Market Insights

"China needs more vehicle carriers to face the rise of electric car exports" [1]

With the order of 47 new ships, China is positioned to increase its presence in the global vehicle shipping market from 2.4% to 8.7%. This significant increase reflects the need to adapt to growing demand and ensure efficient logistics for the transport of electric vehicles.

The dynamic growth of Chinese electric car exports is driven by fierce price competition and an increasingly value-focused consumer. At the same time, car manufacturers are accelerating their expansion into the global market, even in times of fluctuating economics. These factors have driven China ahead of Japan as the leading exporter in the automotive industry. This evolution has led Chinese manufacturers to invest in a larger and more modern fleet of vehicle carriers, thereby preparing them to maintain their growth in the international electric vehicle market.

Analysis of the Fundación Valenciaport

The **manufacture of finished vehicles** is a key sector in the global economy, playing a very important role in promoting **technological innovation** and as an engine of **economic growth**. Indeed, this sector not only generates employment and direct economic activity, but also feeds an interconnected network of auxiliary industries. Beyond being an indicator of the financial health of the automotive sector, vehicle manufacturing provides insight into the state of the global economy, reflecting consumer trends and technological advances.

The global automotive industry has faced persistent challenges since the outbreak of the Covid-19 pandemic, with a notable **21% decline** in vehicle **production** in Europe and North America. Although 2022 showed signs of recovery, production was still below pre-pandemic levels. In addition to high inflation rates and raw material price increases, the microchip crisis has caused manufacturing delays, affecting vehicle availability, and reducing sales. This combination of factors has challenged both manufacturers and shipping companies, which face **challenges in adapting to increasing production volumes** and **microchip shortages**, complicating automotive logistics.

Global finished vehicle production in 2023 experienced a 10.2% growth over the previous year, reaching 75,615,450 units, as shown in Table 1. China, United States and the European Union led global production. In Europe, 14,988,243 units were produced, with an increase of 12.6%, while North America recorded 11,687,968 units, showing an increase of 12.4%, highlighting the United States. Asia remained a key region with

[1] Original news published by "ShippingWatch" and available at: *https://shippingwatch.com/carriers/article17005376.ece*

44,971,479 units produced, led by China, Japan and India. South America maintained a stable production of 2,136,135 units. This shows a **steady growth in production** in the main regions, reflecting a constant demand for vehicles worldwide.

Table 1: Global production of finished vehicles

	2023	2022	% change 23/22	% share 2023
EUROPE	**14.988.243**	**13.316.033**	**+12,6**	**19,8**
European Union	12.126.604	10.896.821	+11,3	16,0
Turkey	960.230	806.971	+19,0	1,3
United Kingdom	901.893	776.764	+16,1	1,2
Russia	491.000	445.247	+10,3	0,6
Ukraine	2.505	1.839	+36,2	0,0
Others (Europe)	506.012	388.391	+30,3	0,7
NORTH AMERICA	**11.687.968**	**10.401.318**	**+12,4**	**15,5**
United States only	7.629.525	7.033.378	+8,5	10,1
SOUTH AMERICA	**2.136.135**	**2.134.324**	**+0,1**	**2,8**
Brazil only	1.781.612	1.823.705	-2,3	2,4
ASIA	**44.971.379**	**40.923.334**	**+9,9**	**59,5**
China	25.347.593	23.237.924	+9,1	33,5
Japan	7.734.465	6.586.250	+17,4	10,2
India	4.669.500	4.373.200	+6,8	6,2
South Korea	3.926.371	3.456.411	+13,6	5,2
Indonesia	1.147.166	1.169.062	-1,9	1,5
Thailand	835.645	747.113	+11,8	1,1
Others (Asia)	1.310.639	1.353.374	-3,2	1,7
MIDDLE EAST/AFRICA	**1.831.725**	**1.823.048**	**+0,5**	**2,4**
Iran only	1.000.666	1.070.195	-6,5	1,3
WORLD	**75.615.450**	**68.598.057**	**+10,2**	**100,0**

Source: S&P Global Mobility

The 12.6% increase in **vehicle production in Europe** by 2023 marks a significant recovery after a period of economic uncertainty and supply chain disruption due to the pandemic. This figure not only reflects renewed confidence in vehicle demand in the region, but also the ability of the European automotive industry to adapt and recover in a changing environment. The European Union produces more than 80% of the vehicles on the road in its member countries, making it an **essential pillar of vehicle production**. This concentration highlights the importance of economic integration and collaboration in the European automotive industry.

Within the European Union, **Germany stands out as the undisputed leader** in vehicle production, experiencing a significant increase of 18.7% in 2023 compared to the previous year (Table 2). This growth can be attributed to several factors, such as internal and external demand, as well as efficiency and innovation in the German automotive industry. In addition, countries such as **Spain, the Czech Republic and Hungary also recorded increases in production**, indicating positive momentum in the automotive

industry throughout the region. These increases may be related to investments in infrastructure and technology, as well as demand for vehicles in the European and global market.

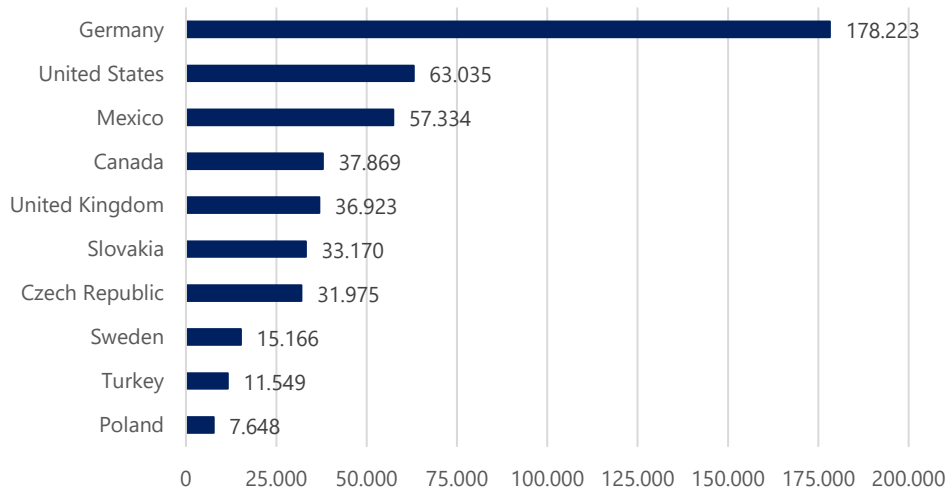
Table 2: Ranking of the top 10 European countries producers of finished vehicles

	2023	2022	% change 23/22
Germany	3.959.322	3.336.546	+18,7
Spain	1.869.988	1.741.084	+7,4
Czech Republic	1.395.211	1.214.746	+14,9
Slovakia	1.062.058	970.275	+9,5
France	959.404	948.341	+1,2
Italy	542.218	484.345	+11,9
Hungary	504.907	452.551	+11,6
Romania	501.337	509.465	-1,6
Belgium	287.211	243.293	+18,1
Sweden	276.070	251.446	+9,8
EUROPEAN UNION	**12.126.604**	**10.896.821**	**+11,3**

Source: S&P Global Mobility

In terms of **vehicle exports in 2023**, Germany consolidated its position as the world's leading exporter, reaching exports of approximately US$178.225 billion (Graph 1). United States and Mexico also stood out in this ranking, with exports valued at more than US$57 billion each. On the other hand, the United States led as the main importer of motor vehicles globally, with imports valued at approximately US$210.3 billion. Germany, despite being the leading exporter, had significantly lower imports in terms of value, being less than half of those recorded by the United States. The United Kingdom also showed a relevant presence in this aspect.

Graph 1: Ranking of major motor vehicle exporting countries by value of exports worldwide in 2023 (in USD million)

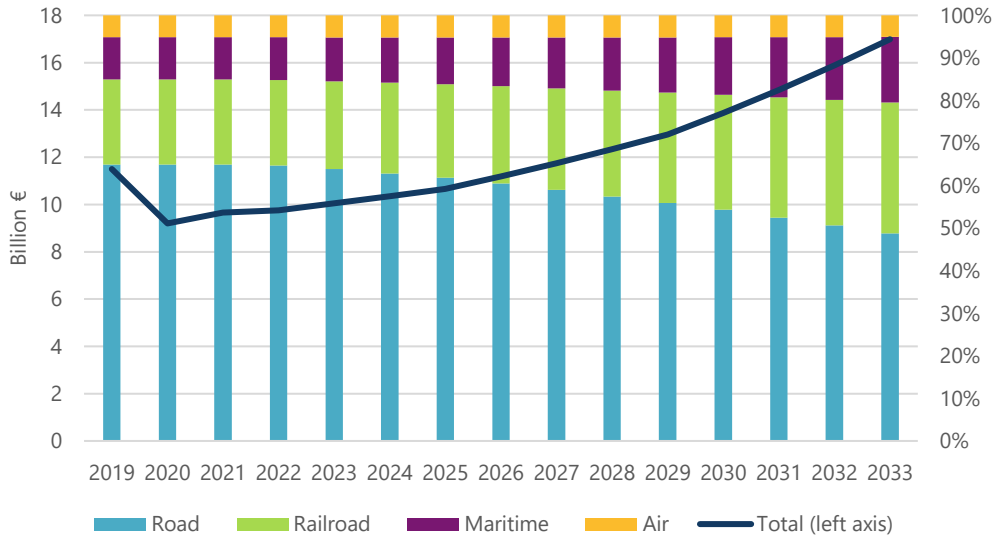


Source: Statista

Considering the relevance of its role in the global automotive market, it is important to note that, from a logistical point of view, the finished vehicle industry in Europe faces **significant challenges given the growing demand and limited capacity**. According to Automotive Logistics, the market is forecast to grow from €10 billion in 2023 to €17 billion in 2033, at a CAGR of 6.9% (Graph 2). Since 2022, transportation capacity constraints have generated tensions, aggravated by increased imports from China and capital restrictions. This has led to fleet reductions and difficulties in expanding capacity. The transition to zero-emission vehicles and the demand for larger and heavier vehicles, especially electric, further complicate the long-term outlook.

Based on the modal pattern of the automotive sector, and its **forecasts for the upcoming years**, as it seeks to reduce emissions, significant changes are anticipated. With a growing interest in rail and maritime options among logistics operators, road transport's participation in the European market is projected to decrease from 63.9% in 2023 to 48.8% in 2033. Despite significant capacity constraints in maritime transport, this mode, recognized for its lower carbon footprint, will witness a **moderate increase over the next ten years**. However, the delay in the construction of new vessels represents a key challenge, postponing a solution to the capacity shortage past 2026.

Graph 2: Projections of the automotive logistics market in Europe by mode (in billion € and % share)



Source: Automotive Logistics

Continuing with the analysis of the maritime transport of vehicles, it is essential to explore **the global outlook** in which the main shipping lines compete for supremacy in an increasingly demanding and competitive market. Table 3 shows the ranking of global vehicle transportation fleets, revealing the main players in this competitive sector. Topping the list is WWL (Wallenius Wilhelmsen), followed by NYK Line (Nippon Yusen Kaisha) and Mitsui O.S.K. Line. In fourth and fifth place are K-Line and GLOVIS, respectively. These companies stand out for their **extensive experience, modern fleets and international reach**, positioning them as undisputed leaders in global vehicle shipping. Moreover, it is notable that these five shipping lines together account for 70.3%

of the container ship capacity share, further consolidating their dominance in the global market.

Table 3: Global ranking of automobile transportation fleet

Ranking	Operator	Vessels	Share (%)	Capacity (vehicles)	Share (%)
1	WWL	109	16,1%	743.023	18,4%
2	NYK Line	104	15,3%	635.026	15,8%
3	Mitsui O.S.K. Line	83	12,2%	503.409	12,5%
4	K-Line	75	11,0%	459.908	11,4%
5	GLOVIS	74	10,9%	492.730	12,2%
6	GRIM	55	8,1%	268.892	6,7%
7	HAL	36	5,3%	248.515	6,2%
8	NEPTUN	15	2,2%	60.100	1,5%
9	Toyofuji Shipping Co.Ltd	14	2,1%	62.760	1,6%
10	GSL	11	1,6%	51.870	1,3%
11	UECC	10	1,5%	41.210	1,0%
12	ARC	9	1,3%	59.706	1,5%
13	AN JI	8	1,2%	35.600	0,9%
13	ECL	8	1,2%	31.600	0,8%
13	SALLAU	8	1,2%	37.329	0,9%
-	Others	60		300.171	
	Total	**679**		**4.031.849**	

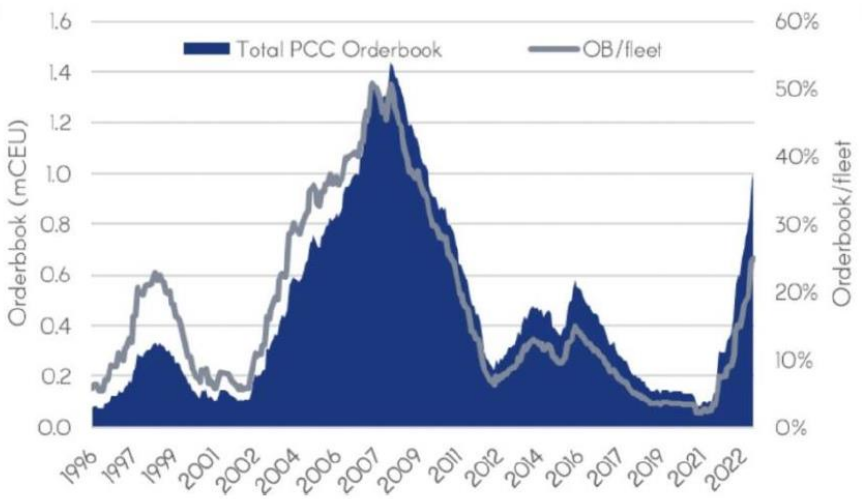
(1) The table only includes vessels with a capacity of 2,000 or more vehicles

(2) The number of vessels of WWL include the number of vessels of EUKOR affiliated with WWL Group

Source: NYK Line based on data from Hesnes Shipping AS

Regarding the **status of the fleet and new vessel orders** in the car carrier shipping market, according to Gram Car Carriers and Gersemi Asset Management, the current order book consists of 140 vessels, scheduled for delivery until 2028, with a large portion of them (103 vessels) expected to be delivered before the end of 2025. In addition, there was a significant increase of 30% in the order book for vehicle carriers in the current year, representing 25% of current capacity and exceeding the historical average of 17% (Graph 3). Despite this increase, it is estimated that the current order book will not be sufficient to meet estimated demand until at least 2025.

Graph 3: Evolution of the order backlog of vehicle carriers (CEU: car equivalent units)



Source: Gersemi Asset Management

On the other hand, according to Clarksons Research's annual report, the current fleet has 760 vessels, just 2% more than in 2019, with another 80 new vessel orders in 2023, representing approximately 37% of fleet capacity. This fleet expansion coincides with **strong investment in new "green" vessels**, which use alternative fuels and are designed to comply with stricter environmental regulations. It is noted that 85% of vessel capacity on order is set to use these alternative fuels, reflecting an increasing focus on sustainability within the industry.

There is also a **diversification in types of vessels used** in the maritime transport of automobiles, with a growing interest in specialized vessels for electric vehicles. This adaptation of the fleet to new technologies responds to the growing demand for electric vehicles and other mobility technologies. In addition, vessel capacity and efficiency is being prioritized to meet global vehicle demand, with fleet expansion into new, larger and more efficient vessels capable of handling a variety of cargo types.

The **accumulation of vehicles in factory and port facilities** due to the lack of means of transportation has generated significant delays in delivery to dealers and customers, impacting the global supply chain in the automotive industry. This situation has led companies in the sector to seek solutions to overcome the obstacles and restore fluidity in the distribution of vehicles, highlighting the urgency of resolving this logistical challenge.

With the lack of vehicle-carrying vessel capacity, some manufacturers have opted to containerize vehicles, **leading the major global container shipping lines to explore new alternatives**. An example of this is the **Memorandum of Understanding (MoU)** signed between the Chinese ports that integrate **Shandong Port Group** (Qingdao, Rizhao, Yantai, Weihai, Dongying, Weifang and Binzhou) with the following shipping lines: **Ocean Network Express (ONE), COSCO SHIPPING Lines, Maersk, CMA CGM, MSC, Evergreen and SITC**. This agreement focuses on the export of electric vehicles (EVs) and lithium-ion batteries in conventional containers.

Another innovative example in response to this changing demand is the design of specific equipment for transporting vehicles, allowing them to be piled on vessels not traditionally associated with this type of transport. An example of this is the design developed by the shipping group **China COSCO SHIPPING Corporation Ltd. Co. (COSCO Group)**, with the implementation of a special 48' Flat Rack container for transporting vehicles on conventional ships (Illustration 1). This innovation has led to new car transport routes and services, such as the one launched from its **PCT** terminal **in the port of Piraeus** through its subsidiary **COSCO SHIPPING Specialized**, with the aim of providing high-quality vehicle logistics services in the EMEA (Europe, Middle East and Africa) region.

Illustration 1: Stacking of 48-foot Foldable Vehicle Racks

Source: Cosco Shipping Specialized Carriers Co., LTD.

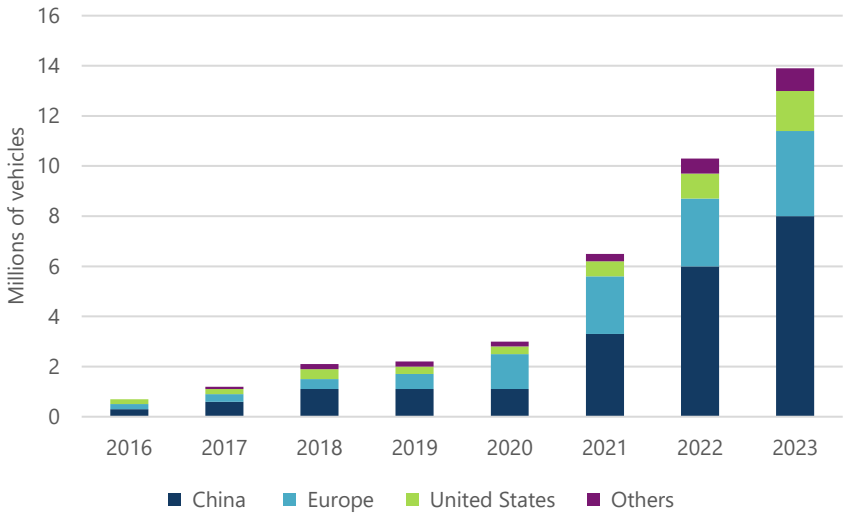
In addition to the logistical challenges facing the vehicle shipping industry, such as the lack of vehicle-carrying vessel capacity and the need to look for innovative alternatives, there is also a significant transformation underway in the automotive industry. The growing awareness of the effects of climate change and the need to reduce carbon emissions are driving a **transition to cleaner and more sustainable vehicles**. In this context, the electrification of automobiles has become a central issue, with numerous countries and companies setting ambitious targets to phase out internal combustion engine vehicles in favor of greener alternatives, such as electric vehicles.

The **electric vehicle** market is experiencing **exponential growth**, with sales exceeding 10 million in 2022 (Graph 4). The share of electric vehicles in total sales has more than tripled in three years, from around 4% in 2020 to 14% in 2022. The positive trend for electric vehicles is estimated to continue strongly through 2023, with more than 2.3 million electric vehicles sold in the first quarter, a 25% increase over the same period last year. Sales are projected to reach 14 million by the end of 2023, representing a 35% year-on-year increase, with new purchases accelerating in the second half of 2024. As a result,

electric vehicles are expected to **account for 18% of total** automotive **sales** for the full year.

According to Gram Car Carriers' projections, the transition to electrification of the car fleet is progressing rapidly, with **approximately half of global electric vehicle sales being made in China**. Moreover, it anticipates that substantial local investments to increase electric vehicle production capacity in China will support the global export ambitions of Chinese electric vehicle manufacturers. In recent months, these manufacturers have made inroads into the car carrier market, leading much of the demand for car carriers, mainly due to the growth in electric vehicle exports from China.

Graph 4: Register of electric vehicles sold by country worldwide (2016-2023)



Source: International Energy Agency

The increasing adoption of electric vehicles is creating **additional logistical challenges for automobile transportation**. With the increasing demand for these vehicles, it is crucial to ensure adequate infrastructure for charging and distribution, as well as for the supply of batteries and electric components. The handling of highly flammable lithium batteries during distribution processes requires new safety guidelines and special storage as well as transportation conditions. Therefore, the transition to electric mobility not only transforms the appearance of vehicles, but also presents logistical challenges that require careful planning and regulatory compliance to ensure safe and efficient transportation.

Focusing on the national level, Spain occupied the eighth position in the world ranking of producers in the automotive sector in 2023, with a **production of approximately 2.5 million vehicles**. According to the Association of Automobile and Truck Manufacturers (ANFAC), this sector represents 8.1% of Spanish GDP, which rises to 10% if associated sectors such as distribution and financial services are included. Despite the global challenges, Spanish factories managed to adapt and close 2022 with a rising production, exceeding 2.2 million vehicles.

As for **vehicle exports**, an increase of 2.9% was recorded during 2022, with a total of 1,932,629 units shipped outside Spanish borders. Despite this increase, the uncertain international environment, derived from the economic and social consequences of the

pandemic, also influenced the slow recovery of European markets, the main destinations for "made in Spain" vehicles, limiting the number of orders.

In this regard, and according to ANFAC's latest Port Logistics Evaluation Report in 2022, **vehicle transport in Spain** experienced a slight increase of 2.6%, reaching **4.59 million units**, although below the usual figures. Maritime transport had a growth of 11.1%, with 2.4 million vehicles moved through Spanish ports. Out of the 24 ports with vehicular traffic, the top 8 handled 90.1% of the total. In terms of intermodal distribution, maritime transport increased its share to 48.4%, driven by exports, while road transport decreased by 3.8%. In the final transfer of vehicles to port terminals, rail was essential, accounting for 32.5% of exported vehicles, while the remaining 67.5% were moved by road.

Continuing with the **maritime transport of vehicles in Spain**, the Port of Sagunto, together with the Port of Tarragona, stood out as the second best rated port by ANFAC in 2022 due to its efficiency in services and agility in customs procedures, although it lacks a rail connection (Table 4). Despite this, Sagunto is consolidating its position as an **important logistics center for vehicle transport in Spain**, especially for imports, with Toyota Logistics Services being one of its main operators, managing imports for the Iberian market and part of Portugal.

Table 4: Ranking of peninsular ports based on the valuation established by ANFAC

Position	Port	Rating	No. of vehicles	Representation (1)
1st	SANTANDER	4,4	287.715	84,5%
2nd	TARRAGONA	4,2	168.917	83,5%
	SAGUNTO*	4,2	121.712	80,1%
3rd	PASAIA	4,1	239.946	89,8%
4th	BARCELONA	3,7	504.015	64,7%
	VALENCIA	3,7	411.608	80,1%
	VIGO*	3,7	444.442	92,5%
5th	MÁLAGA*	3,5	44.247	91,5%
Total		**3,9**	**2.222.602**	**81,2%**

(*) Ports penalized for not having rail access
(1) Percentage of the data provided by the brands participating in the report in relation to the official volumes of Puertos del Estado

Source: ANFAC and Puertos del Estado

All in all, the automotive industry has demonstrated a **remarkable capacity for resilience and adaptability**. This growth reflects the resilience and adaptability of a vital sector that has been able to overcome obstacles such as the Covid-19 pandemic and shortages of key components. Europe, with countries such as Germany and Spain leading the way, has shown a renewed impulse, not only in traditional production but also in the **transition to cleaner and more efficient vehicles**. The growing demand for electric vehicles and logistics innovations are evidence of an industry that is reinventing itself. This evolution towards a greener and more connected mobility presents itself as an opportunity to redefine the global automotive landscape, with innovation and sustainability as the pillars of long-term success. However, logistical challenges remain, and it is essential that the industry continues to collaborate and adapt to ensure a smooth and sustainable supply in the future.