

Corona Virus effecting economy in different sector wet Supply chain management

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In this we will discuss how the supply chain of various sector having affected due to corona virus and we will discuss about the problem and solution related to that problem.

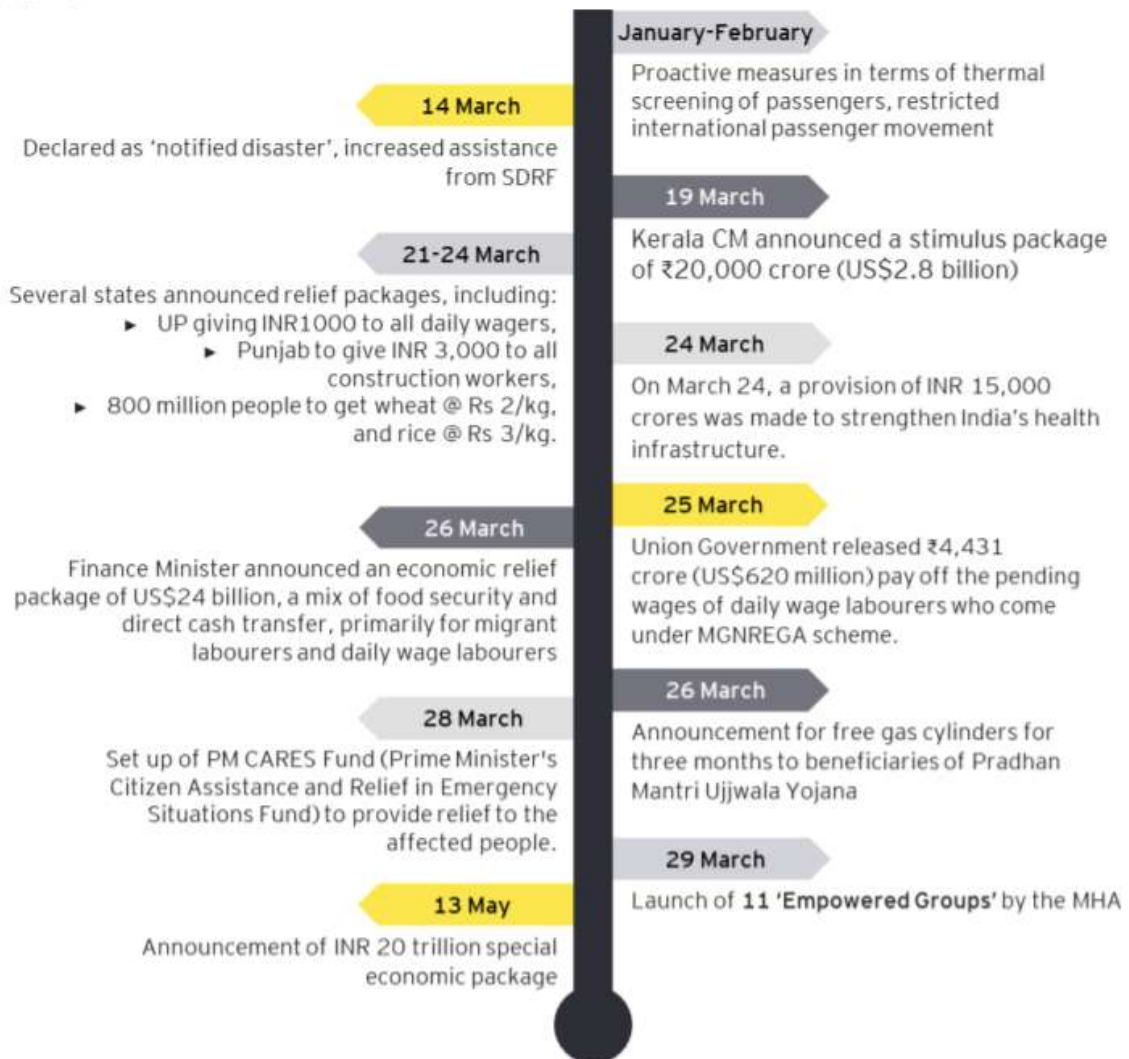
Fig. 1: Indian economy: demand and supply side disruptions

Demand side impact	Supply side impact
<ul style="list-style-type: none"> ▶ Travel restrictions have severely impacted Transport, Tourism, Hospitality and Aviation sectors. <ul style="list-style-type: none"> ▶ Estimated overall losses to India's tourism sector is INR 5 trillion and 50 million job cuts ▶ Branded hotels/tour operators are cumulatively expected to incur INR 1.6 trillion loss ▶ Closing of theatres and shopping complexes has affected the retail sector ▶ Drop in disposable income and consumption due to job losses. ▶ Steep drop in consumer confidence ▶ => deferring of purchase decisions 	<ul style="list-style-type: none"> ▶ Disruptions due to supply chain breakdowns emanating from China, South Korea, Italy, Spain, France, Germany, the UK and the USA. ▶ Manufacturing and sectors like auto, pharma, electronics, chemical prod. etc. face an imminent raw material and component shortage due to shutdown or delay in supply of goods from China. ▶ This is hampering business sentiment and affecting investment and production schedules of companies. ▶ Besides impacting imports of vital raw materials, the slowdown in manufacturing activity in China and other markets of Asia, Europe and the US is also dampening India's exports to these countries
Economic impact of COVID-19 in India	
<ul style="list-style-type: none"> ▶ Trade disruptions with China has impacted Indian exports of sea food (anticipated INR 1,300 crore loss), petrochemicals (34% export to China), diamonds (36%), gems and jewellery etc., resulting in a price reduction ▶ Imports from China alone account for 18% of India's import (FY19) especially those related to ceramic, glass wear, machinery, electrical equip. ▶ Germany and the UK account for a significant share of Indian exports of leather products, footwear, machinery and instruments while Iran is a major export destination for vegetable products. ▶ The cancellation of four major trade events between February and April is likely to cause an estimated loss of INR 8,000-10,000 crore in terms of business opportunity for Jaipur alone. 	<ul style="list-style-type: none"> ▶ Financial markets have become extremely volatile ▶ due to uncertainty about the future and repercussion of Covid-19, leading to huge crashes and wealth erosion, which in turn is impacting consumption levels. ▶ Following the trend of the global equity markets, domestic markets have been extremely bearish. ▶ With equity markets likely to remain volatile in future as well, further wealth erosion of investors is expected ▶ The government will find it tough to meet its ambitious divestment target again this year.

These are major step taken by Indian government for the well-being of the economy

Fig.2

Figure: Major relief packages and interventions undertaken by the Government of India during COVID-19 pandemic



CHAPTER:2 OBJECTIVES

With global firms and countries newly declared aims to reduce supply chain risks in the future. India has a unique potential to emerge as the preferred destination during and beyond the COVID-19 pandemic by focusing on the long-term and repairing the disrupted value chains in the short-term. It has a robust macroeconomic foundation. Fundamentals, a positive demographic dividend, better ease of doing business, and an economy that is forecast to grow India can position itself as an appealing investment destination if it continues to grow, although at a slower pace, during this period. For investors all throughout the world This would necessitate collaboration between the government, local governments, and the private sector.

In this we explore:

- The value chains of the different key sectors in India in the following sections of this research with this goal in mind.
- The COVID-19 epidemic has caused disruptions in the sectoral value chains.
- The potential Solution to resolve this problem and make our economy back on track.

CHAPTER 3.1 Auto, Auto Components and Electric Mobility

Overview:

Because of its ties to various key industries such as steel, basic metals, plastic, and electronics, the automotive industry is seen as a barometer of the economy. Thanks to a growing working population, increased disposable income, technical innovation, urbanization, and the necessity for mobility, the car and auto component industries have enjoyed tremendous expansion in recent years. Two-wheelers, passenger vehicles, commercial vehicles, and three-wheelers are the four main segments of the automobile industry. By 2030, the global automotive sector is expected to be worth approximately US\$ 9 trillion (INR 675 trillion). China is one of the world's largest vehicle markets, both in terms of sales and production and India is now the world's fourth largest automobile market.

Importance of this sector in India:

- The significance of the sector India is one of the world's most populous
- The automotive sector in India contributes roughly 7.5 percent to the country's GDP and is a major employer.
- In FY19, two-wheelers dominated the sector, accounting for 81 percent of total domestic automotive sales of 26.3 million units.

Between FY13 and FY18, domestic automotive sales climbed at a CAGR of 6.7 percent.

- In 2018-19, the Indian auto components sector contributed 2.3 percent to India's GDP, 25 percent to its manufacturing GDP, and employed 5 million people.

Major companies during COVID 19:

- Ford, GM, and FCA have halted production in portions of the United States and reconfigured the facilities to produce COVID-19 medical equipment.
- Nissan has halted production in the United Kingdom due to supply chain disruptions and lower demand. As a result of the disruption in supply lines,
- Daimler has halted manufacturing in Europe.

Because of government limitations on people mobility, supply chain delays, and declining sales,

- Toyota has ceased manufacture in Europe.
- BMW has announced that its European factories and its South African facility will be closed until April 19 in order to deal with weaker demand caused by the coronavirus outbreak.
- Due to the expected fall in the market as a result of the coronavirus.
- Honda has closed four US vehicle facilities.
- Toyota Europe is cancelling plans across the continent due to government shutdowns caused by the coronavirus.
- Renault has announced the closure of factories in Slovenia, Morocco, and Romania.
- As a result of the epidemic, Volkswagen has halted production.

Solution:

Following the lead of the Chinese car sector, the lockdown will result in dramatic changes in purchasing behavior. During travel, consumers will place a higher value on personal health, hygiene, and cleanliness. Following the epidemic, we anticipate a shift in consumer behavior toward personal mobility. In the medium term, shared mobility will take a backseat. However, with depressed attitudes and aversion to higher discretionary spending, such as purchasing new automobiles, demand for used vehicles is likely to increase in the next 3–6 months. Indian consumers may be interested in service-based models such as pay-as-you-go and lease rentals. Many OEMs have recently created online sales channels to connect with consumers digitally, indicating new ways of conducting business.

CHAPTER 3.2 Medical Devices and Equipment OVERVIEW:

The worldwide medical device and equipment manufacturing market is estimated to reach US\$ 520 billion (INR), according to estimates.

By 2020, the total amount of money in the world will be 39 trillion dollars. The expansion will be fueled by an increase in the number of hospitals, increased access to healthcare facilities in emerging markets, and growing public awareness of the importance of regular medical check-ups as well as advancements in medical device manufacturing technology, to name a few. India's medical sector the device and equipment manufacturing industry is one of the top 20 global markets.

Importance of this sector In India:

Given the under penetration of medical devices in the country and the growing need for improved healthcare infrastructure and facilities, the medical devices and equipment manufacturing business has enormous growth potential.

- The medical equipment and gadgets sector in India is projected to be around US\$ 11 billion (INR 825 billion) at the moment. While barely 4–5% of the country's US\$ 96.7 billion (INR 7.25 trillion) healthcare sector is devoted to it.
- The local sector is growing at a rate of 15.8%, while the worldwide medical device and equipment manufacturing business is growing at a rate of 4.1 percent.
- About 800 medical device firms currently operate in India, with an average investment of US\$ 2.3-2.7 million (INR 170-200 million) and a sale of US\$ 6-6.7 million (INR 450-500 million)

Indian market and important countries in the sector:

India lags well behind wealthy economies such as the United States, where medical device spending per capita is over \$415. (INR 31,125). India spends the least on medical devices per capita among the BRICS countries, at around US\$ 3 (INR 225), compared to China's US\$ 7 (INR 575), Brazil's US\$ 26 (INR 1,950), and Russia's US\$ 47 (3,525).

In India, medical devices are approved based on prior approval from the US Food and Drug Administration or the European Union. Foreign makers of regulated devices face substantial challenges due to the country's inadequate regulatory system. In addition to encouraging domestic manufacturing of medical

devices and equipment, the Indian government has recommended the establishment of Medical Technology Parks.

Impact of COVID 19 on Health care sector:

Some companies are voluntarily switching their production lines to make essential supplies. However, there are clear practical limitations on the ability of any general manufacturing businesses to make technically complex and highly regulated machinery in such a short span. Both central and state governments are also providing all the required assistance at this stage but certainly more needs to be done, as the entire situation looks is grim given the rising number of coronavirus cases and deaths in India and other countries.

Solution to overcome the pandemic especially supply chain healthcare:

- Import duty and specific extra duty exemptions for medical device raw materials, parts, and accessories are provided.
- To support the health ecosystem, establish green channels (a preferential clearance mechanism for medical devices, spare parts, and raw materials) at all international airports and seaports.
- To reduce operating costs, offer short-term GST and Health cess exemptions. Reduce corporate tax for existing manufacturing enterprises in the medical devices industry to 10% from 22%.
- Establish international ties to institutionalize leading R&D facilities in India.

CHAPTER 3.3 Tourism and Hospitality

The tourism and hotel business are one of the economy's most important revenue generators. The business not only employs thousands of people but also contributes to the development of a country's infrastructure, as well as supporting a variety of industries such as airlines, transportation, food and beverage, and support services. By bringing foreigners and local inhabitants closer together, the industry facilitates the interchange of cultural ideas.

Importance of this sector in India:

The World Travel and Tourism Council ranks India as the world's seventh largest tourism economy in terms of GDP contribution.

The tourism sector has been selected by the Indian government as one of the champion sectors, as it is predicted to generate the greatest number of jobs in India and around the world.

India's economy is expected to rise to US\$ 5 trillion (INR 375 trillion) by 2025, making it one of the world's fastest growing. In the future years, the services sector will be a major contributor to growth.

Impact of COVID 19:

Global:

The COVID-19 pandemic, according to the United Nations World Tourism Organization, caused a 22% drop in foreign visitor arrivals in the first quarter of 2020. According to the UN specialized agency, the crisis could result in an annual decrease of 60 to 80 percent compared to 2019 statistics, putting millions of people's lives at jeopardy in one of the most labor-intensive sectors of the economy. According to the UNWTO, current 2020 scenarios show that a drop in international travel demand might result in:

According to the UNWTO, current 2020 scenarios show that a drop in international travel demand might result in:

- 1) a loss of 850 million to 1.1 billion international travelers,
- 2) a loss of US\$ 910 billion to US\$ 1.2 trillion (INR 68 to INR 90 trillion) in tourism export profits.
3. At risk are 100 to 120 million direct tourism jobs. The organization stated that this is by far the largest crisis in international tourism since records began in 1950, and that the effects will be seen in different ways and at different periods in different parts of the world.

India:

Due to the pandemic-related interruptions, the Indian sector predicts a total loss of US\$ 67 billion (INR 5 trillion) and job losses of roughly 40–50 million people. According to CII forecasts, the organized sector of the industry will be the hardest hit of the total losses. A total loss of US\$ 21 billion is predicted from branded hotels, tour operators, and travel agents (INR 1.58 trillion).

Over the next 10–12 months, foreign tourist inflows are likely to be essentially non-existent. As a result, it is critical to place a specific emphasis on the tourism sector's revival.

The pandemic has impacted every aspect of the tourism industry. The following are the primary sub-segments of the value chain that are affected:

Solution of COVID 19 To up left tourism sector:

- Make a technology so that they can do virtual tours of key locations and promote through social media.

- Set Separate funds to support tourism industry.
- Disposable Product Demand Has Increased

During this period, respondents said they used disposable products to decrease interaction between people and serve in a safer environment. Human health was prioritized in this situation, with waste management falling to second place during the outbreak.

- Problems arose as a result of challenges in the global supply chain, particularly in the acquisition of imported goods.

CHAPTER 3.4 Real Estate and Construction

The construction and building materials sector is supported by real estate. Infrastructure development projects such as roads and highways, seaports, airports, bridges, irrigation, water supply and sanitation networks, education and healthcare facilities, and infrastructure development projects such as roads and highways, seaports, airports, bridges, irrigation, water supply and sanitation networks, and education and healthcare facilities are all included in the real estate segment.

Importance of this sector in India:

- The Indian real estate market was worth US\$ 120 billion (INR 9 trillion) in 2017 and is predicted to reach US\$ 650 billion (INR 48.75 trillion) by 2025, accounting for 13% of India's GDP.
- The importance of the construction sector in the Indian economy is demonstrated by the fact that it accounts for 8.2% of GDP and employs over 12% of the workforce.
- Construction is the country's second largest employer, behind agriculture, and is expected to grow by 30% over the next decade. 2018-2028. The sector's high employment is mostly attributable to forward and backward links with other economic sectors. The need for real estate and infrastructure development drives forward linkage, while the supply chain for the construction sector, which includes core materials, finished construction materials, and construction equipment, drives backward linkage.
- To encourage investment in the industry, the Indian government has pooled resources to fund the development of about 100 Smart Cities to help the urban real estate sector, with a concentration on the affordable housing segment.

Impact of COVID 19 on Real estate Business:

Fig.3

Participant	Investor (customer)	Constructor	Labour force
Risk	Overdue delivery, pay shortening, risk of losing source of income due to COVID-19	Projects may get delayed or suspended, labour may migrate to their hometowns, buyers may prefer completed projects only, delayed delivery deadlines	Reduced pay, loss of job, short of work
Opportunity	Lower interest rate and home loans, personal loans, deals on offer, concession in property tax	No penalties due to delayed delivery, Delivery timings can extend	Adopt virtual tours and implement new ideas like e-broacher, social benefits from government

Solution to uplift Real estate:

- On housing loans taken for PMAY projects, there should be 6-month interest-free term.

Fig.4



CHAPTER 3.5 Metals – Steel and Aluminum

Iron and steel are a multifarious industry, which is intrinsically linked with the world economy as a whole and plays an important role in strengthening the economy of any country. Steel products are used as a key raw material across many industries, including infrastructure, automotive, engineering and other manufacturing sectors. The steel industry’s products also play a crucial role in sustainable development of the society. Aluminum is the world's second most widely used metal, after steel, and is utilized in a variety of industries, including automotive, construction, electrical, electronics, and aerospace.

The non-ferrous metal's distinctive qualities, such as light weight, corrosion resistance, recyclability, conductivity, ductility, and high strength, are only a few of the reasons for its growing popularity in a range of industries. Primary aluminum, aluminum extrusions, aluminum rolled goods, and alumina chemicals are all part of the aluminum segment.

Importance of this sector In India:

- Aluminum consumption in India is 2.5 kg per capita, which is substantially lower than the global average of 11 kg per capita, and hence there is a lot of room for growth.

- Aluminum contributes 2% of the country's manufacturing GDP, despite its low consumption. As the country's consumption grows, the contribution will increase.
- Aluminum is used in the electricity (48 percent), vehicle (15 percent), building (13 percent), packaging (8 percent), industrial (7 percent), and consumer durables (7 percent) industries in India.
- The steel industry contributes significantly to India's economic growth, accounting for 2% of the country's GDP.
- GDP of a country India has become the world's second largest steel producer, one of the few bright spots in the global steel business.
- Overtaking Japan as a producer. In 2019, India produced 111.2 million tons of crude steel, up nearly 2% year on year. The World Steel Association says so.

Fig 5 Key Consuming sector of steel

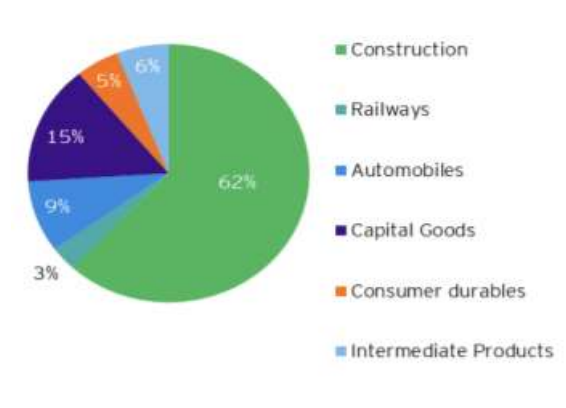
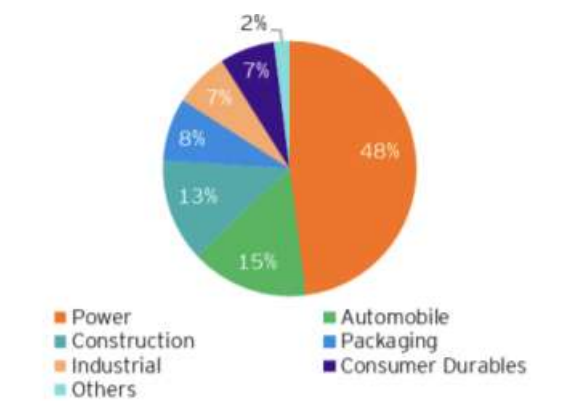


Fig.6 Consuming sector aluminum



Impact of COVID 19 on Metals:

- Labor supply disruption, primarily due to social alienation, which has an influence on productivity.
- Production disruption leads to lower capital productivity.

Efforts by the government to boost demand by increasing spending

- Global supply networks are inefficient, posing a trade barrier around the world.

- Furthermore, outbreaks of global protectionism would arise, posing additional hurdles to trade in international commerce

The global aluminum market is currently in a state of flux, with poor demand, trade disputes, and supply constraints limiting growth prospects. The pandemic epidemic has exacerbated the situation, and if the scenario worsens further, the aluminum industry in India and around the world

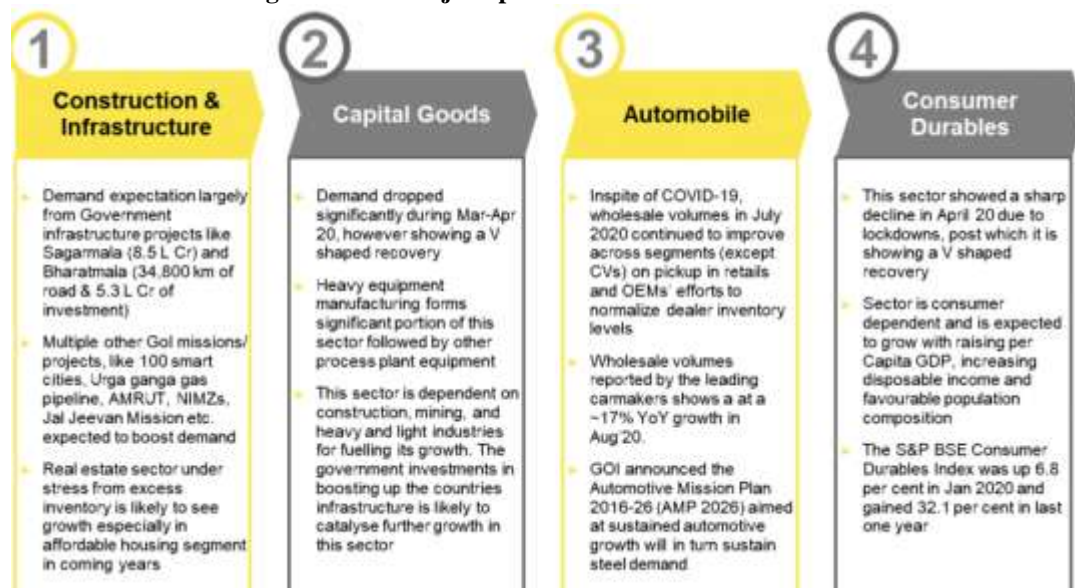
would suffer a significant drop in demand and profitability in the coming days.

Major opportunities ahead of metals industry:

Due to a slew of government infrastructure projects like as Bharatmala, Sagarmala, the Atal Mission for Rejuvenation and Urban Transformation, the establishment of a National Investment and Manufacturing Zone, and

Smart cities, the industry is poised for tremendous expansion in the near future. The opening of the mining sector and rapid infrastructure investment will almost certainly result in an increase in capital goods consumption, which uses approximately 15% of domestic steel output. According to the ambitious Automotive Mission Plan 2026, the automobile sector is expected to sustain steel demand in the mid to long term, if not soon.

Fig.7 Another major update related to various sector:



Research Methodology

As we know there are two type of Research Methodology:

- PrimaryData: is a sort of data that researchers obtain directly from primary sources such as interviews, surveys, and experiments. Primary data is usually acquired directly from the source—the place where the data came from—and is considered the greatest type of data in research.
- Secondary Data gathered by someone other than the primary user is referred to as secondary data. Censuses, information collected by government departments, organizational records, and data acquired for other research purposes are all common sources of secondary data for social science. Primary data, on the other hand, is gathered by the researcher who is performing the study.:

So, for this report I choose Secondary Data. From Report and blog of industries person related to the sector mentioned in the paper. This data help to

find out solution of each sector to uplift them after corona.

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