by James Hsiao

The Impacts of COVID on Taiwan Auto Parts Industry and Its Strategies

肺炎疫情對台灣汽車零組件產業的影響與因應策略

How did the COVID Impact the Global Automotive Industry?

While the whole world is concerning about how severely the Covid will impact the world economy, most economists around the world agree that the impacts on the global economy by the COVID are wider and deeper than they originally expected, as every economy in the world has suffered unprecedented impacts and the automotive component industry has been greatly impacted as well.

Under the influence of the COVID, the global automotive industry faced exceptional crises in their production and the consumption market, including temporary shutdown of car factories, industrial supply chain disruption, new vehicle sales plunge, aftersales market freeze, unemployment & gloomy economic outlook, all of which significantly cut down on customers' trust. After all these changes, will the gradually recovering global auto parts industry also bring Taiwanese auto parts industry to life? Where can the automotive industry survive? Will it lead to a transformation in the auto parts industry?

Development Overview of Taiwan Auto Parts Industry

(a) Localized Marketing Through Chinese Operations

Leading Taiwanese auto parts companies have not only tapped into the supply chains of local Chinese car manufacturers, but also have entered the Chinese automotive aftermarket through joint ventures with Chinese companies or establishing subsidiaries directly. With localized production and sales supported by domestically supplied raw materials and human resources, Taiwanese investors in China have formed several industry clusters alongside the coastal areas in Kunshan, Shanghai, Zhejiang, Guangzhou, and Xiamen. In 2020, the total revenue of these Taiwanese investors in China represented roughly less than 8.9% of the total production value of Taiwanese auto parts industry.

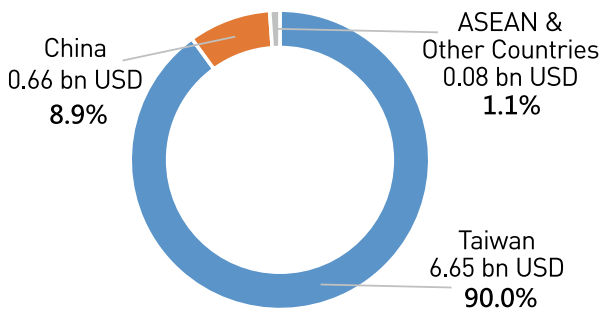
(b) Made in Taiwan and Sales Around the World

Taiwanese auto parts industry has been supplying products to car manufacturing plants invested by Japanese for long, so manufacturing equipment they use and the way they run their business are basically deeply influenced by Japan. Some leading car manufacturers even had the experience in OEM car production and selling products to the Middle East countries. Taiwanese auto parts manufacturers usually set up their R&D centers in Taiwan, due to the competitive edge of lead time, quality, and cost. For example, their rubber/plastic anti-collision components have been certified and tested; market shares of their bumpers, rear-view mirrors, and lamps are high in N. America and Europe; their motor and transmission components have entered the supply chains of well-known EV brands. Orders for high value-added products are processed in Taiwan and exported to the world.

The production value of Taiwanese auto parts industry in 2020 was around 7.39 billion USD (90% generated from Taiwan, 8.9% from China, and 1.1% from ASEAN & other countries). **Graph 1** shows the capacity deployment of Taiwanese auto parts manufacturers.

Graph 1.

The Capacity Deployment of Taiwanese Auto Parts Manufacturers in 2020 (7.39 bn USD)

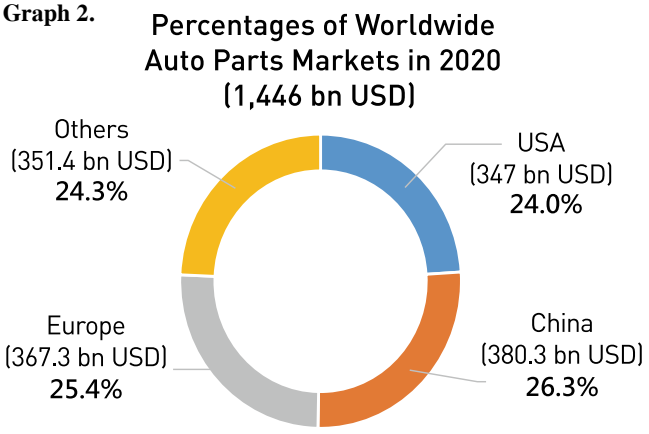


Source: IEK (2021/06)

Taiwanese Auto Parts are Mainly Sold to U.S. Aftermarket

Under the influence of the COVID in 2020, the value of the global auto parts market reached 1,446 bn USD, down 6.8% from 2019. China represented 380.3 bn USD (26.3%), Europe 367.3 bn USD (25.4%), the U.S. 347 bn USD (24.0%). All these three major markets represented 75.7% in total. China and Europe altogether represented 51.7%. **Graph 2** shows the percentages of various auto parts markets in the world.

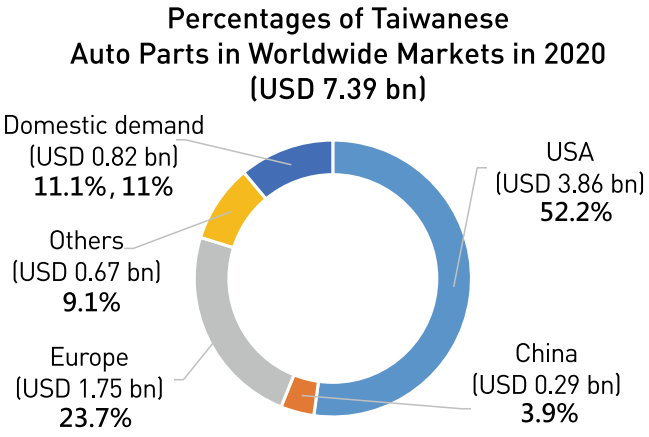
Graph 2.



Source: IEK (2021/06)

The production value of Taiwanese auto parts industry in 2020 was 7.39 bn USD. In addition to 0.79 bn USD worth of production supplied to the domestic Taiwanese market, the industry also had 89.3% of its total production (6.6 bn USD) exported to the world. The largest export destination for Taiwan was USA representing 3.86 bn USD (52.2%), followed by Europe representing 1.75 bn USD (23.7%) and China representing 0.29 bn USD (3.9%). Taiwan exports a diverse range of auto parts, most of which are plastic parts (incl. lamps, bumpers, rear-view mirrors, etc.), electric parts, braking systems, precision machined components such as wheels, gears, hubs, etc.). **Graph 3** shows percentages of Taiwanese auto parts in worldwide markets.

Graph 3.



Source: IEK (2021/06)

The Position of Taiwanese Auto Parts Industry in 3 Major Regional Markets

Main export destinations of Taiwanese auto parts in 2020 in sequence were USA (52.2%), Europe (23.7%), Japan (5.3%), China (3.9%), etc. About 8.9% of the total production value of Taiwanese auto parts in 2020 was generated by leading Taiwanese investors in China, who mainly supply the auto parts market and aftermarket for Chinese car brands and int'l car brands (e.g., VW, GM, etc.). Due to the influence of COVID, the export value of Taiwanese auto parts in 2020 was 5.31 bn USD, down 10.8% from 2019. Taiwanese auto parts manufacturers are dedicated to improving their production equipment and investing in smart manufacturing systems. Through positioning Taiwan as the R&D and production HQ as well as manufacturing various low-volume & high value-added parts in a more flexible way, Taiwanese companies can accept orders, manufacture, and sell products to the whole world.

(a) U.S. Market

Considering the vast territory and high wage level of the U.S., Taiwanese companies usually prefer setting up local warehouses to setting up factories directly. U.S. aftermarket is related to car ownership and accident rates. The more car ownership, the higher accident rate and higher demand for aftermarket service. Current U.S. car ownership reached 0.28 billion vehicles, which are the main market for aftermarket service. However, the market for aftermarket service can be also divided into the high (winter) and low (summer) seasons.

(b) Chinese Markets

Auto parts factories of Taiwanese investors in China are basically for production of engineered machining (e.g., gears and shafts), heat treatment, auto interiors/exteriors surface finishes (such as electroplating), plastic forming dies, clamps/tooling. Most of these factories are located in the auto parts industry clusters in Shanghai, Kunshan, Suzhou, Dongguan, and Ningbo. Those auto parts they produce are supplied directly to Chinese or int'l car brands for their car assembly and aftermarket service.

(c) European and Other Markets

There are lots of auto parts manufacturers in Europe and entering the market for outside competitors (including Taiwanese suppliers) is quite challenging. Taiwanese suppliers mainly export lamps, bumpers, body sheet metal, fenders, rear-view mirrors, etc. to European aftermarket. Taiwanese manufacturers mainly set up their warehouses in the Netherlands and Germany, while some others chose to collaborate with local partners to set up their JV factories. Taiwanese manufacturers are also reinforcing their footprints in the deployment of EV charging stations in Europe.

Impacts of COVID on the Auto Parts Industry and Ways to React to Them

(a) Upstream Supply End

<< Impacts >>

★ City lockdowns, people contracting the virus or sent to quarantine, disruption of logistics and auto parts supply.

★ As auto parts are usually processed in multiple stages (e.g., machining->heat treatment->grinding), the pandemic led to the discontinuation of parts manufacturing procedures.

★ Auto parts are involved in an international supply system, so the pandemic resulted in production and sales disruption across provinces, prefectures, or countries.

<< Ways to React to Them >>

★ Introduction of Just-in-Time and AI production equipment, reducing the demand for labor force.

★ Increasing stocks or diversifying the inventory locations of critical parts featuring high risks or low substitution possibility (e.g., safety parts).

★ Enhancing or simplifying manufacturing procedures of parts to shorten the industrial value chain.

★ Cultivating more suppliers of parts substitutes to disperse the risk.

(b) Downstream Consumption End

<< Impacts >>

★ Cars cannot be shipped out of the factories and sold until they are fully assembled with necessary parts. The pandemic discontinued the supply chain and influenced car sales and maintenance & repair.

★ The supply of critical parts featuring high risks or low substitution possibility was impeded or disrupted due to the need of multiple processing steps and supply across provinces, prefectures, or countries. The risk of supply was heightened.

★ Car production requires the seamless collaboration amongst auto assembly, whole vehicle testing and verification, shipment/sales/aftermarket, but the pandemic influenced every segment.

<< Ways to React to Them >>

★ Cultivating the second upstream parts suppliers to avoid the risk in the supply system.

★ Establishing the idea of Just-in-Case and dispersing parts inventory or logistics ways (for example, Toyota utilizes logistics trucks as movable warehouses) to reduce inventory space and achieve JIT supply.

★ The auto parts industry can introduce Block Chain and Industrial Internet of Things (IIoT) to get connected to the supply chain of production, sales, aftermarket and recycling.

Global and Taiwanese Auto Parts Industrial Outlooks in 2021

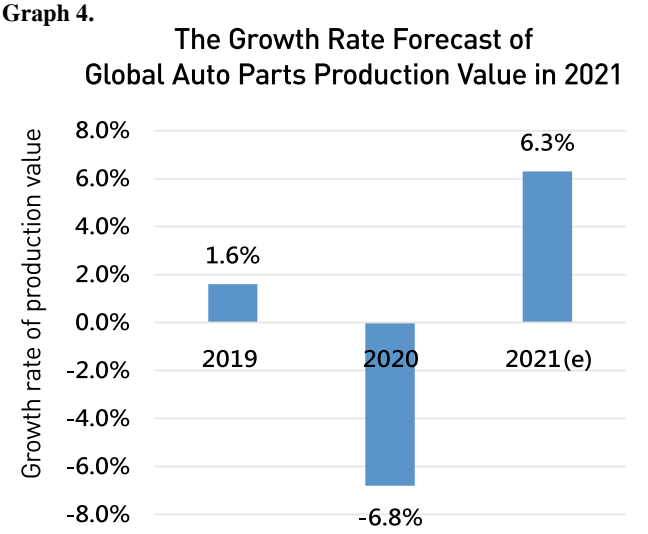
(a) Global Auto Parts Industrial Outlook

Car ownerships in the U.S., Japan, and major European countries continue to rise, which can generate positive effects on the aftermarket. Emerging markets like China, India, Mexico, and ASEAN are also seeing a bigger aftermarket due to the growing post-COVID demand for auto parts. It is expected that in 2021 the economic growth rate of China will exceed 8%. While the governments are formulating policies to popularize the use of new-energy vehicles and establishing guidance to increase EV sales, the demand for critical EV parts will appear a significant growth from 2020. With more vaccinations to help flatten the pandemic curve in 2021 and the implementation of economic stimulus plans in major countries, the value of global auto parts sales is expected to reach 1,533.6 bn USD, up 6.3% from 2020. **Graph 4** shows the growth rate forecast of the global auto parts production value in 2021.

(b) Taiwanese Auto Parts Industrial Outlook

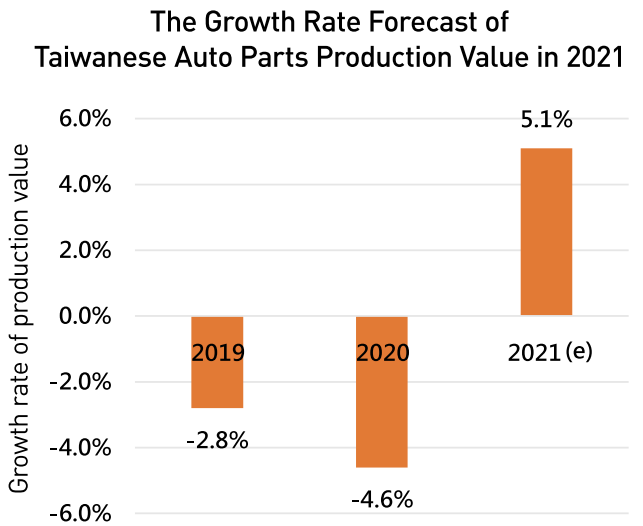
Reshoring of Taiwanese manufacturers and introduction of automated equipment and production are favorable to beefing up the cost competitiveness. It is expected that in 2021 Taiwanese auto parts industry will embrace an increase in their overseas sales due to the easing pandemic curve and their full-year production value will be 221.45 bn NTD, up 5.1% from 2020. The reason for such a production value increase can be attributed to the significant increase in auto parts exports to the U.S., Europe, ASEAN, Japan, and China. On the other hand, the percentage of EV parts will also appear growth. **Graph 5** shows the growth rate forecast of Taiwanese auto parts production value in 2021.

Graph 4.

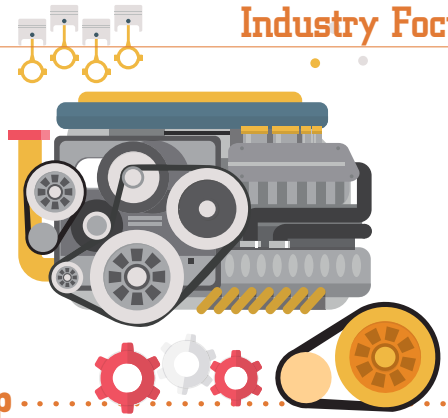


Source: IEK (2021/06)

Graph 5.



Source: IEK (2021/06)



Future Development Strategies of the Auto Parts Industry

(a) Upstream Supply End

- Utilizing digital tools and platforms to enhance the effectiveness of supply chain management.
- Using IIoT, Block Chain, Cloud Service and digital tools to reinforce transparency of supply chain operation and get a real-time understanding of changes in upstream/middle stream/downstream supply chain operation. Introducing JIT production and establishing AI production lines to reduce the demand for labor and improve production efficiency.
- Making the most of AI database to analyze and make decisions, achieving the AI-driven supply chain management.
- Conducting continuous analyses of market demand and raw material prices through the use of AI, Big Data, or other analyzing tools and cultivating the second upstream parts suppliers to reduce the uncertainty and risk of supply chain operation.

(b) Downstream Consumption End

- Utilizing digital tools and platforms to enhance service efficiency.
- Establishing the idea of Just-in-Case and dispersing parts inventory or logistics ways to reduce inventory space and achieve JIT supply.
- The auto parts industry should introduce Block Chain and IIoT to get connected to the supply chain of product planning, R&D, production, sales, aftermarket, and recycling.
- Making the most of AI database to analyze and make decisions, achieving the AI-driven supply chain management.
- Improving digital manufacturing to realize instant data collection and operation visualization of parts production lines; using AI to improve supply chain coordination, ensure auto parts quality, and increase capacity utilization.

(c) Government End

For Taiwanese manufacturers

- Adjusting untimely tariffs on auto parts (such as lower-end stamped sheet metal or rubber/plastic interiors and exteriors), to help manufacturers cut down on manufacturing costs, increase price competitiveness, and reduce too much reliance upon imports from Japan, China, etc. Helping manufacturers transform their business to avoid industrial competition and set foot on niche products, such as critical EV parts.

For int'l community

- Helping manufacturers apply for int'l certification (such as auto-pilot vehicles or Internet of Vehicles) to win over opportunities to collaborate with int'l car brands. Increasing manufacturers' brand awareness in int'l community through helps of governmental institutions functioning abroad (such as attending trade or business matchmaking events) and expanding sales to emerging markets (e.g., ASEAN, Central/E. Europe, the Middle East, Central/S. America). Signing investment & trade protection protocols to help companies accelerate their business deployment.

Recap

Due to the COVID pandemic, the global auto parts consumption market in 2020 reached 1,446 bn USD, down 6.8% from 2019. Main consumption markets included the U.S., China, Europe, Japan, etc. It is forecast that due to the flattened pandemic curve in major countries and economic stimulus plans of certain countries to boost consumption, the global auto parts market in 2021 will reach 1,536.6 bn USD, up 6.3% from 2020. In Taiwan, with the easing pandemic curve, recovering orders, and growing market demand, its auto parts production value is also forecast to reach 221.5 bn NTD, up 5.1% from 2020.

Over 90% capacity of Taiwanese auto parts industry is deployed in Taiwan and mainly for exports to the U.S., Europe, Japan, and China as well as the domestic market for car assembly and aftermarket. 8.9% of its capacity deployed in China is mainly for supplying Chinese brands and aftermarket. In 2020 the value of Taiwanese auto parts export reached 5.31 bn USD, down 10.8% from 2019. Main export destinations were the U.S. (52.2%), Japan (5.3%), China (3.9%), and Germany (3.0%).

The current position of Taiwanese auto parts in the global market can be attributed to their JIT supply, stable product quality, competitive costs, and the supply of superior quality and certified rubber/plastic parts and engineered machined parts to customers. The market share of Taiwanese auto parts is very high in the aftermarket of N. America, Europe, and Japan. Taiwanese auto parts manufacturers are also actively expanding their business to emerging countries like ASEAN, Mexico, and the Middle East countries.

The major COVID-related impacts on Taiwanese auto parts industry are the value reduction of its export to the U.S., Europe and Japan, caused by the pandemic, logistics disruption, container shortage, and dollar depreciation. The future development strategies of Taiwanese auto parts industry should be: Upstream suppliers improve their manufacturing procedures and extend their reach to EV auto parts. In the downstream consumption end, the supply chain risk management mechanism should be established and participation in the eco-system of the int'l supply chain is also important.

It is suggested that Taiwanese Government should reduce the tariffs on lower value-added auto parts (such as lower-end stamped sheet metal or rubber/plastic interiors and exteriors), encourage companies to introduce AI production equipment in order to reduce manufacturing costs and increase price competitiveness, guide companies to transform their business to avert industrial competition and extend their reach to niche products (e.g., critical EV auto parts, charging stations, etc.).