2020 2021 ____

The Automobile Industry Pocket Guide



European Automobile Manufacturers Association



Foreword

I am proud to present you the latest edition of ACEA's Pocket Guide. With the latest data on employment, production, sales, innovation, road safety and trade flows, this publication serves as a handy reference work on one of Europe's most strategic and innovative sectors: the automotive industry.

The automotive ecosystem provides work to 14.6 million Europeans, representing a sizeable 6.7% of total employment in the European Union¹. With 2.7 million people working on the manufacturing of vehicles across 226 factories in the EU, the auto industry accounts for 8.5% of total manufacturing jobs in the region.

More than 18.5 million vehicles were 'made in Europe' in 2019, representing 20% of global vehicle production. 5.6 million of these vehicles were exported around the world, generating a trade surplus of ξ 74 billion for the EU.

There are 313 million vehicles in circulation on Europe's roads today. Apart from ensuring that people and goods can move freely throughout the continent, these vehicles are a significant source of government revenue, bringing in over €440.4 billion in taxes.

Innovation is the core of our sector's DNA. Indeed, the auto industry is by far the biggest spender on R&D in the EU, investing an impressive €60.9 billion. This figure puts us well ahead of the global competition, and helps make the clean and smart mobility transformation a reality. It is not a surprise then to see that EU leads the world when it comes to patents for self-driving vehicles, responsible for a third of global applications.

Although the United Kingdom is no longer part of the European Union (as of 1 February 2020), ACEA decided to base this year's edition of the Pocket Guide on the former EU28 aggregate, as data included cover time frames during which the UK was still an EU member state.

We are unfortunately now facing very strong headwinds in the aftermath of the coronavirus crisis, which has hit our sector with an unprecedented force. Unless EU policy makers and national governments urgently step up their political and economic support, for instance with green fleet renewal schemes, last year's car sales total (15.3 million) will be slashed by around 25% in 2020, putting jobs, production and future investments under serious threat.

This Pocket Guide shows that the automobile industry is a key pillar of the European economy. As such, it is vital to the wider recovery of the continent. We stand committed to work with policy makers to ensure that our sector can keep contributing in a strong and green way to the EU's industrial base, as well as to its global innovation leadership.



Eric-Mark Huitema ACEA Director General

COVID-19 impact

The effect of the coronavirus on the European automobile industry is unprecedented. Most vehicle manufacturers have had to shut down their development and production sites for several weeks or even months this year. Although the exact ramifications of COVID-19 for full-year 2020 results are still unknown, these figures show the impact of the coronavirus on auto production and employment at the peak of the crisis.

- The jobs of more than 1.1 million Europeans working in automobile manufacturing were directly affected by factory shutdowns during the lockdown period.
- EU-wide production losses amounted to more than 2.4 million motor vehicles during the peak crisis months of March, April and May 2020 alone; that is 13% of total production in 2019.

	Employees affected ¹	Estimated loss in production ² (number of vehicles)	Average shutdown duration ³ (in working days)
Austria	14,307	26,480	34
Belgium	30,000	33,360	25
Croatia	700	-	29
Czech Republic	45,000	155,060	29
Finland	4,500	11,604	25
France	90,000	278,425	34
Germany	568,518	616,591	30
Hungary	30,000	51,552	22
Italy	69,382	157,933	41
Netherlands	13,500	30,819	25
Poland	17,284	101,957	36
Portugal	20,000	41,525	35
Romania	20,000	68,673	31
Slovakia	20,000	114,632	24
Slovenia	2,890	19,399	27
Spain	60,000	452,155	34
Sweden	67,000	23,464	15
United Kingdom	65,455	262,715	41
TOTAL (EU+UK)	1,138,536	2,446,344	30

Impact of COVID-19 on the EU automobile industry

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MARCH - MAY 2020

1. ACEA based on multiple sources (Marklines, national automobile manufacturers' associations, OEM reporting)

2. ACEA based on Feb IHS Markit Production Forecast

3. Numbers refer to operating days (without weekends) according to latest OEM reporting

Key figures

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	EMPLOYMENT	
Manufacturing of motor vehicles (EU)	2.7 million people = 8.5% of EU employment in manufacturing	2018
Total (EU manufacturing, services and construction)	14.6 million people = 6.7% of total EU employment	2018
	PRODUCTION	
Motor vehicles (world)	92.8 million units	2019
Motor vehicles (EU)	18.5 million units = 20% of global motor vehicle production	2019
Passenger cars (world)	74.2 million units	2019
Passenger cars (EU)	15.8 million units = 21% of global passenger car production	2019
	REGISTRATIONS	
Motor vehicles (world)	93.3 million units	2019
Motor vehicles (EU)	17.9 million units = 19% of global motor vehicle registrations/sales	2019
Passenger cars (world)	74.9 million units	2019
Passenger cars (EU)	15.3 million units = 20% of global passenger car registrations/sales	2019
Petrol (EU)	58.9% market share	2019
Diesel (EU)	30.5% market share	2019
Electrically-chargeable (EU)	3.0% market share	2019
	TRADE	
Motor vehicle exports (extra-EU)	€135.9 billion	2019
Motor vehicle imports (extra-EU)	€62.0 billion	2019
Trade surplus	€73.9 billion	2019
	VEHICLES IN USE	
Motor vehicles (EU)	312.7 million units	2018
Passenger cars (EU)	271.5 million units	2018
Motorisation rate (EU)	610 vehicles per 1,000 inhabitants	2018
Average age of cars (EU)	10.8 years	2018
	ROAD SAFETY	
Road fatalities (EU)	48 people per million inhabitants	2019
	ENVIRONMENT	
Average CO2 emissions new cars (EU)	123g CO2/km	2019
	INNOVATION	
Automotive R&D investment	€60.9 billion	2018
	TAXATION	
Fiscal income from motor vehicles	€440.4 billion	2019

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THE AUTOMOBILE INDUSTRY POCKET GUIDE 2020/2021

Employment



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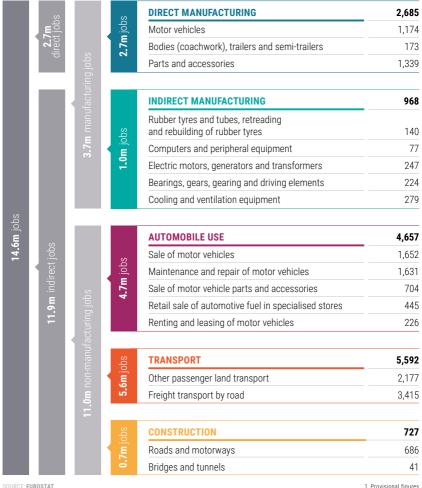
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Automotive sector: direct and indirect employment in the EU

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IN THOUSANDS / 20181



1. Provisional figures

The auto industry provides direct and indirect jobs for 14.6 million Europeans



Employment in the EU automotive sector

IN MILLION JOBS / 2014-2018

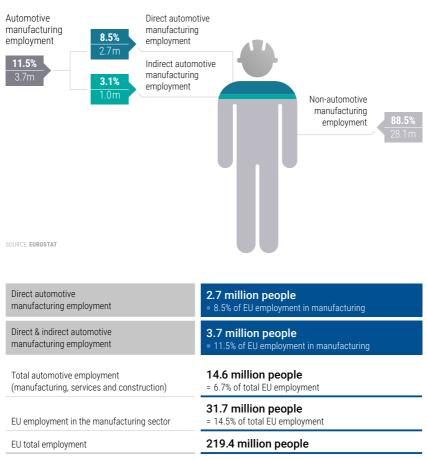
EU automotive employment	2014	2015	2016	2017	2018	% change 18/17
Direct manufacturing	2,369,951	2,441,910	2,491,693	2,597,345	2,685,478	3.4
Indirect manufacturing	892,885	910,004	899,647	958,152	967,925	1.0
Automobile use	4,264,490	4,304,382	4,453,169	4,531,379	4,657,198	2.8
Transport	4,980,618	5,047,587	5,229,789	5,390,441	5,591,549	3.7
Construction	641,931	675,338	650,011	705,199	727,230	3.1
TOTAL	13,149,875	13,379,221	13,724,309	14,182,516	14,629,380	3.2

SOURCE: EUROSTAT

The automotive sector accounts for 6.7% of all EU jobs

EU manufacturing employment

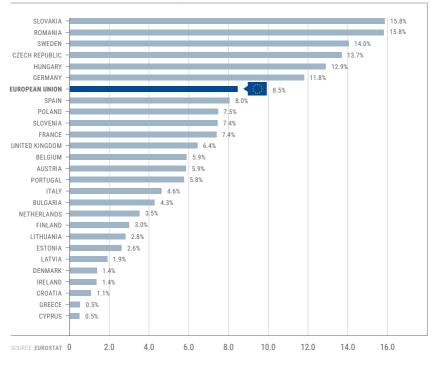
% SHARE / 2018



SOURCE: EUROSTAT

11.5% of EU manufacturing employment is in the auto sector

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Share of direct automotive employment in total manufacturing BY COUNTRY / 2018

Direct automotive manufacturing employment

BY COUNTRY / 2018

Austria	39,569	France	229,422	Poland	213,708
Belgium	28,768	Germany	882,046	Portugal	42,358
Bulgaria	23,777	Greece	1,737	Romania	190,848
Croatia	2,919	Hungary	101,865	Slovakia	81,273
Cyprus	168	Ireland	3,000	Slovenia	15,887
Czech Republic	181,415	Italy	176,303	Spain	162,634
Denmark	4,317	Latvia	2,317	Sweden	90,473
Estonia	2,880	Lithuania	6,163	United Kingdom	166,228
Finland	10,199	Netherlands	25,204		
	C	EUROPEAN UNION	2,685,478		

SOURCE: EUROSTAT

The EU automotive sector directly employs 2.7 million people in manufacturing

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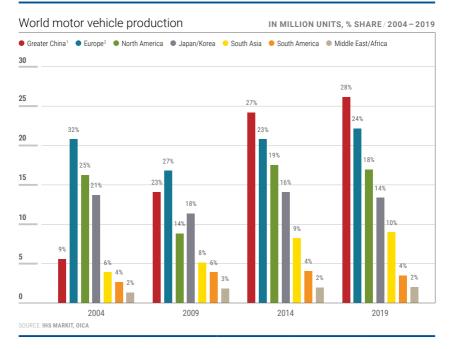
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Production



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World motor vehicle production

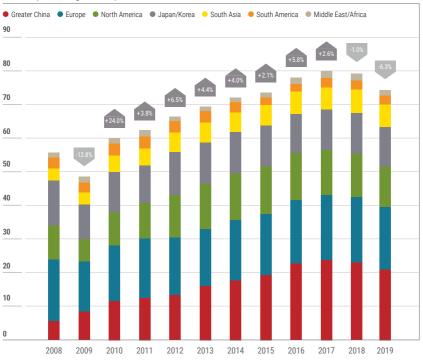
IN 1,000 UNITS / 2019

	2019	2018	% change 19/18	% share 2019
Europe ²	22,060	23,049	-4.3	23.8
Greater China ¹	26,149	28,297	-7.6	28.2
Japan/Korea	13,323	13,423	-0.8	14.4
Middle East/Africa	1,998	2,556	-21.8	2.2
North America	16,902	17,535	-3.6	18.2
South America	3,421	3,574	-4.3	3.7
South Asia	8,933	9,883	-9.6	9.6
WORLD	92,786	98,316	-5.6	100.0

SOURCE: IHS MARKIT, OICA

1. Includes Hong Kong and Taiwan 2. Includes Turkey and CIS countries

92.8 million motor vehicles were produced globally in 2019



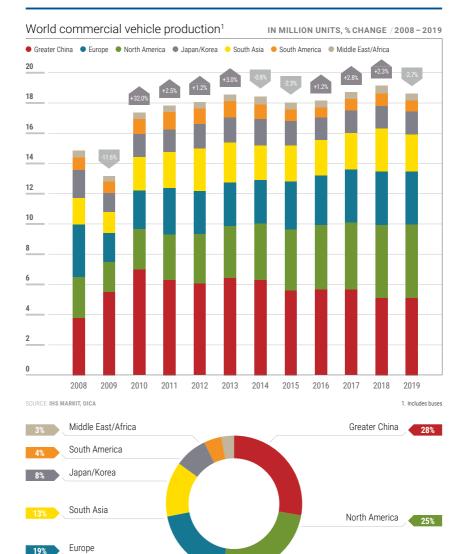
World passenger car production

IN MILLION UNITS, % CHANGE / 2008 - 2019

SOURCE: IHS MARKIT, OICA



25% of all passenger cars produced worldwide are made in Europe



% SHARE / 2019

19% of all commercial vehicles are manufactured in Europe

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Motor vehicle production in the EU

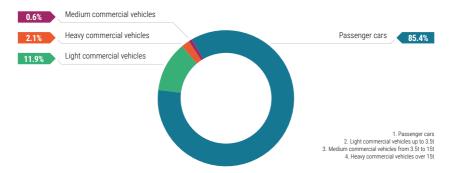
BY COUNTRY / 2019

	PC ¹	LCV ²	MCV ³	HCV ⁴	TOTAL
Austria	158,400	-	9,721	8,680	176,801
Belgium	247,020	-	-	38,434	285,454
Czech Republic	1,427,563	-	67	990	1,428,620
Finland	114,161	-	-	126	114,287
France	1,675,198	563,175	12,661	52,665	2,303,699
Germany	4,661,328	369,203	26,042	107,955	5,164,528
Hungary	498,158	_	-	_	498,158
Italy	542,007	302,820	29,680	5,217	879,724
Lithuania	-	-	-	56	56
Netherlands	176,113	-	-	82,226	258,339
Poland	434,700	186,441	6,923	14,438	642,502
Portugal	282,142	83,399	4,447	-	369,988
Romania	490,412	-	-	-	490,412
Slovakia	1,069,442	-	-	-	1,069,442
Slovenia	199,102	-	-	-	199,102
Spain	2,248,019	640,117	10,054	17,242	2,915,432
Sweden	285,709	-	-	47,600	333,309
United Kingdom	1,303,135	55,963	6,941	11,942	1,377,981
EUROPEAN UNION	15,812,609	2,201,118	106,536	387,571	18,507,834

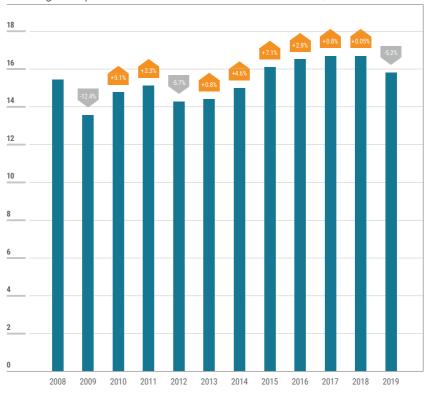
SOURCE: IHS MARKIT, OICA

EU motor vehicle production by type

% SHARE / 2019



18.5 million motor vehicles were manufactured in the EU in 2019

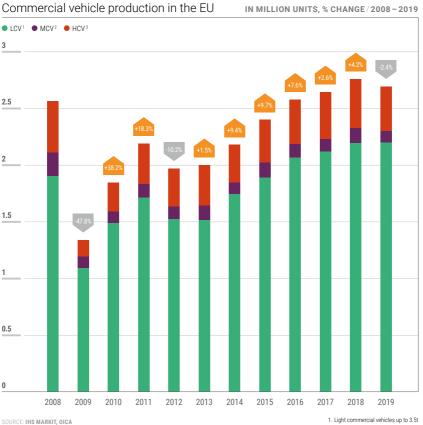


Passenger car production in the EU

IN MILLION UNITS, % CHANGE/2008-2019

SOURCE: IHS MARKIT, OICA

15.8 million cars were made in the EU in 2019

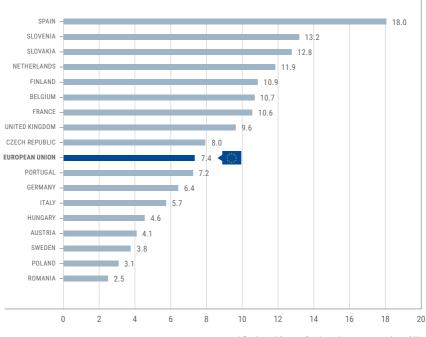


Light commercial vehicles up to 3.5t
 Medium commercial vehicles from 3.5t to 15t
 3. Heavy commercial vehicles over 15t

Some 2.7 million commercial vehicles were produced in the EU in 2019



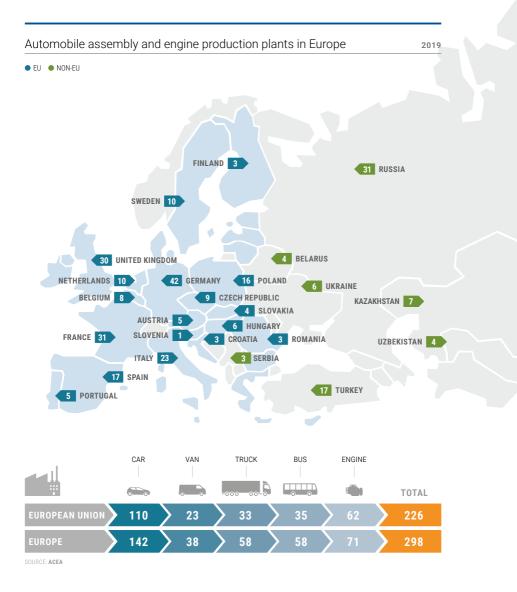




SOURCE: EUROSTAT, IHS MARKIT, OICA

1. Based on total direct manufacturing employment, most recent data available

The EU auto industry produces an average of 7.4 vehicles per worker



There are 226 automobile assembly and production plants in the EU

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Registrations





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% share 2019

22.7

19.2

0.6

20

0.5

0.1

0.3

IN THOUSAND UNITS / 2019

2019 2018 % change 19/18 EUROPE 21,136 21,070 0.3 European Union¹ 17,885 17,643 1.4 FFTA 555 551 0.6 Russia 1.828 1.901 -3.9 Turkev 491 643 -23.6 Ukraine 103 90 13.8 Others: Europe² 274 242 13.5 AMERICA 25.659 26,216 -2.1 20.967 North America 21.355 -1.8 of which the United States 17.641 17.857 -1.2 South America 4,692 4,861 -3.5 of which Brazil 2,784 2,550 9.2

27.5 22.5 18.9 5.0 3.0 45.6 ASIA 42.559 45,731 -6.9 China 26.271 28.546 -8.0 28.2 5,188 5,258 -1.3 5.6 Japan India 3,877 4,455 -13.0 4.2 South Korea 1,784 1,820 -2.0 1.9 Others: Asia³ 5,439 5,652 -3.8 5.8 MIDDLE EAST/AFRICA 4,356 -9.8 3,931 4.2 93,285 97,374 -4.2 100.0 WORLD

1. Data for Malta not available

2. Includes Belarus, Bosnia-Herzegovina, Kazakhstan, North Macedonia, Serbia, Uzbekistan

3. Includes Hong Kong, Taiwan and all the other South Asian countries



Europe accounts for almost 23% of the world's motor vehicle sales

New motor vehicle registrations

SOURCE: ACEA, IHS MARKIT

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New passenger car registrations

IN THOUSAND UNITS / 2019

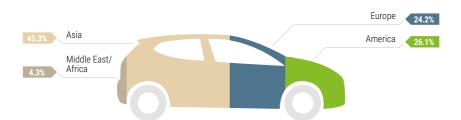
	2019	2018	% change 19/18	% share 2019
EUROPE	18,141	18,062	0.4	24.2
European Union ¹	15,340	15,159	1.2	20.5
EFTA	466	466	0.0	0.6
Russia	1,638	1,683	-2.7	2.2
Turkey	387	486	-20.4	0.5
Ukraine	90	77	17.6	0.1
Others: Europe ²	219	191	15.0	0.3
AMERICA	19,596	20,421	-4.0	26.1
North America ³	16,036	16,667	-3.8	21.4
of which the United States	13,464	13,910	-3.2	18.0
South America	3,559	3,754	-5.2	4.7
of which Brazil	2,262	2,090	8.3	3.0
ASIA	33,958	36,645	-7.3	45.3
China	21,163	23,220	-8.9	28.2
Japan	4,296	4,376	-1.8	5.7
India	3,074	3,464	-11.3	4.1
South Korea	1,488	1,519	-2.0	2.0
Others: Asia ⁴	3,937	4,065	-3.2	5.3
MIDDLE EAST/AFRICA	3,252	3,677	-11.6	4.3
WORLD	74,946	78,805	-4.9	100.0

SOURCE: ACEA, IHS MARKIT

Data for Malta not available
 Includes Belarus, Bosnia-Herzegovina, Kazakhstan, North Macedonia, Serbia, Uzbekistan

3. Based on production type

4. Includes Hong Kong, Taiwan and all the other South Asian countries



75 million passenger cars were registered worldwide in 2019

	2019	2018	% change 19/18	% share 2019
EUROPE	2,995	3,008	-0.4	16.3
European Union ²	2,545	2,484	2.5	13.9
EFTA	89	85	4.2	0.5
Russia	190	218	-13.0	1.0
Turkey	104	157	-33.7	0.6
Ukraine	12	13	-8.3	0.1
Others: Europe	55	51	8.0	0.3
AMERICA	6,063	5,795	4.6	33.1
North America ³	4,931	4,688	5.2	26.9
of which the United States	4,177	3,947	5.8	22.8
South America	1,133	1,106	2.4	6.2
of which Brazil	522	460	13.5	2.8
ASIA	8,601	9,087	-5.3	46.9
China	5,107	5,326	-4.1	27.8
Japan	892	882	1.1	4.9
India	803	990	-18.9	4.4
South Korea	296	301	-1.7	1.6
Others: Asia	1,503	1,587	-5.3	8.2
MIDDLE EAST/AFRICA	679	679	0.0	3.7
WORLD	18,339	18,569	-1.2	100.0

New commercial vehicle¹ registrations

IN THOUSAND UNITS / 2019

1. Includes light, medium and heavy commercial vehicles, and buses and coaches 2. Data for Malta not available

3. Based on production type



18.3 million vans, trucks and buses were registered globally in 2019

SOURCE: ACEA, IHS MARKIT

BY COUNTRY / 2019

	PC ²	LCV ³	CV^4	BC ⁵	TOTAL
AUSTRIA	329,363	43,425	8,082	1,163	382,033
BELGIUM	550,003	81,219	11,531	1,310	644,063
BULGARIA	35,371	5,985		_	41,356
CROATIA	62,975	8,982	1,472	278	73,707
CYPRUS	12,220	2,274	120	-	14,614
CZECH REPUBLIC	249,915	20,436	9,852	1,220	281,423
DENMARK	225,594	33,108	5,024	535	264,261
ESTONIA	26,589	4,403	1,034	200	32,226
FINLAND	114,199	14,702	4,020	593	133,514
FRANCE	2,214,279	478,375	56,261	6,780	2,755,695
GERMANY	3,607,258	304,965	98,399	6,437	4,017,059
GREECE	114,110	7,972	428	364	122,874
HUNGARY	157,900	26,203	5,276	705	190,084
IRELAND	117,100	25,350	2,209	445	145,104
ITALY	1,916,320	187,725	23,622	4,249	2,131,916
LATVIA	18,235	2,703	1,110	98	22,146
LITHUANIA	46,461	4,355	7,327	515	58,658
LUXEMBOURG	55,008	5,089	1,202	273	61,572
NETHERLANDS	446,114	76,395	15,448	935	538,892
POLAND	555,598	69,872	28,317	2,471	656,258
PORTUGAL	223,799	38,454	4,975	601	267,829
ROMANIA	161,562	16,985	6,435	1,952	186,934
SLOVAKIA	101,568	8,508	3,482	305	113,863
SLOVENIA	73,211	13,407	2,265	202	89,085
SPAIN	1,258,260	215,164	24,575	3,261	1,501,260
SWEDEN	356,036	53,816	7,308	1,318	418,478
UNITED KINGDOM	2,311,140	365,778	57,230	5,874	2,740,022
EUROPEAN UNION	15,340,188	2,115,650	387,004	42,084	17,884,926
ICELAND	11,717	1,383	304	79	13,483
NORWAY	142,381	37,736	7,411	2,296	189,824
SWITZERLAND	311,466	34,555	4,291	961	351,273
EFTA	465,564	73,674	12,006	3,336	554,580
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SOURCE: ACEA

The EU represents a market of 17.9 million motor vehicles

1. Data for Malta not available 2. Passenger cars

2. Passenger cars
 3. Light commercial vehicles up to 3.5t

Eight commercial vehicles op to 3.5t
 Commercial vehicles over 3.5t (trucks)

5. Buses and coaches over 3.5t



New passenger car registrations and annual GDP growth in the EU

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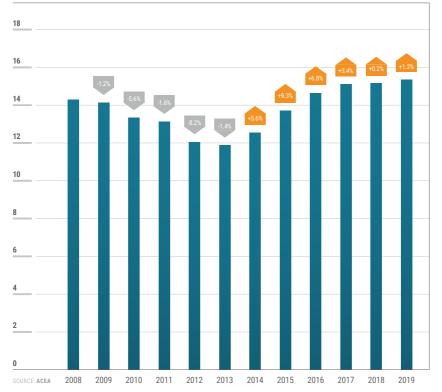
2008-2021

New commercial vehicle registrations and annual GDP growth in the EU

2008-2021 EU new commercial vehicle registrations¹ (million units)
 EU GDP growth (annual % change) 2.8 8% 2.6 6% 2.4 4% 2% 2.2 0% 2.0 1.8 -2% -4% 1.6 1.4 -6% -8% 1.2 1.0 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 SOURCE: ACEA, DG ECFIN, IHS MARKIT 1. Includes light, medium and heavy commercial vehicles, buses and coaches

Vehicle sales mirror economic growth

New passenger car registrations in the EU IN MILLION UNITS, % CHANGE/2008-2019



New commercial vehicle registrations in the EU

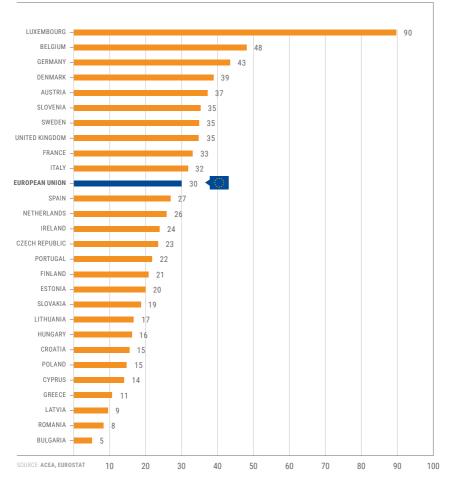
IN MILLION UNITS, % CHANGE/2008-2019



1. Light commercial vehicles up to 3.5t 2. Commercial vehicles, buses and coaches over 3.5t

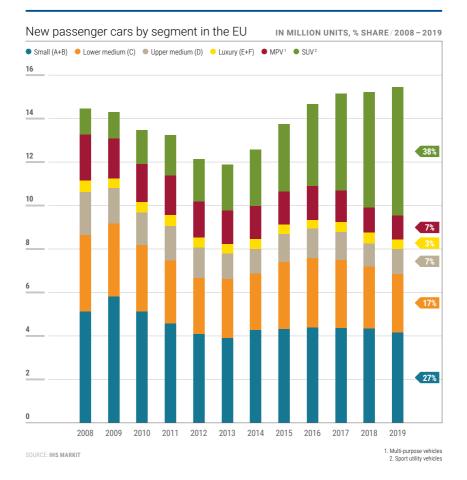
2.5 million commercial vehicles were registered in the EU in 2019

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New passenger car registrations per 1,000 inhabitants BY COUNTRY, IN UNITS / 2019

<u>30 new cars were registered per</u> 1,000 inhabitants in the EU in 2019



Small and medium cars account for over half of total EU car sales

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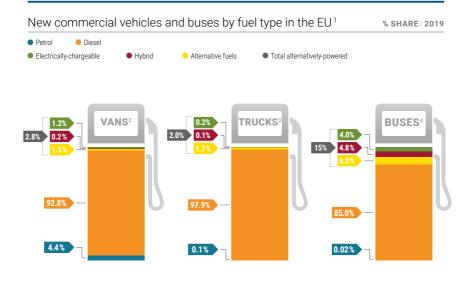


SOURCE: ACEA

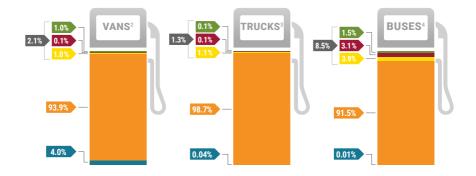
Data for Croatia, Cyprus, Luxembourg and Malta not available
 Includes battery electric vehicles, fuel-cell electric vehicles,
 extended-range and plug-in hybrid electric vehicles
 3. Includes full and mild hybrids
 4. Includes LPG, natural gas and ethanol vehicles

More than half of all new cars in the EU run on petrol (58.9%)

35



% SHARE / 2018



1. Data for Bulgaria, Croatia, Malta and Lithuania not available 2. Light commercial vehicles up to 3.5t 3. Commercial vehicles over 3.5t

Commercial vehicles over 3.5t
 Buses and coaches over 3.5t

The vast majority of commercial vehicles are fuelled by diesel

SOURCE: ACEA

THE AUTOMOBILE INDUSTRY POCKET GUIDE 2020/2021

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Trade

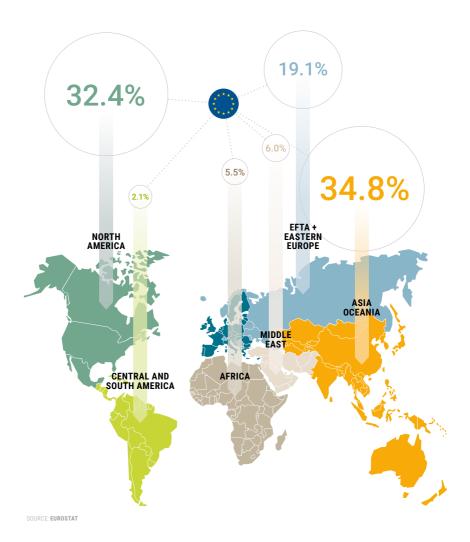


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EU motor vehicle trade

BY TYPE, IN MILLION € / 2019

Trade in value	PC ¹	LCV ²	CV & BC ³	TOTAL
2019				
Imports	53,222	6,326	2,489	62,037
Exports	124,614	3,990	7,333	135,937
Trade balance	71,392	-2,336	4,844	73,900
2018				
Imports	46,026	6,006	2,045	54,077
Exports	127,568	4,149	6,630	138,347
Trade balance	81,541	-1,857	4,585	84,270
% change 19/18				
Imports	15.6%	5.3%	21.7%	14.7%
Exports	-2.3%	-3.8%	10.6%	-1.7%
Trade balance	-12.4%	25.8%	5.6%	-12.3%

SOURCE: EUROSTAT

EU motor vehicle trade			BY TYPE, II	N UNITS/2019
Trade in volume	PC ¹	LCV ²	CV & BC 3	TOTAL
2019				
Imports	3,617,517	427,711	119,246	4,164,474
Exports	5,000,566	374,918	235,247	5,610,731
2018				
Imports	3,651,012	458,779	93,693	4,203,484
Exports	5,369,240	357,558	296,318	6,023,116
% change 19/18				
Imports	-0.9%	-6.8%	27.3%	-0.9%
Exports	-6.9%	4.9%	-20.6%	-6.8%

SOURCE: EUROSTAT

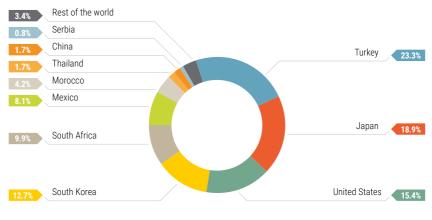
1. Passenger cars

2. Light commercial vehicles up to 5t 3. Commercial vehicles over 5t, including buses and coaches

The automobile industry generates an annual trade surplus of €74 billion for the EU

Countries of origin of EU motor vehicle imports VALUE MARK

VALUE MARKET SHARE / 2019

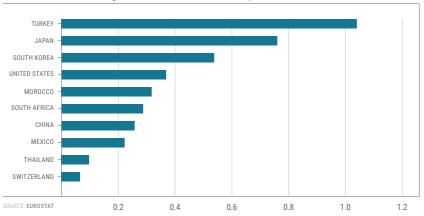


SOURCE: EUROSTAT

Main countries of origin of EU motor vehicle imports BY VALUE, IN MILLION €/ 2019

	2014	2015	2016	2017	2018	2019	% change 19/18	% share 2019
WORLD	31,327	39,109	45,932	52,705	54,077	62,037	14.7	100.0
Turkey	7,931	9,872	11,961	13,870	14,331	14,463	0.9	23.3
Japan	6,669	7,738	9,196	9,739	9,924	11,717	18.1	18.9
United States	4,949	7,008	7,302	6,590	5,671	9,528	68.0	15.4
South Korea	4,027	4,354	4,829	6,599	7,195	7,895	9.7	12.7
South Africa	1,609	2,757	3,639	3,901	4,884	6,147	25.9	9.9
Mexico	1,075	1,652	2,224	4,744	5,282	5,006	-5.2	8.1
Morocco	1,363	1,530	1,742	2,108	2,491	2,605	4.6	4.2
Thailand	751	931	1,134	1,139	965	1,048	8.6	1.7
China	192	212	284	465	590	1,034	75.4	1.7
Serbia	1,152	1,049	1,032	854	672	470	-30.1	0.8

SOURCE: EUROSTAT



Main countries of origin of EU motor vehicle imports IN MILLION UNITS/2019

Main countries o	f origin of EU	motor vehicle imports
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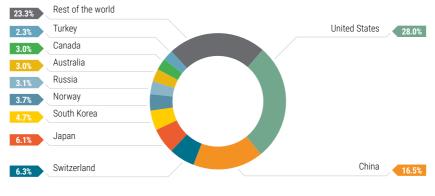
IN UNITS / 2019

	2014	2015	2016	2017	2018	2019	% change 19/18	% share 2019
WORLD	2,629,622	3,034,546	3,405,268	3,903,869	4,203,484	4,164,474	-0.9	100.0
Turkey	708,860	842,209	988,571	1,110,898	1,106,049	1,044,247	-5.6	25.1
Japan	438,278	481,314	580,691	646,682	681,221	762,483	11.9	18.3
South Korea	349,230	376,181	404,076	520,098	541,654	539,048	-0.5	12.9
United States	243,228	251,581	264,169	258,857	280,617	369,042	31.5	8.9
Morocco	168,995	188,370	217,969	264,607	311,305	317,935	2.1	7.6
South Africa	88,170	141,633	188,629	185,920	230,113	286,716	24.6	6.9
China	191,228	214,456	147,371	208,704	389,860	256,842	-34.1	6.2
Mexico	76,142	122,005	138,523	237,580	275,417	222,243	-19.3	5.3
Thailand	68,330	94,917	106,597	106,313	96,069	96,674	0.6	2.3
Switzerland	41,232	48,470	67,805	71,548	73,124	65,114	-11.0	1.6

SOURCE: EUROSTAT

Destinations for EU motor vehicle exports

VALUE MARKET SHARE / 2019

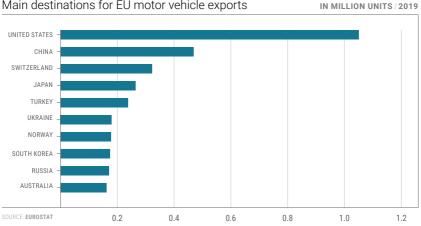


SOURCE: EUROSTAT

Main destir	nations for	EU moto	BY VALUE, IN MILLION €/2019					
	2014	2015	2016	2017	2018	2019	% change 19/18	% share 2019
WORLD	125,278	139,349	135,207	142,388	138,347	135,937	-1.7	100.0
United States	30,234	41,145	38,298	38,975	37,898	38,104	0.5	28.0
China	23,735	18,137	19,961	22,657	22,901	22,482	-1.8	16.5
Switzerland	7,374	8,648	8,269	8,429	8,094	8,594	6.2	6.3
Japan	6,031	6,507	7,362	8,204	8,434	8,282	-1.8	6.1
South Korea	4,937	7,234	6,325	6,840	7,356	6,379	-13.3	4.7
Norway	4,110	4,294	4,382	4,838	4,808	5,074	5.5	3.7
Russia	5,809	3,892	3,207	3,602	3,813	4,155	9.0	3.1
Australia	3,958	4,980	5,167	5,373	4,929	4,039	-18.1	3.0
Canada	3,188	3,826	4,094	4,508	4,266	4,032	-5.5	3.0
Turkey	5,971	8,577	8,673	7,554	4,840	3,134	-35.2	2.3

SOURCE: EUROSTAT

EU vehicle exports brought in €136 billion in 2019



Main destinations for EU motor vehicle exports

Main destinations for EU motor vehicle exports

IN UNITS / 2019

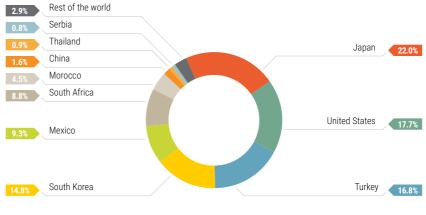
	2014	2015	2016	2017	2018	2019	% change 19/18	% share 2019
WORLD	6,063,651	6,084,750	6,254,941	5,983,463	6,023,116	5,610,731	-6.8	100.0
United States	1,010,196	1,271,612	1,200,995	1,190,782	1,171,383	1,053,909	-10.0	18.8
China	613,632	472,698	534,994	580,557	560,916	469,510	-16.3	8.4
Switzerland	301,777	331,908	315,251	303,723	293,217	321,289	9.6	5.7
Japan	237,991	250,839	279,778	282,625	286,451	264,837	-7.5	4.7
Turkey	418,346	592,114	585,255	525,417	315,044	240,200	-23.8	4.3
Ukraine	78,710	44,976	73,924	113,808	110,523	181,510	64.2	3.2
Norway	171,125	176,945	181,191	178,030	228,096	179,908	-21.1	3.2
South Korea	177,603	230,811	182,736	190,653	197,172	175,632	-10.9	3.1
Russia	328,960	191,707	145,352	160,838	185,130	171,857	-7.2	3.1
Australia	183,084	227,920	206,820	210,304	200,267	162,154	-19.0	2.9

SOURCE: EUROSTAT

18.8% of EU vehicle exports go to the United States

Countries of origin of EU passenger car imports

VALUE MARKET SHARE / 2019



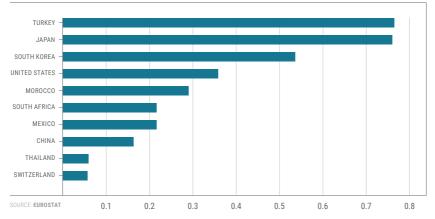
SOURCE: EUROSTAT

Main countries of origin of EU passenger car imports BY VALUE, IN MILLION € / 2019

	2014	2015	2016	2017	2018	2019	% change 19/18	% share 2019
WORLD	26,216	32,530	38,169	44,831	46,026	53,222	15.6	100.0
Japan	6,654	7,718	9,154	9,709	9,902	11,695	18.1	22.0
United States	4,911	6,964	7,233	6,420	5,539	9,424	70.1	17.7
Turkey	4,374	5,056	6,416	8,579	8,802	8,916	1.3	16.8
South Korea	4,014	4,330	4,812	6,585	7,180	7,866	9.6	14.8
Mexico	1,068	1,642	2,211	4,723	5,248	4,963	-5.4	9.3
South Africa	1,235	2,400	3,104	3,238	4,089	4,676	14.4	8.8
Morocco	1,225	1,369	1,548	1,907	2,257	2,372	5.1	4.5
China	112	104	136	369	482	865	79.4	1.6
Thailand	218	442	472	458	434	465	7.3	0.9
Serbia	1, 149	1,035	999	844	655	440	-32.8	0.8

SOURCE: EUROSTAT

The United States accounts for the second highest import value for cars, with a 17.7% share



Main countries of origin of EU passenger car imports IN MILLION UNITS/2019

Main countries of origin of EU passenger car imports

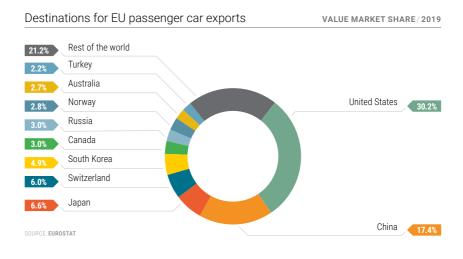
IN UNITS / 2019

	2014	2015	2016	2017	2018	2019	% change 19/18	% share 2019
WORLD	2,223,152	2,463,528	2,858,696	3,326,210	3,651,012	3,617,517	-0.9	100.0
Turkey	474,005	526,500	646,244	789,496	784,937	764,703	-2.6	21.1
Japan	437,238	479,785	578,206	644,698	679,524	760,717	11.9	21.0
South Korea	348,260	374,765	402,956	519,136	540,732	537,341	-0.6	14.9
United States	234,974	243,104	254,979	242,102	267,515	358,044	33.8	9.9
Morocco	152,588	169,823	196,739	240,908	283,622	292,148	3.0	8.1
South Africa	69,223	122,143	161,797	154,025	191,369	218,219	14.0	6.0
Mexico	75,539	121,075	137,249	235,533	271,883	217,856	-19.9	6.0
China	117,886	86,450	70,208	116,668	321,250	164,606	-48.8	4.6
Thailand	32,393	64,238	65,920	64,052	62,109	60,071	-3.3	1.7
Switzerland	35,617	42,314	61,053	64,151	65,914	58,523	-11.2	1.6

SOURCE: EUROSTAT

The EU imported 3.6 million cars in 2019

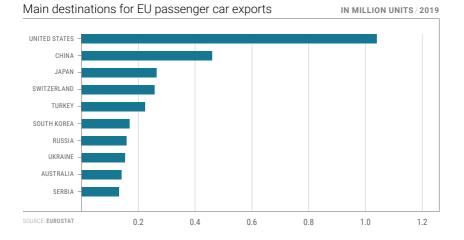
47.



Main destir	nations for	EU passe	exports	BY	VALUE, IN	MILLION	€/2019	
	2014	2015	2016	2017	2018	2019	% change 19/18	% share 2019
WORLD	115,117	129,049	124,850	131,605	127,568	124,614	-2.3	100.0
United States	29,779	40,466	37,721	38,335	37,242	37,631	1.0	30.2
China	23,492	17,948	19,741	22,337	22,311	21,734	-2.6	17.4
Japan	5,999	6,465	7,340	8,185	8,408	8,247	-1.9	6.6
Switzerland	6,393	7,619	7,332	7,432	7,044	7,494	6.4	6.0
South Korea	4,694	6,910	5,791	6,314	6,965	6,131	-12.0	4.9
Canada	3,014	3,640	3,904	4,317	4,018	3,697	-8.0	3.0
Russia	5,207	3,667	2,926	3,120	3,388	3,689	8.9	3.0
Norway	3,183	3,375	3,325	3,744	3,722	3,497	-6.0	2.8
Australia	3,482	4,593	4,603	4,652	3,950	3,373	-14.6	2.7
Turkey	5,147	7,454	7,772	6,544	4,295	2,758	-35.8	2.2

SOURCE: EUROSTAT

EU car exports are worth €124.6 billion



Main destinations for EU passenger car exports

IN UNITS / 2019

	2014	2015	2016	2017	2018	2019	% change 19/18	% share 2019	
WORLD	5,528,952	5,562,996	5,427,673	5,489,098	5,369,240	5,000,566	-6.9	100.0	
United States	998,503	1,223,019	1,170,612	1,176,829	1,154,784	1,040,770	-9.9	20.8	
China	608,912	469,761	531,325	575,284	543,643	459,623	-15.5	9.2	
Japan	237,149	247,832	279,188	282,332	285,434	263,057	-7.8	5.3	
Switzerland	272,946	303,103	282,378	275,091	261,982	258,195	-1.4	5.2	
Turkey	374,603	531,720	534,169	466,574	290,627	224,240	-22.8	4.5	
South Korea	174,614	227,065	176,710	184,805	191,863	168,660	-12.1	3.4	
Russia	302,184	181,457	134,420	147,073	174,492	159,020	-8.9	3.2	
Ukraine	28,187	28,008	51,774	89,893	87,028	151,592	74.2	3.0	
Australia	162,756	206,701	188,595	189,824	168,801	140,179	-17.0	2.8	
Serbia	71,021	88,487	115,587	117,464	138,064	132,128	-4.3	2.6	

SOURCE: EUROSTAT

5 million cars were exported by the EU in 2019

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Vehicles in use

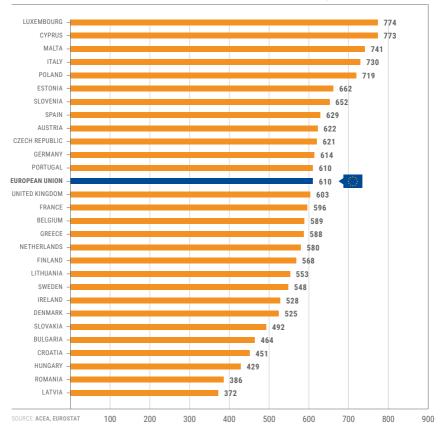




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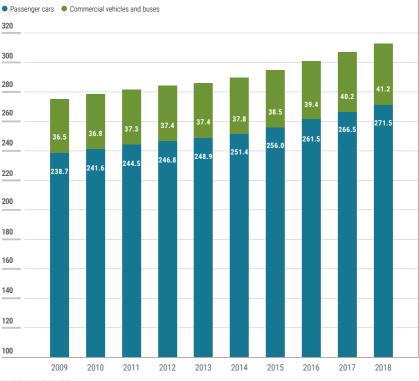
Motorisation rates in the EU

VEHICLES PER 1,000 INHABITANTS / 2018

The EU counts 610 motor vehicles per 1,000 inhabitants

EU vehicle fleet: size and distribution

IN MILLION UNITS / 2009 - 2018



SOURCE: ACEA, EUROSTAT



SOURCE: ACEA VEHICLES IN USE REPORT 2019

1. Light commercial vehicles up to 3.5t 2. Medium and heavy commercial vehicles over 3.5t

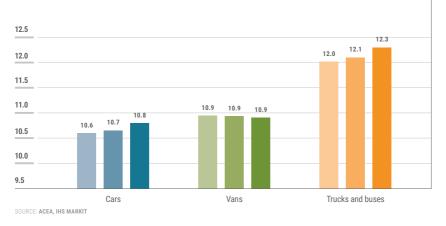
3. Buses and coaches over 3.5t

Cars in the EU are on average 10.8 years old

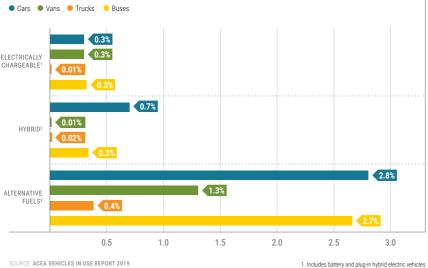
Average age of the EU fleet

BY VEHICLE TYPE, IN YEARS / 2016 - 2018

54



Share of alternatively-powered vehicles in the EU fleet BY SEGMENT, %SHARE/2018



2. Includes full and mild hybrids 3. Includes LPG and natural gas vehicles

0.3% of all passenger cars on EU roads are electrically-chargeable

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Road safety



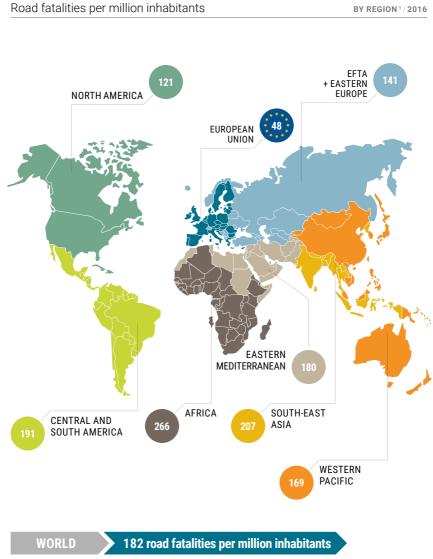


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SOURCE: CARE (EU ROAD ACCIDENTS DATABASE), WHO (WORLD HEALTH ORGANIZATION)

1. WHO regions

EU roads are by far the safest in the world

2006 - 2018 EU road fatalities (in thousands)
 Vehicles on EU roads (in millions) +16.8% -42.4%

Number of motor vehicles and road fatalities in the EU

SOURCE: ACEA, CARE (EU ROAD ACCIDENTS DATABASE)

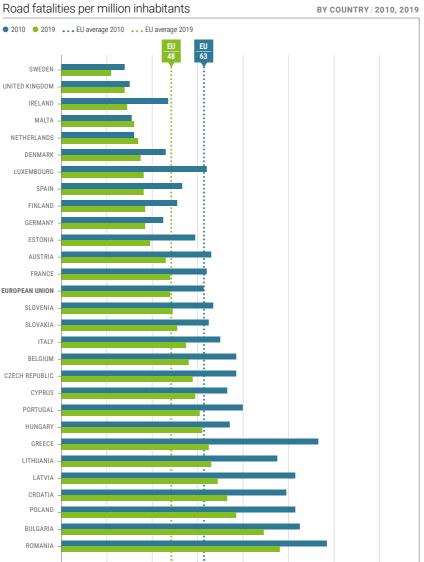
Number of motor vehicles and road fatalities in the EU

2006-2018

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
EU road fatalities (in thousands)	43.8	43.2	39.7	35.4	31.6	30.8	28.3	26.1	26.0	26.2	25.7	25.3	25.2
Vehicles on EU roads (in millions)	267.8	268.0	273.5	275.2	278.4	281.7	284.2	286.3	289.1	294.4	300.3	308.3	312.7

SOURCE: ACEA, CARE (EU ROAD ACCIDENTS DATABASE)

While there are 45 million more vehicles on EU roads, fatalities have fallen by 42.4% since 2006



SOURCE: CARE (EU ROAD ACCIDENTS DATABASE)

Road fatality statistics in the EU

	2019 road fatalities	% change 19 / 18
Austria	416	1.7
Belgium	620	2.6
Bulgaria	628	2.8
Croatia	297	-6.3
Cyprus	52	6.1
Czech Republic	617	-6.2
Denmark	199	13.7
Estonia	52	-22.4
Finland	209	-12.6
France	3,244	-0.1
Germany	3,059	-6.6
Greece	699	-0.1
Hungary	602	-4.9
Ireland	141	0.7
Italy	3,130	-6.1
Latvia	132	-10.8
Lithuania	184	6.4
Luxembourg	22	-38.9
Malta	16	-11.1
Netherlands	661	-2.5
Poland	2,909	1.6
Portugal	614	-9.0
Romania	1,864	-0.2
Slovakia	245	7.0
Slovenia	102	12.1
Spain	1,724	-4.5
Sweden	221	-31.8
United Kingdom	1,926	4.7
EUROPEAN UNION	24,585	-2.5



SOURCE: CARE (EU ROAD ACCIDENTS DATABASE)

BY COUNTRY / 2019

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Environment





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Average CO2 emissions of new passenger cars by country

IN G CO2/KM/2019

	2019 average emissions	% change 19 / 18
Austria	125.5	2.0
Belgium	121.5	1.6
Bulgaria	137.6	7.8
Croatia	119.4	3.5
Cyprus	126.8	2.7
Czech Republic	128.7	2.1
Denmark	111.9	2.1
Estonia	130.1	-1.7
Finland	115.3	-1.2
France	113.7	1.4
Germany	131.2	1.4
Greece	115.6	3.8
Hungary	131.8	3.0
Ireland	114.0	0.6
Italy	119.4	2.6
Latvia	127.9	-0.8
Lithuania	132.0	2.6
Luxembourg	133.0	1.2
Malta	105.3	-2.2
Netherlands	98.4	-6.8
Poland	132.0	1.7
Portugal	109.4	2.9
Romania	124.3	2.3
Slovakia	133.4	5.1
Slovenia	123.7	2.3
Spain	121.3	2.7
Sweden	119.7	-2.1
United Kingdom	127.7	2.5
EUROPEAN UNION	123.0	1.8
Iceland	114.3	-2.1
Norway	59.9	_
EU28 + IS + NO	122.4	



Average CO2 emissions from new passenger cars by country in g CO2/km in 2019

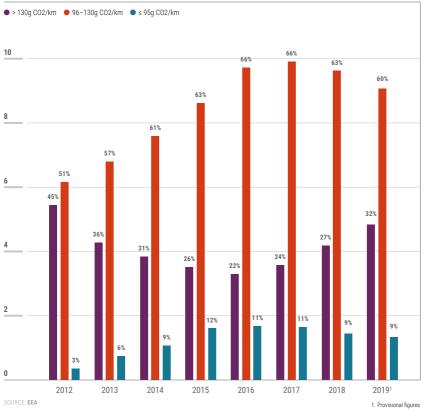


SOURCE: EEA

The average new car emits 123g CO2/km

New passenger cars in the EU by emissions classes

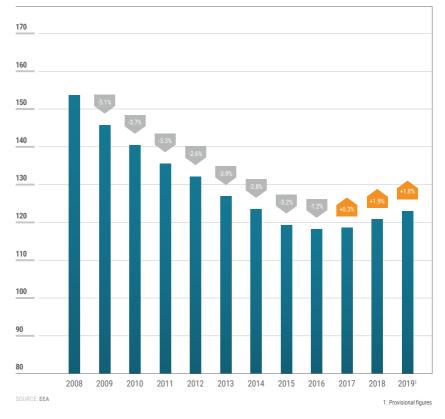




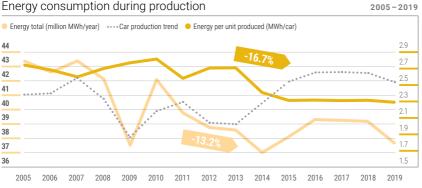
Almost 70% of all new cars sold emit less than 130g CO2/km

Average CO2 emissions of new passenger cars in the EU

IN G CO2/KM, % CHANGE / 2008 - 2019

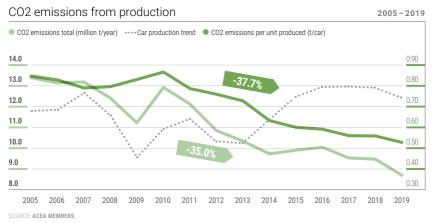


CO2 emissions from new cars are down by 20% since 2008



SOURCE: ACEA MEMBERS

As cars have become equipped with ever more features to make them safer, cleaner and smarter, the complexity of vehicle production has increased. This increase in complexity affects energy demand. Nevertheless, manufacturers have been working continuously to improve the **energy efficiency** of production. As a result, energy consumption per car produced has been decreased by 16.7% over the last 15 years.



The **CO2 emissions** per car produced dropped by 37.7% between 2005 and 2019, while the overall figure went down by 35% over the same period, reflecting the industry's efforts to reduce CO2 emissions from production. Even tough car production has increased by 4.3% since 2005, manufacturers have been able to decouple CO2 emissions from production growth by increasingly sourcing energy from renewable and/or low-carbon sources.

CO2 emissions per car produced dropped by 38% between 2005 and 2019

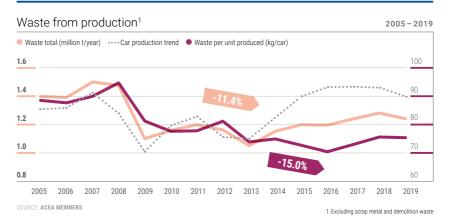
Water used in production

2005-2019



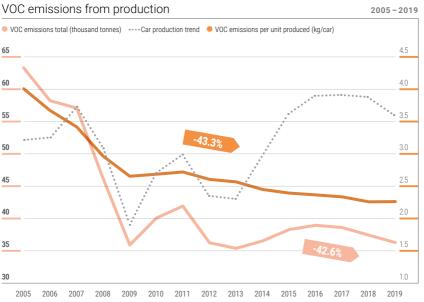
SOURCE: ACEA MEMBERS

Long-term strategies for reducing **water consumption** have made it possible to reduce water use per car produced by 44.8% between 2005 and 2019. This includes the increased application of recirculation technologies for the reuse of water.



The **waste** generated per unit produced by the manufacturing of passenger cars went down by 15% over 15 years. Waste fluctuations, both in absolute and per unit terms can be explained by the occurrence of singular events, such as a fall in total production during the economic crisis.

Water consumption per car produced has been reduced by 45% since 2005



SOURCE: ACEA MEMBERS

Volatile organic compounds (VOC) are organic solvents mainly emitted from paint shops. The graph shows VOC emissions per car produced and the absolute emissions of all car manufacturers combined. With new technologies, such as the replacement of solvent-based paints with solvent-free, water-based equivalents manufactures have been able to reduce unit emissions by 43.3% over the last 15 years.

European manufacturers have significantly reduced the environmental impact of car production over the last 15 years

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Innovation





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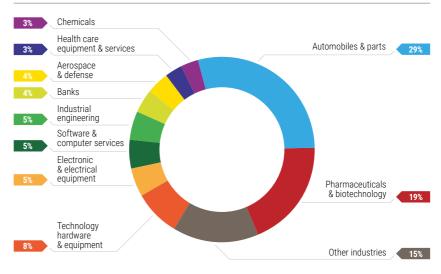
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%SHARE/2018



SOURCE: THE 2019 EU INDUSTRIAL R&D INVESTMENT SCOREBOARD, EUROPEAN COMMISSION

EU R&D investment in the top 10 industrial sectors

IN BILLION €/ 2018

Automobiles & parts	60.9
Pharmaceuticals & biotechnology	39.9
Technology hardware & equipment	15.9
Electronic & electrical equipment	10.9
Software & computer services	10.5
Industrial engineering	9.9
Banks	9.3
Aerospace & defense	9.3
Health care equipment & services	5.5
Chemicals	5.2

SOURCE: THE 2019 EU INDUSTRIAL R&D INVESTMENT SCOREBOARD, EUROPEAN COMMISSION

The automotive sector is the EU's number one investor in R&D, responsible for 29% of total spending

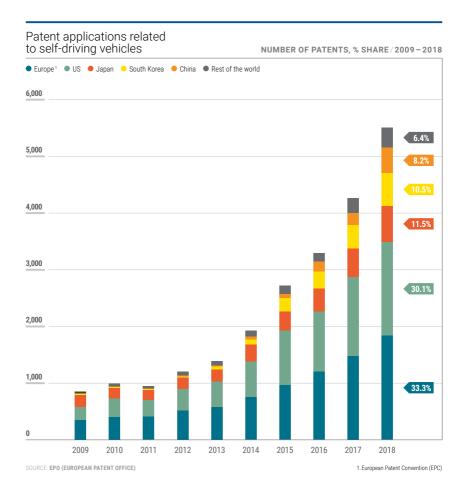


R&D investment in the automobile sector by world region

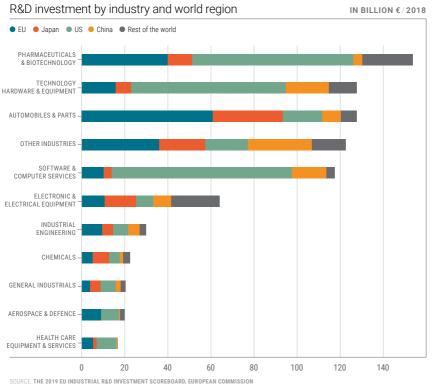
IN BILLION € / % CHANGE

SOURCE: THE 2019 EU INDUSTRIAL R&D INVESTMENT SCOREBOARD, EUROPEAN COMMISSION

EU investment in automotive R&D has increased by 6.1% to €60.9 billion annually



Europe leads the world in patents for self-driving vehicles



The EU is by far the world's largest investor in automotive R&D

THE AUTOMOBILE INDUSTRY POCKET GUIDE 2020/2021

Taxation



European Automobile Manufacturers Association

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		TAX BENEFITS	STION OWNER	COMPAN	WCENTHES	
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	SLOVENIA			8		
<u> </u>	SPAIN					
	SWEDEN UNITED KINGDOM		\odot			

SOURCE: ACEA TAX GUIDE 2020

Purchase incentives for electric vehicles are available in 21 countries

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C02-	based motor veh					2020
		TAX MEASURES	COUSTION STON	ONNERSHIP	COMPANYCAR	
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	BULGARIA			8		
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	POLAND			8	-8	
	PORTUGAL			O	-8	
	ROMANIA			8	-8	
	SLOVAKIA			8	-8	
-	SLOVENIA			8	-8	
A	SPAIN			8		
	SWEDEN				-8	
	UNITED KINGDOM				-0	
			-	-	-	

SOURCE: ACEA TAX GUIDE 2020

Lineal		frame	wa at a r	vabioloo	i.e.			n na arliatal
FISCAL	income	ITOTT	motor	venicies	In	major	Europea	in markets ¹

	🗧 AT	🕒 BE	🛑 de	🕩 рк	🖲 es	🕂 FI	🕩 FR
	€ bn 2017	€bn 2018	€bn 2018	DKK bn 2018	€bn 2018	€bn 2018	€bn 2018
Purchase or transfer							
1. VAT on vehicle sales							
servicing, repair & parts	3.1	7.4	31.3	-	5.0	1.7	18.5
2. Sales & registration taxes	0.5	0.5	-	20.7	0.5	1.0	2.3
3. Annual ownership taxes	2.4	1.7	9.0	9.9	2.9	1.2	0.9
4. Fuels & lubricants	5.4	8.8	41.7	17.5	20.8	3.9	42.8
5. Others							
Driving license fees	-	0.02	0.2	-	0.1	-	-
Insurance taxes	0.4	1.0	5.3	1.5	-	0.4	5.1
Tolls	2.1	0.7	5.7	0.5	-	-	12.6
Customs duties	-	-	0.2	-	-	-	-
Other taxes	0.4	0.7	-	-	0.7	-	1.7
TOTAL (national currencies)	14.3	20.7	93.4	50.1	30.0	8.1	83.9
TOTAL (EURO) ³	14.3	20.7	93.4	6.7	30.0	8.1	83.9
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-	€ bn	€bn	€bn	€bn	€bn	SEK bn	£ bn
	2019	2019	2018	2019	2019	2019	2018/20192
Purchase or transfer							
1. VAT on vehicle sales							
servicing, repair & parts	0.3	0.7	18.6	1.2	4.5	25.0	12.5
2. Sales & registration taxes	0.3	1.0	1.8	2.2	0.7		-
3. Annual ownership taxes	1.2	0.9	6.8	4.3	0.7	13.9	6.5
4. Fuels & lubricants	5.6	3.5	37.8	10.4	3.5	45.0	28.0
5. Others							
Driving license fees	-	0.02	-	0.3	-	-	-
Insurance taxes	-	0.1	3.9	1.2	-	2.8	-
Tolls	-	-	2.2	0.2	0.2	2.7	-
Customs duties	-	-	-	-	-	-	-
Other taxes	0.1	-	5.3	1.8	-	-	1.5
TOTAL (national currencies)	7.4	6.2	76.3	21.5	9.6	89.4	48.5

GRAND TOTAL = € 440.4 billion

SOURCE: ACEA TAX GUIDE 2020

Latest available data; only countries for which sourced data is available are listed
 2. 2012 estimates for income from VAT and other taxes
 3. Euro foreign exchange reference rates at 30 March 2020; source: ECB

Motor vehicles account for €440.4 billion in taxes in major European markets

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Share of VAT in net price of cars



Excise duties on fuels in €/1,000 litres

	UNLEADED	
Austria	515	425
Belgium	600	600
Bulgaria	363	330
Croatia	520	413
Cyprus	429	400
Czech Republic	499	425
Denmark	631	429
Estonia	563	493
Finland	702	530
France	683	594
Germany	654	470
Greece	700	410
Hungary	366	338
Ireland	602	495
Italy	728	617
Latvia	509	414
Lithuania	466	372
Luxembourg	472	355
Malta	549	472
Netherlands	800	503
Poland	383	337
Portugal	643	486
Romania	373	342
Slovakia	555	393
Slovenia	547	469
Spain	504	379
Sweden	619	436
United Kingdom	651	651
EU minimum rates	359	330

SOURCE: ACEA TAX GUIDE 2020

SOURCE: ACEA TAX GUIDE 2020

Automobiles provide a vital source of governement revenue

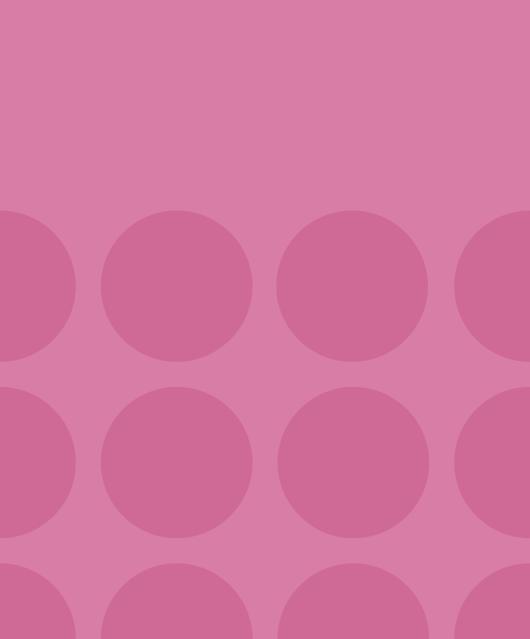
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About ACEA



European Automobile Manufacturers Association

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ACEA represents Europe's car, van, truck and bus makers

Members and partners

The European Automobile Manufacturers' Association (ACEA) is the advocate for the automobile industry in Europe, representing the 16 major manufacturers of passenger cars, vans, trucks and buses with production sites in the EU.

ACEA's members are: BMW Group, CNH Industrial, DAF Trucks, Daimler, Ferrari, Fiat Chrysler Automobiles, Ford of Europe, Honda Motor Europe, Hyundai Motor Europe, Jaguar Land Rover, PSA Group, Renault Group, Toyota Motor Europe, Volkswagen Group, Volvo Cars and Volvo Group.

ACEA has permanent cooperation with the European Council for Automotive R&D (EUCAR), which is the industry body for collaborative research and development.

ACEA works closely with the 29 national automobile manufacturers' associations in Europe, and maintains a dialogue on international issues with automobile associations around the world.



ACEA's mission and priority areas

ACEA's mission

- Define and advocate the common interests, policies and positions of the European automobile industry.
- Engage in dialogue with the European institutions and other stakeholders in order to advance understanding of industry issues, and to contribute to effective policy and legislation at both European and global levels.
- Act as a portal for expert knowledge on vehicle-related regulation.
- Communicate the role and importance of the industry, using reliable data and information.
- Monitor activities that affect the automobile industry, cooperating with the other stakeholders involved.
- Undertake strategic reflection on the increasingly global challenges of mobility, sustainability and competitiveness.

Priority fields

Through its member companies, ACEA taps into a wealth of technical, regulatory and practical expertise in the following priority fields:

- Connected and automated driving
- Competitiveness, market and economy
- Environment and sustainability
- International trade
- Research and innovation
- Road safety
- Transport policy

How ACEA works

The ACEA Board of Directors is composed of the CEOs and Presidents of its member companies. Additionally, a Commercial Vehicle Board of Directors addresses the specific issues that face the commercial vehicle manufacturers that ACEA represents for Trucks: Ford Trucks, DAF Trucks, Daimler Trucks, Iveco, MAN Truck & Bus, Scania, and Volvo Group.

The day-to-day work of the ACEA secretariat is overseen by the Director General, who ensures that the Board of Directors' priorities are addressed. Technical expertise and advisory input comes from working groups on topics as diverse as emissions, road and vehicle safety, general transport policy, and regulatory compliance. These specialist working groups are made up of experts from the member companies.



About EUCAR

The European Council for Automotive R&D (EUCAR) is the collaborative research organisation of the major automobile manufacturers in Europe,

with the mission to strengthen the competitiveness of the manufacturers through strategic collaborative research and innovation.

EUCAR is committed to help society achieve safer, cleaner, smarter and more efficient transport solutions. Together with its members, EUCAR drives the strategy and assessment of collaborative automotive research and innovation, and establishes common work with the European Commission, Member States and other key stakeholders.

EUCAR collaborative research and innovation activities cover both passenger and commercial vehicles, focused on the following strategic pillars:

- Sustainable Propulsion
- Enabling Technologies and Processes
- Safe and Integrated Mobility
- Commercial Vehicles
- Urban Mobility

EUCAR's members participate in high-quality projects with relevant results for the industry. Projects are mainly financed through the European Union Framework Programmes for research and innovation, matched with industry funding.

The EUCAR project book contains an overview of all the current projects: https://www.eucar.be/publications/project-book/

EUCAR is governed by its Council, composed of the heads of the research and advanced development divisions of the member companies. The EUCAR Chairman is nominated annually from the Council on a rotating basis.

EUCAR's members are: BMW Group, CNH Industrial, DAF Trucks, Fiat Chrysler Automobiles, Ford of Europe, Honda R&D Europe, Hyundai Motor Europe, Jaguar Land Rover, PSA Groupe, Groupe Renault, Toyota Motor Europe, Volkswagen Group, Volvo Cars, and Volvo Group.

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European Automobile Manufacturers Association

ACEA represents the 16 major Europe-based car, van, truck and bus manufacturers

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