

## The Evolution of the World Motor Vehicle Production in the Period 2018-2022

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### Abstract

*The automotive industry has always represented a key sector within the economy of any country. Moreover, its significant contribution to the gross domestic product of many countries transformed this industry into one of the main pillars of the global economy. Therefore, numerous countries have built and produced various motor vehicles on different continents. The purpose of the paper is to briefly present and analyze the evolution of the world motor vehicle production on the four continents (Europe, America, Asia-Oceania, and Africa) in the period 2018-2022. The research methodology is based on a qualitative research method. The paper shows that the pre-pandemic period was a better period for the automotive industry than the pandemic period. Also, it demonstrates that Asia-Oceania dominates the production hierarchy by continents.*

**Key words:** motor vehicle production, motor vehicle, automotive industry, car

**J.E.L. classification:** D2, E23, F01, L62

### 1. Introduction

Due to its numerous positive effects on economic development, the automotive industry has always represented a key sector within the economy of any country. Moreover, its significant contribution to the gross domestic product of many countries transformed this industry into one of the main pillars of the global economy. Last year, 85.4 million motor vehicles were manufactured worldwide, a rise of 5.7% in comparison with 2021 (European Automobile Manufacturers' Association (ACEA), 2023).

The hard work of scientists and engineers made possible the appearance of the first internal combustion engines at the end of the eighteenth century (Viskup, 2020). The second half of the nineteenth century witnessed the invention and expansion of the gasoline engine in Europe, which constituted the roots of the later automotive industry. In Germany, Nikolaus Otto designed the four-stroke gas-fuelled internal combustion engine, and Gottlieb Daimler and Wilhelm Maybach invented a petrol-fuelled engine but Karl Friedrich Michael Benz succeeded in building an automobile powered by an internal combustion engine in 1885 (Kirchberg *et al*, 1981), the first proper car in the history of humanity (Roser, 2017).

The rapid technical advancements highly contributed to the development of the automobile industry. On the other hand, the scientific management works of the American Frederick Winslow Taylor and the French Henri Fayol greatly helped entrepreneurs and businessmen in this industry (Toma *et al*, 2014). In this respect, Henry Ford designed and produced high-volume automobiles in the beginning of the 1900s in the United States of America (USA), based on the economy of scale (Toma, 2005; Toma *et al*, 2021).

Since its emergence, the automotive industry has continuously expanded all over the world. Therefore, numerous countries have built and produced various motor vehicles on different continents. In the last century, huge corporations appeared and developed worldwide, such as General Motors, Ford Motor, Daimler Benz, Toyota Motor, Fiat and Volkswagen (Grădinaru *et al*, 2020).

The purpose of the paper is to briefly present and analyze the evolution of the world motor vehicle production on the four continents (Europe, America, Asia-Oceania, and Africa) in the period 2018-2022. The structure of the paper is as follows: the second chapter displays the theoretical background. The next chapter illustrates the research methodology. The findings are shown in the fourth chapter. The conclusions are presented at the end of the paper.

## 2. Theoretical background

Since its beginnings, the automotive industry has become a topic of interest for researchers and practitioners worldwide. A plethora of studies related to this subject have been published, especially after the end of World War II. The etymology of the word automobile derives from two words: the Greek word ‘autós’ (self) and the Latin word ‘mobilis’ (movable).

It is said that the automotive industry encompasses “all those companies and activities involved in the manufacture of motor vehicles, including most components, such as engines and bodies, but excluding tires, batteries, and fuel“ (Rae *et al*, 2023, p. 1) and includes “industries associated with the production, wholesaling, retailing, and maintenance of motor vehicles” (US Bureau of Labor Statistics, 2023, p. 1). In other words, the automotive industry contains „the wide range of organisations involved in the development, manufacturing, marketing and selling of automobiles (cars, trucks, buses, etc.)” (Sage, 2023, p. 1). Its main products are passenger automobiles, light trucks, and commercial vehicles. The motor vehicles comprise the following (Table no. 1):

- passenger cars;
- commercial vehicles: light commercial vehicles, heavy trucks, and buses & coaches.

Table no. 1. Vehicle type definitions

Vehicle type	Definition
Passenger cars	motor vehicles with at least four wheels and no more than eight seats in addition to the driver’s seat, used for the transport of passengers
Light commercial vehicles	motor vehicles with at least four wheels and a maximum mass between 3.5 and 7 metric tons, used for the carriage of goods
Heavy trucks	motor vehicles with at least four wheels and a mass of over 7 metric tons, used for the carriage of goods
Buses & coaches	motor vehicles with at least four wheels, a mass of over 7 metric tons and no more than eight seats in addition to the driver’s seat, used for the transport of passengers

Source: (International Organization of Motor Vehicle Manufacturers (OICA), 2023)

From a geographic point of view, the world motor vehicle production is distributed on all continents. In 2022, China, Japan and Germany stood for the world’s largest producers of cars and commercial vehicles (Placek, 2023). Since the end of the 2007 economic crisis, Toyota Motor and Volkswagen have competed in a highly turbulent business environment (Toma *et al*, 2015) for global supremacy in the automotive sector. Their extraordinary achievements and business success are based on a mixture of major elements, such as strategic thinking (Toma *et al*, 2016a; Toma *et al*, 2016b), visionary leadership (Cornescu *et al*, 2004), lean management (Naruo *et al*, 2007; Marinescu *et al*, 2008), total quality management (Toma *et al*, 2009), entrepreneurial spirit (Zainea *et al*, 2020) and creativity (Toma *et al*, 2018a), social responsibility (Toma *et al*, 2011; Imbrișcă *et al*, 2020) and corporate citizenship (Toma, 2008a), and marketing mix (Toma, 2013; Catană *et al*, 2021). Also, they have implemented competitive business models in the age of digitalization (Toma *et al*, 2018b; Toma *et al*, 2019) and used valuable managerial methods and techniques such as Six Sigma (Toma, 2008b) and balanced scorecard (Toma *et al*, 2010).

## 3. Research methodology

To achieve paper’s purpose the author utilized a qualitative scientific research method. The literature review was based on the information found in several secondary data sources, such as articles, reports and books from the domains of economics and the automotive industry. Then, they were analyzed, categorized and synthesized. Finally, the author elaborated the paper.

#### 4. Findings

The motor vehicle production witnessed several changes worldwide in the period 2018-2022. In the pre-pandemic period (Tables no. 2 and 3) the production hierarchy by continents remained the same: Asia-Oceania was the first, followed by Europe and America.

*Table no. 2. The world motor vehicle production by continents in 2018*

Rank	Region	Production (number of vehicles)
1	Asia-Oceania	52,656,826
2	Europe	22,262,540
3	America	20,847,618
4	Africa	1,102,036

Note: Audi, BMW, Jaguar Land Rover (JLR), Mercedes, Scania and Daimler Trucks not reported.

Source: (OICA, 2019)

*Table no. 3. The world motor vehicle production by continents in 2019*

Rank	Region	Production (number of vehicles)
1	Asia-Oceania	49,333,841
2	Europe	21,579,464
3	America	20,148,849
4	Africa	1,113,651

Source: (OICA, 2020)

In the pandemic period (Tables no. 4, 5 and 6) Asia-Oceania led the production hierarchy, followed by Europe and America in the period 2020-2021, and by America and Europe in 2022.

*Table no. 4. The world motor vehicle production by continents in 2020*

Rank	Region	Production (number of vehicles)
1	Asia-Oceania	44,276,549
2	Europe	16,904,429
3	America	15,692,927
4	Africa	776,247

Note: Audi, BMW, JLR, Mercedes not reported.

Source: (OICA, 2022)

*Table no. 5. The world motor vehicle production by continents in 2021*

Rank	Region	Production (number of vehicles)
1	Asia-Oceania	46,768,800
2	Europe	16,338,165
3	America	16,190,835
4	Africa (excluding Egypt)	907,302

Note: Audi, BMW, JLR, Mercedes not reported.

Source: (OICA, 2022)

*Table no. 6. The world motor vehicle production by continents in 2022*

Rank	Region	Production (number of vehicles)
1	Asia-Oceania	50,020,793
2	America	17,756,263
3	Europe	16,216,888
4	Africa (excluding Egypt)	1,022,783

Note: Audi, BMW, JLR, Mercedes not reported.

Source: (OICA, 2022)

Starting from the above-mentioned data, the evolution of the world motor vehicle production exhibited some important features in the period 2018-2022, as follows:

- The pre-pandemic period was better than the pandemic period.
- The year 2018 was the best year of the period.
- Asia-Oceania clearly dominated the production hierarchy by continents.
- Asia-Oceania attained a world production record in 2018.
- Europe and America were the main competitors of Asia-Oceania.

## 5. Conclusions

The invention and development of the motor vehicle significantly changed the history of humanity. Since its emergence, the automotive industry has witnessed a continuous development all over the world.

This paper seeks to expand the scientific literature regarding the automotive industry. First, the paper illustrates that motor vehicle production contributes to the development of both national economies and the global economy. Second, it shows that the pre-pandemic period was a better period for the automotive industry than the pandemic period. Third, the paper demonstrates that Asia-Oceania dominates the production hierarchy by continents.

Further studies might expand this research by linking the world motor vehicle production with the production obtained by big automotive corporations.

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