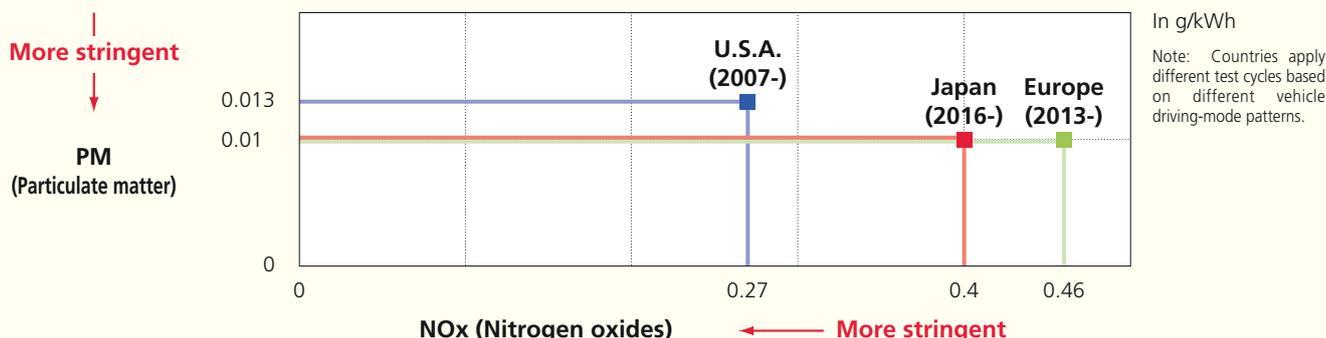
## ● COMPARISON OF HEAVY-DUTY DIESEL TRUCK EMISSIONS REGULATIONS

All regulatory values below apply to the heaviest truck categories. In g/kWh

	NOx Nitrogen oxides	THC Total hydrocarbons	NMHC Non-methane hydrocarbons	CO Carbon monoxide	PM Particulate matter	
<b>Japan (GVW=Over 3.5 tons) (1)</b>						
Long-term regulations (1997, 1998, 1999)	4.50	2.90	—	7.40	0.25	
New short-term regulations (2003, 2004)	3.38	0.87	—	2.22	0.18	
New long-term regulations (2005) (2)	2.0	—	0.17	2.22	0.027	
Post-new long-term regulations (2009, 2010)	0.7	—	0.17	2.22	0.01	
Future regulations (2016, 2017, 2018)	0.4	—	0.17	2.22	0.01	
<b>U.S.A. (GVW=Over 3.85 tons)</b>						
1998 standard	5.36	1.74	—	20.78	0.134	
2004 standard	Automobile manufacturers must comply with one of the following: 1) NOx + NMHC 3.22 2) NOx + NMHC 3.35 with mandatory NMHC value of 0.67			20.78	0.134	
2007 standard	0.27	—	0.188	20.78	0.013	
<b>Europe (GVW=Over 3.5 tons)</b>						
EURO II (1995)	7.0	1.1	—	4.0	0.15	
EURO III (2000) (3)	Transient mode	5.0	—	5.45	0.16	
	Steady state mode	(5.0)	(0.66)	(2.1)	(0.10)	
EURO IV (2005)	Transient mode	3.5	—	4.0	0.03	
	Steady state mode	(3.5)	(0.46)	(1.5)	(0.02)	
EURO V (2008)	Transient mode	2.0	—	4.0	0.03	
	Steady state mode	(2.0)	(0.46)	(1.5)	(0.02)	
EURO VI (2013)	Transient mode	0.46	0.16	—	4.0	0.01
	Steady state mode	(0.4)	(0.13)	—	(1.5)	(0.01)

(1) GVW (gross vehicle weight) (Japan) = Vehicle weight + Maximum load + Maximum occupants x 55 kg. Weight per occupant and other details slightly differ from those of U.S. and European regulations. (2) Japan's 1997-2004 regulations applied to the over-2.5t GVW vehicle category; regulations as of 2005 apply to the over-3.5t GVW vehicle category. (3) EURO III (Europe): All vehicle categories were regulated in the steady state (ESC) mode only, except DPF- and NOx reduction catalyst-equipped vehicles, which were regulated in both the steady state (ESC) and transient (ETC) modes. Beginning with EURO IV, all vehicle categories, whether DPF- and NOx reduction catalyst-equipped or not, are regulated in both modes.

## ● COMPARISON OF HEAVY-DUTY DIESEL TRUCK EMISSIONS REGULATIONS (PM and NOx)



## MOTOR VEHICLE EMISSIONS REGULATIONS IN JAPAN

Vehicle Type		Current Regulations				Future Regulations					
		Test cycle	Year enforced	Emission	Regulatory value (Average)	Test cycle	Year enforced	Emission	Regulatory value (Average)		
Gasoline and LPG Vehicles	Passenger cars	JC08 (g/km) (1)	2009	CO	1.15	WLTP (g/km) (2)	2018	CO	1.15		
				NMHC	0.05			NMHC	0.10		
			NOx	0.05	NOx			0.05			
			JC08 (g/km) (1)	2009	PM (3)	0.005	WLTP (g/km) (2)	2018	PM (3)	0.005	
	Trucks and buses	Mini	JC08 (g/km) (1)	2009	CO	4.02	WLTP (g/km) (2)	2019	CO	4.02	
					NMHC	0.05			NMHC	0.10	
					NOx	0.05			NOx	0.05	
				JC08 (g/km) (1)	2009	PM (3)	0.005	WLTP (g/km) (2)	2019	PM (3)	0.005
		Light-duty (GVW≤1.7t)	JC08 (g/km) (1)	2009	CO	1.15	WLTP (g/km) (2)	2018	CO	1.15	
					NMHC	0.05			NMHC	0.10	
				NOx	0.05	NOx			0.05		
			JC08 (g/km) (1)	2009	PM (3)	0.005	WLTP (g/km) (2)	2018	PM (3)	0.005	
	Medium-duty (1.7t<GVW≤3.5t)	JC08 (g/km) (1)	2009	CO	2.55	WLTP (g/km) (2)	2019	CO	2.55		
				NMHC	0.05			NMHC	0.15		
			NOx	0.07	NOx			0.07			
		JC08 (g/km) (1)	2009	PM (3)	0.007	WLTP (g/km) (2)	2019	PM (3)	0.007		
Heavy-duty (GVW>3.5t)	JE05 (g/kWh)	2009	CO	16.0	(Continued application of current regulations)						
			NMHC	0.23							
			NOx	0.7							
			PM (3)	0.01							
Diesel Vehicles	Passenger cars (4)	JC08 (g/km) (1)	2009	CO	0.63	WLTP (g/km) (2)	2018	CO	0.63		
				NMHC	0.024			NMHC	0.024		
				NOx	0.08			NOx	0.15		
				PM	0.005			PM	0.005		
	Trucks and buses	Light-duty (GVW≤1.7t)	JC08 (g/km) (1)	2009	CO	0.63	WLTP (g/km) (2)	2018	CO	0.63	
					NMHC	0.024			NMHC	0.024	
					NOx	0.08			NOx	0.15	
					PM	0.005			PM	0.005	
		Medium-duty (1.7t<GVW≤3.5t)	JC08 (g/km) (1)	2009 (5)	CO	0.63	WLTP (g/km) (2)	2019	CO	0.63	
	NMHC				0.024	NMHC			0.024		
	NOx				0.15	NOx			0.24		
	PM				0.007	PM			0.007		
	Heavy-duty (GVW>3.5t)	JE05 (g/kWh)	2009 (5)	CO	2.22	WHTC (g/kWh) (6)	2016	CO	2.22		
NMHC				0.17	NMHC			0.17			
NOx				0.7	NOx (7)			0.4			
PM				0.01	PM			0.01			
Motorcycles	Motor-driven cycles Class 1	WMTC (g/km) (8)	2010	CO	2.2						
				THC	0.45						
				NOx	0.16						
	Motor-driven cycles Class 2	WMTC (g/km) (8)	2010	CO	2.2						
				THC	0.45						
				NOx	0.16						
	Mini-sized motorcycles	WMTC (g/km) (8)	2010	CO	2.62						
				THC	0.27						
				NOx	0.21						
	Small-sized motorcycles	WMTC (g/km) (8)	2010	CO	2.62						
THC				0.27							
NOx				0.21							
Class I motorcycles*	Under 0.150ℓ in engine capacity with a maximum speed of 50km/h, or under 0.150ℓ in engine capacity with a maximum speed of 99km/h. *Equivalent to motor-driven cycles, Class 1 and Class 2.	WMTC (g/km) (8)	2016 (9)	CO	1.14						
				THC	0.30						
				NOx	0.07						
Class II motorcycles*	Under 0.150ℓ in engine capacity with a maximum speed of <130km/h, or 0.150ℓ or over in engine capacity with a maximum speed of <130km/h. *Equivalent to mini-sized and small-sized motorcycles with a maximum speed of <130km/h.	WMTC (g/km) (8)	2016 (9)	CO	1.14						
				THC	0.20						
				NOx	0.07						
Class III motorcycles*	With a maximum speed of ≥130km/h. *Equivalent to mini-sized and small-sized motorcycles with a maximum speed of ≥130km/h.	WMTC (g/km) (8)	2016 (9)	CO	1.14						
				THC	0.17						
				NOx	0.09						

(1) All vehicles weighing 3.5t or less are regulated on the basis of (values measured in cold-start state in JC08 test cycle) x 0.25 + (values measured in warm-start state in JC08 test cycle) x 0.75. (2) WLTP: Worldwide Harmonized Light Vehicles Test Procedure, on the basis of values measured in cold-start state. (3) PM values apply only to direct-injection, lean-burn vehicles equipped with absorption-type NOx reduction catalysts. (4) Small-sized diesel passenger cars have an equivalent inertia weight (EIW) of 1.25t (GVW of 1.265t) or less, and mid-sized diesel passenger cars have an EIW over 1.25t. (5) Enforced since 2010 for the 1.7t<GVW≤2.5t medium-duty segment and the 3.5t<GVW≤12t heavy-duty segment. (6) WHTC: World Harmonized Transient Cycle, on the basis of (values measured in cold-start state) x 0.14 + (values measured in warm-start state) x 0.86. (7) Enforcement: 2016 for GVW>7.5t; 2017 for tractors; 2018 for 3.5t<GVW≤7.5t. (8) WMTC: World Motorcycle Test Cycle. (9) 2017 enforcement for in-production models first launched prior to 2016.

Note: CO: Carbon monoxide; NMHC: Non-methane hydrocarbons; THC: Total hydrocarbons; NOx: Nitrogen oxides; PM: Particulate matter.

Sources: Ministry of the Environment; Ministry of Land, Infrastructure, Transport and Tourism

## Improving Air Quality

Japan's central government as well as local governments in major metropolitan areas have implemented measures to address air quality problems caused by motor vehicles. In accordance with national legislation aimed at curbing nitrogen oxide (NO<sub>x</sub>) and particulate matter (PM) emissions, the issuance of inspection-compliance certification is prohibited for vehicles that fail to meet the legal standards at inspection time. Moreover, local governments in major metropolitan areas have introduced additional regulations for diesel trucks and buses for the specific purpose of reducing PM emissions. Enforcement of those regulations means that restrictions are imposed on diesel vehicle circulation in the areas concerned.

### ● PROVISIONS OF THE NATIONAL AUTOMOTIVE NO<sub>x</sub> AND PM LAW/ DIESEL TRUCK & BUS PM EMISSION REGULATIONS FOR MAJOR METROPOLITAN AREAS

	Provisions of the National Automotive NO <sub>x</sub> and PM Law (Major Metropolitan Areas)	Provisions of PM Emission Regulations for Diesel Vehicles (Major Metropolitan Areas)
<b>Areas Regulated</b>	Tokyo and Aichi, Chiba, Hyogo, Kanagawa, Mie, Osaka, and Saitama (designated areas)	Tokyo (except for islands) and Chiba, Kanagawa, and Saitama (all areas); Hyogo (designated areas); Osaka (same areas as those designated under the Automotive NO <sub>x</sub> & PM Law)
<b>Vehicle Types Regulated</b>	Diesel, gasoline, and LPG trucks and buses Diesel passenger cars	Diesel trucks and buses  Note: Not applicable to diesel passenger vehicles with up to 10-passenger occupancy.
<b>Substances Regulated</b>	NO <sub>x</sub> and PM	PM only NO <sub>x</sub> and PM in Hyogo and Osaka
<b>Regulatory Values in Force</b>	<p><b>Trucks and Buses</b> GVW = Gross vehicle weight</p> <p><b>GVW=1.7 tons &amp; under:</b> NO<sub>x</sub>: 0.48g/km (same as 1988 regulatory value for new gasoline vehicles) PM: 0.055g/km (half the 2002 regulatory value for new diesel vehicles)</p> <p><b>GVW=Over 1.7 tons to 2.5 tons:</b> NO<sub>x</sub>: 0.63g/km (same as 1994 regulatory value for new gasoline vehicles) PM: 0.06g/km (half the 2003 regulatory value for new diesel vehicles)</p> <p><b>GVW=Over 2.5 tons to 3.5 tons:</b> NO<sub>x</sub>: 5.9g/kWh (same as 1995 regulatory value for new gasoline vehicles) PM: 0.175g/kWh (half the 2003 regulatory value for new diesel vehicles)</p> <p><b>GVW=Over 3.5 tons:</b> NO<sub>x</sub>: 5.9g/kWh (same as 1998-1999 regulatory value for new diesel vehicles) PM: 0.49g/kWh (same as 1998-1999 regulatory value for new diesel vehicles)</p> <p><b>Passenger Cars</b> NO<sub>x</sub>: 0.48g/km (same as 1978 regulatory value for new gasoline vehicles) PM: 0.055g/km (half the 2002 regulatory value for new diesel vehicles)</p>	<p>In Chiba and Kanagawa, same as 1997, 1998, and 1999 regulatory values for new diesel trucks and buses</p> <p>In Tokyo and in Saitama, same as 2002, 2003, and 2004 regulatory values for new diesel trucks and buses</p> <p>In Hyogo and Osaka, same values as those mandated by the Automotive NO<sub>x</sub> &amp; PM Law</p>
<b>Specific Provisions</b>	<p><b>New Vehicles</b> In regulated areas, new vehicles not meeting the standards cannot be registered.</p> <p><b>Vehicles in Use</b> Regulated vehicles whose principal places of use (as declared in their inspection certificates) fall in regulated areas and that do not meet the standards will not be granted inspection certification after grace periods have expired.</p> <p>Note: Vehicles whose principal places of use (as declared in their inspection certificates) do not fall in regulated areas can travel through regulated areas even if they do not meet the standards.</p>	<p><b>New Vehicles</b> No restriction.</p> <p><b>Vehicles in Use</b> Vehicles not meeting the standards are prohibited from travelling through regulated areas after grace periods have expired. In Osaka, vehicles not meeting the standards are prohibited from travelling on roads directly accessing regulated areas. In Tokyo and in Chiba, Kanagawa, and Saitama, vehicles equipped with local government-specified PM reduction systems are deemed to be in compliance with the standards.</p> <p>Note: Applicable to diesel trucks and buses registered anywhere in Japan and travelling through regulated areas.</p>
<b>Grace Periods</b>	<p>From first registration:</p> <ul style="list-style-type: none"> <li>● Small trucks ..... 8 years etc.</li> <li>● Diesel passenger cars ..... 9 years etc.</li> <li>● Standard trucks ..... 9 years etc.</li> <li>● Minibuses ..... 10 years etc.</li> <li>● Large buses ..... 12 years etc.</li> </ul>	<p>Seven years from first registration, regardless of vehicle type (truck or bus)</p> <p>Note: In Chiba, vehicles neither registered in nor travelling through areas designated under the Automotive NO<sub>x</sub> &amp; PM Law will be exempted for a period of 12 years, provided vehicle owners apply for such an exemption. In Hyogo, grace periods differ according to year of first registration and vehicle type. In Osaka, grace periods are the same as those specified in the Automotive NO<sub>x</sub> &amp; PM Law.</p>

## Promoting Vehicles with Greater Fuel Efficiency and Lower Emissions

Vehicles with greater fuel efficiency help counter global warming through their reduced emission of CO<sub>2</sub>, while vehicles with reduced tailpipe emissions help improve air quality. The Japanese government has established motor vehicle environmental performance certification criteria keyed to Japan's latest fuel efficiency and emission standards. Trucks and buses that comply with NO<sub>x</sub> (nitrogen oxides) and PM (particulate matter) emissions requirements are also certified, separately. To boost widespread public awareness of vehicles with advanced fuel efficiency and/or low emissions, such vehicles are identified with appropriately coded stickers.

### ● CERTIFICATION FOR VEHICLES WITH ADVANCED FUEL EFFICIENCY

Performance Criteria	Vehicle Sticker
Compliant +50% with 2020 fuel efficiency standards	
Compliant +40% with 2020 fuel efficiency standards	
Compliant +30% with 2020 fuel efficiency standards	
Compliant +20% with 2020 fuel efficiency standards	
Compliant +10% with 2020 fuel efficiency standards	
Compliant with 2020 fuel efficiency standards	
Compliant +35% with 2015 fuel efficiency standards	
Compliant +25% with 2015 fuel efficiency standards	
Compliant +20% with 2015 fuel efficiency standards	
Compliant +15% with 2015 fuel efficiency standards	
Compliant +10% with 2015 fuel efficiency standards	
Compliant +5% with 2015 fuel efficiency standards	
Compliant with 2015 fuel efficiency standards	

### ● CERTIFICATION FOR VEHICLES WITH LOW EMISSIONS

Performance Criteria	Vehicle Sticker
Emissions down by 75% from 2018 standards	
Emissions down by 50% from 2018 standards	
Emissions down by 25% from 2018 standards	
Emissions down by 10% from 2009 standards	
Emissions down by 75% from 2005 standards	
Emissions down by 50% from 2005 standards	

### ● CERTIFICATION FOR TRUCKS AND BUSES WITH LOW NO<sub>x</sub> & PM EMISSIONS

Performance Criteria	Vehicle Sticker
Compliant with 2016 emission standards	
Compliant with 2009 emission standards	
Compliant with 2005 emission standards	
Compliant with other designated NO <sub>x</sub> and PM emission standards	

## Vehicle Recycling and Waste Reduction

Under Japan’s End-of-Life Vehicle (ELV) Recycling Law which entered into force in January 2005, automobile manufacturers and importers are responsible for recovery, recycling and appropriate disposal with respect to fluorocarbons, airbags, and automobile shredder residue (ASR). Compliance with the law was anticipated to enable ASR to be recycled at a rate of 70% by 2015, resulting in an automobile recycling rate, by vehicle weight, of 95% (as compared with the 80% rate prevailing prior to the introduction of the law); those rates were in fact surpassed in 2008. Japan’s vehicle recycling infrastructure as mandated by its ELV Recycling Law is the first in the world to administer the entire process of auto recycling—from ELV recovery to final disposal—on the basis of electronic “manifests” (or compliance checklists). JAMA itself played a central role in the development and implementation of this advanced vehicle recycling system; it has, moreover, provided continuous cooperation in, and financial support for, the development, maintenance, and upgrading of related systems. In line with legislative provisions promoting the so-called 3R initiatives (“reduce, reuse, and recycle”), Japan’s automakers are also striving to design vehicles using lightweight materials that are easy to dismantle and recycle, and to reduce and recycle waste generated in the manufacturing process. In 2015 the volume of auto plant-generated waste destined for landfill disposal totalled 400 tons, surpassing by a very wide margin the 2015 target of 10,000 tons. With a new target of 1,000 tons set for 2020, JAMA members will continue to promote the reduction of waste for landfill disposal.

### INDUSTRY MEASURES IN LINE WITH NATIONAL LEGISLATION

	Promotion of Effective Utilization of Resources Law (the “3R” Law)		Distribution, Servicing and Use	End-of-Life Vehicle Recycling Law
	Product Design	Waste Management		ELV Recycling
<b>“Reduce” initiatives</b>	For designated products: <ul style="list-style-type: none"> <li>- Weight reduction/ Downsizing</li> <li>- Longer product life</li> <li>- Reduced use of hazardous substances</li> </ul>	For designated areas of activity: <ul style="list-style-type: none"> <li>- Reduction/recycling of designated waste products generated in vehicle manufacturing operations:                             <ol style="list-style-type: none"> <li>1) Scrap metals</li> <li>2) Casting sand residue</li> </ol> </li> </ul>		Basic premise: <ul style="list-style-type: none"> <li>- Environmentally responsible vehicle design on the part of automobile manufacturers</li> </ul>
<b>“Reuse” initiatives</b>	For designated products: <ul style="list-style-type: none"> <li>- Use of recyclable materials</li> </ul>			
<b>“Recycle” initiatives</b>	<ul style="list-style-type: none"> <li>- Ease of dismantling</li> <li>- Ease of sorting</li> <li>- Non-hazardous recycling</li> <li>- Materials identification</li> </ul>	<ul style="list-style-type: none"> <li>- Total waste volume*:                             <ul style="list-style-type: none"> <li>1990 (baseline): 352,000 tons</li> <li>↓</li> <li>2015: 400 tons</li> <li>JAMA target: 10,000 tons by fiscal 2015</li> </ul> </li> </ul> *For landfill disposal, including scrap metals, casting sand residue, and other waste		<ul style="list-style-type: none"> <li>- Recovery and recycling of:                             <ol style="list-style-type: none"> <li>1) Fluorocarbons</li> <li>2) Airbags</li> <li>3) ASR</li> </ol> </li> </ul> Note: Motorcycles are not covered by the ELV Recycling Law.

### ELV RECOVERY IN NUMBERS

In vehicle units

Fiscal Year		2015	2016
<b>No. of ELVs recovered</b>		3,156,459	3,096,790
<b>Appropriate disposal of three designated items</b>	Fluorocarbons	2,741,493	2,674,057
	Airbags (1)	2,354,249	2,373,276
	ASR (2)	3,122,567	3,029,981

(1) Through recovery/appropriate disposal of inflators or through onboard deactivation.  
 (2) Covers all categories of processors, whether for direct disposal or for transfer to other markets.

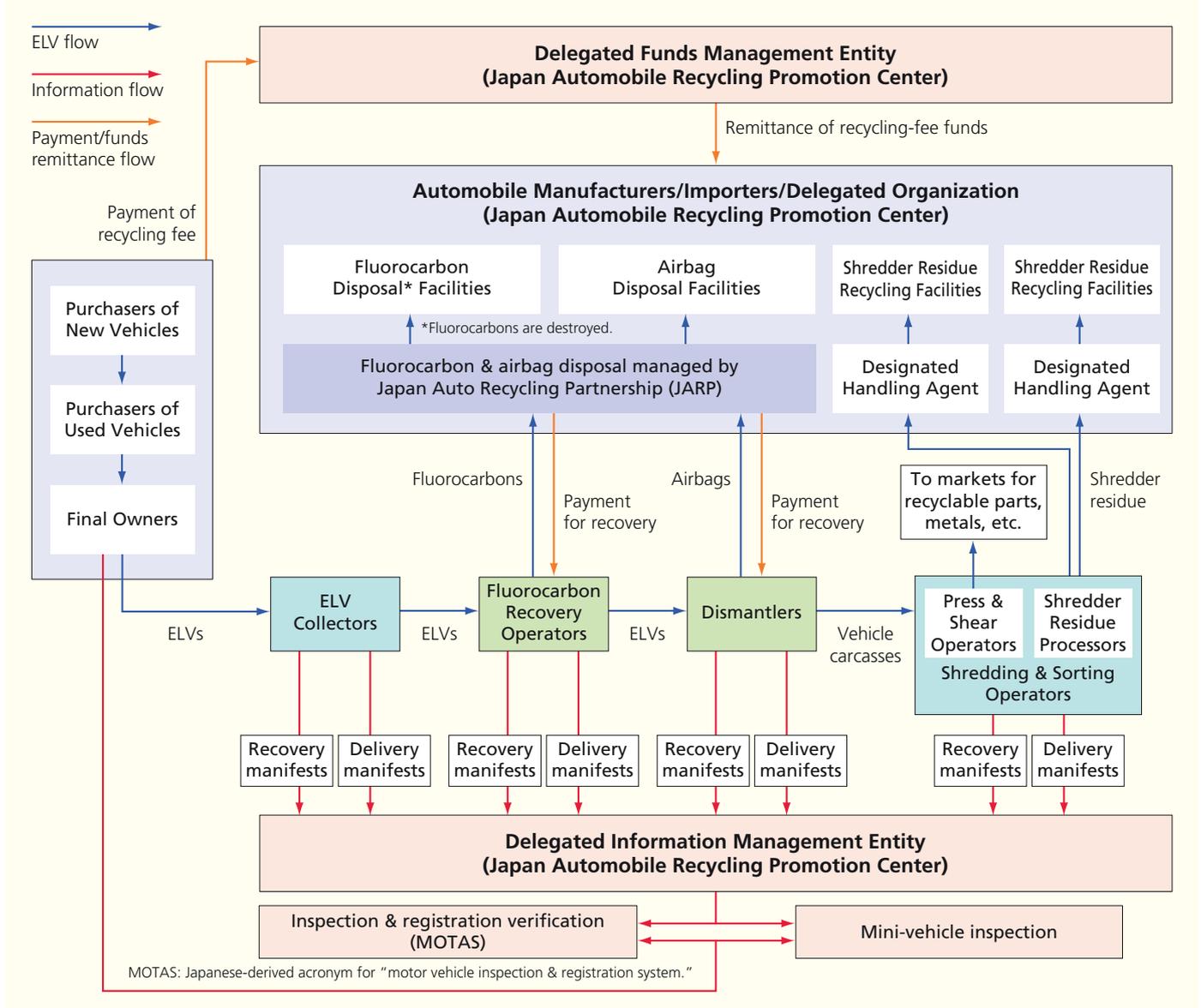
Source: Japan Automobile Recycling Promotion Center

### RECYCLING RATES: TARGETED & ACHIEVED

Three Designated Items	Target	Achieved
Fluorocarbons	Destruction	2.74 million vehicle units (2015)
Airbags	85%	93-94% (2015)
ASR	2005: 30% 2010: 50% 2015: 70%	96.5-98.8% (2015)

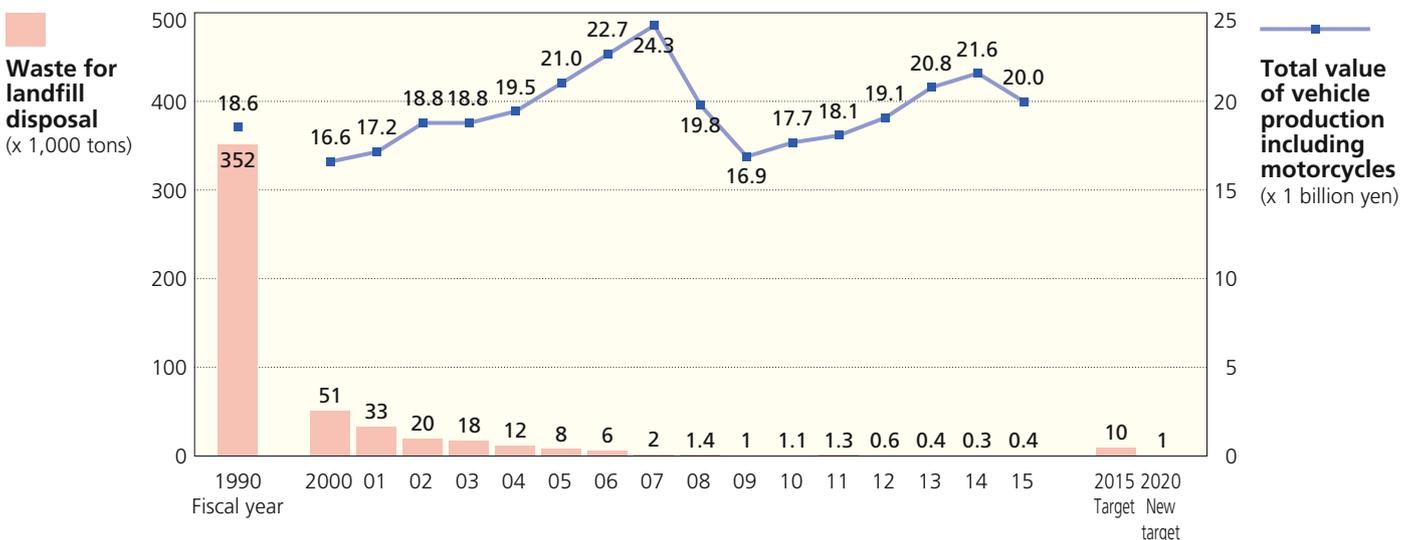
Sources: Government-affiliated entities

## ● THE ELV RECYCLING FLOW (as per the provisions of the End-of-Life Vehicle Recycling Law)



Note: The Japan Automobile Recycling Promotion Center assumes the same responsibilities as automobile manufacturers and importers when an ELV has no manufacturer representation under the provisions of this law. It also assumes transport-to-mainland costs for ELVs turned in on Japan's smallest islands.

## ● REDUCTIONS IN PRODUCTION PLANT-GENERATED WASTE

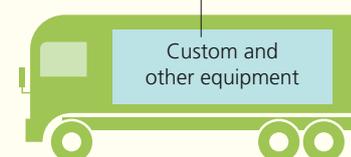


Source: Japan Automobile Manufacturers Association

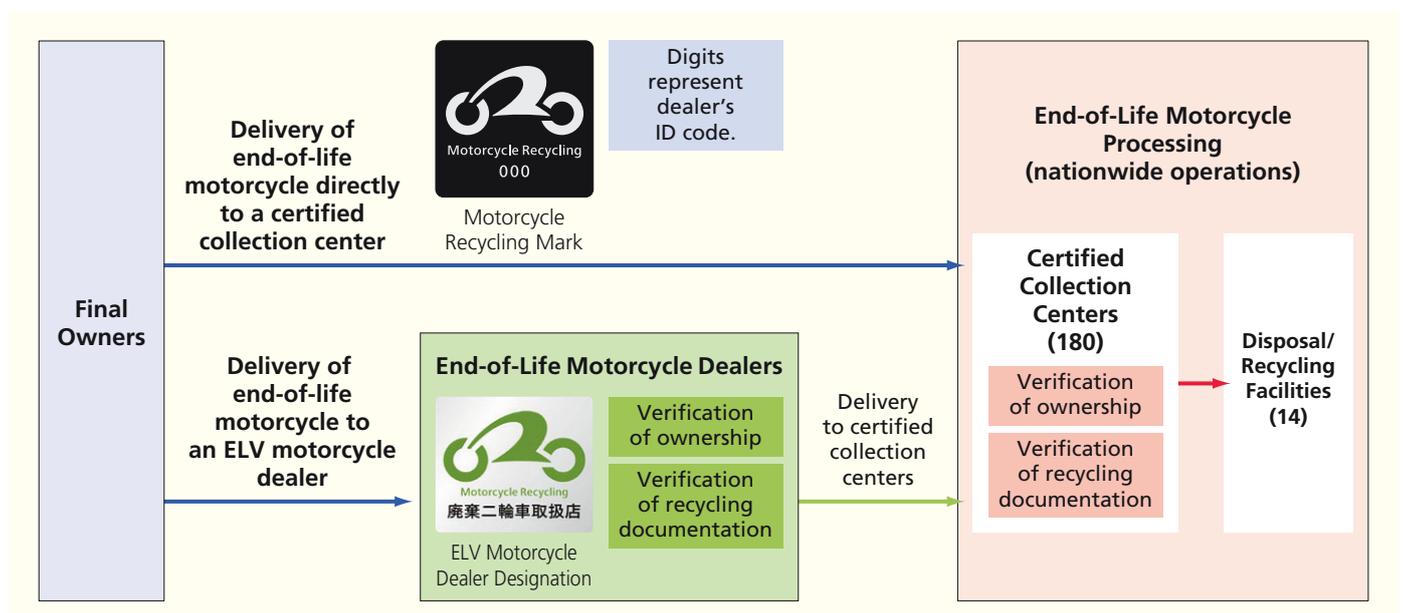
# Voluntary Initiatives to Recycle Commercial Vehicle Rack Equipment and Motorcycles

Japan’s End-of-Life Vehicle Recycling Law does not cover some types of commercial vehicle rack and custom equipment, nor does it cover motorcycles. In response, JAMA, in cooperation with the Japan Auto-Body Industries Association, promotes the voluntary development and use of rack equipment that is easy to dismantle and contains minimal amounts of hazardous substances. JAMA has also introduced a recycling-and-disposal system for such equipment and encourages operator participation in the system. As of January 2017, a total of 159 operators across Japan are participating in this system voluntarily. Meanwhile, since October 2004 JAMA’s four motorcycle-manufacturing members, along with 12 motorcycle importers, have been voluntarily operating a recycling system under which motorcycle dealers nationwide sell only vehicles that feature an official motorcycle recycling mark, enabling, without any additional charge to their final owners, their recovery and processing through the proper disposal channels at the end of their service life. In October 2011, the motorcycle recycling fee was eliminated for vehicles sold prior to the introduction of the motorcycle recycling system seven years earlier. The disposal of municipally-owned end-of-life motorcycles requires advance approval by the Japan Automobile Recycling Promotion Center.

## ● COMMERCIAL VEHICLE RACK EQUIPMENT NOT COVERED BY THE END-OF-LIFE VEHICLE RECYCLING LAW

<p><b>Voluntary Recovery (from Cab-Type Vehicles)</b></p> <p>(Color code explains cost burden placement.)</p> 	<p><b>Voluntary Recovery (from Single-Body Vehicles)</b></p> <p>(Color code explains cost burden placement.)</p> 	<p><b>Vehicles Not Covered by the End-of-Life Vehicle Recycling Law</b></p>	
		<p><b>Van-type CVs such as:</b></p>	Freezer trucks/vans, refrigerator trucks/vans, dry vans, etc.
		<p><b>Tank-type CVs such as:</b></p>	Tank trucks, cement mixers, waterspraying trucks, water-supply trucks, sewage removal trucks, etc.
<p><b>Cost Burden for Equipment Not Covered by the Law</b></p>		The End-of-Life Vehicle Recycling Law does not cover some types of rack and custom equipment for commercial vehicles. Recovery costs through final disposal are therefore not included in the vehicle recycling fee but rather market-determined.	
<p><b>Cost Burden for Equipment Covered by the Law</b></p>		For all commercial vehicle rack equipment covered by the End-of-Life Vehicle Recycling Law, including single-body vehicle equipment (exclusive of custom equipment), the vehicle recycling fee covers the entire cost of recovery through final disposal.	
		<p><b>Hauling CVs such as:</b></p>	Specialized hauling trucks, vehicle carriers, container trucks, lift-equipped vehicles, etc.
		<p><b>Special-purpose CVs such as:</b></p>	Special all-terrain vehicles, fire trucks, wreckers, pump trucks, ladder-equipped vehicles, etc.

## ● THE MOTORCYCLE RECYCLING FLOW

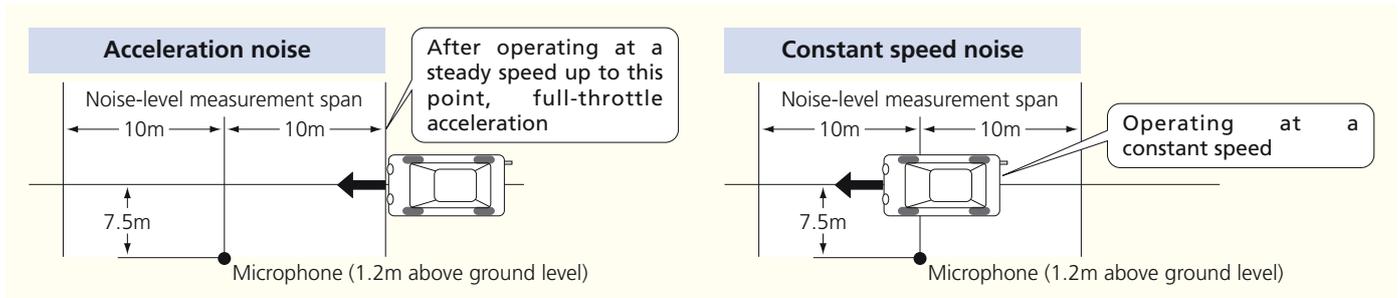


Note: The cost of ELV motorcycle delivery from ELV dealers to certified collection centers is financed by the motorcycle manufacturers on the basis of the consumer’s recycling fee paid at the time of motorcycle purchase. Source: Japan Automobile Recycling Promotion Center

## Reducing Automobile-Emitted Noise

Automobiles generate various kinds of noise, including the noise emitted by the engine, intake system, powertrain, and cooling and exhaust systems. Tires also generate tire-road noise. Automotive noise in Japan is regulated by standards—on acceleration noise, constant speed noise, and stationary noise—which have become progressively more stringent, requiring automakers to develop the technologies necessary for compliance. As regards the noise intentionally emitted through tampered mufflers, which has been recognized as a public nuisance, strengthened regulations in effect since April 2010 mandate a) that mufflers be tamper-resistant so as to prevent the alteration of their noise-suppression mechanism, and b) that replacement mufflers meet the relevant acceleration noise standard through type approval compliance and be ID-marked accordingly. Although very significant progress has been made as a result of these efforts, the Japanese government is nevertheless updating its noise regulations in line with the results of studies conducted under the United Nations’ World Forum for Harmonization of Vehicle Regulations (WP.29). UN Regulation (or “UN R”) 41-04, the new international standard on motorcycle acceleration noise, has been enforced in Japan since January 2014, and in its “New Measures for Reducing Automobile-Emitted Noise” released in July 2015, the government announced an approximate timetable for its adoption of UN R51-03 regulating motor vehicle acceleration noise testing and UN R117-02 regulating tire noise. Meanwhile, UN guidelines on equipping electric and hybrid vehicles with a proximity warning system (to counter their quietness at low speeds) were established in 2011 on the basis of existing Japanese guidelines.

### PROCEDURES FOR TESTING MOTOR VEHICLE NOISE LEVELS



### OVERVIEW OF JAPAN'S MOTOR VEHICLE NOISE REGULATIONS (for acceleration noise)

In dB(A)

Passenger Cars, Trucks and Buses							
Vehicle Type		Regulation					
		1971	1976-1977	1979	1982-1987	1998-2001	
Large-sized vehicles	Vehicles with GVW>3.5 tons and maximum engine output>150 kW	4WD vehicles, etc.				82	
		Trucks	92	89	86	83	
		Buses				81	
Medium-sized vehicles	Vehicles with GVW>3.5 tons and maximum engine output≤150 kW	4WD vehicles, etc.				81	
		Trucks	89	87	86	83	
		Buses				80	
Small-sized vehicles	Vehicles with GVW≤3.5 tons	Other than mini-vehicles	85	83	81	78	76
Passenger cars	Vehicles exclusively for the transport of passengers, with up to 10-passenger occupancy	Over 6 occupants 6 occupants or fewer	84	82	81	78	76

Notes: 1. In pre-1987 regulations, “150 kW” reads “200 horsepower.” 2. “4WD vehicles, etc.” includes 4WDs, tractors, and cranes.

Motorcycles							
Vehicle Type		Regulation					
		1971	1976-1977	1979	1982-1987	1998-2001	2014-
Small-sized motorcycles	Over 250cc	86					
Mini-sized motorcycles	126cc-250cc	84	83	78	75	73	
Class III (see note)	Over 50 (PMR*-based)	Mini-sized and small-sized motorcycles under the previous classification					77
Motor-driven cycles Class 2	51cc-125cc	82	79	75	72	71	
Class II (see note)	26-50 (PMR*-based)	Mostly Class 2 but also some Class 1 motor-driven cycles and some mini-sized motorcycles under the previous classification					74
Motor-driven cycles Class 1	50cc & under	80	79	75	72	71	
Class I (see note)	25 & under (PMR*-based)	Class 1 motor-driven cycles under the previous classification					73

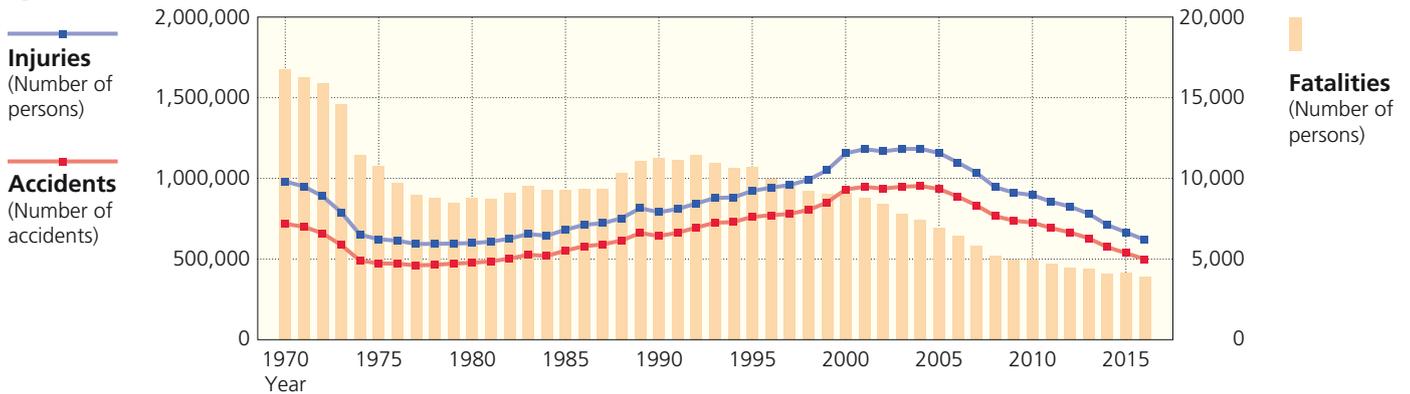
\*PMR: Power-to-mass ratio. Note: For noise regulation purposes only, since 2014 motorcycles in Japan have been classified (based on their PMR values) under the Class I, II and III categories, replacing the Class 1 motor-driven cycle, Class 2 motor-driven cycle, mini-sized motorcycle and small-sized motorcycle categories.

Source: Ministry of the Environment

# Road Fatalities Down after a Slight Rise; Road Accidents and Resulting Injuries Decline for Twelfth Straight Year

In 2016 road fatalities (defined here as deaths occurring within 24 hours after accident) in Japan decreased from the previous year to a total of 3,904. Road accidents and road injuries declined, for the twelfth consecutive year, to 499,201 and 618,853 respectively. Seatbelt use is a major contributing factor to reduced fatalities and reduced injuries in road traffic accidents. The June 2008 revision to the Road Traffic Act requires all automobile passengers, including rear-seat occupants, to use seatbelts. Although the rate of use of rear seatbelts in 2016 stood at 36.0% on regular roads and at 71.8% on expressways, those rates remain low compared to the rate of use of front seatbelts, which approaches 100%. Further measures are needed to encourage rear-seat occupants to buckle up.

## ROAD ACCIDENTS/INJURIES/FATALITIES

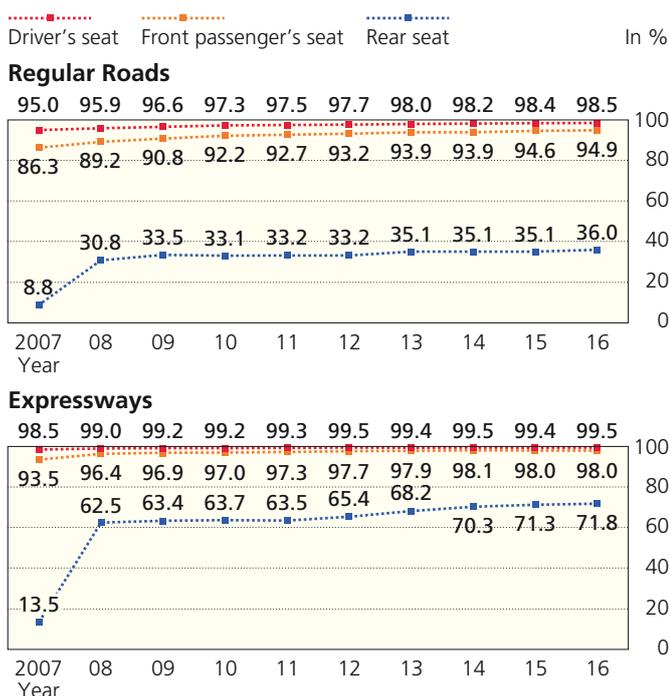


## ROAD ACCIDENTS/INJURIES/FATALITIES (exact figures)

Year	1970	1975	1980	1985	1990	1995	2000	2005	2010	2012	2013	2014	2015	2016
<b>Accidents</b>	718,080	472,938	476,677	552,788	643,097	761,794	931,950	934,346	725,924	665,157	629,033	573,842	536,899	499,201
<b>Injuries</b> (Number of persons)	981,096	622,467	598,719	681,346	790,295	922,677	1,155,707	1,157,113	896,297	825,392	781,492	711,374	666,023	618,853
<b>Fatalities</b> (Number of persons)	16,765	10,792	8,760	9,261	11,227	10,684	9,073	6,937	4,948	4,438	4,388	4,113	4,117	3,904

Source: National Police Agency

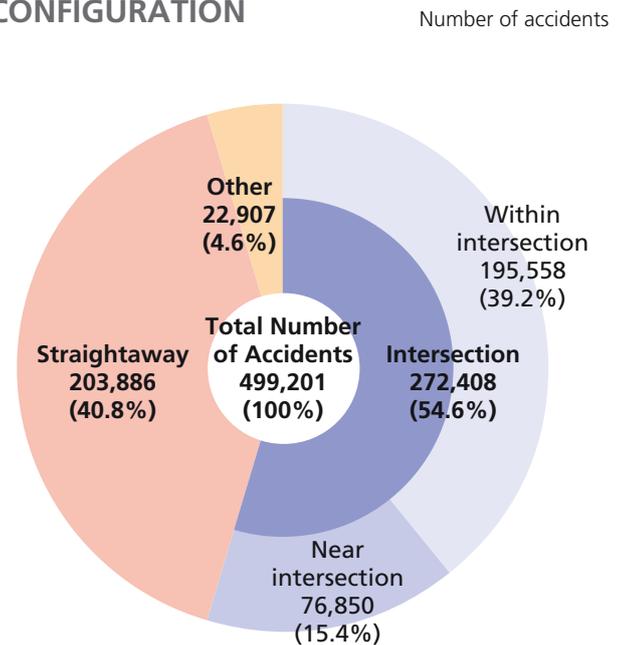
## SEATBELT USE RATES BY SEAT POSITION



Notes: 1. The survey on seatbelt use is conducted annually in October. 2. 2016 survey samples totalled roughly 412,000 on regular roads and 88,000 on expressways.

Sources: National Police Agency; Japan Automobile Federation

## ROAD ACCIDENTS IN 2016 BY ROAD CONFIGURATION



Notes: 1. "Straightaway" includes some curves and tunnels. 2. "Other" includes railroad crossings.

Source: National Police Agency

## Japan's 10th Basic Plan for Road Safety

Japan's road safety measures are promoted on the basis of its succession of consecutive "basic plans" for road safety, the first of which was implemented in 1971. The provisions of the tenth national road safety plan (2016-2020) are premised on the ultimate goal of eliminating road accidents altogether and were formulated on the basis of three guiding principles, namely: 1) the overarching priority of protecting human life, with a particular emphasis on promoting road safety for children, the elderly, and the disabled; 2) the application of advanced technologies to improve road safety; and 3) the promotion of research activity and technological innovation targeting greater road safety.

### ● JAPAN'S ROAD SAFETY TARGETS

- To reduce the annual number of road fatalities to 2,500 or fewer by 2020, and thus to make Japan's roads the safest in the world.
- To reduce the annual number of road injuries (including fatalities for deaths occurring within 24 hours of accident) to 500,000 or fewer by 2020.

### ● EIGHT MAJOR AREAS OF ROAD SAFETY PROMOTIONAL ACTIVITY

<b>Road Infrastructure Improvements</b> <ul style="list-style-type: none"> <li>- Creation of safe pedestrian walkways alongside community roads</li> <li>- Expanded measures for greater safety on main roads</li> <li>- Creation of a bicycle-friendly road use environment</li> <li>- Expansion of parking space availability</li> </ul>	<b>Road Safety Public Awareness-Promoting Initiatives</b> <ul style="list-style-type: none"> <li>- Provision of population segment-targeted road safety education</li> <li>- Conduct of road safety public awareness campaigns</li> <li>- Promotion of road safety awareness campaigns undertaken by civic organizations</li> <li>- Promotion of road safety activities in local communities with the participation of residents</li> </ul>
<b>Promotion of Safe Driving</b> <ul style="list-style-type: none"> <li>- Upgrading of driver education programs</li> <li>- Implementation of improvements to the driver licensing system</li> <li>- Promotion of safe-driving management activities in commercial operations</li> <li>- Promotion of planning &amp; monitoring initiatives for greater safety in commercial vehicle operations</li> </ul>	<b>Enhancement of Vehicle Safety</b> <ul style="list-style-type: none"> <li>- Upgrading of vehicle safety standards</li> <li>- Enhanced new car assessment information supply</li> <li>- Implementation of improvements to the national vehicle recall system</li> <li>- Promotion of bicycle safety</li> </ul>
<b>Enforcement of Road Traffic Laws</b> <ul style="list-style-type: none"> <li>- Strict enforcement of traffic regulations</li> <li>- Systematic investigation of road traffic violations</li> <li>- Stronger crackdowns on "hot-rodding" motorcyclists</li> </ul>	<b>Reinforcement of Emergency Road Rescue Operations Infrastructure</b> <ul style="list-style-type: none"> <li>- Upgrading of rescue operation systems</li> <li>- Upgrading of emergency medical support systems</li> <li>- Development of coordination activities in emergency rescue operations</li> </ul>
<b>Provision of Fair Compensation for Road Accident Victims</b> <ul style="list-style-type: none"> <li>- Promotion of improvements to automobile liability coverage</li> <li>- Enhanced support for the provision of fair "damages" compensation</li> <li>- Enhanced trauma care for road accident victims</li> </ul>	<b>Promotion of Road Safety Research and Analysis</b> <ul style="list-style-type: none"> <li>- Promotion of R&amp;D activities for greater road safety</li> <li>- Promotion of comprehensive analysis of road accident causation</li> </ul>

Source: Japan's 10th Basic Plan for Road Safety

## JAMA Initiatives in Promoting Greater Road Safety

JAMA supports the Japanese government's goals for reduced road fatalities and injuries (see "Japan's Road Safety Targets" in the next section) and pursues its own road safety-promoting initiatives, which are summarized below.

### ● JAMA'S ROAD SAFETY INITIATIVES IN EIGHT PRIORITY AREAS

Priority Area	Road Users: Public Awareness Campaigns	Vehicles: Safety Measures	Road Infrastructure: Proposals to Government
① Accidents involving pedestrians or cyclists	<ul style="list-style-type: none"> <li>• Continued implementation of road safety public awareness campaigns, based on the results of accident causation studies.</li> </ul>	<ul style="list-style-type: none"> <li>• More widespread application of AFS (1), ABS (2), BA (3), and stability control.</li> </ul>	<ul style="list-style-type: none"> <li>• For infrastructural improvements, based on the results of accident causation studies.</li> </ul>
② Special measures for the elderly	<ul style="list-style-type: none"> <li>• Development of road safety educational programs specifically for the elderly.</li> </ul>	<ul style="list-style-type: none"> <li>• Development of technologies specifically geared to aging-related physical changes.</li> </ul>	<ul style="list-style-type: none"> <li>• For more widespread roadway/sidewalk demarcation and greater barrier-free mobility.</li> </ul>
③ Greater use of seatbelts	<ul style="list-style-type: none"> <li>• Public awareness campaigns to promote the use of seatbelts.</li> </ul>		
④ Delays in driver recognition and incorrect vehicle control	<ul style="list-style-type: none"> <li>• Campaigns aimed at preventing faulty driver recognition and incorrect vehicle control.</li> </ul>	<ul style="list-style-type: none"> <li>• Research into the mechanisms of accident causation and human-machine interface conditions using data recorders, etc.</li> </ul>	
⑤ Accidents occurring at twilight/night	<ul style="list-style-type: none"> <li>• Campaigns to promote the early lighting of automobile headlamps.</li> </ul>	<ul style="list-style-type: none"> <li>• More widespread application of AFS.</li> </ul>	<ul style="list-style-type: none"> <li>• For improved nighttime road illumination.</li> </ul>
⑥ Accidents occurring at intersections	<ul style="list-style-type: none"> <li>• Public awareness campaigns to encourage drivers to exercise greater caution at intersections, where the majority of fatal road accidents occur.</li> </ul>	<ul style="list-style-type: none"> <li>• More widespread application of ABS, BA, and stability control.</li> <li>• Improvement of side-impact protection performance.</li> </ul>	<ul style="list-style-type: none"> <li>• For road infrastructure regulations for effective utilization of ITS technologies.</li> </ul>
⑦ Collisions with stationary objects		<ul style="list-style-type: none"> <li>• Improvement of side-impact and vehicle occupant protection performance and of side and curtain airbags.</li> </ul>	<ul style="list-style-type: none"> <li>• For expanded provision of underground power lines and impact-absorbing road installations.</li> </ul>
⑧ Compatibility		<ul style="list-style-type: none"> <li>• R&amp;D on crash-compatible vehicle bodies and compatibility evaluation methods to improve vehicle performance.</li> </ul>	

(1) Adaptive front-lighting systems; (2) Anti-lock braking systems; (3) Brake-assist systems.

## Equipping More Vehicles with Advanced Safety Features

Road safety involves three factors—vehicles, road users, and road infrastructure—and greater road safety requires that progress be made in all three areas. The automotive industry continuously strives for greater *active* safety by upgrading vehicle safety equipment and expanding its onboard installation rates, to help prevent accident occurrence. For example, 44.9% of the totality of passenger cars produced in 2015 for the domestic market were equipped with forward collision-mitigation braking systems (including those for low-speed vehicle operation) and 37.4% with systems enabling accelerator suppression in the event of pedal misapplication. Automakers also continuously seek to increase *passive* safety through enhanced structural safety and vehicle features designed to mitigate injury when accidents do occur.

### ● SAFETY FEATURE ONBOARD INSTALLATION STATUS (for passenger cars produced in 2015 for home market)

	Safety Feature	Installation Status				
		In no. of models (1)		In % (2)	In vehicle units	
Active Safety	Brake assist	179	(170)	98.4	3,718,099	97.0
	Unfastened seatbelt warning (front passenger's seat)	110	(105)	60.4	2,618,825	68.3
	Power-window jamming prevention (with auto-up function)	178	(169)	97.8	3,738,024	97.6
	Power-window jamming prevention (without auto-up function)	31	(30)	17.0	671,726	17.5
	High-intensity discharge headlamps	162	(78)	89.0	2,195,292	57.3
	Adaptive front-lighting system (AFS)	34	(15)	18.7	139,729	3.6
	Backing-up monitoring (rear obstacle detection)	130	(32)	71.4	1,494,945	39.0
	Vehicle perimeter monitoring	44	(14)	24.2	365,005	9.5
	Vehicle perimeter obstacle warning	45	(7)	24.7	393,142	10.3
	Blind-corner monitoring	28	(5)	15.4	241,547	6.3
	Night vision monitoring	2	(0)	1.1	522	0.0
	Curve detection	18	(4)	9.9	69,193	1.8
	Tire pressure monitoring	20	(14)	11.0	92,800	2.4
	Driver inattention warning	33	(10)	18.1	278,196	7.3
	Inter-vehicle distance warning	78	(15)	42.9	852,419	22.2
	Lane departure warning	69	(14)	37.9	802,913	21.0
	Rear collision warning-equipped headrest control	3	(0)	1.6	1,273	0.0
	Forward collision-mitigation braking system	75	(14)	41.2	705,468	18.4
	Adaptive cruise control	48	(7)	26.4	345,206	9.0
	Adaptive cruise control with low-speed following mode	18	(4)	9.9	199,775	5.2
	Full-range adaptive cruise control	26	(7)	14.3	222,726	5.8
	Lane-keeping assist	23	(2)	12.6	186,508	4.9
	Backing-up monitoring (parking assistance)	10	(1)	5.5	38,194	1.0
	Navigator-based gearshift control	15	(1)	8.2	48,715	1.3
	Pre-crash seatbelts	30	(5)	16.5	228,675	6.0
	Electronic stability control	172	(166)	94.5	3,495,904	91.2
	Traction control with anti-lock braking system	155	(149)	85.2	3,065,841	80.0
	Navigator-based stop sign alert with brake assist	10	(4)	5.5	108,478	2.8
	Rearward-approaching-vehicle warning	30	(4)	16.5	192,601	5.0
	Emergency braking warning	92	(82)	50.5	2,551,887	66.6
	Vehicle proximity warning (for HVs/EVs) (3)	47	(42)	47.5	871,143	49.9
	Forward collision-mitigation braking system (for low-speed vehicle operation)	42	(15)	23.1	1,015,993	26.5
	Accelerator suppression for pedal misapplication	68	(15)	37.4	1,432,632	37.4
Automatic high-to-low-beam headlamp control	36	(5)	19.8	284,001	7.4	
Glare-free high beam headlamp control	9	(2)	4.9	46,637	1.2	
Backing-up monitoring (moving-object warning)	24	(2)	13.2	163,538	4.3	
Backing-up collision-mitigation braking system	5	(1)	2.7	10,414	0.3	
Vehicle perimeter-based collision-mitigation braking system (for low-speed operation)	14	(0)	7.7	217,145	5.7	
Rear collision-mitigation braking system	10	(0)	5.5	113,478	3.0	
Lane departure prevention	26	(2)	14.3	202,649	5.3	
Passive Safety	Side airbags	141	(72)	77.5	1,420,023	37.1
	Curtain airbags	139	(67)	76.4	1,197,433	31.2
	Active head restraints	134	(134)	73.6	2,998,057	78.2
	ISOFIX anchorages (for child safety seats)	176	(175)	96.7	3,715,685	97.0
	Three-point seatbelt for rear center seat (4)	134	(134)	84.3	2,283,610	73.3
	<b>Total</b>	<b>182</b>		<b>3,831,851</b>		

(1) "In no. of models" indicates the number of models in which the safety feature is installed as standard or optional equipment. Figures in parentheses indicate the number of models in which the safety feature is standard equipment. (2) "In %" means as a percentage of the total number of models/units produced. (3) In 2015 a total of 99 hybrid/electric car models (1,745,375 vehicle units) were produced. (4) In 2015 a total of 159 passenger car models (3,114,126 vehicle units) were produced, excluding mini and other passenger cars which are not eligible for rear seat inclusion.

Notes: 1. Passenger cars here include minicars. 2. Criteria for inclusion in the calculations whose results are shown here were revised in 2015.

Source: Japan Automobile Manufacturers Association

## Assisted-Mobility Vehicles Provide Freedom of Movement

Assisted-mobility vehicles provide a comfortable and convenient means of displacement for people with otherwise limited mobility, such as elderly persons and the physically disabled, and are increasingly gaining recognition as meeting a significant need. They also play an essential role in the provision of public transportation services for all users. Japan's automakers have been working to enhance the convenience of assisted-mobility vehicles and thereby provide their users with optimal-quality mobility.

### ● TYPES OF ASSISTED-MOBILITY VEHICLES

Vehicle Type	Vehicle Feature	Description	
Nursing care	Wheelchair-accessible (with ramp or lift)	Equipped with a ramp or an electrically-operated lift that allows boarding/deboarding while remaining seated in a wheelchair. Some types of ramps are operated electrically.	
	Elevator seat	Equipped with a powered passenger or rear seat that, once rotated and slid out to the exterior, can be lowered to adjustable positions for easy boarding/exiting. Assists those who have considerable difficulty in boarding/exiting as well as wheelchair users.	
	Revolving seats Revolving sliding seats Revolving tilting seats	Passenger and rear seats can be rotated, rotated and slid out, or rotated and tilted to the exterior. Helpful for those who have a little difficulty in boarding/exiting.	
Self-operating	Drive-assist system	Equipped with drive-assist devices, such as a left-foot accelerator and hand/foot-operated equipment, so that it can be driven by the physically disabled.	
Other	Wheelchair van (multiple capacity)	Typically, with a maximum wheelchair-accommodating capacity of four. In some types, a passenger can be boarded into/deboarded from this vehicle while in a fully reclined position.	
	Assisted-mobility bus	A "non-step" bus equipped with an electric lift or ramp allowing boarding/deboarding while seated in a wheelchair. Their use in local intra-community transport is being promoted.	

### ● TRENDS IN ASSISTED-MOBILITY VEHICLE SALES

In vehicle units

Fiscal Year	2012	2013	2014	2015	2016
<b>Standard &amp; Small Vehicles</b>	25,129	24,366	25,004	23,398	24,380
Chg. (%)	108.8	97.0	102.6	93.6	104.2
Wheelchair-accessible vehicles	13,577	13,196	14,013	13,525	14,493
Vehicles with elevator seats	10,388	10,209	10,065	7,454	6,217
Vehicles with revolving seats	—	—	—	1,552	2,838
Vehicles with drive-assist systems	660	471	552	427	370
Wheelchair vans (multiple capacity)	504	490	374	440	462
<b>Mini-Vehicles</b>	14,041	15,471	18,560	15,837	13,796
Chg. (%)	147.9	110.2	120.0	85.3	87.1
Wheelchair-accessible vehicles	12,096	12,954	14,487	12,705	11,112
Vehicles with elevator seats	1,847	2,474	4,055	2,848	2,491
Vehicles with revolving seats	—	—	—	273	193
Vehicles with drive-assist systems	97	43	18	11	0
Other	1	0	0	0	—
<b>Buses</b>	3,959	4,352	4,305	5,510	6,308
Chg. (%)	127.5	109.9	98.9	128.0	114.5
<b>Total</b>	43,129	44,189	47,869	44,745	44,484
Chg. (%)	120.9	102.5	108.3	93.5	99.4

Notes: 1. JAMA member manufacturers provided the unit sales figures here, which do not include vehicles customized post-purchase. 2. Buses include minibuses. 3. "Standard & Small Vehicles" includes passenger cars and van-type commercial vehicles; definitions for "standard" and "small" vehicles here differ from those in Japan's Road Vehicles Act. 4. Vehicles with elevator seats and vehicles with revolving seats have been calculated separately since 2015. Figures for "Vehicles with elevator seats" prior to 2015 include vehicles with revolving seats. 5. The "Wheelchair vans (multiple capacity)" figures prior to 2016 were listed as "Other" in this booklet's previous editions; and from 2016, the "Other" category for mini-vehicles is being eliminated. 6. "Chg. (%)" means change from the previous year (with the previous year's result indexed at 100).

Source: Japan Automobile Manufacturers Association

## 82.2 Million People Hold Driver's Licenses

At the end of 2016 there were 82.2 million people, or 45.3 million men and 36.9 million women, holding valid driver's licenses in Japan. The number of driver's licenses held totalled 127.8 million (with one count allotted to each vehicle category covered, whenever a license covers multiple vehicle categories). By license category, Class 2 licenses were held by 2.14 million people, or 2.08 million men and 0.06 million women, and Class 1 licenses by 125.6 million people, or 80.97 million men and 44.65 million women.

### ● GENDER TRENDS IN DRIVER'S LICENSE HOLDERS (at end of every calendar year) Number of persons

Year	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
<b>Men</b>	45,412,614	45,517,585	45,539,419	45,487,010	45,448,263	45,437,260	45,463,791	45,430,245	45,344,259	45,255,994
<b>Women</b>	34,494,598	34,930,257	35,272,526	35,523,236	35,767,003	36,050,586	36,396,221	36,645,978	36,805,749	36,949,917
<b>Total</b>	79,907,212	80,447,842	80,811,945	81,010,246	81,215,266	81,487,846	81,860,012	82,076,223	82,150,008	82,205,911

### ● TOTAL NUMBER OF LICENSES HELD, BY YEAR & LICENSE/VEHICLE CATEGORY Number of licenses held

Year		2010	2011	2012	2013	2014	2015	2016
<b>Class 2 Licenses</b>	Large motor vehicle	1,068,347	1,046,361	1,026,180	1,007,743	986,518	964,383	942,526
	Middle-category motor vehicle	1,121,287	1,081,474	1,042,120	1,002,043	960,304	917,142	873,879
	Ordinary motor vehicle	200,961	208,060	214,555	220,403	224,823	229,494	234,070
	Large special-purpose vehicle	46,698	46,055	45,463	45,041	44,330	43,605	42,997
	Traction vehicle	52,480	51,716	51,035	50,473	49,665	48,844	48,134
	<b>Subtotal</b>	<b>2,489,773</b>	<b>2,433,666</b>	<b>2,379,353</b>	<b>2,325,703</b>	<b>2,265,640</b>	<b>2,203,468</b>	<b>2,141,606</b>
<b>Class 1 Licenses</b>	Large motor vehicle	5,415,730	5,375,268	5,337,727	5,299,480	5,253,880	5,198,185	5,143,533
	Middle-category motor vehicle	73,587,938	72,814,101	72,070,665	71,409,459	70,632,500	69,732,685	68,813,808
	Ordinary motor vehicle	4,370,510	5,550,718	6,749,966	7,936,169	9,113,940	10,297,590	11,473,646
	Large special-purpose vehicle	2,435,324	2,443,687	2,454,123	2,465,978	2,473,823	2,476,598	2,475,520
	Traction vehicle	1,145,609	1,152,732	1,160,509	1,168,205	1,174,267	1,178,790	1,182,806
	Large two-wheeler	11,472,937	11,197,903	10,938,930	10,703,691	10,430,075	10,112,584	9,799,816
	Ordinary two-wheeler	8,996,934	9,154,873	9,310,786	9,472,692	9,619,692	9,752,541	9,877,616
	Small special-purpose vehicle	565,103	532,892	503,338	477,296	450,123	422,020	394,952
	Motorized bicycle	17,190,548	17,075,472	16,977,729	16,905,848	16,784,700	16,618,061	16,450,534
	<b>Subtotal</b>	<b>125,180,633</b>	<b>125,297,646</b>	<b>125,503,773</b>	<b>125,838,818</b>	<b>125,933,000</b>	<b>125,789,054</b>	<b>125,612,231</b>
<b>Total</b>	<b>127,670,406</b>	<b>127,731,312</b>	<b>127,883,126</b>	<b>128,164,521</b>	<b>128,198,640</b>	<b>127,992,522</b>	<b>127,753,837</b>	

Note: In the above figures, one count is allotted to each vehicle category covered, whenever a license covers multiple vehicle categories.

### ● CLASS 1 LICENSES AND THE VEHICLE CATEGORIES THEY COVER

Vehicle Category	Class 1 Licenses									
	Large motor vehicle	Middle-category motor vehicle	Quasi-middle-category motor vehicle	Ordinary motor vehicle	Large special-purpose vehicle	Large two-wheeler	Ordinary two-wheeler	Ordinary two-wheeler (51cc-125cc)	Small special-purpose vehicle	Motorized bicycle
Large motor vehicle	●									
Middle-category motor vehicle	●	●								
Quasi-middle-category motor vehicle	●	●	●							
Ordinary motor vehicle	●	●	●	●						
Large special-purpose vehicle					●					
Large two-wheeler (over 400cc)						●				
Ordinary two-wheeler	126cc-400cc					●	●			
	51cc-125cc					●	●	●		
Small special-purpose vehicle	●	●	●	●	●	●	●	●	●	
Motorized bicycle (50cc & under)	●	●	●	●	●	●	●	●		●

Notes: 1. As per a revision to the Road Traffic Act, the quasi-middle-category motor vehicle license went into effect from March 12, 2017. 2. The ordinary motor vehicle and large two-wheeler license categories include licenses restricted to automatic transmission (AT) cars/motorcycles; the ordinary two-wheeler license category includes licenses restricted, respectively, to AT motorcycles, to small-sized (over 250cc) motorcycles, and to small-sized AT motorcycles.

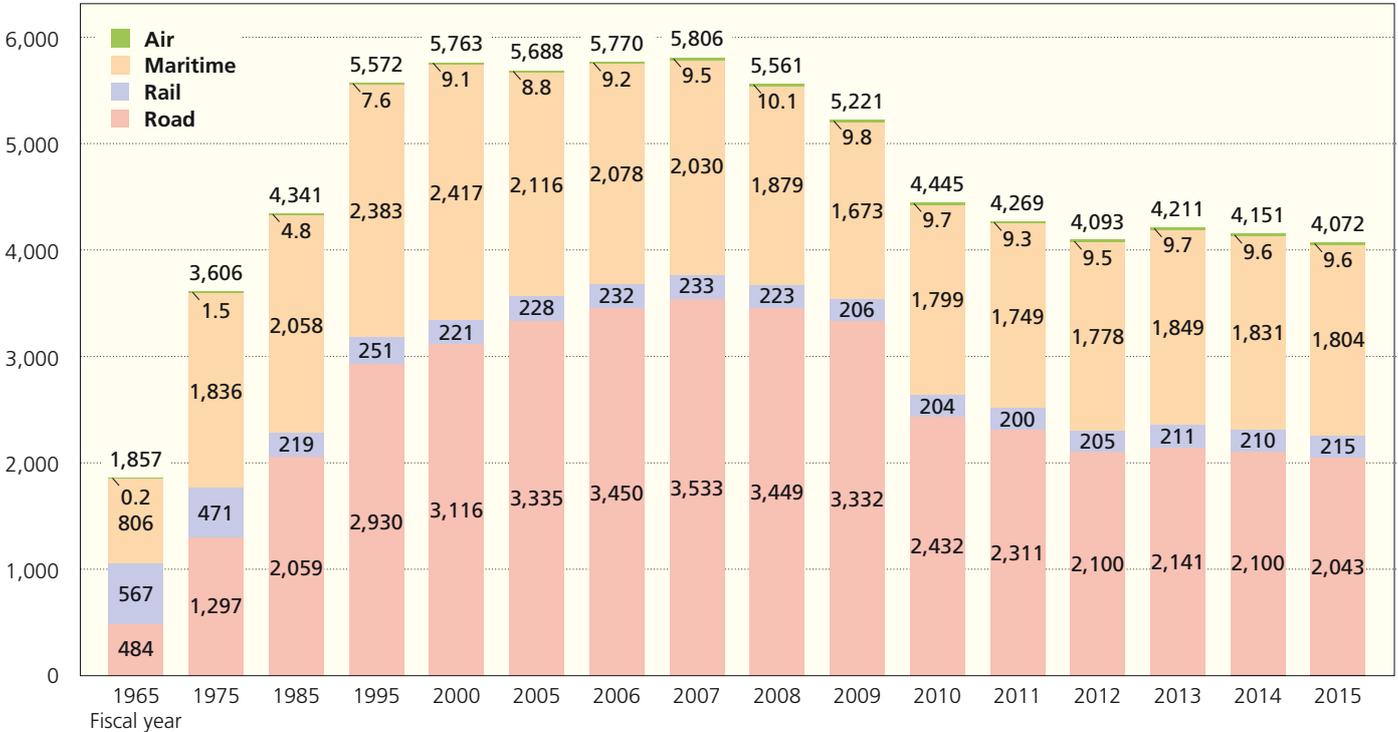
Source for all statistical data on this page: National Police Agency

## Motor Vehicles Are Vital to Goods Distribution

Accounting at present for 50% of Japan's total freight transport, road transportation plays an essential role in goods distribution. The role of motor vehicles in freight transport, especially small cargo transport, will become even more significant in the years ahead.

### TRENDS IN DOMESTIC FREIGHT TRANSPORT VOLUMES, BY MODE

x 100 million tons/km



Notes: 1. Since 1987, "Road" includes transport by mini-vehicles. 2. Survey and calculation methods for "Road" data changed in 2010. 3. "Road" figures for fiscal 2010 (ending March 31, 2011) and 2011 do not include March and April 2011 data from the Tohoku region and Hokkaido as a consequence of the March 11, 2011 earthquake. Sources: Ministry of Land, Infrastructure, Transport and Tourism, etc.

## Automobile Customs Tariffs

After repeated reductions in tariff rates, import tariffs in Japan on finished motor vehicles and major auto components were completely abolished in 1978. Meanwhile, some countries still impose high tariffs on imported vehicles. The United States imposes a 25% tariff on imported trucks, and EU import tariffs range from 10% (on finished passenger cars) to 22% (on larger-sized trucks). China's auto tariffs remain high despite having been progressively lowered after the country's accession to the World Trade Organization.

### AUTOMOBILE CUSTOMS TARIFFS, JAPAN/U.S.A./EU/CHINA

As of February 2017

	Japan	U.S.A.	EU	China
<b>Passenger Cars</b>	None	2.5%	10%	25%
<b>Trucks</b>	None	25% Cab chassis, from 5t up to 20t in GVW ..... 4%	Gasoline trucks, over 2800cc ..... 22% Diesel trucks, over 2500cc ..... 22% Gasoline trucks, 2800cc or under ..... 10% Diesel trucks, 2500cc or under ..... 10%	Trucks, under 5t in GVW ..... 25% Gasoline trucks, 5t or greater in GVW ..... 20% Diesel trucks, from 5t up to 20t in GVW ..... 20% Diesel trucks, 20t or greater in GVW ..... 15%
<b>Buses</b>	None	Vehicles for the transport of 10 or more persons, incl. the driver ..... 2%	Vehicles for the transport of 10 or more persons, incl. the driver Gasoline buses, over 2800cc ..... 16% Diesel buses, over 2500cc ..... 16% Gasoline buses, 2800cc or under ..... 10% Diesel buses, 2500cc or under ..... 10%	25%
<b>Components, etc.</b>	Major components: None	Bodies, parts and accessories ..... 2.5%	Bodies, parts and accessories ..... 3-4.5%	Major components ..... 6-10%

Sources: Customs tariff schedules of countries/region concerned

# Wider ITS Applications and the Transition to Automated Driving

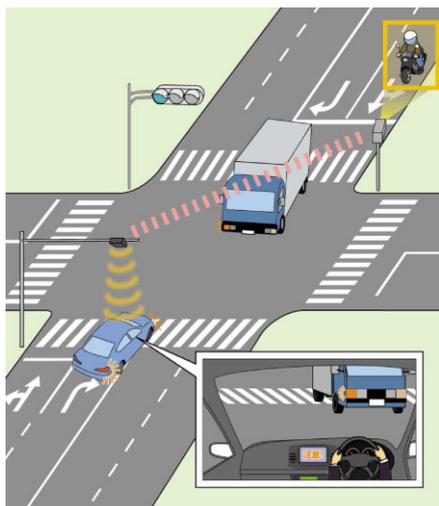
Intelligent Transport Systems aim to radically improve transport safety, efficiency and convenience through the use of information and communication technologies integrating road users, road infrastructure, and vehicles. In 1996 the Japanese government formulated its Comprehensive Concept for the Promotion of ITS, on the basis of which it has promoted, as a national project, ITS development in a number of areas. Advanced navigation systems are already widely in use, as are ETC (electronic toll collection) and smart highway toll stations using ETC exclusively. A wide range of technologies developed on the basis of Advanced Safety Vehicle (ASV) research are also in application. The Public-Private ITS Initiative/Roadmaps policy initiative formulated by the Japanese government in June 2014 (and updated in May 2016) details measures to be taken for further ITS development under public-private cooperative efforts, with the focus on safe-driving support as well as automated driving systems and on the expanded use of road traffic data. To achieve the stipulated goals, coordinated inter-ministerial and inter-agency efforts, including the upgrading of communication infrastructures, are required.

## INTRODUCTION OF ROAD-TO-VEHICLE SAFE-DRIVING SUPPORT SYSTEMS

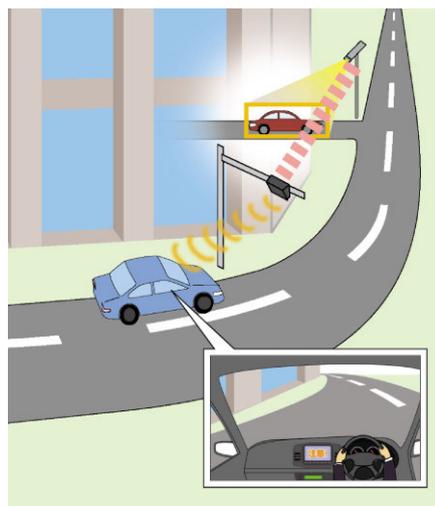
Incorporating ITS technologies, road-to-vehicle (also referred to as "vehicle-to-infrastructure") systems providing safe-driving support and cruise assistance have been in operation in Japan since 2010-11. More recently, ETC 2.0, an advanced electronic toll collection system that also provides drivers with real-time information on traffic conditions, has been introduced, for use on intercity and intracity expressways.

### ● "DSSS"\* SYSTEM FEATURES (EXAMPLES)

1. "Oncoming traffic" warning (here, on right turn)



2. "Entering traffic ahead" warning



\*DSSS: "Driving Safety Support System"

Source: Universal Traffic Management Society of Japan

### ● ETC 2.0 DEVICE-BASED SYSTEM FEATURES (EXAMPLES)



Sources: Ministry of Land, Infrastructure, Transport and Tourism, etc.

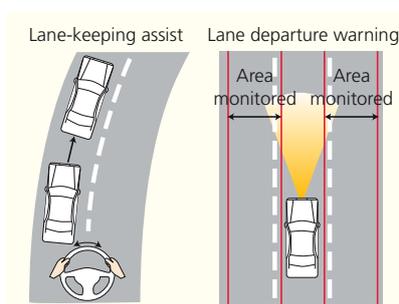
## EXPANDING AVAILABILITY OF ASV TECHNOLOGIES IN THE MARKET

In the area of safe-driving assistance using ITS technologies, a wide range of vehicle safety features, including adaptive front-lighting systems, lane-keeping assist systems, full-range adaptive cruise control systems and collision-mitigation braking systems, have been developed based on the results of research conducted on the Advanced Safety Vehicle (ASV) concept. Most of these advanced technologies have already been introduced to the market (see page 39 for details on the status of their onboard installation).

### ● PRACTICAL APPLICATION OF ASV TECHNOLOGIES

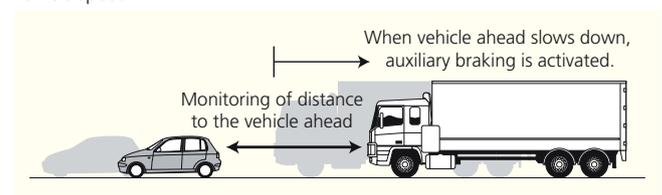
#### 1. Lane-Keeping Assist

Sensors (cameras) positioned on the vehicle monitor the road ahead and, through auxiliary control of the steering wheel, help keep the vehicle centered in the lane whenever the vehicle deviates from its course because of, for example, a crosswind or road surface unevenness.



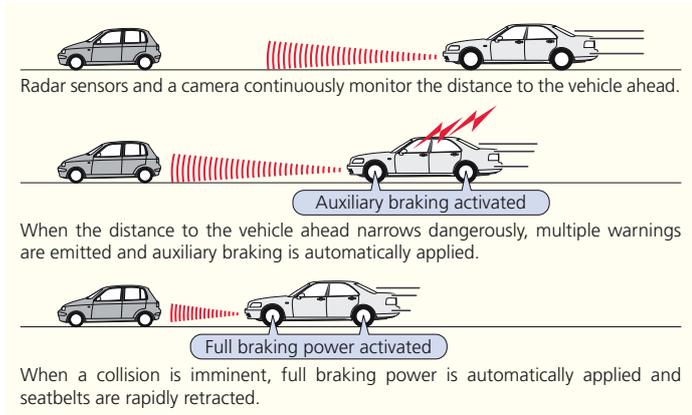
#### 2. Full-Range Adaptive Cruise Control

Information from front sensors helps a vehicle keep a safe distance from the vehicle ahead through brake or speed control according to a preset vehicle speed.



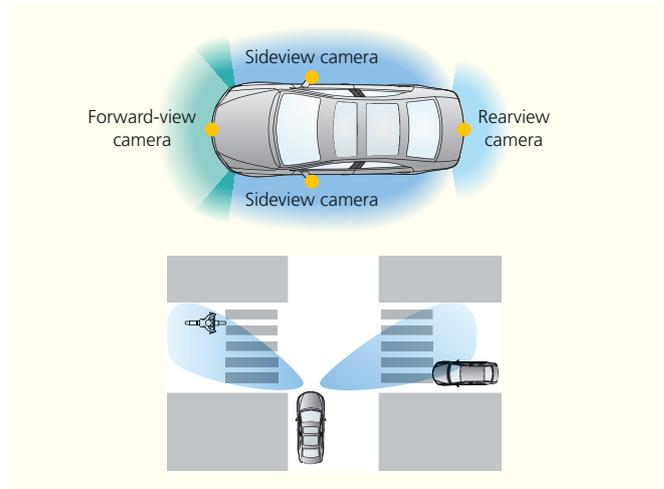
### 3. Collision-Mitigation Braking System (pre-crash safety)

Based on the distance from and speed relative to the vehicle ahead obtained principally by means of radar technology, the system's electronic control unit calculates the risk of collision. In the event of such a risk, multiple warnings are emitted and auxiliary braking is applied. When a collision is imminent, full braking power is applied and seatbelts are retracted automatically.



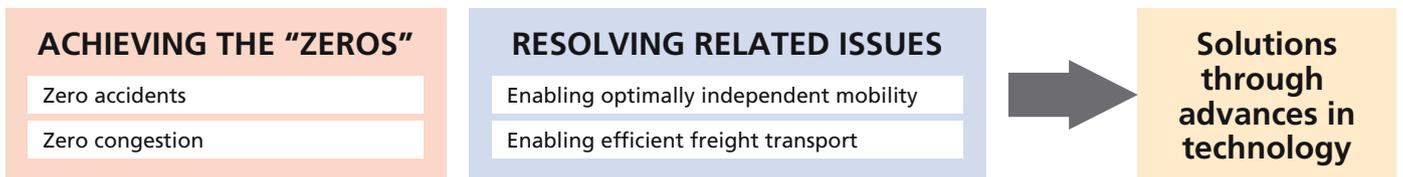
### 4. Vehicle Perimeter Monitoring & Blind-Corner Monitoring

In blind-corner monitoring (bottom image), front cameras with built-in prisms transmit both left and right views to the in-cabin display screen.

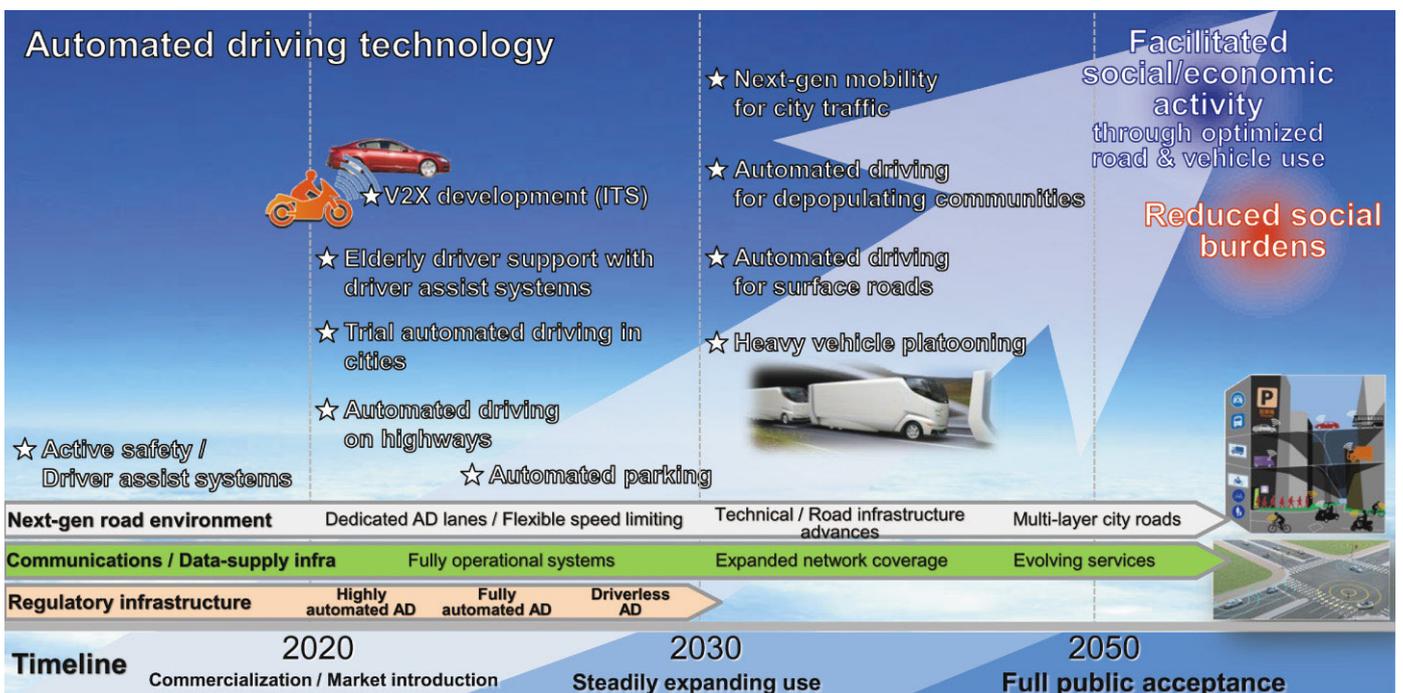


## THE TRANSITION TO AUTOMATED DRIVING

In November 2015, JAMA released a roadmap for achieving safe and efficient road transport for all road users in Japan through the use of automated driving. Targeting the elimination of accidents and congestion and optimized road and vehicle use for people and the transport of goods, the roadmap envisions the wider introduction of automated driving functions in the lead-up to 2020; between 2020 and 2030, the expanded application of automated driving technologies in various driving environments; and by 2050, predicated on full public acceptance which Japan's automakers will promote, a comprehensive deployment of advanced levels of automated driving, the result of integrated efforts on the part of industry, government, and academia.



## THE JAMA ROADMAP FOR THE PROMOTION OF AUTOMATED DRIVING



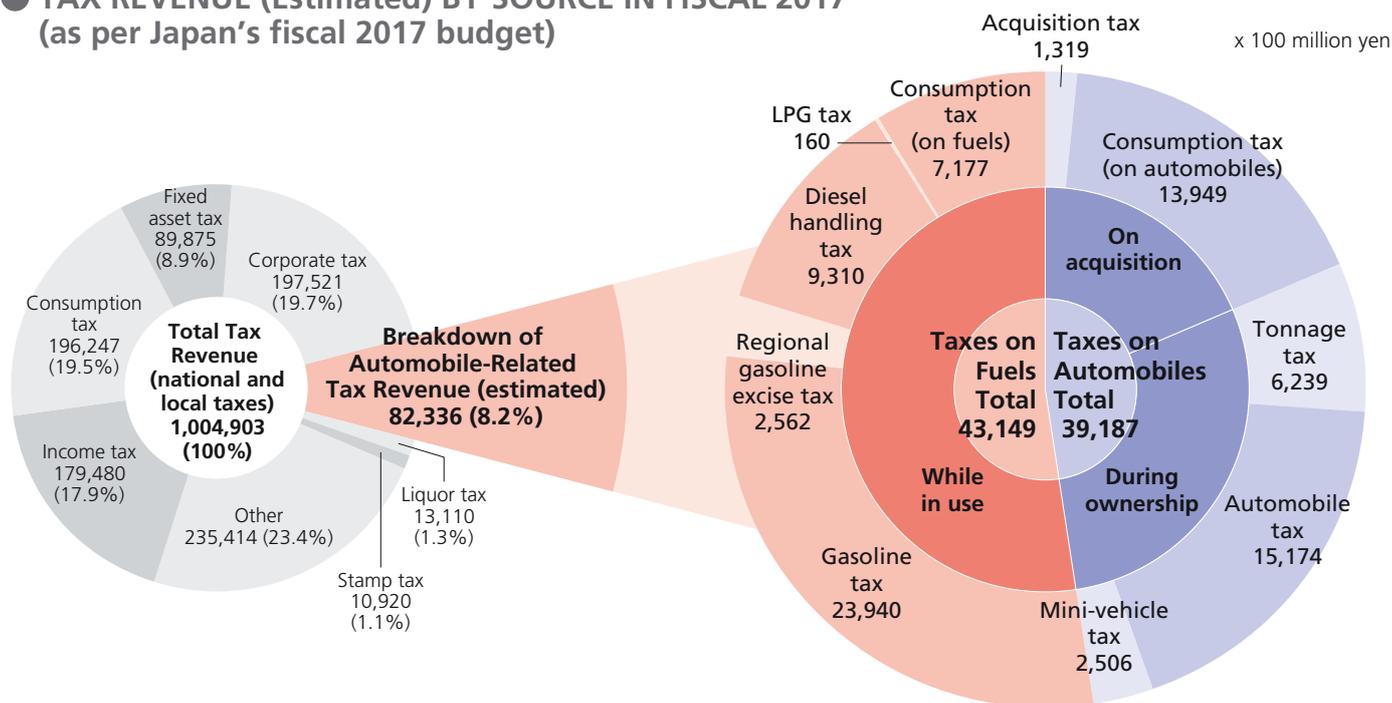
Note: "V2X" means vehicle-to-connected infrastructure.

Source: Japan Automobile Manufacturers Association

## 8 Trillion Yen in Annual Automobile-Related Tax Revenue

Since the initial earmarking of funds for road construction and road maintenance programs in line with Japan’s first five-year road improvement plan in 1954, there has been a steady increase both in the number of automobile-related taxes assessed on users and in their respective rates. Currently, the automobile tax structure consists of nine different taxes, creating a very heavy tax burden for motor vehicle owners in Japan. Under the government’s budget for fiscal 2017, the total value of tax revenue from these automobile-related taxes has been estimated at 8.2 trillion yen, or 8.2% of Japan’s projected total tax revenue of 100 trillion yen in fiscal 2017.

### ● TAX REVENUE (Estimated) BY SOURCE IN FISCAL 2017 (as per Japan’s fiscal 2017 budget)



Notes: 1. Automobile-related consumption tax revenue is not included in the “Consumption tax” segment in the chart on the left, but is included in the breakdown of automobile-related tax revenue appearing in the chart on the right. 2. Automobile-related consumption tax revenue values (including the consumption tax revenue from automobile servicing, not shown but included in figures here) have been calculated by JAMA. 3. The consumption tax is a national sales tax, of which 1.7% of the revenue is redistributed as revenue to local governments. Sources: Ministry of Finance; Ministry of Internal Affairs and Communications

### ● AUTOMOBILE-RELATED TAXES IN JAPAN (as of May 1, 2017)

Tax Category	On Acquisition		During Ownership
	Acquisition Tax	Consumption Tax	Tonnage Tax
<b>How Assessed</b>	Assessed on the acquisition of an automobile, whether new or used, based on the purchase price	Assessed on the purchase price of the automobile	Assessed according to vehicle weight at each mandatory vehicle inspection
<b>National/Local Tax</b>	Prefectural tax	National and local tax	National tax
<b>Tax Rate/ Amount</b>	(Private use) - 3% of purchase price (2% for commercial vehicles and mini-vehicles) - Exempted for vehicles purchased for ¥500,000 or less  Note: For eco-friendly vehicles, reductions/exemptions apply to the acquisition tax (see pages 48-51).	8% (of which 1.7% is a local tax)	1) Only eco-friendly vehicles and new passenger cars and small trucks and buses (GVW≤2.5t) compliant +5% with 2015 fuel efficiency standards, with emissions down by 75% from 2005 standards or by 50% from 2018 standards: ¥2,500/0.5t/year for private-use passenger cars (i.e., base rate) 2) Vehicles on the road 18 years or longer since first registration: ¥6,300/0.5t/year for private-use passenger cars 3) Vehicles on the road 13 years or longer since first registration: ¥5,700/0.5t/year for private-use passenger cars 4) Other vehicles for private use: - Passenger cars: ¥4,100/0.5t/year - Trucks (GVW>2.5t): ¥4,100/t/year; Trucks (GVW≤2.5t): ¥3,300/t/year - Buses: ¥4,100/t/year; Mini-vehicles: ¥3,300/year - Motorcycles (251cc and over): ¥1,900/year - Motorcycles (126 to 250cc): ¥4,900 upon registration  Note: For eco-friendly vehicles, reductions/exemptions apply to the tonnage tax (see pages 48-51).

## ● JAPAN'S ESTIMATED AUTOMOBILE-RELATED TAX REVENUE IN FISCAL 2017

			Tax Revenue (x 100 million yen)	Base Tax Rate (for reference)	Current Tax Rate	Comparison with Base Tax Rate (multiplier value)
Taxes on Automobiles	On acquisition	Acquisition tax	1,319	3%	3% (Excluding commercial/mini-vehicles)	1.0
		Consumption tax (on automobiles)	13,949	8%		
	During ownership	Tonnage tax	6,239	¥2,500/0.5t/year (Vehicles for private use)	¥4,100/0.5t/year (Vehicles for private use)	1.6
		Automobile tax	15,174	Based on engine capacity (e.g., for 1,001≤1,500cc passenger cars, ¥34,500/year; see below)		
		Mini-vehicle tax	2,506	¥10,800/year (Passenger cars for private use)		
Total			39,187			
Taxes on Fuels	While in use	Gasoline tax	23,940	¥24.3/ℓ	¥48.6/ℓ	2.0
		Regional gasoline excise tax	2,562	¥4.4/ℓ	¥5.2/ℓ	1.2
		Diesel handling tax	9,310	¥15.0/ℓ	¥32.1/ℓ	2.1
		LPG tax	160	¥17.5/kg		
		Consumption tax (on fuels)	7,177	8%		
		Total	43,149			
Grand Total			82,336			

Notes: 1. Consumption tax revenue values (including the consumption tax revenue from automobile servicing, not shown but included in figures here) have been calculated by JAMA. 2. Current tax rates effective as of May 1, 2017.

## ● TAX RATES IN EFFECT (Examples), 1954-2017, TO SUPPORT ROAD NETWORK IMPROVEMENTS

Duration	"Five-Year" Plan	Fiscal Year	Acquisition Tax	Tonnage Tax ¥/0.5t/year	Gasoline Tax ¥/ℓ	Regional Gasoline Excise Tax ¥/ℓ	Diesel Handling Tax ¥/ℓ	LPG Tax ¥/kg
1954-57	First	'54 '55 '56 '57	[Commercial and mini-vehicles excluded]	[In the case of a passenger car for private use]	13.0 11.0 ↓ 14.8 ↓ 19.2 ↓ 22.1 ↓ 24.3	2.0 ↓ 3.5 ↓ 4.0 ↓ 4.4	6.0 8.0 ↓ 10.4 ↓ 12.5	5 10 ↓ 17.5
1958-60	Second	'59						
1961-63	Third	'61						
1964-66	Fourth	'64 '66						
1967-69	Fifth	'67 '68						
1970-72	Sixth	'70 '71						
1973-77	Seventh	'74 '76						
1978-82	Eighth	'79						
1983-87	Ninth							
1988-92	Tenth							
1993-97	Eleventh	'93						
1998-2002	Twelfth	'98						
2003-07	As per the national priority infrastructure development plan							
2008-	As per the national medium-term road infrastructure plan							
2010-11	—							
2012-13	—							
2014-16	—							
2017-	—							
Comparison with base tax rate (multiplier value)			1.00	1.64	2.00	1.18	2.14	1.00

Base tax rate \*The base tonnage tax rate (¥2,500/0.5t/year) is applied only to eco-friendly vehicles and new passenger cars and small trucks and buses (GVW≤2.5t) compliant +5% with 2015 fuel efficiency standards, with emissions down by 75% from 2005 standards or by 50% from 2018 standards. Source: Japan Automobile Manufacturers Association

Automobile Tax	Mini-Vehicle Tax	While in Use				
		Gasoline Tax	Regional Gasoline Excise Tax	Diesel Handling Tax	LPG Tax	Consumption Tax
Fixed amount assessed on the owner each year as of April 1	Fixed amount assessed on the owner each year as of April 1	Assessed on gasoline		Assessed on light oil	Assessed on LPG	Assessed on the purchase price of fuels
		Included in the fuel price				
Prefectural tax	Municipal tax	National tax		Prefectural tax	National tax	National and local tax
Passenger cars (for private use) - Up to 1,000cc ¥29,500/year - 1,001 to 1,500cc ¥34,500/year - 1,501 to 2,000cc ¥39,500/year - 2,001 to 2,500cc ¥45,000/year - 2,501 to 3,000cc ¥51,000/year - 3,001 to 3,500cc ¥58,000/year - 3,501 to 4,000cc ¥66,500/year - 4,001 to 4,500cc ¥76,500/year - 4,501 to 6,000cc ¥88,000/year - Over 6,000cc ¥111,000/year  Note: For some eco-friendly vehicles, reductions apply to the automobile tax (see page 51).	1) Mini-vehicles (for private use) - Passenger cars ¥10,800/year - Trucks ¥5,000/year  Note: Above tax rates apply to vehicles newly registered in or after fiscal 2015 and take effect from fiscal 2016.  2) Motorcycles - Up to 50cc ¥2,000/year - 51 to 90cc ¥2,000/year - 91 to 125cc ¥2,400/year - 126 to 250cc ¥3,600/year - 251cc and over ¥6,000/year  Note: For some eco-friendly mini-vehicles, reductions apply to the mini-vehicle tax (see page 51).	¥48.6/ℓ	¥5.2/ℓ	¥32.1/ℓ (light oil)	¥17.5/kg (LPG)	8% of the purchase price of fuels (of which 1.7% is a local tax)  [For light oil, imposed on the light oil price excluding the diesel handling tax]

Source: Japan Automobile Manufacturers Association

## Tax Incentives to Promote the Wider Use of Eco-Friendly Vehicles

To help expedite the shift to low-carbon road transport in the interest of curbing global warming and to help improve air quality, the Japanese government has, since April 2009, applied auto-related tax incentives to promote the wider use of eco-friendly vehicles. A new package of incentives, introduced for application beginning in April 2017, updates vehicle eligibility requirements and will be in effect for the next two years.

### INCENTIVES & ELIGIBILITY REQUIREMENTS

#### ● ACQUISITION AND TONNAGE TAX REDUCTIONS/EXEMPTIONS

Period in effect: April 1, 2017 through March 31, 2019 for the acquisition tax; May 1, 2017 through April 30, 2019 for the tonnage tax.

Alternative-Energy Vehicles  Passenger Cars; Small, Mid-Sized & Heavy-Duty Trucks and Buses	Electric vehicles/Fuel cell vehicles/Plug-in hybrid vehicles/ Clean diesel passenger cars (1)/Natural gas vehicles (2)		
	Acquisition Tax	New vehicles	Exempt
		Used vehicles	¥450,000 deduction
Tonnage Tax		Exempt on initial inspection mandated for new vehicle purchase and at time of 1st vehicle inspection post-purchase	

(1) Only vehicles complying with 2009 or 2018 emission standards. (2) With NOx emissions down by 10% from 2009 emission standards, or complying with 2018 emission standards.

Passenger Cars  Gasoline vehicles/ LPG vehicles (including hybrids)	 or 					
	Compliant +40% with 2020 fuel efficiency standards		Compliant +30% with 2020 fuel efficiency standards		Compliant +10% with 2020 fuel efficiency standards	
Acquisition Tax	New vehicles	Exempt	60% reduction	40% reduction	20% reduction	
	Used vehicles	¥450,000 deduction	¥250,000 deduction	¥150,000 deduction	¥50,000 deduction	
Tonnage Tax		Exempt*	75% reduction	50% reduction	25% reduction	

\*For vehicles compliant +40% with 2020 fuel efficiency standards, exemption applies on initial inspection mandated for new vehicle purchase and at time of 1st vehicle inspection post-purchase; for vehicles compliant +30% with 2020 fuel efficiency standards, exemption applies only on initial inspection mandated for new vehicle purchase.

Note: Incentives and eligibility requirements as shown in the above chart will be in effect from April 1, 2017 through March 31, 2018 for the acquisition tax, and from May 1, 2017 through April 30, 2018 for the tonnage tax; a second phase of incentives and eligibility requirements for passenger cars will be in effect starting in April 2018 (see page 50).

Small Trucks and Buses (GVW≤2.5t)  Gasoline vehicles (including hybrids)	 or 					
	Compliant +25% with 2015 fuel efficiency standards		Compliant +10% with 2015 fuel efficiency standards		Compliant +5% with 2015 fuel efficiency standards	
Acquisition Tax	New vehicles	Exempt	80% reduction	60% reduction	40% reduction	20% reduction
	Used vehicles	¥450,000 deduction	¥350,000 deduction	¥250,000 deduction	¥150,000 deduction	¥50,000 deduction
Tonnage Tax		Exempt*	75% reduction	50% reduction	25% reduction	

\*Exemption applies on initial inspection mandated for new vehicle purchase and at time of 1st vehicle inspection post-purchase.

Fuel consumption and exhaust emission requirements are currently JC08 test cycle-based. For the purpose of assessing the acquisition tax on used passenger cars and on used small trucks and buses (GVW≤2.5t) whose certified fuel efficiency was measured in the old 10•15-mode test cycle, the equivalence of JC08 test cycle-obtained fuel efficiency values to the 10•15-mode test cycle as listed in the two charts below is applied.

For passenger cars:

JC08 Test Cycle-Obtained Fuel Efficiency Value	Equivalence to the 10•15-Mode Test Cycle
Compliant +40% with 2020 fuel efficiency standards	= Compliant +110% with 2010 fuel efficiency standards
Compliant +30% with 2020 fuel efficiency standards	= Compliant +95% with 2010 fuel efficiency standards
Compliant +20% with 2020 fuel efficiency standards	= Compliant +80% with 2010 fuel efficiency standards
Compliant +10% with 2020 fuel efficiency standards	= Compliant +65% with 2010 fuel efficiency standards
Compliant with 2020 fuel efficiency standards	= Compliant +50% with 2010 fuel efficiency standards
Compliant +20% with 2015 fuel efficiency standards	= Compliant +50% with 2010 fuel efficiency standards
Compliant +10% with 2015 fuel efficiency standards	= Compliant +38% with 2010 fuel efficiency standards

For small trucks and buses (GVW≤2.5t):

JC08 Test Cycle-Obtained Fuel Efficiency Value	Equivalence to the 10•15-Mode Test Cycle
Compliant +25% with 2015 fuel efficiency standards	= Compliant +57% with 2010 fuel efficiency standards
Compliant +20% with 2015 fuel efficiency standards	= Compliant +50% with 2010 fuel efficiency standards
Compliant +15% with 2015 fuel efficiency standards	= Compliant +44% with 2010 fuel efficiency standards
Compliant +10% with 2015 fuel efficiency standards	= Compliant +38% with 2010 fuel efficiency standards
Compliant +5% with 2015 fuel efficiency standards	= Compliant +32% with 2010 fuel efficiency standards

<b>Mid-Sized Trucks and Buses (2.5t&lt;GVW≤3.5t)</b>  <b>Gasoline vehicles (including hybrids)</b>			or			or			or			or	
		Emissions down by 75% from 2005 standards	Emissions down by 50% from 2018 standards	Emissions down by 50% from 2005 standards	Emissions down by 25% from 2018 standards	Emissions down by 75% from 2005 standards	Emissions down by 50% from 2018 standards	Emissions down by 50% from 2005 standards	Emissions down by 25% from 2018 standards				
		Compliant +15% with 2015 fuel efficiency standards	Compliant +10% with 2015 fuel efficiency standards	Compliant +15% with 2015 fuel efficiency standards	Compliant +10% with 2015 fuel efficiency standards	Compliant +5% with 2015 fuel efficiency standards	Compliant with 2015 fuel efficiency standards			Compliant +5% with 2015 fuel efficiency standards			
<b>Acquisition Tax</b>	New vehicles	Exempt	75% reduction	50% reduction	25% reduction								
	Used vehicles	¥450,000 deduction	¥350,000 deduction	¥250,000 deduction	¥150,000 deduction								
<b>Tonnage Tax</b>		Exempt*	75% reduction	50% reduction	25% reduction								

\*Exemption applies on initial inspection mandated for new vehicle purchase and at time of 1st vehicle inspection post-purchase.

<b>Mid-Sized Trucks and Buses (2.5t&lt;GVW≤3.5t)</b>  <b>Diesel vehicles (including hybrids)</b>			or	Compliant with 2018 emission standards	Compliant with 2009 emission standards		or	Compliant with 2018 emission standards	Compliant with 2009 emission standards
		NOx and PM emissions down by 10% from 2009 standards	NOx and PM emissions down by 10% from 2009 standards	NOx and PM emissions down by 10% from 2009 standards	NOx and PM emissions down by 10% from 2009 standards				
		Compliant +15% with 2015 fuel efficiency standards	Compliant +10% with 2015 fuel efficiency standards	Compliant +15% with 2015 fuel efficiency standards	Compliant +10% with 2015 fuel efficiency standards	Compliant +5% with 2015 fuel efficiency standards	Compliant with 2015 fuel efficiency standards	Compliant +5% with 2015 fuel efficiency standards	Compliant with 2015 fuel efficiency standards
<b>Acquisition Tax</b>	New vehicles	Exempt	75% reduction	50% reduction	25% reduction				
	Used vehicles	N/A	N/A	N/A	N/A				
<b>Tonnage Tax</b>		Exempt*	75% reduction	50% reduction	25% reduction				

N/A: Not applicable. \*Exemption applies on initial inspection mandated for new vehicle purchase and at time of 1st vehicle inspection post-purchase.

<b>Heavy-Duty Trucks and Buses (GVW&gt;3.5t)</b>  <b>Diesel vehicles (including hybrids)</b>			or	Compliant with 2016 emission standards	
		NOx and PM emissions down by 10% from 2009 standards	Compliant with 2016 emission standards		
		Compliant +15% with 2015 fuel efficiency standards	Compliant +10% with 2015 fuel efficiency standards	Compliant +5% with 2015 fuel efficiency standards	Compliant with 2015 fuel efficiency standards
<b>Acquisition Tax</b>	New vehicles	Exempt	75% reduction	50% reduction	25% reduction
	Used vehicles (hybrid vehicles only)	¥450,000 deduction	¥350,000 deduction	¥250,000 deduction	¥150,000 deduction
<b>Tonnage Tax</b>		Exempt*	75% reduction	50% reduction	25% reduction

\*Exemption applies on initial inspection mandated for new vehicle purchase and at time of 1st vehicle inspection post-purchase.

Notes concerning the charts on pages 48 and 49: 1. Acquisition tax reductions/exemptions are applied on initial inspection mandated for new vehicle purchase during the period in which the above reductions/exemptions are in effect; for used vehicles, deductions are made from vehicles' purchase price and the acquisition tax is assessed on the amount remaining after deduction. 2. Tonnage tax reductions are applied on initial inspection mandated for new vehicle purchase during the period in which the above reductions/exemptions are in effect. 3. Vehicles complying with or surpassing the fuel efficiency standards stipulated in Japan's Energy Conservation Law are identified with appropriately coded stickers. 4. Vehicles complying with or surpassing emission standards are certified by Japan's Ministry of Land, Infrastructure, Transport and Tourism.

● ACQUISITION AND TONNAGE TAX REDUCTIONS/EXEMPTIONS

Starting in April 2018, the following updated incentives and eligibility requirements for passenger cars will come into effect.

<b>Passenger Cars</b>  <b>Gasoline vehicles/ LPG vehicles</b> (including hybrids)		 or  Emissions down by 75% from 2005 standards      Emissions down by 50% from 2018 standards					
		 Compliant +50% with 2020 fuel efficiency standards	 Compliant +40% with 2020 fuel efficiency standards	 Compliant +30% with 2020 fuel efficiency standards	 Compliant +20% with 2020 fuel efficiency standards	 Compliant +10% with 2020 fuel efficiency standards	 Compliant with 2020 fuel efficiency standards
<b>Acquisition Tax</b>	New vehicles	Exempt		80% reduction	60% reduction	40% reduction	20% reduction
	Used vehicles	¥450,000 deduction		¥350,000 deduction	¥250,000 deduction	¥150,000 deduction	¥50,000 deduction
<b>Tonnage Tax</b>		Exempt*		75% reduction		50% reduction	25% reduction

\*For vehicles compliant +50% with 2020 fuel efficiency standards, exemption applies on initial inspection mandated for new vehicle purchase and at time of 1st vehicle inspection post-purchase.

Note: Incentives and eligibility requirements as shown in the above chart will be in effect from April 1, 2018 through March 31, 2019 for the acquisition tax, and from May 1, 2018 through April 30, 2019 for the tonnage tax. (For incentives and eligibility requirements for alternative-energy passenger cars, see page 48.)

Passenger cars meeting the following performance criteria are not covered by the tax incentives for eco-friendly vehicles shown on pages 48-50, but when they undergo the initial inspection mandated for new vehicle purchase during the relevant “period in effect” stipulated below, they will be eligible for a tonnage tax reduction, in that the “base tax rate” rather than the (higher) “current tax rate” for the tonnage tax will be assessed on them (see page 47).

Period in Effect	Emissions Performance Criteria	Fuel Efficiency Performance Criteria
<b>May 1, 2017 through April 30, 2018</b>	 or  Emissions down by 75% from 2005 standards      Emissions down by 50% from 2018 standards	 Compliant +5% with 2015 fuel efficiency standards
<b>May 1, 2018 through April 30, 2019</b>	 or  Emissions down by 75% from 2005 standards      Emissions down by 50% from 2018 standards	 Compliant +10% with 2015 fuel efficiency standards

Notes: 1. The provisions shown in the above chart were established in Japan’s 2017 revised tax regimen and apply to qualifying passenger cars (excluding minicars and hybrids) only once, on initial inspection mandated for new vehicle purchase. Prior to the establishment of these provisions, the “current tax rate” for the tonnage tax was assessed on vehicles not covered by the tax incentives for eco-friendly vehicles. 2. Example of the amount assessed when the base tonnage tax rate is applied over a three-year period in the case of a qualifying 1.5-ton passenger car for private use: ¥22,500 (as opposed to the ¥36,900 assessed at the “current tax rate”).

## ● ACQUISITION AND TONNAGE TAX REDUCTIONS/EXEMPTIONS

(Heavy-Duty Vehicles Equipped with Advanced Safety Features and Public-Use Assisted-Mobility Vehicles)

Period in effect: April 1, 2017 through March 31, 2019 for the acquisition tax; May 1, 2015 through April 30, 2018 for the tonnage tax.

Vehicle Type		Reductions/Exemptions	
		Acquisition Tax	Tonnage Tax
<b>Trucks (3.5t&lt;GVW≤22t)</b> <b>Buses (GVW≤12t, for seated passengers only)</b> equipped with a collision-mitigation braking system and/or an electronic stability control system	Equipped with either of the two systems	¥3.5 million deduction from purchase price (1), (2)	50% reduction (1), (3)
	Equipped with both systems	¥5.25 million deduction from purchase price (1), (2)	75% reduction (1), (3)
<b>Assisted-Mobility Vehicles</b>	Low-floor ("non-step") buses (for use in public transport)	¥10 million deduction from purchase price (2)	Exempt (3)
	Buses equipped with an electric lift (for use in public transport)	• For large buses (occupancy≥30 persons), ¥6.5 million deduction from purchase price (2) • For small buses (occupancy<30 persons), ¥2 million deduction from purchase price (2)	Exempt (3)
	Universal design-based taxis (for use in public transport)	¥1.0 million deduction from purchase price (2)	Exempt (3)

(1) Large trucks (20t<GVW≤22t) equipped with both systems are eligible only for the acquisition tax incentive of a ¥3.5 million deduction from vehicle purchase price and the tonnage tax incentive of a 50% reduction from the applicable tonnage tax rate. Eligibility for small buses (GVW≤5t, for seated passengers only) requires that they be equipped with a collision-mitigation braking system. (2) Deductions are applied once, at the time of first registration. (3) Tonnage tax reductions/exemptions are applied once, on initial inspection mandated for new vehicle purchase during the period in which these reductions/exemptions are in effect.

Notes: 1. The acquisition tax is assessed on the amount remaining after deduction. 2. The above tonnage tax reductions/exemptions do not apply to vehicles targeted by this scheme that are eligible for the tonnage tax reductions/exemptions prescribed for eco-friendly vehicles (see pages 48 and 49), to which the latter measures only are applied. Regarding the acquisition tax, owners of vehicles covered under this scheme can opt either for the deductions indicated here or for the acquisition tax reductions/exemptions prescribed for eco-friendly vehicles (see pages 48 and 49).

## ● FISCAL 2017 & 2018 AUTOMOBILE TAX REDUCTIONS (Passenger Cars and Trucks & Buses)

Requirements		Reduction
<b>Passenger Cars</b>	<b>Electric vehicles/Fuel cell vehicles/Plug-in hybrid vehicles/Clean diesel passenger cars (1)/Natural gas vehicles (2)</b> Compliant +30% with 2020 fuel efficiency standards, with emissions down by 75% from 2005 standards or down by 50% from 2018 standards	75% reduction (4)
	Compliant +10% with 2020 fuel efficiency standards, with emissions down by 75% from 2005 standards or down by 50% from 2018 standards	50% reduction (4)
<b>Trucks &amp; Buses</b>	<b>Electric vehicles/Fuel cell vehicles/Plug-in hybrid vehicles/Natural gas vehicles (3)</b>	75% reduction (4)

(1) Only vehicles complying with 2009 emission standards. (2) With NOx emissions down by 10% from 2009 emission standards. (3) With NOx emissions down by 10% from 2009 emission standards, or complying with 2018 emission standards. (4) Reductions effective on initial inspection mandated for new vehicle purchase to be applied in the fiscal year following the year of purchase.

Note: This scheme also mandates a yearly 15% (10% for trucks and buses) surcharge on the automobile tax for gasoline and LPG-powered vehicles on the road 13 years or longer, and for diesel vehicles on the road 11 years or longer, since first registration; electric vehicles, fuel cell vehicles, natural gas vehicles, methanol vehicles, gasoline hybrid vehicles, public transport buses and trailers are exempt.

## ● FISCAL 2017 & 2018 MINI-VEHICLE TAX REDUCTIONS (Minicars and Mini-Trucks) \*

Requirements		Reduction
<b>Minicars</b>	<b>Electric vehicles/Fuel cell vehicles/Natural gas vehicles (1)</b>	75% reduction (2)
	Compliant +30% with 2020 fuel efficiency standards, with emissions down by 75% from 2005 standards or down by 50% from 2018 standards	50% reduction (2)
	Compliant +10% with 2020 fuel efficiency standards, with emissions down by 75% from 2005 standards or down by 50% from 2018 standards	25% reduction (2)
<b>Mini-Trucks</b>	<b>Electric vehicles/Fuel cell vehicles/Natural gas vehicles (1)</b>	75% reduction (2)
	Compliant +35% with 2015 fuel efficiency standards, with emissions down by 75% from 2005 standards or down by 50% from 2018 standards	50% reduction (2)
	Compliant +15% with 2015 fuel efficiency standards, with emissions down by 75% from 2005 standards or down by 50% from 2018 standards	25% reduction (2)

\*Applies only to newly registered three- or four-wheeled mini-vehicles.

(1) With NOx emissions down by 10% from 2009 emission standards, or complying with 2018 emission standards. (2) Reductions effective on initial inspection mandated for new vehicle purchase to be applied in the fiscal year following the year of purchase.

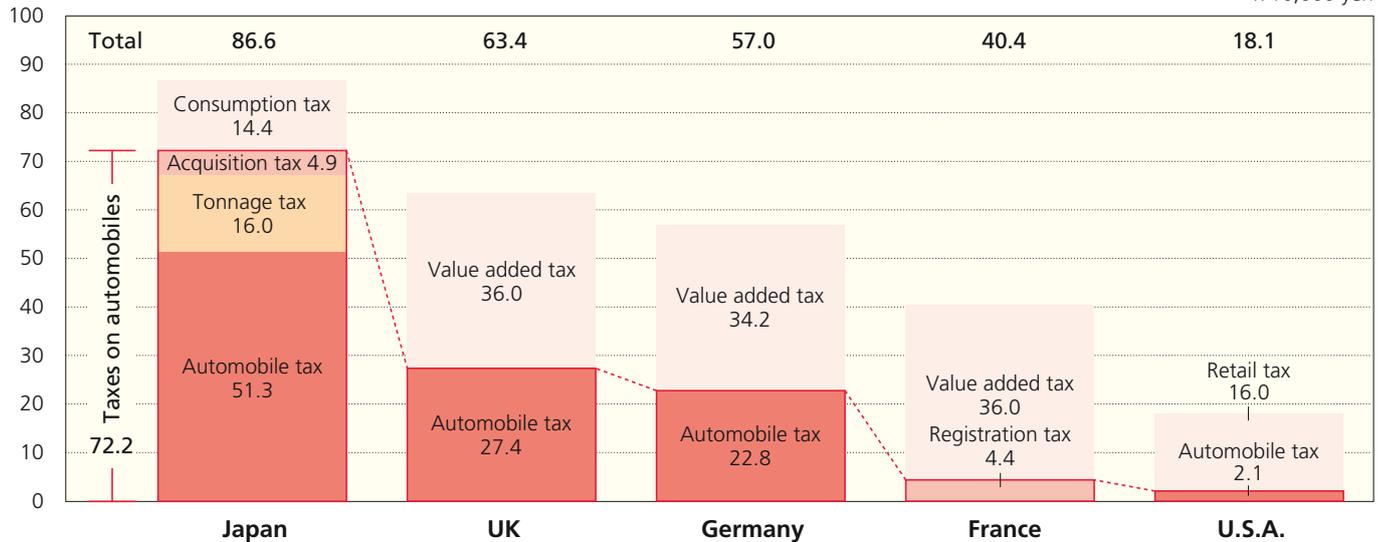
Note: This scheme also mandates a yearly 20% surcharge on the mini-vehicle tax for mini-vehicles on the road 13 years or longer since first registration; electric vehicles, fuel cell vehicles, natural gas vehicles, methanol vehicles, gasoline hybrid vehicles and trailers are exempt.

## Automobile-Related Taxes Are Onerous

Consider the case of a passenger car costing 1.8 million yen when purchased new and providing 13 years of service to the original owner for private use. During that period, six different categories of taxes (including consumption tax at the time of vehicle purchase and on fuel) will be assessed on the owner/user, amounting to a grand total of roughly 1.7 million yen. In addition to these various taxes, the user will also be required to pay onerous expressway tolls, automobile insurance premiums (mandatory and optional), a recycling fee, periodic inspection fees, and maintenance costs.

### INTERNATIONAL COMPARISON OF AUTOMOBILE-RELATED TAXES

x 10,000 yen

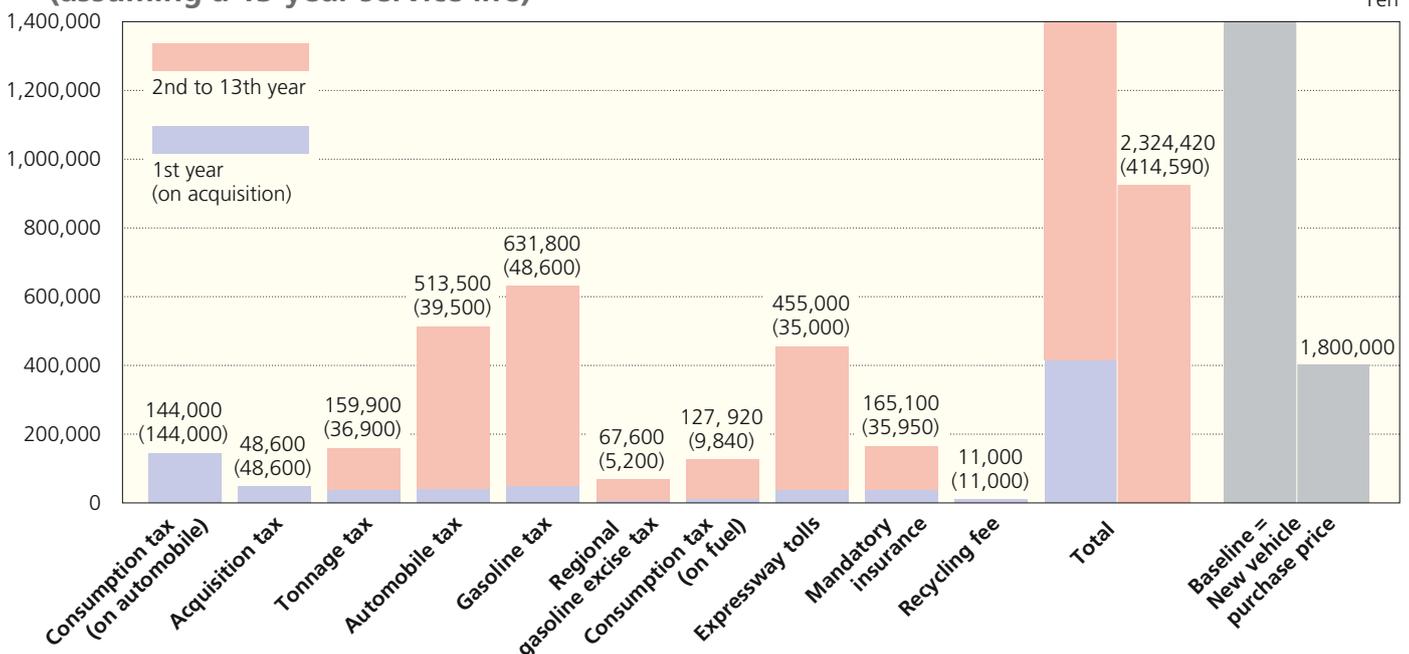


Assumptions: 1) Engine capacity: 1800cc. 2) 1t<GVW≤1.5t. 3) Purchase price: ¥1.8 million. 4) Fuel consumption (JC08 test cycle-based): 15.5km/l (CO<sub>2</sub> emissions: 150g/km). 5) France = Paris; U.S.A. = New York City. 6) France: Vehicle in no. 8 horsepower "class." 7) Service life: 13 years. 8) Currency exchange rates: EUR 1 = JPY 120, GBP 1 = JPY 146, USD 1 = JPY 109 (averaged April 2016-March 2017).

Notes: 1. As shown here, tax amounts other than Japan's may not be the most current. 2. Does not include applicable incentives/surcharges, if any. 3. Does not include registration fees. 4. Automobile tax on private vehicles (i.e., for personal use only) was abolished in France as of 2000. Source: Japan Automobile Manufacturers Association

### TAXES ASSESSED ON PASSENGER CAR OWNERSHIP/USE (PRIVATE) (assuming a 13-year service life)

Yen



Assumptions: 1) A passenger car with 1800cc engine capacity and purchase price of ¥1.8 million (retail price, excluding consumption tax). 2) 1t<GVW≤1.5t. 3) Annual fuel consumption: 1,000 liters. 4) Tonnage tax imposed yearly, but collected only at time of mandatory vehicle inspection. 5) Tax amounts reflect rates in effect from April 1, 2017. 6) Consumption tax = 8% of retail price. 7) The recycling fee indicated is the average rate for an 1800cc passenger car.

Notes: 1. Estimated expressway tolls, mandatory insurance premium payments and recycling fee are included here because they can be considered similar to taxes. (Mandatory insurance premium values indicated effective as of April 1, 2017.) 2. Value of expressway tolls was estimated by JAMA based on expressway toll revenue in 2015. Source: Japan Automobile Manufacturers Association

## The 45th Tokyo Motor Show 2017 to Be Held in October at Tokyo Big Sight

The 45th Tokyo Motor Show 2017 will be held at Tokyo Big Sight in Tokyo's Ariake waterfront area from October 27 (October 28 for the general public) through November 5, 2017. With "BEYOND THE MOTOR" as its theme, the show will cover passenger cars, commercial vehicles, motorcycles, auto bodies and coach work, auto parts, machinery and tools, and auto-related services. Extending the existing values of mobility is the vision that underpins the organizer's objective of redefining the show within the context of continuous evolution. Accordingly, the aim will be to transcend auto industry "borders" to integrate a multiplicity of concepts and technologies from a broad spectrum. The new "Tokyo Connected Lab 2017" special exhibit will explore how connected mobility and related services will change people's lifestyles, offering not only convenience and enjoyment but also added value, in an ever-evolving megacity such as Tokyo. Making a dynamic new start in 2017, the Tokyo Motor Show will in the years ahead provide an exciting, stimulating experience to seasoned motor show visitors and novices alike.

### ● TOKYO MOTOR SHOW HISTORICAL DATA

No.	Year	Dates held (month/day)	Duration (days)	Venue	Number of visitors	No.	Year	Dates held (month/day)	Duration (days)	Venue	Number of visitors
1	1954	Apr. 20-Apr. 29	10	Hibiya	547,000	23	1979	Nov. 01-Nov. 12	12	Harumi	1,003,100
2	1955	May 07-May 18	12	◇	784,800	24	1981	Oct. 30-Nov. 10	12	◇	1,114,200
3	1956	Apr. 20-Apr. 29	10	◇	598,300	25	1983	Oct. 28-Nov. 08	12	◇	1,200,400
4	1957	May 09-May 19	11	◇	527,200	26	1985	Oct. 31-Nov. 11	12	◇	1,291,500
5	1958	Oct. 10-Oct. 20	11	Korakuen	519,400	27	1987	Oct. 29-Nov. 09	12	◇	1,297,200
6	1959	Oct. 24-Nov. 04	12	Harumi	653,000	28	1989	Oct. 26-Nov. 06	12	Makuhari	1,924,200
7	1960	Oct. 25-Nov. 07	14	◇	812,400	29	1991	Oct. 25-Nov. 08	15	◇	2,018,500
8	1961	Oct. 25-Nov. 07	14	◇	952,100	30	1993	Oct. 22-Nov. 05	15	◇	1,810,600
9	1962	Oct. 25-Nov. 07	14	◇	1,049,100	31	1995	Oct. 27-Nov. 08	13	◇	1,523,300
10	1963	Oct. 26-Nov. 10	16	◇	1,216,900	32	1997	Oct. 24-Nov. 05	13	◇	1,515,400
11	1964	Sep. 26-Oct. 09	14	◇	1,161,000	33	1999	Oct. 22-Nov. 03	13	◇	1,386,400
12	1965	Oct. 29-Nov. 11	14	◇	1,465,800	34	2000	Oct. 31-Nov. 04	5	◇	177,900
13	1966	Oct. 26-Nov. 08	14	◇	1,502,300	35	2001	Oct. 26-Nov. 07	13	◇	1,276,900
14	1967	Oct. 26-Nov. 08	14	◇	1,402,500	36	2002	Oct. 29-Nov. 03	6	◇	211,100
15	1968	Oct. 26-Nov. 11	17	◇	1,511,600	37	2003	Oct. 24-Nov. 05	13	◇	1,420,400
16	1969	Oct. 24-Nov. 06	14	◇	1,523,500	38	2004	Nov. 02-Nov. 07	6	◇	248,600
17	1970	Oct. 30-Nov. 12	14	◇	1,452,900	39	2005	Oct. 21-Nov. 06	17	◇	1,512,100
18	1971	Oct. 29-Nov. 11	14	◇	1,351,500	40	2007	Oct. 26-Nov. 11	17	◇	1,425,800
19	1972	Oct. 23-Nov. 05	14	◇	1,261,400	41	2009	Oct. 23-Nov. 04	13	◇	614,400
20	1973	Oct. 30-Nov. 12	14	◇	1,223,000	42	2011	Dec. 02-Dec. 11	10	Ariake	842,600
21	1975	Oct. 31-Nov. 10	11	◇	981,400	43	2013	Nov. 22-Dec. 01	10	◇	902,800
22	1977	Oct. 28-Nov. 07	11	◇	992,100	44	2015	Oct. 29-Nov. 08	11	◇	812,500

Note: From the 33rd Tokyo Motor Show through the 39th, passenger cars and motorcycles were exhibited in one show and commercial vehicles in another, in alternate years.

### ● FIVE MAJOR INTERNATIONAL MOTOR SHOWS AND THEIR LATEST DATA

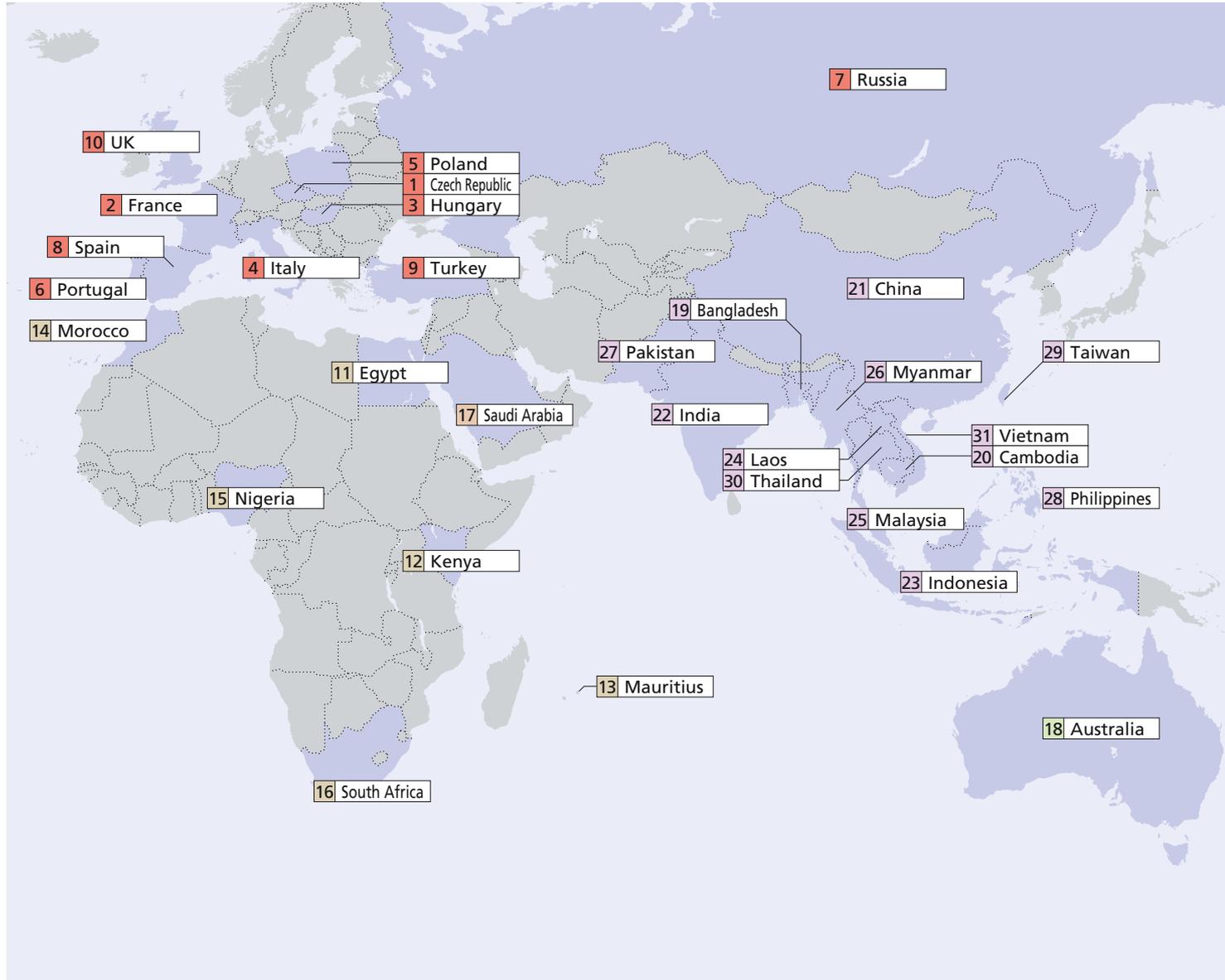
Abbreviated Name	The 2015 Tokyo Motor Show	The 2015 Frankfurt Motor Show	The 2016 Geneva Motor Show	The 2016 Paris Motor Show	The 2017 Detroit Motor Show
Official Name	Tokyo Motor Show	Internationale Automobil-Ausstellung	Salon international de l'automobile et accessoires de Genève	Mondial de l'Automobile, Paris	North American International Auto Show
Organizer	Japan Automobile Manufacturers Association	Verband der Automobilindustrie (VDA)	Palexpo	AMC Promotion	Detroit Auto Dealers Association, LLC
Venue	Tokyo Big Sight	Messegeleande, Frankfurt am Main	Geneva Palexpo	Paris Expo (Porte de Versailles)	Cobo Exhibition Center
Duration (excluding press days)	11 days	11 days	11 days	16 days	9 days
Frequency/Period Held	Biennial Late Oct. to early Nov.	Biennial Mid to late Sep.	Annual Early to mid Mar.	Biennial Early to mid Oct.	Annual Early to mid Jan.
Number of Visitors (excluding press)	812,500	931,700	691,000	1,072,700	806,600
Number of Exhibitors	160 manufacturers	560 manufacturers	140 manufacturers	—	—
Exhibits	Passenger cars Commercial vehicles Motorcycles Auto bodies & parts, machinery & tools "Smart Mobility City 2015"	Passenger cars Motorcycles Auto parts	Passenger cars Auto parts & accessories	Passenger cars Commercial vehicles Auto parts	Passenger cars Auto parts

Note: "—" means data is not available at the end of March 2017.

# Global Manufacturing Operations Expand Their Range

Japanese automobile manufacturers have continued to develop local production operations, whether as wholly-owned subsidiaries or as joint ventures, in the United States, Europe, Southeast Asia, China and, recently, Russia and other countries with emerging markets. These operations contribute to the strengthening of local economies

## ● GEOGRAPHICAL DISTRIBUTION OF JAPANESE AUTOMAKERS' OVERSEAS PRODUCTION BASES

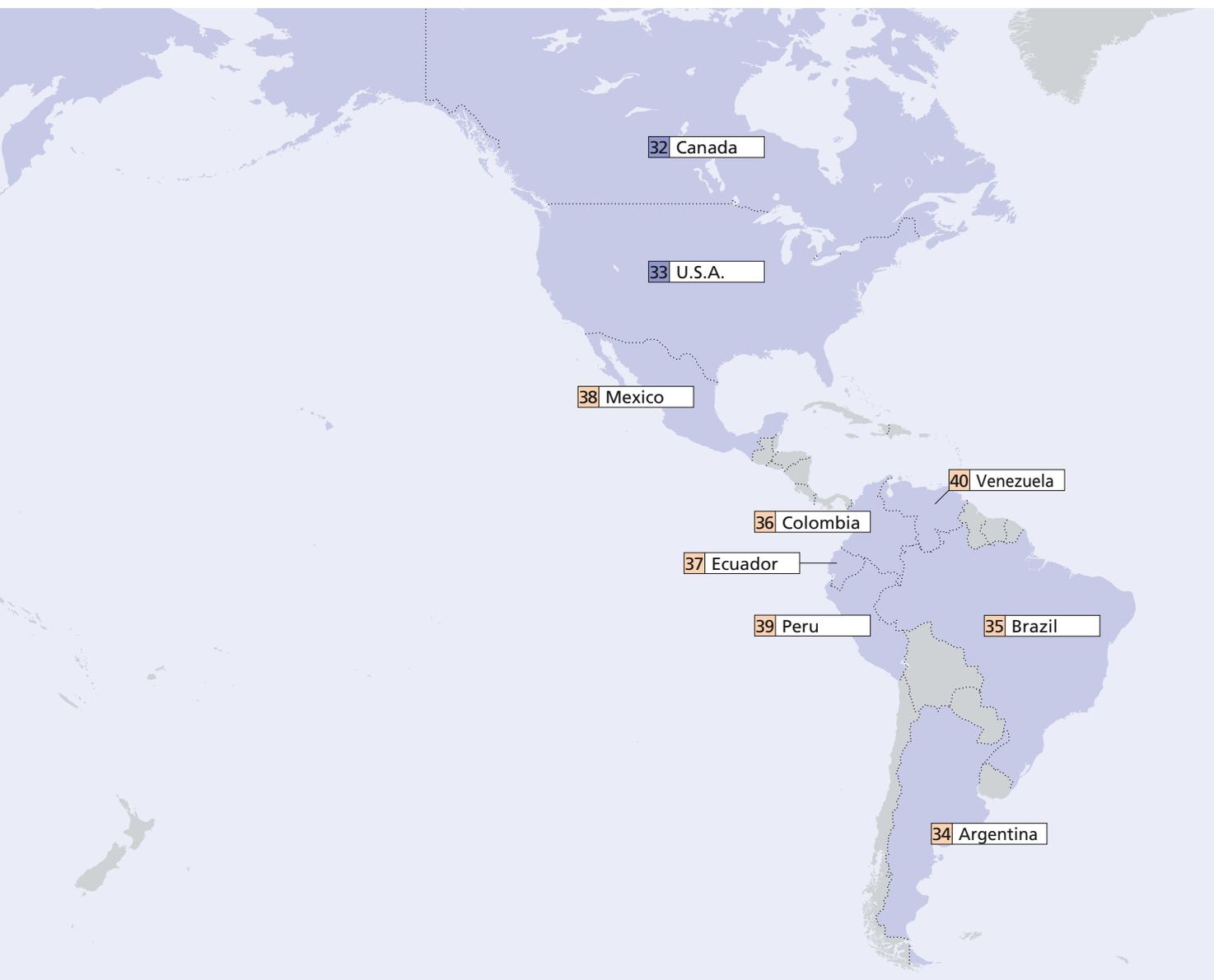


## ● JAPANESE AUTOMAKERS' OVERSEAS PRODUCTION BASES: Number of Plants by Country &

Country/Territory	Country No. (see map)	Motor Vehicles (incl. parts)	Motor-cycles (incl. parts)	Motor Vehicles & Motorcycles (incl. parts)	Parts Only
<b>Europe</b>					
Czech Republic	1	1	-	-	-
France	2	1	1	-	-
Hungary	3	1	-	-	-
Italy	4	-	1	-	1
Poland	5	-	-	-	2
Portugal	6	2	-	-	-
Russia	7	6	-	-	-
Spain	8	1	-	-	1
Turkey	9	4	-	-	-
UK	10	3	-	-	1
<b>Europe Total</b>		19	2	-	5

Country/Territory	Country No. (see map)	Motor Vehicles (incl. parts)	Motor-cycles (incl. parts)	Motor Vehicles & Motorcycles (incl. parts)	Parts Only
<b>Africa</b>					
Egypt	11	5	-	-	-
Kenya	12	3	1	-	-
Mauritius	13	1	-	-	-
Morocco	14	1	-	-	-
Nigeria	15	1	2	-	-
South Africa	16	5	-	-	-
<b>Africa Total</b>		16	3	-	-
<b>Middle East</b>					
Saudi Arabia	17	1	-	-	-
<b>Middle East Total</b>		1	-	-	-
<b>Oceania</b>					
Australia	18	1	-	-	1
<b>Oceania Total</b>		1	-	-	1

through employment creation, local parts purchasing and, in many cases, export revenue for the host countries. Locally-produced automobile parts such as engines and transmissions, as well as finished vehicles of some models, are exported to Japan and other destinations.



## Items Produced

Country/ Territory	Country No. (see map)	Motor Vehicles (incl. parts)	Motor- cycles (incl. parts)	Motor Vehicles & Motorcycles (incl. parts)	Parts Only
<b>Asia</b>					
Bangladesh	19	2	2	-	-
Cambodia	20	-	2	-	-
China	21	23	8	-	16
India	22	12	7	-	2
Indonesia	23	14	7	1	11
Laos	24	-	1	-	-
Malaysia	25	12	2	-	2
Myanmar	26	1	-	-	-
Pakistan	27	5	3	1	-
Philippines	28	6	4	-	4
Taiwan	29	8	2	-	-
Thailand	30	16	4	-	7
Vietnam	31	8	3	2	1
<b>Asia Total</b>		107	45	4	43

Country/ Territory	Country No. (see map)	Motor Vehicles (incl. parts)	Motor- cycles (incl. parts)	Motor Vehicles & Motorcycles (incl. parts)	Parts Only
<b>North America</b>					
Canada	32	5	-	-	2
U.S.A.	33	13	1	-	12
<b>North America Total</b>		18	1	-	14
<b>Latin America</b>					
Argentina	34	1	2	1	-
Brazil	35	8	4	-	3
Colombia	36	1	2	-	-
Ecuador	37	2	-	-	-
Mexico	38	7	1	1	-
Peru	39	-	1	-	-
Venezuela	40	1	-	-	-
<b>Latin America Total</b>		20	10	2	3
<b>World Total</b>		182	61	6	66

Source: Japan Automobile Manufacturers Association

## Japanese Automakers' Overseas Production Rises for Seventh Consecutive Year

The global operations of Japanese automobile manufacturers continue to grow, focusing on on-site manufacturing to meet local needs. Whether as independent operations, joint ventures or technical tie-ups, local manufacturing activities are conducted in numerous countries around the world (see pages 54-55). In 2016 Japanese automakers' overseas production totalled nearly 19 million units, with Asia and Europe seeing the most significant increases.

### OVERSEAS PRODUCTION BY JAPANESE AUTOMOBILE MANUFACTURERS

In vehicle units

Year	Asia	Middle East	Europe	North America		Latin America	Africa	Oceania	Total	
				EU	U.S.A.					
1985	208,589	—	44,658	43,175	296,569	296,569	90,252	99,500	151,574	891,142
1986	282,912	—	75,163	73,903	426,087	425,644	87,115	119,000	133,109	1,123,386
1987	355,758	—	102,943	100,794	608,446	592,761	104,925	134,000	127,003	1,433,075
1988	456,489	—	132,129	130,326	723,396	672,766	125,531	145,000	152,334	1,734,879
1989	597,402	—	205,005	203,215	1,040,868	932,242	144,811	184,500	166,541	2,339,127
1990	952,390	—	226,613	223,164	1,570,114	1,298,878	160,654	186,000	169,169	3,264,940
1991	1,035,715	—	285,994	282,278	1,684,964	1,378,907	169,001	172,000	134,051	3,481,725
1992	1,120,430	—	358,601	351,296	1,853,097	1,547,361	195,161	167,500	109,276	3,804,065
1993	1,315,346	—	496,574	472,744	2,030,478	1,691,239	211,802	179,000	106,754	4,339,954
1994	1,553,585	—	502,332	477,728	2,346,619	1,982,209	197,325	168,000	128,213	4,896,074
1995	1,882,850	—	641,573	575,852	2,595,436	2,215,657	110,660	226,000	102,961	5,559,480
1996	1,950,621	—	738,378	650,990	2,641,451	2,275,525	140,031	195,674	118,097	5,784,252
1997	2,003,286	—	814,689	714,699	2,664,588	2,290,685	190,596	182,218	136,107	5,991,484
1998	1,215,202	5,688	920,985	814,847	2,674,299	2,270,516	260,131	144,181	150,685	5,371,171
1999	1,547,671	3,493	929,303	835,582	2,797,175	2,311,163	246,710	130,216	125,575	5,780,143
2000	1,673,740	4,258	953,170	837,679	2,991,924	2,480,691	387,732	146,435	130,933	6,288,192
2001	1,872,521	5,660	1,032,004	939,034	3,061,612	2,451,496	407,887	162,825	137,084	6,679,593
2002	2,380,621	6,000	1,153,059	1,015,748	3,375,453	2,720,449	445,862	155,973	135,498	7,652,466
2003	3,007,348	5,820	1,338,476	1,245,469	3,487,012	2,821,723	457,467	162,969	148,471	8,607,563
2004	3,638,978	10,800	1,454,903	1,296,516	3,840,744	3,143,603	534,863	191,537	125,726	9,797,551
2005	3,964,209	10,500	1,545,355	1,369,556	4,080,713	3,383,277	645,074	225,725	134,581	10,606,157
2006	4,129,856	11,400	1,702,836	1,509,402	4,001,639	3,281,073	745,827	259,050	121,635	10,972,243
2007	4,523,751	3,342	1,976,407	1,789,875	4,049,068	3,324,326	895,099	252,332	159,710	11,859,709
2008	4,877,074	0	1,876,109	1,693,151	3,576,246	2,893,466	920,738	257,646	143,741	11,651,554
2009	5,145,418	0	1,228,294	1,136,145	2,687,527	2,108,161	790,794	168,651	96,836	10,117,520
2010	7,127,042	0	1,356,126	1,250,226	3,390,095	2,653,231	982,342	206,476	119,473	13,181,554
2011	7,547,259	0	1,410,628	1,302,277	3,068,979	2,422,152	1,029,511	233,709	93,675	13,383,761
2012	8,500,993	0	1,484,110	1,383,583	4,253,869	3,324,703	1,234,584	248,711	101,381	15,823,648
2013	9,056,388	0	1,537,025	1,379,733	4,540,685	3,627,226	1,284,187	232,191	106,278	16,756,754
2014	9,112,629	596	1,654,208	1,382,052	4,785,769	3,813,351	1,591,099	241,841	90,125	17,476,267
2015	9,472,178	437	1,668,878	1,401,521	4,823,222	3,847,517	1,820,525	218,020	91,616	18,094,876
2016	10,091,596	89	1,757,776	1,487,994	4,989,360	3,976,482	1,859,685	190,724	90,240	18,979,470

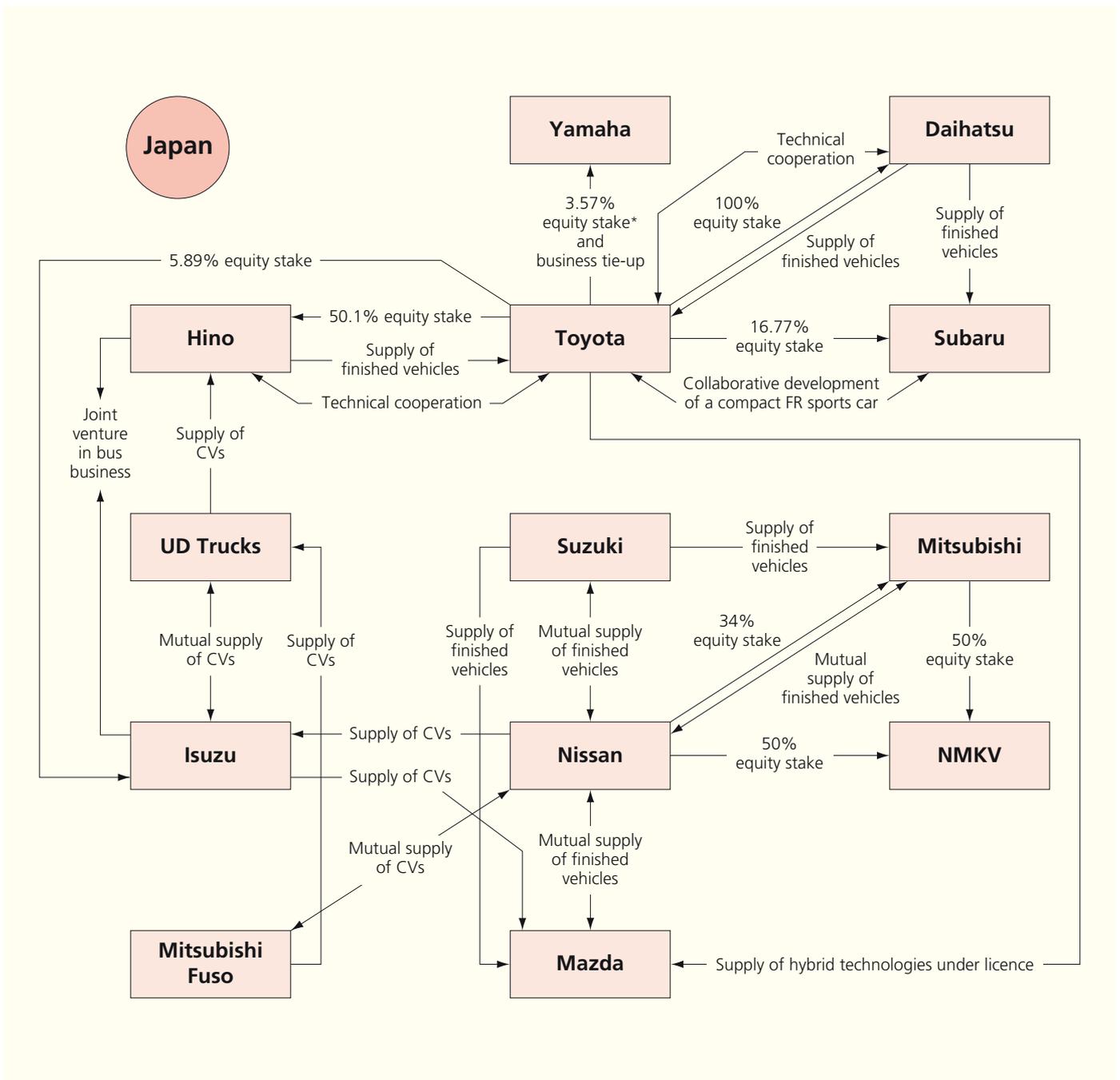
Notes: 1. Data in principle is for Japanese-brand vehicles only. 2. Until 1997, data was based on statistics supplied by the national automobile trade associations of respective countries. 3. Mexico is included in Latin America and Turkey in Europe. 4. Data excludes vehicles produced with technical assistance only provided by Japanese automakers. 5. The figures reflect the use of a new method, adopted as of January 2007, for computing overseas unit production.

Source: Japan Automobile Manufacturers Association

# Japanese Automakers Forge Extensive International Alliances

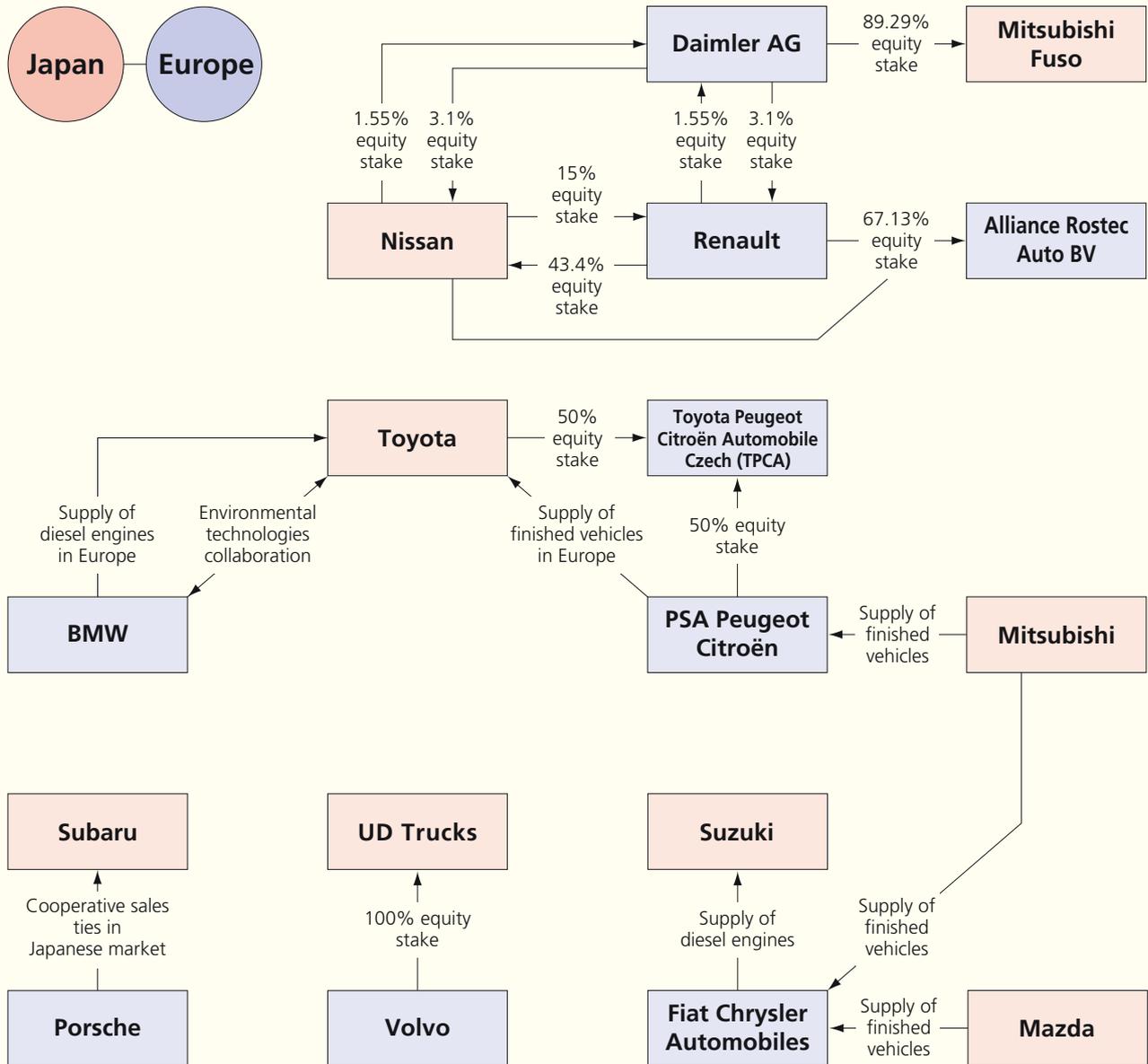
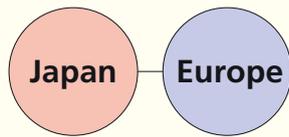
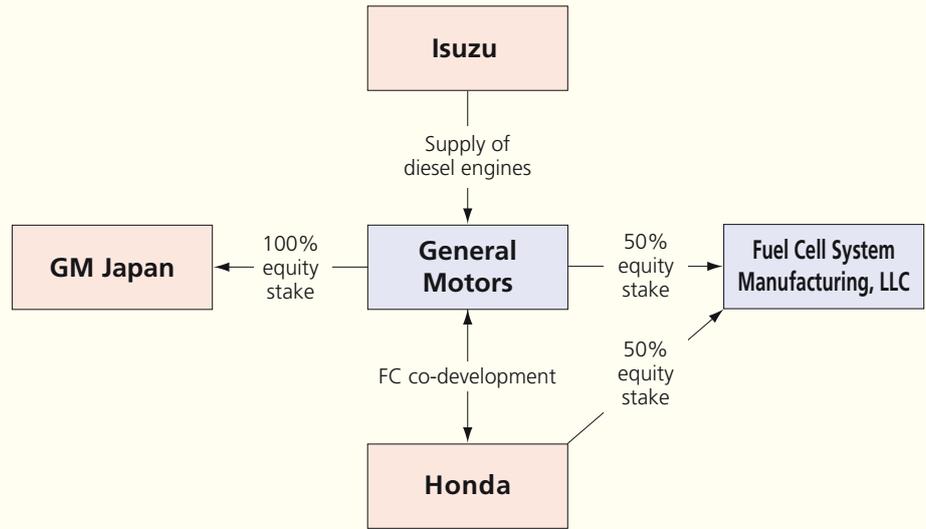
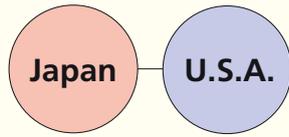
With economic globalization, Japanese automobile manufacturers have rapidly adapted to the needs of individual markets, not only by shifting production to those markets but also by forging extensive alliances with overseas manufacturers. Various forms of partnership currently exist between Japanese, U.S. and European automakers—including capital and technical tie-ups, joint R&D and production operations, and cooperative sales ties—and such arrangements are expanding yearly. With the rapid growth of motorization in China and Southeast Asia, Japanese automakers have been actively building relationships with local manufacturers there on the basis of capital tie-ups and the supply of production as well as environment- and safety-related technologies.

At March 31, 2017 \*At December 31, 2016



Note: In principle, the tie-ups shown above cover only technical cooperation related to motor vehicle production and exclude sales tie-ups.

Source: Japan Automobile Manufacturers Association



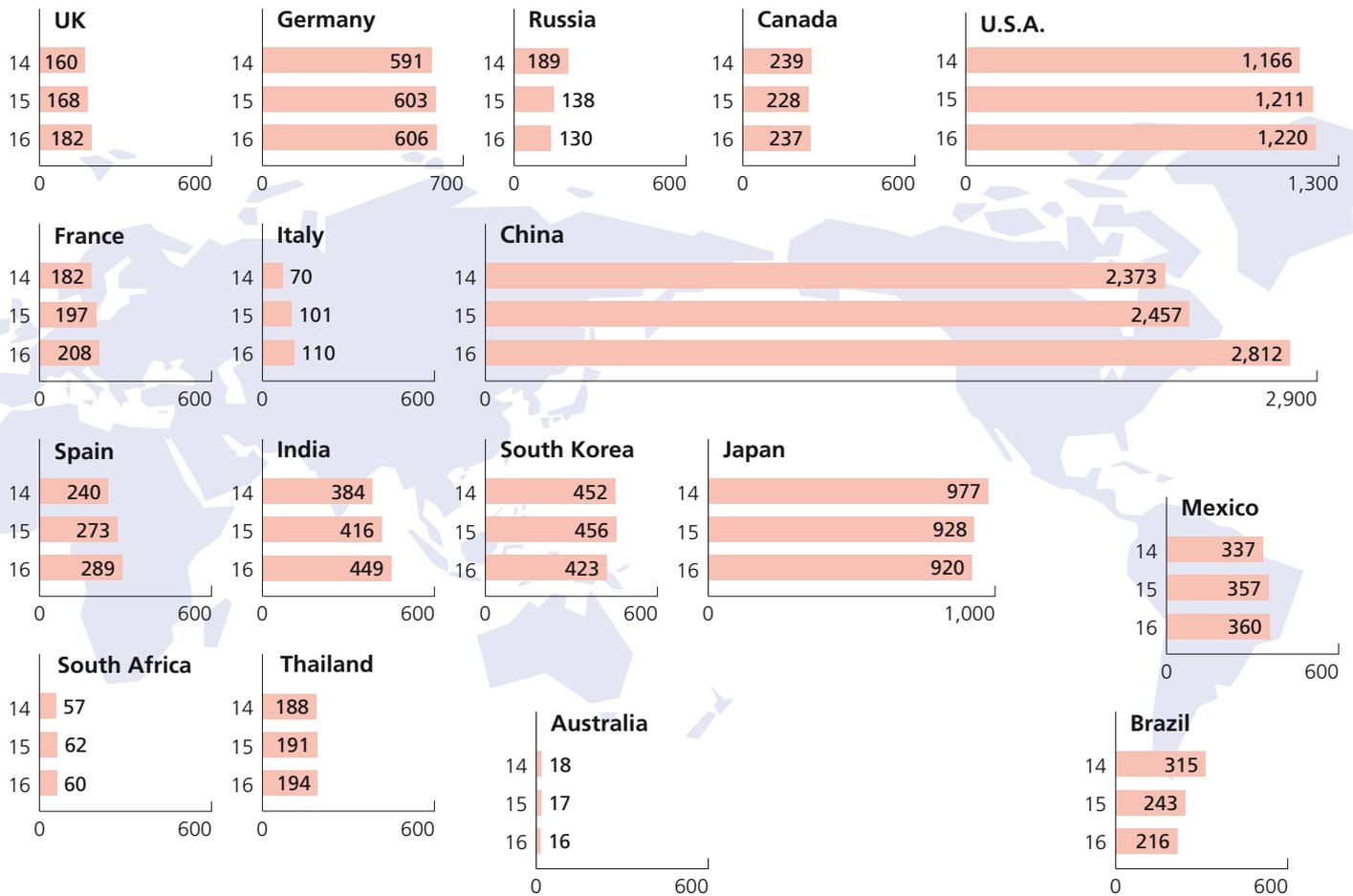


## Motor Vehicle Production Worldwide Increases for Seventh Straight Year

In 2016 worldwide motor vehicle production (excluding motorcycles) grew 4.5% from the previous year to a total of 94.98 million units. By region, production increased in Africa (up 7.9% to 902,000 units), Asia-Oceania (up 7.6% to 51.52 million units), Europe (up 2.5% to 21.70 million units), and North America (up 1.2% to 14.57 million units), but decreased in Latin America (down 4.4% to 6.29 million units).

### MOTOR VEHICLE PRODUCTION EXCLUDING MOTORCYCLES (MAJOR PRODUCING COUNTRIES)

x 10,000 units



### GLOBAL MOTORCYCLE PRODUCTION (BY COUNTRY/TERRITORY)

In vehicle units

Country/ Territory	2013			2014			2015		
	Mopeds	Motorcycles	Total	Mopeds	Motorcycles	Total	Mopeds	Motorcycles	Total
Austria	—	—	81,167	—	—	81,536	—	—	—
Czech Republic	26	1,328	1,354	17	1,058	1,075	16	1,711	1,727
France	—	—	38,885	—	—	48,853	—	—	—
Germany	—	—	105,015	—	—	125,497	—	—	—
Italy	—	—	240,635	—	—	225,820	—	—	—
Spain	—	—	5,010	—	—	9,700	—	—	—
UK	—	—	15,531	—	—	18,911	—	—	—
Brazil	0	1,673,477	1,673,477	—	1,517,662	1,517,662	—	1,262,708	1,262,708
China	—	20,467,563	22,889,147	—	18,934,987	21,295,105	—	16,617,298	18,832,191
India	—	—	16,883,049	—	—	18,489,311	—	—	18,829,786
Indonesia	—	—	7,780,295	—	—	7,926,104	—	—	—
Japan	0	563,309	563,309	0	597,058	597,058	0	522,394	522,394
Malaysia	—	—	549,244	—	—	439,907	—	—	382,218
Pakistan	—	—	794,763	—	—	916,698	—	—	1,255,770
Philippines	—	—	729,690	—	—	749,506	—	—	806,594
Taiwan	—	—	1,115,223	—	—	1,175,259	—	—	1,118,848
Thailand	—	—	2,218,625	—	—	1,816,545	—	—	1,800,623

Note: "—" means data is not available at the end of March 2017.

Sources: Motorcycle manufacturers' associations of individual countries, etc.

# GLOBAL MOTOR VEHICLE PRODUCTION (BY COUNTRY/REGION/TERRITORY)

In vehicle units

Country/Region/ Territory	2014			2015			2016		
	Passenger Cars	Trucks & Buses	Total	Passenger Cars	Trucks & Buses	Total	Passenger Cars	Trucks & Buses	Total
Austria	136,000	16,000	152,000	104,000	17,200	121,200	90,000	18,000	108,000
Belgium	481,636	35,195	516,831	369,172	40,081	409,253	354,003	45,424	399,427
Finland	45,000	35	45,035	69,000	53	69,053	55,280	0	55,280
France	1,499,464	322,000	1,821,464	1,555,000	417,000	1,972,000	1,626,000	456,000	2,082,000
Germany	5,604,026	303,522	5,907,548	5,708,138	325,226	6,033,364	5,746,808	315,754	6,062,562
Italy	401,317	296,547	697,864	663,139	351,084	1,014,223	713,182	390,334	1,103,516
Netherlands	29,196	2,232	31,428	41,870	2,252	44,122	42,150	2,280	44,430
Portugal	117,744	43,765	161,509	115,468	41,158	156,626	99,200	43,896	143,096
Spain	1,898,342	504,636	2,402,978	2,218,980	514,221	2,733,201	2,354,117	531,805	2,885,922
Sweden	154,174	0	154,174	188,987	0	188,987	205,374	0	205,374
UK	1,528,148	70,731	1,598,879	1,587,677	94,479	1,682,156	1,722,698	93,924	1,816,622
Czech Republic	1,246,506	4,714	1,251,220	1,241,166	5,367	1,246,533	1,344,182	5,714	1,349,896
Hungary	434,069	3,530	437,599	491,720	3,650	495,370	472,000	0	472,000
Poland	472,600	120,904	593,504	534,700	125,992	660,692	554,600	127,237	681,837
Romania	391,422	12	391,434	387,171	6	387,177	358,861	445	359,306
Slovakia	971,160	0	971,160	1,038,503	0	1,038,503	1,040,000	0	1,040,000
Slovenia	118,533	58	118,591	133,092	0	133,092	133,702	0	133,702
Double Counts Portugal/World	0	-5,749	-5,749	0	-7,866	-7,866	0	-8,505	-8,505
Double Counts Eastern Europe/World	-120,000	0	-120,000	-123,360	0	-123,360	-125,200	0	-125,200
<b>European Union (EU27)</b>	<b>15,409,337</b>	<b>1,718,132</b>	<b>17,127,469</b>	<b>16,324,423</b>	<b>1,929,903</b>	<b>18,254,326</b>	<b>16,786,957</b>	<b>2,022,308</b>	<b>18,809,265</b>
Turkey	733,439	437,006	1,170,445	791,027	567,769	1,358,796	950,888	535,039	1,485,927
Serbia	101,576	1,574	103,150	82,400	1,230	83,630	79,360	960	80,320
Russia	1,682,921	204,272	1,887,193	1,216,093	162,153	1,378,246	1,124,774	179,215	1,303,989
Azerbaijan	0	247	247	0	415	415	0	247	247
Belarus	9,350	13,640	22,990	8,469	6,564	15,033	10,090	6,774	16,864
Kazakhstan	37,157	3,005	40,162	12,453	2,024	14,477	8,397	2,254	10,651
Ukraine	25,941	2,810	28,751	5,654	2,590	8,244	4,340	924	5,264
Uzbekistan	245,660	0	245,660	185,400	0	185,400	88,152	0	88,152
Double Counts CIS/World	-196,442	0	-196,442	-131,550	0	-131,550	-101,090	0	-101,090
<b>CIS</b>	<b>1,804,587</b>	<b>223,974</b>	<b>2,028,561</b>	<b>1,296,519</b>	<b>173,746</b>	<b>1,470,265</b>	<b>1,134,663</b>	<b>189,414</b>	<b>1,324,077</b>
<b>Europe</b>	<b>18,048,939</b>	<b>2,380,686</b>	<b>20,429,625</b>	<b>18,494,369</b>	<b>2,672,648</b>	<b>21,167,017</b>	<b>18,951,868</b>	<b>2,747,721</b>	<b>21,699,589</b>
Canada	913,533	1,480,621	2,394,154	888,565	1,394,742	2,283,307	802,057	1,568,214	2,370,271
U.S.A.	4,253,098	7,407,604	11,660,702	4,162,808	7,943,180	12,105,988	3,934,357	8,263,780	12,198,137
<b>North America</b>	<b>5,166,631</b>	<b>8,888,225</b>	<b>14,054,856</b>	<b>5,051,373</b>	<b>9,337,922</b>	<b>14,389,295</b>	<b>4,736,414</b>	<b>9,831,994</b>	<b>14,568,408</b>
Mexico	1,915,709	1,452,301	3,368,010	1,968,054	1,597,164	3,565,218	1,993,168	1,604,294	3,597,462
Argentina	363,711	253,618	617,329	308,756	217,901	526,657	241,315	231,461	472,776
Brazil	2,502,293	644,093	3,146,386	2,017,639	411,782	2,429,421	1,778,464	377,892	2,156,356
Colombia	70,149	988	71,137	76,678	1,070	77,748	77,946	1,090	79,036
Ecuador	0	5,986	5,986	0	4,800	4,800	0	0	0
Venezuela	11,039	8,720	19,759	9,739	8,561	18,300	849	2,001	2,850
Double Counts South America/World	-43,000	-18,000	-61,000	-37,700	-11,000	-48,700	-12,170	-10,580	-22,750
<b>Latin America</b>	<b>4,819,901</b>	<b>2,347,706</b>	<b>7,167,607</b>	<b>4,343,166</b>	<b>2,230,278</b>	<b>6,573,444</b>	<b>4,079,572</b>	<b>2,206,158</b>	<b>6,285,730</b>
<b>North and Latin America</b>	<b>9,986,532</b>	<b>11,235,931</b>	<b>21,222,463</b>	<b>9,394,539</b>	<b>11,568,200</b>	<b>20,962,739</b>	<b>8,815,986</b>	<b>12,038,152</b>	<b>20,854,138</b>
Australia	166,933	13,378	180,311	159,872	13,137	173,009	149,000	12,294	161,294
Bangladesh	536	0	536	540	0	540	580	0	580
China	19,928,505	3,803,095	23,731,600	21,143,351	3,423,899	24,567,250	24,420,744	3,698,050	28,118,794
India	3,162,372	682,485	3,844,857	3,408,849	751,736	4,160,585	3,677,605	811,360	4,488,965
Indonesia	1,013,172	285,351	1,298,523	824,445	274,335	1,098,780	968,101	209,288	1,177,389
Iran	925,975	164,871	1,090,846	884,866	97,471	982,337	1,074,000	90,710	1,164,710
Japan	8,277,070	1,497,595	9,774,665	7,830,722	1,447,599	9,278,321	7,873,886	1,330,810	9,204,696
Malaysia	545,122	50,012	595,134	563,883	50,781	614,664	469,720	43,725	513,445
Pakistan	126,020	22,726	148,746	182,548	47,138	229,686	178,530	42,420	220,950
Philippines	74,322	32,616	106,938	77,539	34,954	112,493	89,560	46,280	135,840
South Korea	4,124,116	400,816	4,524,932	4,135,108	420,849	4,555,957	3,859,991	368,518	4,228,509
Taiwan	332,629	46,594	379,223	298,418	52,667	351,085	251,096	58,435	309,531
Thailand	743,258	1,137,329	1,880,587	760,688	1,148,710	1,909,398	805,033	1,139,384	1,944,417
Vietnam	44,328	4,543	48,871	45,400	4,600	50,000	59,880	6,150	66,030
Double Counts Asia/World	-201,000	0	-201,000	-205,130	0	-205,130	-213,830	0	-213,830
<b>Asia-Oceania</b>	<b>39,263,358</b>	<b>8,141,411</b>	<b>47,404,769</b>	<b>40,111,099</b>	<b>7,767,876</b>	<b>47,878,975</b>	<b>43,663,896</b>	<b>7,857,424</b>	<b>51,521,320</b>
Algeria	1,244	0	1,244	19,346	0	19,346	42,008	0	42,008
Egypt	17,542	24,973	42,515	12,000	24,000	36,000	10,930	25,300	36,230
Morocco	209,999	21,987	231,986	260,129	28,208	288,337	313,868	31,238	345,106
South Africa	277,491	288,592	566,083	341,025	274,633	615,658	335,539	263,465	599,004
Tunisia	0	1,860	1,860	0	540	540	0	0	0
Double Counts South Africa/World	-23,070	-101,010	-124,080	-28,370	-96,220	-124,590	-28,660	-92,060	-120,720
<b>Africa</b>	<b>483,206</b>	<b>236,402</b>	<b>719,608</b>	<b>604,130</b>	<b>231,161</b>	<b>835,291</b>	<b>673,685</b>	<b>227,943</b>	<b>901,628</b>
<b>Grand Totals</b>	<b>67,782,035</b>	<b>21,994,430</b>	<b>89,776,465</b>	<b>68,604,137</b>	<b>22,239,885</b>	<b>90,844,022</b>	<b>72,105,435</b>	<b>22,871,240</b>	<b>94,976,675</b>

Notes: 1. Includes preliminary figures. 2. Some EU countries do not release truck and bus production data.

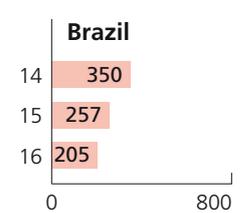
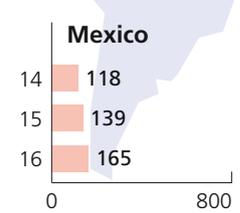
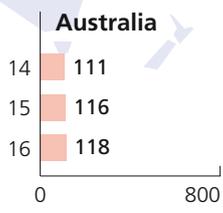
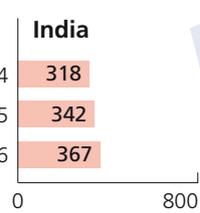
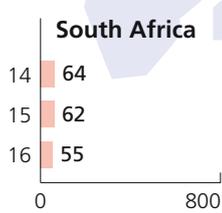
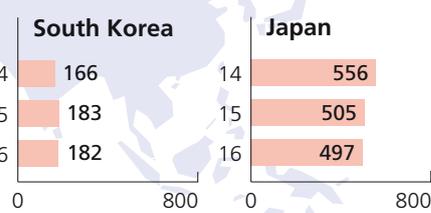
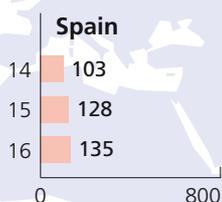
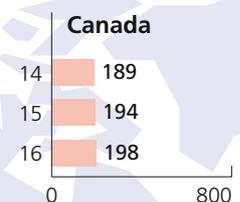
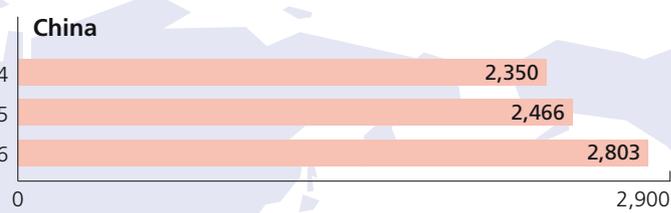
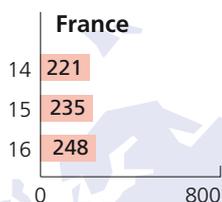
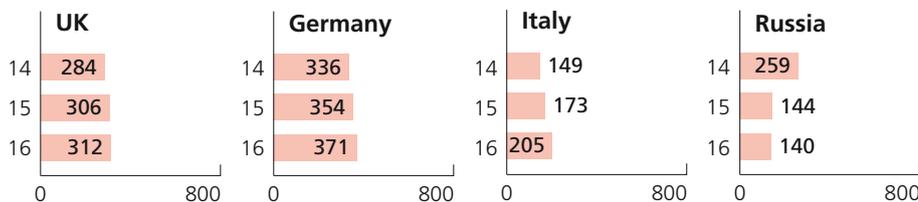
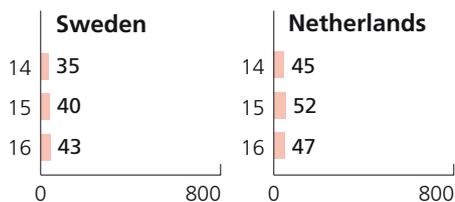
Sources: International Organization of Motor Vehicle Manufacturers (OICA); for Japan, Japan Automobile Manufacturers Association

# Global Growth in Motor Vehicle Sales for Seventh Consecutive Year

In 2016 new motor vehicle registrations (excluding motorcycles) increased 4.7% over the previous year to a global total of 93.86 million units. Vehicle sales rose in Italy (up 18.8% to 2.05 million units), Mexico (up 18.6% to 1.65 million units), and China (up 13.7% to 28.03 million units). On the other hand, new registrations dropped from the previous year in Brazil (down 20.2% to 2.05 million units) and South Africa (down 11.4% to 547,000 units).

## NEW REGISTRATIONS OF MOTOR VEHICLES EXCLUDING MOTORCYCLES (SELECTED COUNTRIES)

x 10,000 units



## NEW REGISTRATIONS OF PASSENGER CARS AND COMMERCIAL VEHICLES (BY COUNTRY)

In vehicle units

Country	2014			2015			2016		
	Passenger Cars	Commercial Vehicles	Total	Passenger Cars	Commercial Vehicles	Total	Passenger Cars	Commercial Vehicles	Total
Austria	303,318	38,897	342,215	308,555	41,042	349,597	329,604	44,941	374,545
Belgium	482,939	62,316	545,255	501,066	70,458	571,524	539,519	78,335	617,854
Czech Republic	192,314	23,280	215,594	230,857	29,213	260,070	259,693	31,315	291,008
Denmark	189,055	32,658	221,713	207,717	37,767	245,484	222,924	42,462	265,386
Finland	106,237	13,876	120,113	108,819	14,664	123,483	118,991	17,439	136,430
France	1,795,885	415,042	2,210,927	1,917,226	427,866	2,345,092	2,015,177	463,295	2,478,472
Germany	3,036,773	319,945	3,356,718	3,206,042	333,783	3,539,825	3,351,607	357,260	3,708,867
Hungary	67,476	21,243	88,719	77,171	23,762	100,933	96,552	27,255	123,807
Italy	1,360,578	132,430	1,493,008	1,575,737	150,342	1,726,079	1,824,968	225,324	2,050,292
Netherlands	387,553	62,777	450,330	449,350	71,828	521,178	382,825	86,585	469,410
Norway	144,202	36,071	180,273	150,686	39,420	190,106	154,603	43,388	197,991
Poland	327,709	64,767	392,476	354,975	77,464	432,439	416,123	88,427	504,550
Portugal	142,826	29,531	172,357	178,503	35,151	213,654	207,345	39,998	247,343
Romania	82,809	17,527	100,336	98,325	22,266	120,591	115,004	27,016	142,020
Slovakia	72,237	9,723	81,960	77,968	12,123	90,091	88,165	12,435	100,600
Spain	890,125	139,657	1,029,782	1,094,077	182,982	1,277,059	1,147,007	200,337	1,347,344
Sweden	303,948	48,519	352,467	345,108	51,585	396,693	372,318	59,500	431,818
UK	2,476,435	366,590	2,843,025	2,633,503	427,903	3,061,406	2,692,786	430,969	3,123,755
Russia	2,333,067	259,329	2,592,396	1,282,740	158,183	1,440,923	1,239,680	164,784	1,404,464
Switzerland	301,942	36,462	338,404	323,783	38,867	362,650	317,318	38,564	355,882
Turkey	587,331	220,155	807,486	725,596	285,598	1,011,194	756,938	250,919	1,007,857
Canada	760,449	1,129,938	1,890,387	712,322	1,227,195	1,939,517	661,088	1,322,657	1,983,745
U.S.A.	7,689,110	9,154,354	16,843,464	7,516,826	10,328,798	17,845,624	6,872,729	10,993,044	17,865,773
Mexico	745,250	431,055	1,176,305	892,194	497,280	1,389,474	1,065,912	581,811	1,647,723
Brazil	2,794,687	703,325	3,498,012	2,123,009	445,967	2,568,976	1,676,722	373,599	2,050,321
Argentina	432,696	181,152	613,848	480,952	163,069	644,021	525,757	183,725	709,482
China	19,707,677	3,791,324	23,499,001	21,210,339	3,451,263	24,661,602	24,376,902	3,651,273	28,028,175
India	2,570,736	606,269	3,177,005	2,772,270	652,566	3,424,836	2,966,637	702,640	3,669,277
Japan	4,699,591	863,297	5,562,888	4,215,889	830,621	5,046,510	4,146,458	823,800	4,970,258
South Korea	1,359,834	302,034	1,661,868	1,533,670	300,116	1,833,786	1,533,813	289,228	1,823,041
Malaysia	588,348	78,139	666,487	591,275	75,402	666,677	514,545	65,579	580,124
Indonesia	863,268	332,141	1,195,409	755,566	275,856	1,031,422	834,919	213,215	1,048,134
Thailand	411,402	470,430	881,832	356,063	443,569	799,632	328,053	440,735	768,788
Australia	883,949	229,281	1,113,230	924,154	231,254	1,155,408	927,274	250,859	1,178,133
Egypt	273,500	75,600	349,100	258,400	73,700	332,100	214,800	49,300	264,100
South Africa	439,264	205,240	644,504	412,670	205,079	617,749	361,289	186,117	547,406
Other	5,903,710	1,725,494	7,629,204	5,710,752	1,636,451	7,347,203	5,808,387	1,533,826	7,342,213
<b>Grand Totals</b>	<b>65,708,230</b>	<b>22,629,868</b>	<b>88,338,098</b>	<b>66,314,155</b>	<b>23,370,453</b>	<b>89,684,608</b>	<b>69,464,432</b>	<b>24,391,956</b>	<b>93,856,388</b>

Sources: International Organization of Motor Vehicle Manufacturers (OICA); for Japan, Japan Automobile Dealers Association; Japan Mini Vehicles Association; Japan Automobile Manufacturers Association

# More than 1.26 Billion Motor Vehicles in Use Worldwide

There were over 1.26 billion motor vehicles (excluding motorcycles) in use worldwide in 2015, equivalent to 172 motor vehicles per 1,000 inhabitants or one vehicle for every 5.8 persons. Motorcycle density in recent years has been particularly high in Malaysia and Thailand, with one motorcycle in use for every three persons; in Greece, with one in use for every six persons; and in Italy, with one in use for every seven persons. In Japan, one motorcycle is in use for every 11 persons.

## MOTOR VEHICLE DENSITY: INTERNATIONAL COMPARISONS (at end of 2015)

In vehicle units  x 1 person

Country	No. of Motor Vehicles per 1,000 Inhabitants		No. of Persons per Motor Vehicle (No. of Persons per Passenger Car)
	Total Motor Vehicles	Passenger Cars	
U.S.A.	392	846	1.2 (2.6) 
Australia	565	714	1.4 (1.8) 
Italy	625	706	1.4 (1.6) 
Canada	647	615	1.5 (1.6) 
Japan	482	611	1.6 (2.1) 
Austria	612	559	1.6 (1.8) 
France	497	600	1.7 (2.0) 
Switzerland	592	537	1.7 (1.9) 
Spain	485	596	1.7 (2.1) 
UK	518	591	1.7 (1.9) 
Germany	598	559	1.7 (1.8) 
Belgium	574	494	1.7 (2.0) 
<b>World Average</b>	172	126	5.8 (8.0) 

Sources: Ministry of Land, Infrastructure, Transport and Tourism; Ward's, etc.; for population data, OECD, UN

## MOTOR VEHICLES IN USE WORLDWIDE (at end of 2015)

In vehicle units

Country	Passenger Cars	Commercial Vehicles	Total
Germany	45,071,209	3,355,885	48,427,094
Italy	37,351,233	4,890,701	42,241,934
France	32,000,000	6,652,000	38,652,000
UK	33,542,448	4,677,162	38,219,610
Spain	22,355,022	5,108,151	27,463,173
Netherlands	8,336,414	1,059,999	9,396,413
Belgium	5,587,415	900,444	6,487,859
Austria	4,748,048	453,702	5,201,750
Sweden	4,678,271	611,867	5,290,138
Poland	20,697,654	3,735,830	24,433,484
Switzerland	4,458,069	459,318	4,917,387
Turkey	10,589,915	4,725,309	15,315,224
Russia	41,000,000	8,000,000	49,000,000
U.S.A.	126,013,540	146,153,933	272,167,473
Canada	22,067,778	1,146,770	23,214,548
Mexico	26,379,326	10,641,506	37,020,832
Argentina	11,003,000	3,305,000	14,308,000
Brazil	33,566,000	8,959,000	42,525,000
Japan	60,987,342	16,416,989	77,404,331
China	135,119,000	23,191,000	158,310,000
South Korea	16,561,665	4,428,220	20,989,885
India	30,570,000	11,230,000	41,800,000
Thailand	8,170,837	7,319,174	15,490,011
Indonesia	13,845,949	9,237,905	23,083,854
Australia	13,549,449	3,592,815	17,142,264
South Africa	6,845,284	3,105,264	9,950,548
Other	147,609,640	45,328,497	192,938,137
<b>Grand Totals</b>	<b>922,704,508</b>	<b>338,686,441</b>	<b>1,261,390,949</b>

Sources: Ministry of Land, Infrastructure, Transport and Tourism; Ward's, etc.

## MOTORCYCLE DENSITY: INTERNATIONAL COMPARISONS (No. of Persons per Motorcycle)

 x 1 person

2014	Malaysia	3 
2015	Thailand	3 
2014	Greece	6 
2014	Italy	7 
2014	Spain	9 
2014	Switzerland	10 
2015	Japan	11 
2014	Austria	11 
2014	Netherlands	14 
2014	Germany	14 
2015	China	15 

Note: Data for Japan is as at March 31.

Sources: Ministry of Land, Infrastructure, Transport and Tourism; Ministry of Internal Affairs and Communications; Federation of Asian Motorcycle Industries (FAMI); European Association of Motorcycle Manufacturers (ACEM), etc.; for population data, OECD, UN

## MOTORCYCLES IN USE WORLDWIDE

In vehicle units

Year	Country/Territory	Total
2014	Italy	8,505,620
2014	Spain	5,033,209
2014	France	3,015,223
2014	UK	1,328,300
2014	Netherlands	1,228,147
2014	Switzerland	852,567
2014	Austria	755,447
2014	Poland	1,311,184
2014	Czech Republic	1,016,978
2014	Germany	5,888,263
2014	Greece	1,802,929
2015	China	88,774,976
2015	Japan	11,482,344
2015	Thailand	20,541,724
2014	Taiwan	13,735,994
2014	Malaysia	11,734,527
2015	Philippines	4,888,573

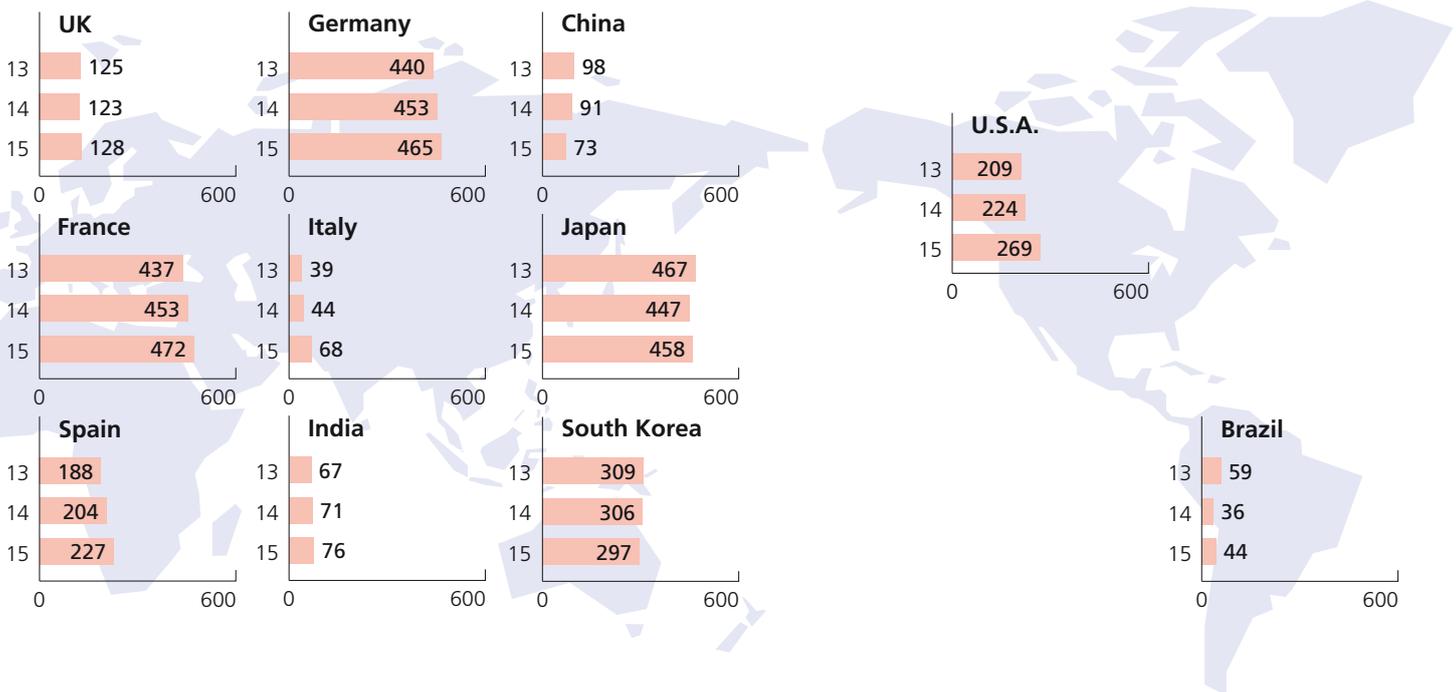
Sources: Ministry of Land, Infrastructure, Transport and Tourism; Ministry of Internal Affairs and Communications; Federation of Asian Motorcycle Industries (FAMI); European Association of Motorcycle Manufacturers (ACEM), etc.

## Motor Vehicle Exports Increase in the U.S.A., Italy, and Spain

Motor vehicle exports (excluding motorcycles) in 2015 increased over the previous year, notably, in descending order of absolute export unit volume growth, in the U.S.A., to 2.69 million units (up 20.3% in terms of relative growth); in Italy, to 683,000 units (up 55.7%); and in Spain, to 2.27 million units (up 11.5%). Exports decreased, in descending order of absolute export unit volume decline, in China (to 728,000 units, down 20.0% in relative terms) and South Korea (to 2.97 million units, down 2.9%).

### MOTOR VEHICLE EXPORTS (MAJOR EXPORTING COUNTRIES)

x 10,000 units



### MOTOR VEHICLE EXPORTS (MAJOR EXPORTING COUNTRIES)

In vehicle units

Country	2013			2014			2015		
	Passenger Cars	Commercial Vehicles	Total	Passenger Cars	Commercial Vehicles	Total	Passenger Cars	Commercial Vehicles	Total
Japan	4,065,519	609,114	4,674,633	3,835,595	630,029	4,465,624	3,970,003	608,075	4,578,078
U.S.A.	1,624,236	467,236	2,091,472	1,784,937	454,592	2,239,529	2,206,701	487,591	2,694,292
Germany	4,197,516	207,244	4,404,760	4,303,127	226,277	4,529,404	4,406,206	244,015	4,650,221
UK	1,201,395	47,910	1,249,305	1,195,196	34,822	1,230,018	1,227,881	47,179	1,275,060
France	3,842,199	530,355	4,372,554	3,961,884	571,759	4,533,643	4,159,198	563,013	4,722,211
Italy	169,576	223,657	393,233	189,112	249,554	438,666	385,738	297,217	682,955
Spain	1,493,731	386,243	1,879,974	1,631,744	408,149	2,039,893	1,893,724	380,008	2,273,732
Brazil	461,402	130,221	591,623	265,620	93,951	359,571	316,777	125,236	442,013
South Korea	2,948,352	140,931	3,089,283	2,919,781	143,423	3,063,204	2,821,832	152,282	2,974,114
China	596,286	381,006	977,292	533,009	377,352	910,361	427,727	300,505	728,232
India	596,142	77,050	673,192	621,341	86,939	708,280	653,889	101,689	755,578

Sources: Ward's, etc.; for Japan, Japan Automobile Manufacturers Association

### MOTORCYCLE EXPORTS (MAJOR EXPORTING COUNTRIES/TERRITORY)

In vehicle units

Country/Territory	2013			2014			2015		
	Mopeds	Motorcycles & Scooters	Total	Mopeds	Motorcycles & Scooters	Total	Mopeds	Motorcycles & Scooters	Total
Japan	0	430,897	430,897	0	465,584	465,584	0	417,649	417,649
China	—	8,982,918	8,982,918	—	8,281,206	8,281,206	—	7,402,466	7,402,466
Taiwan	—	—	421,884	—	—	499,172	—	—	454,743
Indonesia	—	—	27,135	—	—	41,746	—	—	—
India	—	—	2,084,000	—	—	2,457,466	—	—	2,481,193

Note: "—" means data is not available at the end of March 2017.

Sources: Automobile/motorcycle manufacturers' associations of individual countries; for Japan, Japan Automobile Manufacturers Association

# Classifications According to the Road Vehicles Act and the Road Traffic Act

Japan classifies motor vehicles according to the provisions of two basic laws: the Road Vehicles Act and the Road Traffic Act. Road Vehicles Act classifications are used for registration statistics, vehicle inspection, and related maintenance and repair. Road Traffic Act classifications determine the different categories of driver's licenses. Vehicle registration number/character combinations are determined by vehicle type and usage in accordance with Road Vehicles Act designations, and a "vanity plate" system has been introduced nationwide.

## CLASSIFICATION UNDER THE ROAD VEHICLES ACT (for registration, inspection, etc.)

**Standard** Over 2,000cc in engine capacity, excluding diesel engines

**Small** Over 660cc to 2,000cc in engine capacity, excluding diesel engines

**Mini** 660cc and under in engine capacity

Note: A vehicle that exceeds any one of the requisites above is classified in the higher category.

## CLASSIFICATION UNDER THE ROAD TRAFFIC ACT (for driver's license issuance)

<b>Large Motor Vehicles</b> Gross vehicle weight: ≥11 tons Payload: ≥6.5 tons or Occupancy: ≥30 persons	<b>Middle-Category Motor Vehicles</b> Gross vehicle weight: 7.5≤tons<11 Payload: 4.5≤tons<6.5 or Occupancy: 11≤persons<30	<b>Quasi-Middle-Category Motor Vehicles (1)</b> Gross vehicle weight: 3.5≤tons<7.5 Payload: 2≤tons<4.5 or Occupancy: <11 persons
<b>Ordinary Motor Vehicles</b> Gross vehicle weight: <5 tons Payload: <3 tons or Occupancy: <11 persons	<b>Special-Purpose Motor Vehicles</b> Motor vehicles with caterpillar treads such as bulldozers, steamrollers, graders, snowplows, tractors, etc. are classified into two categories: large and small. Small special-purpose motor vehicles are those of up to 15km/h in maximum speed, up to 4.7m in length, up to 2m in height (2), and up to 1.7m in width.	

(1) As per a revision to the Road Traffic Act, the quasi-middle-category motor vehicle classification went into application in March 2017. (2) Projections on small special-purpose vehicles should not exceed 2.8m. Note: The Road Traffic Act stipulates that the driver of any one-rider, three- or four-wheeled vehicle of up to 50cc in engine capacity, with a legal maximum speed of 50km/h and a maximum load of 30kg, is required to hold an "ordinary motor vehicle" driver's license.

## CLASSIFICATION OF MOTORCYCLES

Road Vehicles Act						Road Traffic Act	
Category	Engine Capacity	Rated Output	Width	Height	Length	Category	Engine Capacity
Small-sized	Over 250cc	Over 1.0kW	Over 1.3m	Over 2.0m	Over 2.5m	Large	Over 400cc
Mini-sized	126cc to 250cc	Over 1.0kW	1.3m and under	2.0m and under	2.5m and under	Ordinary	51cc to 400cc
Motor-driven cycles Class 2	51cc to 125cc	Over 0.6kW to 1.0kW	1.3m and under	2.0m and under	2.5m and under	Motorized bicycles	50cc and under
Motor-driven cycles Class 1	50cc and under	0.6kW and under	1.3m and under	2.0m and under	2.5m and under		

Note: A motorcycle that exceeds any one of the requisites above is classified in the higher category.

## SIGNIFICANCE OF VEHICLE REGISTRATION DATA & NUMBER PLATE TYPES

**Large-Sized Number Plates**  
Larger-than-standard-size plates are issued to vehicles weighing 8 tons or more, with payload of 5 tons or more, or 30-person or more occupancy. 22cm x 44cm

**Mid-Sized Number Plates**  
Standard-size plates are issued to standard and small vehicles and mini-vehicles with engine capacity of more than 360cc, whether for private or commercial business use. 16.5cm x 33cm

**Small-Sized Number Plates**  
Small-size plates are issued to small- and mini-sized motorcycles and mini-vehicles with engine capacity of 360cc or less, excluding those designated with any one of the 40-to-49, 50-to-59 or 80-to-89 number categories. 12.5cm x 23cm

Motor Vehicle Registry Designation:  
Kanji indicate geographical area of vehicle registration.

品川 500  
さ 23-45

**Designated Number Categories Indicating Vehicle Type**

Ordinary trucks	1, 10-19, 100-199
Ordinary buses	2, 20-29, 200-299
Ordinary passenger cars	3, 30-39, 300-399
Three- or four-wheeled small trucks	4, 40-49, 400-499
Three- or four-wheeled small passenger cars and small buses	6, 60-69, 600-699
Special-purpose vehicles	5, 50-59, 500-599
Large special-purpose vehicles	7, 70-79, 700-799
Large special-purpose vehicles used as construction machinery	8, 80-89, 800-899
	9, 90-99, 900-999
	0, 00-09, 000-099

**Number Assignment**  
From "1" to "99-99"

**Usage Designations**

Ordinary and large motor vehicles	
Private use	さすせそたちつととなにぬねのはひふほまみむめもやゆらりるろ
Commercial business use	あいうえかきくけこ
Rental vehicle	われ
Foreign military vehicle	EHKMTYよ
Mini-vehicles	
Private use	あいうえかきくけこさすせそたちつととなにぬねのはひふほまみむめもやゆららるろ
Commercial business use	りれ
Rental vehicle	わ
Foreign military vehicle	AB

*Hiragana* character indicates vehicle usage category: private, commercial business, rental or foreign military vehicle (private or official).

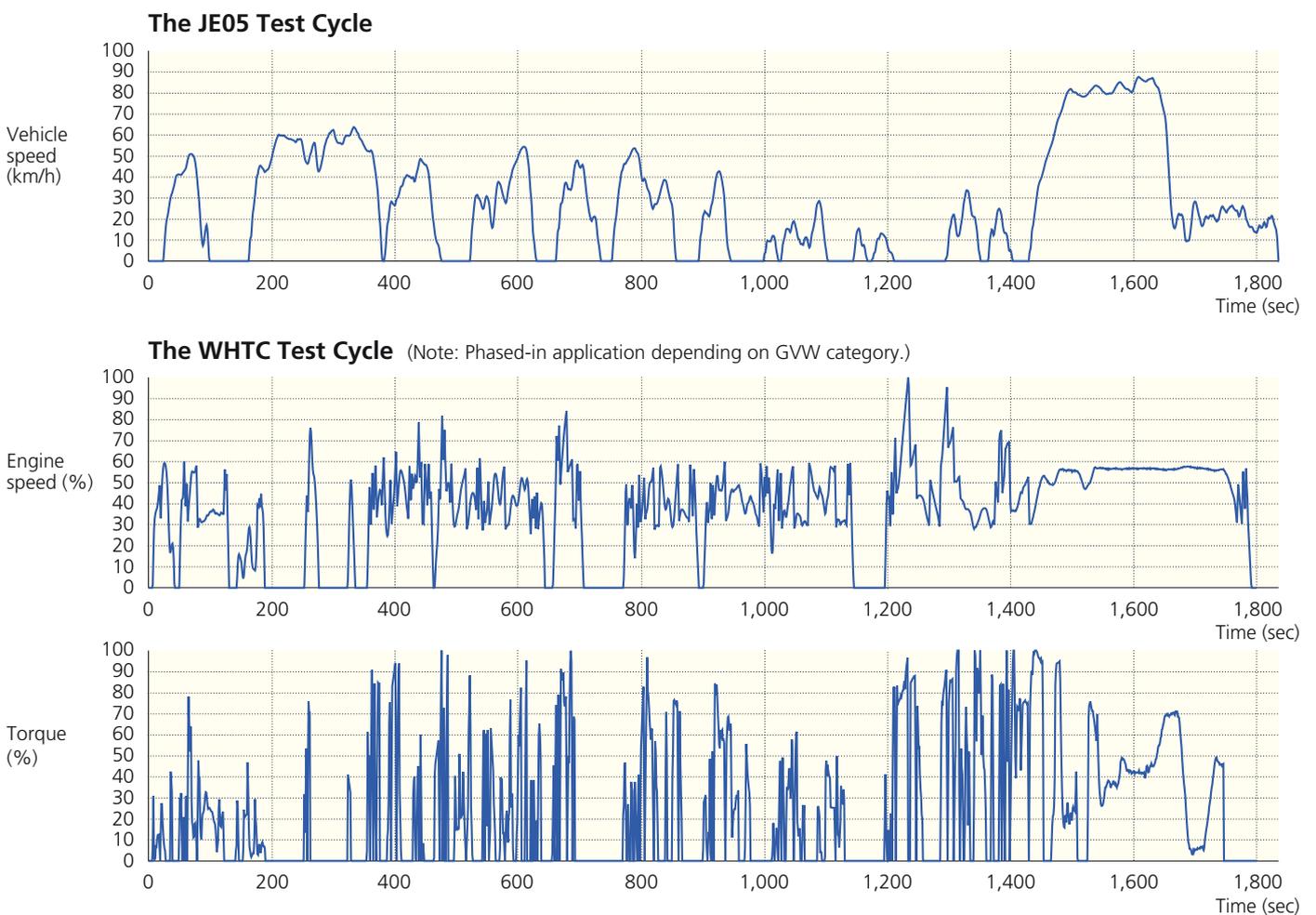
**Number Plate Colors**

Ordinary and large motor vehicles	
Private use or rental vehicle	Green characters on white background
Commercial business use	White characters on green background
Mini-vehicles	
Private use or rental vehicle	Black characters on yellow background
Commercial business use	Yellow characters on black background

# Japan’s Test Cycles for Measuring Fuel Consumption and Exhaust Emissions

The JC08 test cycle is currently the only test cycle applied in Japan to measure fuel consumption rates as well as exhaust emissions in non-heavy-duty vehicles, having replaced the 10•15-mode test cycle. The objective in using the JC08 test cycle is to obtain test results that are as close as possible to actual on-road fuel consumption rates, and certified fuel efficiency values are established on the basis of JC08 test cycle results. Beginning in 2018, for the purpose of global harmonization, Japan will replace its JC08 test cycle with the Worldwide Harmonized Light Vehicles Test Procedure (WLTP). Meanwhile, Japan’s JE05 test cycle for measuring diesel exhaust emissions from heavy-duty vehicles is being replaced by the World Harmonized Transient Cycle (WHTC).

## ● COMPARISON OF THE JE05 AND WHTC TEST CYCLES FOR HEAVY-DUTY VEHICLES (measuring fuel consumption)



## ● COMPARISON OF THE JC08 AND WLTP TEST CYCLES FOR PASSENGER CARS & LIGHT COMMERCIAL VEHICLES (measuring fuel consumption and exhaust emissions)

(Note: Phased-in application of WLTP depending on GVW category.)

	Maximum speed (km/h)	Average speed (km/h)	Maximum acceleration (km/h/sec)	Duration (sec)	Distance (km)	Idling time (%)
JC08	81.60	24.41	5.50	1,204	8.17	29.7
WLTP	97.40	36.39	5.70	1,477	14.94	15.4

## Alternative Systems Expedite Certification

Motor vehicle certification in Japan is based primarily on the Type Approval System, which is applied to both domestic and imported automobiles and covers most mass-produced models. The Preferential Handling Procedure for imported motor vehicles is an alternative procedure which was instituted to expedite the certification of foreign-made vehicles that are imported in limited quantities. The Type Notification System and the Common Structure Type Approval System are mainly applied to large commercial vehicles.

### THE TYPE APPROVAL SYSTEM

This certification procedure is applied to domestic and imported mass-produced models. The Ministry of Land, Infrastructure, Transport and Tourism (MLIT) inspects a sample vehicle and the quality-control system of the automobile manufacturer concerned, then completes the type approval process within two months in principle. All finished vehicles that have been granted type approval are then inspected by the manufacturer, eliminating the need to present them for new vehicle inspection. For imported vehicles, the MLIT not only dispatches officials overseas to conduct certification inspections but also accepts the test results of designated foreign testing institutes.

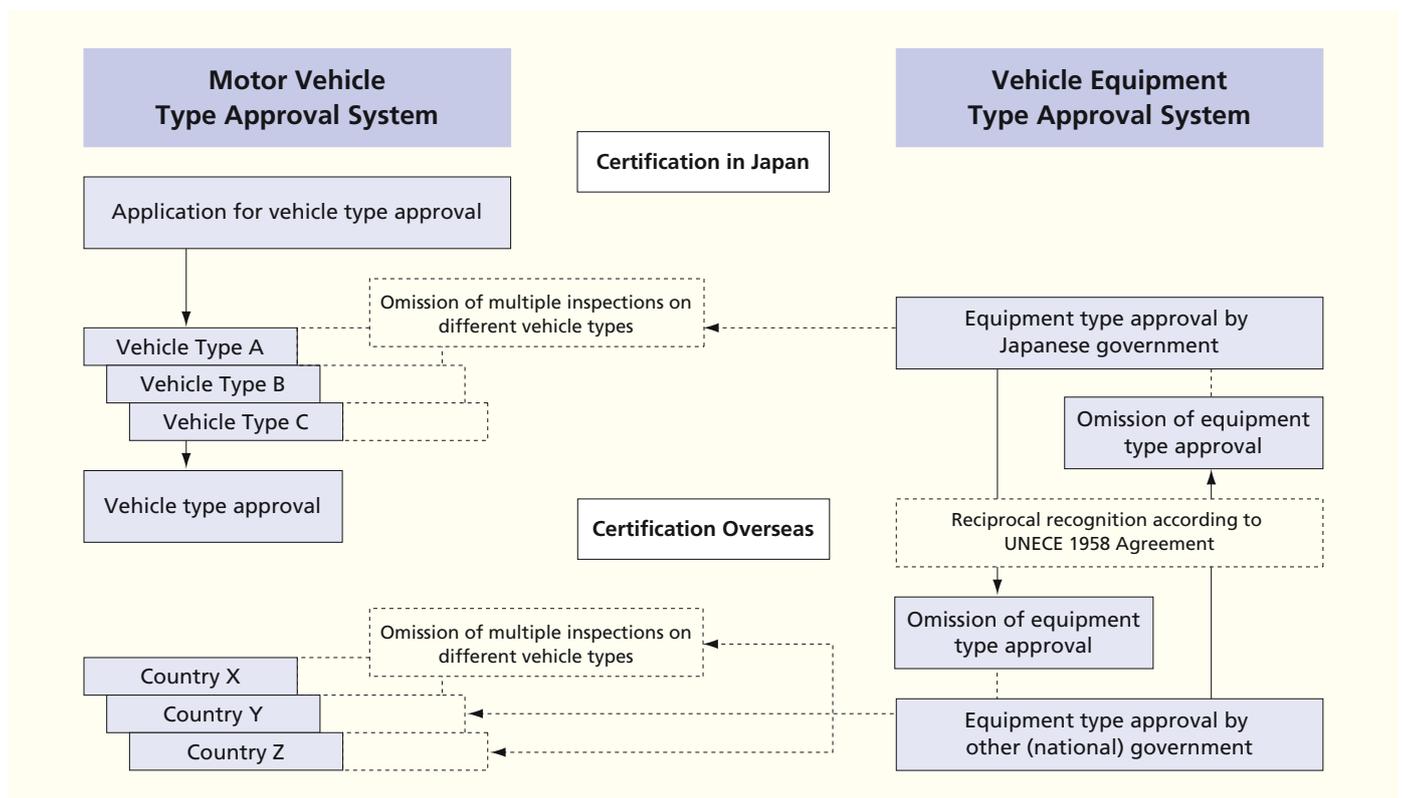
### THE PREFERENTIAL HANDLING PROCEDURE FOR IMPORTED VEHICLES

This procedure is applied to models that are imported into Japan in quantities of 5,000 units or less per year. Designed to make the importation of vehicles simpler and faster, it exempts the applicant from undergoing the sample vehicle inspection that is mandatory under the Type Approval System. The MLIT inspects only the application documentation and issues a form indicating completion of the procedure within one month.

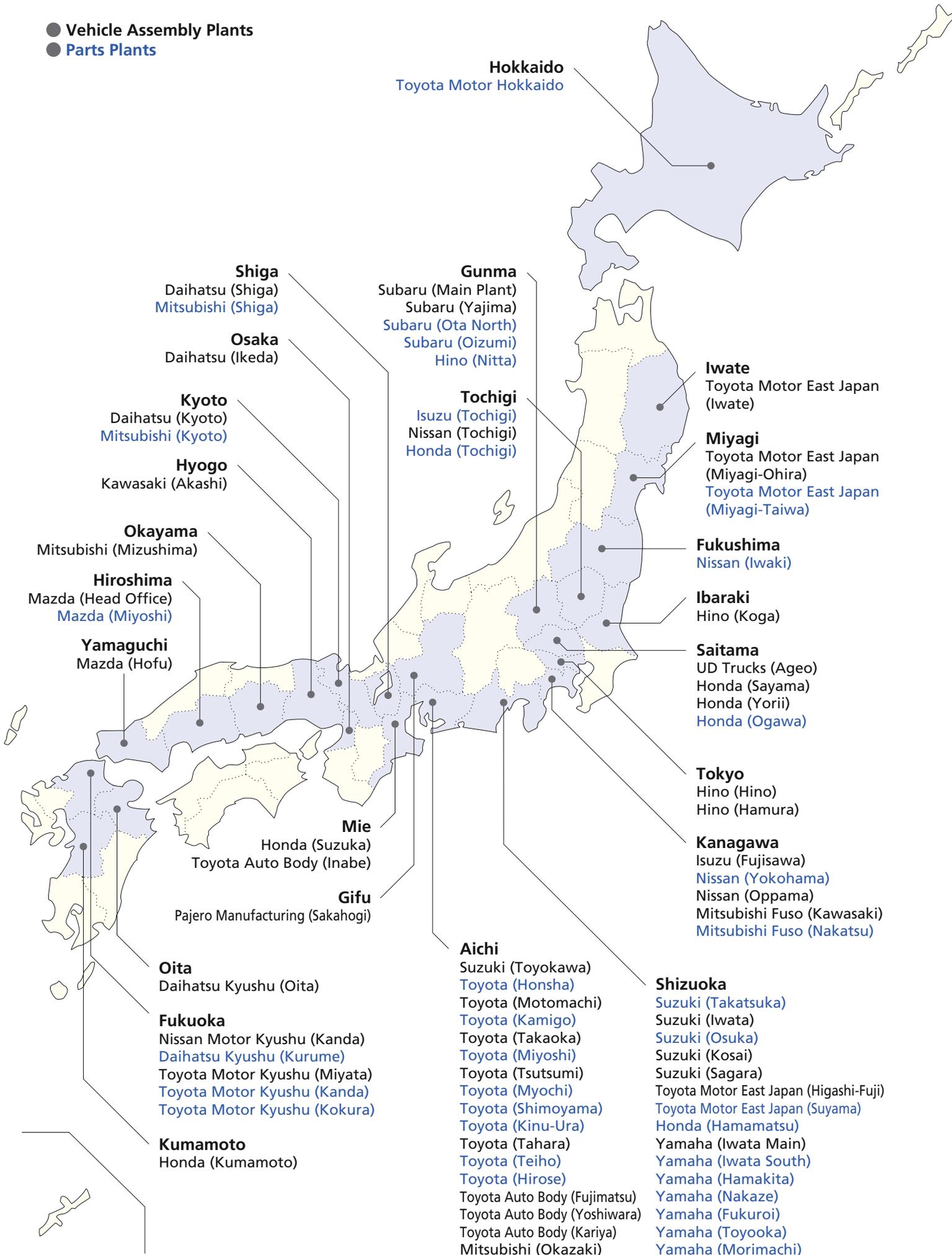
### RATIONALIZATION OF MOTOR VEHICLE/RECIPROCAL EQUIPMENT TYPE APPROVAL SYSTEMS

Increased globalization in the automobile industry worldwide is underscoring the need for the more widespread adoption of reciprocal recognition systems, under which certification is mutually recognized between importing and exporting countries or regions. Meanwhile, the United Nations' World Forum for Harmonization of Vehicle Regulations (also known as WP.29) is making steady progress in the establishment of global technical regulations (GTRs) focusing on vehicle safety and environmental standards. In 1998 the Japanese government officially acceded to the UNECE 1958 Agreement, under which each signatory government reciprocally recognizes certifications of vehicle structure and equipment issued by all the other signatory countries. It also introduced the Vehicle Equipment Type Approval System, which specifically addresses the expanding common use of equipment in vehicle manufacturing. This system not only allows equipment and parts that have been certified by 1958 Agreement co-signatory countries to be exempted from undergoing certification procedures in Japan, but furthermore does not require them to be inspected again if they are used in other models.

### JAPAN'S RATIONALIZATION OF MOTOR VEHICLE/RECIPROCAL EQUIPMENT TYPE APPROVAL SYSTEMS



- Vehicle Assembly Plants
- Parts Plants





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