

## Changes in Volkswagen's Operating Principles in the Realities of the COVID-19 Pandemic

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### **Abstract.**

*The beginning of the COVID-19 crisis caused many changes related to the functioning of the economy, the operation of enterprises, and the lifestyle of citizens. Therefore, it is not surprising that large transnational corporations have been forced to change their business policies, adjusting to the conditions of the pandemic. Thus, it is still relevant to consider how the principles of operation of such companies have changed, which of their decisions turned out to be successful and which were not. This study analyses the evidence from Volkswagen, as one of the largest and most influential representatives of the automotive industry. The authors of the study noted that the company's activities during the crisis turned out to be quite effective. One of the main reasons for this turned out to be that Volkswagen was one of the first to meet the pandemic in China, because of which it knew how to act in case of the spread of the virus in other countries. The company's policy was multi-layered, consisting of many components at once. Thus, managers tried to simultaneously provide employees at enterprises with a sufficient level of protection, improve the quality of formed and create new supply chains, digitalize the company's activities, etc. Although implementing such a policy proved challenging, such actions turned out to be quite effective in countering the consequences of the pandemic. The study also compared the performance of Volkswagen with Tesla, as one of its main competitors in the automotive market. This provided a better insight into the activities of a particular strategy to combat the consequences of the COVID-19 pandemic. This paper brings new knowledge for the development of strategies to counter various kinds of crises and sheds light on the features of the modern functioning of the global carmaker market.*

**Keywords:** Volkswagen; COVID crisis; crisis; control; risk; carmakers; international economics.

### **Introduction**

The COVID-19 pandemic, unexpectedly worldwide, has brought uncertainty to all economic actors (Gozgor, Lau, 2021; Mishra, Das, Yadav, Khan, and others, 2020). The crisis has caused problems in various aspects of economic activity, including capital markets, labour markets, foreign trade, and consumption and production sectors (Shang, Li, Zhang, 2021; Roy, 2020); it has also changed all aspects of human life: in terms of health, geopolitics, economics, education, mobility, etc. (Hamrouni, Sharif, Sharif, Hassanein, Abduekarem, 2022). Companies also felt the problems: both SMEs (small and medium-sized enterprises), which required significant support from the state to maintain their own activities (Bartik, Bertrand, Cullen, Glaeser, Luca, Stanton, 2020), and large companies, which had to change some of their ways of operating. (Demary, Hasenclever, Hüther, 2021). However, each of the companies had its own specific ways of adapting to the new realities of the economy, which can be better understood to enable them to weather the consequences of such a crisis. This makes it relevant to consider the characteristics of individual companies during the COVID-19 pandemic. This paper analyses the Volkswagen Group Corporation and compares its crisis management practices with other manufacturers in the automotive sector.

As such, the research aims to conclude an analysis of Volkswagen's activity during the COVID-19 pandemic and determine efficient methods to mitigate crisis losses, employed by the company. The research object is directly a Volkswagen company and its pandemic activity. The research novelty is determined by the detailed description of the Volkswagen company activity before and during the pandemic and a comparison of anti-crisis methods of other automobile companies.

### **Background about the company**

The Volkswagen company itself was founded back in 1938 by Ferdinand Porsche in Berlin. The "Gesellschaft zur Vorbereitung des Deutschen Volkswagens mbH", as it was then called, produced only military vehicles almost immediately after its founding, prompted by the outbreak of the Second World War. After the end of hostilities and the company's complete takeover by England, it continued to produce some

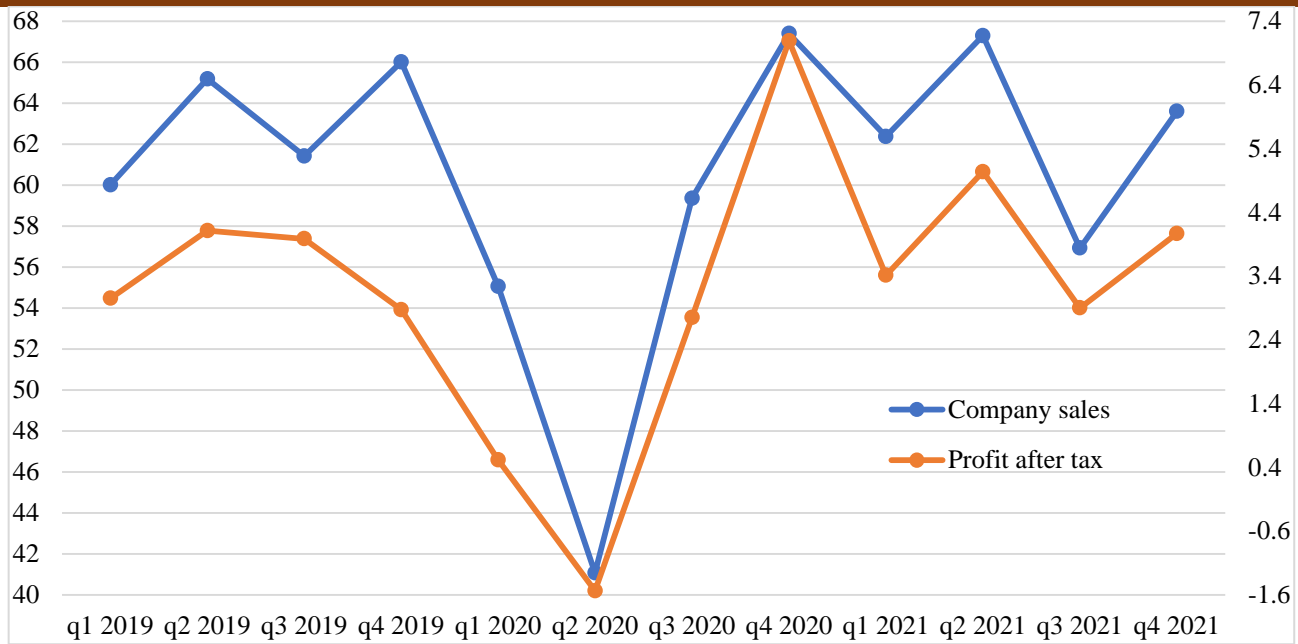
military vehicles for the British Army, but in the 1950s and 1960s, it was able to ramp up the production of private cars. The company began to gradually expand by absorbing more and more concerns: thus, Volkswagen was soon producing Bentley, Lamborghini, and Bugatti cars (Lupa, 2008). Similar expansions continued, enabling it to gain a foothold in the market. The concern is now one of the leading car manufacturers in the world, with a market share of around 10% (Statista, 2022). In the future, the company intends to go into the electrification of its vehicles, as outlined in one of the company's "Strategy 2025" publications, which outlined the company's steps to achieve certain green car production goals.

One of the most important events in the company's modern history was the Dieselgate scandal. Its significance lies in the fact that this event has not only reduced the company's credibility among investors and consumers (tarnishing its image), but also undermined the credibility of the entire automotive industry: as a result of installing a device called a "defeat device", the company was able to reduce its vehicles' waste emissions by 40%; scientists point out that the fraud was one of the most extensive in history (Barth, Eckert, Gatzert, Scholz, 2022). This eventually led the company to quite severe financial consequences, which is not strange given the unethical nature of this action (Coombs, Tachkova, 2018; Jong, Linde, 2022); causing the company's crisis in 2015 - 2016. However, not only the company itself suffered losses, but also many other car manufacturers (Barth, Eckert, Gatzert, Scholz, 2022). Nevertheless, it is worth noting that after this event, the entire automotive industry became more focused on the production of cars using clean fuels. Thus, Dieselgate caused the company to switch to more environmentally friendly production methods not only at Volkswagen but also at other corporations (Painter, Martins, 2017).

While many scientists have highlighted many problems, such as financial and reputational, caused by the scandal, there is an opinion that while the company bears high losses due to its reorientation to electric car production, it will remain the leader in the future of the industry and, thus, generate additional profit by being in a better place in the market (Georgievski, Alqudah, 2016). Nevertheless, it is worth considering the significant risks behind the industry. Firstly, the modern production of electric cars is expensive, which is the reason why many car manufacturers cannot afford to make them. Secondly, electric cars are inconvenient due to their constant recharge need. This significantly lowers the demands on the modern market, and it is unknown when the listed issues will be dealt with and investments compensated. Nevertheless, it is hard to predict, whether the company will be able to reach the leadership in the industry considering the serious competition, which reveals their first models into the market. It is only possible to note, that the company has all the odds, but only time will tell the fact. Peculiarly, the first negative reviews, addressing moral culture problems, started to appear even before the "Dieselgate" events (Vega, 2015).

### **During covid**

Before assessing Volkswagen's performance in weathering the COVID-19 pandemic, it is first worth analysing what the company's financial performance was like at the start of the crisis. The most important of these are shown in Figure 1 below.



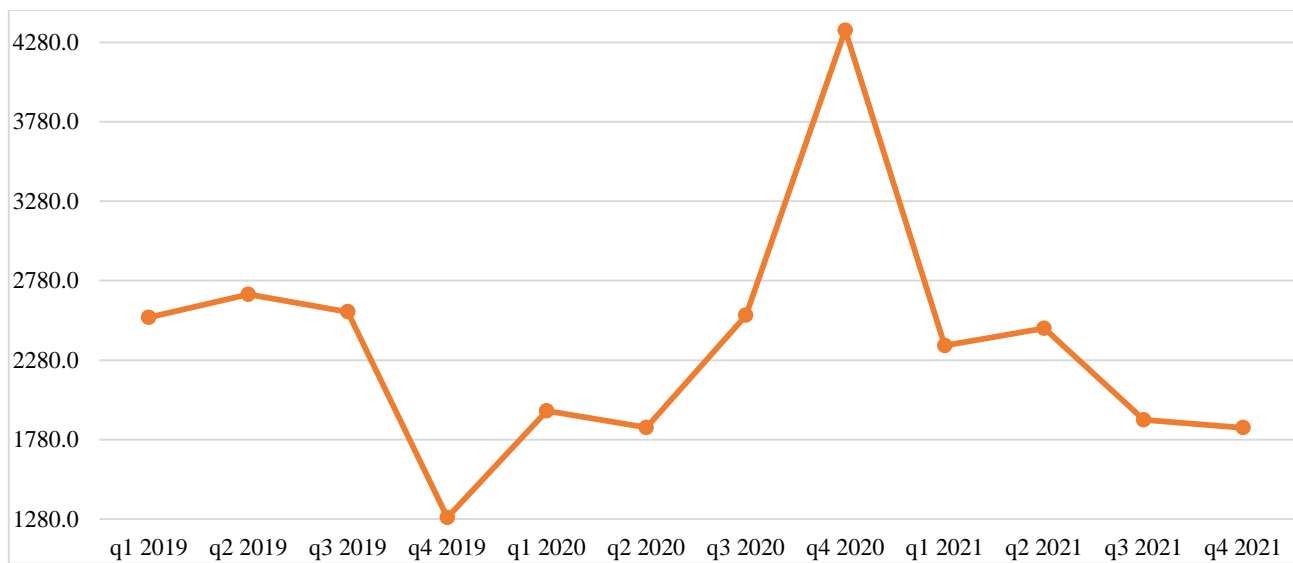
**Figure 1.** Volkswagen's revenue and sales figures from 2019 to 2021 by quarter, €m

*Note: q – quarter*

*Source: Volkswagen's annual and weekly financial statements (Volkswagen Annual Reports, 2022; Volkswagen Interim Reports & Half-Yearly Financial Reports, 2022).*

As can be seen from Figure 1, the company has experienced a fairly strong decline in sales (primarily due to logistics issues, reduced demand for vehicles and plant performance problems), leading to a decline in revenues, which in one period has reached negative values. Overall, the COVID-19 pandemic caused the company's sales to drop by 11.3% and after-tax revenues to drop by just over 37%. A brighter picture could be seen if the company's revenues and sales data were available monthly, but Volkswagen does not file monthly data on its financial results.

Figure 2 shows the company's sales figures for 2019 - 2021.



**Figure 2.** Volkswagen's sales from 2019 to 2021, thousand units

*Note: q – quarter*

*Source:* Volkswagen's annual and weekly financial statements (Volkswagen Annual Reports, 2022; Volkswagen Interim Reports & Half-Yearly Financial Reports, 2022).

As can be seen in Figure 2 at the onset of the COVID-19 crisis, sales in countries have fallen significantly even in volume terms (number of units sold) and the rate of recovery is erratic and volatile: they peaked at the end of 2020 but fell in 2021 and are below pre-pandemic levels.

Overall, car manufacturing companies, including Volkswagen, have significant losses due to the crisis beginning (Nayak, Mishra, Naik, Swapnarekha, Cengiz, Shanmuganathan, 2021). The most common tips to combat the consequences of the crisis are: to create reliable, obvious, and proper communications with employees; diversify the supply chains and lower the amount of smaller manufacturers in the structure; carefully process the fund policy, liquidity, and operative capital; to develop new marketing strategies including the new market changes, caused by the pandemic; ensure digitalization of every process in the company and provide cyber-protection of newly created digital products. By the way, as for digitalization and logistics, Volkswagen used a careful and timed strategy to improve the company's effectiveness and lower overall losses. Moreover, in the long run, it may benefit even more and will not cause huge losses in case of a new crisis, similar to the COVID-19 pandemic.

Let us now look at the direct operations of the company. With the onset of the crisis, the company's management was forced to close many of its plants. Andreas Renschler, CEO of TRATON and board member of Volkswagen AG, pointed out that such decisions were necessary to keep the company's workforce healthy, even by temporarily or completely shutting down production. This, as well as existing supply chain problems, which have been particularly severe in the company, given the peculiarity of the just-in-time management system, the model supply chain structure, the small number of stocks and the large number of small suppliers who went bankrupt during the pandemic, resulting in shortages in warehouses (Moosavi, Fathollahi-Fard, Dulebenets, 2022; Broek, Beer, Amelsvoort, Vanhaverbeke, Nugteren, 2020), did lead to a sharp drop in company revenues in the short and longer term. Note that the damage from supply chain problems is more tangible than it may first appear, as the damage from a single process or facility disruption can compound as its impact spreads through the supply chain, leading to greater damage at subsequent stages (Chen, Xi, Jing, 2017). The company decided to try to solve this problem by speeding up production and transportation, but this proved to be quite problematic given the capacity constraints in the factories and the demand for safety measures that could not be met at this pace of operation. It is worth noting that an important condition for automotive companies was the reduction in demand for vehicles due to the permanent quarantine regime in many countries, particularly in Europe.

Volkswagen, in fact, was ready to face the pandemic as it gained momentum in Europe. The reason for this was that the company's factories had already been closed in China as the virus began to spread from that country. In China, the company was the first car manufacturer with foreign capital, which brought it good profits. As Gunnar Killian, a member of Volkswagen's human resources and truck and bus divisions, notes, the temporary nature of the pandemic in China has given company management important insights on how to streamline its approach to imposing restrictions on factories in other countries around the world (Undconsorten, 2020). Soon, the Chinese part of the company took over responsibility and donated 120 million yuan to support the country in the fight against the pandemic; in addition, Volkswagen China set up a team to provide medical advice as well as manage epidemiological safety at its facilities (Chen, Zhong, 2022). Volkswagen's preparations for the restart after the reduction of quarantine restrictions were interesting. The company has divided all zones into red, yellow, and green zones. In the red zone, where minimum distances cannot be maintained despite maximum effort for technical reasons, mouth and nose protection must be used. In the yellow and green zones, relatively less stringent protection measures have been adopted depending on the possibility of protecting employees from infection by the virus (Undconsorten, 2020).

During the COVID-19 crisis, one of the most important components of the company that underwent changes was the IT component. In general, the IT management structure has remained similar to what it was before the pandemic but has been analysed and refined by means of a management matrix. Interestingly, Volkswagen does not use one particular IT management structure, and the structure varies depending on inputs and decisions. Separate e-commerce programmes, such as Microsoft Teams, used for meetings, drafting, and signing documents (or for many other purposes) for company employees working online, have

begun to play a more significant role in company operations (Broek, Beer, Amelsvoort, Vanhaverbeke, Nugteren, 2020). Overall, the company is going to invest more than \$25 billion in digitalisation by the end of 2024 (Volkswagen Annual Reports, 2022). Digitisation has also taken place in terms of the company's communication with customers, allowing them to shop more conveniently and interact with staff (Bai, 2021). This solution helped not only to increase the number of customers, but also to reduce operational costs. In addition, Volkswagen has unveiled a platform developed jointly with Amazon Web Services and Siemens that allows its partners to create their own applications and link them to the company's factories. This makes it easier for the company's factories and partners to meet their own needs and transform them into reality.

With the increasing role of IT in the automotive industry, the role of cybersecurity has increased: the likelihood that company data could be stolen, or attackers could gain access to the corporate network has increased. Previously, automotive companies have faced inefficiencies, financial losses, and security problems due to cyber-attacks in the past. In 2019, for example, many companies, including Volkswagen, had a cyber security breach that resulted in the theft of over 300,000 files in 51,000 folders or, as the attackers claimed, over 516GB of financial and personal data; so developing new cyber security systems was not a novelty (Fraga-Lamas, Fernandez-Karames, 2019; Broek, Beer, Amelsvoort, Vanhaverbeke, Nugteren, 2020).

At the start of the pandemic, Frank Vitter, the group's board member responsible for finance and information technology, said that the COVID-19 crisis had significantly affected the company, causing many countermeasures to be taken to cut costs and ensure liquidity; some measures were immediately taken to "revitalise" the business by launching car manufacturing plant operations in cities where this was possible (Volkswagen-newsroom Volkswagen Group Business..., 2020). By the end of the third quarter of 2020, the company was able to solve some of the problems that were associated with it. As Alexander Seitz, Volkswagen brand CFO, points out, such successes are due to systematic measures taken to cut costs and ensure liquidity, as well as the dedicated efforts of employees who did their best to catch up after the temporary closure in the spring (Volkswagen-newsroom Volkswagen brand recovers..., 2020).

Volkswagen's 2021 report outlines expectations for 2022 and the company's outlook (Volkswagen Annual Reports, 2022). The company expects market turbulence to continue due to the unstable geopolitical situation and new risks caused by protectionist tendencies: Thus, although car sales will probably be able to increase, they will not reach pre-pandemic levels. Another problem is the remaining shortage of semiconductors, as well as the risks of renewal (new waves) associated with the COVID-19 virus.

### **The Comparison between VW and Tesla**

The conclusion will also benefit from the comparison of Volkswagen with any other large car manufacturing company, such as Tesla (Song, 2022). Worth noting that the company has suffered substantial losses due to the crisis beginning, which was noticeable in the P/E, EV/EBITDA, and other metrics. Nevertheless, the company managed to show good development at the time. However, it is difficult to evaluate how effective the company's activity was. Washington Post in one of their publications described the case of multiple workers being fired due to absence during the pandemic even though the leadership reassured workers, that they may stay home if they need to protect their families. Meanwhile, Mask was seen publishing somewhat unclear messages on the danger of the pandemic and said, that "the danger of panic due to the coronavirus is far higher than the virus itself" (Kolodny, 2020). Suffice it to note, that such negative reviews of the Volkswagen company during the research were not found even though there is far more data analyzed.

While investigating the positive side of Tesla's activity in preventing the pandemic consequences it is worth noting that the measures the company took to implement the no-reserve strategy, improving the sales to certain target groups, new product launches (which, then, were more liked) and transition of most sales to online mode, including phone calls, have significantly improved the financial metrics of the company during pandemic (Bai, Chen, Liu, 2022). This allowed for improving sales, the overall employer state, and their productiveness and the reserve usage decrease. Moreover, Tesla modified its production lines to produce artificial lung ventilation machines (even though it was a relatively complicated task as the ALV technology differs from the car production technology) (Brem, Viardot, Nylunda, 2021). As such it is possible to conclude that Tesla has partially ignored the safety of their employees to achieve financial results even

though we deem it not ethical conduct. Nevertheless, the Volkswagen company managed to overcome the COVID-19 crisis in comparison with Tesla.

### After covid

From the above-mentioned, the company managed to overcome the pandemic period. Currently, the company is in the process of a radical transformation into a technological company. Volkswagen will launch not only the production of automobiles but also software and various services. Company projects are perspective. Nevertheless, this level of diversification is hard to achieve as the employed production processes in the company should be able to quickly adapt to frequent changes in the market. For this, the company decided to employ the ARIS (Architecture of Integrated Information Systems) system which allowed the company to achieve more opaque organization processes, evaluate them and configure them in various sub-departments and companies, which will accelerate the transformation. This system allows us to view the interconnection and correlation between wide spectra of processes, helping organizations to improve operational effectiveness. Company sub-departments will also benefit from the synergy with primary processes, which can be analyzed in real-time. Worth noting that some software, created by the company, is already available for the consumers.

As for the automobile market development, the company has had significant success in the matter. In the previous year, Volkswagen managed to break the situation in key regions of the works, successfully expanded the capabilities of the electric industry, improved the software capabilities, and improved effectiveness. In North America, the company managed to profit primarily from selling the five types of off-rovers. As for Europe, the company successfully expands the electric car market, where every fourth car is Volkswagen. As for China, the company manages to acquire high profits and hold a high marketplace despite lockdowns, caused by the new outbreaks of COVID-19. South America was also successful. As for the financial state of the company – it has improved. In the subsequent years, the company plans to continue development in constant development; additional investments will be delegated to the SRPEW (Scientific-Research and Prototype-Experiment Works) and capital investments, aimed at the improvement of competitiveness in the international market. As such, if Volkswagen company achieves all set goals, its development will get to the next level, on which the company will be able to achieve serious competitiveness in the production not only of automobiles but also of high-technology products with high demand.

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