



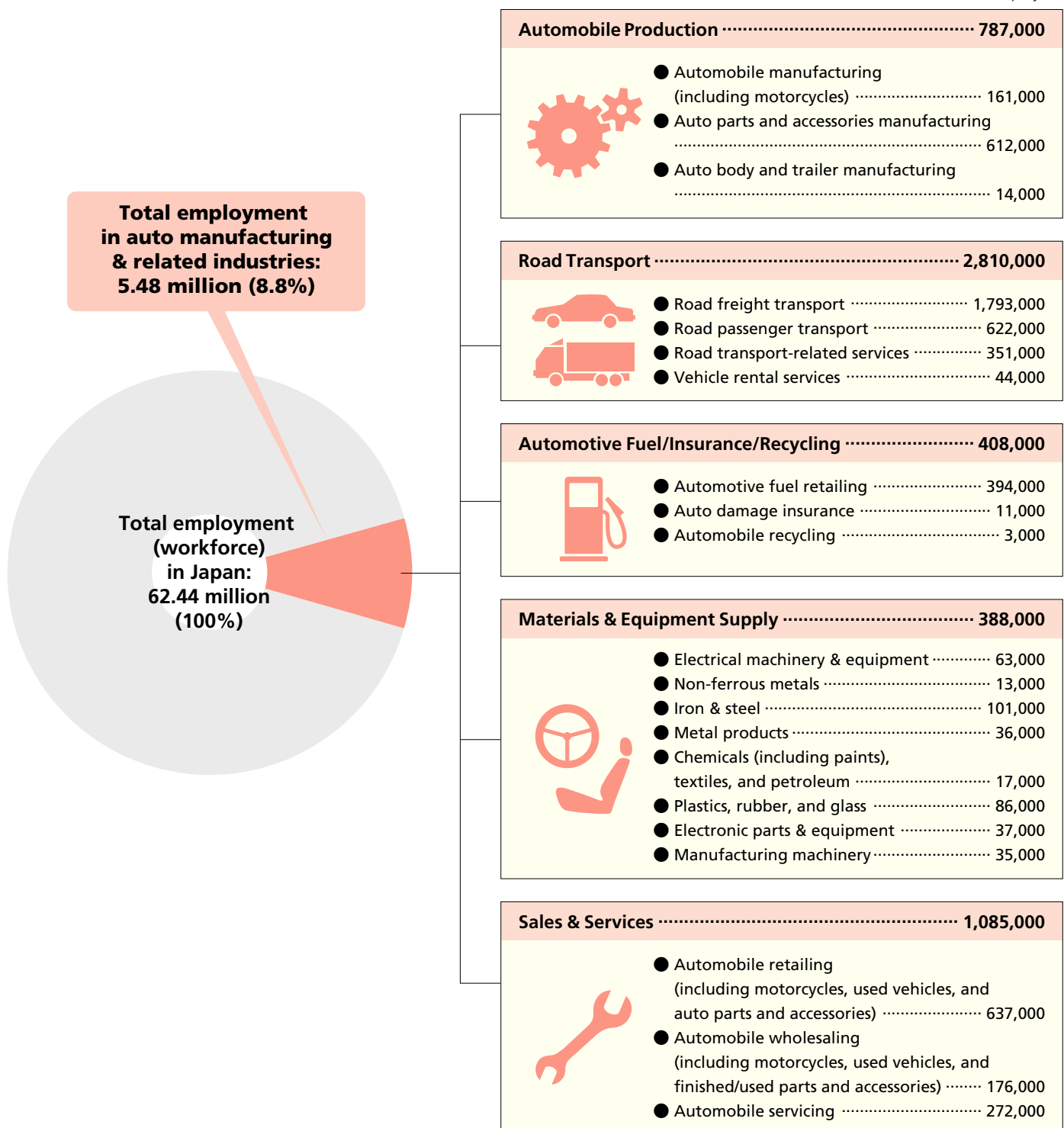
JAPAN AUTOMOBILE MANUFACTURERS ASSOCIATION, INC.

## 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 5.48 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

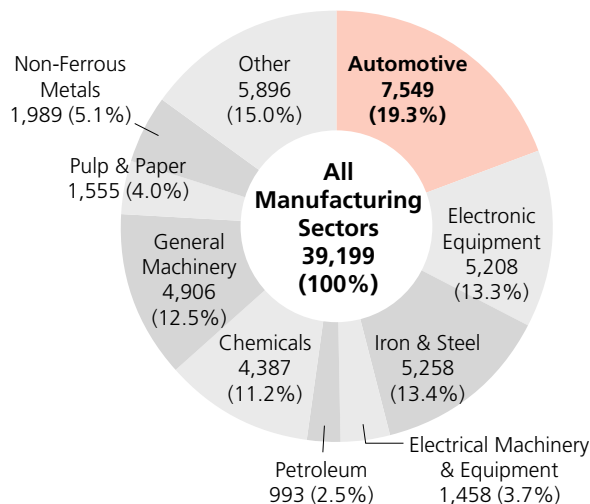
An automobile typically is composed of 20,000 to 30,000 parts, all of which even the largest manufacturers cannot produce themselves. Automakers therefore either outsource production or purchase finished products (such as tires, batteries, air conditioners and audio systems), including products manufactured abroad. 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-and-development 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>Springs, dampers</b>	
<b>Common steel</b>	Chassis, frames, wheel parts	<b>Turbochargers</b>	
<b>Special steel</b>	Gears, axle shafts, crankshafts, fuel injection equipment	<b>Bearings</b>	
<b>Copper</b>	Electricals, radiators, cables	<b>Machined parts, e.g. pumps</b>	
<b>Lead, tin, zinc</b>	Engine metals, solder, body varnish, batteries	<b>Tires and tubes</b>	
<b>Aluminum</b>	Engine parts (e.g. pistons, cylinder heads), wheels, chassis	<b>Batteries</b>	
<b>Noble metals</b>	Emissions aftertreatment parts	<b>Window glass</b>	
<b>Other non-ferrous metals</b>	Magnets, plating	<b>Onboard tools, e.g. jacks</b>	
<b>Synthetic resin</b>	Steering wheels, bumpers, radiator grilles, body components	<b>Supplies, e.g. extinguishers, tire chains</b>	
<b>Glass</b>	Window glass, mirrors, headlamps	<b>Electronic parts</b>	Sensors, ECUs, actuators
<b>Rubber</b>	Tires, sealing parts, vibration control parts	<b>Lights, cables, optical fibers</b>	
<b>Ceramics</b>	Plugs, electronic parts, sensors, emissions aftertreatment parts	<b>Air conditioners, air cleaners</b>	
<b>Textiles</b>	Seats, linings, seatbelts	<b>Starters, alternators, generators, inverters, meters</b>	
<b>Leather</b>	Seats, packing	<b>Audio systems, phones, navigation systems</b>	
<b>Paper</b>	Filters	<b>Safety equipment, e.g. anti-lock brakes, airbags, traction control</b>	
<b>Wood</b>	Load-carrying platforms, interior equipment	<b>Coke</b>	For casting
<b>Paints</b>	Ornamental and rustproof paints	<b>Petroleum, electricity, natural gas</b>	Fuel, heat treatment, paint drying, power generation
<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.		

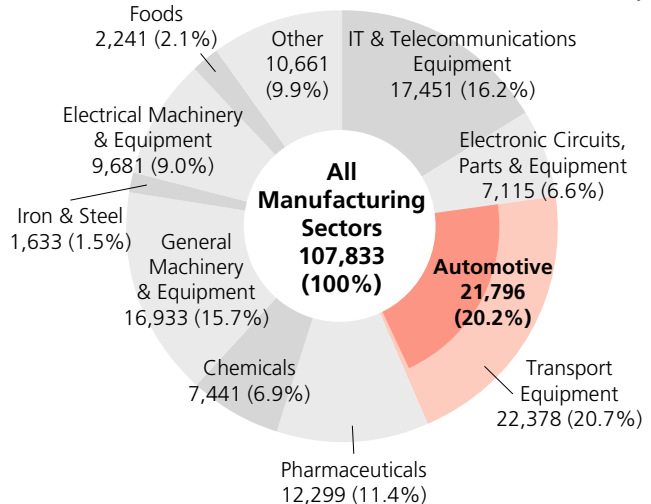
## INVESTMENTS IN EQUIPMENT OF MAJOR MANUFACTURING SECTORS (PROJECTED, FY 2012)

x 100 million yen



## INVESTMENTS IN R&D OF MAJOR MANUFACTURING SECTORS (FY 2011)

x 100 million yen



Note: Japan's fiscal year (FY) starts on April 1 and ends on March 31 of the following year.  
Source: Survey on Corporate Finance, Ministry of Economy, Trade and Industry

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

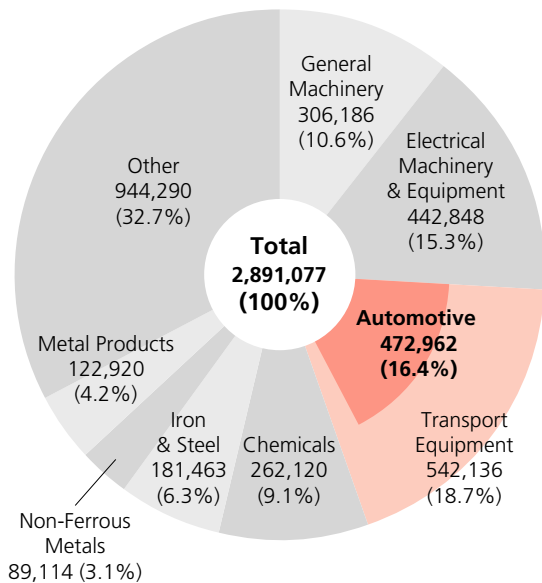
# Automobile Manufacturing Is a Core Industry

The automotive industry is one of the Japanese economy's core industrial sectors. In 2010 automotive shipments accounted for 16.4% of the total value of Japan's manufacturing shipments, and 36.6% 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 47.3 trillion yen in 2010, up 16.8% from the previous year.

To our readers: Because a significant amount of shipment data for major manufacturing sectors in 2011 was not yet available at press time, this entire page remains unaltered from last year's edition of this publication.

## SHIPMENTS OF MAJOR MANUFACTURING SECTORS IN VALUE TERMS (2010)

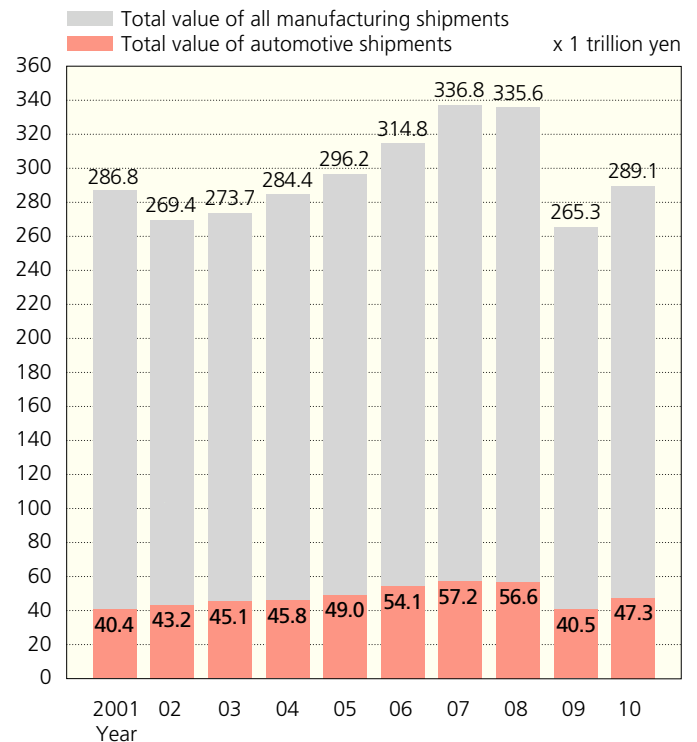
x 100 million yen



### Breakdown of automotive shipments:

- Automobiles (including motorcycles) ..... 185,160
- Auto bodies and trailers ..... 3,707
- Automotive parts and accessories ..... 284,095

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



## 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
2001	232,284	112,018	58,492	145,450	282,965	524,657	451,522	404,215	1,299,143	1,060,156	2,867,544	31.1	14.1
2002	227,483	109,627	56,685	137,365	254,773	460,411	479,974	431,630	1,230,660	967,300	2,693,618	35.1	16.0
2003	233,271	119,030	56,321	132,430	260,683	480,137	498,869	450,500	1,275,564	956,603	2,737,344	35.3	16.5
2004	241,493	141,413	61,931	134,543	290,742	498,469	506,995	458,122	1,335,931	968,597	2,844,183	34.3	16.1
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

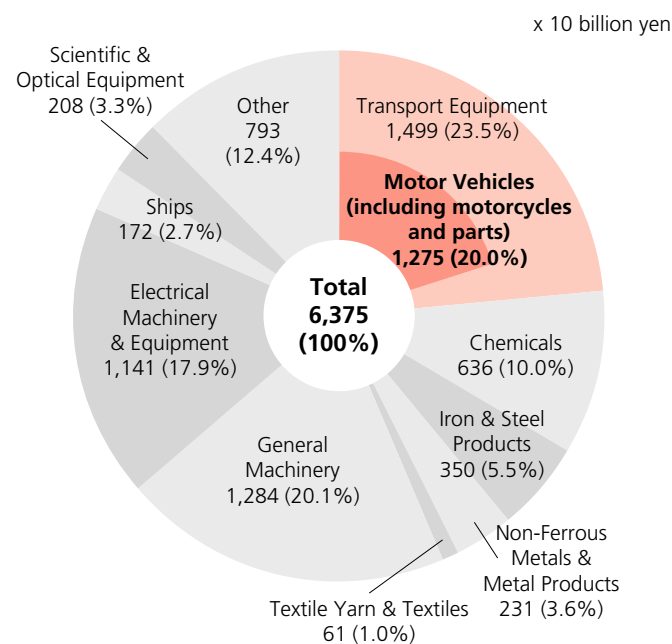
Notes: 1. Shipments from all manufacturing operations with four or more employees are included in this data. 2. Compilation of data on production in value terms was discontinued in 1996 and replaced by data on shipments in value terms. 3. Figures in value terms include domestic consumption tax revenue from shipments. 4. "Electrical Machinery & Equipment" includes IT-related electronic parts and equipment as of 2002.

Source for all statistical data on this page: Census of Manufactures, Ministry of Economy, Trade and Industry

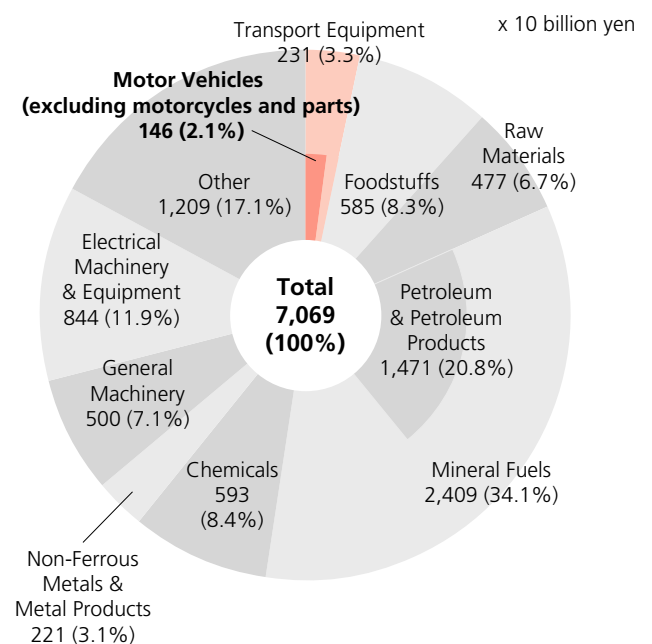
## Motor Vehicle Exports and Imports Both Show an Increase

Japan's gross exports in 2012 decreased by 2.7% from the previous year, while gross imports rose by 3.8%. In value terms, automotive exports grew 10.5% from 2011 to 12.8 trillion yen, with motor vehicle and parts exports rising but motorcycle exports falling. Automotive imports also increased, by 21.2% year-on-year to 1.5 trillion yen, with both motor vehicle and parts imports showing growth.

### EXPORTS BY PRINCIPAL COMMODITY (FOB) IN 2012



### IMPORTS BY PRINCIPAL COMMODITY (CIF) IN 2012



### 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. (%)
2003	118,363	102.3	88,950	22,998	6,415	545,484	104.7
2004	124,773	105.4	92,142	25,617	7,014	611,700	112.1
2005	135,132	108.3	99,288	28,006	7,839	656,565	107.3
2006	161,795	119.7	122,995	30,227	8,573	752,462	114.6
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

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

### AUTOMOTIVE IMPORTS IN VALUE TERMS (CIF)

x 100 million yen

Year	Motor Vehicles			Imports Total		
	Value	Chg. (%)	Passenger Cars, Trucks, Buses	Auto Parts	Value	Chg. (%)
2003	11,799	105.0	8,279	3,520	443,620	105.1
2004	12,842	108.8	9,055	3,787	492,166	110.9
2005	13,353	104.0	9,149	4,204	569,494	115.7
2006	14,412	107.9	9,163	5,249	673,443	118.3
2007	15,586	108.1	9,294	6,291	731,359	108.6
2008	14,160	90.9	7,499	6,662	789,548	108.0
2009	8,245	58.2	4,549	3,696	514,994	65.2
2010	10,836	131.4	5,957	4,879	607,650	118.0
2011	12,069	111.4	7,352	4,717	681,112	112.1
2012	14,631	121.2	9,082	5,549	706,886	103.8

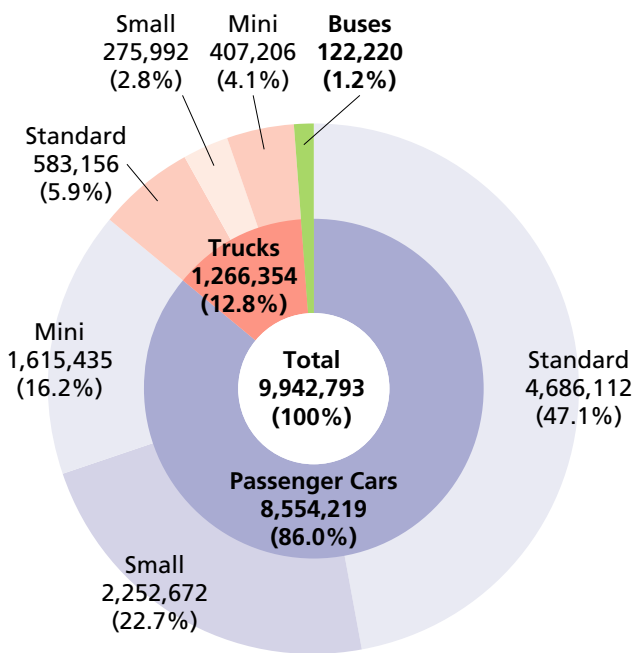
Notes: 1. Motor vehicles include passenger cars, trucks, buses, and chassis. 2. FOB: Free on board; CIF: Cost, insurance, and freight. 3. "Chg. (%)" means change from the previous year (with the previous year's result indexed at 100).

# Motor Vehicle Production Up for First Time in 2 Years

In 2012 motor vehicle production in Japan increased for the first time in two years, totalling 9.94 million units, up 18.4% from the previous year. Passenger car production grew 19.5% to a total of 8.55 million units. Within that category, standard car production climbed 12.1% to 4.69 million units, small car production rose 21.0% to 2.25 million units, and minicar production surged 44.6% to 1.62 million units. Truck and bus production also showed an increase over 2011, growing 11.5% to 1.27 million units and 17.4% to 122,000 units, respectively.

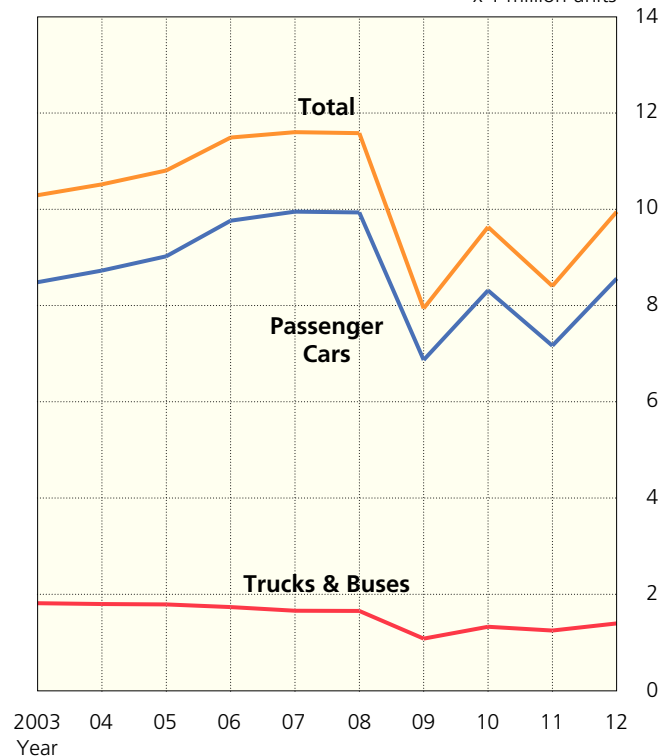
## MOTOR VEHICLE PRODUCTION BY TYPE IN 2012

In vehicle units



## TRENDS IN MOTOR VEHICLE PRODUCTION

x 1 million units



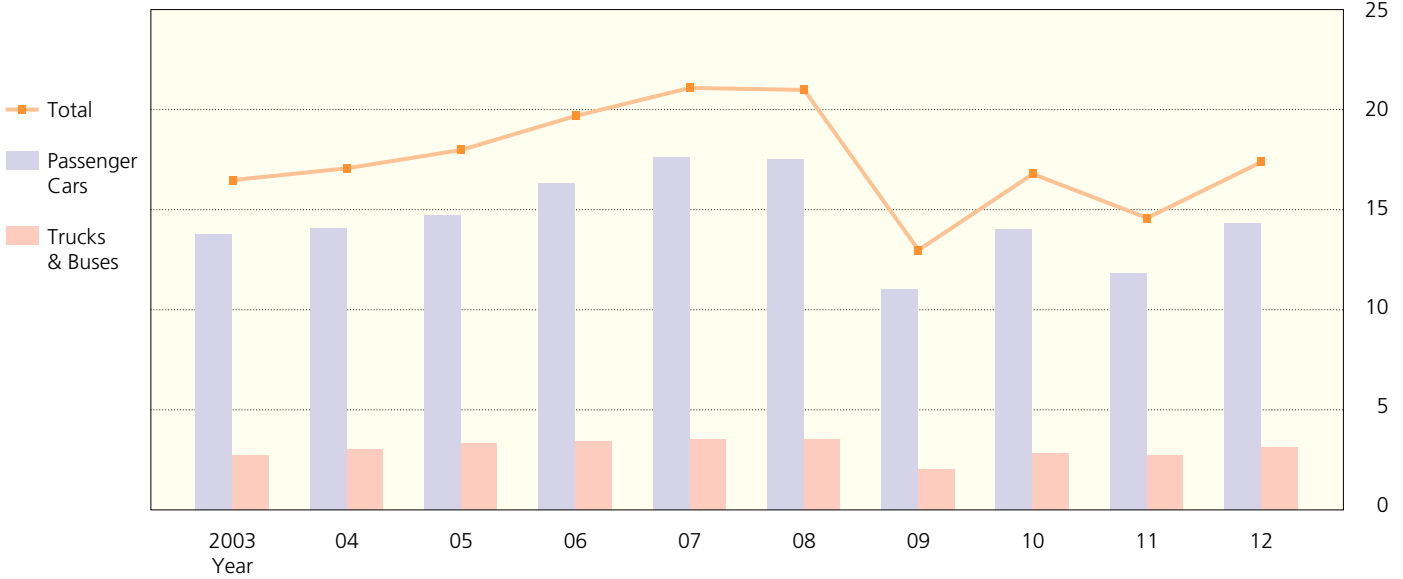
## MOTOR VEHICLE PRODUCTION

Year	Passenger Cars					Trucks				
	Standard	Small	Mini	Total	Chg. (%)	Standard			Small	
						Gasoline	Diesel	Subtotal	Gasoline	Diesel
1970	51,619	2,377,639	749,450	3,178,708	121.7	52,047	206,053	258,100	1,156,729	97,132
1975	209,032	4,198,550	160,272	4,567,854	116.2	84,304	203,866	288,170	1,441,759	168,716
1980	403,338	6,438,847	195,923	7,038,108	114.0	457,208	427,990	885,198	1,663,834	449,477
1985	494,792	6,991,432	160,592	7,646,816	108.1	842,792	435,420	1,278,212	1,218,423	659,470
1990	1,750,783	7,361,224	835,965	9,947,972	109.9	635,255	614,270	1,249,525	517,972	744,971
1995	2,553,703	4,140,629	916,201	7,610,533	97.5	232,514	591,626	824,140	304,495	604,826
2000	3,376,447	3,699,893	1,283,094	8,359,434	103.2	153,280	495,900	649,180	204,253	279,029
2003	3,753,446	3,434,662	1,290,220	8,478,328	98.4	157,420	615,307	772,727	250,019	199,443
2004	4,044,563	3,309,147	1,366,675	8,720,385	102.9	127,529	642,424	769,953	261,902	184,634
2005	4,191,360	3,416,622	1,408,753	9,016,735	103.4	106,530	617,133	723,663	233,694	203,069
2006	4,915,428	3,302,265	1,537,210	9,754,903	108.2	96,083	603,327	699,410	213,687	205,717
2007	5,864,354	2,638,842	1,441,441	9,944,637	101.9	125,262	593,639	718,901	177,425	188,107
2008	5,786,333	2,714,413	1,427,397	9,928,143	99.8	121,443	613,480	734,923	163,237	166,521
2009	3,459,589	2,145,279	1,257,293	6,862,161	69.1	83,442	288,244	371,686	127,004	88,135
2010	4,846,411	2,159,119	1,304,832	8,310,362	121.1	75,016	445,611	520,627	133,043	105,733
2011	4,180,361	1,861,279	1,116,885	7,158,525	86.1	58,951	453,309	512,260	135,335	99,251
2012	4,686,112	2,252,672	1,615,435	8,554,219	119.5	73,016	510,140	583,156	162,012	113,980

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			Grand Total
	Standard	Small	Mini	Total	Standard	Small	Mini	Tractors	Total	Large	Small	Total	
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
2003	8,454,215	4,243,705	1,054,329	13,752,249	1,539,221	540,480	338,236	67,945	2,485,882	116,560	130,268	246,828	16,484,959
2004	8,836,999	4,067,398	1,146,115	14,050,512	1,805,315	561,422	333,606	89,959	2,790,302	105,985	129,577	235,562	17,076,376
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
2006	10,891,826	4,088,449	1,333,394	16,313,669	2,029,030	574,272	352,050	122,267	3,077,619	131,726	203,231	334,957	19,726,245
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	9,676,681	3,091,067	1,486,926	14,254,674	1,954,361	422,502	302,836	106,209	2,785,908	120,992	237,196	358,188	17,398,770

Source: Ministry of Economy, Trade and Industry

In vehicle units

Subtotal	Mini	Total	Chg. (%)	Buses				Total	Chg. (%)	Year
				Large (≥30 passengers)	Small (≤29 passengers)	Total	Chg. (%)			
1,253,861	551,922	2,063,883	102.1	15,265	31,301	46,566	111.3	5,289,157	113.1	1970
1,610,475	438,987	2,337,632	90.8	13,624	22,481	36,105	78.8	6,941,591	105.9	1975
2,113,311	914,679	3,913,188	115.2	16,470	75,118	91,588	146.4	11,042,884	114.6	1980
1,877,893	1,388,583	4,544,688	105.2	15,547	64,044	79,591	110.2	12,271,095	107.0	1985
1,262,943	986,171	3,498,639	89.0	15,787	24,398	40,185	95.5	13,486,796	103.5	1990
909,321	804,276	2,537,737	93.9	12,814	34,452	47,266	96.2	10,195,536	96.6	1995
483,282	594,356	1,726,818	98.8	8,035	46,509	54,544	112.7	10,140,796	102.5	2000
449,462	524,427	1,746,616	111.1	11,406	49,668	61,074	92.1	10,286,018	100.3	2003
446,536	514,202	1,730,691	99.1	12,286	48,156	60,442	99.0	10,511,518	102.2	2004
436,763	546,185	1,706,611	98.6	11,763	64,550	76,313	126.3	10,799,659	102.7	2005
419,404	521,879	1,640,693	96.1	11,063	77,574	88,637	116.1	11,484,233	106.3	2006
365,532	453,587	1,538,020	93.7	11,516	102,154	113,670	128.2	11,596,327	101.0	2007
329,758	443,718	1,508,399	98.1	11,660	127,442	139,102	122.4	11,575,644	99.8	2008
215,139	398,276	985,101	65.3	8,783	78,012	86,795	62.4	7,934,057	68.5	2009
238,776	449,776	1,209,179	122.7	10,274	99,060	109,334	126.0	9,628,875	121.4	2010
234,586	389,150	1,135,996	93.9	9,427	94,682	104,109	95.2	8,398,630	87.2	2011
275,992	407,206	1,266,354	111.5	10,598	111,622	122,220	117.4	9,942,793	118.4	2012

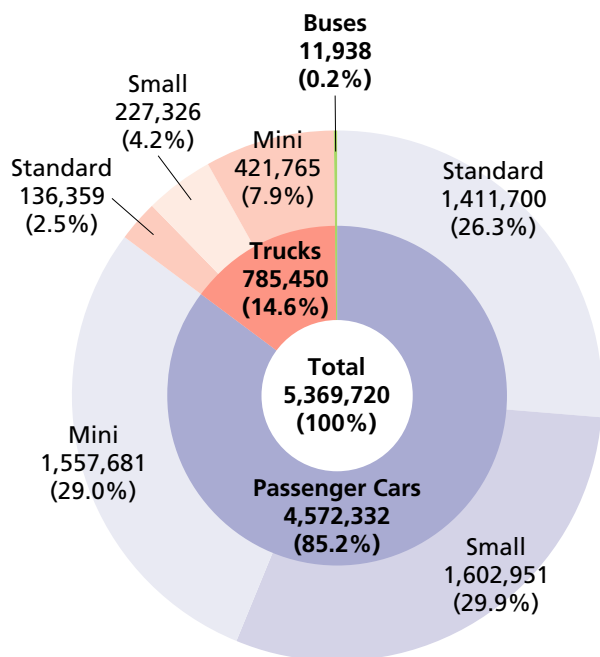
2,000cc), and "mini" (660cc and under); see page 66 for details. 2. KD sets have been excluded since 1979; they represent less than 60% of the cost of compositional components per Source: Japan Automobile Manufacturers Association

# Motor Vehicle Sales Show First Increase in 2 Years

Passenger car and commercial vehicle demand in Japan in 2012 totalled 5.37 million units, an increase of 27.5% from the previous year. Total passenger car sales grew 29.7% to 4.57 million units, with the standard car segment rising 23.8% to 1.41 million units, small cars climbing 28.6% to 1.60 million units, and minicars surging 36.8% to 1.56 million units. Sales of trucks and buses increased 16.4% and 12.1% from 2011, to 785,000 and 12,000 units respectively.

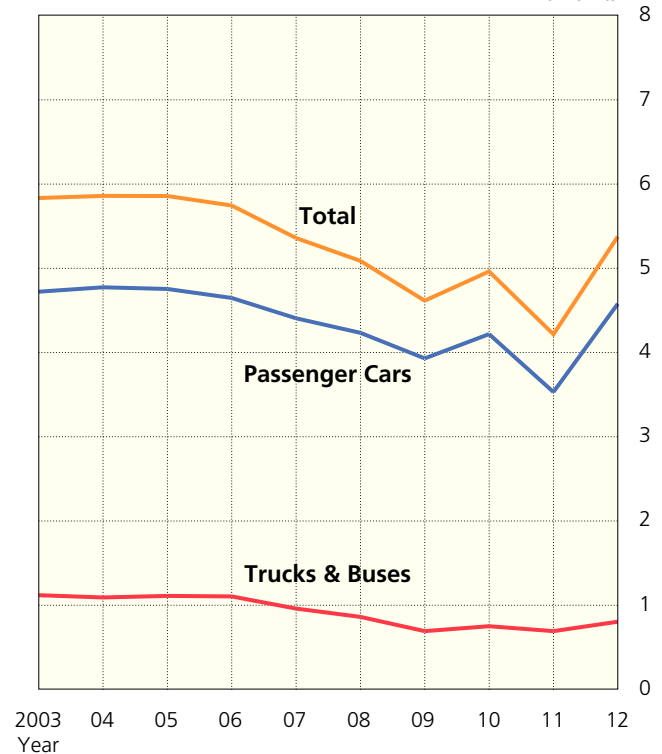
## NEW MOTOR VEHICLE REGISTRATIONS BY TYPE IN 2012

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
2003	1,229,907	2,194,194	1,291,819	4,715,920	—	208,752	373,259	509,044	1,091,055	—
2004	1,358,281	2,037,767	1,372,083	4,768,131	101.1	186,588	361,449	519,067	1,067,104	97.8
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
2006	1,225,867	1,908,267	1,507,598	4,641,732	97.8	209,283	354,870	516,021	1,080,174	99.5
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

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. (%)
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

Notes: 1. Figures for 2003 include other types of mini-vehicles not counted in the data in the bottom chart. 2. "Chg. (%)" means change from the previous year (with the previous year's result indexed at 100).  
Source: Japan Mini Vehicles Association

## RECREATIONAL VEHICLE (RV) SALES

In vehicle units

Year	Station Wagons	Vans	Off-Road 4WD Vehicles	Minivans	Total	
						Chg. (%)
2003	771,384	6,927	183,435	1,201,270	2,163,016	99.1
2004	669,501	7,347	170,447	1,230,788	2,078,083	96.1
2005	612,667	9,363	179,776	1,169,006	1,970,812	94.8
2006	509,936	9,406	211,135	1,126,216	1,856,693	94.2
2007	460,950	8,752	226,159	980,181	1,676,042	90.3
2008	454,164	9,396	213,209	938,694	1,615,463	96.4
2009	339,827	7,433	157,284	890,265	1,394,809	86.3
2010	365,565	8,762	195,783	946,473	1,516,583	108.7
2011	378,041	8,482	170,304	748,133	1,304,960	86.0
2012	430,995	10,165	212,341	902,715	1,556,216	119.3

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

Source: Japan Automobile Dealers 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
5,862	15,341	21,203	—	5,828,178	100.6	4,027,315	101.5	1,800,863	98.6	2003
5,098	13,049	18,147	85.6	5,853,382	100.4	3,962,232	98.4	1,891,150	105.0	2004
5,856	11,898	17,754	97.8	5,852,067	100.0	3,928,351	99.1	1,923,716	101.7	2005
6,064	11,536	17,600	99.1	5,739,506	98.1	3,715,887	94.6	2,023,619	105.2	2006
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

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 Rise for Third Consecutive Year

Imported vehicle sales in Japan in 2012 totalled 316,000 units, up 14.6% from the previous year. Passenger car sales climbed 15.3% to 301,000 units, and commercial vehicles (trucks and buses) rose 3.1% to 15,000 units. Sales of used imported vehicles increased 5.0% to 508,000 units, with passenger cars rising 5.5% to 488,000 units, and trucks growing 1.9% to 15,000 units.

### TRENDS IN IMPORTED MOTOR VEHICLE SALES

In vehicle units

Year		2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
<b>Vehicles produced by non-Japanese manufacturers</b>	Passenger Cars	243,996	240,209	245,610	243,892	230,078	192,317	159,143	180,255	203,800	239,546
	Commercial Vehicles	3,610	3,682	3,383	2,712	1,515	1,585	1,761	1,827	2,057	2,017
<b>Total</b>		247,606	243,891	248,993	246,604	231,593	193,902	160,904	182,082	205,857	241,563
<b>Vehicles produced by Japanese manufacturers abroad</b>	Passenger Cars	31,198	28,989	19,119	15,670	32,918	13,961	8,746	33,028	56,907	61,048
	Commercial Vehicles	0	0	0	0	575	11,368	8,877	9,973	12,880	13,382
<b>Total</b>		31,198	28,989	19,119	15,670	33,493	25,329	17,623	43,001	69,787	74,430
<b>Passenger Cars Total</b>		275,194	269,198	264,729	259,562	262,996	206,278	167,889	213,283	260,707	300,594
<b>Commercial Vehicles Total</b>		3,610	3,682	3,383	2,712	2,090	12,953	10,638	11,800	14,937	15,399
<b>Grand Totals</b>		278,804	272,880	268,112	262,274	265,086	219,231	178,527	225,083	275,644	315,993
<b>Chg. (%)</b>		100.6	97.9	98.3	97.8	101.1	82.7	81.4	126.1	122.5	114.6

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
2003	281,526	97.5	1,405	733	283,664	97.6	562,415
2004	286,798	101.9	1,715	748	289,261	102.0	485,572
2005	282,654	98.6	1,420	660	284,734	98.4	444,635
2006	278,726	98.6	1,615	654	280,995	98.7	458,966
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

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. (%)
2003	555,895	103.4	6,148	118.9	38,025	89.1	308	600,376	102.5
2004	576,809	103.8	7,961	129.5	31,856	83.8	281	616,907	102.8
2005	588,397	102.0	9,468	118.9	27,269	85.6	228	625,362	101.4
2006	586,398	99.7	11,121	117.5	22,640	83.0	303	620,462	99.2
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

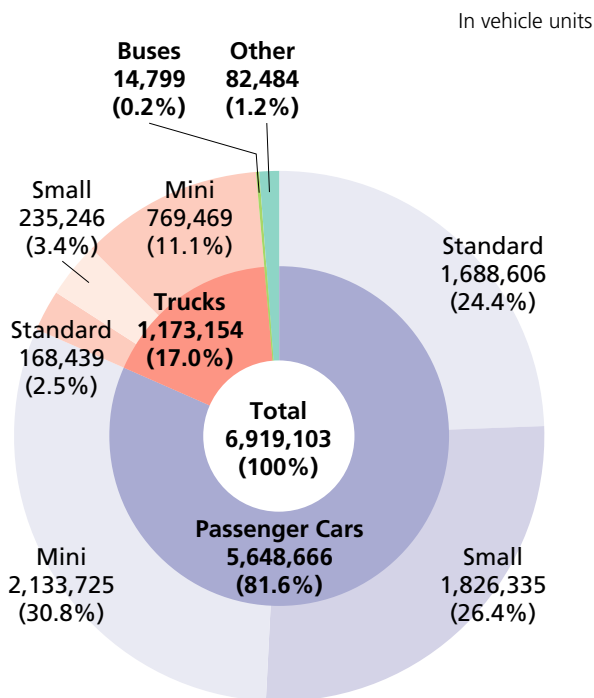
Notes: 1. For motor vehicle classifications in Japan, see page 66. 2. "Other" includes buses, large special-purpose vehicles and small-sized three-wheeled trucks. 3. "Chg. (%)" means change from the previous year (with the previous year's result indexed at 100).

Source: Japan Automobile Importers Association

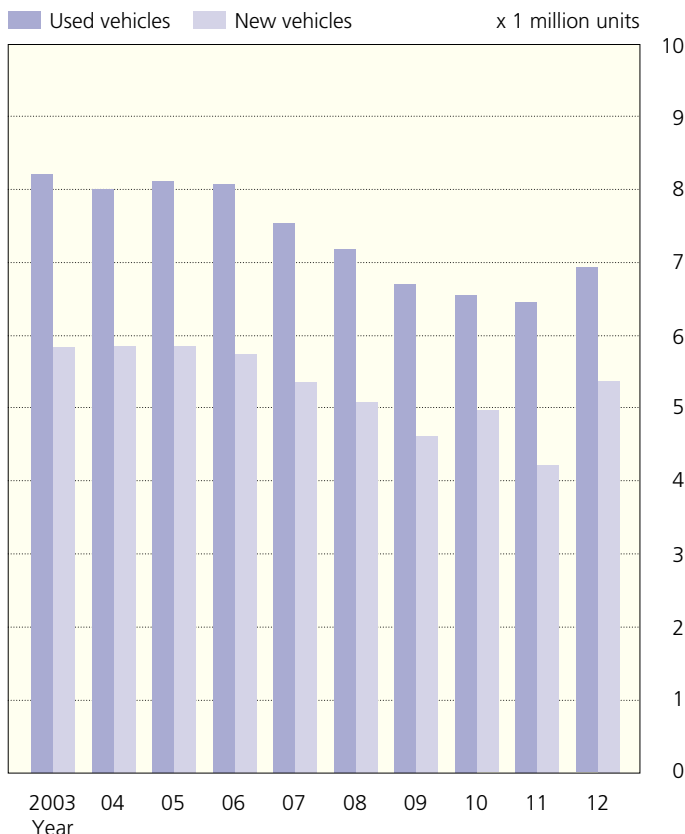
# Used Vehicle Sales Rise for First Time in 7 Years

In 2012 sales of used motor vehicles expanded 7.3% over the previous year to total 6.92 million units, marking the first increase in seven years. Used passenger car sales climbed 9.0% to 5.65 million units, with standard passenger cars increasing 9.5% to 1.69 million units, small cars rising 5.4% to 1.83 million units, and minicars growing 11.9% to 2.13 million units. Also showing an increase over 2011, sales of used trucks and buses rose 0.1% to 1.17 million units and 6.9% to 15,000 units, respectively.

## USED VEHICLE SALES BY TYPE IN 2012



## 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
2003	1,910,017	2,640,456	1,809,840	6,360,313	100.6	220,470	379,461	1,062,660	1,662,591	99.6	17,392	101.9	154,971	97.0	8,195,267	100.3
2004	1,984,562	2,524,764	1,777,866	6,287,192	98.9	225,715	363,523	972,000	1,561,238	93.9	17,240	99.1	136,242	87.9	8,001,912	97.6
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
2006	1,959,739	2,304,226	2,033,569	6,297,534	99.1	244,770	365,180	1,003,607	1,613,557	101.5	20,643	109.4	135,130	93.3	8,066,864	99.5
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

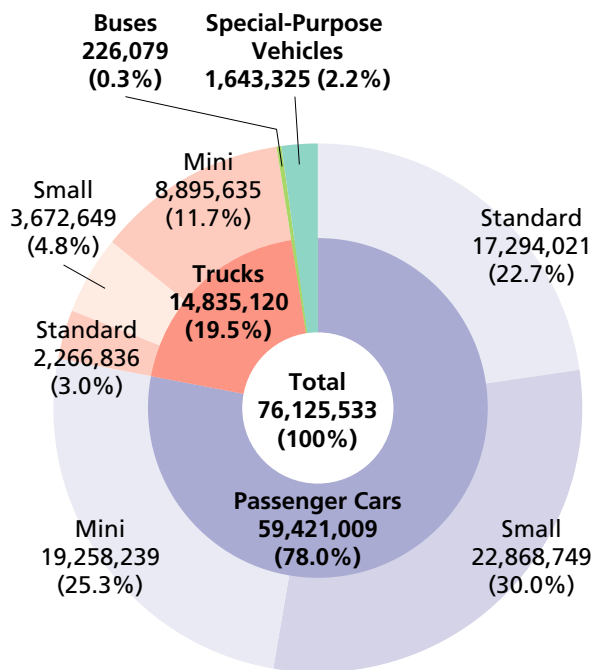
Notes: 1. Passenger cars and trucks are classified under Japan's Road Vehicles Act in three categories, based primarily on engine capacity: "standard" (over 2,000cc), "small" (661cc-2,000cc), and "mini" (660cc and under); see page 66 for details. 2. Includes imported vehicles. 3. "Other" refers to emergency 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

## Slight Increase in Number of Motor Vehicles in Use

At the end of December 2012, motor vehicles in use in Japan (excluding motorcycles) totalled 76.1 million units, a 0.8% increase over the previous year. Passenger cars in use increased 1.3% to 59.4 million units, with standard and minicars growing 1.5% and 4.2% to 17.3 million and 19.3 million units respectively, but small cars dropping 1.2% to 22.9 million units. Meanwhile, trucks in use slipped 0.9% from 2011 to 14.8 million units whereas buses in use rose 0.1% to 226,000 units. At the end of March 2012, the average service life of motor vehicles in Japan was 12.16 years for passenger cars, 12.81 years for trucks, and 16.82 years for buses.

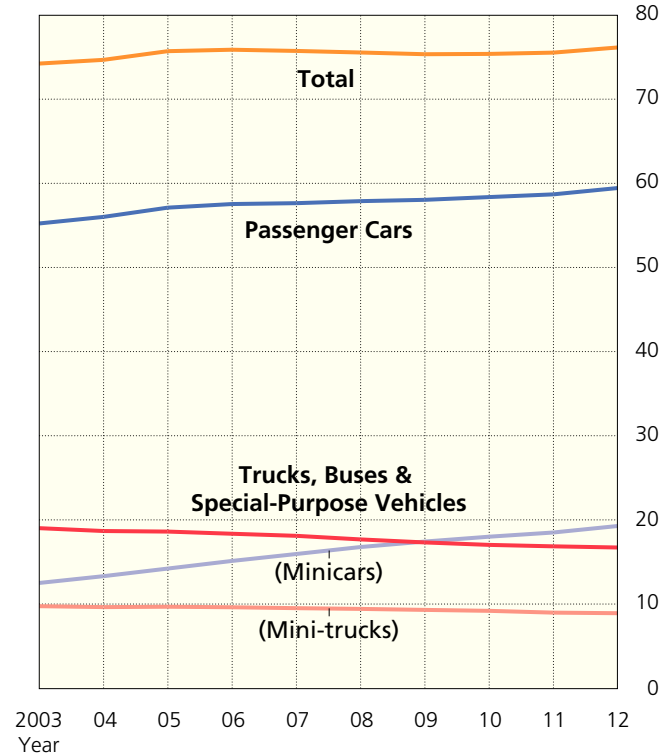
### MOTOR VEHICLES IN USE BY TYPE AT END OF 2012

In vehicle units



### TRENDS IN MOTOR VEHICLES IN USE

x 1 million units

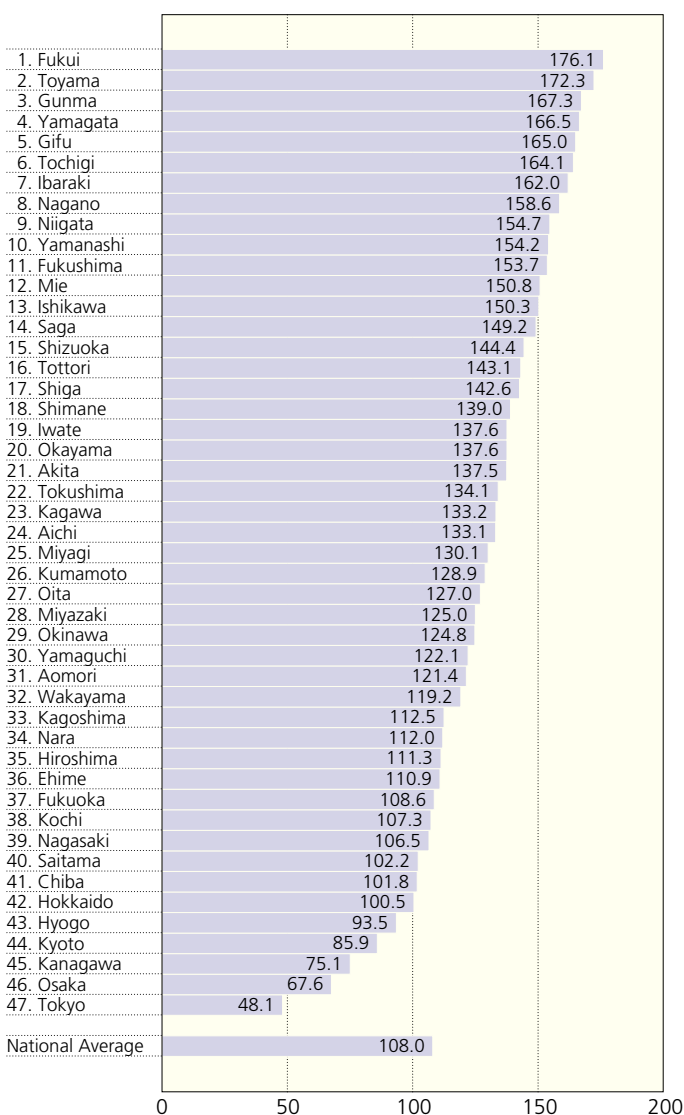


### MOTOR VEHICLES IN USE (at end of every calendar year)

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
2003	15,836,593	26,885,069	12,490,928	55,212,590	101.2	2,476,588	4,870,933	9,732,853	17,080,374	97.7
2004	16,295,520	26,401,167	13,297,363	55,994,050	101.4	2,464,873	4,694,922	9,621,053	16,780,848	98.2
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
2006	16,714,523	25,698,303	15,108,217	57,521,043	100.8	2,465,823	4,431,103	9,602,484	16,499,410	98.6
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

Notes: 1. "Special-purpose vehicles" refers to emergency vehicles, special vehicles equipped with beds, refrigerated trucks, tank trucks, tractors, bulldozers, steamrollers, snowplows, 100). 3. "Three-wheeled vehicles" includes three-wheeled passenger cars, trucks, and special-purpose vehicles.

● PRIVATE PASSENGER CARS IN USE PER 100 HOUSEHOLDS BY PREFECTURE (at March 31, 2012)



Source: Automobile Inspection & Registration Information Association

● PASSENGER CARS IN USE BY YEAR OF FIRST REGISTRATION

At March 31, 2012

Year of First Registration	Vehicles in Use	% of Total Vehicles in Use
April 2011-March 2012	2,714,278	6.76
April 2010-March 2011	2,634,190	6.56
April 2009-March 2010	2,821,928	7.03
April 2008-March 2009	2,372,259	5.91
April 2007-March 2008	2,745,864	6.84
April 2006-March 2007	2,717,640	6.77
April 2005-March 2006	2,971,964	7.40
April 2004-March 2005	2,887,033	7.19
April 2003-March 2004	2,777,406	6.92
April 2002-March 2003	2,485,835	6.19
April 2001-March 2002	2,552,735	6.36
April 2000-March 2001	2,118,516	5.28
April 1999-March 2000	1,809,820	4.51
April 1998-March 1999	1,434,798	3.57
-March 1998	5,099,175	12.71
Total Vehicles in Use	40,143,441	100.00

● AVERAGE AGE BY TYPE

In years

Year	Passenger Cars	Trucks	Buses
2003	6.39	8.10	9.24
2004	6.58	8.17	9.33
2005	6.77	8.36	9.53
2006	6.90	8.50	9.61
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

● AVERAGE SERVICE LIFE BY TYPE

In years

Year	Passenger Cars	Trucks	Buses
2003	10.77	11.23	14.41
2004	10.97	11.84	14.48
2005	10.93	11.72	15.34
2006	11.10	11.47	15.02
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

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
109,909	121,909	231,818	99.3	1,689,629	99.3	74,214,411	100.3	137,510	3,478	2003
109,703	121,231	230,934	99.6	1,649,686	99.6	74,655,518	100.6	142,032	3,471	2004
109,917	121,816	231,733	100.3	1,630,062	98.8	75,686,455	101.4	147,626	3,280	2005
109,763	121,918	231,681	100.0	1,606,934	98.6	75,859,068	100.2	151,441	3,238	2006
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

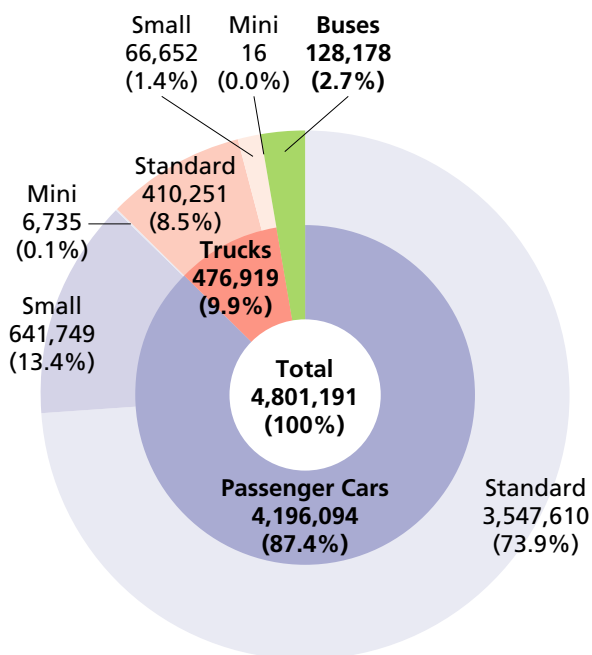
snowmobiles, etc., that are identified as special-purpose vehicles by special registration numbers. 2. "Chg. (%)" means change from the previous year (with the previous year's result indexed at 100). Source: Ministry of Land, Infrastructure, Transport and Tourism

# Motor Vehicle Exports Show First Increase in 2 Years

Exports of motor vehicles in 2012 rose 7.5% over the previous year to 4.80 million units. Passenger car exports increased 6.8% to 4.20 million units, truck exports climbed 12.5% to 477,000 units, and bus exports grew 15.7% to 128,000 units. With the value of automobile exports increasing 12.5% to US\$ 114.6 billion and the value of auto parts exports rising 8.3% to US\$ 43.5 billion, the total value of automotive exports thus grew 11.3% from 2011 to US\$ 158.1 billion.

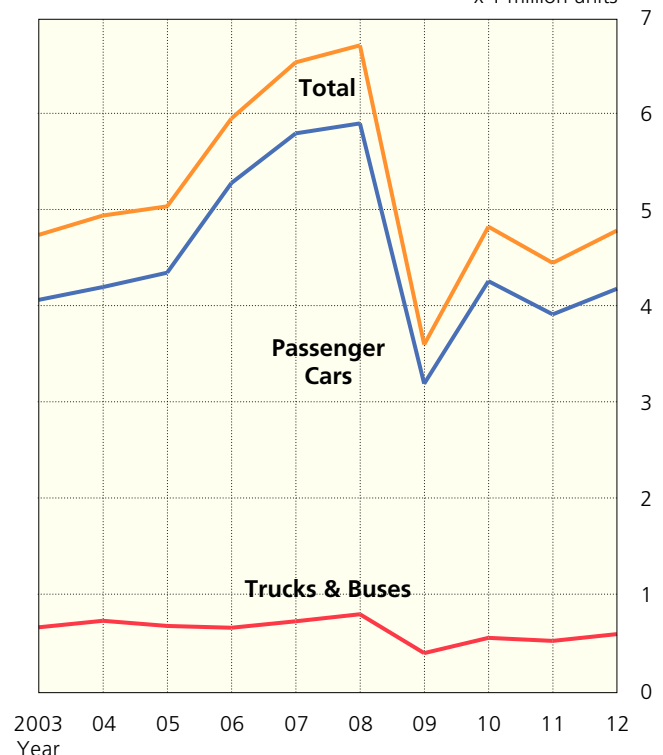
## MOTOR VEHICLE EXPORTS BY TYPE IN 2012

In vehicle units



## TRENDS IN MOTOR VEHICLE EXPORTS

x 1 million units



## MOTOR VEHICLE EXPORTS

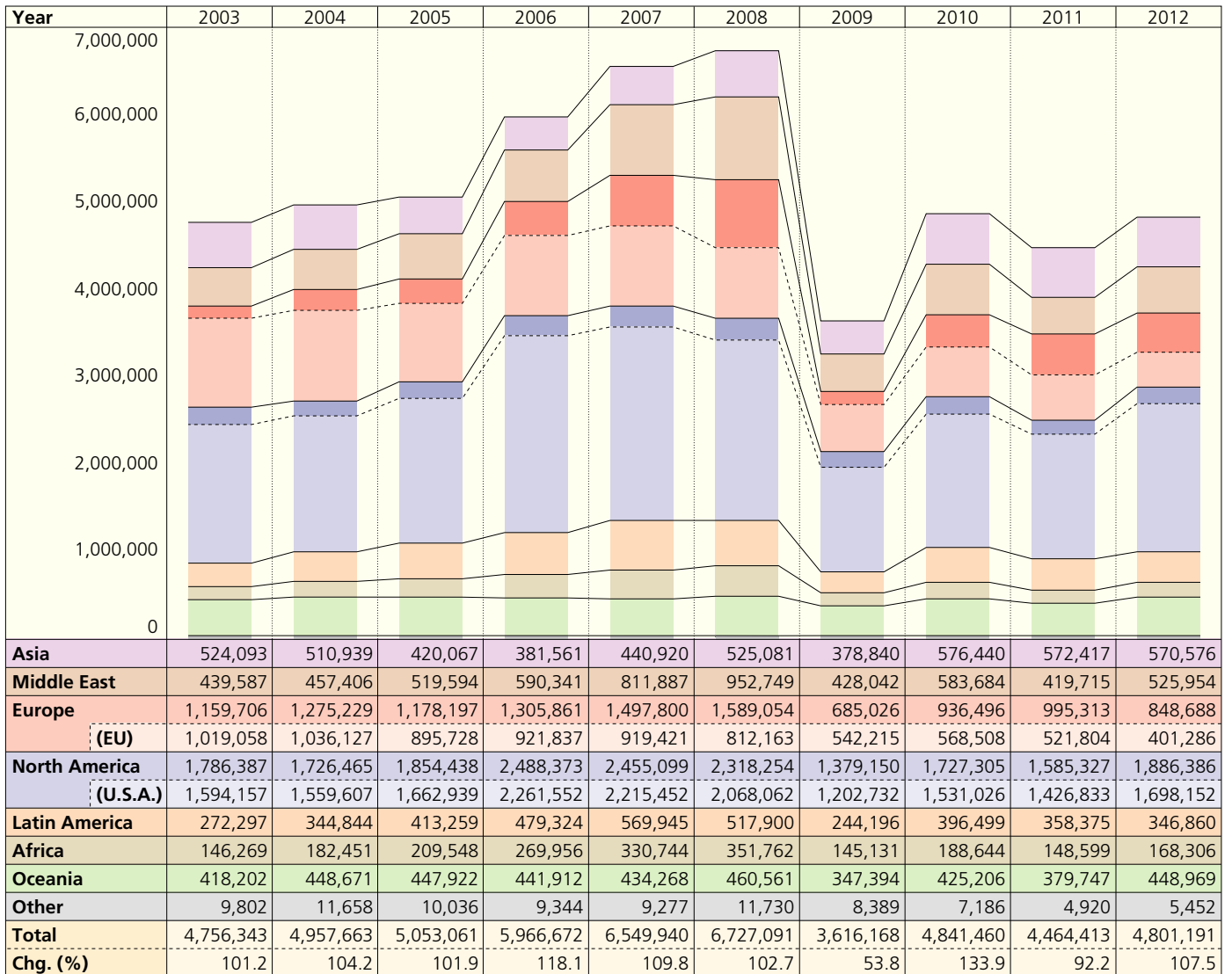
Year	Passenger Cars					Trucks		
	Standard	Small	Mini	Subtotal	Chg. (%)	Standard	Small	Mini
1970	715,450		10,136	725,586	129.5	65,170	272,549	13,892
1975	1,821,835		5,451	1,827,286	105.8	168,370	643,232	22,071
1980	345,413	3,580,623	21,124	3,947,160	127.2	332,257	1,548,251	73,177
1985	493,047	3,932,414	1,301	4,426,762	111.2	1,196,973	1,029,757	11,374
1990	1,343,967	3,138,147	16	4,482,130	101.8	944,737	364,376	8
1995	1,156,122	1,732,050	8,044	2,896,216	86.2	612,654	236,929	276
2000	2,333,263	1,462,069	520	3,795,852	101.0	530,823	86,329	718
2003	2,856,312	1,222,433	1,753	4,080,498	101.7	553,406	76,787	61
2004	2,995,259	1,217,013	1,755	4,214,027	103.3	591,233	96,453	109
2005	3,164,603	1,198,273	292	4,363,168	103.5	521,848	89,946	162
2006	3,845,081	1,449,608	808	5,295,497	121.4	488,632	89,201	141
2007	4,450,934	1,359,414	1,611	5,811,959	109.8	527,010	89,128	312
2008	4,379,569	1,534,975	885	5,915,429	101.8	567,596	90,581	41
2009	2,403,359	804,980	300	3,208,639	54.2	267,060	48,447	0
2010	3,453,951	818,660	2,755	4,275,366	133.2	397,404	52,908	0
2011	3,176,195	743,509	10,200	3,929,904	91.9	369,973	53,786	8
2012	3,547,610	641,749	6,735	4,196,094	106.8	410,251	66,652	16

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. 2. Vehicle 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 REGION OF DESTINATION)

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

In vehicle units



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

In vehicle units

		Buses						Year
Subtotal	Chg. (%)	Large	Small	Subtotal	Chg. (%)	Total	Chg. (%)	
351,611	120.9	4,520	5,059	9,579	141.6	1,086,776	126.7	1970
833,673	95.3	6,406	10,247	16,653	104.3	2,677,612	102.3	1975
1,953,685	137.2	7,616	58,500	66,116	179.4	5,966,961	130.8	1980
2,238,104	108.0	6,249	59,357	65,606	116.7	6,730,472	110.2	1985
1,309,121	90.6	6,066	33,895	39,961	113.7	5,831,212	99.1	1990
849,859	82.8	8,028	36,706	44,734	60.8	3,790,809	85.0	1995
617,870	100.8	7,131	34,032	41,163	107.3	4,454,885	101.0	2000
630,254	98.8	8,300	37,291	45,591	93.5	4,756,343	101.2	2003
687,795	109.1	11,692	44,149	55,841	122.5	4,957,663	104.2	2004
611,956	89.0	9,957	67,980	77,937	139.6	5,053,061	101.9	2005
577,974	94.4	11,567	81,634	93,201	119.6	5,966,672	118.1	2006
616,450	106.7	13,887	107,644	121,531	130.4	6,549,940	109.8	2007
658,218	106.8	17,574	135,870	153,444	126.3	6,727,091	102.7	2008
315,507	47.9	11,106	80,916	92,022	60.0	3,616,168	53.8	2009
450,312	142.7	13,969	101,813	115,782	125.8	4,841,460	133.9	2010
423,767	94.1	14,495	96,247	110,742	95.6	4,464,413	92.2	2011
476,919	112.5	19,026	109,152	128,178	115.7	4,801,191	107.5	2012

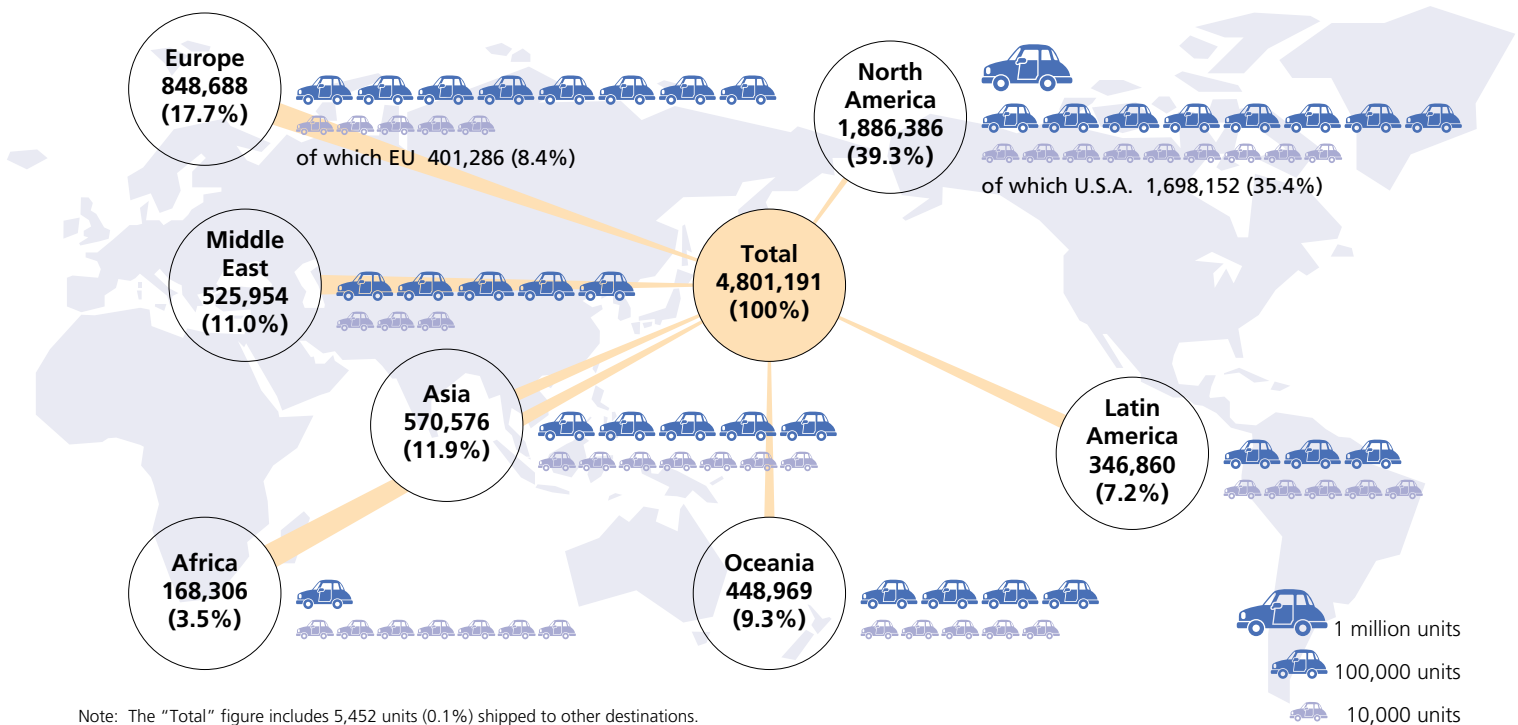
type classification in this table differs somewhat from that used in Ministry of Finance export data. 3. KD sets have been excluded since 1979; they represent less than 60% of the cost of compositional  
Source: Japan Automobile Manufacturers Association

# An Increase in Motor Vehicle Exports to the Middle East, North America, Oceania, and Africa

Compared to the previous year, motor vehicle exports in 2012 climbed 25.3% to the Middle East, 19.0% to North America, 18.2% to Oceania, and 13.3% to Africa, but declined 14.7% to Europe, 3.2% to Latin America, and 0.3% to Asia.

## MOTOR VEHICLE EXPORTS BY DESTINATION IN 2012

In vehicle units



Note: The "Total" figure includes 5,452 units (0.1%) shipped to other destinations.

## MOTOR VEHICLE EXPORT TRENDS (BY REGION OF DESTINATION)

In %

Region	2003	04	05	06	07	08	09	10	11	12
Asia	11.0	10.3	8.3	6.4	6.7	7.8	10.5	11.9	12.8	11.9
Middle East	9.2	9.2	10.3	9.9	12.4	14.2	11.8	12.1	9.4	11.0
Europe	24.4	25.7	23.3	21.9	22.9	23.6	19.0	19.3	22.3	17.7
(EU)	(20.8)	(20.9)	(17.7)	(15.4)	(14.0)	(12.1)	(15.0)	(11.7)	(11.7)	(8.4)
North America	37.6	34.8	36.7	41.7	37.5	34.5	38.1	35.7	35.5	39.3
(U.S.A.)	(33.5)	(31.5)	(32.9)	(37.9)	(33.8)	(30.7)	(33.3)	(31.6)	(32.0)	(35.4)
Latin America	5.7	7.0	8.2	8.0	8.7	7.7	6.8	8.2	8.0	7.2
Africa	3.1	3.7	4.1	4.5	5.1	5.2	4.0	3.9	3.4	3.5
Oceania	8.8	9.1	8.9	7.4	6.6	6.8	9.6	8.8	8.5	9.3
Other	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.1	0.1	0.1



# MOTOR VEHICLE EXPORTS BY DESTINATION IN 2012

In vehicle units

Destination		Passenger Cars				Trucks				Buses			Total	
		Standard	Small	Mini	Subtotal	Standard	Small	Mini	Subtotal	Large	Small	Subtotal		
Asia	South Korea	12,138	1,267	0	13,405	71	0	0	71	0	0	0	13,476	
	China	184,114	2,997	0	187,111	7,693	0	0	7,693	0	923	923	195,727	
	Taiwan	34,588	3,271	0	37,859	8,352	635	0	8,987	1,750	578	2,328	49,174	
	Hong Kong	10,576	5,248	98	15,922	4,447	462	2	4,911	117	725	842	21,675	
	Thailand	12,327	4,125	4	16,456	47,304	300	0	47,604	88	18,741	18,829	82,889	
	Singapore	3,456	650	5	4,111	1,736	283	0	2,019	33	278	311	6,441	
	Malaysia	25,116	16,086	1	41,203	16,055	4,536	0	20,591	414	4,858	5,272	67,066	
	Philippines	11,889	1,833	1	13,723	3,127	708	0	3,835	148	9,471	9,619	27,177	
	Indonesia	23,757	4,912	1	28,670	46,070	3	0	46,073	1,416	566	1,982	76,725	
	Pakistan	122	8,353	0	8,475	2,081	192	0	2,273	565	379	944	11,692	
	Other	7,030	2,525	0	9,555	3,948	2,742	12	6,702	561	1,716	2,277	18,534	
Subtotal		325,113	51,267	110	376,490	140,884	9,861	14	150,759	5,092	38,235	43,327	570,576	
Middle East	Bahrain	13,498	1,047	0	14,545	1,402	403	0	1,805	160	1,238	1,398	17,748	
	Saudi Arabia	66,318	43,294	0	109,612	32,570	3,235	0	35,805	1,433	5,517	6,950	152,367	
	Kuwait	35,728	2,565	0	38,293	1,914	969	0	2,883	445	802	1,247	42,423	
	Oman	53,914	2,348	0	56,262	21,207	1,684	0	22,891	974	6,661	7,635	86,788	
	Israel	13,414	9,017	0	22,431	834	0	0	834	0	0	0	23,265	
	United Arab Emirates	70,447	14,096	0	84,543	17,154	13,373	0	30,527	2,264	6,860	9,124	124,194	
	Qatar	22,049	735	0	22,784	1,857	1,242	0	3,099	408	1,795	2,203	28,086	
	Other	31,275	6,984	0	38,259	10,736	539	0	11,275	463	1,086	1,549	51,083	
Subtotal		306,643	80,086	0	386,729	87,674	21,445	0	109,119	6,147	23,959	30,106	525,954	
Europe	Sweden	14,691	1,139	4	15,834	6	0	0	6	0	0	0	15,840	
	Denmark	2,355	653	0	3,008	0	0	0	0	0	0	0	3,008	
	UK	49,478	17,175	0	66,653	2	0	0	2	0	0	0	66,655	
	Netherlands	27,126	3,865	8	30,999	0	0	0	0	0	0	0	30,999	
	Belgium	10,956	3,421	0	14,377	0	0	0	0	0	0	0	14,377	
	France	65,294	5,219	3,320	73,833	0	0	0	0	0	0	0	73,833	
	Germany	85,523	15,649	154	101,326	0	0	0	0	0	0	0	101,326	
	Spain	18,401	928	0	19,329	0	0	0	0	0	0	0	19,329	
	Italy	17,776	5,237	4	23,017	811	0	0	811	0	0	0	23,828	
	Finland	7,874	164	0	8,038	0	0	0	0	0	0	0	8,038	
	Poland	8,029	509	0	8,538	0	0	0	0	0	0	0	8,538	
	Austria	13,014	4,374	40	17,428	32	0	0	32	0	39	39	17,499	
	Greece	368	246	0	614	0	0	0	0	0	0	0	614	
	Other	13,689	985	459	15,133	2,269	0	0	2,269	0	0	0	17,402	
	Subtotal		334,574	59,564	3,989	398,127	3,120	0	0	3,120	0	39	39	401,286
	Norway	18,120	2,215	510	20,845	0	0	0	0	0	0	0	20,845	
	Switzerland	22,811	6,488	210	29,509	245	0	0	245	0	0	0	29,754	
Russia	314,699	36,006	150	350,855	4,218	1,525	0	5,743	1	571	572	357,170		
Turkey	2,923	8,362	0	11,285	4,680	582	0	5,262	0	0	0	16,547		
Ukraine	17,936	2,801	11	20,748	252	0	0	252	0	15	15	21,015		
Other	1,745	279	4	2,028	43	0	0	43	0	0	0	2,071		
Subtotal		712,808	115,715	4,874	833,397	12,558	2,107	0	14,665	1	625	626	848,688	
North America	Canada	169,004	16,934	234	186,172	2,061	0	1	2,062	0	0	0	188,234	
	U.S.A.	1,507,311	168,783	1,422	1,677,516	18,207	2,428	1	20,636	0	0	0	1,698,152	
Subtotal		1,676,315	185,717	1,656	1,863,688	20,268	2,428	2	22,698	0	0	0	1,886,386	
Latin America	Mexico	42,652	10,907	0	53,559	12,865	631	0	13,496	0	4,346	4,346	71,401	
	Puerto Rico	18,016	11,121	0	29,137	0	0	0	0	0	0	0	29,137	
	Colombia	12,674	4,408	30	17,112	15,906	283	0	16,189	840	15	855	34,156	
	Ecuador	9,959	2,938	0	12,897	3,554	110	0	3,664	548	2	550	17,111	
	Peru	11,162	16,537	0	27,699	2,877	498	0	3,375	106	2,994	3,100	34,174	
	Chile	23,753	13,526	0	37,279	2,331	424	0	2,755	0	250	250	40,284	
	Brazil	30,679	947	5	31,631	0	0	0	0	0	0	0	31,631	
	Other	40,282	23,145	0	63,427	14,636	4,374	0	19,010	1,886	4,643	6,529	88,966	
Subtotal		189,177	83,529	35	272,741	52,169	6,320	0	58,489	3,380	12,250	15,630	346,860	
Africa	Algeria	2,065	4,072	0	6,137	11,217	254	0	11,471	2,507	1,018	3,525	21,133	
	Egypt	1,287	13,910	0	15,197	11,992	18,062	0	30,054	445	3,448	3,893	49,144	
	Nigeria	2,308	92	0	2,400	70	450	0	520	647	3,911	4,558	7,478	
	Kenya	669	35	0	704	4,158	396	0	4,554	80	480	560	5,818	
	South Africa	17,745	7,142	0	24,887	15,055	886	0	15,941	0	11,484	11,484	52,312	
	Other	11,056	6,156	0	17,212	8,772	1,822	0	10,594	635	3,980	4,615	32,421	
Subtotal		35,130	31,407	0	66,537	51,264	21,870	0	73,134	4,314	24,321	28,635	168,306	
Oceania	Australia	277,252	82,257	60	359,569	34,406	2,085	0	36,491	23	3,415	3,438	399,498	
	New Zealand	20,599	10,442	0	31,041	4,636	243	0	4,879	0	275	275	36,195	
	Other	2,851	1,301	0	4,152	4,732	293	0	5,025	35	4,064	4,099	13,276	
Subtotal		300,702	94,000	60	394,762	43,774	2,621	0	46,395	58	7,754	7,812	448,969	
Other		1,722	28	0	1,750	1,660	0	0	1,660	34	2,008	2,042	5,452	
<b>Grand Totals</b>		<b>3,547,610</b>	<b>641,749</b>	<b>6,735</b>	<b>4,196,094</b>	<b>410,251</b>	<b>66,652</b>	<b>16</b>	<b>476,919</b>	<b>19,026</b>	<b>109,152</b>	<b>128,178</b>	<b>4,801,191</b>	

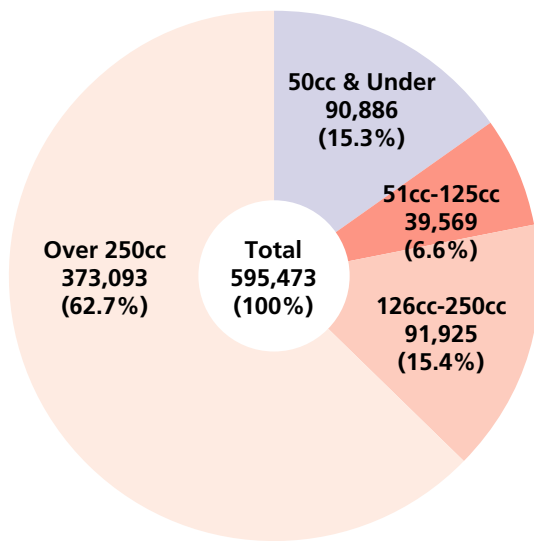
Source: Japan Automobile Manufacturers Association

# Motorcycle Production Declines for Second Consecutive Year

Overall domestic motorcycle production in 2012 decreased 6.8% from the previous year to 595,000 units. While small-sized motorcycles (over 250cc) grew 2.2% to 373,000 units, Class 1 motor-driven cycles (50cc and under), Class 2 motor-driven cycles (51cc to 125cc) and mini-sized motorcycles (126cc to 250cc) shrank 13.4% to 91,000 units, 38.7% to 40,000 units, and 12.1% to 92,000 units, respectively. The combined total for larger motorcycles (all those over 50cc) dropped 5.6% from 2011 to 505,000 units.

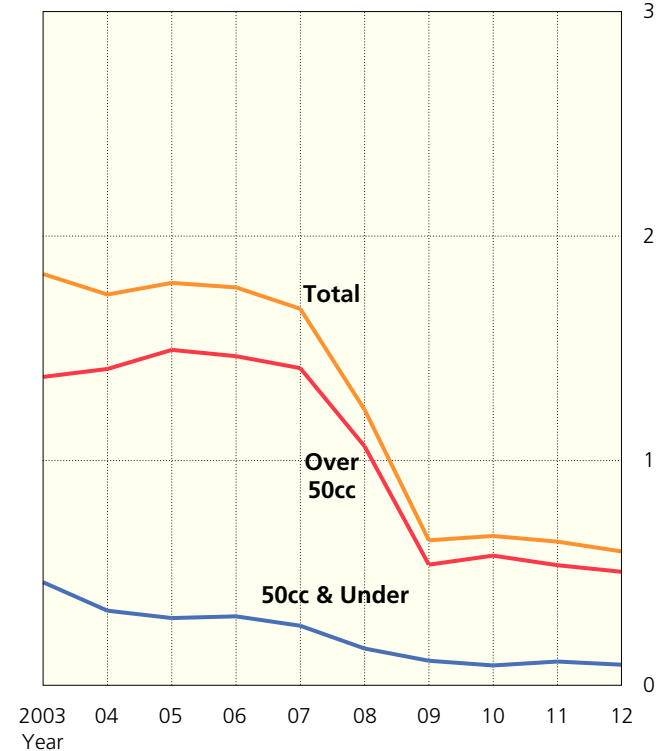
## MOTORCYCLE PRODUCTION BY ENGINE CAPACITY IN 2012

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	
2003	458,072	376,800	235,499	760,534	1,372,833	1,830,905	86.5	
2004	331,449	304,622	271,126	832,387	1,408,135	1,739,584	95.0	
2005	298,549	260,343	279,274	953,419	1,493,036	1,791,585	103.0	
2006	306,246	149,868	276,043	1,039,229	1,465,140	1,771,386	98.9	
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	

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).

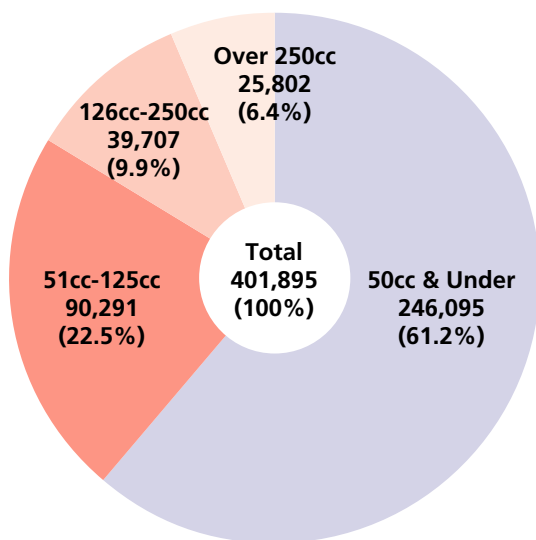
Source: Japan Automobile Manufacturers Association

## Growth in Sales of Mini-Sized and Small-Sized Motorcycles

Domestic motorcycle sales (defined here as ex-factory shipments to domestic dealers, not as new registrations) in 2012 totalled 402,000 units, down 0.9% from the previous year. By engine capacity, sales of Class 1 motor-driven cycles (50cc and under) and Class 2 motor-driven cycles (51cc to 125cc) dropped 4.3% and 5.7%, to 246,000 and 90,000 units respectively, whereas sales of mini-sized motorcycles (126cc to 250cc) climbed 25.0% to 40,000 units and those of small-sized motorcycles (over 250cc) grew 22.8% to 26,000 units. Overall sales of motorcycles with engine capacity over 50cc thus totalled 156,000 units, an increase of 4.9% over 2011.

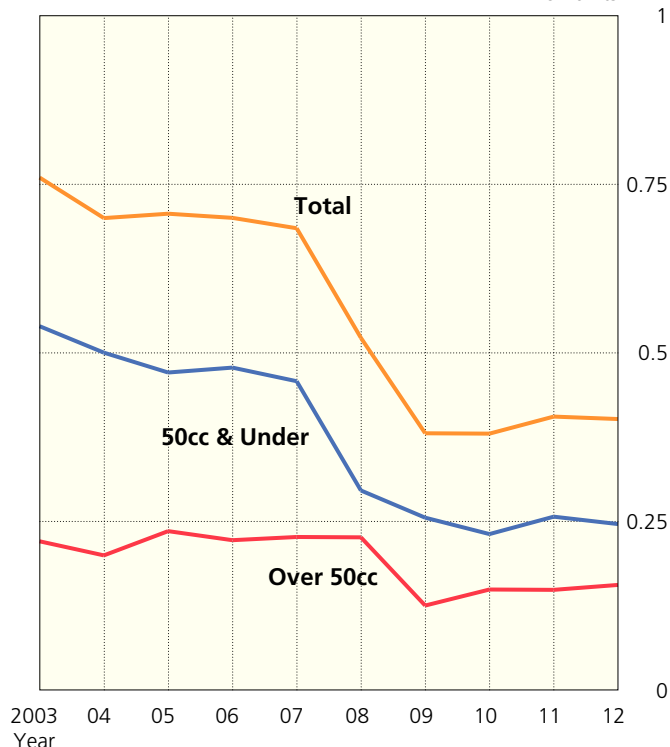
### MOTORCYCLE SALES BY ENGINE CAPACITY IN 2012

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	
2003	539,610	89,906	87,881	42,724	220,511	760,121	98.6	
2004	500,388	62,780	97,135	39,718	199,633	700,021	92.1	
2005	470,922	88,747	99,658	47,186	235,591	706,513	100.9	
2006	478,196	82,211	91,395	48,564	222,170	700,366	99.1	
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	

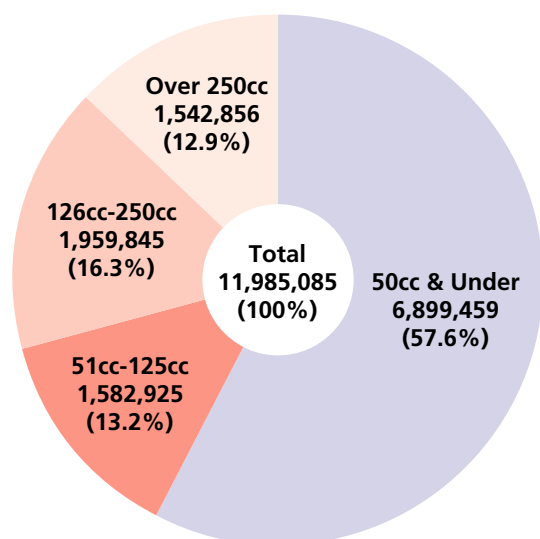
Note: "Chg. (%)" means change from the previous year (with the previous year's result indexed at 100).

## Rise in Number of Class 2 Motor-Driven Cycles and Small-Sized Motorcycles in Use

As of March 31, 2012, the number of motorcycles in use in Japan dipped to 11.99 million, down 1.8% from the previous year. By engine capacity, Class 1 motor-driven cycles, which account for 57.6% of all motorcycles in use, dropped 3.6% to 6.90 million units and mini-sized motorcycles in use slipped 0.8% to 1.96 million units. On the other hand, Class 2 motor-driven cycles and small-sized motorcycles in use rose 2.7% and 0.5%, to 1.58 million and 1.54 million units respectively. Thus, motorcycles over 50cc in use increased 0.7%, to a total of 5.09 million units.

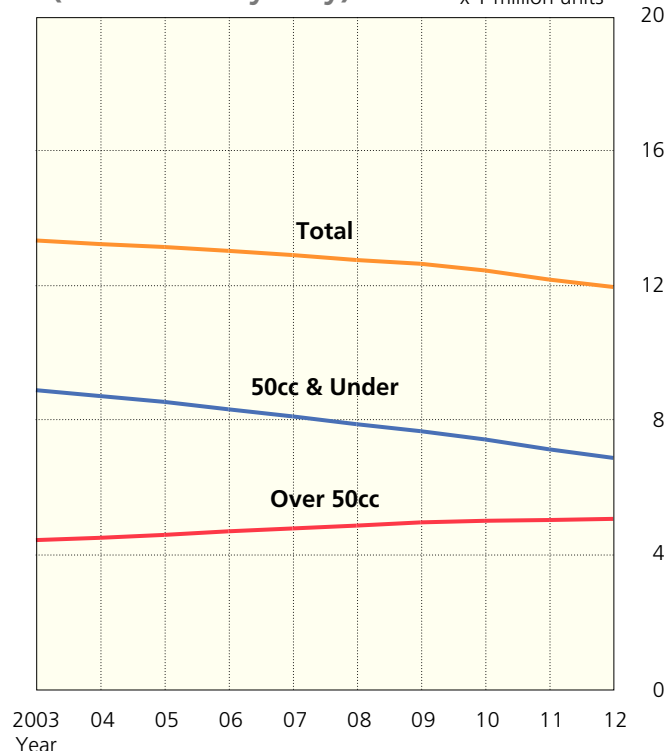
### ● MOTORCYCLES IN USE BY ENGINE CAPACITY (at March 31, 2012)

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
2003	8,915,037	1,329,410	1,772,545	1,352,199	4,454,154	13,369,191	98.7
2004	8,739,686	1,341,088	1,810,594	1,370,331	4,522,013	13,261,699	99.2
2005	8,566,613	1,353,732	1,857,439	1,397,392	4,608,563	13,175,176	99.3
2006	8,345,225	1,378,714	1,908,402	1,428,149	4,715,265	13,060,490	99.1
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

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).

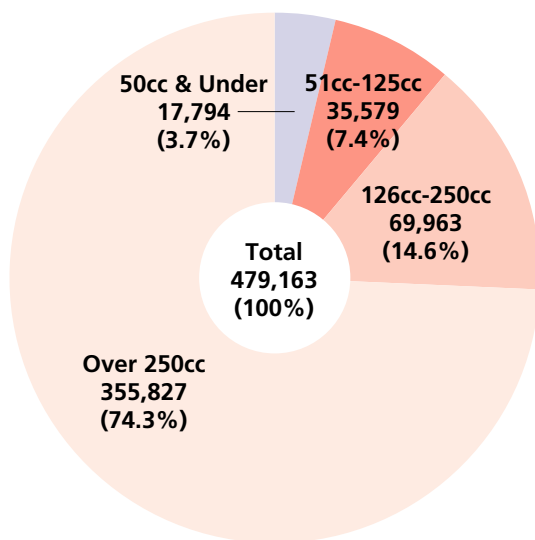
Sources: Ministry of Land, Infrastructure, Transport and Tourism; since 2006 (only for the 125cc-and-under categories), Ministry of Internal Affairs and Communications

# Motorcycle Exports Slip from Previous Year

Motorcycle exports in 2012 declined 5.1% from the previous year to 479,000 units. By engine capacity, exports of Class 1 motor-driven cycles, Class 2 motor-driven cycles and mini-sized motorcycles dropped 9.9%, 22.4%, and 16.3%, to 18,000, 36,000, and 70,000 units respectively, whereas exports of small-sized motorcycles, at 356,000 units, remained unchanged from the previous year's level. In 2012 the total value of motorcycle and motorcycle components exports decreased 2.8% to US\$ 4.6 billion, with the value of motorcycle exports dipping 0.2% to US\$ 3.2 billion and the value of components exports falling 8.2% to US\$ 1.4 billion.

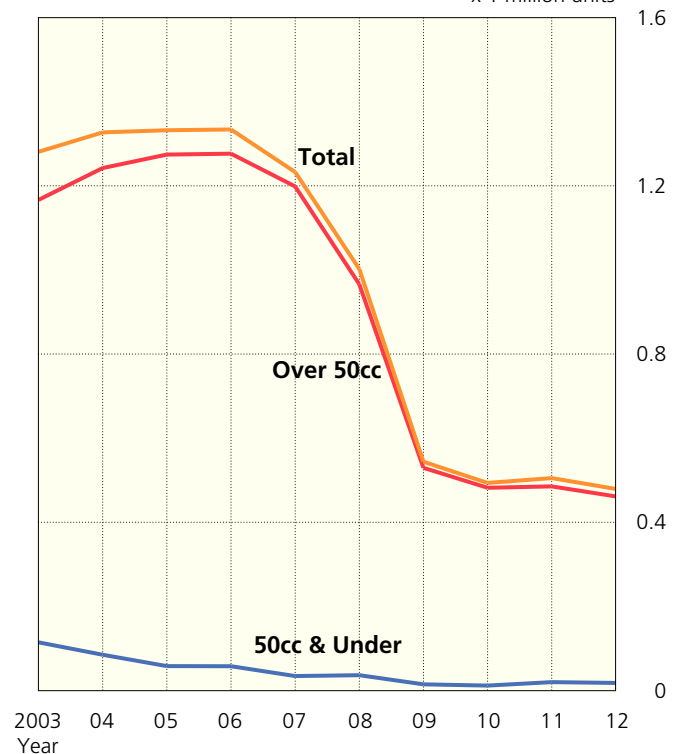
## MOTORCYCLE EXPORTS BY ENGINE CAPACITY IN 2012

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	
2003	114,315	312,768	144,873	708,999	1,166,640	1,280,955	90.3	
2004	84,832	265,245	173,037	804,030	1,242,312	1,327,144	103.6	
2005	57,860	197,378	177,824	899,161	1,274,363	1,332,223	100.4	
2006	57,558	124,335	183,980	968,153	1,276,468	1,334,026	100.1	
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	

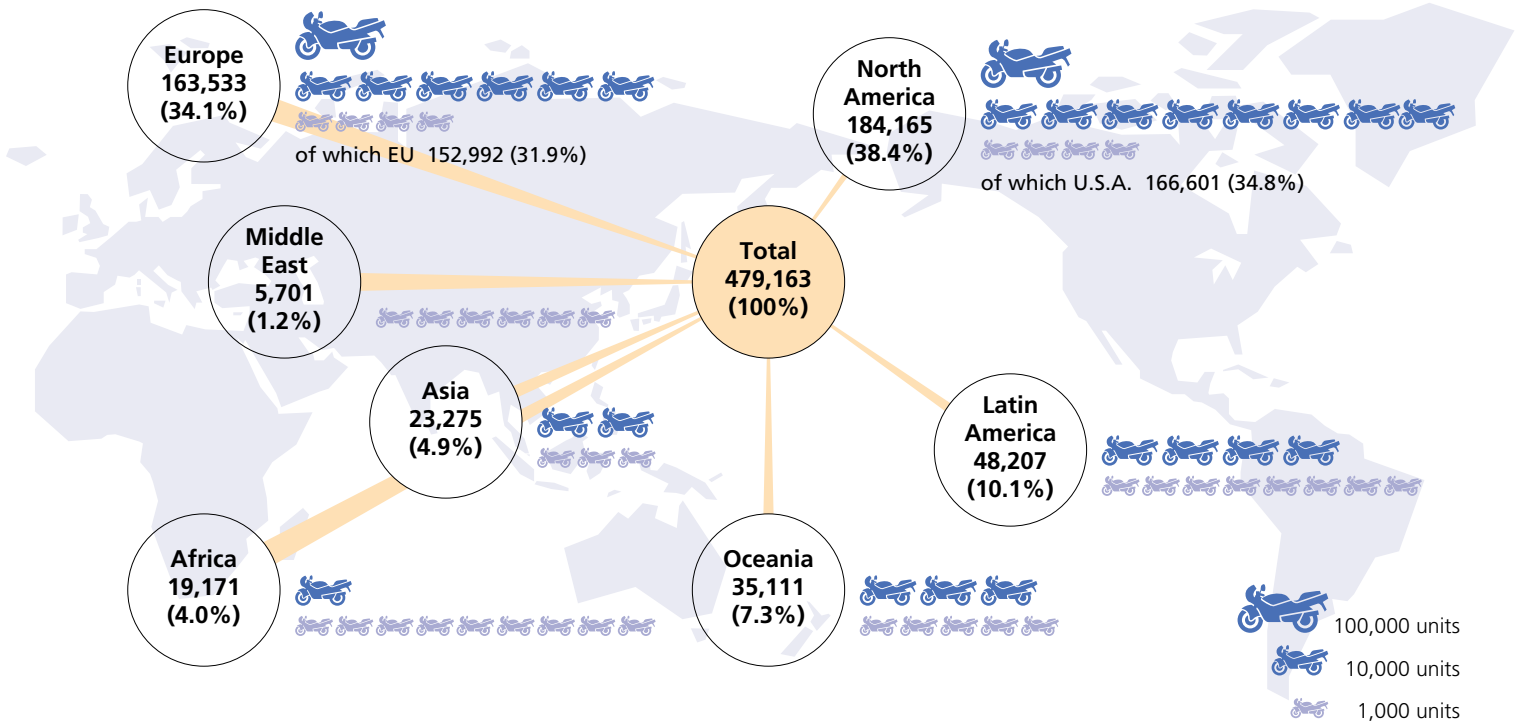
Notes: 1. Figures represent ex-factory export shipments of motorcycles manufactured in Japan. 2. Class 2 motor-driven cycles include three-wheeled motor-driven cycles. 3. KD sets have been excluded since 1979; they represent less than 60% of the cost of compositional components per vehicle and have been 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

# A Rise in Motorcycle Exports to the Middle East and the Americas

Whereas motorcycle exports in 2012 increased 51.1% to the Middle East, 4.4% to Latin America, and 2.8% to North America over the previous year, they declined 40.1% to Asia, 15.5% to Oceania, 9.2% to Africa, and 6.2% to Europe.

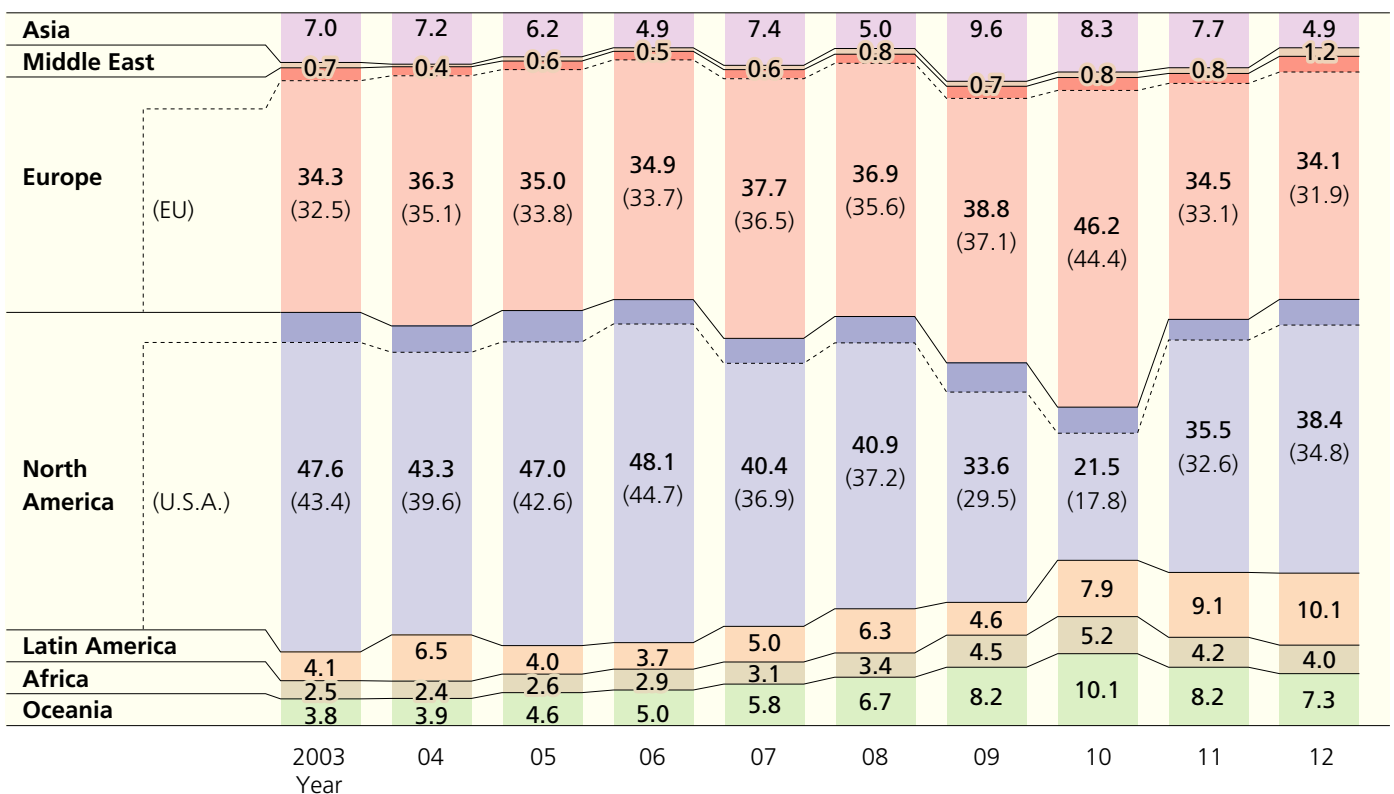
## MOTORCYCLE EXPORTS BY DESTINATION IN 2012

In vehicle units



## MOTORCYCLE EXPORT TRENDS (BY REGION OF DESTINATION)

In %



## MOTORCYCLE EXPORTS BY DESTINATION IN 2012

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	0	0	1	940	941	941
	Taiwan	480	980	0	1,354	2,334	2,814
	Hong Kong	36	5	85	3,355	3,445	3,481
	Singapore	0	7	13	1,269	1,289	1,289
	Malaysia	2	0	23	4,854	4,877	4,879
	Philippines	3	0	7,800	209	8,009	8,012
	Other	10	34	134	1,681	1,849	1,859
	Subtotal	531	1,026	8,056	13,662	22,744	23,275
Middle East	Saudi Arabia	0	30	2,101	459	2,590	2,590
	Israel	0	20	24	926	970	970
	United Arab Emirates	15	361	338	432	1,131	1,146
	Other	3	23	155	814	992	995
	Subtotal	18	434	2,618	2,631	5,683	5,701
Europe	Sweden	10	10	214	616	840	850
	Denmark	10	10	160	209	379	389
	UK	19	325	762	9,950	11,037	11,056
	Netherlands	0	473	2,836	20,248	23,557	23,557
	Belgium	0	6	12	160	178	178
	France	1,301	3,270	1,117	35,971	40,358	41,659
	Germany	256	374	1,520	28,775	30,669	30,925
	Portugal	0	0	17	1,199	1,216	1,216
	Spain	44	329	232	8,819	9,380	9,424
	Italy	123	197	1,211	27,868	29,276	29,399
	Finland	86	50	130	547	727	813
	Poland	8	4	148	881	1,033	1,041
	Hungary	5	10	53	411	474	479
	Greece	0	4	0	689	693	693
	Slovenia	6	4	4	341	349	355
	Czech Republic	0	0	6	498	504	504
	Other	18	12	97	327	436	454
	Subtotal	1,886	5,078	8,519	137,509	151,106	152,992
	Norway	16	81	104	334	519	535
	Switzerland	12	24	135	5,571	5,730	5,742
	Turkey	0	0	7	875	882	882
	Russia	90	74	123	2,573	2,770	2,860
	Other	0	5	2	515	522	522
Subtotal	2,004	5,262	8,890	147,377	161,529	163,533	
North America	Canada	943	1,413	2,958	12,250	16,621	17,564
	U.S.A.	10,796	10,298	26,459	119,048	155,805	166,601
	Subtotal	11,739	11,711	29,417	131,298	172,426	184,165
Latin America	Mexico	15	20	317	1,563	1,900	1,915
	Guatemala	0	10	313	108	431	431
	Nicaragua	0	57	886	2	945	945
	Panama	0	0	130	148	278	278
	Colombia	0	32	2,553	1,824	4,409	4,409
	Venezuela	0	0	90	2,920	3,010	3,010
	Peru	0	141	1,358	141	1,640	1,640
	Chile	27	98	419	847	1,364	1,391
	Brazil	0	32	742	31,101	31,875	31,875
	Argentina	0	0	10	471	481	481
	Other	2	382	697	751	1,830	1,832
	Subtotal	44	772	7,515	39,876	48,163	48,207
Africa	Guinea	0	128	479	0	607	607
	Ghana	0	238	22	0	260	260
	Togo	0	250	338	0	588	588
	Niger	0	110	728	3	841	841
	Rwanda	0	464	15	0	479	479
	Dem Rep Congo	0	709	30	0	739	739
	Ethiopia	0	0	1,121	0	1,121	1,121
	Kenya	0	489	474	5	968	968
	Uganda	0	2,047	31	0	2,078	2,078
	Tanzania	0	0	240	0	240	240
	Namibia	0	252	0	0	252	252
	South Africa	37	2,210	1,009	2,516	5,735	5,772
	Other	6	2,931	1,576	713	5,220	5,226
	Subtotal	43	9,828	6,063	3,237	19,128	19,171
Oceania	Australia	3,118	5,435	5,917	16,454	27,806	30,924
	New Zealand	291	1,086	1,415	1,163	3,664	3,955
	Other	6	25	72	129	226	232
	Subtotal	3,415	6,546	7,404	17,746	31,696	35,111
<b>Grand Totals</b>		<b>17,794</b>	<b>35,579</b>	<b>69,963</b>	<b>355,827</b>	<b>461,369</b>	<b>479,163</b>

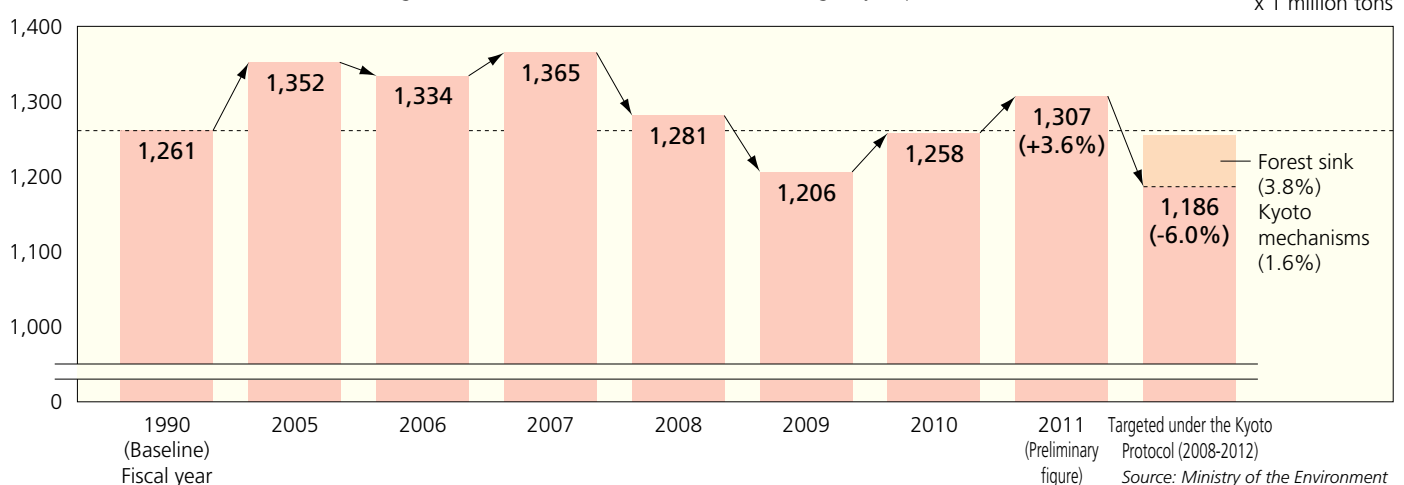
Source: Japan Automobile Manufacturers Association

# Climate Change and CO<sub>2</sub> Emissions Reduction: The Response of the Transport Sector

Under the Kyoto Protocol, adopted in 1997 by most industrialized countries to reduce CO<sub>2</sub> and other greenhouse gas emissions and enforced in February 2005, Japan pledged to reduce its average GHG emissions volume in the first commitment period (2008-2012) to 6% below the 1990 level. In April 2005, the Japanese government formulated a target achievement plan (revised in March 2008) and then promoted diverse CO<sub>2</sub> reduction measures in all major sectors including the industrial, consumer, and transport sectors. In line with the national initiative, the automobile industry has been making vigorous efforts with respect to increasing vehicle fuel efficiency, developing and promoting alternative energy-powered vehicles, raising public awareness of eco-friendly driving practices, and supporting the government's efforts to improve traffic flow. After peaking in 2001, CO<sub>2</sub> emissions in Japan's transport sector have been on a steady decline, owing largely to increased fuel efficiency in passenger cars, greater efficiency in goods distribution, and the widespread adoption of fuel-conserving ecodriving.

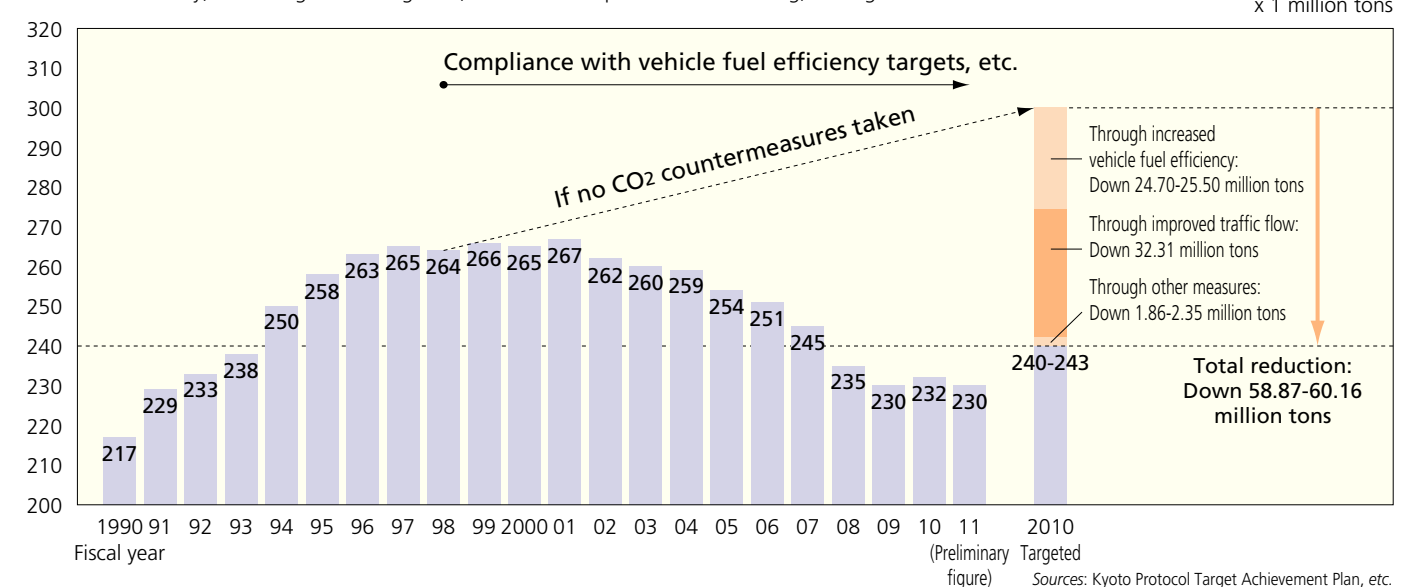
## ● JAPAN'S GHG EMISSION VOLUMES: ACTUAL & TARGETED under the Kyoto Protocol

Japan's GHG emissions in 1990 totaled 1,261 million tons (in equivalent tons of CO<sub>2</sub>). In order for Japan to meet its target under the Kyoto Protocol, it was determined that its average GHG emissions volume during the first commitment period (2008-2012) would have to be reduced to 1,186 million tons. Total GHG emissions in 2011 rose 3.9% from 2010 to 1,307 million tons, 3.6% above the 1990 level or 9.6% higher than the target volume. This is largely attributable to Japan's increased consumption of fossil fuels for thermal power generation following the March 11, 2011 earthquake and tsunami, which outweighed the decline in GHG emissions in the manufacturing sector caused by decreased production resulting from that disaster. In order to achieve the "6% below 1990" target, therefore, further reduction efforts are urgently required.



## ● ACTUAL & TARGETED CO<sub>2</sub> EMISSION VOLUMES IN JAPAN'S TRANSPORT SECTOR

Of Japan's total CO<sub>2</sub> emissions, the transportation sector accounts for roughly 20%, of which 90% are auto-emitted—making CO<sub>2</sub> reduction in road transport a priority concern. After peaking in 2001, CO<sub>2</sub> emission volumes in Japan's transport sector have been steadily declining, registering 230 million tons in 2011 and thus considerably surpassing the 2010 target, for the fourth consecutive year. This was achieved by means of increased vehicle fuel efficiency, road congestion mitigation, and the wider practice of ecodriving, among other measures.

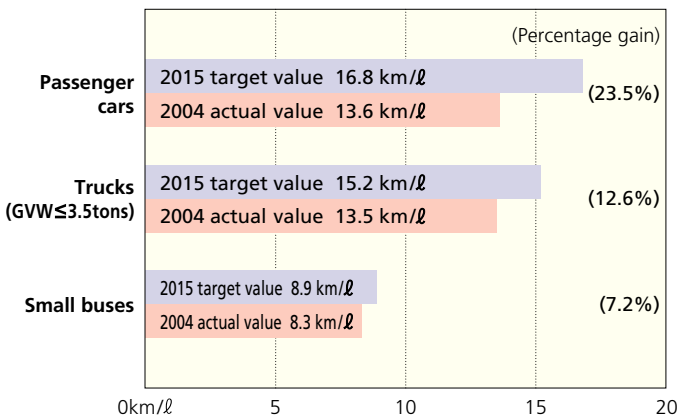




# CO<sub>2</sub> Emissions Reduction: Improving Vehicle Fuel Efficiency

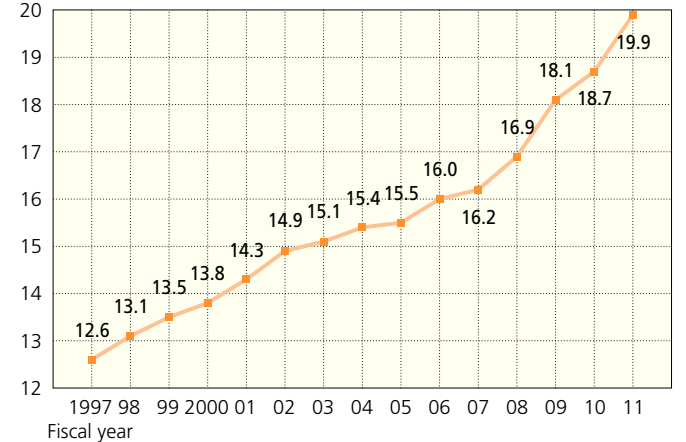
For gasoline-powered passenger cars and trucks weighing 3.5 tons or less, fuel efficiency targets for 2015 were formulated in 2007, applying “top runner” criteria whereby the leading fuel efficiency performance to date (2007) for a given vehicle weight category was used as the target value. The 2015 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. Compliance here will mean that by 2015 the average fuel efficiency of heavy-duty vehicles will increase by over 12% compared to the 2002 level. Japan’s automakers are working hard to further advance fuel efficiency technologies, aiming now to comply with an even more stringent target established in 2012 for passenger cars for enforcement in 2020.

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



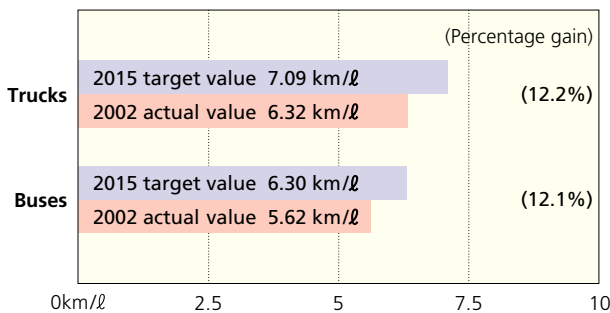
Note: Fuel efficiency here is JC08 test cycle-based (see page 67), and targets were established assuming the same respective shipment volume ratios by vehicle weight category for 2015 as those recorded in 2004.  
Sources: Ministry of Economy, Trade and Industry; Ministry of Land, Infrastructure, Transport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

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



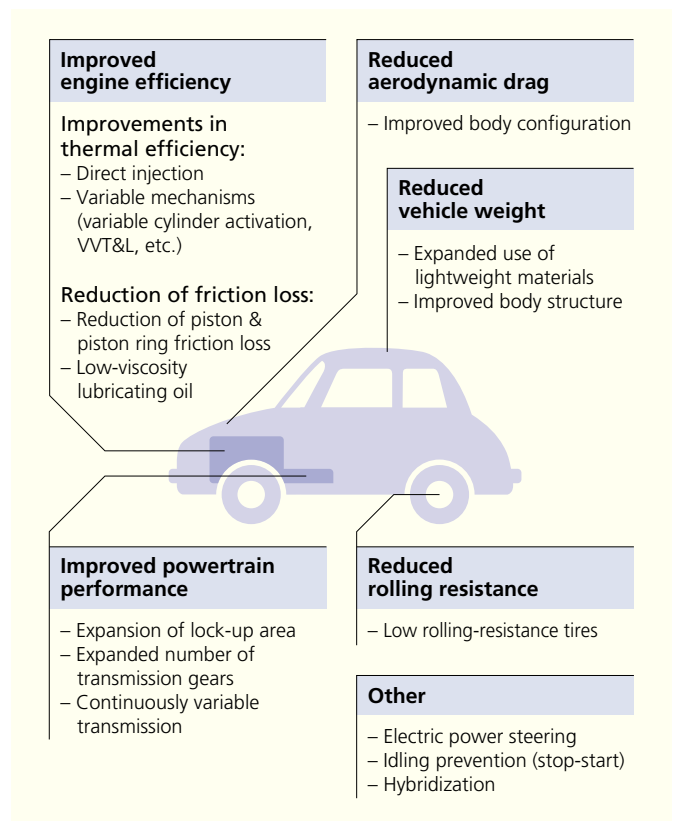
Note: All figures here are 10·15-mode test cycle-based (the JC08 test cycle-based 2015 target of 16.8 km/ℓ is equivalent here to 18.6 km/ℓ) and apply only to domestic-brand new passenger cars.  
Source: Japan Automobile Manufacturers Association

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

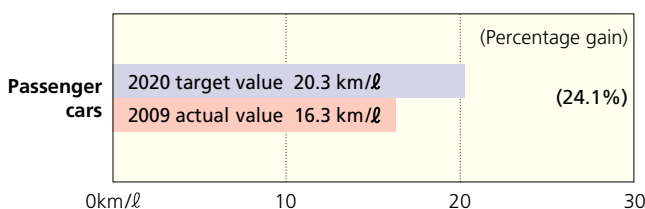


Note: Fuel efficiency here is JE05 test cycle-based (see page 67), and targets were established assuming the same respective shipment volume ratios by vehicle weight category for 2015 as those recorded in 2002.  
Sources: Ministry of Economy, Trade and Industry; Ministry of Land, Infrastructure, Transport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

## VEHICLE TECHNOLOGIES FOR INCREASED FUEL EFFICIENCY



## 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 respective 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

## 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 navigator-aided, 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

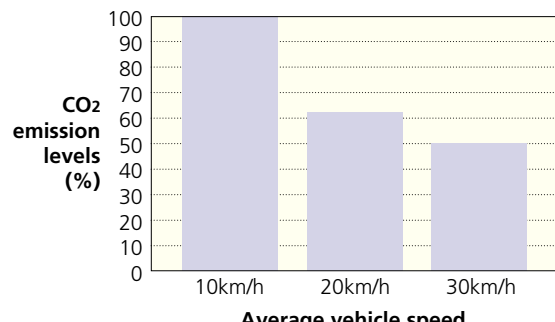
	<p><b>1. Accelerate gently.</b></p> <p>Think “eco-start” when you accelerate—increasing your speed at a relaxed pace, to 20km/h in 5 seconds, boosts fuel efficiency by 10%. Gentle acceleration also contributes to safer driving.</p>		<p><b>6. Plan your itinerary to avoid congested routes.</b></p> <p>Plan 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% less 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.

## CO2 Emissions Reduction: Improving Traffic Flow

Improved road traffic flow enables increased vehicle speed and increased fuel efficiency, which in turn contributes to CO2 reduction. Improving traffic flow by upgrading road networks and overall infrastructure is therefore urgently required. JAMA advocates such upgrades, including measures to mitigate congestion at intersections, as well as the early completion of the Tokyo metropolitan area's three major ring roads and the greater use of expressways. To help ensure steady progress in this regard, the government and other relevant public-sector players must jointly establish a data compilation/analysis and response formulation/implementation scheme to evaluate the impact of traffic flow-related measures on CO2 reduction and to follow up accordingly. JAMA in fact conducted a quantitative assessment of the impact on CO2 reduction of the operation of the Oji section (opened for service in December 2002) of the Tokyo Metropolitan Expressway's inner ring road. This study determined that operation of the new section enabled increased average vehicle speed on that ring road and on surrounding local roads, resulting in an estimated reduction in CO2 emissions of 20,000 to 30,000 tons annually.

### ● IMPACT OF VEHICLE SPEED ON CO2 EMISSIONS



Source: Japan Automobile Research Institute

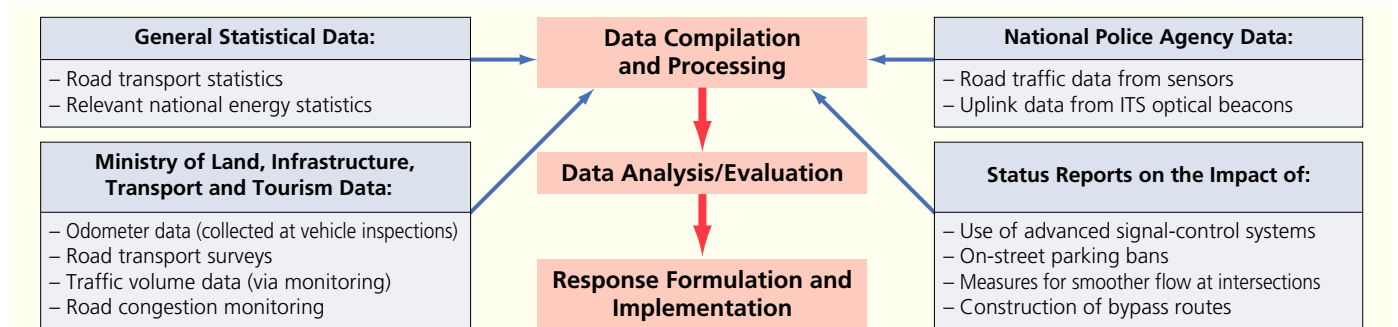
### ● IMPACT OF THE OJI SECTION'S OPERATION ON CO2 REDUCTION

		Before Operation	After Operation	Increase/Decrease
Average vehicle speed in km/h	Tokyo Metropolitan Expressway	56.0	56.2	0.2
	Local roads	22.5	22.8	0.3
CO2 emissions volume x 10,000 tons/year	Tokyo Metropolitan Expressway	173	178	5
	Local roads	356	349	-7
	Total	529	527	-2

Note: Vehicle speed and CO2 emissions were calculated on the basis of three established models, including that of the Japan Automobile Research Institute. The estimated annual CO2 reduction volume varies between 20,000 and 30,000 tons depending on the model used.

Source: Japan Automobile Manufacturers Association

### ● PROPOSED DATA INPUT/ANALYSIS & RESPONSE FORMULATION SCHEME FOR IMPROVED TRAFFIC FLOW

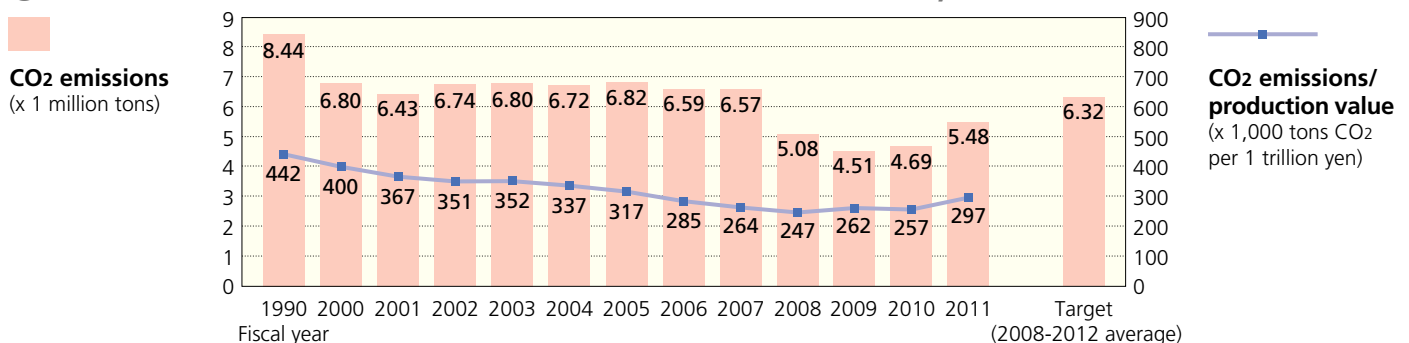


Source: Japan Automobile Manufacturers Association

## CO2 Reductions at Production Plants

Japan's automakers have implemented multiple measures to reduce energy consumption and otherwise cut CO2 emissions at their production facilities. Since 2008, their plant-emitted CO2 reduction goals have been achieved jointly with the members of the Japan Auto-Body Industries Association (JABIA). Although those combined emissions increased in 2011 to 5.48 million tons as a result of the discontinuance of nuclear power generation, that figure nevertheless represents a 35.1% decrease from the 1990 level, underscoring expectations that the 2008-2012 target (a reduction of 25% from the 1990 level) will be achieved.

### ● PRODUCTION PLANT-GENERATED CO2 EMISSION VOLUMES, 1990-2011






Source: Japan Automobile Manufacturers Association

## 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. For gasoline, diesel, and LPG vehicles, the Japanese government has established 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

For Gasoline and Diesel Vehicles Including Trucks and Buses with GVW ≤ 2.5t

Rating/Performance Level		Vehicle Sticker
<b>Compliant +20% compared to standards</b>	Performing at least 20% better compared to 2015 fuel efficiency standards	
<b>Compliant +10% compared to standards</b>	Performing at least 10% better compared to 2015 fuel efficiency standards	
<b>Compliant with standards</b>	Compliant with 2015 fuel efficiency standards	




Note: Fuel efficiency is JC08 test cycle-based.

For Trucks and Buses with GVW > 2.5t

Rating/Performance Level		Vehicle Sticker
<b>Compliant +10% compared to standards</b>	Performing at least 10% better compared to 2015 fuel efficiency standards	
<b>Compliant +5% compared to standards</b>	Performing at least 5% better compared to 2015 fuel efficiency standards	
<b>Compliant with standards</b>	Compliant with 2015 fuel efficiency standards	







Note: Fuel efficiency is JC08 or JE05 test cycle-based.

For Gasoline and LPG Vehicles Including Gasoline Trucks with GVW ≤ 2.5t




Rating/Performance Level		Vehicle Sticker
<b>Compliant +50% compared to standards</b>	Performing at least 50% better compared to 2010 fuel efficiency standards	
<b>Compliant +38% compared to standards</b>	Performing at least 38% better compared to 2010 fuel efficiency standards	
<b>Compliant +25% compared to standards</b>	Performing at least 25% better compared to 2010 fuel efficiency standards	

Note: Fuel efficiency is 10・15-mode test cycle-based.

### ● CERTIFICATION FOR VEHICLES WITH LOW EMISSIONS

Rating/Performance Level		Vehicle Sticker
	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

Rating/Performance Level		Vehicle Sticker
<b>Compliant with 2009 emission standards</b>		
<b>Compliant with 2005 emission standards</b>		
<b>Compliant with other certification criteria (see above)</b>		

## Vehicle Exhaust Emissions: New Regulations Enforced in 2009

Japan's vehicle exhaust emissions regulations have always been among the strictest in the world, and its automakers have worked very hard to develop the advanced technologies required to comply with them. As a result, NO<sub>x</sub> and other atmospheric pollutant levels have been on a steady decline even in large urban areas. 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 new regulations were implemented by the Japanese government in 2009, of which the regulations for trucks and buses were, at the time of their enforcement, the most stringent in the world. Starting in 2016, the NO<sub>x</sub> regulation for heavy-duty diesel vehicles will be even stricter, as will be the NO<sub>x</sub>, THC and CO emission limit values for motorcycles.

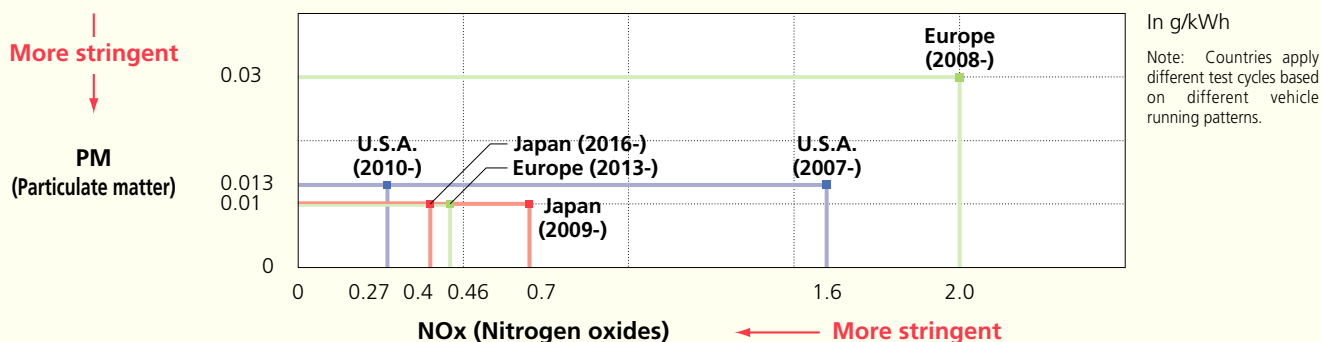
### ● COMPARISON OF HEAVY-DUTY DIESEL TRUCK EMISSIONS REGULATIONS

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

	NO <sub>x</sub> 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) NO <sub>x</sub> + NMHC 3.22 2) NO <sub>x</sub> + NMHC 3.35 with mandatory NMHC value of 0.67			20.78	0.134	
2007 standard (3)	0.27 (1.6)	—	0.188	20.78	0.013	
2010 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) (4)	Transient mode	5.0	—	0.78	5.45	0.16
	Steady state mode	(5.0)	(0.66)	—	(2.1)	(0.10)
EURO IV (2005)	Transient mode	3.5	—	0.55	4.0	0.03
	Steady state mode	(3.5)	(0.46)	—	(1.5)	(0.02)
EURO V (2008)	Transient mode	2.0	—	0.55	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)
EEV (5)	Transient mode	2.0	—	0.40	3.0	0.02
	Steady state mode	(2.0)	(0.25)	—	(1.5)	(0.02)

(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) The U.S.'s 2007 standard permitted an NO<sub>x</sub> compliance level of around 1.6g until 2010 depending on engine family type. (4) EURO III (Europe): All vehicle categories were regulated in the steady state (ESC) mode only, except DPF- and NO<sub>x</sub> 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 NO<sub>x</sub> reduction catalyst-equipped or not, are regulated in both modes. (5) EEV (Europe): Enhanced Environmentally Friendly Vehicles. EEV regulations constitute a special category and are applied by EU member countries only in specific instances when urban air quality is particularly poor (for example, when temporary restrictions on vehicle circulation in cities are enforced). Emission values indicated are provisional.

### ● COMPARISON OF HEAVY-DUTY DIESEL TRUCK EMISSIONS REGULATIONS (PM and NO<sub>x</sub>)



## MOTOR VEHICLE EMISSIONS REGULATIONS IN JAPAN

Vehicle Type		Previous Regulations				Current/Future Regulations									
		Test cycle	Year enforced	Emission	Regulatory value (Average)	Test cycle	Year enforced	Emission	Regulatory value (Average)						
Gasoline and LPG Vehicles	Passenger cars	10·15M + 11M (g/km) (1)	2005	CO	1.15	JC08 (g/km) (1)	2009	CO	1.15						
				NMHC	0.05			NMHC	0.05						
				NOx	0.05			NOx	0.05						
	Trucks and buses	Mini	10·15M + 11M (g/km) (1)	2007	CO	4.02	JC08 (g/km) (1)	2009	CO	4.02					
					NMHC	0.05			NMHC	0.05					
					NOx	0.05			NOx	0.05					
		Light-duty (GVW≤1.7t)	10·15M + 11M (g/km) (1)	2005	2005	CO	1.15	JC08 (g/km) (1)	2009	CO	1.15				
						NMHC	0.05			NMHC	0.05				
						NOx	0.05			NOx	0.05				
		Medium-duty (1.7t<GVW≤3.5t)	10·15M + 11M (g/km) (1)	2005	2005	CO	2.55	JC08 (g/km) (1)	2009	CO	2.55				
						NMHC	0.05			NMHC	0.05				
						NOx	0.07			NOx	0.07				
		Heavy-duty (GVW>3.5t)	JE05 (g/kWh)	2005	2005	CO	16.0	JE05 (g/kWh)	2009	CO	16.0				
						NMHC	0.23			NMHC	0.23				
						NOx	0.7			NOx	0.7				
Diesel Vehicles	Passenger cars (3)	10·15M + 11M (g/km)	2005	CO	0.63	JC08 (g/km)	2009	CO	0.63						
				NMHC	0.024			NMHC	0.024						
				NOx	Small-sized			0.14	NOx	0.08					
					Mid-sized			0.15							
				PM	Small-sized			0.013	PM	0.005					
					Mid-sized			0.014							
				Trucks and buses	Light-duty (GVW≤1.7t)			10·15M + 11M (g/km)	2005	CO	0.63	JC08 (g/km)	2009	CO	0.63
										NMHC	0.024			NMHC	0.024
										NOx	0.14			NOx	0.08
				Medium-duty (1.7t<GVW≤3.5t)	10·15M + 11M (g/km)			2005	2005	CO	0.63	JC08 (g/km)	2009 (4)	CO	0.63
										NMHC	0.024			NMHC	0.024
										NOx	0.25			NOx	0.15
	Heavy-duty (GVW>3.5t)	JE05 (g/kWh)	2005	2005	CO	2.22	JE05 (g/kWh)	2009 (4)	CO	2.22					
					NMHC	0.17			NMHC	0.17					
					NOx	2.0			NOx	0.7					
						WHTC (g/kWh) (5)	2016 (5)	CO	2.22						
								NMHC	0.17	NMHC	0.17				
								NOx (6)	0.4	NOx (6)	0.4				
Motor-cycles	Motor-driven cycles Class 1	Motorcycle test cycle (g/km)	2006	CO	2.0	WMTC (g/km) (7)	2010	CO	2.2						
				HC	0.5			THC	0.45						
				NOx	0.15			NOx	0.16						
	Motor-driven cycles Class 2	Motorcycle test cycle (g/km)	2007	2007	CO	2.0	WMTC (g/km) (7)	2010	CO	2.2					
					HC	0.5			THC	0.45					
					NOx	0.15			NOx	0.16					
	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.	Motorcycle test cycle (g/km)	2006	CO	2.0	WMTC (g/km) (7)	2016	CO	1.14					
					THC	0.30			THC	0.30					
					NOx	0.07			NOx	0.07					
	Mini-sized motorcycles	Motorcycle test cycle (g/km)	2006	2006	CO	2.0	WMTC (g/km) (7)	2010	CO	2.62					
					HC	0.3			THC	0.27					
					NOx	0.15			NOx	0.21					
	Class II motorcycles*	Under 0.050ℓ in engine capacity with a maximum speed of 129km/h, or 0.150ℓ or over in engine capacity with a maximum speed of 129km/h. *Equivalent to mini-sized motorcycles with a maximum speed of 129km/h.	Motorcycle test cycle (g/km)	2006	CO	2.0	WMTC (g/km) (7)	2016	CO	1.14					
					THC	0.20			THC	0.20					
					NOx	0.07			NOx	0.07					
Small-sized motorcycles	Motorcycle test cycle (g/km)	2007	2007	CO	2.0	WMTC (g/km) (7)	2010	CO	2.62						
				HC	0.3			THC	0.27						
				NOx	0.15			NOx	0.21						
Class III motorcycles*	With a running speed capacity of over 130km/h. *Equivalent to mini-sized motorcycles with a running speed capacity of over 130km/h and small-sized motorcycles.	Motorcycle test cycle (g/km)	2006	CO	2.0	WMTC (g/km) (7)	2016	CO	1.14						
				THC	0.17			THC	0.17						
				NOx	0.09			NOx	0.09						

(1) All vehicles weighing 3.5t or less are regulated as follows: Beginning in 2008, on the basis of (values measured in cold-start state in JC08 test cycle) x 0.25 + (values measured in 10·15-mode test cycle) x 0.75; and beginning in 2011, 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) PM values apply only to direct-injection, lean-burn vehicles equipped with absorption-type NOx reduction catalysts. (3) 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. (4) Enforced since 2010 for medium-duty diesel vehicles (1.7t<GVW≤2.5t) and heavy-duty diesel vehicles (3.5t<GVW≤12t). (5) On the basis of (values measured in cold-start state in WHTC (World Harmonized Transient Cycle) test cycle) x 0.14 + (values measured in warm-start state in WHTC test cycle) x 0.86. (6) Enforcement: 2016 for GVW>7.5t; 2017 for tractors; 2018 for 3.5t<GVW≤7.5t. (7) WMTC: A forthcoming worldwide harmonized motorcycle test cycle. 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 the greater Tokyo area have implemented measures to address air quality problems caused by motor vehicles. In accordance with national legislation aimed at curbing nitrogen oxide (NOx) and particulate matter (PM) emissions in major metropolitan areas, the issuance of inspection-compliance certification is prohibited for vehicles that fail to meet the legal standards at inspection time. Moreover, the Tokyo metropolitan and surrounding prefectural governments have introduced additional regulations for diesel trucks and buses for the specific purpose of reducing PM emissions. Enforcement of these regulations means that restrictions are imposed on diesel vehicle circulation in the areas concerned.

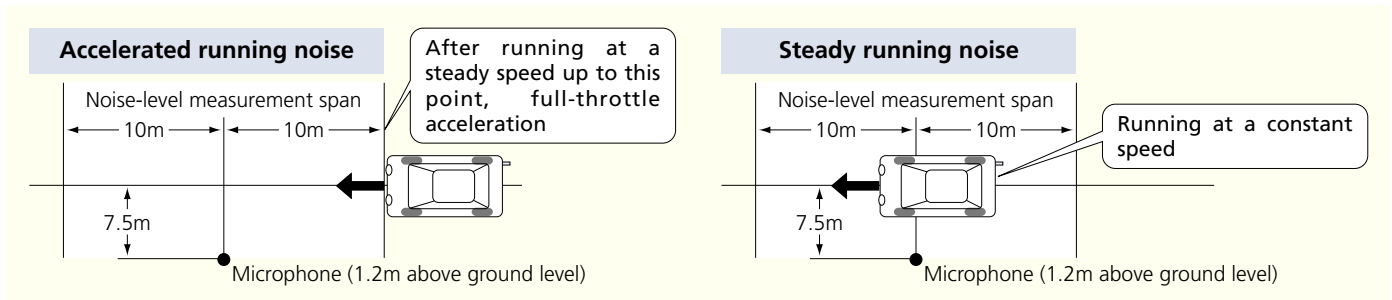
### ● PROVISIONS OF THE NATIONAL AUTOMOTIVE NO<sub>x</sub> AND PM EMISSIONS ACT/ DIESEL TRUCK & BUS PM EMISSION REGULATIONS FOR THE GREATER TOKYO AREA

	Provisions of the National Automotive NO <sub>x</sub> and PM Emissions Act (Major Metropolitan Areas)	Provisions of PM Emission Regulations for Diesel Vehicles (Greater Tokyo Area Only)
<b>Areas Regulated</b>	Tokyo, Osaka, and Aichi, Chiba, Hyogo, Kanagawa, Mie, and Saitama prefectures (designated areas)	Tokyo (except for islands) and Chiba, Kanagawa, and Saitama prefectures (all areas)
<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
<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> Same as 1988 regulatory values for new gasoline vehicles            PM Half the 2002 regulatory values for new diesel vehicles</p> <p><b>GVW=Over 1.7 tons to 2.5 tons:</b>            NO<sub>x</sub> Same as 1994 regulatory values for new gasoline vehicles            PM Half the 2002 regulatory values for new diesel vehicles</p> <p><b>GVW=Over 2.5 tons to 3.5 tons:</b>            NO<sub>x</sub> Same as 1995 regulatory values for new gasoline vehicles            PM Half the 2003 regulatory values for new diesel vehicles</p> <p><b>GVW=Over 3.5 tons:</b>            NO<sub>x</sub> Same as 1998-1999 regulatory values for new diesel vehicles            PM Same as 1998-1999 regulatory values for new diesel vehicles</p> <p><b>Passenger Cars</b>            NO<sub>x</sub> Same as 1978 regulatory values for new diesel vehicles            PM Half the 2002 regulatory values 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 Saitama, same as 2002, 2003, and 2004 regulatory values for new diesel trucks and buses</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 will be prohibited from travelling through regulated areas after grace periods have expired. 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: Except in Chiba Prefecture, where vehicles neither registered in nor travelling through areas designated under the national Automotive NO<sub>x</sub> and PM Emissions Act will be exempted for a period of 12 years, provided vehicle owners apply for such an exemption.</p>

## 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 accelerated running noise, steady running noise, and stationary exhaust proximity 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 not only meet Japan’s relevant noise standards through type approval compliance but also be ID-marked accordingly. Although very significant progress has been made as a result of all of these efforts, the Japanese government’s Central Environment Council is nevertheless working on the updating of noise regulations in line with the results of studies conducted under the United Nations’ World Forum for Harmonization of Vehicle Regulations (WP.29). Accordingly, in its “New Measures for Reducing Automobile-Emitted Noise” released in April 2012, the government announced its intention to introduce, beginning in 2014, UN R41-04, the new international standard on motorcycle acceleration noise, as well as UN R117-02, to regulate tire noise generated by passenger cars, trucks and buses. Meanwhile, the Forum’s Working Party on Noise has undertaken discussion of the quietness of electric vehicles and hybrid vehicles running at low speed, with a view to creating a global technical standard in this regard.

### PROCEDURES FOR TESTING MOTOR VEHICLE NOISE LEVELS



### OVERVIEW OF JAPAN’S MOTOR VEHICLE NOISE REGULATIONS (for accelerated running 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.	92	89	86	83	82
		Trucks					81
		Buses					81
Medium-sized vehicles	Vehicles with GVW>3.5 tons and maximum engine output≤150 kW	4WD vehicles, etc.	89	87	86	83	81
		Trucks					80
		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	84	82	81	78	76
		6 occupants or fewer					

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	83	78	75	73	
Mini-sized motorcycles	126cc-250cc		84					
Class III (see note)	Over 50 (PMR*-based)	Mini-sized and small-sized motorcycles under the current 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 current 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 current classification						73

\*PMR: Power-to-mass ratio. Note: Beginning in 2014, for noise regulation purposes, motorcycles in Japan will be classified (based on their PMR values) under the Class I, II and III categories, and the Class 1 motor-driven cycle, Class 2 motor-driven cycle, mini-sized motorcycle and small-sized motorcycle categories will no longer apply.

Source: Ministry of the Environment



## 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 also provided financial support for related software development and continues to help finance system maintenance and upgrades. In line with national efforts to “reduce, reuse, 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 2011 the volume of auto plant-generated waste destined for landfill disposal totalled 1,300 tons, a 99.6% decrease from the 1990 level, very largely surpassing the 2015 target of 10,000 tons.

### INDUSTRY MEASURES IN LINE WITH NATIONAL LEGISLATION

	Promotion of Effective Utilization of Resources Law (the “3-R” 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>		- Recovery and recycling of: <ol style="list-style-type: none"> <li>1) Fluorocarbons</li> <li>2) Airbags</li> <li>3) ASR</li> </ol> Note: Motorcycles are not covered by the ELV Recycling Law.
<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>	- Total waste volume*: <ul style="list-style-type: none"> <li>1990 (baseline): 352,000 tons</li> <li>↓</li> <li>2011: 1,300 tons (a 99.6% reduction from 1990)</li> <li>JAMA target: 10,000 tons by FY 2015</li> </ul> *For landfill disposal, including scrap metals, casting sand residue, and other waste		

### ELV RECOVERY IN NUMBERS

In vehicle units

Fiscal Year		2011	2012
<b>No. of ELVs recovered</b>		2,963,642	3,405,662
<b>Appropriate disposal of 3 designated items</b>	Fluorocarbons	2,374,587	2,157,945
	Airbags (1)	1,645,528	2,816,486
	ASR (2)	2,870,155	3,391,787

(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.

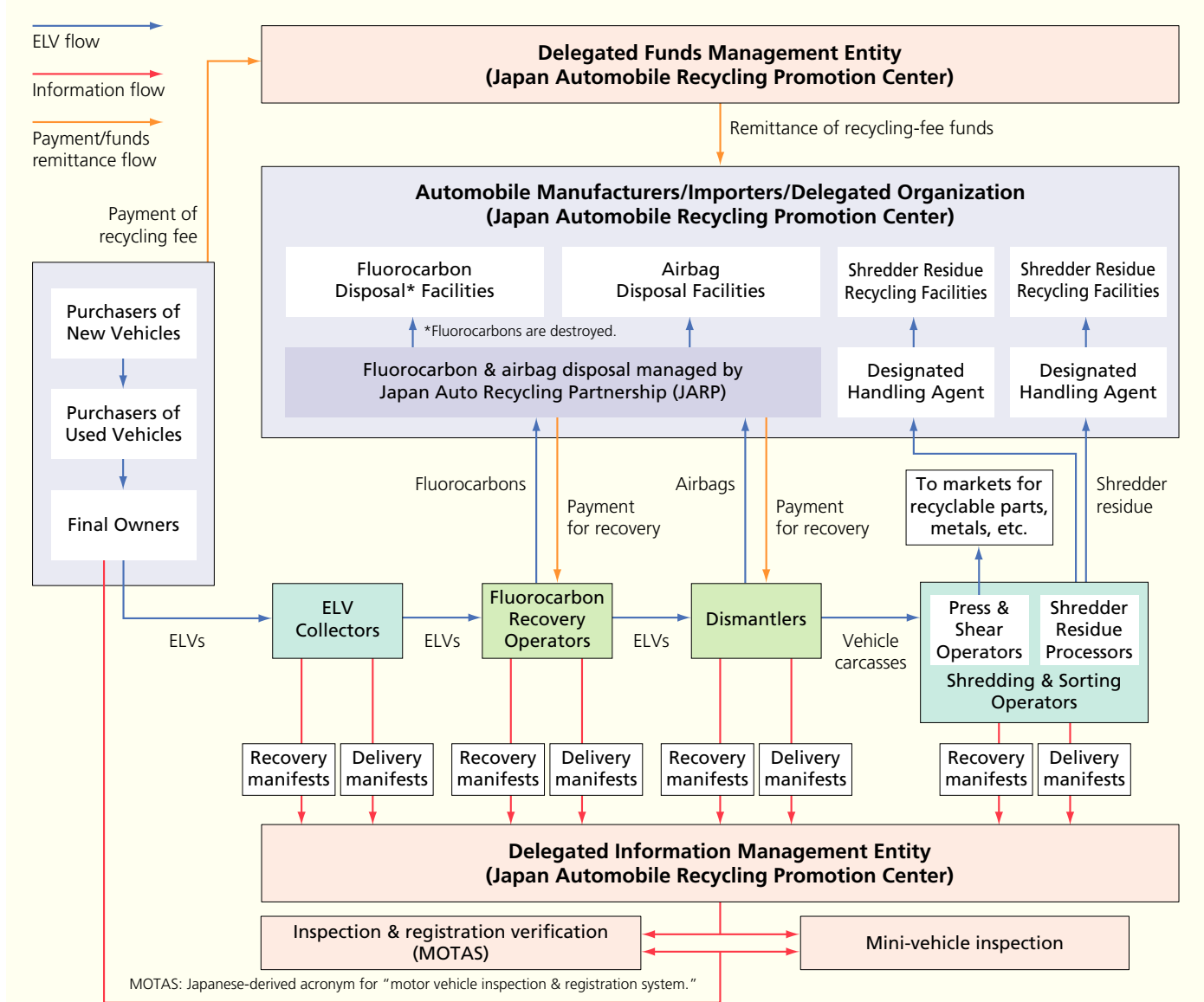
Source: Japan Automobile Recycling Promotion Center

### RECYCLING RATES: TARGETED & ACHIEVED

Three Designated Items	Target	Achieved
Fluorocarbons	Destruction	2.158 million vehicle units (2012)
Airbags	85%	92.0-100% (2011)
ASR	2005: 30% 2010: 50% 2015: 70%	92.0-94.0% (2011)

Sources: Government-affiliated entities

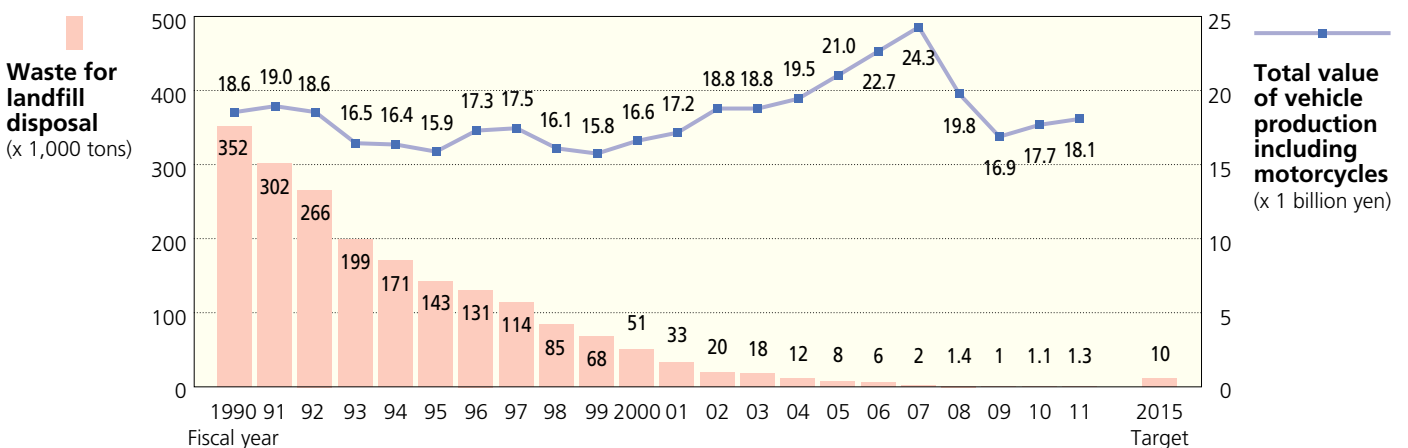
## ● THE ELV RECYCLING FLOW (as per the provisions of the End-of-Life Vehicle Recycling Law)



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. In addition, this organization provides financial assistance in the disposal of illegally abandoned vehicles.

## ● REDUCTIONS IN PRODUCTION PLANT-GENERATED WASTE

As a result of the efforts made by Japan's automobile manufacturers, the total volume of auto plant-generated waste destined for landfill has decreased dramatically. It surpassed the 2015 target of 10,000 tons for the first time in 2005, shrinking more than 97% from the 1990 baseline level to 8,000 tons. In 2011 plant-generated waste totalled 1,300 tons, slightly increasing over the previous year but largely (99.6%) decreasing from the baseline and fully meeting the target.



Source: Japan Automobile Manufacturers Association

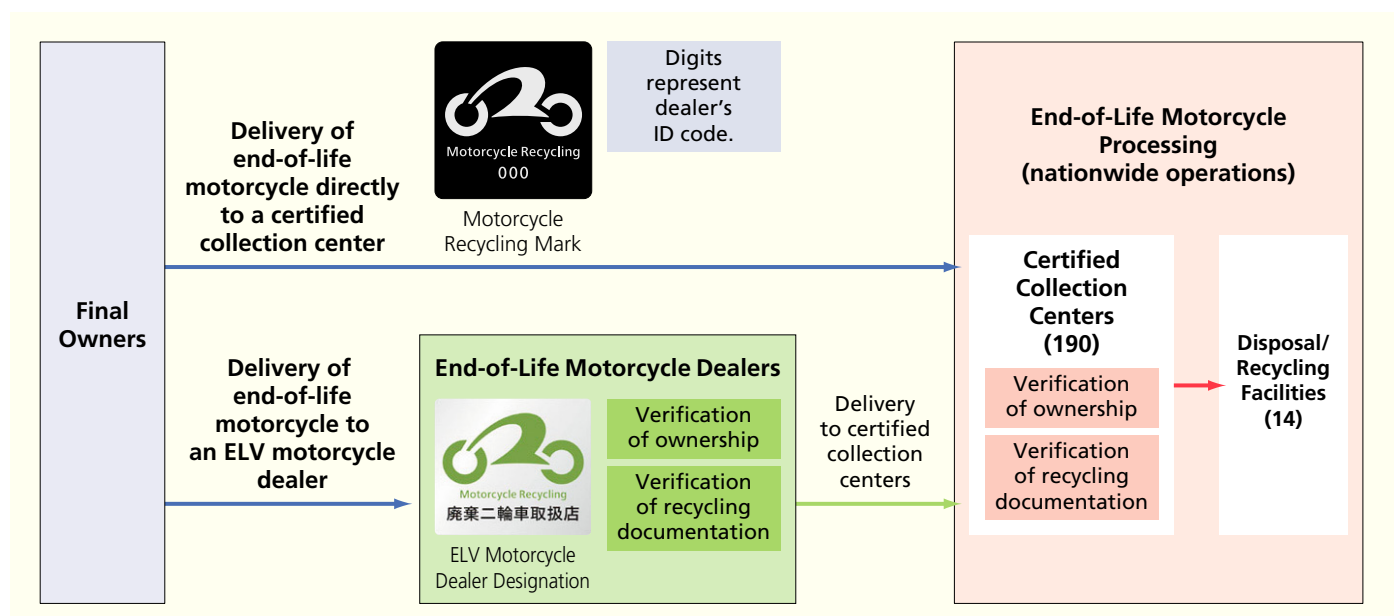
# Voluntary Initiatives to Recycle Commercial Vehicle Rack Equipment and Motorcycles

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 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. As of January 2013, a total of 163 operators across Japan are participating in the system voluntarily. 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. Municipally-owned motorcycles require a pre-approval by the Japan Automobile Recycling Promotion Center prior to their appropriate disposal.

## ● 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

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

In addition to their recycling and waste-reduction activities, Japan's automakers 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 (motorcycles have separate restrictions) to lessen their environmental impact, particularly when they are dismantled and processed at the end of their service life. Meanwhile, JAMA itself is promoting the voluntary reduction of volatile organic compounds (VOCs) in vehicle cabins and has formulated test methods for that purpose. In response, automakers are eliminating VOCs in adhesive and paint solvents and developing water-based solvents to replace them.

### ● 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 complied by the end of 2005.
<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 headlamps - Fluorescent cabin lamps	All models complied by the end of 2002. 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 headlamps will be mercury-free in the near future.
<b>Hexavalent chromium</b>	Banned as of January 2008.	All passenger car models complied by the end of 2007. All large commercial vehicle models complied by the end of 2011.
<b>Cadmium</b>	Banned as of January 2007.	All models complied by the end of 2005.

### 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 different substances. Automakers will work to lower vehicle cabin VOC concentration levels even further in future. This voluntary initiative applies only to vehicles that are manufactured and sold in Japan.

### ● VEHICLE CABIN VOC TEST CONDITIONS & PROCEDURES (Summary Outline)

<b>Pre-test conditions (ventilated cabin)</b>	Cabin doors and windows are open for at least 30 minutes for ventilation.
<b>Test conditions &amp; procedures, Step 1 (airtight heated cabin) [Formaldehyde]</b>	All cabin doors and windows are closed and radiation lamps are used to heat the cabin in an airtight state, maintaining cabin temperature at 40°C (35°C for buses) for a period of 4.5 hours. Cabin air is then sample-tested over a period of 30 minutes.
<b>Test conditions &amp; procedures, Step 2 (engine &amp; AC running) [Toluene, etc.]</b>	After completing Step 1, engine is started and AC turned on. Cabin air is then sample-tested in that state over a period of 15 minutes for passenger cars, 30 minutes for trucks, and 120 minutes for buses.

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

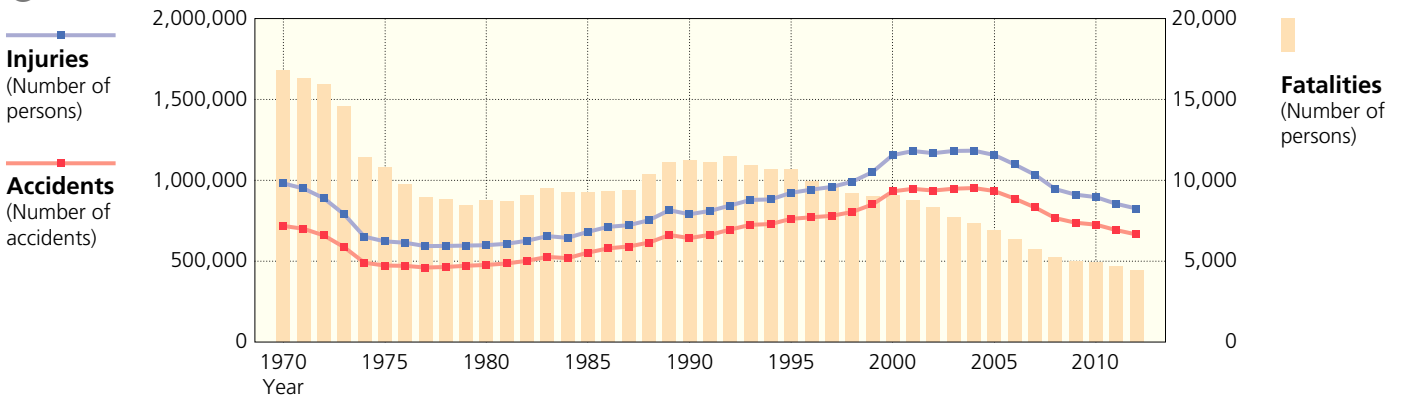
Substance	Target Value for Indoor Concentration Level	Principal Sources
<b>Formaldehyde</b>	100 $\mu\text{g}/\text{m}^3$ (0.08 ppm)	Adhesives for plywood, wallpaper, etc.
<b>Toluene</b>	260 $\mu\text{g}/\text{m}^3$ (0.07 ppm)	Adhesives/paints for interior finishing materials, furniture, etc.
<b>Xylene</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.

# Road Accidents and Resulting Fatalities and Injuries Continue to Decline

In 2012 road fatalities (defined as occurring within 24 hours after the accident) in Japan fell for the twelfth straight year, to a total of 4,411. Road accidents and road injuries also declined, for the eighth consecutive year, to 665,138 and 825,396 respectively. Increased seatbelt use is one of the major factors behind the downward trend in road fatalities. 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 2012 stood at 33.2% on regular roads and at 65.4% 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

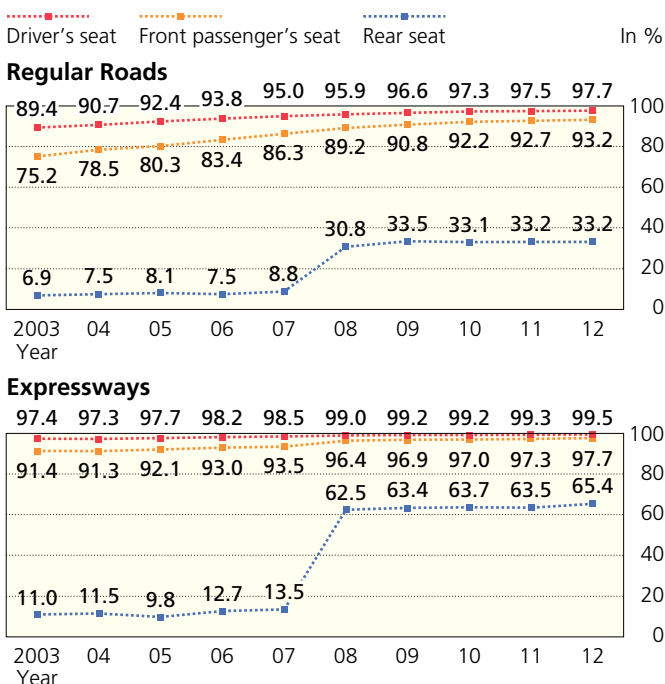


## ROAD ACCIDENTS/INJURIES/FATALITIES (exact figures)

Year	1970	1975	1980	1985	1990	1995	2000	2005	2008	2009	2010	2011	2012
<b>Accidents</b>	718,080	472,938	476,677	552,788	643,097	761,794	931,950	934,339	766,382	737,628	725,903	692,056	665,138
<b>Injuries</b> (Number of persons)	981,096	622,467	598,719	681,346	790,295	922,677	1,155,707	1,157,115	945,703	911,215	896,294	854,610	825,396
<b>Fatalities</b> (Number of persons)	16,765	10,792	8,760	9,261	11,227	10,684	9,073	6,927	5,197	4,968	4,922	4,663	4,411

Source: National Police Agency

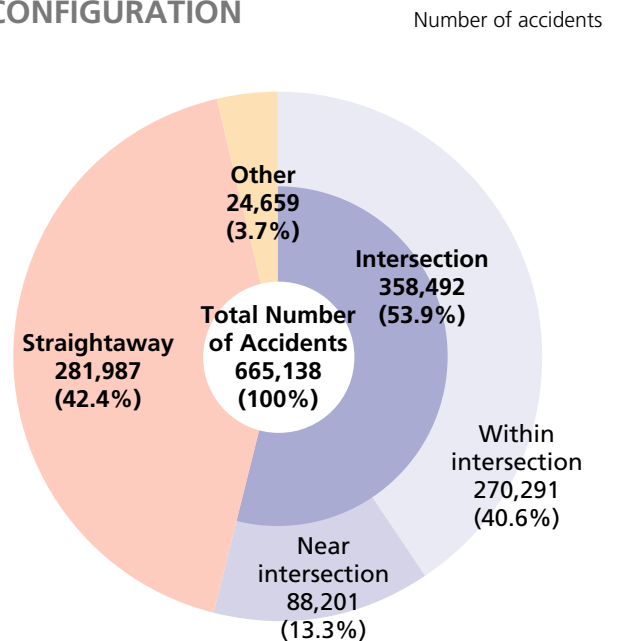
## SEATBELT USE RATES BY SEAT POSITION



Notes: 1. The survey on seatbelt use is conducted annually in October. 2. 2012 survey samples totalled roughly 414,000 on regular roads and 88,000 on expressways.

Sources: National Police Agency; Japan Automobile Federation

## ROAD ACCIDENTS IN 2012 BY ROAD CONFIGURATION



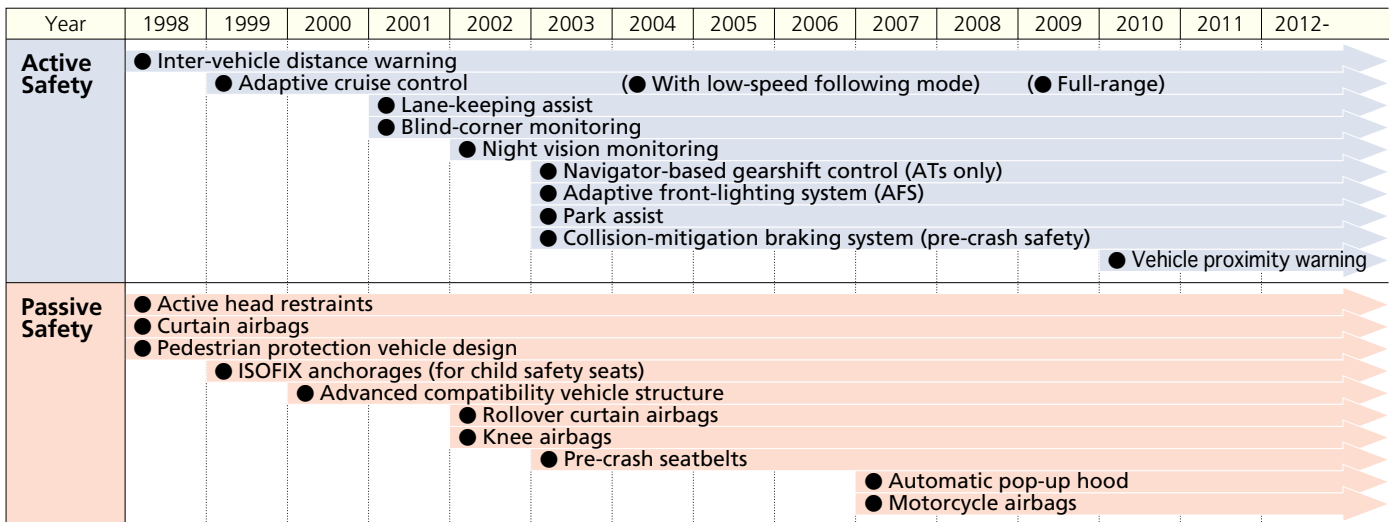
Notes: 1. "Straightaway" includes some curves and tunnels. 2. "Other" includes railroad crossings.

Source: National Police Agency

## 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. At the same time, it seeks to increase *passive* safety through enhanced structural safety and vehicle features designed to mitigate injury when accidents do occur.

### ● VEHICLE SAFETY FEATURES & YEAR OF INTRODUCTION



Source: Japan Automobile Manufacturers Association

### ● SAFETY FEATURE ONBOARD INSTALLATION STATUS (for passenger cars produced in 2011 for home market)

	Safety Feature	Installation Status				
		In no. of models (1)	In % (2)	In vehicle units	In % (2)	
<b>Active Safety</b>	Anti-lock braking system (ABS)	185	(172)	100.0	3,187,340	96.5
	Brake assist	171	(163)	92.4	3,075,017	93.1
	Unfastened seatbelt warning (driver's seat)	185	(185)	100.0	3,279,843	99.3
	Unfastened seatbelt warning (front passenger's seat)	68	(66)	36.8	983,880	29.8
	Power-window jamming prevention (with auto-up function)	179	(178)	96.8	3,260,040	98.7
	Power-window jamming prevention (without auto-up function)	34	(33)	18.4	507,943	15.4
	High-intensity discharge headlamps	153	(56)	82.7	1,380,712	41.8
	Adaptive front-lighting system (AFS)	42	(15)	22.7	149,090	4.5
	Back-up monitoring (rear obstacle detection)	120	(22)	64.9	457,993	13.9
	Vehicle perimeter monitoring	36	(6)	19.5	80,909	2.4
	Vehicle perimeter obstacle warning	33	(6)	17.8	107,878	3.3
	Blind-corner monitoring	20	(0)	10.8	43,020	1.3
	Night vision monitoring	4	(0)	2.2	587	0.1
	Night vision "pedestrian ahead" warning	2	(0)	1.1	459	0.1
	Curve detection	14	(0)	7.6	77,716	2.4
	Tire pressure monitoring	8	(6)	4.3	82,181	2.5
	Driver inattention warning	18	(0)	9.7	82,114	2.5
	Inter-vehicle distance warning	45	(2)	24.3	47,410	1.4
	Lane deviation warning	24	(0)	13.0	27,436	0.8
	Rear collision warning-equipped headrest control	8	(0)	4.3	1,493	0.1
	Collision-mitigation braking system (pre-crash safety)	49	(2)	26.5	46,627	1.4
	Adaptive cruise control	45	(2)	24.3	43,995	1.3
	Adaptive cruise control with low-speed following mode	6	(0)	3.2	19,956	0.6
	Full-range adaptive cruise control	10	(0)	5.4	24,843	0.8
	Lane-keeping assist	17	(0)	9.2	4,110	0.1
Back-up monitoring (parking assistance)	22	(0)	11.9	18,990	0.6	
Navigator-based gearshift control	34	(6)	18.4	52,167	1.6	
Pre-crash seatbelts	43	(5)	23.2	27,048	0.8	
Electronic stability control	130	(75)	70.3	1,042,396	31.5	
Traction control with ABS	122	(72)	65.9	1,013,910	30.7	
Navigator-based stop sign alert with brake assist	11	(6)	5.9	70,446	2.1	
Rearward-approaching-vehicle warning	3	(0)	1.6	3,101	0.1	
Emergency braking warning	20	(20)	10.8	368,578	11.2	
Vehicle proximity warning (for HVs/EVs) (3)	12	(10)	31.6	101,088	11.0	
<b>Passive Safety</b>	Side airbags	137	(55)	74.1	830,296	25.1
	Curtain airbags	141	(54)	76.2	733,583	22.2
	Active head restraints	134	(131)	72.4	2,132,162	64.5
	ISOFIX anchorages (for child safety seats)	153	(139)	82.7	2,755,109	83.4
	Three-point seatbelt for rear center seat (4)	100	(83)	71.4	1,171,710	50.4
<b>Total</b>			<b>185</b>		<b>3,304,359</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 parenthesis 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 2011 a total of 38 hybrid/electric car models (917,404 vehicle units) were equipped with a vehicle proximity warning system. (4) In 2011 a total of 140 passenger car models (2,322,533 vehicle units) featured a rear center seat. Minicars do not feature a rear center seat.

Note: Passenger cars here include minicars.

Source: Japan Automobile Manufacturers Association

## JAMA Initiatives in Promoting Greater Road Safety

In April 2004, JAMA pledged its support of the Japanese government's goal to reduce road fatalities by 50% over a period of ten years. JAMA's own initiatives towards that goal are outlined 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	• Continued implementation of road safety public awareness campaigns, based on the results of accident causation studies.	• More widespread application of AFS (1), ABS (2), BA (3), and stability control.	• For infrastructural improvements, based on the results of accident causation studies.
② Special measures for the elderly	• Development of road safety educational programs specifically for the elderly.	• Development of technologies specifically geared to aging-related physical changes.	• For more widespread roadway/sidewalk demarcation and greater barrier-free mobility.
③ Greater use of seatbelts	• Public awareness campaigns to promote the use of seatbelts.		
④ Delays in driver recognition and incorrect vehicle control	• Campaigns aimed at preventing faulty driver recognition and incorrect vehicle control.	• Research into the mechanisms of accident causation and human-machine interface conditions using data recorders, etc.	
⑤ Accidents occurring at twilight/night	• Campaigns to promote the early lighting of automobile headlamps.	• More widespread application of AFS.	• For improved nighttime road illumination.
⑥ Accidents occurring at intersections	• Public awareness campaigns to encourage drivers to exercise greater caution at intersections, where the majority of fatal road accidents occur.	• More widespread application of ABS, BA, and stability control. • Improvement of side-impact protection performance.	• For road infrastructure regulations for effective utilization of ITS technologies.
⑦ Collisions with stationary objects		• Improvement of side-impact and vehicle occupant protection performance and of side and curtain airbags.	• For expanded provision of underground power lines and impact-absorbing road installations.
⑧ Compatibility		• R&D on crash-compatible vehicle bodies and compatibility evaluation methods to improve vehicle performance.	

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

## Japan's 9th 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 1970. In line with the government's goal of eventually achieving "zero road accidents" nationwide, Japan's ninth road safety plan (2011-2015) aims to create a highly road safety-conscious society that places maximum priority on human life and, in particular, the safety of those of its members who are most vulnerable to road accidents—namely, pedestrians, senior citizens, and persons who are disabled. The plan emphasizes the need to pursue aggressive measures targeting further reductions in the occurrence of road accidents and fatalities.

### ● JAPAN'S ROAD SAFETY TARGETS

- To reduce the annual number of road fatalities (occurring within 24 hours post-accident) to below 3,000 by 2015, and thus to make Japan's roads the safest in the world.
- To reduce the total annual number of road fatalities (occurring within 24 hours post-accident) and injuries to below 700,000 by 2015.

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

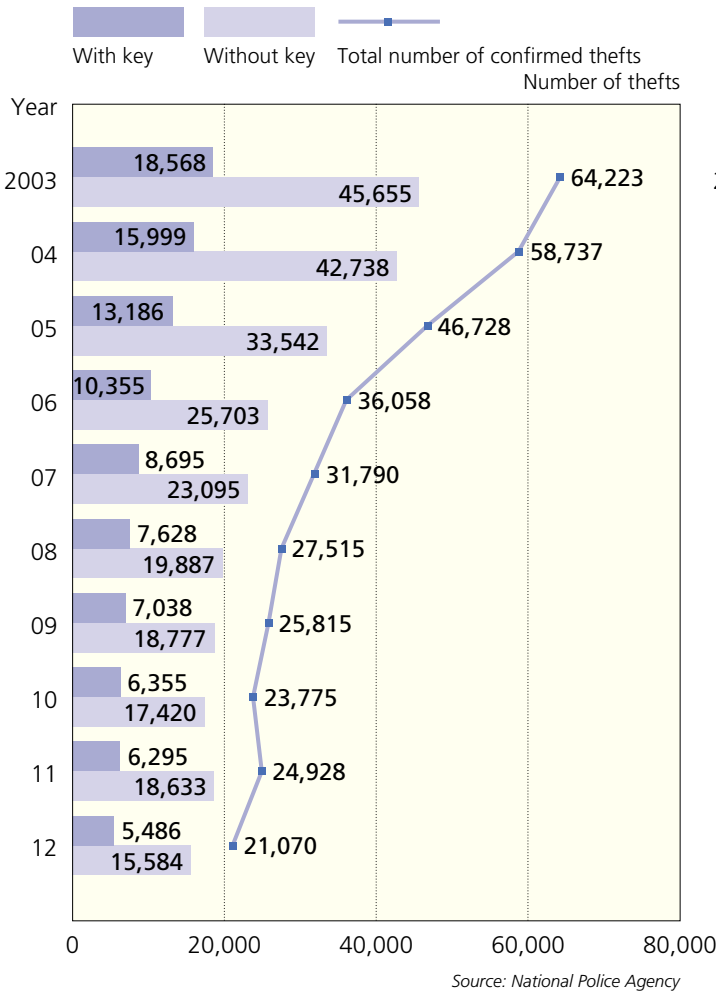
<b>Road Infrastructure Improvements</b> <ul style="list-style-type: none"> <li>- Sidewalk construction/upgrades, especially in school zones</li> <li>- More pedestrian routes suitable for the elderly and disabled</li> <li>- Increased use of ITS</li> </ul>	<b>Road Safety Public Awareness Campaigns</b> <ul style="list-style-type: none"> <li>- Promotion of safe cycling</li> <li>- Promotion of road safety education for the elderly</li> <li>- Promotion of seatbelt use by all vehicle occupants</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>- Implementation of special driver-education programs for the elderly</li> <li>- Vehicle fleet operation-related road accident analysis</li> </ul>	<b>Enhancement of Vehicle Safety</b> <ul style="list-style-type: none"> <li>- Expanded development and onboard application of Advanced Safety Vehicle technologies</li> <li>- Implementation of improvements to the national vehicle recall system</li> <li>- Promotion of regular vehicle checks and maintenance</li> </ul>
<b>Enforcement of Road Traffic Laws</b> <ul style="list-style-type: none"> <li>- Strict enforcement of traffic regulations</li> <li>- Stronger crackdowns on "hot-rodding" motorcyclists</li> </ul>	<b>Reinforcement of Emergency Rescue Operations Infrastructure</b> <ul style="list-style-type: none"> <li>- Improved training and deployment of emergency rescue personnel</li> <li>- Upgrading of emergency dispatch support systems</li> <li>- Promotion of doctor-staffed helicopters</li> </ul>
<b>Provision of Fair Compensation for Road Accident Victims</b> <ul style="list-style-type: none"> <li>- Enhanced support for the provision of fair "damages" compensation</li> </ul>	<b>Promotion of Road Safety Research and Analysis</b> <ul style="list-style-type: none"> <li>- Promotion of further safe-driving research</li> <li>- Promotion of comprehensive analysis of road accident causation</li> </ul>

Source: Japan's 9th Basic Plan for Road Safety

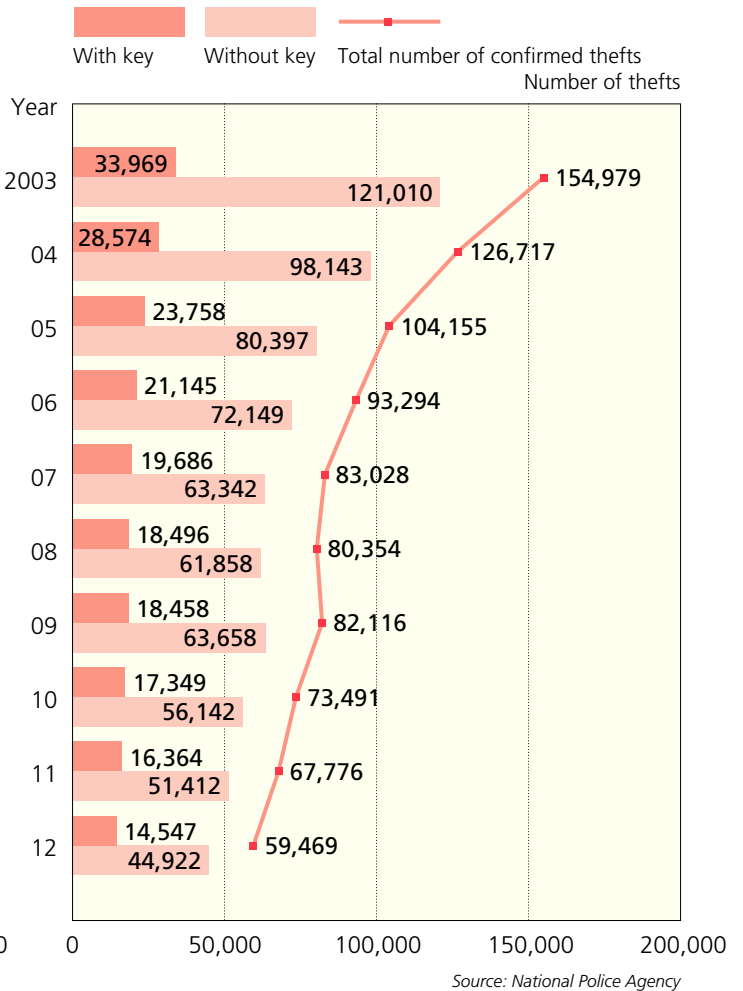
## Efforts to Prevent Theft

After peaking at 64,223 in 2003, the annual number of automobile thefts in Japan shrank for seven consecutive years, registering 23,775 in 2010. Although increasing slightly in 2011, automobile thefts continued their downward trend (attributable to the widespread use of immobilizers, or portable electronic lock systems) in 2012, dropping to 21,070. Meanwhile, although 59,469 motorcycle thefts were reported in 2012, that figure nevertheless extends the uninterrupted decline in such thefts since 2000. To enhance motor vehicles' "theft-resistance," the automobile industry has very significantly expanded the supply of smart keys equipped with immobilizers.

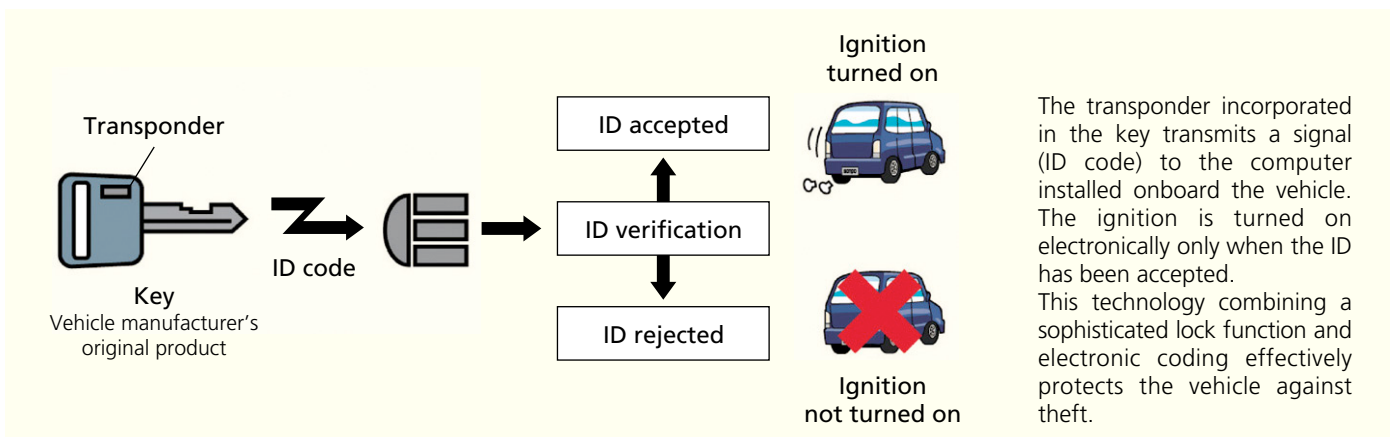
### TRENDS IN CONFIRMED MOTOR VEHICLE THEFTS



### TRENDS IN CONFIRMED MOTORCYCLE THEFTS



### A SAMPLE IMMOBILIZER DEVICE AND HOW IT WORKS



Note: The above diagram illustrates the operation of a vehicle manufacturer-supplied original product. Other types of immobilizers are available in the aftersales market.



## 81.5 Million People Hold Driver's Licenses

At the end of 2012 there were 81.5 million people, or 45.4 million men and 36.1 million women, holding valid driver's licenses in Japan. The number of driver's licenses held totalled 127.9 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 2.38 million people, or 2.32 million men and 0.06 million women, and Class 1 licenses by 125.5 million people, or 81.68 million men and 43.82 million women.

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

Year	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
<b>Men</b>	44,786,148	45,020,226	45,135,941	45,257,391	45,412,614	45,517,585	45,539,419	45,487,010	45,448,263	45,437,260
<b>Women</b>	32,681,581	33,226,722	33,662,880	34,072,475	34,494,598	34,930,257	35,272,526	35,523,236	35,767,003	36,050,586
<b>Total</b>	77,467,729	78,246,948	78,798,821	79,329,866	79,907,212	80,447,842	80,811,945	81,010,246	81,215,266	81,487,846

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

Year		2006	2007	2008	2009	2010	2011	2012
<b>Class 2 Licenses</b>	Large motor vehicle	1,134,485	1,122,994	1,106,704	1,089,135	1,068,347	1,046,361	1,026,180
	Middle-category motor vehicle	—	1,234,075	1,200,328	1,162,250	1,121,287	1,081,474	1,042,120
	Ordinary motor vehicle	1,410,805	156,965	168,575	190,198	200,961	208,060	214,555
	Large special-purpose vehicle	47,950	48,030	47,753	47,238	46,698	46,055	45,463
	Traction vehicle	54,028	54,005	53,703	53,125	52,480	51,716	51,035
	Subtotal	2,647,268	2,616,069	2,577,063	2,541,946	2,489,773	2,433,666	2,379,353
<b>Class 1 Licenses</b>	Large motor vehicle	5,472,155	5,523,190	5,499,204	5,464,835	5,415,730	5,375,268	5,337,727
	Middle-category motor vehicle	—	75,632,238	75,059,457	74,378,308	73,587,938	72,814,101	72,070,665
	Ordinary motor vehicle	75,565,509	705,387	1,961,618	3,177,214	4,370,510	5,550,718	6,749,966
	Large special-purpose vehicle	2,377,493	2,402,921	2,417,497	2,428,901	2,435,324	2,443,687	2,454,123
	Traction vehicle	1,095,585	1,115,034	1,130,186	1,139,434	1,145,609	1,152,732	1,160,509
	Large two-wheeler	12,382,886	12,195,811	12,006,075	11,765,267	11,472,937	11,197,903	10,938,930
	Ordinary two-wheeler	8,245,516	8,454,617	8,663,075	8,839,410	8,996,934	9,154,873	9,310,786
	Small special-purpose vehicle	685,982	656,664	629,151	598,136	565,103	532,892	503,338
	Motorized bicycle	17,378,918	17,365,524	17,358,087	17,304,896	17,190,548	17,075,472	16,977,729
Subtotal	123,204,044	124,051,386	124,724,350	125,096,401	125,180,633	125,297,646	125,503,773	
<b>Total</b>	125,851,312	126,667,455	127,301,413	127,638,347	127,670,406	127,731,312	127,883,126	

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

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

Vehicle Category	Class 1 Licenses								
	Large motor vehicle	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	●	●							
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 middle-category motor vehicle license went into effect from June 2, 2007. 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.

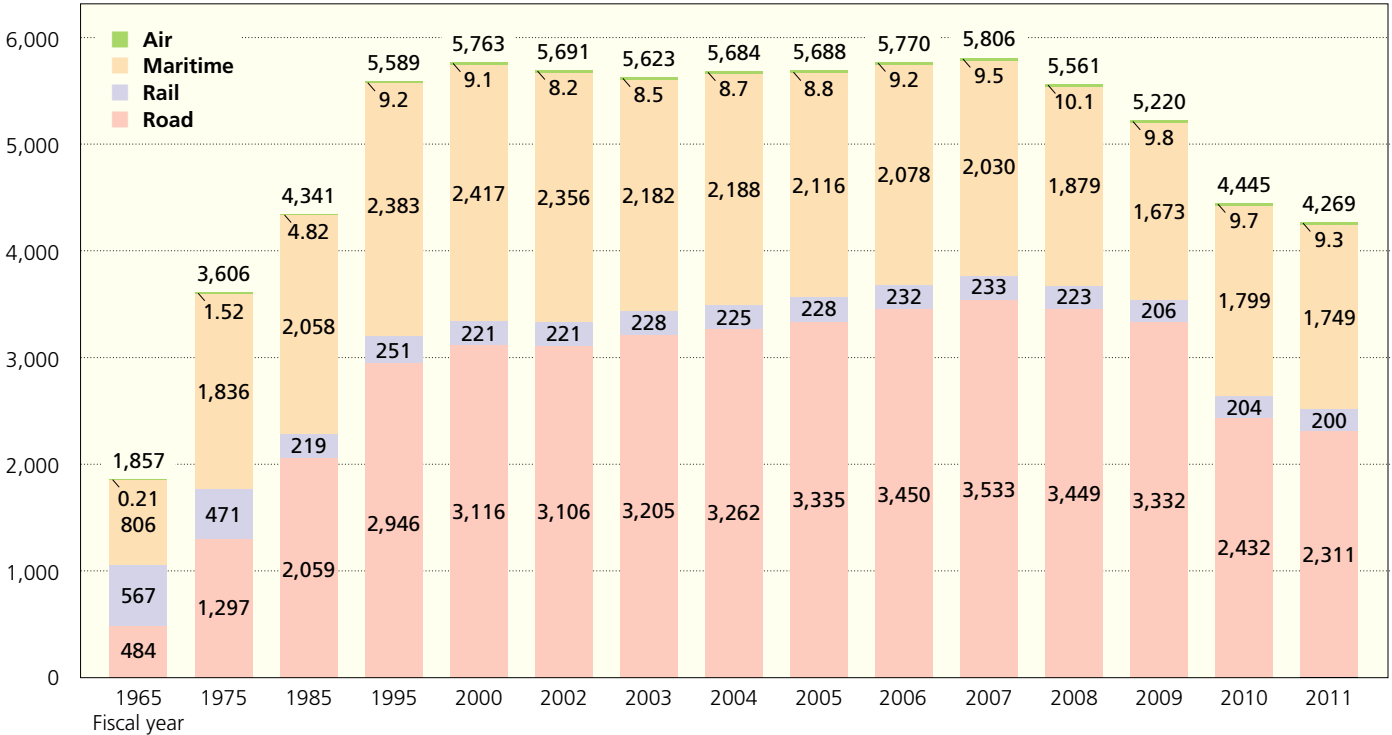
Source for all statistical data on this page: National Police Agency

## Motor Vehicles Are Vital to Goods Distribution

Accounting at present for 54% of Japan's total freight transport, road transportation plays an essential role in goods distribution. With the continuous expansion of 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 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 2013

	Japan	U.S.A.	EU	China
<b>Passenger Cars</b>	None	2.5%	10%	25%
<b>Trucks</b>	None	25% Cab chassis, 5t or greater in GVW ..... 4%	Gasoline trucks, over 2800cc Diesel trucks, over 2500cc ..... 22% Gasoline trucks, 2800cc or under Diesel trucks, 2500cc or under ..... 10%	Trucks, under 5t in GVW ..... 25% Gasoline trucks, 5t or greater in GVW 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 Diesel buses, over 2500cc ..... 16% Gasoline buses, 2800cc or under 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

# Evolution of Intelligent Transport Systems (ITS) in Japan

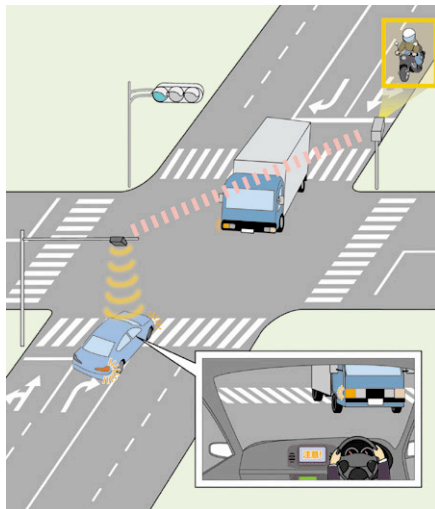
Intelligent Transport Systems aim to radically improve transport safety, efficiency and convenience through the use of information and communication technologies integrating road users, road infrastructure, and vehicles. In 1996 the Japanese government formulated its Comprehensive Concept for the Promotion 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. In 2010 a strategic government plan called for the introduction of road-to-vehicle safe-driving support systems and the halving of road congestion on major highways by 2020. Accordingly, on the basis of advanced safety vehicle (ASV) development, an ITS "spot service" system and a safe-driving support system were both launched that year. In line also with the additional government goal of reducing road fatalities to below 3,000 by 2015 (see page 40), the use of such systems is expected to expand significantly.

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

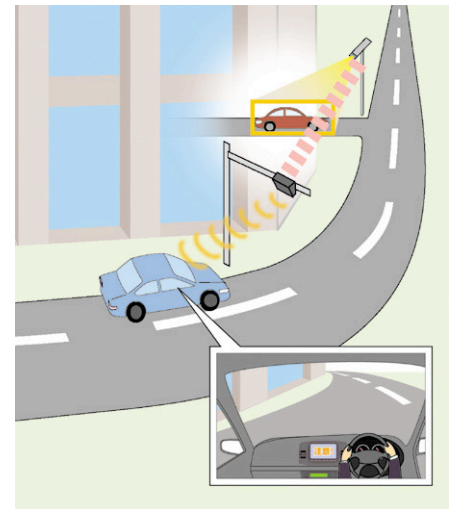
Incorporating ITS technologies, road-to-vehicle systems providing safe-driving support and cruise assistance have been in operation in Japan since 2010, when an ITS "spot service" system (for use mainly on urban expressways) and a "DSSS" (for "Driving Safety Support System") system were launched on a full-scale basis.

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

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

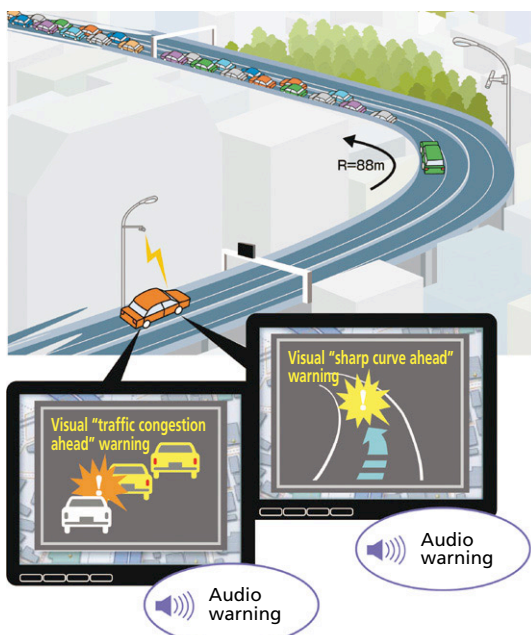


2. Entering traffic ahead warning



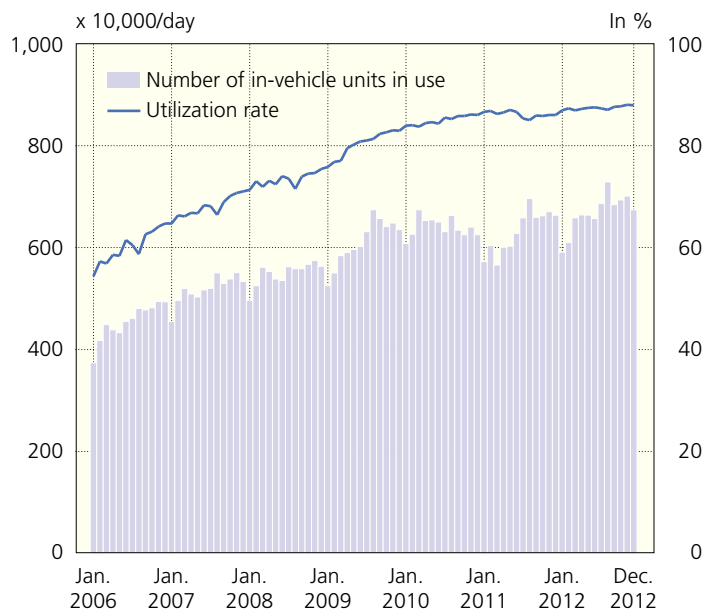
Source: Universal Traffic Management Society of Japan

### ● "SPOT SERVICE" SYSTEM FEATURES (EXAMPLES)



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

### ● ETC UTILIZATION STATUS



Notes: 1. Data was not collected from roads that were made toll-free on a trial basis from July 2010 through June 2011. 2. No data was collected from the entire Tohoku region in and after June 2011, when all toll roads there were made toll-free.

Source: Ministry of Land, Infrastructure, Transport and Tourism

## 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).

### ● THE ADVANCED SAFETY VEHICLE (ASV) PROJECT, PHASES 1-5: Summary of Contents and Scheduling

	Phase 1 (Five-Year Plan)	Phase 2 (Five-Year Plan)	Phase 3 (Five-Year Plan)	Phase 4 (Five-Year Plan)	Phase 5 (Five-Year Plan)
<b>Implementation Period</b>	FY 1991 through FY 1995	FY 1996 through FY 2000	FY 2001 through FY 2005	FY 2006 through FY 2010	FY 2011 through FY 2015
<b>Objectives</b>	Technological verification	R&D for market introduction	<ul style="list-style-type: none"> <li>Preparation for widespread use</li> <li>Development of new technologies</li> </ul>	<ul style="list-style-type: none"> <li>Promotion of widespread use</li> <li>Practical application of some systems (see page 44)</li> </ul>	<ul style="list-style-type: none"> <li>Breakthroughs in active safety technologies</li> <li>Preparation for implementation of telecommunications-based systems to help prevent accidents involving pedestrians</li> </ul>

Source: Ministry of Land, Infrastructure, Transport and Tourism

### ● PRINCIPAL ASV SAFETY TECHNOLOGIES DEVELOPED

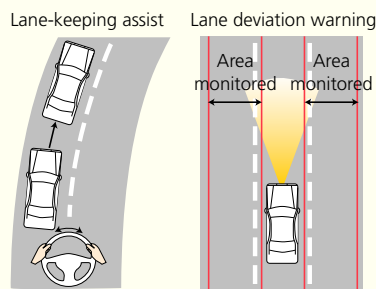
- |                                       |  |  |
|---------------------------------------|--|--|
| 1 Collision-Mitigation Braking System | 6 Vehicle Perimeter Obstacle Warning               | 10 Driver Inattention Warning System       |
| 2 Curve Detection System              | 7 Adaptive Front-Lighting System                   | 11 Electronic Stability Control System     |
| 3 Full-Range Adaptive Cruise Control  | 8 Rear Collision Warning-Equipped Headrest Control | 12 Rear/Side Obstacle Detection            |
| 4 Lane Deviation Warning System       | 9 Pre-Crash Seatbelts                              | 13 Emergency Braking Warning               |
| 5 Lane-Keeping Assist System          |  | 14 Night Vision "Pedestrian Ahead" Warning |

Source: Ministry of Land, Infrastructure, Transport and Tourism

### ● PRACTICAL APPLICATION OF ASV TECHNOLOGIES

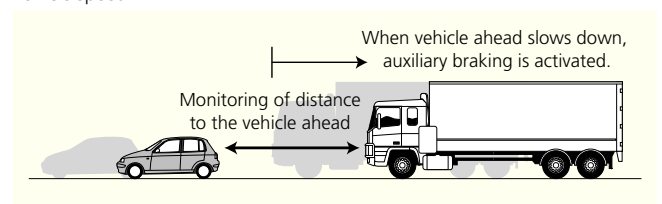
#### 1. Lane-Keeping Assist

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.



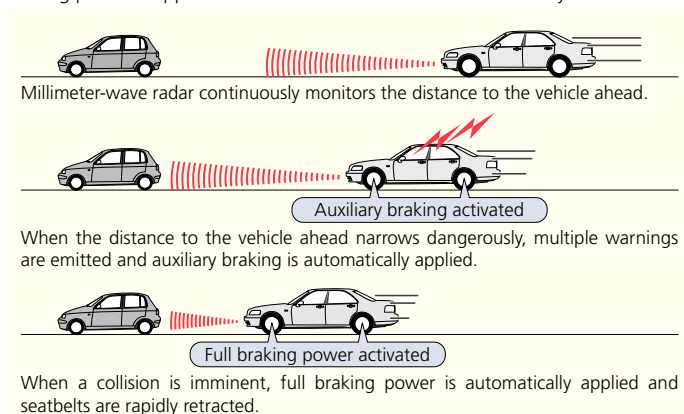
#### 2. Full-Range Adaptive Cruise Control

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.



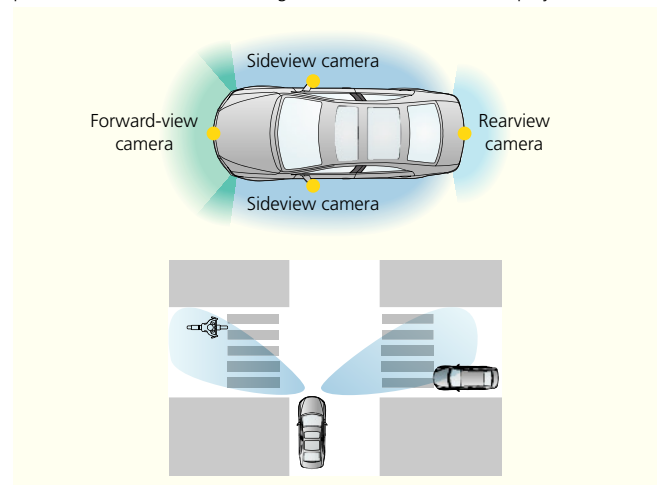
#### 3. Collision-Mitigation Braking System (pre-crash safety)

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

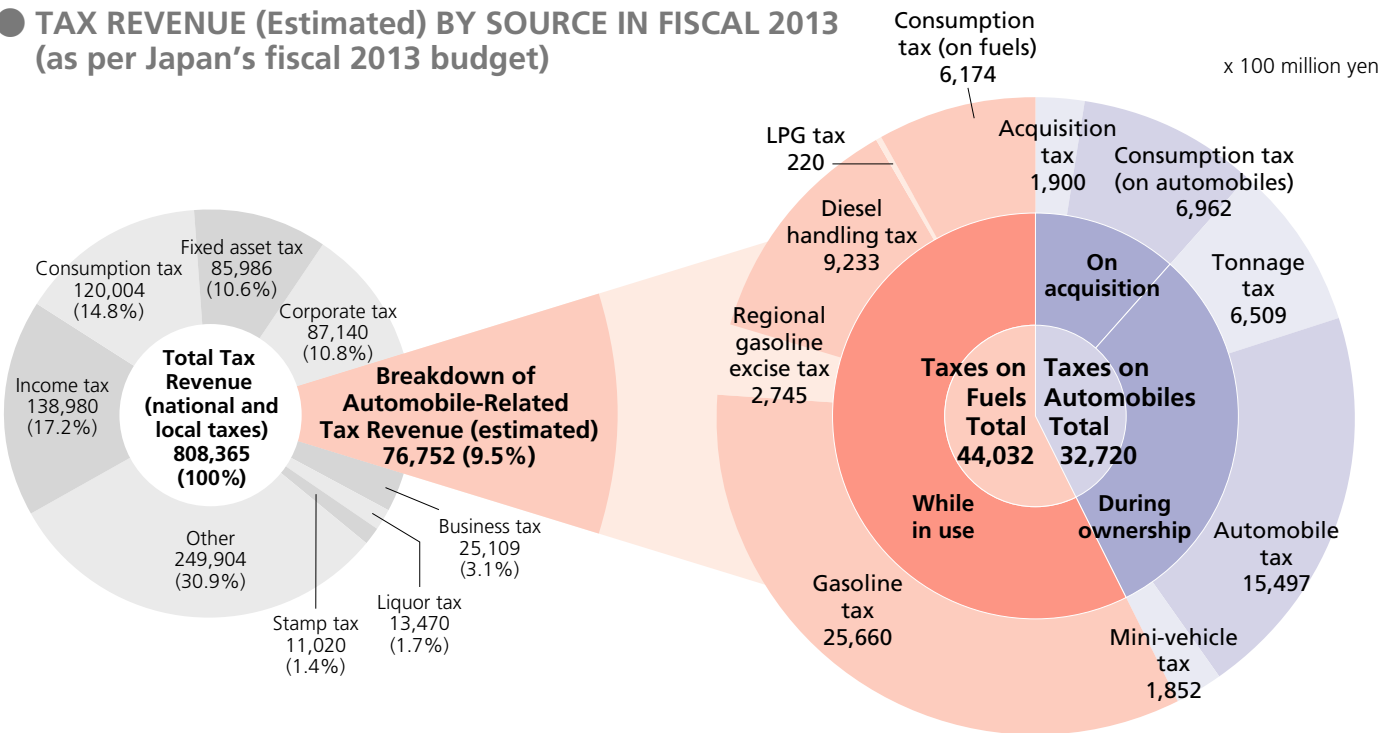
In blind-corner monitoring (bottom image), front cameras with built-in prisms transmit both left and right views to the in-cabin display screen.



# Eight 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 Japanese motor vehicle owners. Under the government’s budget for fiscal 2013, the total value of tax revenue from these automobile-related taxes was estimated at 7.7 trillion yen, or 9.5% of Japan’s projected total tax revenue of 81 trillion yen in fiscal 2013.

## ● TAX REVENUE (Estimated) BY SOURCE IN FISCAL 2013 (as per Japan’s fiscal 2013 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% of the revenue is redistributed to local government coffers. Sources: Ministry of Finance; Ministry of Internal Affairs and Communications

## ● AUTOMOBILE-RELATED TAXES IN JAPAN (as of May 1, 2012)

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 vehicle inspection
<b>National/Local Tax</b>	Prefectural tax	National and local tax	National tax
<b>Tax Rate/ Amount</b>	(Private use) - 5% of purchase price (3% for commercial and mini-vehicles) - Exempted for vehicles purchased for 500,000 yen or less  Notes: 1. Acquisition tax reductions/exemptions are in effect from April 1, 2012 through March 31, 2015 for eco-friendly vehicles (see pages 48-50). 2. Reduction of the acquisition tax (in a two-stage process) to 0% is to coincide with a projected increase in the national consumption tax to 10%.	5% (of which 1% is a local tax)	1) Vehicles complying with 2015 fuel efficiency standards: Original rates apply (¥2,500/0.5t per year for private passenger cars) 2) Vehicles on the road 18 years or longer since first registration: Previous rates apply (¥6,300/0.5t per year for private passenger cars) 3) Vehicles on the road 13 years or longer since first registration: Temporary rates apply (¥5,000/0.5t per year for private passenger cars) 4) Other vehicles for private use: - Passenger cars: ¥4,100/0.5t per year - Trucks (GVW>2.5t): ¥4,100/t per year - Trucks (GVW≤2.5t): ¥3,300/t per year - Buses: ¥4,100/t per year - Mini-vehicles: ¥3,300 per year - Motorcycles (251cc and over): ¥1,900 per year - Motorcycles (126 to 250cc): ¥4,900 upon registration  Note: Additionally, tonnage tax reductions/exemptions are in effect from May 1, 2012 through April 30, 2015 for eco-friendly vehicles (see pages 48-50).

## ● JAPAN'S ESTIMATED AUTOMOBILE-RELATED TAX REVENUE IN FISCAL 2013

			Tax Revenue (x 100 million yen)	Original Tax Rate	Current Tax Rate	Comparison with Original Tax Rate (multiplier value)
Taxes on Automobiles	On acquisition	Acquisition tax	1,900	3%	5% (Excluding commercial/mini-vehicles)	1.7
		Consumption tax (on automobiles)	6,962	5%	—	—
	During ownership	Tonnage tax	6,509	¥2,500/0.5t per year (Registered vehicles for private use)	¥4,100/0.5t per year (Registered vehicles for private use)	1.6
		Automobile tax	15,497	Based on engine capacity	No change	—
		Mini-vehicle tax	1,852	¥7,200/year (Passenger cars for private use)	No change	—
<b>Total</b>			<b>32,720</b>			
Taxes on Fuels	While in use	Gasoline tax	25,660	¥24.3/ℓ	¥48.6/ℓ	2.0
		Regional gasoline excise tax	2,745	¥4.4/ℓ	¥5.2/ℓ	1.2
		Diesel handling tax	9,233	¥15.0/ℓ	¥32.1/ℓ	2.1
		LPG tax	220	¥17.5/kg	No change	—
		Consumption tax (on fuels)	6,174	5%	—	—
		<b>Total</b>	<b>44,032</b>			
<b>Grand Total</b>			<b>76,752</b>			

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. Tax rates indicated effective as of May 1, 2012.

## ● TAX RATES IN EFFECT (Examples), 1954-2012, TO SUPPORT ROAD NETWORK IMPROVEMENTS

Year	Five-Year Plan	Year	Acquisition Tax	Tonnage Tax Yen/0.5t per year	Gasoline Tax Yen/ℓ	Regional Gasoline Excise Tax Yen/ℓ	Diesel Handling Tax Yen/ℓ	LPG Tax Yen/kg
1954-'57	First	'54 '55 '56 '57			13.0 11.0 ↓ 14.8	2.0 ↓ 3.5	6.0 8.0 ↓ 10.4	
'58-'60	Second	'59			19.2 ↓ 22.1	↓ 4.0	↓ 12.5	
'61-'63	Third	'61 '62 '63	Commercial and mini-vehicles excluded	In the case of a passenger car for private use	24.3	4.4	15.0	
'64-'66	Fourth	'64 '65 '66						
'67-'69	Fifth	'67 '68 '69	3%					5 10 ↓ 17.5
'70-'72	Sixth	'70 '71 '72		2,500				
'73-'77	Seventh	'74 '75 '76 '77	5%	5,000 6,300	29.2 36.5 45.6	5.3 6.6 8.2	19.5 24.3	
'78-'82	Eighth	'78 '79 '80 '81 '82						
'83-'87	Ninth	'83 '84 '85 '86 '87						
'88-'92	Tenth	'88 '89 '90 '91 '92						
'93-'97	Eleventh	'93 '94 '95 '96 '97			48.6	5.2	32.1	
'98-'02	Twelfth	'98 '99 '00 '01 '02						
2003-'07	As per the national priority infrastructure development plan							
'08-	As per the national medium-term road infrastructure plan			6,300				
'10-'11	—			5,000				
'12-	—		5%	4,100 (2,500*)	48.6	5.2	32.1	17.5
Comparison with original tax rate (multiplier value)			1.67	1.64	2.00	1.18	2.14	1.00

Original tax rate \*The original tonnage tax rate (¥2,500/0.5t per year) is applied to vehicles compliant with 2015 fuel efficiency standards.

Note: Tax rates indicated effective as of May 1, 2012.

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 yen/year - 1,001 to 1,500cc 34,500 yen/year - 1,501 to 2,000cc 39,500 yen/year - 2,001 to 2,500cc 45,000 yen/year - 2,501 to 3,000cc 51,000 yen/year - 3,001 to 3,500cc 58,000 yen/year - 3,501 to 4,000cc 66,500 yen/year - 4,001 to 4,500cc 76,500 yen/year - 4,501 to 6,000cc 88,000 yen/year - Over 6,000cc 111,000 yen/year	1) Mini-vehicles (for private use) - Passenger cars 7,200 yen/year - Trucks 4,000 yen/year 2) Motorcycles - Up to 50cc 1,000 yen/year - 51 to 90cc 1,200 yen/year - 91 to 125cc 1,600 yen/year - 126 to 250cc 2,400 yen/year - 251cc and over 4,000 yen/year	48.6 yen/ℓ	5.2 yen/ℓ	32.1 yen/ℓ (light oil)	17.5 yen/kg (LPG)	5% of the purchase price of fuels (of which 1% 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, the Japanese government has, since April 2009, applied both new and extended auto-related tax incentives to promote the wider use of eco-friendly vehicles. For the purchase of new vehicles that comply with Japan's 2015 fuel efficiency standards, reductions/exemptions are applicable to the acquisition tax and tonnage tax since April 1 and May 1, 2012, respectively.

### INCENTIVES & ELIGIBILITY REQUIREMENTS FOR NEW VEHICLES

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

Period in effect: April 1, 2012 through March 31, 2015 for the acquisition tax; May 1, 2012 through April 30, 2015 for the tonnage tax.

Vehicle Type			Reductions/Exemptions	
	Requirements	Certification Sticker(s)	Acquisition Tax (4)	Tonnage Tax
<b>Passenger Cars and Small Trucks and Buses (GVW≤2.5t)</b>				
<b>Electric Vehicles (including fuel cell vehicles), Plug-In Hybrid Vehicles, Clean Diesel Vehicles (1), Natural Gas Vehicles (2)</b>			Exempt	Exempt at time of 1st vehicle inspection; 50% reduction at 2nd inspection
<b>Gasoline Vehicles (including hybrid vehicles)</b>	Compliant +20% compared to 2015 fuel efficiency standards, with emissions down by 75% from 2005 standards (3)		Exempt	Exempt at time of 1st vehicle inspection; 50% reduction at 2nd inspection
	Compliant +10% compared to 2015 fuel efficiency standards, with emissions down by 75% from 2005 standards (3)		75% reduction	75% reduction
	Compliant with 2015 fuel efficiency standards, with emissions down by 75% from 2005 standards (3)		50% reduction	50% reduction
<b>Mid-Sized Trucks and Buses (2.5t&lt;GVW≤3.5t)</b>				
<b>Electric Vehicles (including fuel cell vehicles), Plug-In Hybrid Vehicles, Natural Gas Vehicles (2)</b>			Exempt	Exempt at time of 1st vehicle inspection; 50% reduction at 2nd inspection
<b>Diesel Vehicles (including hybrid vehicles)</b>	Compliant +10% compared to 2015 fuel efficiency standards, with NOx and PM emissions down by 10% from 2009 standards		Exempt	Exempt at time of 1st vehicle inspection; 50% reduction at 2nd inspection
	Compliant +5% compared to 2015 fuel efficiency standards, with NOx and PM emissions down by 10% from 2009 standards		75% reduction	75% reduction
	Compliant +10% compared to 2015 fuel efficiency standards, and compliant with 2009 emission standards		75% reduction	75% reduction
	Compliant with 2015 fuel efficiency standards, with NOx and PM emissions down by 10% from 2009 standards		50% reduction	50% reduction
	Compliant +5% compared to 2015 fuel efficiency standards, and compliant with 2009 emission standards		50% reduction	50% reduction
<b>Gasoline Vehicles (including hybrid vehicles)</b>	Compliant +10% compared to 2015 fuel efficiency standards, with emissions down by 75% from 2005 standards		Exempt	Exempt at time of 1st vehicle inspection; 50% reduction at 2nd inspection
	Compliant +5% compared to 2015 fuel efficiency standards, with emissions down by 75% from 2005 standards		75% reduction	75% reduction
	Compliant +10% compared to 2015 fuel efficiency standards, with emissions down by 50% from 2005 standards		75% reduction	75% reduction
	Compliant with 2015 fuel efficiency standards, with emissions down by 75% from 2005 standards		50% reduction	50% reduction
	Compliant +5% compared to 2015 fuel efficiency standards, with emissions down by 50% from 2005 standards		50% reduction	50% reduction

Vehicle Type			Reductions/Exemptions	
	Requirements	Certification Sticker(s)	Acquisition Tax (4)	Tonnage Tax
<b>Heavy-Duty Trucks and Buses (GVW&gt;3.5t)</b>				
<b>Electric Vehicles (including fuel cell vehicles), Plug-In Hybrid Vehicles, Natural Gas Vehicles (2)</b>			Exempt	Exempt at time of 1st vehicle inspection; 50% reduction at 2nd inspection
<b>Diesel Vehicles (including hybrid vehicles)</b>	Compliant +10% compared to 2015 fuel efficiency standards, with NOx and PM emissions down by 10% from 2009 standards		Exempt	Exempt at time of 1st vehicle inspection; 50% reduction at 2nd inspection
	Compliant +5% compared to 2015 fuel efficiency standards, with NOx and PM emissions down by 10% from 2009 standards		75% reduction	75% reduction
	Compliant +10% compared to 2015 fuel efficiency standards, and compliant with 2009 emission standards		75% reduction	75% reduction
	Compliant with 2015 fuel efficiency standards, with NOx and PM emissions down by 10% from 2009 standards		50% reduction	50% reduction
	Compliant +5% compared to 2015 fuel efficiency standards, and compliant with 2009 emission standards		50% reduction	50% reduction

(1) Passenger cars complying with 2009 emission standards. (2) With NOx emissions down by 10% from 2009 emission standards. (3) Fuel consumption and exhaust emission requirements are JC08 test cycle-based. The "Compliant +20% compared to 2015 fuel efficiency standards," "Compliant +10% compared to 2015 fuel efficiency standards," and "Compliant with 2015 fuel efficiency standards" requirements are equivalent to "Compliant +50% compared to 2010 fuel efficiency standards," "Compliant +38% compared to 2010 fuel efficiency standards," and "Compliant +25% compared to 2010 fuel efficiency standards," respectively, when measured in the 10-15-mode test cycle, on which basis the 2010 fuel efficiency standards were established. (4) Acquisition tax reductions/exemptions are applied once, at the time of new vehicle purchase during the period in which these reductions/exemptions are in effect.

## ● ACQUISITION AND TONNAGE TAXES ON NEW VEHICLES: EXAMPLES OF AMOUNTS ASSESSED, BY VEHICLE TYPE

In yen

	Tax Status	Passenger Cars			Mini-Vehicles			Heavy-Duty Vehicles		
		Exempt	With 75% reduction	With 50% reduction	Exempt	With 75% reduction	With 50% reduction	Exempt	With 75% reduction	With 50% reduction
<b>Acquisition Tax</b>	<b>As of April 1, 2012</b>	0	20,200	40,500	0	6,700	13,500	0	90,000	180,000
	Without reductions/exemptions	81,000	81,000	81,000	27,000	27,000	27,000	360,000	360,000	360,000
<b>Tonnage Tax</b>	<b>As of May 1, 2012</b>	0	5,600	11,200	0	1,800	3,700	0	9,300	18,700
	Without reductions/exemptions	22,500	22,500	22,500	7,500	7,500	7,500	37,500	37,500	37,500
<b>Total Reduction (acquisition tax + tonnage tax)</b>		<b>103,500</b>	<b>77,700</b>	<b>51,800</b>	<b>34,500</b>	<b>26,000</b>	<b>17,300</b>	<b>397,500</b>	<b>298,200</b>	<b>198,800</b>

Assumptions: For passenger cars: purchase price = ¥1.8 million, GVW<1.5t; For mini-vehicles: purchase price = ¥1 million; For heavy-duty vehicles: purchase price = ¥8 million, GVW=15t. Note: Reductions are applied on the basis of compliance with stipulated requirements, and reduction amounts vary according to vehicle purchase price and weight.



● ACQUISITION AND TONNAGE TAX REDUCTIONS/EXEMPTIONS FOR HEAVY-DUTY VEHICLES EQUIPPED WITH ADVANCED SAFETY FEATURES AND PUBLIC-USE ASSISTED-MOBILITY VEHICLES

Period in effect: April 1, 2012 through March 31, 2015 for the acquisition tax; May 1, 2012 through April 30, 2015 for the tonnage tax.

Vehicle Type		Reductions/Exemptions	
		Acquisition Tax	Tonnage Tax
Trucks (GVW>8t), Tractors (GVW>13t) and Buses (GVW>5t, for seated passengers only) equipped with a collision-mitigation braking system		¥3.5 million deduction from purchase price (1), (2)	50% reduction (1), (3)
Assisted-Mobility Vehicles	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)	<ul style="list-style-type: none"> <li>For large buses (occupancy≥30 persons), ¥6.5 million deduction from purchase price (2)</li> <li>For small buses (occupancy&lt;30 persons), ¥2 million deduction from purchase price (2)</li> </ul>	Exempt (3)
	Universal design-based taxis (for use in public transport)	¥1.0 million deduction from purchase price (2)	Exempt (3)

(1) For large trucks (GVW>22t), some tractors (GVW>13t) and buses (GVW>12t, for seated passengers only), period in effect: April 1, 2012 through October 31, 2014. (2) Deductions are applied once, at the time of first registration. (3) Reductions/exemptions are applied once, at the time of first mandatory vehicle inspection.

Notes: 1. Acquisition tax is assessed on the amount remaining after deduction. 2. The above tonnage tax reduction/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 page 48), 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 page 48).

● FISCAL 2012-2013 AUTOMOBILE TAX REDUCTIONS FOR PASSENGER CARS AND SMALL TRUCKS AND BUSES (GVW≤2.5t) \*

Requirements (1)	Certification Stickers	Reduction
Compliant +10% compared to 2015 fuel efficiency standards, with emissions down by 75% from 2005 standards (2)		50% reduction approximately (3)
Compliant with 2015 fuel efficiency standards, with emissions down by 75% from 2005 standards (2)		25% reduction approximately (3)

\*Also applies to trucks and buses (2.5t<GVW>3.5t, gasoline vehicles only) certified as fuel-efficient and low-emission vehicles.

(1) Applies additionally to electric (including fuel cell) vehicles, plug-in hybrid vehicles and natural gas vehicles (with NOx emissions down by 10% from 2009 standards). (2) Fuel consumption and exhaust emission requirements are JC08 test cycle-based, with "Compliant +10% compared to 2015 fuel efficiency standards" and "Compliant with 2015 fuel efficiency standards" being equivalent to "Compliant +38% compared to 2010 fuel efficiency standards" and "Compliant +25% compared to 2010 fuel efficiency standards," respectively, when measured in the 10·15-mode test cycle, on which basis the 2010 fuel efficiency standards were established. (3) For eligible vehicles newly registered in 2012 and 2013, the automobile tax reduction is applied in the year subsequent to the year of registration.

Note: This scheme also mandates a yearly 10% surcharge on the automobile tax for diesel vehicles on the road 11 years or longer, and for gasoline and LPG-powered vehicles on the road 13 years or longer, since first registration.

INCENTIVES & ELIGIBILITY REQUIREMENTS FOR USED VEHICLES

● FISCAL 2012-2013 ACQUISITION INCENTIVES FOR PASSENGER CARS AND SMALL TRUCKS AND BUSES (GVW≤2.5t) \*

Requirements (1)	Certification Stickers	Incentive
Compliant +20% compared to 2015 fuel efficiency standards, with emissions down by 75% from 2005 standards (2)		¥450,000 deduction from purchase price
Compliant +10% compared to 2015 fuel efficiency standards, with emissions down by 75% from 2005 standards (2)		¥300,000 deduction from purchase price
Compliant with 2015 fuel efficiency standards, with emissions down by 75% from 2005 standards (2)		¥150,000 deduction from purchase price

\*Also applies to trucks and buses (gasoline vehicles only) and heavy-duty trucks and buses (hybrid vehicles only) certified as fuel-efficient and low-emission vehicles.

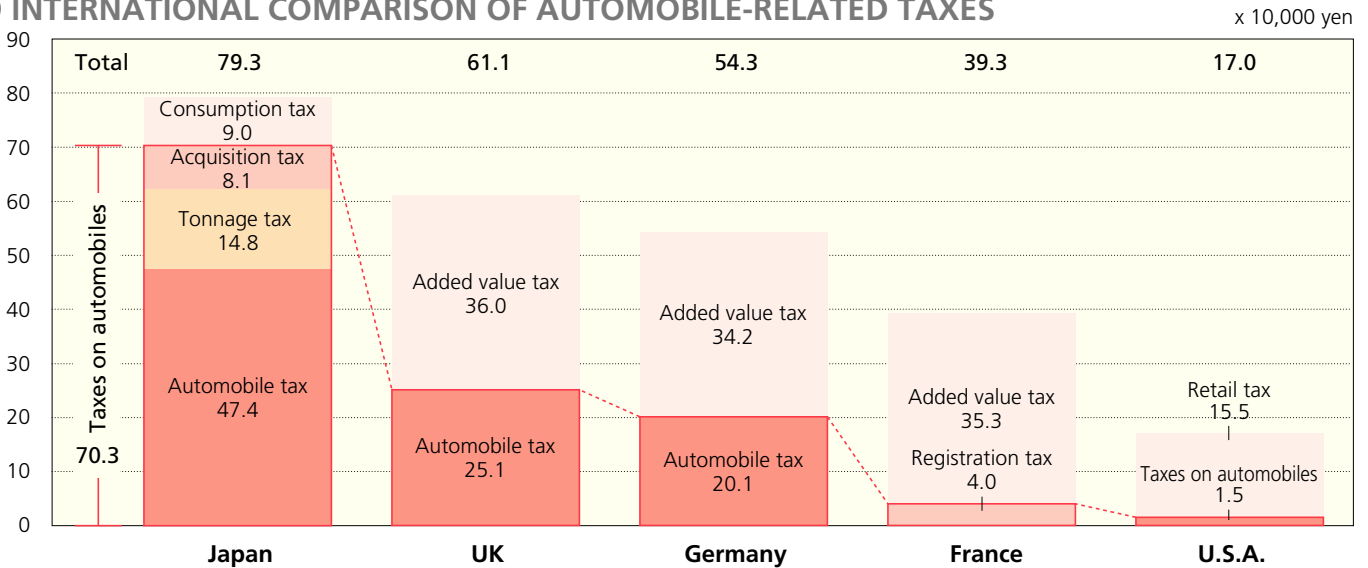
(1) Applies additionally to electric (including fuel cell) vehicles, plug-in hybrid vehicles, natural gas vehicles (with NOx emissions down by 10% from 2009 standards) and clean diesel passenger cars (compliant with 2009 emission standards). (2) Fuel consumption and exhaust emission requirements are JC08 test cycle-based, with "Compliant +20% compared to 2015 fuel efficiency standards," "Compliant +10% compared to 2015 fuel efficiency standards," and "Compliant with 2015 fuel efficiency standards" being equivalent to "Compliant +50% compared to 2010 fuel efficiency standards," "Compliant +38% compared to 2010 fuel efficiency standards," and "Compliant +25% compared to 2010 fuel efficiency standards," respectively, when measured in the 10·15-mode test cycle, on which basis the 2010 fuel efficiency standards were established.

Note: Acquisition tax is assessed on the amount remaining after deduction.

## Automobile-Related Taxes are Onerous

Consider the case of a passenger car costing 1.8 million yen when purchased new and providing 12 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 1.53 million yen, which is equivalent to the purchase price of a new 1000cc passenger car. In addition to these various taxes (totalling about 130,000 yen yearly), the user will also be required to pay onerous highway tolls, automobile insurance premiums (mandatory and optional), a recycling fee, periodic inspection fees and maintenance costs.

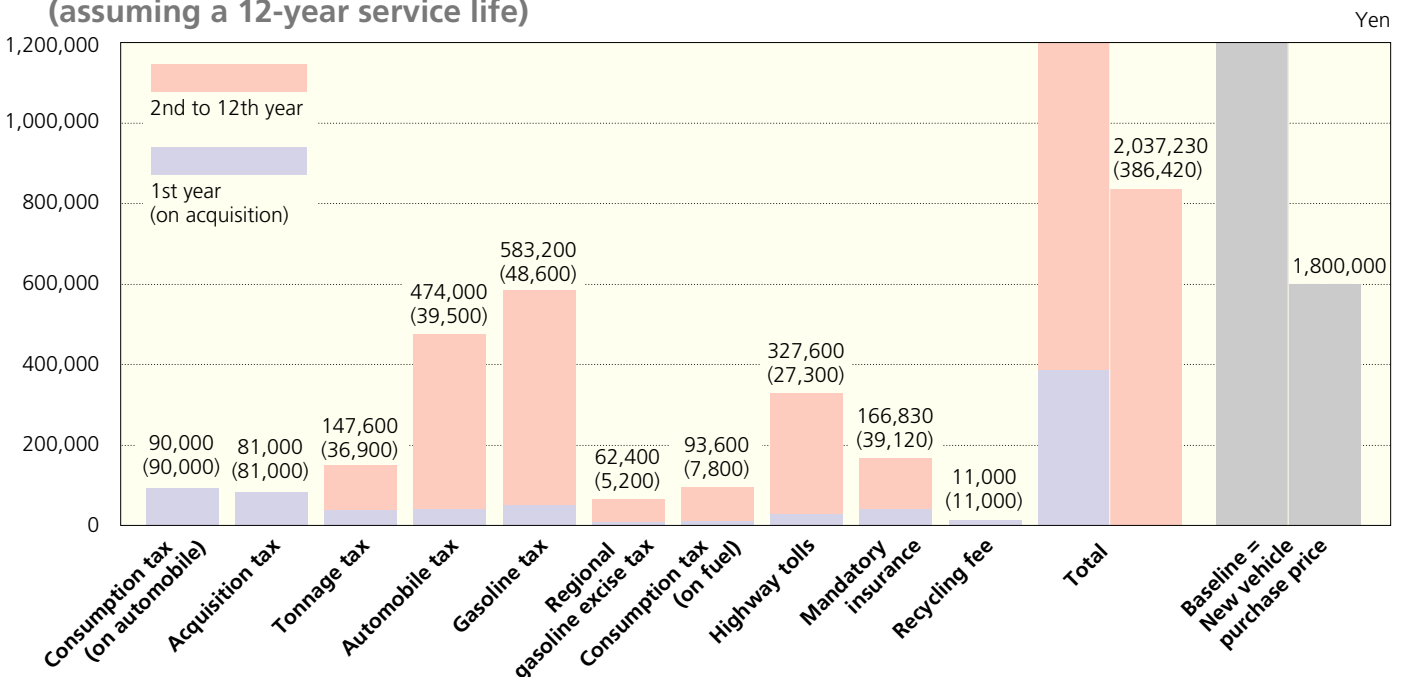
### INTERNATIONAL COMPARISON OF AUTOMOBILE-RELATED TAXES



Assumptions: 1) Engine capacity: 1800cc. 2) GVW: Under 1.5t. 3) Purchase price: ¥1.8 million. 4) Fuel consumption (JC08 test cycle-based): 15.0km/l (CO<sub>2</sub> emissions: 155g/km). 5) France = Paris. U.S.A. = New York City. 6) France: Vehicle in no. 8 horsepower "class." 7) Service life: 12 years. 8) Currency exchange rates: €1 = ¥109, £1 = ¥135, US\$1 = ¥84 (averaged April 2012-March 2013).

Notes: 1. As shown here, tax amounts other than Japan's may not be the most current. 2. Does not include any green tax regimens that may apply. 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 12-year service life)



Assumptions: 1) A passenger car with 1800cc engine capacity and purchase price of ¥1.8 million (retail price, excluding consumption tax). 2) GVW: Under 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, 2013. 6) Consumption tax = 5% of retail price. 7) The recycling fee indicated is the average rate for an 1800cc passenger car.

Notes: 1. Estimated highway 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, 2013.) 2. Value of highway tolls was estimated by JAMA based on highway toll revenue in 2011. Source: Japan Automobile Manufacturers Association

# 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

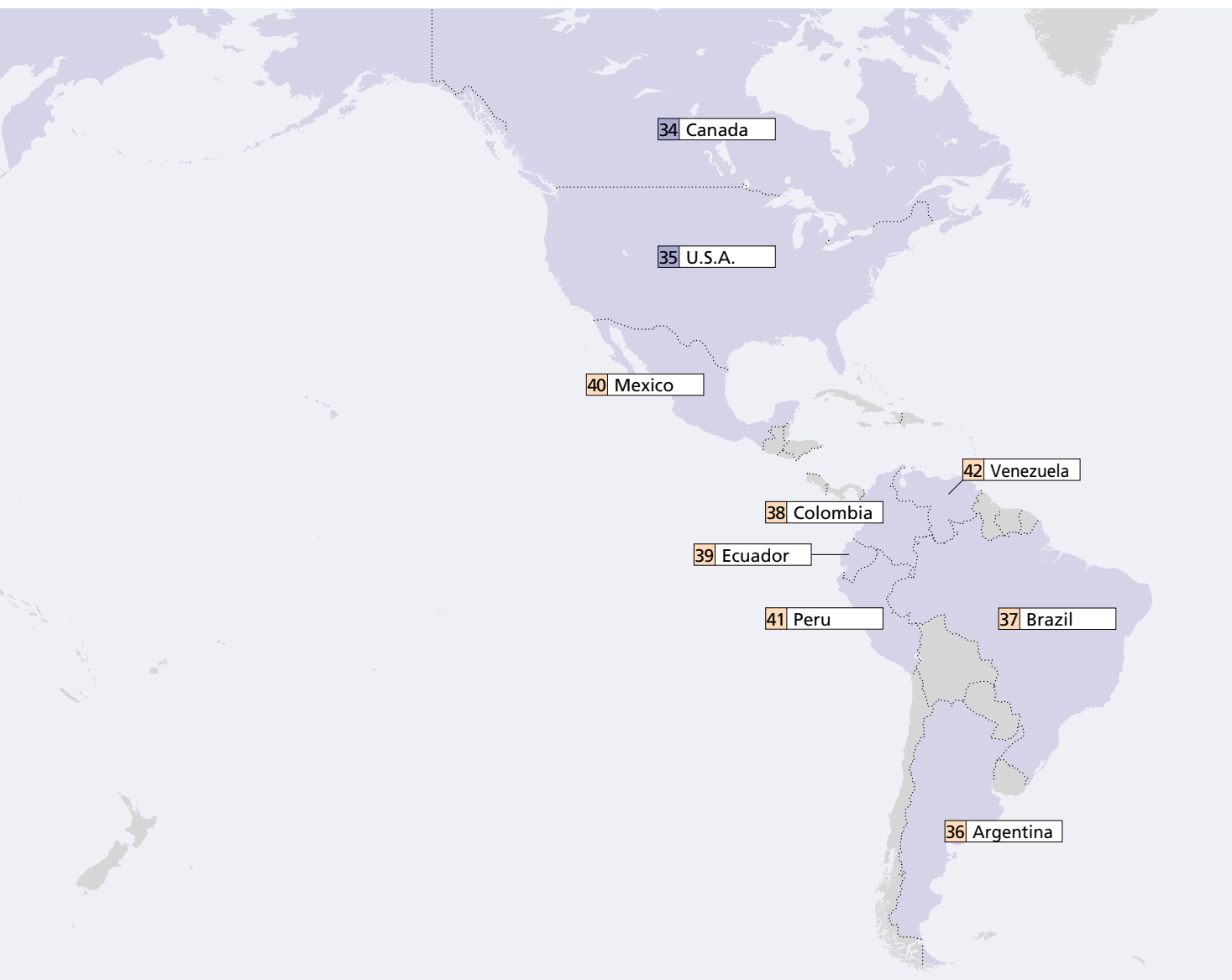


## ● JAPANESE AUTOMAKERS' OVERSEAS PRODUCTION BASES: Number of Plants by Country &

Country/ Territory	Country No. (see map)	Motor Vehicles (incl. parts)	Motor-cycles (incl. parts)	Motor Vehicles & Motorcycles (incl. parts)	Parts Only
<b>Europe</b>					
Belgium	1	-	-	-	1
Czech Republic	2	1	-	-	-
France	3	1	1	-	-
Hungary	4	1	-	-	-
Italy	5	-	1	-	1
Poland	6	-	-	-	3
Portugal	7	2	-	-	-
Russia	8	6	-	-	-
Spain	9	1	1	-	-
Turkey	10	4	-	-	-
UK	11	3	-	-	1
<b>Europe Total</b>		19	3	-	6

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	12	4	-	-	-
Kenya	13	3	-	-	-
Morocco	14	1	-	-	-
Nigeria	15	-	2	-	-
South Africa	16	6	-	-	-
Tunisia	17	1	-	-	-
Zimbabwe	18	1	-	-	-
<b>Africa Total</b>		16	2	-	-
<b>Middle East</b>					
Saudi Arabia	19	1	-	-	-
<b>Middle East Total</b>		1	-	-	-
<b>Oceania</b>					
Australia	20	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	21	2	-	-	-
Cambodia	22	-	1	-	-
China	23	23	8	-	17
India	24	8	4	-	1
Indonesia	25	9	4	1	9
Laos	26	-	1	-	-
Malaysia	27	10	3	-	2
Myanmar	28	1	-	-	-
Pakistan	29	6	1	1	-
Philippines	30	8	4	-	4
Taiwan	31	8	2	-	-
Thailand	32	13	4	-	8
Vietnam	33	8	2	1	1
<b>Asia Total</b>		96	34	3	42

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	34	4	-	-	1
U.S.A.	35	14	1	-	13
<b>North America Total</b>		18	1	-	14
<b>Latin America</b>					
Argentina	36	1	2	1	-
Brazil	37	5	4	-	2
Colombia	38	2	2	-	-
Ecuador	39	2	-	-	-
Mexico	40	5	1	1	-
Peru	41	-	1	-	-
Venezuela	42	2	1	-	-
<b>Latin America Total</b>		17	11	2	2
<b>World Total</b>		168	51	5	65

Source: Japan Automobile Manufacturers Association

## Overseas Production Benefits Local Economies

The global operations of Japanese automobile manufacturers continue to grow, focusing increasingly 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). Overseas production brings significant benefits to local economies and host countries, including employment, industrial development, and technology transfer.

### 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	7,547,127	0	1,410,628	1,302,277	3,068,979	2,422,152	1,029,511	233,709	93,675	13,383,629
2012	8,502,741	0	1,484,110	1,383,583	4,253,871	3,324,705	1,234,584	248,711	101,381	15,825,398

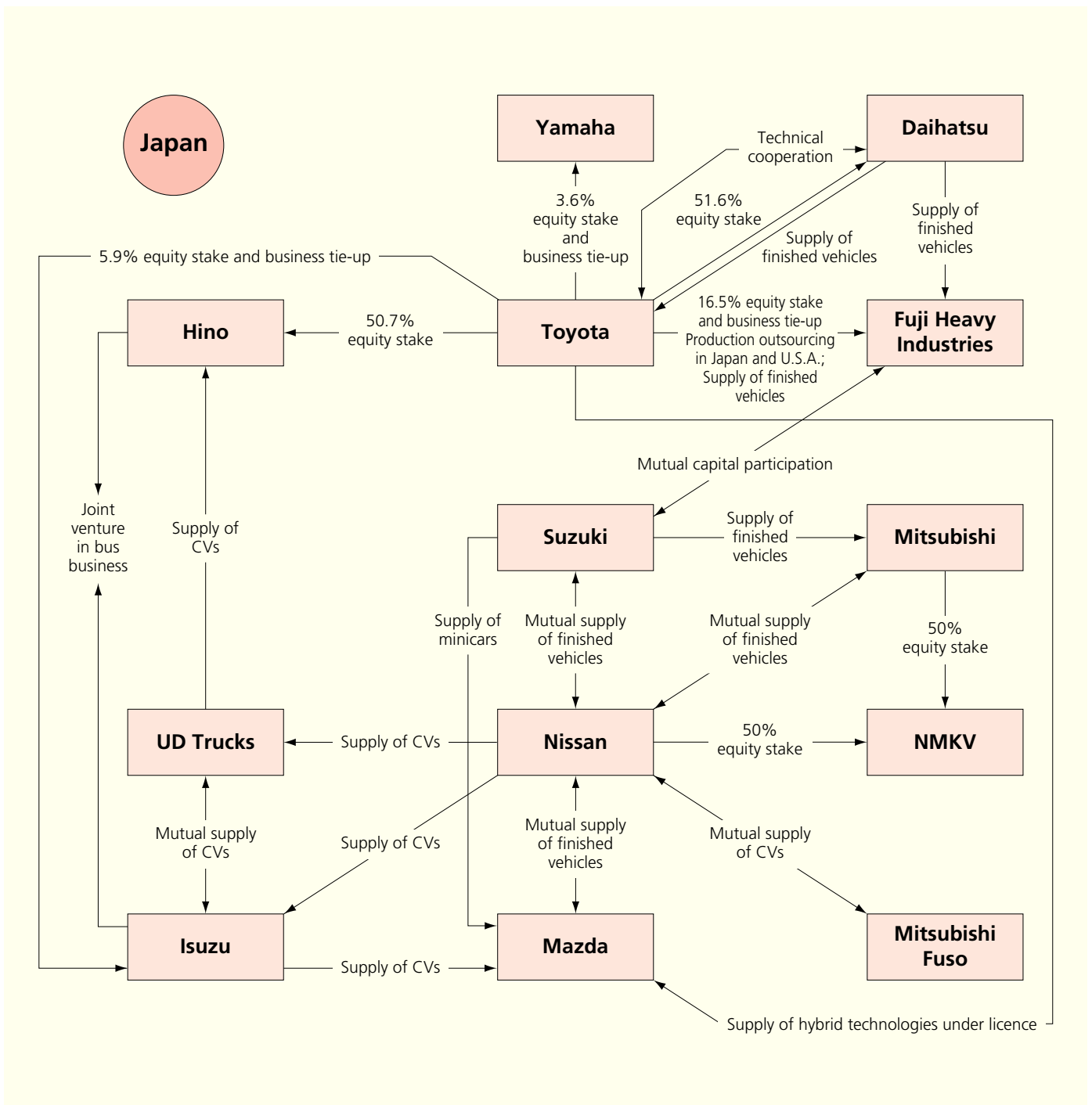
Notes: 1. Data in principle is for Japanese-brand vehicles only. 2. Until 1997, data was based on statistics supplied by the national automobile trade associations of respective countries. 3. Mexico is included in Latin America and Turkey in Europe. 4. Data excludes vehicles produced with technical assistance 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

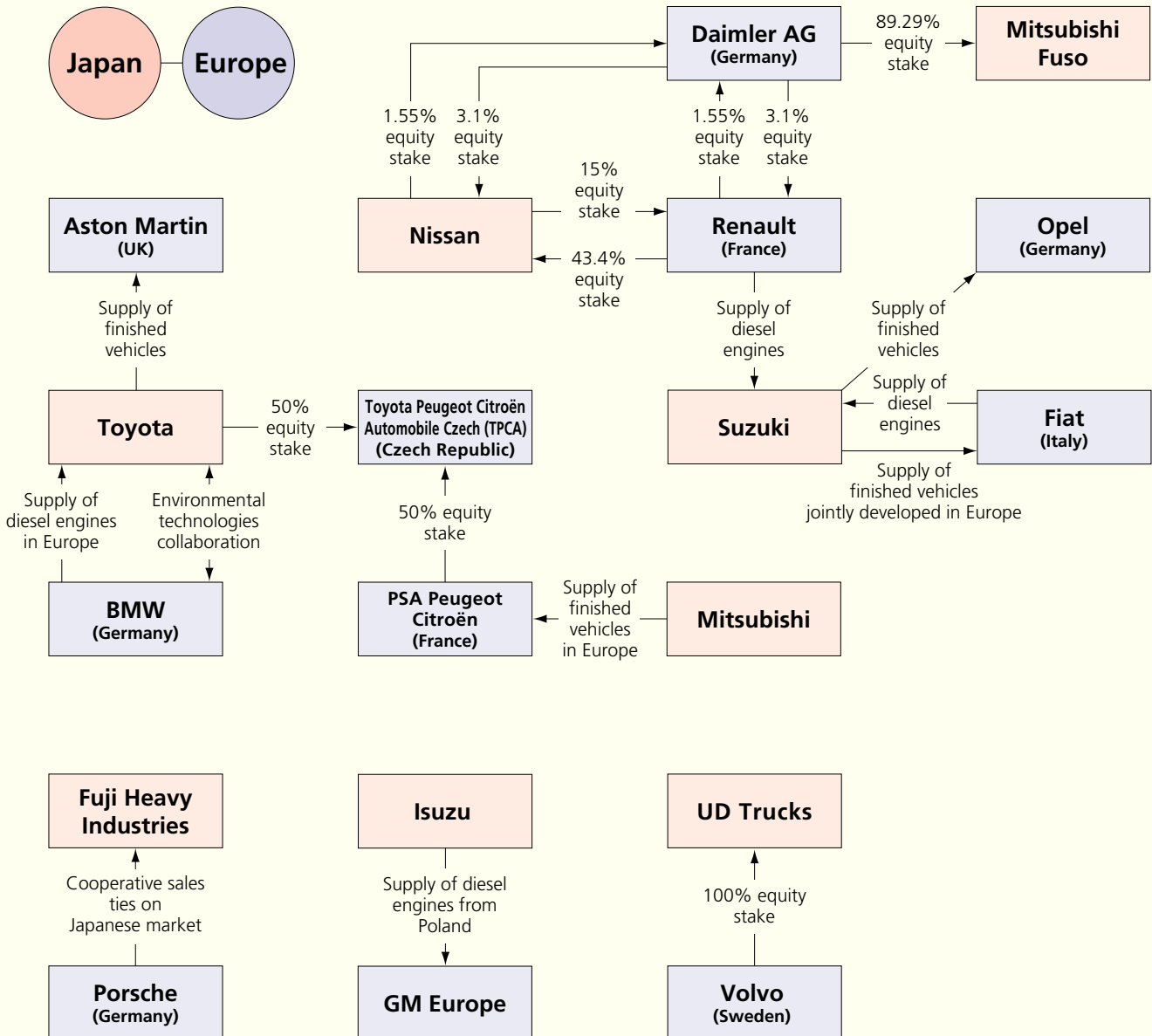
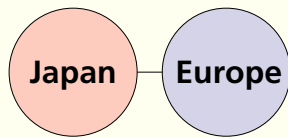
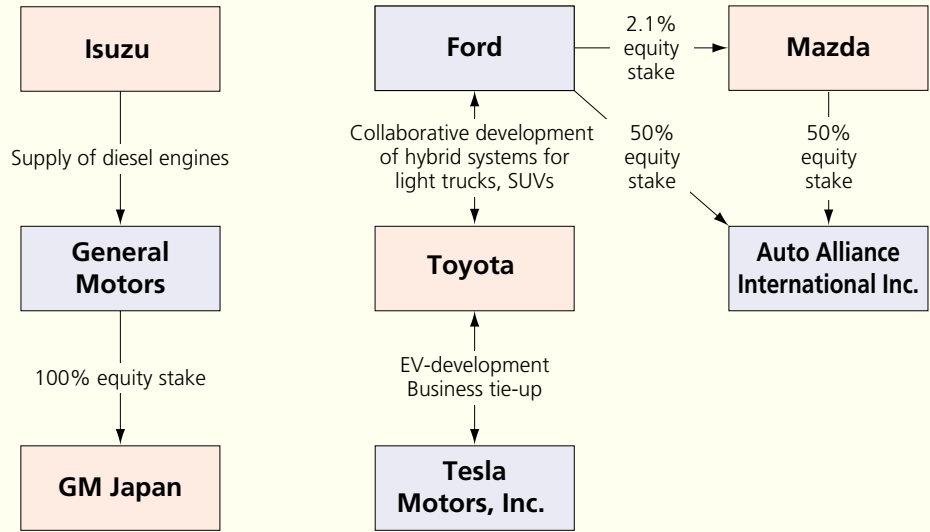
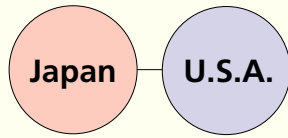
With economic globalization, Japanese automobile manufacturers have rapidly adapted to the needs of individual markets, not only by shifting production to those markets but also by forging extensive alliances with overseas manufacturers. Various forms of partnership currently exist between Japanese, 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 spread of motorization in China and Southeast Asia, Japanese automakers are 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.

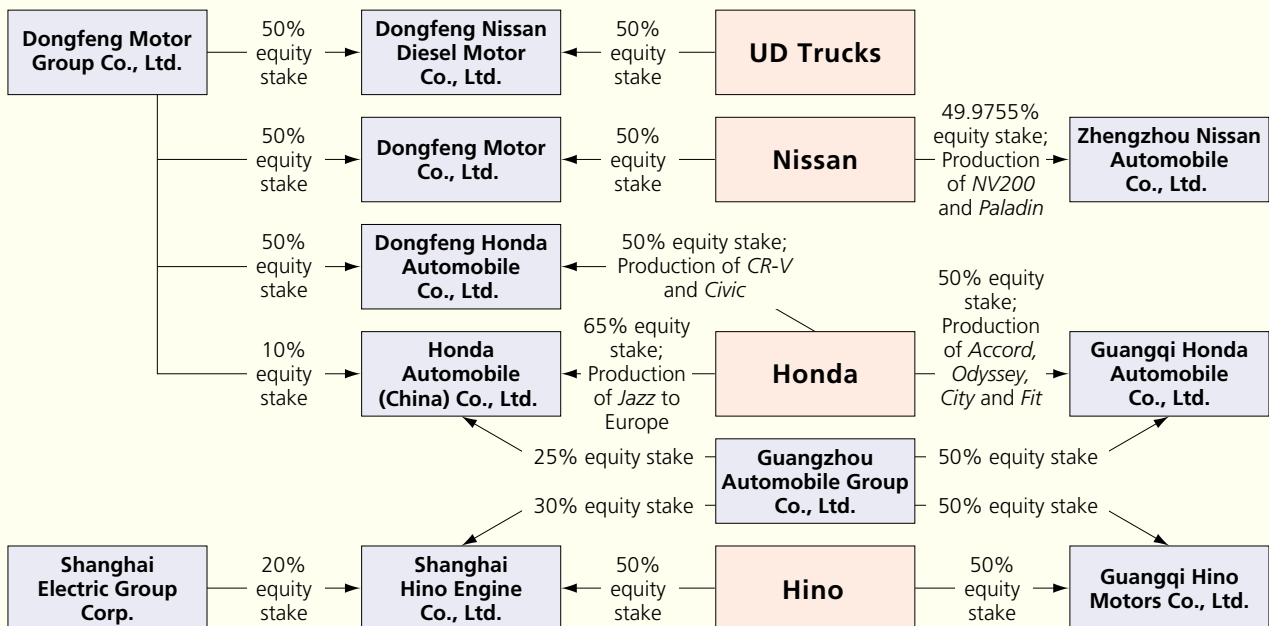
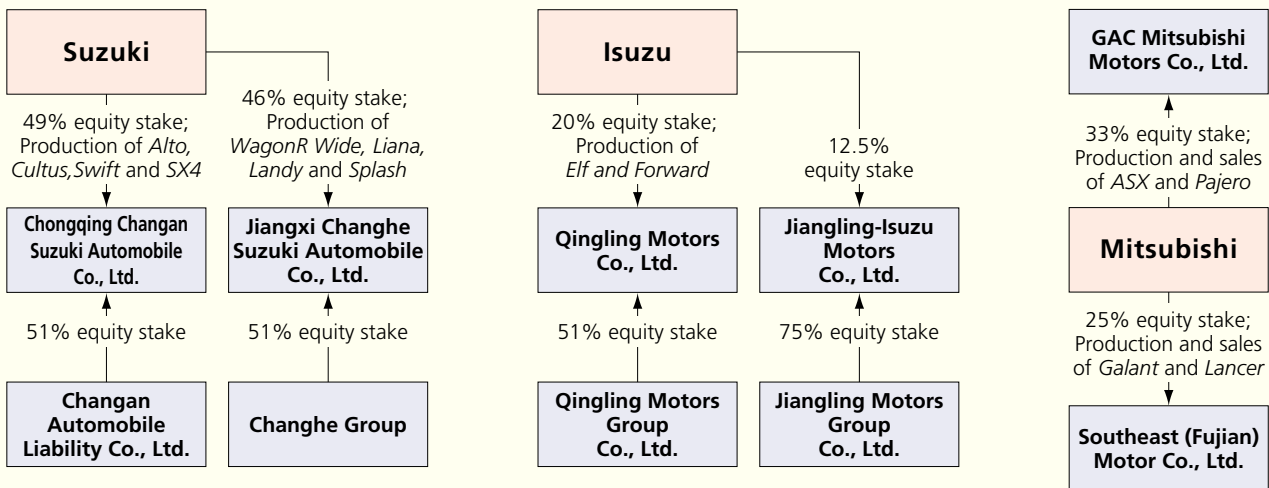
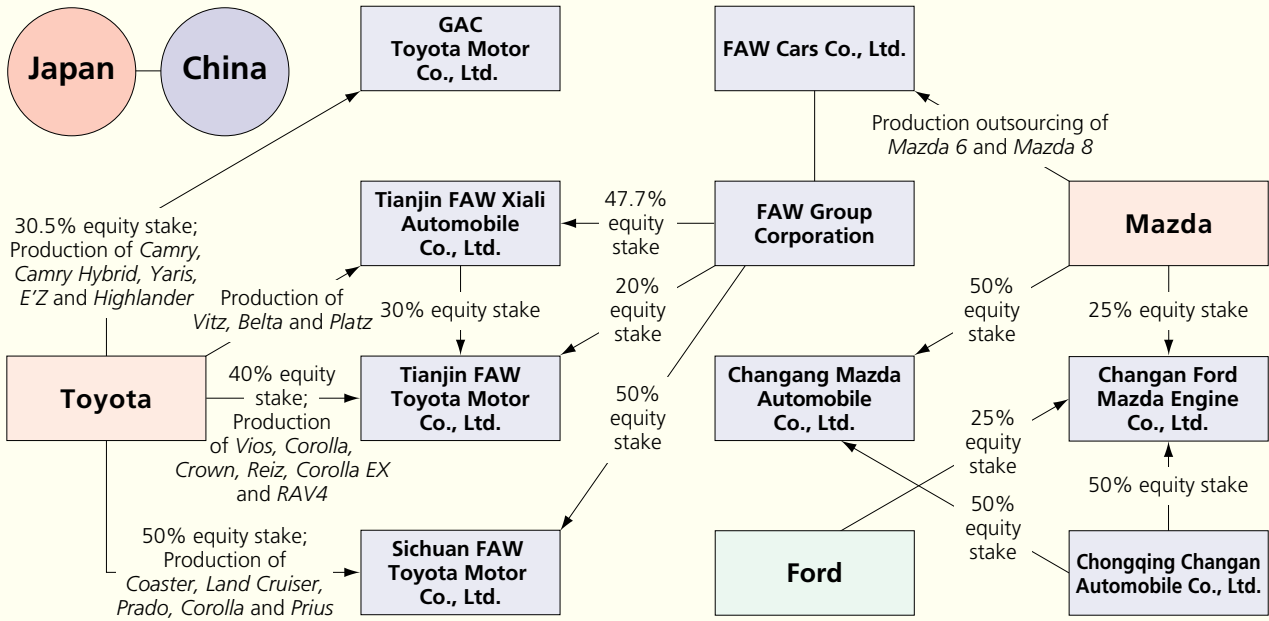
At March 31, 2013



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





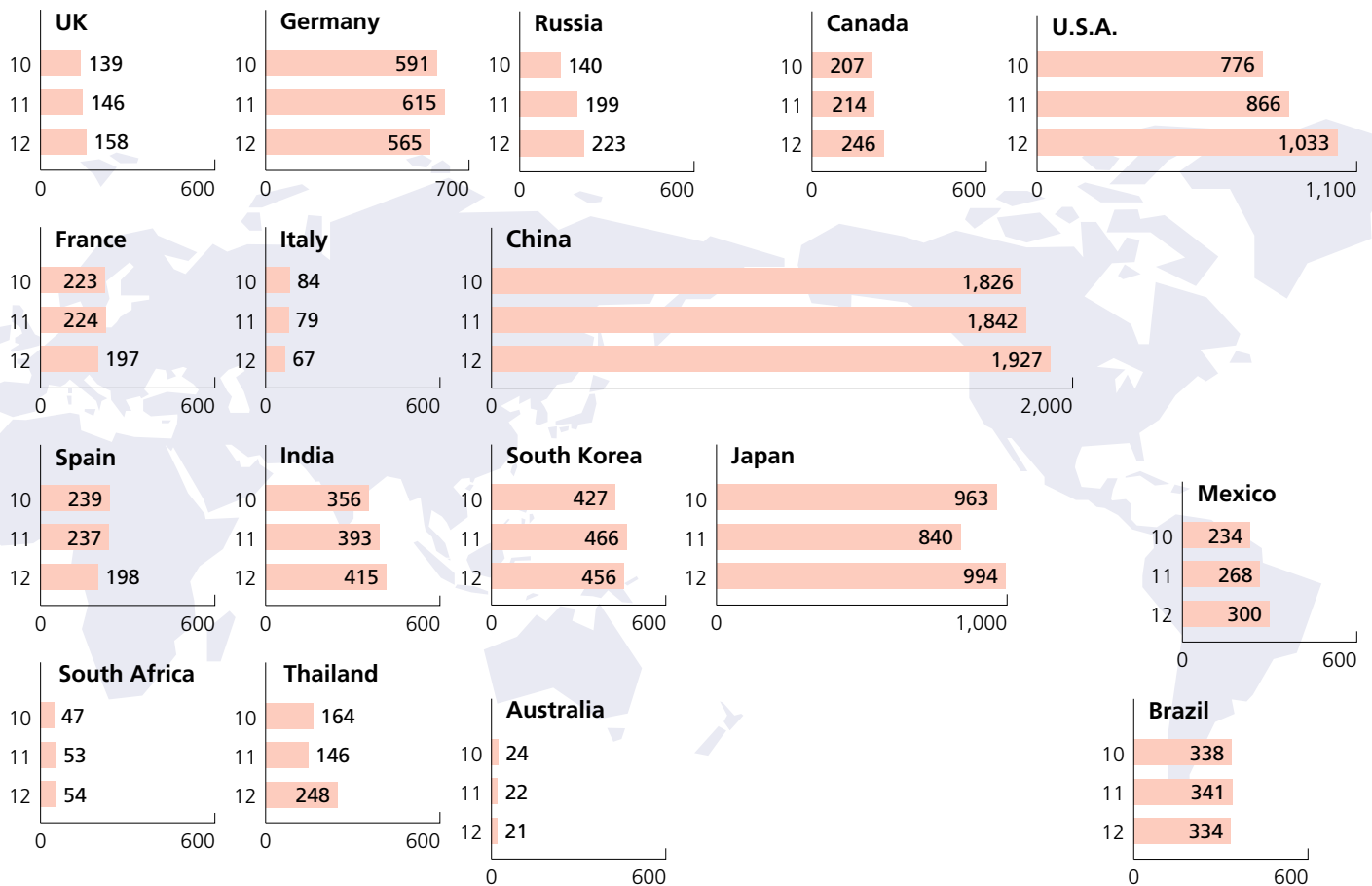


# Motor Vehicle Production Increases Worldwide Except in Europe

In 2012 worldwide motor vehicle production (excluding motorcycles) increased 5.3% from the previous year to a total of 84.14 million units. By region, production increased in North America (up 18.5% to 12.79 million units), Asia-Oceania (up 7.7% to 43.71 million units), Africa (up 5.3% to 586,000 units), and Latin America (up 3.3% to 7.23 million units), but decreased in Europe (down 5.4% to 19.82 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	2009			2010			2011		
	Mopeds	Motorcycles	Total	Mopeds	Motorcycles	Total	Mopeds	Motorcycles	Total
Austria	—	51,366	51,366	—	39,909	39,909	—	48,710	48,710
Czech Republic	74	675	749	49	733	782	39	1,116	1,155
France	—	—	109,705	—	—	92,900	—	—	74,359
Germany	—	82,438	82,438	—	99,244	99,244	—	110,084	110,084
Italy	—	—	477,000	—	—	455,176	—	—	414,000
Spain	—	—	115,602	—	—	123,123	—	—	95,399
UK	—	—	22,658	—	—	23,455	—	—	23,886
Russia	—	—	22,000	—	—	—	—	—	—
Brazil	—	1,539,473	1,539,473	—	1,830,614	1,830,614	—	2,136,891	2,136,891
China	—	23,592,594	25,427,676	—	24,476,418	26,681,807	—	24,654,624	27,005,224
India	—	—	10,512,903	—	—	13,349,349	—	—	15,453,619
Indonesia	—	3,658,414	5,884,021	—	—	7,395,390	—	—	8,006,293
Japan	—	644,901	644,901	—	664,175	664,175	—	639,187	639,187
Malaysia	—	—	436,430	—	—	467,941	—	—	498,076
Pakistan	—	—	736,861	—	—	838,665	—	—	828,576
Philippines	—	681,497	681,497	—	813,261	813,261	—	762,947	762,947
South Korea	—	—	96,583	—	—	—	—	—	—
Taiwan	—	—	1,016,796	—	—	1,028,517	—	—	1,207,428
Thailand	—	—	1,634,123	—	—	2,024,599	—	—	2,043,039

Note: "—" means data is not available.

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

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

In vehicle units

Country/Region/ Territory	2010			2011			2012		
	Passenger Cars	Trucks & Buses	Total	Passenger Cars	Trucks & Buses	Total	Passenger Cars	Trucks & Buses	Total
Austria	86,183	18,814	104,997	130,343	22,162	152,505	124,000	19,060	143,060
Belgium	528,996	26,306	555,302	560,779	34,305	595,084	507,204	34,670	541,874
Finland	6,385	280	6,665	2,540	0	2,540	2,900	0	2,900
France	1,924,171	305,250	2,229,421	1,931,030	311,898	2,242,928	1,682,814	284,951	1,967,765
Germany	5,552,409	353,576	5,905,985	5,871,918	275,035	6,146,953	5,388,456	260,813	5,649,269
Italy	573,169	265,017	838,186	485,606	304,742	790,348	396,817	274,951	671,768
Netherlands	48,025	46,107	94,132	40,772	32,379	73,151	28,000	29,462	57,462
Portugal	114,563	44,166	158,729	141,779	50,463	192,242	115,735	47,826	163,561
Spain	1,913,513	474,387	2,387,900	1,839,068	534,261	2,373,329	1,539,680	439,499	1,979,179
Sweden	177,084	40,000	217,084	188,969	0	188,969	162,814	0	162,814
UK	1,270,444	123,019	1,393,463	1,343,810	120,189	1,463,999	1,464,906	112,039	1,576,945
Czech Republic	1,069,518	6,866	1,076,384	1,191,968	7,877	1,199,845	1,171,774	7,164	1,178,938
Hungary	208,571	2,890	211,461	211,218	2,313	213,531	215,440	2,400	217,840
Poland	785,000	84,474	869,474	741,000	97,133	838,133	540,000	107,803	647,803
Romania	323,587	27,325	350,912	310,243	24,989	335,232	326,556	11,209	337,765
Slovakia	561,933	0	561,933	639,763	0	639,763	900,000	0	900,000
Slovenia	201,039	10,301	211,340	168,955	5,164	174,119	126,836	4,113	130,949
Double Countings Germany/Belgium	-80,150	0	-80,150	-85,000	0	-85,000	-76,850	0	-76,850
Double Countings Germany/Italy	-4,346	0	-4,346	-6,570	0	-6,570	-5,400	0	-5,400
Double Countings Portugal/Japan	0	-10,047	-10,047	0	-8,847	-8,847	0	-7,166	-7,166
<b>European Union (EU27)</b>	<b>15,260,094</b>	<b>1,818,731</b>	<b>17,078,825</b>	<b>15,708,191</b>	<b>1,814,063</b>	<b>17,522,254</b>	<b>14,611,682</b>	<b>1,628,794</b>	<b>16,240,476</b>
Turkey	603,394	491,163	1,094,557	639,734	549,397	1,189,131	576,660	495,679	1,072,339
Serbia	17,384	649	18,033	10,227	796	11,023	10,227	796	11,023
Russia	1,208,362	194,882	1,403,244	1,744,097	246,058	1,990,155	1,968,789	262,948	2,231,737
Belarus	0	15,249	15,249	0	24,343	24,343	0	25,425	25,425
Ukraine	75,261	7,872	83,133	97,585	7,069	104,654	69,687	6,594	76,281
Uzbekistan	130,400	26,480	156,880	146,300	33,260	179,560	144,980	19,200	164,180
Double Countings Ukraine/World	-52,330	0	-52,330	-67,050	0	-67,050	0	0	0
<b>CIS</b>	<b>1,361,693</b>	<b>244,483</b>	<b>1,606,176</b>	<b>1,920,932</b>	<b>310,730</b>	<b>2,231,662</b>	<b>2,183,456</b>	<b>314,167</b>	<b>2,497,623</b>
<b>Europe</b>	<b>17,242,565</b>	<b>2,555,026</b>	<b>19,797,591</b>	<b>18,279,084</b>	<b>2,674,986</b>	<b>20,954,070</b>	<b>17,382,025</b>	<b>2,439,436</b>	<b>19,821,461</b>
Canada	967,077	1,101,112	2,068,189	990,482	1,144,639	2,135,121	1,040,298	1,423,434	2,463,732
U.S.A.	2,731,105	5,031,439	7,762,544	2,976,991	5,684,544	8,661,535	4,105,853	6,223,031	10,328,884
<b>North America</b>	<b>3,698,182</b>	<b>6,132,551</b>	<b>9,830,733</b>	<b>3,967,473</b>	<b>6,829,183</b>	<b>10,796,656</b>	<b>5,146,151</b>	<b>7,646,465</b>	<b>12,792,616</b>
Mexico	1,386,148	956,134	2,342,282	1,657,080	1,023,970	2,681,050	1,810,007	1,191,967	3,001,974
Argentina	508,401	208,139	716,540	577,233	251,538	828,771	497,376	267,119	764,495
Brazil	2,584,690	797,038	3,381,728	2,519,389	888,472	3,407,861	2,623,704	718,913	3,342,617
Venezuela	73,757	30,600	104,357	69,115	33,294	102,409	67,226	36,857	104,083
Double Countings Venezuela/World	-60,308	-16,683	-76,991	-56,520	-18,770	-75,290	-55,800	-21,640	-77,440
Other	37,197	31,552	68,749	28,030	24,322	52,352	70,686	24,322	95,008
<b>Latin America</b>	<b>4,529,885</b>	<b>2,006,780</b>	<b>6,536,665</b>	<b>4,794,327</b>	<b>2,202,826</b>	<b>6,997,153</b>	<b>5,013,199</b>	<b>2,217,538</b>	<b>7,230,737</b>
<b>North and Latin America</b>	<b>8,228,067</b>	<b>8,139,331</b>	<b>16,367,398</b>	<b>8,761,800</b>	<b>9,032,009</b>	<b>17,793,809</b>	<b>10,159,350</b>	<b>9,864,003</b>	<b>20,023,353</b>
Australia	205,334	38,673	244,007	189,503	34,690	224,193	178,480	31,250	209,730
China	13,897,083	4,367,678	18,264,761	14,485,326	3,933,550	18,418,876	15,523,658	3,748,150	19,271,808
India	2,831,542	725,531	3,557,073	3,040,144	887,267	3,927,411	3,285,496	859,698	4,145,194
Indonesia	496,524	205,984	702,508	562,250	276,138	838,388	743,501	322,056	1,065,557
Iran	1,367,014	232,440	1,599,454	1,413,276	235,229	1,648,505	848,000	141,110	989,110
Japan	8,310,362	1,318,513	9,628,875	7,158,525	1,240,105	8,398,630	8,554,219	1,388,574	9,942,793
Malaysia	522,568	45,147	567,715	488,441	45,254	533,695	510,400	61,750	572,150
Pakistan	130,625	22,345	152,970	139,700	22,494	162,194	142,600	23,100	165,700
Philippines	56,128	9,497	65,625	45,751	8,170	53,921	46,390	8,970	55,360
South Korea	3,866,206	405,535	4,271,741	4,221,617	435,477	4,657,094	4,167,089	390,649	4,557,738
Taiwan	251,490	51,966	303,456	288,523	54,773	343,296	278,043	60,995	339,038
Thailand	554,387	1,090,126	1,644,513	537,987	919,811	1,457,798	957,623	1,525,420	2,483,043
Vietnam	40,334	1,952	42,286	29,904	1,277	31,181	38,900	1,570	40,470
Double Countings China/World	-114,774	0	-114,774	-119,670	0	-119,670	-127,610	0	-127,610
<b>Asia-Oceania</b>	<b>32,414,823</b>	<b>8,515,387</b>	<b>40,930,210</b>	<b>32,481,277</b>	<b>8,094,235</b>	<b>40,575,512</b>	<b>35,146,789</b>	<b>8,563,292</b>	<b>43,710,081</b>
Egypt	76,412	40,271	116,683	53,072	28,659	81,731	36,880	19,600	56,480
Morocco	35,546	6,520	42,066	54,638	4,839	59,477	103,364	5,379	108,743
South Africa	295,394	176,655	472,049	312,265	220,280	532,545	274,873	264,551	539,424
Double Countings Egypt/World	-26,790	-12,850	-39,640	-18,610	-9,220	-27,830	-11,660	-6,140	-17,800
Double Countings South Africa/World	-23,690	-56,110	-79,800	-25,780	-69,140	-94,920	-22,080	-84,140	-106,220
Other	0	3,718	3,718	0	5,634	5,634	0	5,769	5,769
<b>Africa</b>	<b>356,872</b>	<b>158,204</b>	<b>515,076</b>	<b>375,585</b>	<b>181,052</b>	<b>556,637</b>	<b>381,377</b>	<b>205,019</b>	<b>586,396</b>
<b>Grand Totals</b>	<b>58,242,327</b>	<b>19,367,948</b>	<b>77,610,275</b>	<b>59,897,746</b>	<b>19,982,282</b>	<b>79,880,028</b>	<b>63,069,541</b>	<b>21,071,750</b>	<b>84,141,291</b>

Note: Japan and Japan-related figures differ from OICA's.

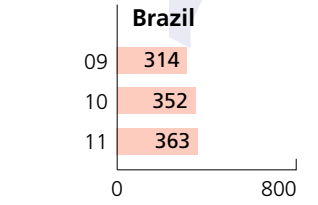
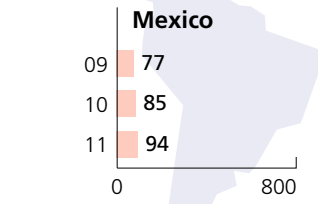
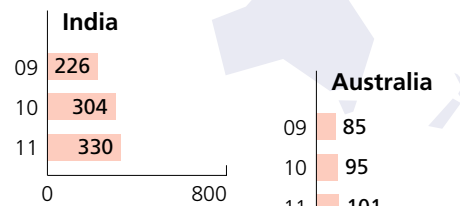
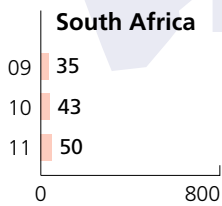
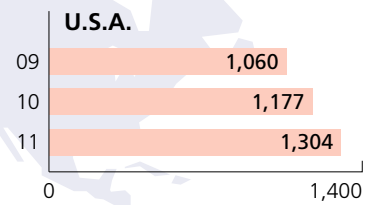
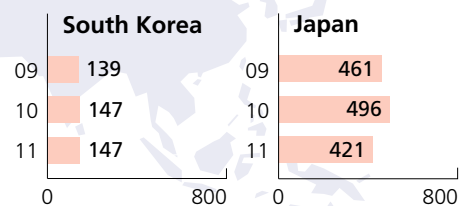
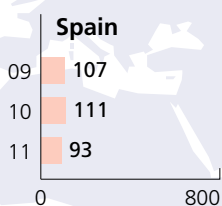
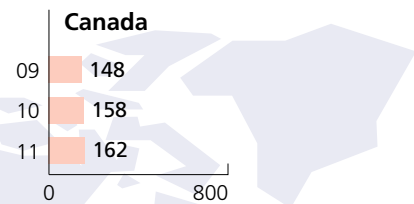
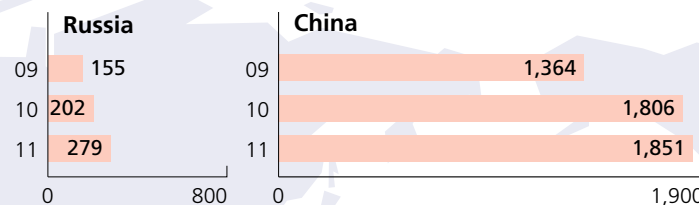
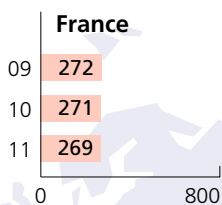
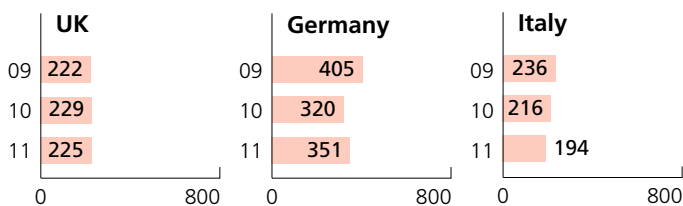
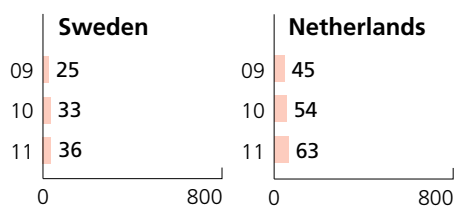
Sources: International Organization of Motor Vehicle Manufacturers (OICA); for Japan, Japan Automobile Manufacturers Association

# Motor Vehicle Sales Rise Across the Globe, Except in Japan, Italy, the UK, and France

In 2011 overall new motor vehicle registrations (excluding motorcycles) increased 4.1% over the previous year to a global total of 77.2 million units. Vehicle sales rose in Russia (up 38.3% to 2.79 million units), the United States (up 10.8% to 13.04 million units), Germany (up 9.7% to 3.51 million units), India (up 8.6% to 3.30 million units), Australia (up 6.3% to 1.01 million units), Brazil (up 3.4% to 3.63 million units), China (up 2.5% to 18.51 million units), Canada (up 2.3% to 1.62 million units), and South Korea (up 0.6% to 1.47 million units). On the other hand, new registrations dropped from the previous year in Japan (down 15.1% to 4.21 million units), Italy (down 10.3% to 1.94 million units), the United Kingdom (down 1.9% to 2.25 million units), and France (down 0.8% to 2.69 million 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	2009			2010			2011		
	Passenger Cars	Commercial Vehicles	Total	Passenger Cars	Commercial Vehicles	Total	Passenger Cars	Commercial Vehicles	Total
Austria	319,403	31,026	350,429	328,563	34,001	362,564	356,145	40,510	396,655
Belgium	476,194	60,587	536,781	547,347	61,177	608,524	572,211	72,027	644,238
Czech Republic	161,659	24,962	186,621	169,236	17,772	187,008	173,282	22,068	195,350
Denmark	112,436	19,316	131,752	153,562	19,675	173,237	169,974	28,471	198,445
Finland	90,574	12,442	103,016	111,956	14,428	126,384	126,116	18,302	144,418
France	2,302,398	416,183	2,718,581	2,251,669	457,215	2,708,884	2,204,229	482,823	2,687,052
Germany	3,807,175	242,184	4,049,359	2,916,260	282,157	3,198,417	3,173,634	334,822	3,508,456
Greece	220,548	17,438	237,986	141,499	12,341	153,840	97,682	6,976	104,658
Hungary	60,189	14,561	74,750	46,069	10,424	56,493	45,094	15,902	60,996
Italy	2,159,912	197,461	2,357,373	1,962,042	202,566	2,164,608	1,749,294	193,068	1,942,362
Netherlands	387,699	64,208	451,907	482,531	59,781	542,312	555,812	71,945	627,757
Poland	320,119	51,716	371,835	333,599	54,260	387,859	277,430	61,336	338,766
Portugal	160,996	42,686	203,682	223,491	49,270	272,761	153,433	37,883	191,316
Romania	130,193	17,769	147,962	106,328	13,089	119,417	94,624	16,044	110,668
Slovakia	74,717	18,044	92,761	64,033	9,800	73,833	68,203	9,701	77,904
Spain	952,772	121,450	1,074,222	982,015	132,104	1,114,119	808,059	123,353	931,412
Sweden	213,408	34,105	247,513	289,684	44,450	334,134	304,984	54,082	359,066
UK	1,997,087	225,455	2,222,542	2,032,977	260,599	2,293,576	1,942,995	306,488	2,249,483
Russia	1,465,917	79,780	1,545,697	1,910,573	104,800	2,015,373	2,653,408	133,800	2,787,208
Switzerland	266,018	28,681	294,699	294,239	30,540	324,779	318,958	36,298	355,256
Turkey	365,052	199,556	564,608	515,595	281,600	797,195	594,307	311,150	905,457
Canada	729,023	753,209	1,482,232	694,349	889,039	1,583,388	681,956	938,265	1,620,221
U.S.A.	5,400,890	5,200,478	10,601,368	5,635,433	6,136,787	11,772,220	6,089,422	6,951,210	13,040,632
Mexico	434,679	338,706	773,385	499,567	347,314	846,881	586,056	349,037	935,093
Brazil	2,474,764	666,476	3,141,240	2,644,706	870,358	3,515,064	2,647,245	986,003	3,633,248
Argentina	373,231	113,911	487,142	524,514	173,785	698,299	673,853	209,497	883,350
Venezuela	—	—	136,517	—	—	125,202	—	—	120,691
China	10,331,315	3,313,479	13,644,794	13,757,794	4,304,142	18,061,936	12,214,125	6,290,989	18,505,114
India	1,425,933	837,747	2,263,680	1,871,041	1,168,479	3,039,520	1,950,363	1,349,076	3,299,439
Japan	3,923,741	685,515	4,609,256	4,212,267	743,869	4,956,136	3,524,788	685,431	4,210,219
South Korea	1,174,743	219,257	1,394,000	1,217,764	247,662	1,465,426	1,211,284	263,353	1,474,637
Malaysia	486,342	50,563	536,905	543,594	61,562	605,156	535,113	65,010	600,123
Indonesia	361,907	124,181	486,088	541,475	223,235	764,710	601,945	292,219	894,164
Thailand	238,773	310,098	548,871	346,644	453,713	800,357	360,441	433,640	794,081
Australia	662,476	186,144	848,620	757,813	191,174	948,987	803,450	204,987	1,008,437
Egypt	158,926	46,595	205,521	192,848	56,069	248,917	133,165	42,992	176,157
South Africa	224,705	129,056	353,761	279,081	146,656	425,737	330,703	166,983	497,686
Other	956,507	339,950	1,296,457	1,187,405	423,403	1,610,808	1,268,063	446,551	1,714,614
<b>Grand Totals</b>	<b>45,402,421</b>	<b>15,234,975</b>	<b>60,773,913</b>	<b>50,769,563</b>	<b>18,589,296</b>	<b>69,484,061</b>	<b>50,051,846</b>	<b>22,052,292</b>	<b>72,224,829</b>
<b>World Total*</b>	<b>65,021,000</b>			<b>74,163,000</b>			<b>77,197,000</b>		

Note: The "—" for some entries for Venezuela means that the relevant data is not available at the end of March 2013, which accounts for the discrepancy, in the "Grand Totals" row, between the three "Total" figures and the figures (for both passenger cars and commercial vehicles) they represent. \*"World Total" figures have been calculated by JAMA and rounded off. Sources: Automobile manufacturers' associations of individual countries; for Japan, Japan Automobile Dealers Association; Japan Mini Vehicles Association; Japan Automobile Manufacturers Association

# More than One Billion Motor Vehicles in Use Worldwide

There were 1.07 billion motor vehicles (excluding motorcycles) in use worldwide in 2011, equivalent to 154 motor vehicles per 1,000 inhabitants or one vehicle for every 6.5 persons. Meanwhile, motorcycle density in recent years has been particularly high in Malaysia and Vietnam, with one motorcycle in use for every three persons; in Thailand and Indonesia, with one in use for every four persons; and in Italy, with one in use for every seven persons. In Japan, one motorcycle is in use for every ten persons.

## MOTOR VEHICLE DENSITY: INTERNATIONAL COMPARISONS (at end of 2011)

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.	409	799	1.3 (2.4)
Italy	615	697	1.4 (1.6)
Australia	551	691	1.4 (1.8)
Canada	590	618	1.6 (1.7)
France	497	600	1.7 (2.0)
Spain	483	598	1.7 (2.1)
Japan	459	591	1.7 (2.2)
Austria	536	586	1.7 (1.9)
Switzerland	526	577	1.7 (1.9)
UK	508	577	1.7 (2.0)
Belgium	491	567	1.8 (2.0)
Germany	525	562	1.8 (1.9)
<b>World Average</b>	154	107	6.5 (9.3)

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


## MOTOR VEHICLES IN USE WORLDWIDE (at end of 2011)

In vehicle units

Country	Passenger Cars	Commercial Vehicles	Total
Germany	42,927,647	3,055,708	45,983,355
Italy	37,113,300	4,953,778	42,067,078
France	31,425,000	6,516,000	37,941,000
UK	31,362,716	4,269,641	35,632,357
Spain	22,277,244	5,319,109	27,596,353
Netherlands	8,135,102	1,099,802	9,234,904
Belgium	5,407,015	840,630	6,247,645
Austria	4,513,421	417,054	4,930,475
Sweden	4,408,749	563,178	4,971,927
Poland	18,125,000	3,231,000	21,356,000
Switzerland	4,163,003	403,975	4,566,978
Turkey	8,113,111	3,948,903	12,062,014
Russia	36,415,100	6,446,678	42,861,778
U.S.A.	127,576,670	121,354,963	248,931,633
Canada	20,352,000	959,000	21,311,000
Mexico	22,175,785	9,813,663	31,989,448
Argentina	8,413,000	2,745,000	11,158,000
Brazil	27,490,694	7,164,275	34,654,969
Japan	58,670,314	16,842,573	75,512,887
China	43,220,000	50,280,000	93,500,000
South Korea	14,136,465	4,300,908	18,437,373
India	14,165,000	9,949,000	24,114,000
Thailand	4,798,000	6,605,000	11,403,000
Indonesia	9,685,000	7,171,000	16,856,000
Australia	12,474,044	3,164,896	15,638,940
South Africa	5,242,000	2,853,000	8,095,000
Other	124,572,663	39,458,050	164,030,713
<b>Grand Totals</b>	<b>747,358,043</b>	<b>323,726,784</b>	<b>1,071,084,827</b>

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

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

 x 1 person

2011	Malaysia	3
2009	Vietnam	3
2011	Thailand	4
2009	Indonesia	4
2011	Italy	7
2011	Switzerland	9
2011	Japan	10
2011	Spain	11
2011	Austria	12
2011	Netherlands	13
2011	China	13

Note: Date for Japan as at March 31.

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

## MOTORCYCLES IN USE WORLDWIDE

In vehicle units

Year	Country/Territory	Total
2011	Italy	8,610,000
2011	Spain	4,070,032
2011	France	3,439,417
2011	UK	1,468,800
2011	Netherlands	1,269,433
2011	Switzerland	833,891
2011	Austria	712,635
2011	Poland	2,102,175
2011	Czech Republic	944,171
2009	Russia	4,710,000
2011	Turkey	2,527,190
2009	U.S.A.	7,929,724
2009	Mexico	1,201,046
2009	Colombia	2,630,391
2011	China	102,602,397
2009	Indonesia	52,433,132
2011	Japan	12,205,926
2011	Thailand	18,152,469
2011	Taiwan	15,173,602
2011	Malaysia	9,986,919
2009	Vietnam	25,414,689
2009	South Korea	1,820,729
2009	Pakistan	5,607,334
2011	Philippines	3,760,893

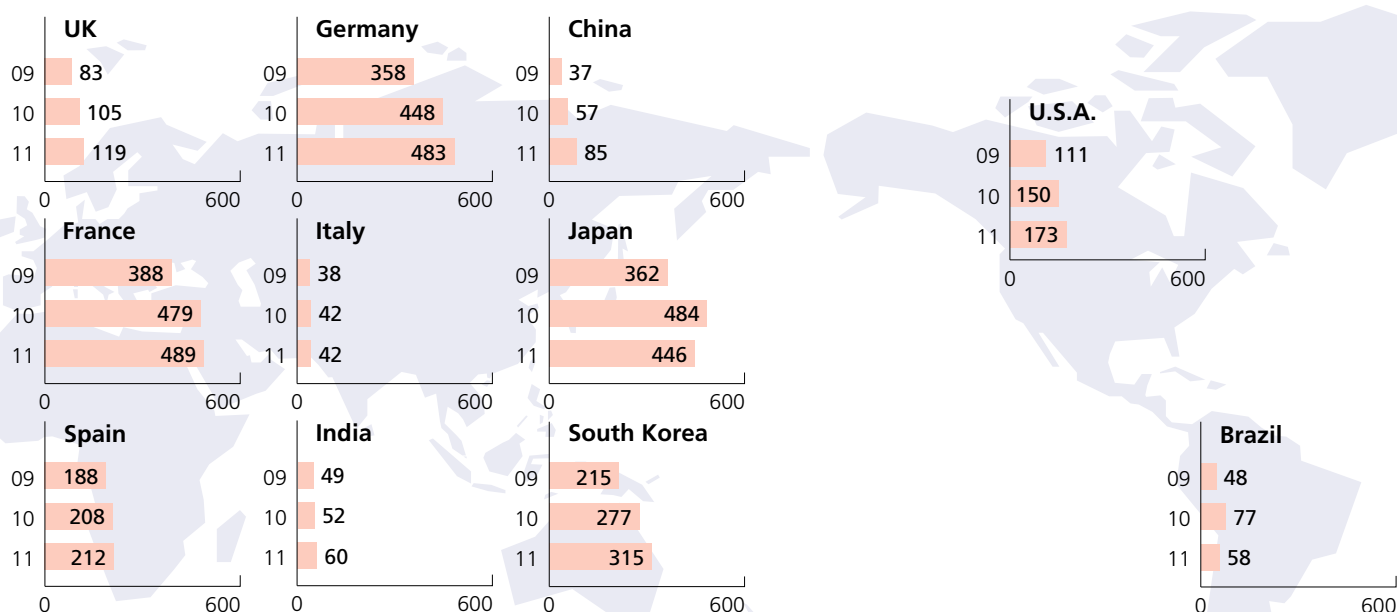
Sources: Ministry of Land, Infrastructure, Transport and Tourism; Ministry of Internal Affairs and Communications; Federation of Asian Motorcycle Industries (FAMI); Motorcycle Industry in Europe (ACEM), etc.

# A Worldwide Surge in Motor Vehicle Exports, Except in Brazil and Japan

Motor vehicle exports (excluding motorcycles) in 2011 increased over the previous year in China (to 850,000 units, up 50.0%), India (to 600,000 units, up 15.7%), the United States (to 1.73 million units, up 15.0%), the United Kingdom (to 1.19 million units, up 14.0%), South Korea (to 3.15 million units, up 13.7%), Germany (to 4.83 million units, up 7.7%), and France (to 4.89 million units, up 2.2%), but decreased in Brazil (to 579,000 units, down 24.6%) and Japan (to 4.46 million units, down 7.8%). Motorcycle exports in 2011 showed a year-on-year rise in China (to 10.56 million units, up 27.3%), India (to 1.95 million units, up 27.1%), and Japan (to 505,000 units, up 2.3%), but declined in Taiwan (to 300,000 units, down 0.8%).

## MOTOR VEHICLE EXPORTS (MAJOR EXPORTING COUNTRIES)

x 10,000 units



## MOTOR VEHICLE EXPORTS (MAJOR EXPORTING COUNTRIES)

In vehicle units

Country	2009			2010			2011		
	Passenger Cars	Commercial Vehicles	Total	Passenger Cars	Commercial Vehicles	Total	Passenger Cars	Commercial Vehicles	Total
Japan	3,208,639	407,529	3,616,168	4,275,366	566,094	4,841,460	3,929,904	534,509	4,464,413
U.S.A.	755,093	351,885	1,106,978	1,080,981	420,894	1,501,875	1,300,075	427,562	1,727,637
Germany	3,425,626	158,094	3,583,720	4,238,759	242,147	4,480,906	4,518,973	307,960	4,826,933
UK	762,234	66,454	828,688	961,420	85,547	1,046,967	1,124,676	69,376	1,194,052
France	3,542,282	340,931	3,883,213	4,306,065	480,430	4,786,495	4,336,759	556,356	4,893,115
Italy	251,038	131,571	382,609	231,557	184,833	416,390	203,769	219,857	423,626
Spain	1,555,149	328,026	1,883,175	1,658,341	421,441	2,079,782	1,642,578	478,490	2,121,068
Brazil	373,747	101,578	475,325	616,125	151,307	767,432	413,183	165,545	578,728
South Korea	2,007,230	141,632	2,148,862	2,610,949	161,158	2,772,107	2,980,659	171,049	3,151,708
China	153,005	217,025	370,030	282,368	284,285	566,653	470,090	379,718	849,808
India	446,145	45,009	491,154	444,326	74,043	518,369	507,318	92,663	599,981

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

## MOTORCYCLE EXPORTS (MAJOR EXPORTING COUNTRIES/TERRITORY)

In vehicle units

Country/Territory	2009			2010			2011		
	Mopeds	Motorcycles & Scooters	Total	Mopeds	Motorcycles & Scooters	Total	Mopeds	Motorcycles & Scooters	Total
Japan	0	543,879	543,879	0	493,464	493,464	0	504,985	504,985
China	—	6,234,302	6,234,302	—	8,291,590	8,291,590	—	10,555,996	10,555,996
Taiwan	—	335,330	335,330	—	302,350	302,350	—	299,866	299,866
Indonesia	—	—	29,815	—	—	29,395	—	—	30,995
India	—	—	1,140,058	—	—	1,531,619	—	—	1,947,198

Note: "—" means data is not available at the end of March 2013.

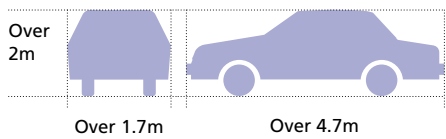
Sources: Automobile/motorcycle manufacturers' associations of individual countries; for Japan, Japan Automobile Manufacturers Association

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

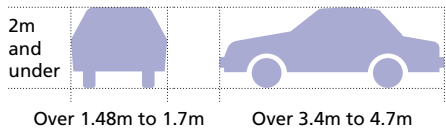
Japan classifies motor vehicles according to the provisions of two basic laws: the Road Vehicles Act and the Road Traffic Act. Road Vehicles Act classifications are used for registration statistics, vehicle inspection, and related maintenance and repair. Road Traffic Act classifications determine the 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.)

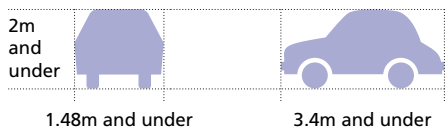
**Standard** Over 2,000cc in engine capacity, excluding diesel engines



**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 (1)</b> Gross vehicle weight: 5≤tons<11 Payload: 3≤tons<6.5 or Occupancy: 11≤persons<30
<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 per hour 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 middle-category motor vehicle classification went into application in June 2007.  
 (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
<b>Small-sized</b>	Over 250cc	Over 1.0kW	Over 1.3m	Over 2.0m	Over 2.5m	<b>Large</b>	Over 400cc
<b>Mini-sized</b>	126cc to 250cc	Over 1.0kW	1.3m and under	2.0m and under	2.5m and under	<b>Ordinary</b>	51cc to 400cc
<b>Motor-driven cycles Class 2</b>	51cc to 125cc	Over 0.6kW to 1.0kW	1.3m and under	2.0m and under	2.5m and under	<b>Motorized bicycles</b>	50cc and under
<b>Motor-driven cycles Class 1</b>	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

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

Usage Designations	
<b>Ordinary and large motor vehicles</b>	
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
<b>Mini-vehicles</b>	
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).

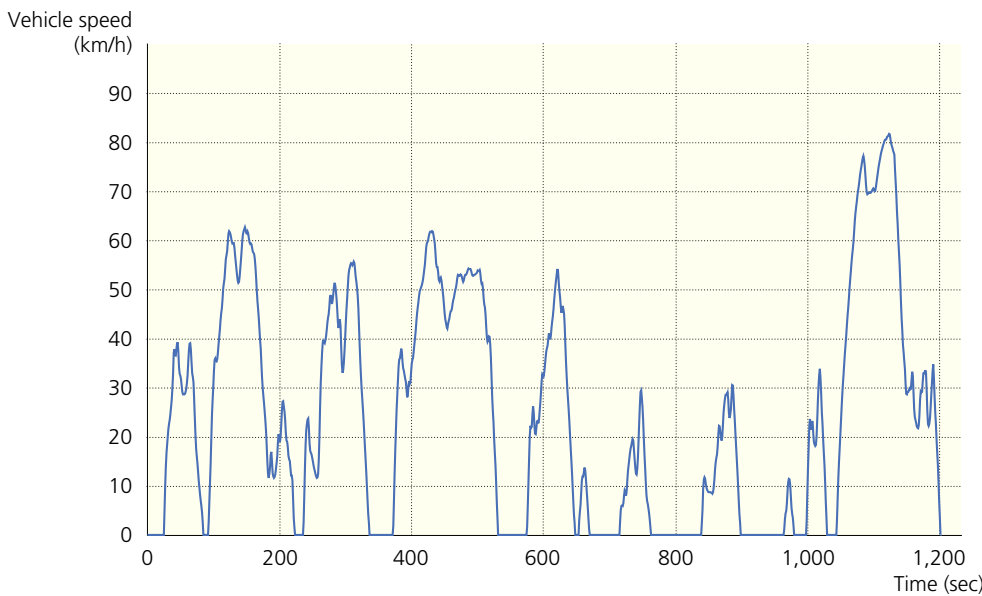
Number Assignment	
From "1" to "99-99"	

Number Plate Colors	
<b>Ordinary and large motor vehicles</b>	
Private use or rental vehicle	Green characters on white background
Commercial business use	White characters on green background
<b>Mini-vehicles</b>	
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

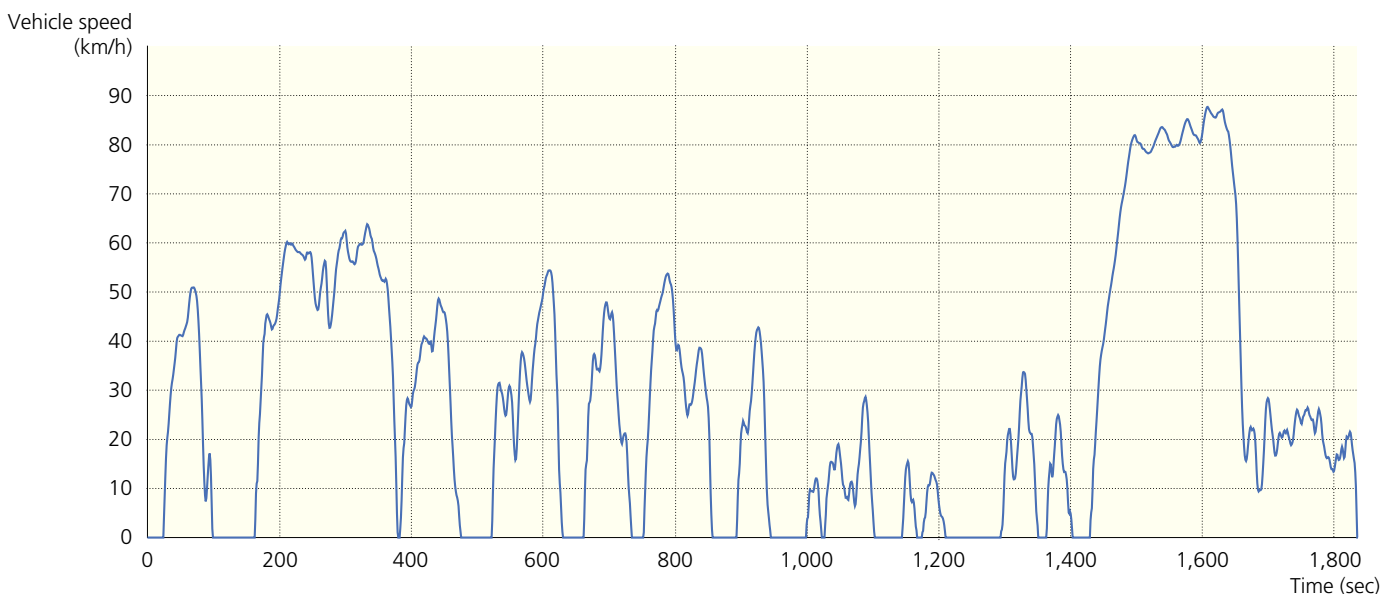
The JC08 test cycle is now the only test cycle applied in Japan to measure fuel consumption rates and exhaust emissions in non-heavy-duty vehicles, having replaced the 10-15-mode and (less commonly used) 11-mode test cycles. The objective in using the JC08 test cycle is to obtain test results that are as close as possible to actual on-road fuel consumption rates. Certified fuel efficiency values are therefore indicated on the basis of JC08 test cycle results and, for heavy-duty vehicles, on the basis primarily of JE05 test cycle results.

## ● THE JC08 TEST CYCLE



The JC08 cycle reflects typical vehicle running patterns in congested urban and urban expressway traffic (including idling and frequently-alternating acceleration and deceleration), but, compared to its predecessors, it increases the duration of the test cycle and the variation in running patterns. Measurement is made with both a cold start and a warm start, at a maximum speed of 82km/h.

## ● THE JE05 TEST CYCLE FOR HEAVY-DUTY VEHICLES (GVW>3.5t)



The JE05 cycle for heavy-duty vehicles includes idling and frequently-alternating acceleration and deceleration, also reflecting a typical vehicle running pattern in today’s congested urban areas, as well as an expressway running mode. Engine revolution and torque are predetermined to reach target speed based on test vehicle specifications. Measurement is made on the engine alone, while following the transient driving pattern.



## Alternative Systems Expedite Certification

Certification in Japan is based primarily on the Type Approval System, which is applied both to 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 third procedure, the Type Notification System, is 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 (MLITT) 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 MLITT 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

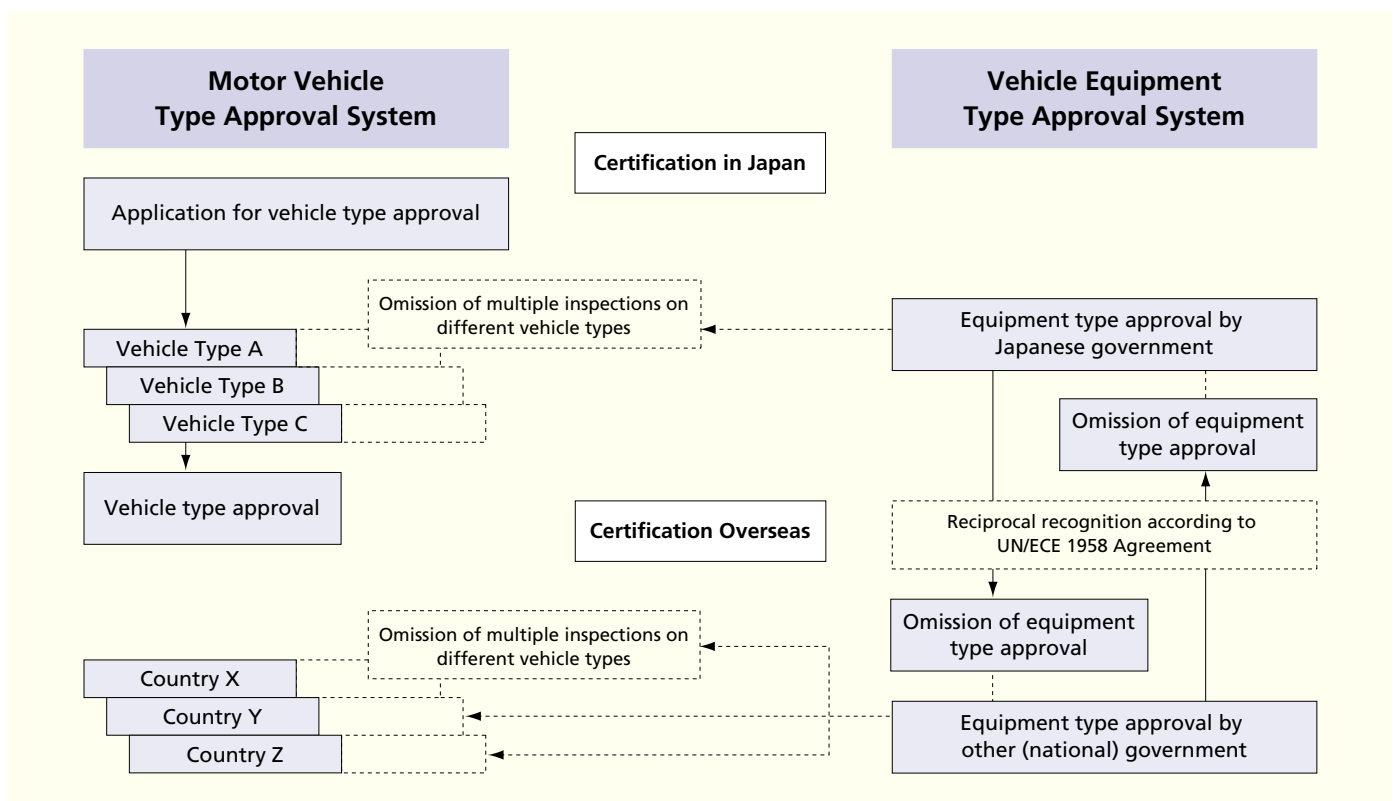
This procedure is applied to models that are imported into Japan in quantities of 2,000 units\* or less per year. Designed to make the importation of vehicles simpler and faster, it exempts the applicant from undergoing the sample vehicle inspection that is mandatory under the Type Approval System. The MLITT inspects only the application documentation and issues a form indicating completion of the procedure within one month.

\*In quantities of up to 5,000 units per year as of May 10, 2013.

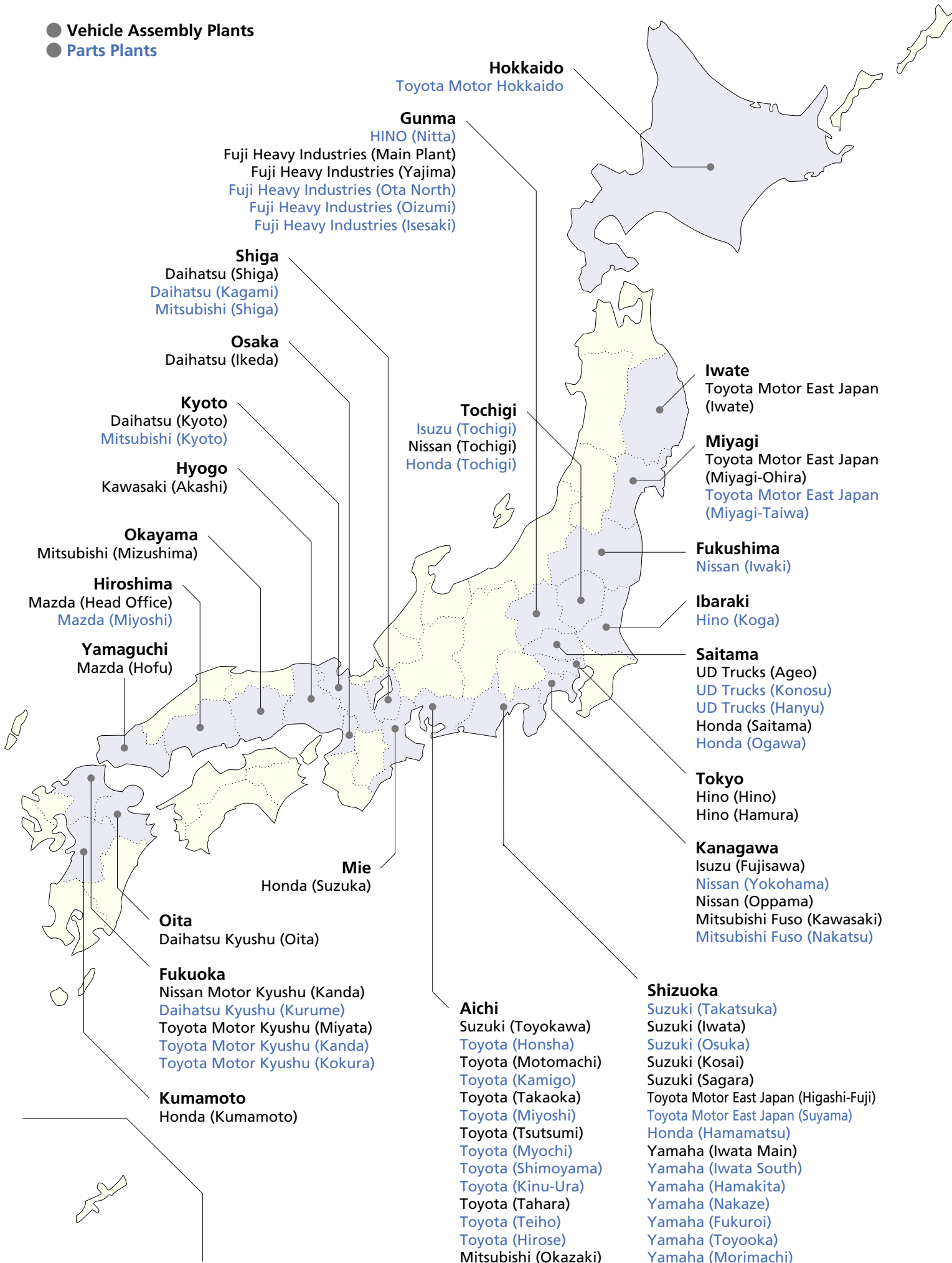
### RATIONALIZATION OF MOTOR VEHICLE/RECIPROCAL EQUIPMENT TYPE APPROVAL SYSTEMS

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 UN/ECE World Forum for Harmonization of Vehicle Regulations (also known as WP29) is making steady progress towards the establishment of global technical regulations (GTRs) focusing on vehicle safety and environmental standards. In 1998 the Japanese government officially acceded to the UN/ECE 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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