

COVID-19 Impact on the Manufacturing Industry



Impact of Covid-19 on Global manufacturing Industry

THE IHS PURCHASING MANAGERS INDEX (PMI)*, HAS SEEN HISTORIC LOWS ACROSS THE WORLD.

Country/Region	April PMI	Comment
United States	36.1	Lowest since 2009
Eurozone	33.4	Lowest in the history of the index
United Kingdom	32.6	Lowest since 2013
Japan	41.9	Lowest since 2009
China	50.8	Improved from lowest-ever of 35.7 in February 2020
India	27.4	Declined from 51.8 in March 2020

The global manufacturing landscape is not very likely to return to normalcy before the end of 2020

Manufacturing volumes of sectors affected...	
Neutral	<ul style="list-style-type: none"> Semiconductor Electronics
Negative	<ul style="list-style-type: none"> Automotive Chemicals Petrochemicals Food & Beverages
Positive	<ul style="list-style-type: none"> Medicine Medical Devices & Equipment Disinfectants & Sanitizers

*PMI index number represents the economic condition of the manufacturing industry. A PMI index number below 50 indicates recession.

IMPACT ON THE GLOBAL MANUFACTURING INDUSTRY

- Shutdown of manufacturing units resulting in decreased production volumes
- Disruptions in global supply chain
- Decline in global FDI inflows
- Job losses to control fixed costs
- Potential shift in production base from China to other low cost locations less impacted by Covid-19
- Rise of smart manufacturing, automation & digitalization
- Adoption of technologies such as AI, AR, Digital Twin likely to gain momentum
- Emphasis on localization to shorten supply chain

REGIONAL CHANGES...

- Asian Countries like India and Vietnam are being considered as new manufacturing destinations posing competition to China
- South Korea plans to shift some of its factories to India. POSCO and Hyundai Steel are considering Andhra Pradesh (India) as a likely place to set up their factories
- Japan reportedly is spending USD 2.2 Bn to help companies to shift out of China

In the long run, adoption of smart manufacturing and digital transformation provides new, innovative and automated solutions to critical problems face by the manufacturing industry

SMART MANUFACTURING

COVID19 has awakened the world to a strong digital sense. The loss of production for straight 8 to 12 weeks across the world due to absence of labor has pushed the manufacturers to rethink automation.

COLLABORATIVE ROBOTS
In the event of continued social distancing even after relaxation of lockdown, the need for industrial robots is more fervent. New use cases are being developed for implementation of Cobots to support the healthcare sector. UVD Robots Ap5, a Danish robot maker, supplied disinfection robots to hospitals in China, Italy and other countries. China is already the largest and the fastest growing market for industrial robots. Amid the labor shortages during the virus situation, semiconductor companies in China which have highly automated manufacturing have witnessed very limited dip in production.

China is pursuing a strong plan to become manufacturing power and strengthen its intelligent automation, where it intends to increase its domestic supply of industrial robots and gain domestic and international market share

DIGITAL TWIN
Manufacturing companies are looking at Digital Twin solutions for optimizing production capacity amid and post the lockdown situation. Digital twins use real time data to assess demand, supply or functioning of workstations and assets. Digital twin developed by Mitsubishi Electric, equips itself and its customers with visibility into plant and process data to enable predictive maintenance.

INDEX Group, a supplier of machines producing engine parts in the automotive industry, has built a new business model powered by digital twin. This platform allows its customers access to real-time data on equipment performance and condition as well as a knowledge database to train employees

3D PRINTING
Stressed supply chains distributed over geographies has become a matter of concern due to global lockdown and rising COVID infections. Manufacturing industry has started to look at 3D printing as a solution to shorten the supply gaps. The industry witnessed large scale 3D printed medical devices like ventilator splitters, testing devices and masks

PREDICTIVE MAINTENANCE
The pandemic is directing the manufacturing industry towards predictive maintenance. It is accelerating the condition monitoring of assets through real-time data. Manufacturing companies need ways to increase efficiency and decrease downtimes of expensive assets. Predictive maintenance increases efficiency by assuring maintenance tasks are done when they're needed

ROBOTIC PROCESS AUTOMATION
RPA automates the monotonous and time-consuming tasks and improves the efficiency and reliability of work outcomes. RPA assists in business processes, IT support and workflow processes, remote infrastructure and back office work. Ui Path, a provider of RPA software is offering healthcare organizations to accelerate critical processes. RPA aids in managing high volume of testing requests, reducing wait time, and process orders

Automotive production volumes are likely to witness a slump in the short term, however adoption of advanced technologies and shift in supply chain strategies will result in operational efficiencies

SHORT TERM IMPACT

- SUPPLY CHAIN DISRUPTIONS**
 - Global automotive industry, which imports more than USD 34 Bn in motor parts from China annually has been significantly impacted due to plant closures in China resulting in slowing or halting production and availability of components for auto manufacturers globally.
 - Also with the current stocks diminishing rapidly, shortage of auto parts likely to affect global production volumes in 2020
- SHIFTING PRODUCTION TO MEDICAL EQUIPMENT**
 - As a part of the short term strategy, automobiles companies are producing ventilators and face masks to help during the coronavirus pandemic.
 - For instance, Fiat began converting one of its car plants in China to make about one million masks a month. Similarly, General Motors, Ford and Tesla in the US have pledged their support to offer resources to make more ventilators
- DIGITAL TECHNOLOGY TO BOOST SALES**
 - Carmakers turned to digital solutions to boost car sales. Traditional automotive brands, including Volkswagen, Nissan, SAIC and BMW, have turned to online sales for cars, using tools such as virtual reality and live broadcasts to stimulate sales.
 - This also addresses the issue of freeing up existing inventory to allow entry of new models

LONG TERM IMPACT

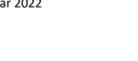
- SHIFT IN SOURCING STRATEGY**
 - Having experienced severe supply disruptions during the last few months with an over dependency on China as a manufacturing base, automakers likely to review their supplier strategy across geographies, and possibly rely more on indigenous suppliers.
 - Japan has earmarked USD 2.2 billion to help companies shift manufacturing base from China to Japan, and USD 214 million to other countries
- PRODUCT DEVELOPMENT DELAYS**
 - Product development cycles and new model launches likely to be delayed due to financial challenges and supply chain disruptions. The R&D spend may be reduced as automakers look to conserve capital.
 - GM announced postponing launch of updated models – Chevrolet Equinox, Silverado, and Bolt EV, as well as the GMC Terrain, Sierra, and Cadillac XT4 in the US to year 2022
- REGULATORY CHANGES**
 - Emission norms could be relaxed for automakers to cope up with declining sales in the coming quarters
- ADOPTION OF TECHNOLOGICAL ADVANCEMENTS**
 - Increased adoption of automation, digitalization and artificial intelligence (AI) in the automobile sector to improve resilience to future disruptions

REGIONAL DEVELOPMENT

- China**: Plants opening up, footfalls in retail showrooms increasing, however the country is expected to witness a 5-10% decline in automobile sales in 2020
- USA**: Automotive production stand stills, major automakers announced indefinite shutdowns, domestic vehicle sales volumes are forecasted to witness a fall ~26.5% in 2020
- EU**: Situation remains critical in Europe, EU-wide production loss stands at ~2 Mn vehicles, according to ACEA
- India**: Auto industry anticipates USD 2 Bn loss, as factories and dealers shut shop, companies expect loss of about 750,000 units in production in March alone

WHAT THE PLAYERS ARE SAYING...

Ford expects a net loss of USD 2 Bn for the first quarter as the coronavirus pandemic continues to suppress the sales and production activities



The company expects its operating profit to fall to € 0.9 Bn, which would be an 81% drop from € 4.84 Bn last year in Q1. After five weeks of shutdown Volkswagen has now restarted production in two of its plants

Semiconductor industry witnessed mixed market impact; data centers and wired communications segments posed as winners, where as demand from automotive & industrial applications hampered growth

IMPACT ON THE GLOBAL SEMICONDUCTOR INDUSTRY

- STRONG DEMAND FROM DATA CENTERS & STORAGE SOLUTIONS**
 - As companies shifted to work-from-home and consumers move more towards digital platforms, the demand for storage solutions for data centers, laptops and other gadgets has increased
 - According to a report by McKinsey, the semiconductor market for servers could increase by 1 to 7 percent, driven by a strong demand in video streaming and conferencing
- POSITIVE DEMAND FROM WIRE COMMUNICATIONS**
 - Demand for semiconductors used in wired communication applications likely to increase due to stringent security upgrades for existing enterprise infrastructures, fixed broadband usage in some countries, higher purchases of cable/DSL and wireless routers as workers upgrade internet connections in private home offices, higher internet traffic surges the demand for switches & routers
 - Greater demand for cloud services and associated computing nodes, which will increase the need for optoelectronics in data center fiber connections is observed
- DECLINE IN DEMAND FROM AUTOMOTIVE & INDUSTRIAL APPLICATIONS**
 - Since global automotive demand has witnessed a sharp decline, the demand for semiconductors for automotive applications, which primarily depend on car sales volume and vehicle digitalization and electrification is expected to decrease over the coming months
 - Demand for semiconductor in medical electronics, aerospace equipment, power and energy products and lighting solutions is expected to decline as companies postpone infrastructure investments, reduce manufacturing activities, or decrease operations

REGIONAL DEVELOPMENT

- China**: Recovery of the Chinese market post-COVID-19 emerged as a revival platform for the semiconductor and circuit manufacturing industry
- USA**: U.S. imposed export controls that impacted the sale of certain semiconductors and other technology to China. This requires the US companies to obtain special licenses to sell certain items to companies in China that support the military, even if the products are for civilian use
- India**: The Indian government has stopped all electronics manufacturing, shut down retail stores and halted sale of electronics online. Consumer demand has fallen since people are confined to their homes and spending on essentials

WHAT THE PLAYERS ARE SAYING...

Memory Business witnessed high demand, despite weak seasonality and the effects of COVID-19, largely due to continued investments in 5G infrastructure and increased demand from cloud applications. Demand for DRAM is expected to remain firm, whereas mobile demand may face high uncertainty



Witnessed stronger demand from datacenter in all regions due to remote-work economy and increased e-commerce activity. Moving supply from smartphone to datacenter markets, for both DRAM modules and SSDs

Chemical sector witnessed increased demand from packaging, food & disinfectant industry; however shorter supply chains & innovative business models will be the future go to strategy for key players

IMPACT ON THE GLOBAL CHEMICAL INDUSTRY

- INCREASE IN DEMAND FROM PACKAGING & FOOD INDUSTRY**
 - Demand for pharmaceuticals, food additives, and disinfectants is peaking and chemical companies catering to the need of these sectors are reporting increased sales volumes
 - Demand for the packaging materials has been increased to prevent the contamination of food, medicine, personal care, and medical products thereby creating a significant demand for chemicals involved in the packaging industry
- SUPPLY CHAIN DE-GLOBALIZATION**
 - In response to the supply chain disruptions, chemical companies have now started to (partly) relocate or ramp-up the production of critical chemicals supplies and medical goods closer to end-customers (for example, pharmaceutical active ingredients, disinfectant gels, masks). The markets are expected to be more self-reliant in the coming times
 - Also, commodity chemicals companies may have to cope with feedstock price volatility, supply chain and logistics challenges, and unpredictable customer demand and the industry may need to find alternatives to the sector's reliance on inputs from China-based suppliers
- RISE IN INNOVATIVE AND NEW BUSINESS MODELS**
 - Chemical companies may capitalize the current scenario and use this opportunity to get closer to end-users and accelerate innovative digital enabled business models that address customer needs
 - By interacting with customers directly, companies can enhance customer services, provide better prices for commoditized as well as shift to complete digitalization of services for better customer experience

REGIONAL DEVELOPMENT

- China**: Chemical manufacturing output in China declined by 21% and profits by 66%, government has launched various infrastructure investments worth USD 3.5 trillion
- USA**: The US chemical volumes are expected to fall 3.3 percent in 2020 before rising 5.2 percent in 2021
- EU**: European regulators are focusing more towards developing a regional structure, emphasis is expected to be on making in Europe and have strategic stocks and have very reliable trade agreements in place
- India**: Improving its feedstock allocation policy, Government investments in chemical clusters across the country, Easier access to capital simplifying pollution compliance laws

WHAT THE PLAYERS ARE SAYING...

BASF anticipates a year with reduced profits and decline in production owing to the outbreak of Covid 19



Covid 19 estimates that Covest 19 will have a negative impact on its first-quarter earnings of about USD 65 million.

Solvay expects an impact of approximately EUR 25 million in the first quarter and will update its outlook as the situation becomes clearer

Supply chain disruption is the biggest challenge faced by the F&B industry, however, going forward innovative products and product safety will be the key elements influencing industry growth

IMPACT ON

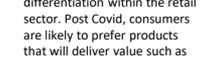
- INCREASE IN DEMAND FOR PACKAGED FOOD DUE TO PANIC BUYING**
 - Packaged food and beverage industries are witnessing an upsurge in the demand, due to an increase in consumption for shelf-stable foods and beverages including milk products, canned foods & ready to eat meals as consumers rush to stock the pantries as a result of panic buying
- DISRUPTIONS IN THE SUPPLY CHAIN**
 - Food supply chain has been largely impacted by the pandemic COVID-19. For instance, Coca Cola Co. experienced delays in its raw material supply from China as a result of stalled production due to the spread of COVID-19 in China. The company imports sucralose from China and have flagged that Chinese suppliers have experienced delays in production and export
- HIGHER DEMAND FOR INNOVATION FOOD PRODUCTS**
 - Many 2020 product launches have been delayed or cancelled; few have been now pushed to 2021, providing ample time to retailers for creating innovative food products. This will also create a real opportunity for differentiation within the retail sector. Post Covid, consumers are likely to prefer products that will deliver value such as better price; reduced waste; higher nutrient density, more convenience, etc.
- DEMAND FOR PLANT BASED PRODUCTS TO INCREASE**
 - Desire for plant-based products is likely to be the new shifting trend post the pandemic. It is believed that COVID-19 which originated in animals will accelerate consumer shifts to plant-based foods
- INCREASING CONCERNS OVER PRODUCT SAFETY**
 - Consumers are now highly aware of the importance of hygiene and food safety. Food and beverage manufacturers across the globe are likely to consider technological advancements like blockchain to enhance visibility and transparency into their supply chain

REGIONAL DEVELOPMENT

- China**: Change in consumer demand such as easy to prep meal options, concerns over product safety leading to hygienic and safe foods and increase in demand for online buying
- EU**: The European Investment Bank (EIB) approves € 1.6 Bn of financing for the agri-food sector aims to support private businesses along the supply chain, including those in food, bio-based materials and biogenery
- India**: Budget reallocations, diversion of marketing spends, postponing investment plans, and business consolidation are some of the measures undertaken by the food & beverage (F&B) industry

WHAT THE PLAYERS ARE SAYING...

Amid the pandemic, Nestle Q1 sales remained resilient. Most of the company's markets. The Ecommerce sales contributed to more than 10% of total sales in the quarter. Nestle is likely to be in an advantageous position due to its diversified product portfolio.



Tyson Foods, experienced negative impact due to Covid. 900 workers were found Covid positive from their Indiana plant, which temporary further shut down operations. The company estimates the Covid will have an impact on the quarter earnings which is set to be announced in May 2020

For a more detailed assessment of the impact of COVID-19 on the Manufacturing industry please reach out to marketing@datamaticsbpm.com.