Managing the impact of COVID-19 on India's supply chains

– Now, Next and Beyond

July 2020

EY

Building a better working world

Foreword

Gaurav Taneja
Partner
Government & Public Sector (GPS) Leader, EY LLP

Adil Zaidi
Partner
Economic Development Advisory (EDA) Leader, EY LLP

History will remember the coronavirus (COVID-19) pandemic as one of the biggest black swan events. The economic and social disruption caused by COVID-19 is expected to be far worse than that of the 2008-09 Global Financial Crisis; and perhaps might even beat the Great Depression of the 1930s.

The economic impact of COVID-19 will be a function of the magnitude and speed at which it continues to spread and the duration over which it lasts. Containment is the current strategy, but unless the world gets an effective vaccine for mass scale use or a medicine to treat, containment measures like lockdown will dry up revenues and resources. With globally integrated supply chain models completely disrupted, the pandemic will have long lasting impact globally, on all fronts – social, political, technical, industrial and economic.

EY's Government & Public Sector community has been working closely with governments from across the world to prepare economic revival strategies and help them adopt digital technology to create new ways of working. In India, EY is working with more than 18 states, 15 central ministries and 210 districts on several immediate initiatives, such as Invest India's business immunity platform, to resolve problems pertaining to procurement of raw materials, logistics, regulatory approvals as well as preparing a strategy to lift the lockdown in phases.

Our Hon'ble Prime Minister Narendra Modi, in his address to the nation on 13 May 2020, themed on making India self-reliant (*Aatma Nirbhar Bharat*), laid down a robust framework for undertaking immediate reforms and at the same time, planning for long-term development. As part of *Aatma Nirbhar Bharat*, a special economic stimulus package of about US$ 268 billion (INR 20 trillion), equivalent to 10% of India's GDP, has been announced to mitigate the devastating social and economic impact of COVID-19 lockdown. The movement also calls for undertaking bold reforms across sectors to drive the country's push toward self-reliance.

The Hon'ble Finance Minister Nirmala Sitharaman has already announced a set of relief measures related to MSMEs, migrant workers, street vendors, small farmers, NBFCs and real estate sector, among others. These measures, while providing impetus to all sectors of the Indian economy, will not only help businesses that have been forced to the brink of bankruptcy, but also migrant workers that the economy is seeing mass exodus of.

From a long-term perspective, it is important that we review our pre-COVID outbreak plans and work toward a "New Normal."

We hope that this report will greatly add to the intellectual vigor of dealing with the pandemic in a systematic and sustainable way.

Viewpoint

Deepak Bagla
Managing Director & CEO,
Invest India

Countries across the globe are grappling to counter the threatening impact of the pandemic. As countries continue to be in complete or partial lockdowns to contain the spread of coronavirus, the associated economic challenges have been exacerbated due to the global interconnectedness of supply chains, bringing many economies to a complete halt.

Over the past few decades, firms have optimized their value chains through offshoring and consolidating their manufacturing bases in low cost economies. However, with the prolonging of the pandemic, both regional and global value chains stand fractured and there is a pressing need to re-evaluate and re-engineer globally integrated supply chains.

As companies look to diversify their supply chain risks, India has an exclusive opportunity to emerge as the preferred destination for global companies. Recognizing this opportunity, the Hon'ble Prime Minister of India, in his address to the nation on 12 May 2020, laid-out his vision of an '*Aatma Nirbhar Bharat*' (Self-reliant India) and outlined economy, infrastructure, system, demography and demand as the five pillars. With a renewed impetus on Make in India 2.0 and making India a preferred destination for global investments, India today is going through an unprecedented transformation.

Invest India, as India's national investment promotion and facilitation agency, has been working on sector-specific investor targeting and development of new partnerships to enable sustainable investments in the country. EY has been Invest India's knowledge partner for over four years, helping us in creating targeted solutions to make India a fertile ground for investments as well as in effectively undertaking urgent programs such the 'Business Immunity Platform' during the COVID-19 pandemic.

EY has been working with Invest India on several initiatives. I believe that EY's initiative to launch this report – wherein their team of experts has undertaken an in-depth analysis of the COVID-induced disruptions in the global and domestic value chains, and suggested thought-through areas of interventions to mitigate the potential supply chain risks to catapult the Indian economy back on the growth path – is well timed.

I wish EY the very best for this report and in its endeavors for creating sustainable solutions for the business world in the post-COVID times.

As companies look to diversify their supply chain risks, India has an exclusive opportunity to emerge as the preferred destination for global companies.

Table of contents

Preface

Objective of the report

With the newly defined objectives of global companies and countries to reduce their supply chain risks in the long-term and fix the broken value chains in the short-term, India has an exclusive opportunity to emerge as the preferred destination during and after the COVID-19 pandemic. With its strong macro-economic fundamentals, favorable demographic dividend, improved ease of doing business, and an economy expected to grow, albeit at a lower rate during this period, India can position itself as an attractive investment destination for investors across the globe. This would require the government, local bodies and the industry to leverage this opportunity optimally.

It is with this intent that EY, through the following sections of this report, examines:

- The value chains of 15 key sectors in India.
- The disruptions in the sectoral value chains caused due to the COVID-19 pandemic.
- The opportunities and roadmaps to re-engineer and overhaul the Indian business machinery to become an attractive destination for foreign and domestic value chain investments.

Approach and methodology

The report has been prepared through a comprehensive research and in-depth analysis of global and domestic value chains of each sector. The '*areas of interventions*' and the '*suggested mitigation measures*' for managing the ongoing and post-COVID situations, as presented in this report, have been curated through a multi-pronged approach that broadly includes:

- Inputs from EY's sector experts to leverage their in-depth sector knowledge and insights.
- Conducting interviews with multiple companies, industry experts and stakeholders to understand on-ground challenges and opportunities.
- Conducting detailed benchmarking studies of sector-specific international best practices.
- Utilizing EY's rich experience of working intricately with 30 state governments and several central ministries for decades.
- Leveraging the critical insights gathered through EY's direct involvement in several ongoing state and central-level initiatives related to COVID-19 across the country.

Structure of recommendations

The '*possible areas of interventions*' and the implementation roadmap, as suggested for each sector in the report, are broadly classified as:

- Possible interventions by the government
- Possible interventions by the private sector

The recommendations are further divided based on time horizons required for their implementation:

- Short-term: Within 3 months
- Medium-term: 3–9 months
- Long-term: Beyond 9 months

Note: 1) Currency exchange rate considered throughout the report are: US$ 1 = INR 75; JPY 1.4 = INR 1
2) A list of abbreviations used in the report is given at the end of this report.

To track the lastest sectoral updates and insights by EY's Economic Development Advisory (EDA) on India's supply chain dynamics, please follow us on twitter.com/TheEDA_EY (@TheEDA_EY)

Executive summary

About the report

As companies look to fix their broken value chains in the short-term and reduce their supply chain risks in the long-term, India has an exclusive opportunity to emerge as a preferred business destination during and after the COVID-19 pandemic. Recognizing this opportunity, the Hon'ble Prime Minister of India, in his address to the nation on 12 May 2020, laid-out his vision of an '*Aatma Nirbhar Bharat*' (Self-reliant India) and outlined economy, infrastructure, system, demography and demand as the five pillars.

This report is an effort to explore how to realize the vision of self-reliant India by delving deeper into how the social and economic pillar could be strengthened, while leveraging and improving other four pillars – infrastructure, system, demography and demand. It has been prepared through a comprehensive research on the impact of COVID-19 across value chains of key economic sectors, and an in-depth analysis has been carried out to reach at 'possible interventions' for the governments and private sector.

The exercise also involved conducting interviews and focus group discussions with EY sectoral leaders and industry players. Initiatives undertaken by governments outside India in the last few months were studied to draw learnings. The interventions in this report have been classified into short, medium and long-term categories.

The analysis of the market conditions revealed that the businesses have been severely affected due to the pandemic-related challenges and continue to face various problems despite recent government measures. Even though companies operate in different industries and businesses, certain issues remain common across the sectors. Below are some of the common issues:

Common issues

- **Weak demand:** The demand has weakened across most of the industries due to weak consumer sentiment, job losses, and as consumers defer their non-discretionary purchases and focus on buying essential items. The restrictions imposed to curb the spread of virus has affected the ongoing infrastructure and other projects, thereby leading to a cascading effect on the value chain of related industries. Travel restrictions has severely impacted transport, tourism, hospitality and aviation sectors.

- **Supply chain disruptions:** The curb on movement of people and non-essential goods has affected the supply chain, leading to shortage of raw materials. The coronavirus outbreak in major raw material supplying countries has affected the movement of raw materials across the borders. The industries such as automotive and pharmaceuticals are feeling the heat of supply chain disruptions due to their dependency on a single source for most of the requirements. The supply chain disruptions have led to longer product cycle and increased financial liabilities.

- **Liquidity crunch:** Businesses are under pressure to meet their existing fixed overhead costs such as rentals, electricity bills and wages as their revenues have been hit due to weak demand amid pandemic-related challenges. It has become extremely difficult for the businesses, especially MSMEs, to meet their existing loan obligations and this could force some of them toward bankruptcies.

- **Labor/capacity underutilization:** The exodus of unemployed migrant laborers to their native places has further added to the ongoing problems of industries. The worry remains whether they will return to work soon given their recent traumatic experience of job losses and travel hardships. The existing workforce is also facing difficulties in reaching the factories due to curbs on the movement of people within the state, thereby affecting the overall productivity of the organizations. The shortage of manpower and shorter duration of work hours have affected the capacity utilization of industries and there is no clear sign when normalcy will return due to the ongoing uncertainty about finding a cure for the pandemic.

- **Meeting regulatory requirements**: The industries are facing the challenges of meeting various regulatory requirements such as license extension and payment of license fees for operating their businesses due to manpower shortage and liquidity crunch. The filing of GST returns also remains a challenging task for companies.

- **Workforce health and business in "New Normal"**: Maintaining the health of workers in "New Normal" also remains a challenging task for industries in the absence of proper guidelines. This is further expected to add to their liquidity crunch and without any support from the government, it will be difficult for several companies to survive going forward.

To mitigate the impact of the pandemic, the government should urgently take more actions to support the businesses so that they can survive this crisis. Below are some of the common interventions that the

government and the private sectors should take to offset the impact of some of these common issues across the industries.

Common interventions by the Government

- **Boosting demand:** In order to boost the demand, the government should offer export incentives to the industries and also cut GST rates apart from extending the operation hours for businesses. At the same time, the government should also look at imposing import duties on certain goods and raw materials, which can be manufactured locally, to provide support to the domestic industries. Easing restrictions on the movement of people and goods will further help increase sales of various products and restart the activities of ongoing infrastructure projects, thereby boosting the demand for the related segments of the industries. This will also help enhance the capacity utilization of the industries. The government should also provide plug-n-play infrastructure and CFCs in each district, with focus on technological support and export promotion.

- **Enhancing supply:** The government should provide increased relaxation on non-hotspot areas for opening up the industries. Easing restrictions on the movement of people and goods, logistics and allowing extended operating hours will further help improve the supply chain of businesses as well as sourcing of raw materials. The government should look at identifying key players in each sector value chain (raw materials suppliers, buyers, technology providers and logistics providers) and create an extensive database platform for each cluster in order to enable collaboration possibilities to improve the availability of raw materials in the country. Immediate clearance of goods stuck at the ports will further enhance the availability. The government should enact ease of not just doing business but resuming, diversifying and expanding too. It must also establish helpdesks and digital platform to bridge information gap between suppliers, buyers and logistics service providers.

- **Liquidity support:** It is one of the most critical interventions that the government should undertake immediately in order to support the businesses. This can be done by lowering duties, taxes and GST rates, providing quick refund of taxes and immediate release of incentives under the industrial and sectoral policies, offering subsidies under interest subvention and MEIS schemes. In addition, the government should provide relief on PF and ESIC payments, tax break for workers and waiver on professional tax, full waiver of electricity charges for 3 months and deferment of electricity charges for another 6 months as well as waiver/deferment of rental payments for a few months.

- The government should look at offering GST exemption and Health Cess exemption for few months to minimize the cost of operations and defer payment of dues. To ease the liquidity pressure, the moratorium on repayment of loans (principal and interest) should be extended and collateral free loans/working capital loans must be offered at lower interest rate, or the government can give the guarantee to banks for working capital loans, relax NPA norms and allow debt restructuring. The government should also allow the companies to treat salaries paid to workers during the lockdown period as mandatory CSR contribution. These interventions will not only help businesses weather the ongoing liquidity crisis storm but also prevent job losses for large number of workers.

- **Easing regulatory requirements:** The government should extend the timelines for existing approvals and licenses necessary for meeting compliance requirements and operation of businesses. The auto-renewals/clearances/approvals based on self-declaration should be promoted across the industries, especially for hotels, restaurants and events businesses, to manage the challenges of meeting regulatory requirements during the pandemic.

- **Workforce welfare:** The government should issue SOPs for businesses operating in "New Normal" in order to help the industries as well as safeguard the health of workforce. There should be strict enforcement of hygiene SOPs and cash handling guidelines for the workers. Giving wage subsidy benefits to small industries and income support for contract workers for at least three months should also be looked at during this crisis to offer some support. This will not only help save jobs but also give more time to industries to figure out next course of action to tide over the crisis. There is also an urgent need for the re-skilling of employees – be it in manufacturing sector or services sector – to make their work meet the new requirements. The government should allow provision for expenditures incurred for supporting workers and setting-up of quarantine facilities for workers under state resources or CSR allocation to the private sector. The Central government should also formalize and automate labor exchanges across India with the support of state governments and regulate labor registration under Labor Welfare Boards to ensure that labor cess funds are used for the benefit of workers.

- **Policy interventions:** The pandemic has highlighted the importance of having diverse supply sources within the country and across the globe. It is an opportune time for the government to revisit, renegotiate and enforce FTAs and other regional agreements, especially with respect to value addition clauses and change in import-export basket of India, to protect the local economy and increase reach beyond South Asia. The government should also increase its focus on tapping foreign investors by offering incentives to encourage FDI in the country. This will not only help in the development of supply chain infrastructure for niche products in India but also lead to increased employment generation opportunities.

Common interventions by the private sector

Short-term

- Organizations will need to monitor and track employee health status, follow most conservative disease control protocols, define travel guidelines and quarantine requirements, and plan for flexible work shifts and home office
- Priority would be to maintain liquidity and cash efficiency and optimization of cash-flow management
- Post the pandemic, pricing would come under pressure in some sectors as dealers scramble to destock. Organizations will need to weigh how much discounting they can tolerate to secure volume and market share, considering the need to maintain brand positioning and profitability.
- Prioritization of key action steps to protect relationships with top customers, critical suppliers and strategic practitioners (including management of communications cascade up and down the tier-n supplier ecosystem)

Medium-term

- Implement phased start-up from the reboot, improve operational set-up for coping with demand catch-up, optimize processes to increase cost efficiency and address overhead reduction
- Maximize product modularity using a Pareto analysis[1] across products, sub-components, sub-systems and parts to improve economies of scale and reduce the working capital requirement
- Include specialized supply chain finance and early settlement to resolve the issues with dealers
- Market oriented teams like marketing, sales and services will need to actively engage with their customers to assure supply and closing out any on-going deals

Long-term

- Determine resource and capability needs in the "New Normal" environment and strategically plan for sustainable future (M&A, footprint/ supplier network redesign)
- Prioritize focus areas where existing business model needs to be adapted and change operating paradigms:
  - For supply chain – resilience over efficiency
  - For retail – more direct sales with higher performing, streamlined dealership networks
- Explore opportunities for automation and efficiency upliftment as well as plan and implement up-skilling of employees to prepare them for the re-engineered processes/ systems
- Organizations already are investing more in online marketing as well as pickup and home delivery services. The next step now is to redesign the buying and after-sales processes to exploit the full potential of digital technology.

Apart from the above common interventions to support businesses, the government also needs to take specific measures for various industries. A combination of these interventions will not only result in the revival of businesses but also help in the recovery of Asia's third-largest economy.

Below are some of the key sectoral interventions that the government should undertake in order to lift the economy.

[1] The Pareto principle is a statistical technique in decision-making used for the selection of a limited number of tasks that produce a significant overall effect

Key sectoral interventions proposed for the Government

Auto, auto components and electric mobility

- Include auto industry in "critical sector" and make it eligible for a dedicated fiscal stimulus/bailout package to tide over the crisis
- Dedicate corridors for auto-parts suppliers for material movement and customs clearance – for provinces cleared for the functioning during COVID-19
- Extend FAME II scheme by 24 months and relax CAFÉ norms by 2 years
- Roll-out Vehicle Scrappage Policy, which has a business opportunity of about US$ 6 billion (INR 450 billion)/year with introduction of incentives similar to "Cash for Clunkers" scheme
- Offer incentives to invest in future technologies like mechatronics and telematics, as well as reinstate 200% weighted deduction for R&D investment/spend and also extend this for R&D outsourced to third-party service providers

Electronics

- Re-open M-SIPS scheme for end-products not covered under SPECS Scheme for tapping foreign investments to manufacture end products
- Identify and link value chain stakeholders for increased collaboration in order to move from SKD to CKD level of manufacturing
- Tax holidays to foreign collaborators to encourage technology transfers from foreign to domestic players in medical electronics domain
- Fast-track approvals for 'Multi-Billion-Dollar' investment projects and incentivize investments in R&D

Food processing

- Increase number of crops under purview of MSP procurement for 3-4 crop cycles
- Increase silos/warehousing capacities and promote greenhouse dryers/other dehydration techniques
- Develop common facility centers, including primary processing equipment, packaging facility, cold chains and testing facilities at existing industrial areas/food parks
- Create a digital platform for helping farmers/FPOs connect with large retailers or processors

Gems and jewelry

- Give additional one-year moratorium for fulfillment of export obligations under EPCG scheme, Diamond Import Licensing and other similar government schemes
- Establish district/block/village-level hallmarking centers under CFC/cluster development scheme

IT And ITeS

- Widen the spectrum of digitization initiatives in US$ 1.36 trillion (INR 102 trillion) National Infrastructure Pipeline projects
- Allow 50% GST exemption on outsourced business to MSMEs and start-ups by large companies for 6 months
- Extend tax holiday to SEZ by another one year
- Establish Data Center Parks/Hyperscale Data Centers on PPP mode providing cost effective solutions through software defined technologies such as HCI

Leather

- Provide grant in aid for development and maintenance of all common infrastructure, including CETP/ZLD in existing and upcoming leather parks/clusters
- Reduce GST on all domestic leather finished products to 12% from 28%
- Provide technological support for promotion of better preservation and processing of raw hides and skins to improve tannery operations

Medical devices and equipment

- Revise minimum limit for local content in domestic medical devices in India for more incentives
- Re-imbursement of quality standard testing fee as due to lack of adequate quality testing framework in India, medical device manufacturers have to obtain US FDA/CE certifications, which are expensive
- Establish green channels (preferential clearance mechanism of medical devices/spare parts/raw materials) across all international airports and seaports to support the health ecosystem

Metals - Steel and aluminum

- Include steel in priority sector lending norms and reduce consumption tax on high steel consuming sectors like auto and construction

- Restrict import of steel (barring special steels that are not produced in India) and aluminum for 1 year by imposing safeguard duty on these products
- Scale up government infrastructure projects like National Infrastructure Pipeline and enable speedy clearance of contractors' dues

Minerals – Coal, bauxite and iron ore

- Coal - Develop alternate sourcing channels for mining technology equipment, including mining transport equipment and mining equipment
- Bauxite - Declare aluminum/primary aluminum production as an essential commodity/service and exempt/reduce export duty of 15% for lower-grade bauxite
- Iron ore - Augment transport facility for to and from mines, especially for non-captive units, and reduce freight rate for long lead rail transportation for the movement of iron ore

Pharmaceuticals

- Encourage small and medium scale industries to start production of molecules, i.e., KSM immediately and with minimum investment
- Allow coverage of allied/ancillary units such as packaging industry related to pharma sector under the Essential Commodities Act to avoid disruption in value chain and provide fast-track clearance of stocks at ports of entry
- Encourage R&D/innovation in development of APIs/intermediates through special incentive packages

Plastic and packaging

- Focus on engineered plastic manufacturing and create level playing field between recycled plastic and virgin plastic
- Encourage adoption of plastic recycling in an organized way with proper guidelines and incentives to the players
- Draft strategies to establish India as a leader in the plastic and packaging industry and attract companies looking to move out of China

Real estate and construction

- Allow inclusion of COVID-19 outbreak as a force majeure condition under Section 6 of RERA
- Encourage states to partially waive off stamp duty in major metropolitan areas and acquire completed assets
- Expedite implementation of large/regional infrastructure projects like DMIC and other industrial/defense corridors

Retail and e-Commerce

- Utilize 'Aarogya Setu' app for connecting consumers with retailers, and retailers with distributors or manufacturers by adding required functionalities to facilitate the trade
- Classify laptops, smartphones, and work from home support equipment as essential goods
- Set up retail clusters and promote them extensively and incentivize rail cargo to make transportation costs globally competitive

Textile and apparel

- Focus on using factories and available labor for manufacturing technical textile for domestic market, particularly for automotive applications, medical textiles, protective clothing, PPE bodysuits
- Review Integrated Textile Parks scheme, especially locating them strategically with logistic linkages
- Provide a level playing field to MMF manufacturers via a uniform GST of 5% from the inverted GST structure of 12%

Tourism and hospitality

- Launch integrated marketing strategy through technology interventions for attracting domestic tourists and organize 'Tax Free Shopping Festival' around November 2020
- Encourage start-ups and MSMEs in developing Wellness Tourism, Rural Tourism, Adventure Tourism and other niche and new tourism products as per the state's USPs
- Reduce GST to 6% from 18% for limited time and set up tourism industry support fund

Way forward

In the way the "New Normal" wave is building up, India's (or for any country's) economy can swing in two extreme ways. It can either be pulled into a deep depression, or if the potential opportunities are embraced and

a well-thought-through plan of action is developed and effectively executed, then the economy can catapult to recovery and consequent development.

The central ministries and state governments are working relentlessly to resolve broken supply chains, deteriorated budgetary metrices and economic downturn. However, this is a Catch-22 situation for the governments – if the lockdown is not lifted completely, the extent of recession will be unimaginable; while if the lockdown is lifted, there is a high likelihood of the fast spread of virus. It is perhaps time that along with putting the efforts to develop a vaccine or cure for the virus, governments as well as businesses undertake serious industrial continuity planning.

The importance of industry continuity planning needs to be recognized given such level of disruptions, which struck without warning, across sectors, industry players and geographies. The government should, hence, prepare exhaustive plans to manage the current outbreak, which may linger on for longer period, as well as for potential future disasters so that there's minimum disruption to the business ecosystem. This planning may include capacity building of human resource, current adoption as well as switchover to use of technology, preparing SOPs and creating reserves/funds for such situations.

The pandemic is teaching us to survive with minimum resources and making us recognize the importance of planning for an uncertain future. Perhaps, it is the nature's decree for us to 'go low and slow' but certainly this gives us an opportunity for - Building a better working world!

The COVID-19 pandemic

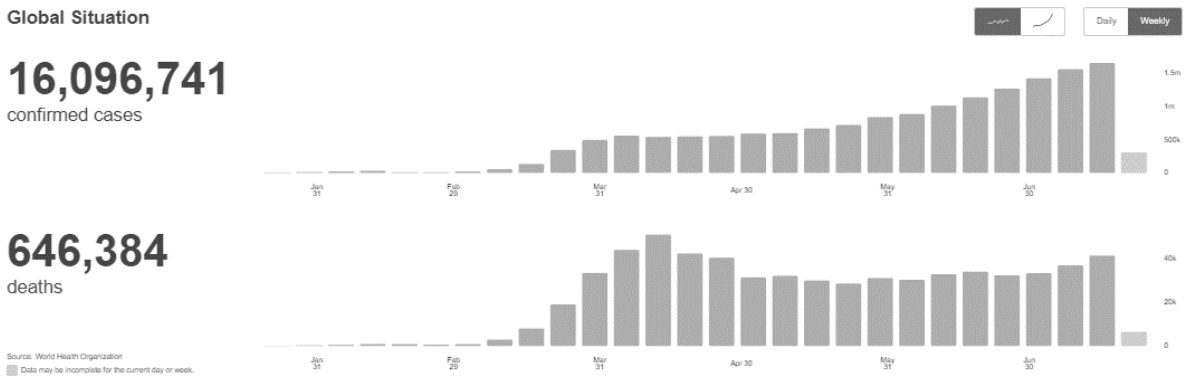
About the 'Notified Disaster'

In early January 2020, when coronavirus outbreak was starting to build up as a pandemic in the city of Wuhan in China, it seemed like a far cry to evolve into a worldwide pandemic that would lead to unprecedented human, social and economic disruption, leaving hardly any life untouched. However, in under five months, the virus spread to almost 200 countries, and now the number of COVID-19 confirmed cases have crossed 16 million worldwide and death toll has reached 646,384[2]. In the last few months, the virus' epicenter shifted from China to Europe, and then to the US. In recent weeks, the fear has gripped the nations about the second wave of coronavirus outbreak following emergence of fresh cases in China while the world is still struggling to find the cure for the pandemic.

India reported its first coronavirus positive case in Kerala on 30 January and by early March, the confirmed cases had crossed 100. Keeping in view the spread of COVID-19 in India and the declaration of it as a pandemic by the World Health Organization, by way of a special one-time dispensation on 14 March 2020, India declared COVID-19 outbreak as a "Notified Disaster" and asked the State Disaster Response Fund to assist.

Figure: Confirmed COVID-19 cases[3] (27 July 2020)

Globally, as of **1:09pm CEST, 27 July 2020**, there have been **16,096,741 confirmed cases** of COVID-19, including **646,384 deaths**, reported to WHO.



[2] This paper is being written in the middle of the pandemic; hence, there is at this moment little clarity on reliability of the available statistics.

[3] Source: World Health Organisation

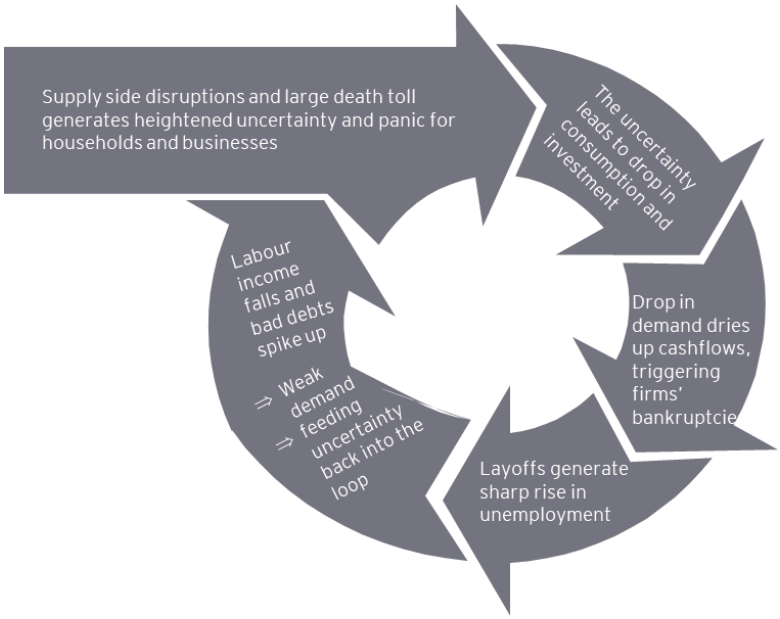
For any economic institution, pandemics are known unknowns. While in almost any risk inventory and disaster-scenario planning, pandemics are mentioned as a possibility to prepare for, but they are usually perceived as so unlikely, that they can hardly be labelled as top of an average manager's mind.

The only known method until now to control the spread of this pandemic is "social distancing" to break the chain of virus spread through human contact. Consequently, country after country went into lockdown to completely minimize physical interactions between humans. However, as the economic consequences of the confinement measures are becoming clear, concerns about unemployment, likely persistently changing ways of doing business by incorporating social distancing, demand-supply disruptions and the fear of regressing into a global depression, have become palpable.

The impact

The coronavirus pandemic may go down in the history books as the most expensive crisis (so far). While World War I and World War II were more expensive, the COVID-19 crisis is not over yet. The economic impact of COVID-19 will be a function of the magnitude and speed at which it spreads and duration over which it lasts. Overall, demand effects will probably be much larger than the initial supply shocks.

Figure below shows the impact of COVID-19 on the economy. Typically, with supply side disruptions and a large death toll, a large-scale uncertainty creeps in among households and businesses which, in turn, leads to drop in consumption and investments. This ultimately leads to drying up of corporate cashflows and forces firms into bankruptcies, leading to workforce layoffs and a large-scale unemployment in the economy. Finally, as labor income falls and bad debts spike up, the overall financial health and aggregate demand in the economy is adversely impacted. The uncertainty tends to feed upon itself and thus, the economy is subjected to depressing loop.



As per the International Labour Organisation's March 2020 report, the current containment measures are affecting close to 2.7 billion workers, representing around 81% of the world's workforce. Furthermore, the United Nations' economists estimated a US$ 50 billion (INR 3.75 trillion) decrease in manufacturing production in February 2020, while the International Monetary Fund has warned that the negative economic effects will be felt "very intensively" in developing countries that export raw materials. UNCTAD has projected that developing countries as a whole (excluding China) will lose nearly US$ 800 billion (INR 60 trillion) in terms of export revenue in 2020[4].

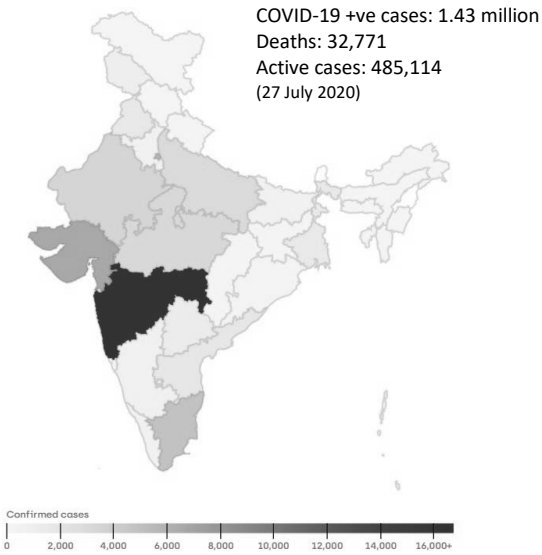
The Indian COVID-19 story

As the coronavirus has been the biggest disruption to the world economy ever since the 2008-09 Global Financial Crisis, the Indian economy's condition during the pandemic outbreak can also be measured by taking 2008 as a reference point. While India entered the 2008 crisis coming off years of strong growth, the story is different this time around, with the economy going through a slowdown, pre COVID-19[5].

[4] https://www.unido.org/stories/coronavirus-economic-impact
[5] https://www.mycii.in/KmResourceApplication/65670.TowardsanOrganisedSafeandSustainableRestartoftheEconomy.pdf

The nationwide lockdown imposed across India to stop the spread of the coronavirus has led to widespread chaos and suffering, especially among the country's 300 million poor. Among the most affected states as of July 2020 – Maharashtra, Tamil Nadu, Delhi, Andhra Pradesh, Karnataka and Gujarat – which have become the hotbeds of COVID-19 positive cases, also happen to be the key industrial and business epicenters of India. This has further dampened the economic recovery sentiment.

Overall, even before the onset of COVID-19 pandemic across the world and in India, the Indian economy was slowing down with a real GDP growth rate of 4.7% in 3QFY20. The GDP growth rate further fell to 3.1% in 4QFY20, the lowest since 2008-09 Global Financial Crisis. However, the 4QFY20 growth rate only partly captures the impact of pandemic as the nationwide lockdown was announced on 24 March 2020. The impact will be significant in 1QFY21 as the entire country was almost in the lockdown phase for over two months in order to curb the spread of coronavirus.



The only saving grace for India from the development in the global market is the sharp fall in global crude prices. A lower global crude price has the potential to benefit the Indian economy by reducing the quantum of its overall import bill and lowering inflation.

Figure: Indian economy: demand and supply side disruptions[6]

Economic impact of COVID-19 in India

Demand side impact

- Travel restrictions have severely impacted Transport, Tourism, Hospitality and Aviation sectors.
  - 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

Supply side impact

- 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

Impact on international trade

- 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.

Impact on financial markets

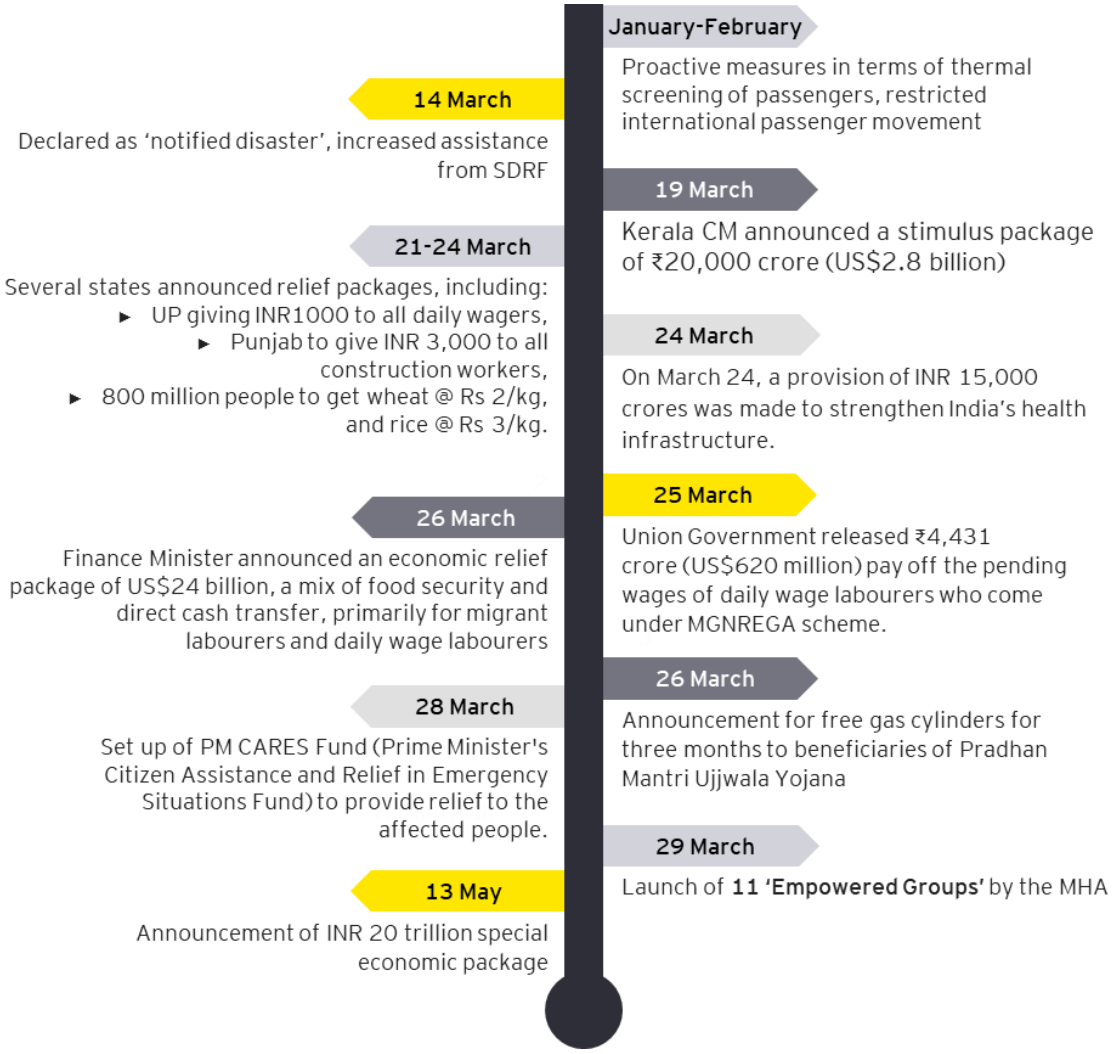
- Financial markets have become extremely volatile
- due to uncertainty about the future and repercussion of Covid-19, leading to huge crashes and wealth erosion, which in turn is impacting consumption levels.
- Following the trend of the global equity markets, domestic markets have been extremely bearish.
- 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.

[6] Source: EY analysis

Key government interventions

The Government of India has relentlessly worked toward appeasing the pandemic associated impacts, in terms of medical, security and financial measures. Among the several strategic steps undertaken since the declaration of COVID-19 as a notified disaster, the timeline below illustrates the major interventions by the central authorities to offer relief to citizens.

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



In addition to the above, some of the major examples of strategic bodies and rapid action programs that have been set up to combat the far-reaching economic impact of COVID-19 include:

- **Launch of 11 'Empowered Groups' by the Ministry of Home Affairs**[7]: The "empowered groups" consisting of officers from across departments was formed to manage the COVID-19 situation and subsequent lockdown across the country. The groups aim to identify problem areas and delineate policy to implement strategies in a time-bound manner.
- **Launch of 'Business Immunity Platform' by Invest India:** Invest India, the National Investment Promotion & Facilitation Agency (IPA) of India is the world's first IPA to launch a tool called as 'The Business Immunity Platform' that provides businesses and investors real-time updates on India's active response to COVID-19 through the following support:
  - Brings together government institutions and stakeholders, industry champions and logistic providers to identify and fill the demand-supply gaps of products such as ventilators, personal protective equipment for the COVID-19 frontline workers in the country

[7] Source: https://www.techcircle.in/2020/03/30/govt-forms-11-empowered-groups-to-manage-covid-19-challenges

- Tracks and reports all the major steps being taken to fight the COVID-19 pandemic in India, provides information on the latest central and state government initiatives as well as query resolutions through emails and WhatsApp texts

The Platform has witnessed over 500,000 visitors from 50+ countries and received more than 2,600 queries. The platform further showcases over 750 government advisories and notifications both at the Center and State levels and over 550 articles, reports and videos on COVID-19.

Opportunities emerging from COVID-19 chaos

There are series of repercussions for the people and the economy due to disruptions caused by the COVID-19 crisis in travel, events, manufacturing, supply chain and trade, among others. To begin with, businesses worldwide are trying to figure out other operational dynamics, while working from home has definitely been a success. Similarly, universities have quickly moved toward remote working/learning for the remainder of the school year.

Overall, these testing times are bringing to fore the accelerated adoption of online services and possibly creating a long-term behavioral change in the way people shop, consume media, seek health services and education, or generally get things done. A quick look at how the segments have responded[8] -

Edtech	According to United Nations, over 770 million learners globally are currently affected due to the closure of schools and universities. To help bridge the gap, many edtech companies are offering free teaching resources to educators to help with the transition from in-person to online learning. Although access to on-line resources is not universal, this period might prove to be great opportunity to digitize, dematerialize, demonetize and democratize education to make edtech a norm even after the lockdown is lifted.[9]
Transformation of retail to hyperlocal	It is expected that the consumption and shopping patterns of the consumers will witness a shift, which will undoubtedly help the hyperlocal segment and e-Commerce industry. Also, many traditional players can leverage the change in consumer behavior to drive their digital transformation to maintain connect with their valued customers.
Fintech	The fintech industry will see itself flourishing going ahead even though they may see reduced number of transactions in the short-term because of the slowdown in the economy. As people and companies start to become comfortable with the use of online transactions and realize its benefits, the fintech industry will witness a healthy growth.
Boom in remote working enabling tools	A lot of remotely working software seems to be doing well. Zoom, a popular remote conferencing software, saw a sharp increase in its stock price in the first few months of 2020.[10] In addition, as employees are starting to work from home, the demand for standup desks/office chairs/tables and other such equipment would soon be blowing up as well.
Reinvention of healthcare	Just as the bubonic plague ushered in an era of labor reforms and improvements in medicine in the Middle Ages, the COVID-19 will bring major improvements in healthcare. Healthtech has already become a crucial segment witnessing increased adoption with online solutions available for medicines delivery, consultations to health/wellness.
Resetting planet earth	As industries and transport networks have closed down, the world has witnessed a phenomenal fall in carbon emissions. However, a global pandemic that is claiming millions of lives and bringing economic activities to a standstill should clearly not be a way of bringing about favorable climatic change. The methods that many communities have employed to protect from health crisis has raised hope for the climate in the longer-term.

[8] https://www.ey.com/en_in/covid-19/the-nudge-factor-parts-of-ecommerce-may-benefit-from-covid-19

[9] Source: World Economic Forum (https://www.weforum.org/agenda/2020/03/3-ways-coronavirus-is-reshaping-education-and-what-changes-might-be-here-to-stay/)

[10] https://www.business-standard.com/article/companies/challenges-await-firms-after-covid-19-work-from-home-may-become-permanent-120040500935_1.html

Onset of job transition era	▶ Business interruptions and rising layoffs are extremely disheartening, but for some this period might perhaps be a good time to switch careers or think about starting their own business. It is safe to say that this round of job losses followed by reemployment trends will be far different than anything in the past.
Invigoration of VC industry	▶ Moving forward, for most companies travel expenses will be dramatically lower. Once businesses realize they can survive with a lot of fewer face-to-face interactions, any proposed travel expenses will receive far more scrutiny.
Gaming and OTT	▶ The segment is witnessing a surge in usage considering most individuals are restricted to their homes. On the other side of entertainment, online gaming was already picking up steam and with the pause in all live sports, this seems to be the go-to entertainment platform and social engagement through video/voice chat for millennials.
Ways companies might take forward business	▶ Shrinking the office with work from home success ▶ Use more automation in factories ▶ A push for localization to reduce costs ▶ Rejig shifts so that there is no overlap of workforce between two shifts ▶ Change strategy of employee engagement ▶ Mandate thermal screening in factories – Before any machine is turned on, a longer health checklist will have to be observed ▶ Preserve cash and reduce marketing costs, travel, entertainment expenses ▶ Revise business continuity plans

Rejig in global value chains: 'Make in India' can shine

In addition to the opportunities arising from the COVID-19-induced "New Normal" as listed above, the growing interest of global conglomerates to shift their existing supply chains away from China and to other business inducive economies such as Vietnam and India, present a very fine opportunity for India to attract these manufacturing mammoths as elucidated below:

In early April 2020, Japan announced that it has earmarked $2.2 billion of its record economic stimulus package to help its manufacturers shift production out of China as the coronavirus disrupts supply chains between these two trading partners.

It is interesting to note that while the recent coronavirus induced disruptions have just added fuel to the fire, for many companies the shift from China began prior to the COVID-19 outbreak, on account of rising input costs and the US-China trade war.

The movement of companies away from China to other less-developed countries would **trigger a new wave of industrialization**. Consequently, the expansion of the manufacturing hub linked with global supply chains would increase not only productivity but also create large-scale employment.

India can be a fertile ground for these investments in the supply chain shifts. These companies are looking for reasonable prices with quality material, large and cost-effective labour force, robust service sector, and developed ports, all of which can be made available in India. If India is able to work on upskilling its labour and providing logistics and transport infrastructure, it can immensely gain to establish itself in the global manufacturing space, which will not only lead to foreign investment on a huge scale, but also will provide the much-needed impetus to the economy.

Analysis of sectoral value chains

A. Auto, Auto Components and Electric Mobility

Sector overview

The automotive industry is considered as the barometer of the economy given its linkages with several key segments such steel, base metals, plastic and electronics. The automobile industry, along with the auto components industry, has seen a significant growth in recent years, thanks to a growing working population, rising disposable income, technological advancement, urbanization and the need for mobility. The automobile sector is divided into four key segments: two-wheelers, passenger vehicles, commercial vehicles and three wheelers. The size of global automotive industry is projected to grow to about US$ 9 trillion (INR 675 trillion) by 2030. China is counted among the largest automobile markets worldwide, both in terms of sales and production,[11] while India is currently the 4th largest automobile market in the world[12].

Importance of sector In India

- The Indian automotive industry contributes about 7.5% to India's GDP and is a major employment generator.
- Two-wheelers dominate the industry and had a share of 81% in the domestic automobile sales of 26.3 million units in FY19. The domestic automobiles sales increased at a CAGR of 6.7% between FY13 and FY18.
- The Indian auto components industry accounted for 2.3% of India's GDP, 25% to its manufacturing GDP and provided employment to 5 million people in 2018-19.

Important countries in the sector and India

Asia-Pacific accounts for the largest market in the global automotive industry, owing to the increasing demand from the developing nations. Engine, transmission and steering parts account for more than half of all components' *(about 53%)* exports from India. While Europe remains the highest value export destination for the Indian auto components, there has been a substantial increase in exports to North America in the last two years. In terms of exports value, Africa is now at par with Latin America. Auto components imports from Asia continued to rise for the second year in a row, with Asian markets accounting for *61%* of all components imports from India.

Value chain

The supply chain designs of most global firms, so far, assumed free flow of materials across the globe, enabling them to source, produce and distribute products at the most cost competitive locations around the world. The automotive industry is labor- and capital-intensive, and is highly concentrated, with few countries and companies leading world production. The value chain is highly complex, primarily due to a growing set of players, interconnected sectors, functions and activities located in separate geographies. Although few companies lead auto production, their value chain activities (assembly, production, design, testing, R&D and innovation) are present in several locations, but China is the home to world's several leading auto parts manufacturers.

---

[11] https://www.statista.com/statistics/574151/global-automotive-industry-revenue/

[11] https://www.makeinindia.com/sector/automobiles

Functions	R&D and Product Design	Material Supply	Auto Component	Product Assembly	Logistics and Transport	Marketing and Sales
Key Factors	▸ Skilled Manpower ▸ Capacity Building ▸ Process/ Product Innovation	▸ Aluminium, Iron & Steel ▸ Glass, Plastics & Rubbers	▸ Drive Transmission & Steering ▸ Engine Components ▸ Body/ Chassis/ BiW ▸ Suspension & Braking ▸ Electricals & Electronics	▸ Automobile Manufacturers	▸ Warehouses ▸ Transporters ▸ Exporters and Importers (for external trade)	▸ Distribution Channels (Dealerships, Franchise and Company Outlets) ▸ Marketing and Promotional Activities
Value+	Low to Medium	Low	Medium	High	Low	Low to Medium

Impact of COVID-19

The coronavirus pandemic has exposed the vulnerability of concentrating so many sources to a region, which is far away from critical markets in North America, Europe and Latin America. China accounts for 27% of India's automotive parts imports and major automotive suppliers such as Adient, BorgWarner, Lear, Garett Motion, Bosch, Magna and Aptiv have manufacturing operations in the affected regions (about 20% revenue share in China). A global supply chain disruption has accelerated vehicle production downtime due to shortage of parts, particularly in electrical, interiors, lighting and braking components. Inordinate delays in the clearance due to congestions at ports are also likely to impact manufacturing of vehicles in India.

The outbreak of COVID-19 aggravated the already precarious situation of the Indian auto industry, which had been struggling with rapid degrowth in auto sales since last five quarters, beginning the first quarter of FY19. Weak demand, increased capex for OEMs, increased costs due to regulatory changes to incorporate safety features like airbags and rear parking sensors, unfavorable exchange rates, muted rural consumption, cost increase in long-term insurance, weakened investment sentiment, and liquidity crisis with NBFCs were some of the factors behind the degrowth in auto sales. The automotive component sector is likely to log around 16% y-o-y degrowth in revenue in FY21 as the pandemic disrupts the supply chain and impairs underlying vehicle demand in both domestic and overseas markets, according to CRISIL.

March 2020 was one of the toughest months for the Indian auto industry due to uncertainty and COVID-19 closures. According to the SIAM, domestic sales of passenger vehicles tumbled by 51% y-o-y in March, the worst decline since 1997-98 when the auto industry body started recording data. Each segment witnessed double digit y-o-y fall in volumes, with commercial vehicles plunging a record 88% followed by three-wheelers (-58%), cars (-52%) and two-wheelers (-39%). SIAM estimates a revenue loss of over US$ 304 million (INR 23 billion) per day to OEMs due to the shutdown of plants, with over US$ 2.60 billion (INR 200 billion) of unsold inventory piled up with the channel partners.

The OEMs, already reeling under the sluggish demand and regulatory hassles, have halted or cut down productions to tide over the crisis. The massive slippages in the ongoing fiscal year is likely to push industry back to its six-year old volumes. The Indian auto-component firms had already cut production by up to 40%–50% to control inventories due to dwindling demand. The complete lockdown has pushed many smaller component manufacturers to the brink of bankruptcy along with around 15,000 automobile dealers and 25,000 dealerships in India, who operate at wafer thin margins.

The epidemic has had the greatest impact on the services industry and on the dispensable income for a number of industries, leading to tremendous job losses and pay-cuts. The shrinking purchasing power has deepened the sluggish customer demand, and subdued agricultural activities and business will further dent the rural demand. The informal sector as well as the rural market, a key buyer of two-wheelers and large vehicle segment, will be affected significantly.

The stress of commercial vehicles segment -- which was already reeling with excess capacity because of GST impact, axle loading, new insurance regulations and lower movement of goods due to slowdown in the economy – has accentuated further due to logistics disruptions that is likely to continue in hot zones.

The shared mobility start-ups have been negatively impacted by the COVID-19 outbreak as their services across the cities were disrupted, causing inconvenience to users. In the short run, consumers are likely to prefer self-driven rides. The public transit systems will also witness a drastic impact on asset utilization, revenues and workers due to the requirement of maintaining social distancing guidelines in order to curb the virus spread. The pandemic will also delay the progress of transition toward the electric mobility.

Interventions

i. Interventions by other countries

Countries	Interventions

China	▶ Total aid package worth US$ 1.13 billion (INR 84.75 billion) proposed for auto industry[13]
	▶ Subsidies that were supposed to end in 2020 have been extended to 2022
	▶ In cities like Hangzhou, restrictions on license plates aimed at curbing excessive sales are being loosened and quotas expanded
	▶ Programs similar to USA's 'Cash for Clunkers' scheme of 2009 have been introduced with government offering vouchers and coupons instead of subsidies in places like Tianjin and Hebei
	▶ The extension of new energy vehicle purchase subsidies and the two-year purchase tax exemption policy, together with the "dual credit" policy, has incentivized OEMs to ramp up the NEV production
	▶ Central and local governments have introduced auto consumption stimulus policies, and corresponding rebound sales may drive further production volume improvements
	▶ The Ministry of Commerce introduced eight measures to stabilize automobile consumption:
	  ▶ Ease in automotive buying restriction
	  ▶ Support the purchase and use of new energy vehicles
	  ▶ Rescind all local policies that restrict sales of non-local second-hand vehicles
	  ▶ Encourage automotive trade-in
	  ▶ Promote the upgrading of rural automotive consumption
	  ▶ Accelerate the renewal of automotive used for public service sector
	  ▶ Promote the removal of restrictions on pickups entering cities
	  ▶ Strengthen the construction of urban parking lots and new energy charging piles

USA	▶ Economic rescue package of US$ 2 trillion (INR 150 trillion) proposed for industries, including automotive.[14] ▶ Employee retention tax credit of 50% and suspension of the employer share of payroll taxes (the taxes that fund Social Security and Medicare) for two years
Japan	▶ Formation of "New Coronavirus Countermeasures Automobile Council" taskforce with representation from automakers, suppliers and government officials to chalk out measures to combat the impact of coronavirus on the country's automotive industry[15] ▶ A total fiscal stimulus of US$ 9.2 billion (INR 690 billion) for a reserve fund to fight the new coronavirus pandemic ▶ US$ 2 billion (INR 151 billion) earmarked for companies shifting production back to Japan from China and US$ 220 million (INR 16.61 billion) for those seeking to move production to other countries ▶ Interest-free loans of up to 30 million yen (INR 21 million) will be available for 3 years for small and mid-sized companies, whose sales have fallen by 20% or more in March ▶ Four major business bodies in the Japanese auto industry will set up a new fund to support manufacturers in the auto sector. The larger and financially healthier firms will provide tax deductible funds to smaller and ailing firms.

[13] Economic Times - China's car stimulus will only create new problems
[14] Times of India - US Congress, negotiators reach deal on $2-trillion coronavirus aid package
[15] CNBC - Japan-creates-automotive-task-force-to-address-coronavirus-impact

ii. Possible interventions by the Government

Categories	Areas of intervention	Possible impact/outcome	Efforts required	Possible risks/mitigation measures
Short-term				
Innovative models for easing logistics woes	▶ Engage cab aggregators and start-ups to initiate a pickup/truck/tractor aggregation model for connecting farmers to mandis ▶ Dedicate corridors for auto-parts suppliers for material movement and customs clearance – for provinces cleared for the functioning of COVID-19. Plug-n-play infrastructure should be provided on such corridors.	▶ This will support Agri-sector to gear up for harvesting and remove logistic roadblocks currently faced by the agrarian community ▶ This will ease logistics bottlenecks and help maintain adequate supplies in this critical time	▶ **Actors:** Collectorates, ULBs/ village panchayats, mandis, cab aggregators/start-ups, vehicle owners, farm producers and distributors ▶ Intermodal coordination between ports, rail and road actors - clearances to be accorded by state/central port authorities, rail and road authorities	▶ Disjointed Agri-distribution channels and information asymmetry may be an issue in this case and therefore, clear-cut directives, frameworks and SOPs should be issued to ensure transparency ▶ Coordination and cooperation among multiple states and central authorities has been a complex process and thus, senior level interventions will be needed to smoothen the process
Fiscal measures and other policy interventions	▶ Include auto industry in **"critical sector"** and make it eligible for a dedicated fiscal stimulus/bailout package to tide over the crisis - vehicle dealers must be included in this package as they operate on wafer-thin margins ▶ Keep uniform GST for auto components at 18% for at-least 3 years (about 40% of components currently fall in the 28% bracket) ▶ Offer subsidy or waive-off GST on short-term leasing of cars ▶ Temporary waiver of regulatory testing costs	▶ These interventions will ensure liquidity in the sector across the value chain with special focus to reduce the impact on MSMEs and mitigate NPAs	▶ This requires immediate action plan from regulatory agencies headed by Ministry of Finance including CBIC and MoRTH, in consultation with auto industry bodies and associations, considering the financial implications	▶ Injecting fiscal stimulus by doling out subsidies and effecting waivers will adversely impact sovereign credit rating and financial parameters of the country ▶ A fund or SPV could be created, seeded by partial government funding (about 10%) and rest by financial institutions such as LIC, PFC, EPF, NIIF, IIFCL and others. This fund/SPV could subscribe to bonds/NCDs of highly rated corporates (A and above). ▶ Utilizing unspent cesses like education cess and exploring fundraising via multilateral loans and from external private market borrowings

Categories	Areas of intervention	Possible impact/outcome	Efforts required	Possible risks/mitigation measures
Support to vehicle owners	▶ Waiver/subsidy on registration charges for ICE engines or introduce 'one nation, one registration tax' on vehicles ▶ Remove cess for engines below 1200cc or less than 4meters in length ▶ Waive-off permit cost for new commercial vehicle for the first year	▶ This will reduce costs for vehicle owners and incentivize seamless mode of transport through roads for the greater benefit of economy		-
Relaxation of norms and extension of schemes	▶ Extension of FAME II scheme by 24 months	▶ This will ensure sustained interests among stakeholders for promulgation of the EV market while the finances for ICE market improves	▶ Ministry of Heavy Industries & Public Enterprises, which regulates FAME II scheme, needs to take action	-
	▶ Relaxation of CAFÉ norms by 2 years	▶ This may boost the production and sale of ICE for the short-term before large scale transition to EV	▶ CAFÉ norms as proposed in draft National Auto Policy by Department of Heavy Industry.	-
Medium-term				
Boost demand	▶ Lower GST (18%)/allow higher depreciation on purchase of new vehicles for consumers. Extend the additional depreciation of 15% (over and above existing 15%) applicable until 31 March 2020 for 24 months.	▶ The savings through lower GST, tax deductions and lower interest, as well as incentives for scrapping old vehicles in lieu of new vehicle purchase will catalyze demand	▶ Ministry of Finance and other regulatory bodies should work out the required interventions ▶ GST – CBIC ▶ Vehicle scrappage policy - MoRTH	▶ 'Cash for Clunkers' scheme proved out to be a failure in the US owing to poor implementation. The derivation of incentives/subsidies for the scheme should consider the economic and environmental factors.
	▶ Roll-out vehicle scrappage policy, which has a business opportunity of US$ 6 billion (INR 450 billion)/year with introduction of incentives similar to "Cash for Clunkers"[16] scheme			

[16] 'Cash for Clunkers' refers to the provision of financial incentives to the owners of vehicles to get them to scrap outmoded models and replace them with newer vehicles. During the global economic crisis of 2008-09, the US, the UK, China, Germany and France came out with 'Cash for Clunker' schemes to speed up new vehicle sales and help stimulate their economies

Categories	Areas of intervention	Possible impact/outcome	Efforts required	Possible risks/mitigation measures
	▶ Introduce a new window for lower interest for auto loans through an interest subvention scheme for commercial vehicle, small value cars and electric cars ▶ Increase the tenor of loans provided by public sector banks for commercial and personal vehicles from the current average of 5 years to around 8 years to reduce the EMI burden on car buyers	for new vehicles across segments	▶ Interest subvention scheme – Ministry of Finance and banks /NBFCs ▶ Income Tax - CBDT	
	▶ Allow income tax deduction on vehicle loans			
Fiscal boost to EV segment	▶ Lower GST on EV charging service and battery swapping service to 5% from 18% ▶ Reduce GST on purchase of Lithium-ion batteries in the battery replacement market and battery swapping market to 5% from 18%	▶ This will help achieve economies of scale in EV battery manufacturing and reduce EV cost	▶ Cabinet to approve the necessary interventions in accordance with NITI Aayog's plan	-
	▶ Approve and expedite implementation of US$ 5.30 billion (INR 400 billion) subsidy scheme for EV battery manufacturing			
Long-term				
Boost exports	▶ Introduction of special export promotion scheme for developing markets such as SAFTA, Africa, Middle East, South America and CIS countries	▶ This will boost international trade prospects for the sector with opening up of new markets for domestic players	▶ Ministry of Commerce to formulate export promotion schemes ▶ Invest India and state level investment facilitation agencies to execute focused investment promotion events with outbound delegations	▶ The success of these interventions is impacted by the existing global economic climate and political diplomacy ▶ Country-wise risk analysis and comparative studies need to be done to prioritize and derive the optimum treaty conditions for trade
Demand creation	▶ Conversion of all vehicles owned and leased by state governments as well as fleet of SRTCs to EV in the long run	▶ This will bolster the EV segment in the country and catalyze	▶ The government should engage private investors/practitioner	▶ Government needs the right delivery practitioner in

Categories	Areas of intervention	Possible impact/outcome	Efforts required	Possible risks/mitigation measures
	▶ Develop and implement EV transition targets for taxi fleets and logistics fleets in the states in the medium to long run ▶ Support creation of required charging infrastructure by increasing the current allocated subsidy of US$ 132 million (INR 10 billion) for charging stations and attracting private players under FAME-II scheme where total subsidy outlay is US$ 1.30 billion (INR 100 billion) ▶ Set up the proposed charging station infrastructure - (i) at least one charging station in a grid of 3 Km X 3 Km in the cities and one charging station at every 25 km on both sides of highways/roads (ii) fast charging stations for long range and/or heavy duty EVs to be installed at every 100 km for the ease of inter-city travel	its better penetration into the hinterland	through PPP model and provide level-playing field for availing FAME-II subsidies (in comparison to PSUs) to create the necessary charging infrastructure in order to achieve the target of transforming India to an all-electric passenger vehicle market by 2030 ▶ The process of inviting further rounds of EOI and RFP for charging infrastructure deployment under DHI's FAME-II scheme should be expedited	infrastructure planning, design creation and maintenance ▶ The private player selection process should be prudent with considerable expertise in both power generation and power supply projects from both grid and renewable sources, and the proven ability to integrate them into an EV charging station. Further, the private players should demonstrate an experience in every aspect of an EV charging programs lifecycle: from conceptualization through to asset management.
Incentivize R&D	▶ Offer incentives to invest in future technologies like mechatronics, telematics, robotics, autotronics, power electronics, data analytics, lean manufacturing, process knowledge, quality core tools training, computer-aided engineering, robotics, programmable logic control, three-dimensional modelling software and machine handling skills ▶ Reinstate 200% weighted deduction for R&D investment/spend and also extend this for R&D outsourced to third-party service providers	▶ This will build a resilient supply chain and accelerate the industry toward the "New Normal" that would rely more on "smart" assembly lines	▶ The government should incentivize the firms, especially MSMEs through dedicated fund scheme like TDAF	-

Reimagining supply chain

Employees
- Employee safety is crucially important to continue operations and guidelines for how to maintain the factories running are needed
- Remote working is a key facilitator but requires the right technology and IT infrastructure and is not always possible

Customers
- Social distancing to avoid infection is severely reducing eventual end-customer demand in many sectors, such as automotive and aero
- Some end-customer markets are less impacted but still difficult to serve due to government lock down regulations or supply issues

Suppliers
- The drive for maximum supply chain efficiency has taken buffers out of many systems, leading to standstills
- The supply chain resilience appears insufficient, but the response is complicated as also local / regional supply chains suffer

Investors
- Global stock markets have crashed and many corporations face serious liquidity issues, especially among tier 1 – 3 suppliers
- Uncertainty around the current crisis is also increasing the awareness of similar threats in the future

Government
- Some governments initially underestimated the threat and are now reacting with complete lock downs and isolation
- Government's role for the economy to mitigate current and future pandemics is not yet resolved despite massive support packages

Short-term

1. **NOW** – Immediate response
2. **NEXT** – Reboot and react
3. **BEYOND** – Adapt to the new world

Long-term

Supply Chain Management

Non-Negotiables	Key Dimensions
▸ Constraints discovery mechanism to monitor and track possible disruptions ▸ Budget for bulk in-warding of stock on reopening to limit restart impact ▸ De-risking of supply chain including exploring vendor financing tie-ups ▸ Communicate with vendors and assess extent of impact up to Tier II/ Tier III ▸ Preparedness for restart (ensure maintenance)	**Route to Market and Channel Strategy** ▸ Rapid re-alignment of channels, outlets, products ▸ Liquidity and credit management in the network ▸ Agile sales and service team re-deployment **Integrated Sales and Operations Planning** ▸ Demand and supply volatility ▸ Allocation and re-prioritization framework **Logistics and Distribution** ▸ Securing inbound and outbound flows ▸ Re-positioning of inventories at regional warehouses **Manufacturing and Plant Operations** ▸ Assess and manage constraints ▸ Agility of machines, labour and materials ▸ Immediate recovery planning **Procurement and Supplier Management** ▸ Supplier risk assessment ▸ Contractual obligation management ▸ Open order reset/ amendments **Crisis Management and Governance** ▸ Remote working capability ▸ Crisis governance and communication ▸ End-to-End Compliance Report
Indian Auto Sector Highlights ▸ Supply side constraints of BSIV inventory liquidation : 10% sales allowed by authorities post lockdown that too within 10 days - **Press Reports** ▸ **Indian auto ancillaries and OEMs have about 27% import dependence on China for key parts and accessories - ICRA**	

Prepare

SC resilience assessment and strategy
- Conduct end-to-end (E2E) supply chain risk assessment
- Stress test the supply chain
- War game supply crisis scenarios
- Identify critical risk scenarios
- Against each scenario, identify critical SC gaps and impacts
- Define potential responses
- Develop business case for different resilience investment interventions

SC resilience capability build-out
- Based on SC resilience strategy, invest in key SC capabilities
- Note the following examples:
- Visibility and monitoring capability
- Alternative BOMs – critical component alternatives
- Alternative supplier sourcing strategies
- Build in-network flexibility
- Develop agile planning capability – planning center coverage

Sense

SC risk intelligence monitoring
- Provide SC risk monitoring and reporting
- Use early warning system triggering predefined standard operating procedures to respond early to risks or disruptions
- Conduct new product risk assessments
- Review E2E SC demand and supply signal abnormalities/outliers
- Perform ongoing risk and controls assessments, including systems and facility risk and cyber reviews

Respond

SC risk response operating procedures
- Define plan B for specific disruptive events
- Develop plan B standard operating procedures and responses to the predefined supply disruption triggers
- Provide clear delegation of authority and decision-making
- Determine external and internal communication protocols
- Assess readiness to trigger plan B

Major crisis management
- Develop crisis management approach for major events where predefined responses are not adequate
- Create a crisis management framework
- Discover
- Triage
- Respond/communicate
- Resolve/new normal
- Provide crisis management governance, operating model, standard ways of working

B. Electronics Manufacturing

Sectoral overview

The electronics industry manufactures electronic equipment for industries, telecom sector and consumer electronics products like circuit boards, TVs and computers. The global electronics industry has witnessed a rapid growth in recent years, driven by advancement in technologies, increasing need for automation among businesses and demand from young millennials for NextGen electronic products. China is the key supplier for raw materials and components used in manufacturing of electronics products. India, which is dependent on imports to meet its raw materials requirement, is fast emerging as a global leader in electronics manufacturing, ranging from simple consumer durables to complex state-of-the-art industrial electronic products.

Importance of sector in India

- India has witnessed a surge in companies involved in manufacturing of electronic equipment over the last decade. The country currently produces telecom products, IT hardware, consumer electronics, medical electronics, industrial electronics and automotive electronics.
- India attracted FDI worth about US$ 1.18 billion (INR 88.5 billion) between January 2015 and December 2019)[17]. The investment has primarily been driven by the initiatives taken by the Government of India and state governments to boost local manufacturing of electronics and electronic components.
- The government's "Make in India" program launched in 2014 has helped enhance investments in domestic manufacturing and reducing the country's dependence on imports across sectors. Initiative such as Modified Special Incentive Package Scheme and Electronic Manufacturing Clusters scheme have also promoted domestic manufacturing of electronics and helped reduce India's dependence on imports in the electronics industry to some extent.
- India in 2019 came up with the National Policy on Electronics with an aim to position the country as a global hub for Electronics System Design & Manufacturing by encouraging and driving capabilities in the country for developing core components including chipsets and creating an enabling environment for the industry to compete globally.
- To boost the investment and growth prospects of the industry, the government in March 2020 approved three major schemes to further realize the potential of electronics sector in India. These initiatives are Production Linked Incentive (PLI), Scheme for Promotion of Manufacturing of Electronics Components & Semiconductors (SPECS) and Electronics Manufacturing Clusters 2.0 (EMC 2.0). These schemes aim to enable large scale electronics manufacturing in India, create domestic ecosystem of components as well as provide state-of-the-art infrastructure and common facilities for large anchor units and their supply chain practitioners.

Important countries in the sector and India

China has been a worldwide leader in the manufacturing and exports of electronics products and components. Other key suppliers are Taiwan and South Korea. India is primarily dependent on these countries for key raw materials and components supplies for manufacturing electronics products.

---

[17] Department for Promotion of Industry and Internal Trade, Ministry of Commerce & Industry, GoI, *Fact Sheet on FDI*

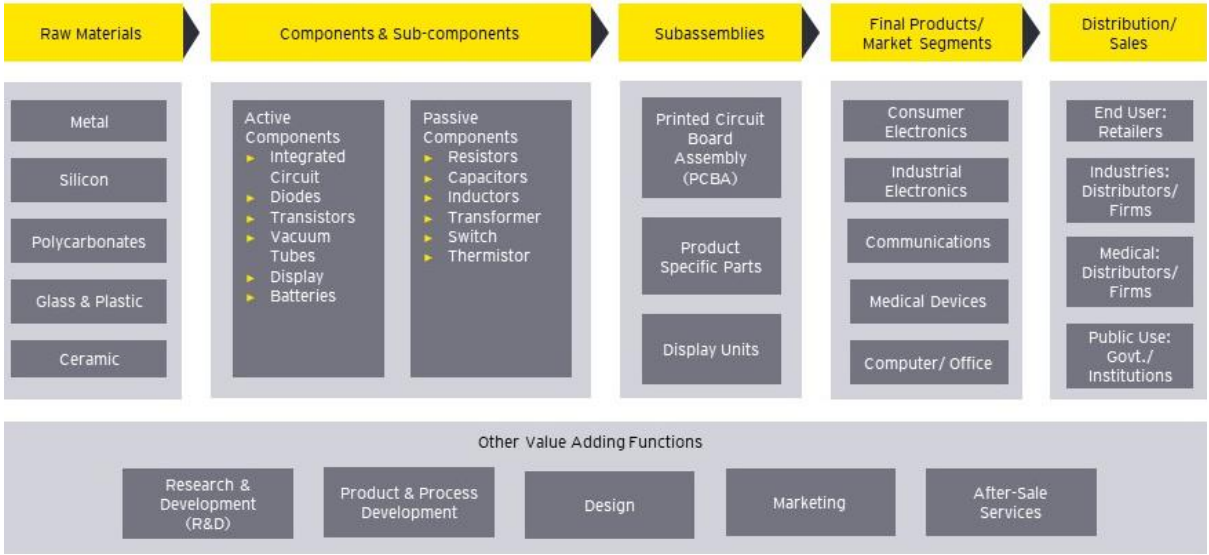
Value chain

The electronics value chain comprises of a range of activities that bring a product from its conception to its delivery and finally to the end consumer. These activities can be local or global, considering the geographic range around which these activities are performed.

Over the last few decades, firms have increasingly started optimizing their manufacturing process by restructuring their operations globally through outsourcing and offshoring to different countries. Critical activities like conceptualization, product design and development, circuitry, semiconductor designing and software development, which are the most attractive and also most remunerative, are controlled by lead firms and leading component suppliers. Other uncritical activities are performed at offshore locations or outsourced.

Most of the critical components are manufactured in a few leading countries and it becomes imperative to source these products from such countries, which already have installed capacities.

Figure: Electronics global value chain



Impact of COVID-19

The Indian electronics industry is likely to suffer in the short-term due to disruptions in supplies from China and other countries given its dependency on them to meet its requirement of raw materials. Some suppliers across the countries have temporarily ceased their production due to COVID-19, while logistics providers are also unable to transport goods seamlessly, particularly across borders, due to pandemic-related restrictions.

China has been severely affected because of COVID-19, thereby resulting in temporary closure of plants across the country. The supply chain and the quantum of components imported into India have been gravely impacted due to these closures and consequently, the Indian manufacturers are feeling the impact of part shortages in their supply networks. A delay of at least 4 –5 weeks is expected in the shipment of products upon re-opening of production units across the globe with limited cargo vessels.[18] This will also result in increased marginal cost of logistics (i.e., logistics cost per unit of product).

The fear of second wave of pandemic and rising number of coronavirus cases in India and globally have further dented the sentiment among businesses. As a result, the transportation and logistics is unlikely to improve significantly in the near-term, leading to shortage of parts and further increase in the prices of raw materials and components. This will significantly affect the profitability of businesses, which are also facing liquidity crunch.

The ESDM sector has been strained with liquidity crunch due to production shutdowns in India because of the nationwide lockdown. The reduced demand post COVID-19 will further pose cash flow constraints, and MSMEs will be the worst hit. The pandemic has also posed a challenge for the companies in meeting the regulatory compliances.

[18] https://www.globenewswire.com/news-release/2020/02/25/1990356/0/en/Coronavirus-Expected-to-Cause-Five-Week-Product-Shipment-Delays-Says-Electronics-Manufacturing-Industry.html

The lockdown restrictions have been eased and some activities have started but the mass-migration of workers to their hometowns amidst temporary closure of production units previously has posed a new challenge for the industry. It will take a considerable time for the companies, especially those operating in the labor-intensive ESDM sector, to mobilize the labor and increase the capacity utilization of their units.

The plants remain underutilized currently due to weak demand and unavailability of labor, with businesses also toying with the idea of diversification due to emerging requirements for new products amidst the crisis. A shift away from the core business could have a significant impact on the manufacturing of electronics products in the country.

The temporary closure of technology-oriented firms in the US and Europe has also put the Indian firms in a tight spot due to their high dependence on the foreign R&D teams. This has affected the process of continuous product innovation and if this continues for a longer period, there will be a significant delay in the development of new technologies.

The government has announced several measures, including maintaining social distancing guidelines and offering some leeway in meeting the regulatory compliances for businesses. However, still a lot needs to be done to support businesses in this unprecedented time so that the industry can tide over this crisis.

Interventions

i. Possible interventions by the government

Categories	Areas of intervention	Possible impact/outcome	Efforts required	Possible risks/mitigation measures
Short-term				
Demand creation	▶ Reduce GST rates for limited period for high-volume electronics items like mobile phones, TVs and ACs to boost demand	▶ This will stimulate demand for high-volume electronic items, leading to increased transactions and cash flows	▶ Identification of key 20% electronics products, contributing to a majority of electronics sales in the country on the basis of 80/20 rule, the law of the vital few, through the GST tax collection data ▶ Tax incentives in the form of short-term GST rate cuts for identified electronic items for boosting demand. For e.g., reduction of GST on mobile phones to 12% from 18% and for TVs and ACs to 18% from 28%. ▶ GST Council and Ministry of Finance to undertake the assessment and notify the identified goods and revised GST rates for specified duration/period	▶ Other industries may also demand reduction of GST for boosting demand of their products ▶ The government may identify key products in those industries, and based on their revenue contribution/sales percentage, it could introduce rate-cuts for a short period and increase the rates at a later stage in a staggered manner
Tap foreign investors and encourage FDI	▶ Offer policy support for stimulating investments in Electronics and ESDM sector	▶ The effective policy framework for stimulating investments in the sector will lead to increased indigenous manufacturing, improved infrastructure and supply chain, increased employment opportunities and export potential	▶ Expediting the release of operational guidelines and implementation mechanism for the three new schemes launched by MeitY, namely PLI, SPECS and EMC 2.0 ▶ MeitY should come up with the guidelines and teams may be on-boarded accordingly	▶ The electronics policy for several states has different definitions and product coverage. MeitY may, hence, issue policy framework for the states to review their existing policy and others to formulate one.
	▶ Re-open M-SIPS scheme for end-products not covered under SPECS	▶ This will further entice foreign firms in the electronics sector and	▶ The finished electronics goods segment needs to be promoted in the short-term for tapping firms planning to move out of countries such as China	▶ The reopening of M-SIPS scheme may lead to budget constraints,

Categories	Areas of intervention	Possible impact/outcome	Efforts required	Possible risks/mitigation measures
	scheme for tapping foreign investments to manufacture end products	could boost investments and export potential ▶ The development of ancillary industries will lead to employment generation and also create support infrastructure	▶ As SPECS scheme only focuses on intermediate products and components, the existing M-SIPS scheme may be re-initiated for one more year to attract such firms and foreign investments	considering that 3 new schemes have been recently launched by MeitY ▶ The government may consider increasing the investment threshold limits under M-SIPS to ensure large scale investments in the sector with high revenue generation potential for the government
Tap foreign investors and encourage FDI	▶ Provide support to foreign firms planning to relocate from China and incentivize investments in refurbished plant & machinery	▶ This could help India emerge as a favorable destination for relocating production units from China and increase investment in the sector, thereby boosting export potential	▶ The government may come up with a new scheme to attract such companies from neighboring countries and also give subsidy on refurbished plant & machinery as part of investment proposed in such relocated unit ▶ The government may also raise capping limit of eligible cost of refurbished P&M under the SPECS scheme to up to 60% of total P&M expenditure. This is proposed at 20% of the total investment in P&M.	▶ The government can enforce transfer pricing regulations to check the investments and subsidy
	▶ Provide customized incentives packages to foreign firms for undertaking mega investment projects, i.e., above US$ 67 million (INR 5 billion) Fast-track approvals for 'Multi-Billion-Dollar' investment projects	▶ This will attract large-scale investments from foreign firms, leading to improved infrastructure, development of supply chain for niche products (semiconductors - fabrication units, microprocessors, microcontrollers, application-specific ICs, memory chips, LCD module manufacturing),	▶ MeitY may come up with a policy to attract such investment projects through customized financial benefits and fast-track approvals, with defined timelines and in-principal consents ▶ The incentives may include: ▶ Income tax holidays for 10 years ▶ Subsidy of up to 25% on capital investment ▶ Concession of up to 25% in land rates of prevailing circle rates ▶ Rebate in power tariff to the extent of 20% of total tariff	▶ There may be dissent among firms on the quantum of incentives provided to other firms by the government ▶ The government may formulate assessment parameters and define the range for quantum of incentives against each parameter to justify the customized package offered to firms

Categories	Areas of intervention	Possible impact/outcome	Efforts required	Possible risks/mitigation measures
		employment generation and increase in exports		
Strengthen supply chain	▶ Re-negotiate trade tariffs/duty structures for short-term to ensure continuity of supply chain	▶ This will lead to reduction in manufacturing costs and make the end-products more competitive as well as improve cash flows	▶ Identification of critical components requiring re-negotiations of trade tariffs/duty structure to ensure continuity of supply chain at reasonable prices. For instance, rolling back of the recent increase in BCD can be done for a short period (about 6 months) for products, which have limited local manufacturing and new investments that may take time to be grounded. PCBA of cellular mobile phones, charger or power adapter, earphones and vibrator motor/ringer for use in the manufacturing of cellular mobile phones are some of the products. ▶ Notification from Central Board of Indirect Taxes & Customs, Department of Revenue, Ministry of Finance.	▶ Other industries may also demand the same. ▶ The government may identify the critical components in those industries and based on the revenue contribution/sales percentage of its end-product, it may roll back duties for a short period and increase the duties at a later stage in a staggered manner.
Boost technology capabilities	▶ Tax holidays to foreign collaborators to encourage technology transfers from foreign to domestic players in medical electronics domain	▶ This will attract foreign firms and enhance technological capabilities of the country through increase in number of technology transfers.	▶ For certain niche sub-sectors such as ventilators, critical care equipment and medical imaging, the government may consider granting tax concessions such as income tax holidays for 5 years for foreign companies entering a joint venture with Indian practitioners. ▶ MeitY should be the nodal agency to encourage such collaborations/technology transfers and approve such proposals, while CBIC and Department of Revenue may issue the required notifications	-
Provide liquidity support	▶ Provide rebates to improve cash flow of firms	▶ This will reduce fixed and variable expenses for firms, leading to improved cash flows and sustenance in the short- to medium-term, as well as enable them to make up for the losses incurred due to production shutdowns	▶ Exemptions/reductions from/in monthly or annual lease/rental payment for industries in state authorities (such as SIPCOT, MIDC, GIDC and APIIC) for 6 months starting 1 April 2020 – 50% rebate on power/water bill, 100% exemption on power/water tax (GST), labor wage compensation of US$ 27 (INR 2,000)/person/month for 6 months, and rebate of 50% on the income tax for FY 2020-2021 ▶ Respective state governments and their concerned departments may come up with the policy and	▶ Other industries may also demand similar support ▶ The government may cap these incentives based on the investment scale of the industry

Categories	Areas of intervention	Possible impact/outcome	Efforts required	Possible risks/mitigation measures
		during the lockdown period to some extent	notification in this regard. CBIC, DPIIT and other central authorities may come up with necessary notifications enabling these interventions.	
Medium-term				
Incentivize R&D	▶ Incentivize investments in R&D through fiscal incentives on R&D capex	▶ This will increase investments in R&D as well as help Indian firms reduce their dependency on foreign companies and enhance technological capabilities of the country	▶ The government may consider keeping the capping limit of eligible investment under R&D to up to 50% of total capital expenditure for existing units and up to 30% for new units in the recently launched SPECS initiative ▶ MeitY can make appropriate changes in the draft SPECS initiative	-
Encourage diversification	▶ Enable diversification of businesses to mitigate risks	▶ This will encourage firms to diversify, reduce risks and increase sustainability, while meeting the rising demands of identified products/domains	▶ Identification of electronics sub-sectors with diversification potential and need based on assessment of domestic value addition/demand-supply/industrial capacity of the state and incentivizing such firms based on key demand areas identified by the government post COVID-19 through duty benefits and tax exemptions. *(For e.g., Demand for automation gadgets at factories and household consumer appliances may increase post COVID-19 to reduce dependency on manual laborer/workers. Therefore, based on demand forecasting, certain companies may undertake diversification to meet such growing requirements).* ▶ MeitY should come up with a taskforce, which can routinely identify such industries, and assist industries in product diversification	-
Long-term				
Expand domestic supply chain	▶ Expansion of raw materials sources to	▶ This will lower dependency on only a few limited countries/regions for raw	▶ MeitY should create a platform for promotion of alternative sources for procurement of imported	▶ The firms may face the issue of higher manufacturing cost as a

Categories	Areas of intervention	Possible impact/outcome	Efforts required	Possible risks/mitigation measures
	reduce dependency on a single geography	materials and thereby, reduce disruptions to supply chain ▶ This will also increase indigenous manufacturing	components to reduce dependence on a few manufacturing economies ▶ Identification of strategies to ensure continuity in supply chain and availability of critical components even in a crisis ▶ Alternative sources for import of electronic components from other leading manufacturing countries such as South Korea, Taiwan and Japan should be explored	result of using raw materials from different geographies ▶ The government may re-negotiate trade tariffs, reduce/exempt import duties on certain raw materials for easing the burden of high cost on firms
B2B facilitation	▶ Identify and link value chain stakeholders for increased collaboration in order to move from SKD to CKD level of manufacturing	▶ This will increase forward and backward integration and collaborations among value chain firms as well as may help India move toward CKD level of manufacturing	▶ Identification of key players in the sector value chain (raw materials suppliers, buyers, technology providers and logistics players) to enable forward and backward integration and collaboration possibilities ▶ MeitY should work toward creating an integrated platform for linking buyers and sellers in electronics industry	-
Infrastructure development	▶ Improve infrastructure to attract foreign investments in the ESDM sector	▶ This will make India a favorable investment destination	▶ Identification of infrastructure bottlenecks to create an implementation roadmap, prioritized by geographies and focus on sub-sectors ▶ Focus should be on existing EMCs and SEZs where electronics manufacturing industry is prevalent ▶ MeitY may coordinate with the respective state governments to have stakeholder consultations at EMCs and other such clusters and define timelines for removal of such impediments	-

ii. Possible interventions by the private sector

Categories	Areas of intervention	Possible impact/outcome	Efforts required	Possible risks/mitigation measures
Short-term				
Demand creation	▶ Enable collaboration of industry players, primarily MSMEs, with online/e-Commerce market players	▶ This will help in boosting demand/sales and also lead to higher capacity utilization and economies of scale	▶ The industry players, mainly MSMEs making white goods, should also focus to collaborate with online platforms/market players to cater to customers in Tier-2 and Tier-3 cities	-
Medium-term				
Collaborations/joint ventures	▶ Identify and collaborate with foreign firms looking to invest in India for mutual benefits	▶ This will lead to increased investments, technology transfers, employment generation opportunities and faster grounding of projects due to local support	▶ The medium to large sized enterprises may identify foreign firms, which are planning to invest in India, for collaborating with them to form joint ventures	-
Long-term				
Diversify raw materials sources	▶ Explore multiple potential sources of electronics raw materials and components	▶ This will reduce dependency on a single country such as China for raw materials/components and mitigate supply chain disruptions	▶ The industry players/organizations should explore sources for import of electronic components from countries such as South Korea and Japan	▶ The diversification of sources is likely to lead to higher cost of inputs/raw materials

C. Food Processing

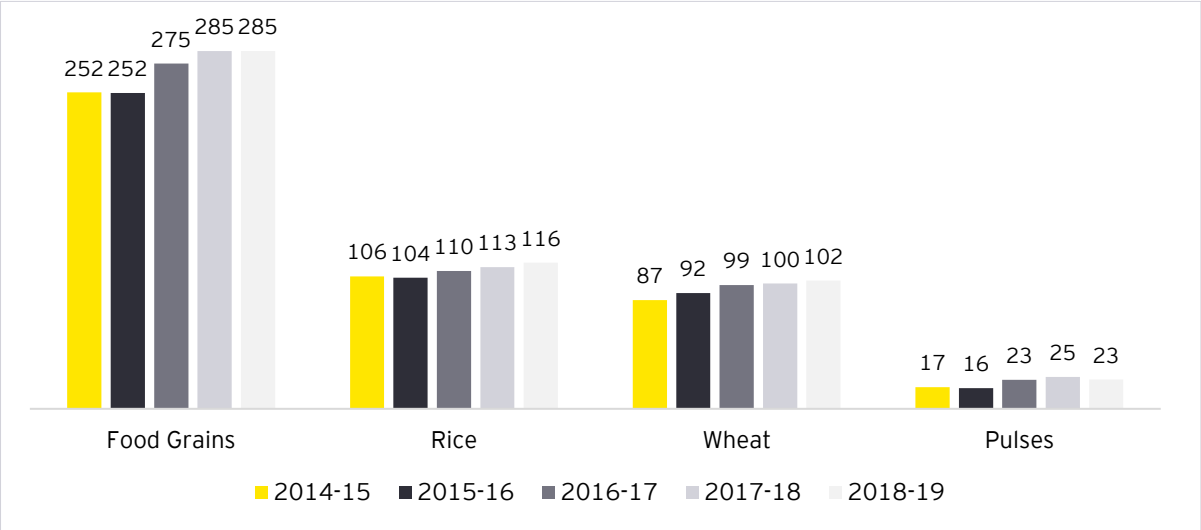
Sector overview

The food processing sector plays a vital role in India's economic development as it connects and synergizes two most important pillars of our economy: industry and agriculture. India is a major player in the global food value chain and one of the largest producers of grains, pulses, cereals, fruits and vegetables, spices, milk and eggs, among others.

Importance of sector in India

- The market size of Indian food processing industry is estimated to be US$ 543 billion (INR 40.73 trillion)[19], and the sector accounted for 1.6%[20] of India's total GVA in 2017-18.
- India's processing capacity, however, is quite low currently and therefore, there's a huge potential for growth going forward. At present, India processes less than 10% of its agriculture output and only about 2% of fruits and vegetables, 6% of poultry, 21% of meat, 23% of marine and 35% of milk[21].
- Most of the processing done in India is primary processing, i.e., milling of grains, sugar and edible oils. The primary processing offers lower value-addition than secondary processing, which includes processing of high value items such as fruits and vegetables, bakery, chocolates, dairy, and ready-to-cook meals, among others.
- India's food ecosystem offers huge opportunities for businesses to invest in the sector and gain from its potential growth.

Agriculture Production (Million Tons)



[19] https://www.investindia.gov.in/sector/food-processing
[20] https://mofpi.nic.in/sites/default/files/gva_current_2.pdf
[21] http://face-cii.in/sites/default/files/food_processing_report_2019.pdf

Value chain

The first stage of food processing value chain is the production stage or harvesting, which is the most labor-intensive activity. Following this comes the processing stage, which can be divided into primary and secondary processing. The primary processing involves cleaning, grading, sorting and milling of raw materials. The secondary processing involves operations to change form or manufacture modified products and requires skilled workforce. Thereafter, grading and packaging as well as distribution and marketing processes come into the play before the product finally reaches to the end consumer.

Raw Material	Value addition			
Producers (Farmers/Breeders/ Fisherman)	Warehousing/ Cold Storage /Logistics	Processing	Grading and Packaging	Distribution & Marketing
Agriculture Produce	Cold Storage	Fruits and vegetable Processing	Quality Control	Branding
Fruits and Vegetables	Warehousing	Meat Processing	Grading	Retailers
Meat and Poultry	Conventional Vehicles	Milk Processing	Packaging	Wholesales
Marine/Inland Water Products	Reefer Vehicles	Milling		Institutions
Beverages/Aerated & Non-Aerated Drinks /Fermented Products				Export
Milk				

Sub-sectors and value chain:

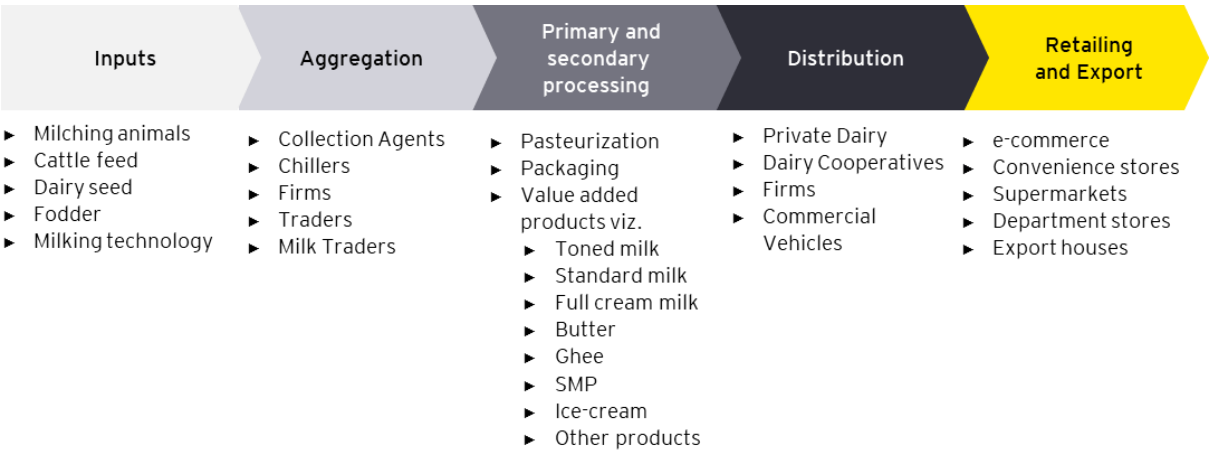
i. Fruits and Vegetables

Processes such as pulping, flaking, powdering, canning, pickling and dehydration are major value addition activities, which help increase the shelf-life of the produce. India currently processes about 2% of total fruits and vegetables produced in the country versus 78% in the Philippines, 23% in China and 65% in the US.

Inputs	Aggregation	Primary and secondary processing	Distribution	Retailing and Export
▸ Seeds and planting material ▸ Fertilizers ▸ Farm equipment (drip machinery, sprayers, harvesters, etc.	▸ Collection Agents ▸ Cooperatives and FPOs ▸ Firms ▸ Traders ▸ Private Mandis	▸ Cleaning ▸ Grading ▸ Sorting ▸ Packaging ▸ Pulping ▸ Juicing ▸ Flacking ▸ Powdering ▸ Canning ▸ Picking ▸ dehydration	▸ Cold storage ▸ Pack houses ▸ Warehouses ▸ Commercial vehicles	▸ e-commerce ▸ Convenience stores ▸ Supermarkets ▸ Department stores ▸ Export houses

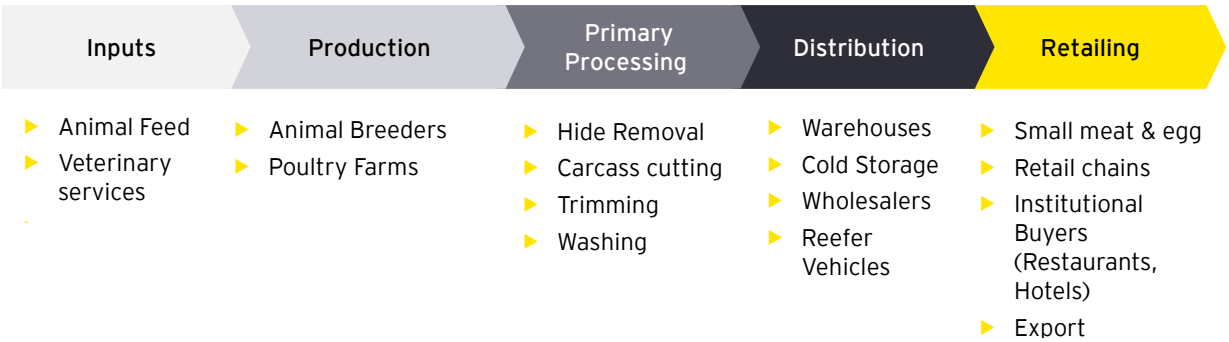
ii. Milk

In India, milk is collected and processed through organized and unorganized channels. The organized channel is the most prevalent in India, the world's largest milk producer. The milk is collected at a collection point, or local chilling stations, and then transported to the processing facilities.



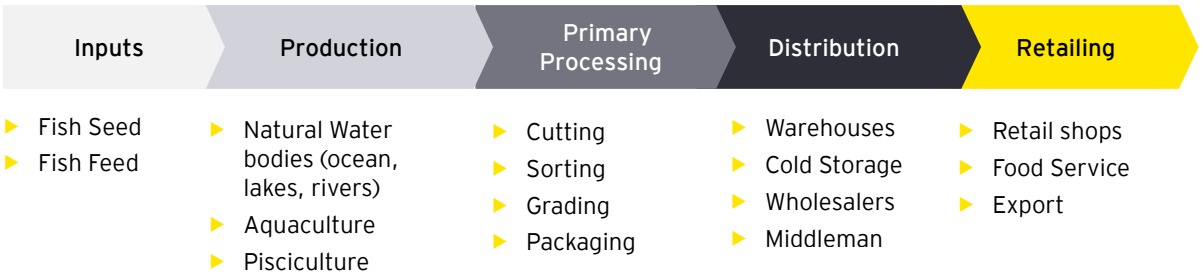
iii. Meat and poultry

Globally, India is among the largest producers of buffalo meat and goat meat, 3rd largest egg producer and 4th largest chicken producer. For meat processing, animals are first tested for any diseases and then sent for processing.



iv. Marine or inland water

Marine, or inland water, products are sold in the local market by small players, while large players sell it to processors through collection agents, middlemen and fish cooperative societies.



v. Grain processing

The primary processing includes milling of commodities such as rice, dal, flour and oil, among others. The secondary processing includes converting these milled products into other value-added products such as noodles, pasta and snacks. The rice mills account for the largest share of the organized food processing sector in India.

Inputs	Production	Primary Processing	Distribution	Retailing
▸ Seeds ▸ Fertilizers ▸ Farm equipment (Drip, machinery sprayers, harvesters)	▸ Farmers ▸ Cooperatives ▸ Firms ▸ Farmer Producer Organisations	▸ Cleaning ▸ Grading ▸ Sorting ▸ Milling ▸ Packaging	▸ Silos ▸ Warehouses ▸ Commercial Vehicles	▸ e-commerce ▸ Convenience stores ▸ Supermarkets ▸ Department Stores ▸ Export

vi. Consumer foods

The consumer foods segment, which includes packaged foods and beverages, has tremendous growth potential in comparison to other sub-sectors. The export potential is huge for the consumer foods because of India's expat population, which is one of the largest in the world, and as the Indian cuisine has gained a significant reputation globally.

Inputs	Processing	Distribution	Retailing & Exports
▸ Primary Processed grains ▸ Vegetables ▸ Fruits ▸ Dairy ▸ Meat ▸ Poultry	▸ Grading & Sorting ▸ Dehydration ▸ Mixing & Grinding ▸ Other processing techniques ▸ Packaging	▸ Warehouses ▸ Commercial Vehicles ▸ Export	▸ e-commerce ▸ Convenience stores ▸ Supermarkets, ▸ Department Stores ▸ Export

Impact of COVID-19

The logistics disruptions due to the lockdown has hampered the supply of products from processors to consumers. The non-availability of workers has become a major issue at the different stages of value chain. The larger players, with automated technologies for processing, have witnessed decreased demand from the domestic and international market. The meat and poultry industry has been affected as the restricted interstate movement of goods has hampered consistent supply. The marine food processing companies are also facing issue of low supply due to logistics restrictions and as the deep-sea fishing has been banned to avoid large gatherings, apart from a steep decline in overall demand from the local and export markets.

Prices of vegetables and fruits have risen due to the limited availability because of restricted movement of goods. The supply of edible oils will be impacted as India is largely dependent on imports to meet its requirement and this may lead to increase in prices. Spices are in huge demand but owing to high exports, availability in the domestic market is likely to be limited.

The shortage of workers, primarily in perishable food produce, means that wastage will increase if the products are not processed in time. The restrictions in movement of laborers, most of whom migrated to their native places to tide over the crisis amid job losses, may lead to loss in seasonal crops and this may impact the supply chain of products like juices and pulp. The decline in the production of ready-to-cook food due to consumers rising preference for fresh foods will have a huge impact on small food retail shops. There has been a reduction in the bulk demand due to closure of institutional buyers like hotels and restaurants, and restriction on exports.

India may witness a huge inventory of food grains, and warehousing and cold chains capacities may fall short. Agriculture and allied activities sectors have been partially affected due to the COVID-19 pandemic, but agricultural chemicals and fertilizers, which are import dependent, may see supply disruptions. Preventive measures are the need of the hour to curb the spread of COVID-19 to rural population of India and mitigate the damage caused to the economy.

Interventions

i. Possible interventions by the Government

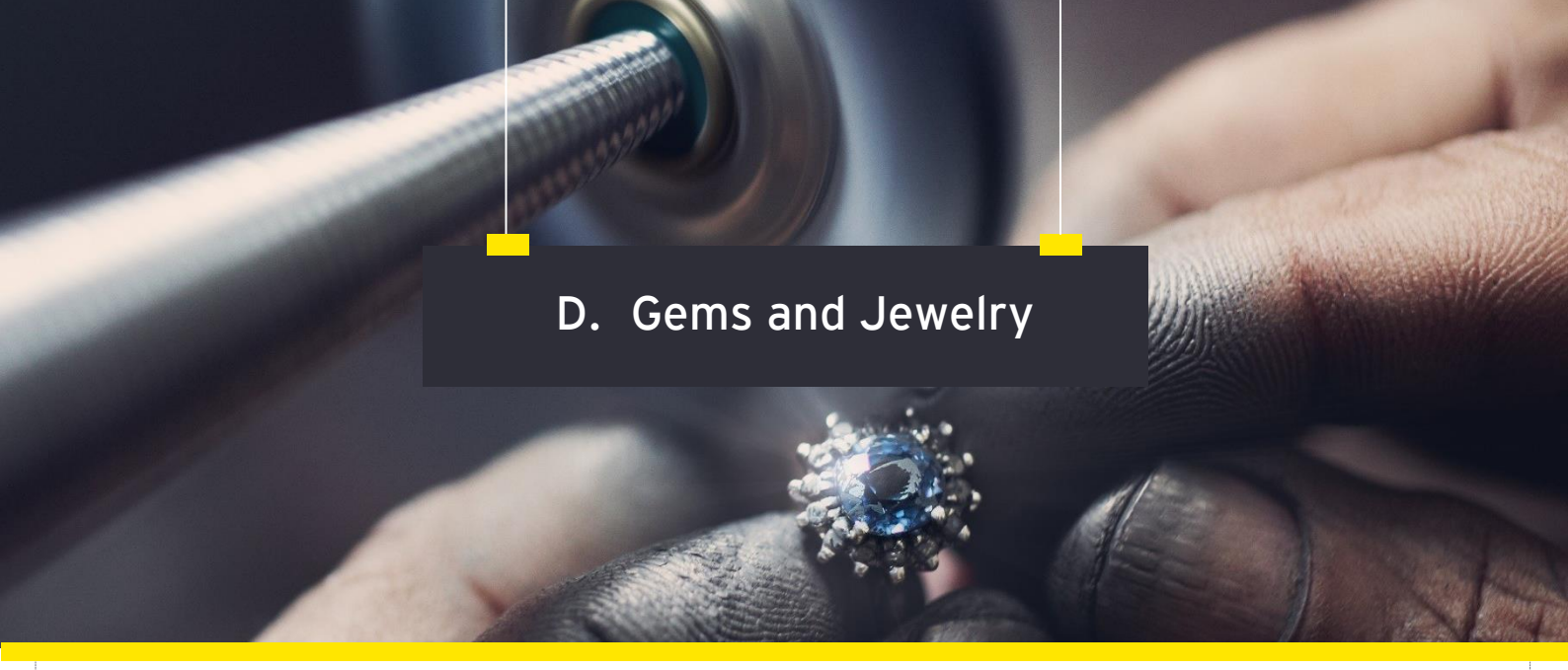
Categories	Area of intervention	Possible impact/output	Efforts required	Possible risks/mitigation measures
Short-term				
Demand creation	▶ Increase number of crops under purview of MSP procurement for 3-4 crop cycles ▶ Start crop procurement and mandi operations at block level by permitting one-third (1/3rd) of total agents to work at a time and promote token systems	▶ This will stabilize prices of crops and also help in monetary realizations for farmers	▶ The government should issue notification of updated list of items and MSP as well as SOP for mandi operations ▶ There's a need for mobile-based application that can offer crop registration facilities and cop procurement services ▶ **Responsibility:** State governments, APMCs, industries and farmers	▶ The social distancing measures should be mandated and monitored closely to reduce the risk of virus infection
Liquidity Support	▶ Allow 10-15 days for payment of primary procurement, instead of mandated upfront payment ▶ Reduce mandi tax across states and waive-off double charging of mandi tax in case of procurement from other states for next 3 months	▶ The food processing industries facing working capital/cash crunch can resume operations soon ▶ It will also allow unrestricted movement of raw produce for processing, resulting in lower crop wastage/losses	▶ The state governments to issue orders allowing direct procurement with provision of staggered payment, i.e., 40% upfront, 30% in 7 days and remaining 30% in 15 days ▶ The industries can issue post-dated check or tie-up with local banks ▶ APMC or mandi agents can become third-party guarantors	▶ There's risk of payment failure but it can be mitigated by considering the amount as working capital loans against industries and credit arrangements with local nationalized banks ▶ No mandi tax will mean loss of revenue to state governments
Infrastructure development	▶ Increase silos/warehousing capacities ▶ Promote greenhouse dryers/other dehydration techniques	▶ This will prevent crop wastages and crop losses as well as increase shelf life of fruits, vegetables and other perishable food items	▶ The government can allow operation of temporary silos in fallow/unused government lands and give subsidy for creating greenhouse dryers for fruits and vegetables	▶ It will take a long time in rolling out these technologies at farm level ▶ This can be mitigated through focused training programs at

Categories	Area of intervention	Possible impact/output	Efforts required	Possible risks/mitigation measures
			▶ There's a need for prototype development of greenhouse dryers and availability at Custom Hiring Centres	KVKs for progressive farmers in groups of 5-10 farmers
Policies impacting export-import	▶ Provide transport subsidy for export commodities, especially via air cargo ▶ Encourage agricultural chemical and fertilizer companies to expand their production capacities	▶ This will ensure market access to farmers and also result in import substitution of chemicals and fertilizers	▶ The state governments can reimburse the price difference directly in the bank accounts of exporting farmers on providing invoices for current year and last season. ▶ The government should roll out a special incentive package for agricultural chemical/fertilizer manufacturers	▶ This should be applicable only for farmers exporting fruits and vegetables based on previous year's data ▶ The incentive should be for capacity expansion of more than 30%
Medium-term				
Leverage technology	▶ Create a digital platform for helping farmers/FPOs connect with large retailers or processors	▶ This will save time and cost of gathering information about market and buyers, and supplies and suppliers	▶ There's a need to design and develop such platforms for state governments ▶ The agriculture and industry departments should coordinate to achieve this breakthrough	▶ The government will need to undertake extensive awareness building exercise as understanding of technology and its usage may be limited among the farmer community
Long-term				
Infrastructure development	▶ Development of common facility centers, including primary processing equipment, packaging facility, cold chains and testing facilities at existing industrial areas/food parks ▶ Promote investments in gamma-ray irradiation units	▶ This will increase overall value of food processing, enhance efficiency, reduce wastages as well as increase shelf life of fruits, vegetables and other perishable food items	▶ The state governments should identify clusters and develop CFCs ▶ There's also a need for identification of a leading food processing industry as lead member in the cluster ▶ The government must give incentives to private sector for setting up gamma-ray	▶ The creation of SPV for smooth operations might take time, but the efforts can be expedited by integrating the plan under ASPIRE scheme on Livelihood Business Incubators mode

Categories	Area of intervention	Possible impact/output	Efforts required	Possible risks/mitigation measures
			irradiation units in prominent fruits and vegetable export clusters	
Incentivize business expansion/ diversification	▶ Incentivize expansion/investment in organic farming and certification agencies	▶ This will increase production of organic products with better market value and boost monetary returns	▶ The state governments should develop sub-sector wise policy initiatives ▶ The government should support organic farmers with additional 10% subsidy on farm mechanization	▶ This will increase financial burden to state governments depending on incentives

ii. Possible interventions by the private sector

Categories	Areas of intervention	Possible impact/outcome	Efforts required	Possible risks/mitigation measures
Medium-term				
Leveraging technology	▶ Focus on improving the quality of food products via new technologies ▶ Increase adherence to international standards	▶ This will improve the standard of operations in food processing sector and also help in driving exports	▶ The companies must introduce new technologies and focus on laborer training and skill development programs	▶ There will be a minor increase in cost of production



D. Gems and Jewelry

Sector overview

The gems and jewelry sector holds a significant place in peoples' heart across cultures as they symbolize wealth, power, prosperity and beginning of a new life when people get married. These precious metals also come in handy when someone faces financial crisis and that is why people invest in gold, silver and other gems. Therefore, the industry sees a huge business in the world market. Total exports value of global gems and jewelry is estimated to be about US$ 652 billion (INR 48.9 trillion). India ranked 6th in gems and jewelry exports globally, with a share of US$ 40 billion (INR 3 trillion) in FY19. Other major exporters are Switzerland (12.5%), Hong Kong (10%), the US (7.3%) and the UAE (7%).

Importance of sector in India

- The gems and jewelry sector accounts for 7% of India's GDP and around 15.7% of total merchandise exports.
- India is the leader in exports of cut and polished diamonds and exported 75% of the world's polished diamonds in FY19.[22] India ranked 2nd globally in diamond exports and shipped stones valued at US$ 23 billion (INR 1.73 trillion).
- The sector currently employs nearly 4.6 million workforce and this number is likely to rise to 8.23 million by 2022. The sector attracted around US$ 1.16 billion (INR 87 billion) of FDI between April 2000 and March 2019.

Major gems and jewelry clusters in India

- India's western state of Gujarat leads the total national jewelry production, with a share of about 85%. The state also accounts for 72% of the global share of polished diamonds. Around 90% of the total diamonds in Gujarat are processed by about 10,000 diamond units located in and around Surat, employing over 800,000 workers.[23]
- Rajasthan's Jaipur, popularly known as the Pink City, has also gained market share as a polishing center and in exporting to international markets.[24]

Regions	Cluster details
Northern region	5 states – 38 clusters – 3,100 units (Jewelry - plain gold, diamond studded, silver, imitation)
Eastern region	5 states – 13 clusters – 8,000 units (Jewelry - plain gold, diamond studded, silver, imitation)
Southern region	5 states – 69 clusters – 33,000 units (Plain gold and studded jewelry)

[22] https://www.ibef.org/industry/gems-jewellery-india.aspx

[23] https://economictimes.indiatimes.com/small-biz/sme-sector/for-thousands-of-diamond-traders-a-new-bourse-in-surat-promises-to-add-to-the-shine/articleshow/68626309.cms?from=mdr

[24] www.businesstoday.in/magazine/features/why-indias-diamond-industry-is-facing-its-worst-crisis-ever/story/226005.html8

Western region	5 states – 45 clusters – 25,000 units (Colored stones, gold and silver jewelry, cutting and polishing diamonds)
Gujarat	16 clusters – 19,000 units (Cutting and polishing diamonds, gold and silver jewelry)
Rajasthan	11 clusters – 1,350 units (Colored stones, gold and silver jewelry, cutting and polishing diamonds)

Export-import scenario

India exports about 75% of the world's polished diamonds.

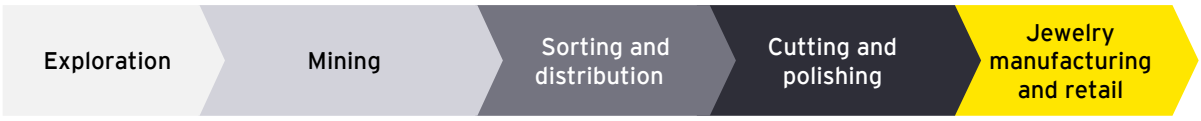
Major import commodities	Major export commodities
Rough Diamonds; Rough Lab Grown Diamonds; Rough Colored Gemstones; Rough Synthetic Stones; Raw Pearls; Gold Bar; Silver Bar; Platinum Bar; CPD-SEZ	Cut and Polished Diamonds; Polished Lab Grown Diamonds; Colored Gemstones; Polished Synthetic Stones; Pearls-Worked; Plain Gold Jewelry; Studded Gold Jewelry; Silver Jewelry; Platinum Jewelry; Imitation Jewelry; Articles of Gold, Silver and Other; Gold Medalion and Coin
Major countries	**Major countries**
Top 5 – The UAE, Belgium, Switzerland, Hong Kong, South Africa Others - Russia, Singapore, Israel, Russia, Thailand, Israel, Spain and USA	Top 5 – The US, the UAE, Hong Kong, Belgium, Israel Others - Singapore, Netherlands, Namibia, Australia, Sri Lanka, United Kingdom, China, South Africa, New Zealand, Lebanon and Spain

Key players – international and national

India is one of the largest jewelry consumption market in the world, with a share of approximately 29%. The sector, which is home to over 300,000 gems and jewelry players, will likely grow by US$ 103.06 billion (INR 7.7 trillion) between 2019 and 2023. Below are some of the key players in the jewelry value chain:

Mining	Processing	Retail
▸ Alrosa ▸ Petra Diamonds ▸ De Beers Group ▸ Roi Tinto ▸ Dominion Diamond Mines	▸ K.A.R.P ▸ SRK ▸ Hari Krishna Exports Pvt. Ltd. ▸ Venus Jewels ▸ Ankit Gems Pvt. Ltd.	▸ Blue Nile ▸ Tiffany & Co. ▸ Tanishq ▸ Signet Jewelers ▸ P.C. Jewellers

Value chain



Major reserves
- Russia
- Congo
- Australia
- Botswana
- South Africa
- Angola

Key players
- Alrosa
- De Beers Group
- Dominion
- Rio Tinto
- Petra Diamonds

Major players

Mostly carried out by the miners. Other distribution centers are small and fragmented

Major centers
- India
- Belgium
- Israel
- USA
- China
- Thailand
- South Africa

Players include
- Tiffany & Co.
- Signet Jewelers
- Blue Nile
- LVMH
- Damiami Spa
- Tanishq

The gems and jewelry industry, especially for imports and exports, usually opts for the air route for logistics as the shipments are categorized under "valuable cargo." The precious cargo imports and exports are undertaken at many airports in India, but a major chunk of shipments is routed via international airports of New Delhi, Mumbai, and Chennai.

Mines	Refineries	Air-cargo	Processing	Air-cargo (exports)	Transport	Wholesale/retail	Consumer

Impact of COVID-19

The gems and jewelry industry is facing a challenging time on account of ongoing restrictions and lockdown in India, parts of China and Hong Kong region, as well as other key markets. Rating agency ICRA in February 2020 cut the diamond sector outlook to negative from stable on demand worries amid virus woes. India's total gems and jewelry gross exports, including cut and polished diamonds, are estimated to have plunged by 56.4% y-o-y to US$ 1.5 billion (INR 112.5 billion) in March 2020, from US$ 3.4 billion (INR 255 billion) a year ago. As a result, total exports in FY20 is estimated to be US$ 35.14 billion (INR 2.6 trillion), a fall of 11.3% from a year ago.

The overall demand scenario still remains subdued amid weak consumer sentiment due to the slowdown in the economy and worries over second wave of coronavirus pandemic. China accounts for about 14% of global demand for cut and polished diamond, while a larger proportion (35%) of India's exports is currently routed through Hong Kong and therefore, subdued demand in key markets can have serious consequences for the country's cut and polished diamond industry.[25]

Major sectors/service with maximum impact because of COVID-19 in diamond industry are as follows:[26]

- **People flow/laborers:** Indian exporters have been badly affected due to rescheduling of the Hong Kong International Jewellery Show from March to May. The cancellation of domestic events as well as postponement of weddings have also affected the industry players. The cancellation of four major trade events between February and April this year is likely to cause a loss of US$ 1.1–1.3 million (INR 78.7–97.5 million) in business opportunities in the jewelry sector for the city of Jaipur alone.[27] Migration of laborers to their native places to tide over the virus woes has turned into a nightmare for the manufacturing sector now due to unavailability of workers.

- **Supply chains:** Disruptions in supply chain have severely affected India, which largely depends on imports for gold and rough diamonds to meet requirements. The country accounts for about 20% of global imports. Of this, more than 60% of India's imports are from top 15 affected countries.
- **Goods trade:** About 50% of industry revenue is dependent on exports, and 84% of this share constitute of the top 15 affected countries. The COVID-19 outbreak will be a big problem for Surat's diamond industry as it exports 94% of its total production, and China and Hong Kong account for 41% of its total exports[28].

- **Domestic consumption:** Remaining 50% of sector revenue is driven by domestic consumption. Elevated gold prices, global uncertainty and delayed marriages will affect the domestic consumption. The demand will be severely hit if the lockdown extends as gold and diamonds are discretionary purchases, and consumers will give preference to necessary spending amid uncertainty.

- **Commodity prices:** Raw materials, including gold or rough diamond, form a major share of 80–90% of total cost of jewelry items. Prices are likely to remain high as most of the raw materials are imported, while rising safe haven demand will further boost the prices.

- **Weak export demand/competition:** The Indian gems and jewelry sector is facing two major threats in addition to disruptions caused by COVID-19. Firstly, the demand from its major export markets such as the US, China, Italy and Japan has declined due to slowdown in these economies. Secondly, other emerging economies such as China and Vietnam have started gaining market share in the polishing industry, leading to a slump in India's exports of cut and polished diamonds.

[25] ET Bureau, ICRA cuts diamond sector outlook to negative on coronavirus, By Santanuka Ghosal, 20 February 2020
[26] The Covid-19 fallout, Quantifying first-cut impact on the pandemic, Impact note by CRISIL, Mar 19, 2020
[27] ET Bureau, India, China could explore measures to boost trade hit by Covid-19, By Dipanjan Roy Chaudhury, Apr 04, 2020
[28] Contagion: How Covid-19 will impact different sectors, By FORTUNE INDIA, Mar 24, 2020

- **Unorganized sector:** The gems and jewelry sector in India is unorganized and fragmented, mostly dominated by the family-run businesses. Hence, it is difficult to enhance their potential and global competitiveness given the prominent use of traditional techniques, lack of financial capital and high labor costs per unit.

- **Dependence on imports:** India is totally dependent on imports to meet its requirement of rough diamonds. As a result, the domestic players are compelled to import at prices dictated by the diamond mining companies. This also exposes the traders to exchange rate fluctuation, which further impacts the margins.

- **Price volatility:** Uncertainty and volatility in prices have become new challenges for the diamond companies in India. This is because a 10% decline in the rough diamond prices, leads to around 30% decline in polished prices, which impacts profitability of Indian traders.
- **Stringent financing:** Domestic diamond companies are increasingly finding it difficult to secure financing from the lenders due to stringent conditions because of several default cases in the industry in recent times. The industry is under credit distress due to challenges in fund raising and market dislocation in key consuming countries.

Interventions

i. Interventions by other countries

Countries	Interventions
China	▸ As early as December, China started offering a 50% unemployment insurance refunds for business entities that do not lay-off employees or keep redundancies to a minimum.[29] The refunds are even higher for companies facing temporary operational difficulties but are refraining from laying off their employees. ▸ The relief package, which primarily targets small and medium enterprises, also provides easier access to loans for small and micro firms and subsidies for staff training and the unemployed, besides unemployment insurance refunds to firms with no or few layoffs.
South Africa	▸ A structured training program, which takes into consideration current specific demands and the expansion of the jewelry industry, is developed in collaboration with the Mining Qualifications Authority (MQA).
Botswana	▸ The government introduced prudent macro-economic policy management whereby every extra Pula generated from the sale of diamond and other resources is put into the 'Pula Fund', which is a sovereign fund.
Belgium	▸ The new Antwerp World Diamond Center 'Door-Opener' strategy will help expand Belgian business by opening up Antwerp diamond sector's global industry contacts to Belgian firms and entrepreneurs, as part of a structured program. ▸ Implementation of a visitor center of diamonds for tourists with a powerful narrative, community integration through introducing special even days, scholarship funds and introduction of a knowledge center. ▸ The introduction of a new carat tax, a judicial agreement, and a revamped security environment is introduced to ensure the long-term, flourishing presence of the diamond trade in Antwerp.

[29] https://www.china-briefing.com/news/china-incentives-employers-jobs-market/

i. Possible interventions by the Government

Categories	Areas of intervention	Possible impact/outcome	Efforts required	Possible risks/mitigation measures
Short-term				
Policy interventions	▶ Give additional one-year moratorium for fulfillment of export obligations under EPCG scheme, Diamond Import Licensing and other similar government schemes	▶ The moratorium period will help the industry to adhere to the requirements of schemes	▶ The government should make amendments under various schemes for the revised moratorium period	-
Medium-term				
Ease of doing business	▶ Set up hallmarking centers	▶ The mandatory hallmarking compliance will ensure product quality and result in time and cost savings for traders	▶ The hallmarking centers should be established taluka-wise/zilla-wise under CFC/Cluster development scheme	-
Supporting workforce	▶ Support vulnerable segment under MGNREGA	▶ The coverage of unorganized workforce under MGNREGA and payment for the lockdown period will offer some support	▶ The help of GJEPC and respective associations should be taken to bring the unorganized workers under organized sector	▶ Identifying and convincing unorganized workers to register has always faced resistance
Long-term				
Develop long-term Vision/ strategy	▶ Long-term development vision, strategy re-evaluation and contingency plans	▶ This will help in revival and sustainable development of the sector	▶ GJEPC/government should develop the vision plan/strategy ▶ The import and export value chain analysis must be done to plug the gap and enhance local production and employment opportunities	-
Demand creation	▶ Export promotion	▶ This will lead to increase in foreign exchange earnings	▶ GJEPC should identify and tap new markets (Russia, Brazil, Vietnam, Australia) with the help of government	▶ The government will need to support in creating awareness and capacity building programs for MSMEs to be able to meet international design and quality standards

E. Information Technology and ITeS

Sector overview

India is the leading offshoring destination for companies across the globe given its servicing capabilities. The country accounts for a share of about 38% in the overall business process management sourcing market. The sector's exports crossed US$ 137 billion (INR 10.28 trillion) in FY19, growing at 8.3% y-o-y. The IT-BPM/ITeS sector accounts for the largest share in total Indian service exports (approximately 45%).

Importance of sector in India

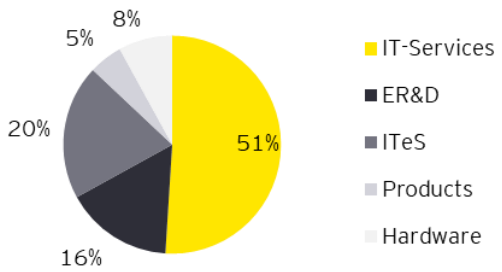
- The IT industry contributes about 8% to India's GDP and employs more than 4 million people.
- There are more than 5,300 technology start-ups in the country and the sector majorly helps fuel their growth.
- The Indian IT-BPM/ITeS sector is witnessing a CAGR of 8.7%, which is approximately 3–4 times higher than the growth of global IT and ITeS market.
- The Indian government has identified IT & ITeS as one of the 12 champion services sectors given its significant contribution to the GDP and in employment generation.

Source: IBEF

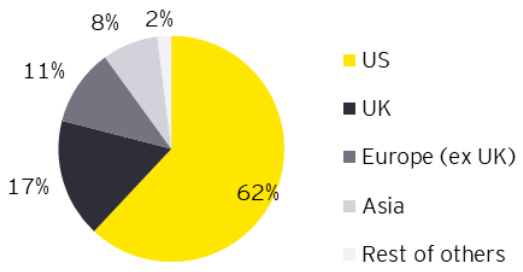
The contribution of exports to the IT & ITeS sector's revenue is higher than the domestic market. More than 50% of revenue of the sector comes from the IT services segment alone. India's Tata Consultancy Services, Infosys, Wipro and Tech Mahindra are some of the leading global IT services providers. The industries with the largest IT spend are BFSI, manufacturing, retail and consumer packaged goods, telecom and media & entertainment.

Segment-wise growth revenue and geographic breakup of export revenue is illustrated as below:

Sector-wise break-up of IT-ITeS revenue (FY 19)



Geographic breakup of export revenue in FY 19



Source: DPIIT and NASSCOM report

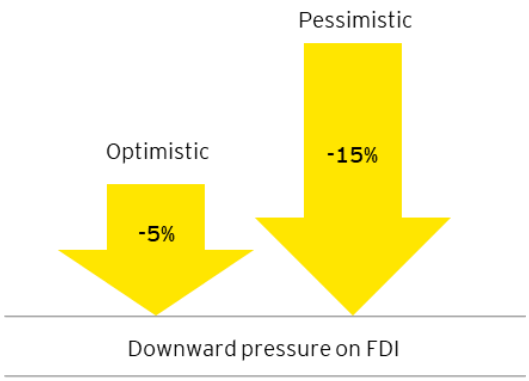
Value chain

The pandemic has presented new challenges for the Indian ITeS sector, causing disruptive impact on both demand and supply side elements, which could derail India's economic growth. The cautious approach by global giants in IT spending coupled with adverse impact of coronavirus induced travel restrictions, value chain disruptions, subdued consumption and worsened investment elasticities will significantly impact the US$ 180 billion (INR 13.5 trillion) Indian IT sector.

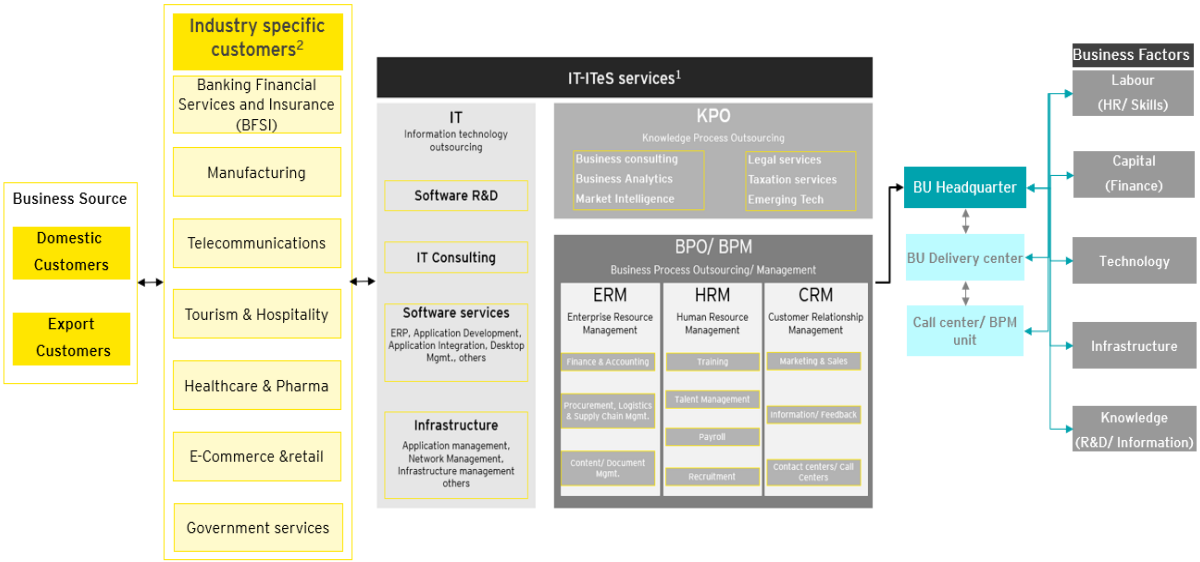
The FDI screening regulations imposed by key the global value chain contributors and investor countries may filter-out incoming investments to India. The FDI leakages to low pandemic impacted regions may further squeeze FDI volumes.[30]

Major segments of the value chain that may get affected amid virus-related disruptions are business from offshore clients due to low technology spends by the companies. However, on the positive side, business-critical IT services such as core banking, call centers and e-Commerce will continue to operate and may witness a surge in demand in the short-term.

Demand shocks filtering through 2021



Source: UNCTAD

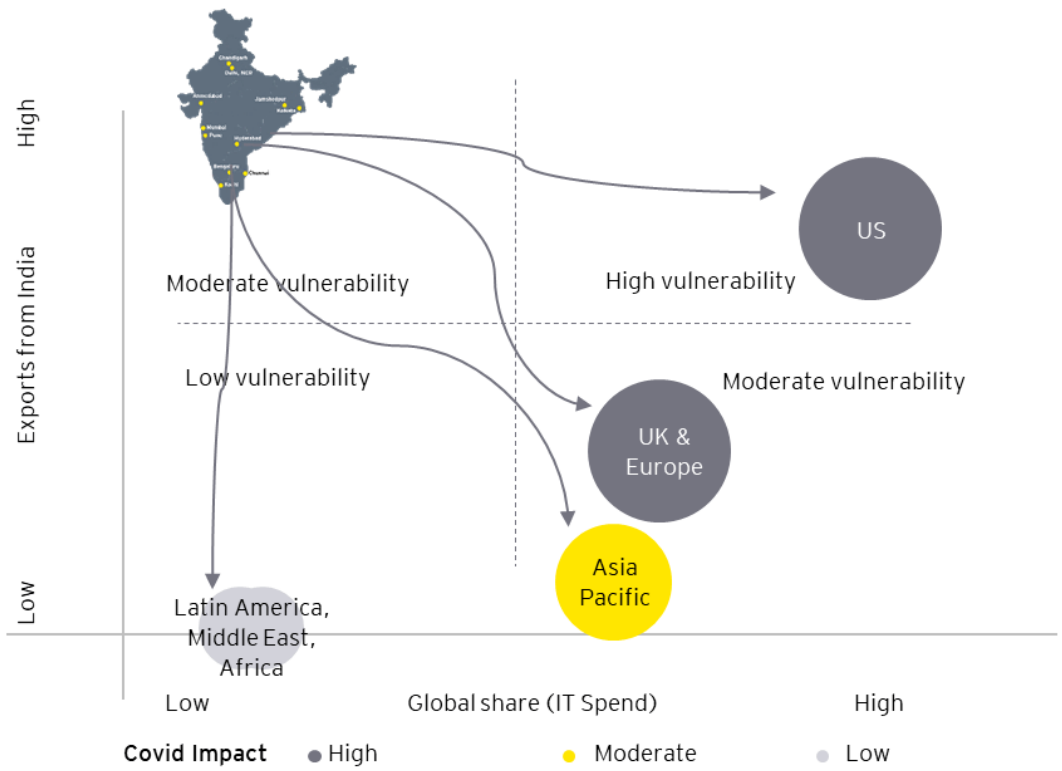


[1] Vertical Activities- Industry specific: Each industry has its own value chain. Within each of these chains, there are associated services that can be offshored. This diagram captures the industries with the highest demand for offshore services.
[2] This graphical depiction of vertical activities does not imply value levels. Each industry may include ITO, BPO and advanced activities.
Note: The diagram is for illustration only and may be assessed by self for actual facts & figures for other sources

Source: EY analysis

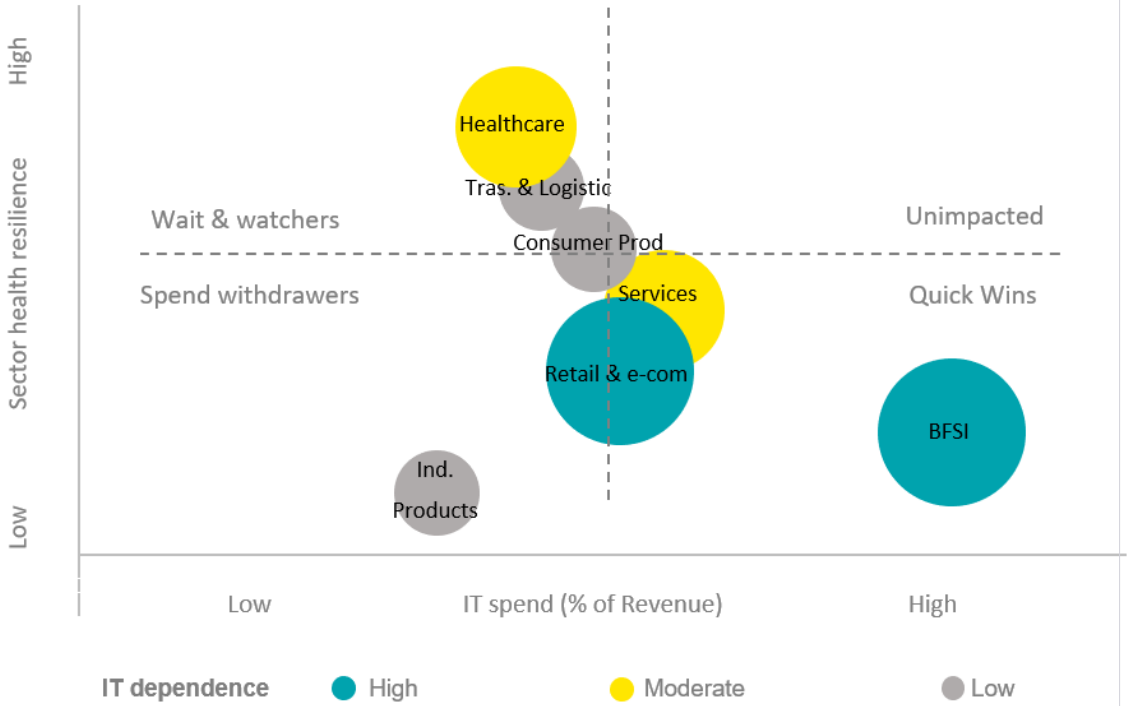
30 Sources: https://www.idc.com/getdoc.jsp?containerId=prAP46159120 | https://www.ibef.org/industry/information-technology-india.aspx | https://www.comptia.org/content/research/it-industry-trends-analysis | https://unctad.org/en/pages/newsdetails.aspx?OriginalVersionID=2299 | NASSCOM Quarterly industry review, March 2020 | ASSOCHAM, 2020

Vulnerable GVCs – India Perspective



Source: EY analysis

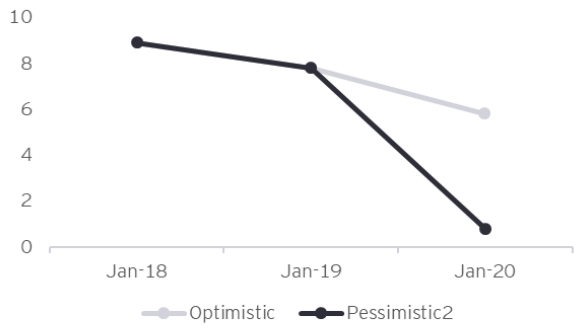
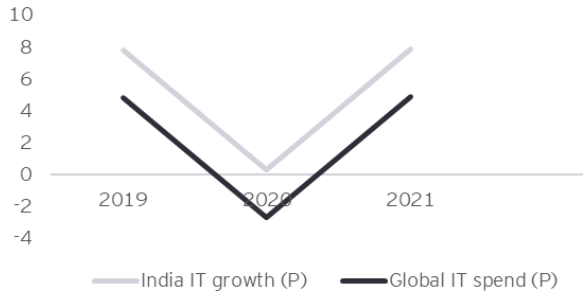
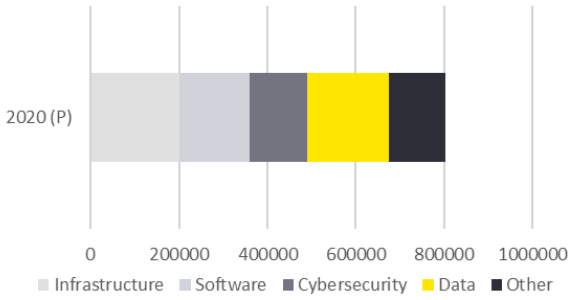
Ripple effect: IT demand drivers



Impact of COVID-19

Since a major share of the ITeS revenue is dependent on exports, the ripple effect is likely to creep in and the hardware, software and services businesses associated with it will see a slowdown. The US and the Europe, which together account for more than two-thirds of India's IT exports, are among the worst affected geographies due to the pandemic. This will impact India's leading software exporters as clients in those markets will resort to cuts in IT spending to tide over the COVID-19 crisis. As a result, the revenues of companies will be hit and that will put the business of entire value chain at risk.

Major disruptions across value chain:

Business sourcing	Impact level: High
Industry projects revenue growth may take a plunge by 2 - 7 %  Source: EY analysis	▶ Issuance of FDI screening regulation may filter-out the incoming FDI ▶ Reduced technology spending by clients in the US and the Europe (80% of total export revenue of India) Demand-side impact can emerge due to economic slowdown in the US and EU; expected fall in deals from clients ▶ Bargains from clients may further drive down the revenues
Industry specific customers	**Impact level: Moderate**
What growth figures may look like for India IT sector  Source: EY analysis	▶ Industry specific customers will be impacted due to slowdown in industries like retail, BFSI, e-Commerce ▶ Manufacturing, retail and logistics clients are expected to defer deal closures ▶ Temporary closure of companies may affect clients' decision to collaborate with companies in low pandemic impact regions
Human capital and employment	**Impact level: High**
Entry level talent at risk  Source: EY analysis	▶ Companies may not just put hiring on hold but also trim workforce to compensate for lost revenues ▶ Entry level professionals will be exposed to greater risk of unemployment ▶ IT firms seek client waivers and SLA relaxations for staff to work from home ▶ Retaining best performing employees is a challenge as resources are moving closer to their hometown

Finance (revenue and profitability)	Impact level: High
3-10% reduction in fair values of IT Stocks across firms **2-4%** cut in revenue growth estimation of some large and mid cap tech services companies *Source: Kotak Institutional Equities*	▶ A significant portion of overseas revenues will be severely impacted ▶ Profitability and margins of companies will get affected due to less capacity utilization ▶ Reduction in share price and shareholders return may impact financing from banks ▶ Client bankruptcy and slower client decision making may lead to delayed payment and lower discretionary spends
Operational issues	**Impact level: High**
Key factors that ensure growth Increasing sales and marketing efforts Selling new business lines Increasing internal efficiency Picking up business from new customers Success reaching new customers 0 10 20 30 40 50 60 % Respondents Source: Comptia	▶ Services delivery to end customer will be severely impacted due to the lockdown ▶ Difficulty in operating the business due to inadequate work from home infrastructure such as low bandwidth connectivity, call drops and interrupted power supply ▶ Global travel restrictions are hurting ability of IT companies to execute and close the projects ▶ New businesses/deals will also be impacted due to reduced sales and marketing efforts ▶ Working from home for some services may expose companies to SLA and contractual breaches

Interventions

The IT & ITeS industry in many states has been recognized as "Essential Service" given the essential nature of services it provides to many essential services such as healthcare and insurance, government services, provision and support to citizens for utilities and maintenance and support for communication infrastructure, transportation, banking and e-Commerce operations. The industry was allowed to operate during the nationwide lockdown with some restrictions and gradually more relaxations were given. The MeitY also decided to provide a rental waiver to units housed in STPI premises for 1 March to 30 June 2020 period.

While the impact may be worse than that of the 2008 Global Financial Crisis, the recoveries may come much sooner owing to stronger resilience factor and bettering adaptiveness. The government support can further provide some boost to the recovery process.

i. Possible interventions by the Government

Categories	Areas of intervention	Possible impact/outcome	Efforts required	Possible risks/mitigation measures
Short-term				
Government approvals	▶ Amend rule-based approach on 50% employees to come to office to number of employees based on the floor area available	▶ This approach will ensure social distancing in the offices	▶ MHA should issue revised guidelines	▶ This may require close coordination between local municipal and health authorities
	▶ Widen the spectrum of digitization initiatives in US$ 1.36 trillion (INR 102 trillion) National Infrastructure Pipeline projects	▶ This will help increase demand through internal growth drivers	▶ The Central government should issue advisory to all state governments ▶ The project details should be revisited, and a progressive procurement framework must be developed	▶ Revisiting the project details may require significant rework
	▶ Allow 50% GST exemption on outsourced business to MSMEs and start-ups by large companies for 6 months	▶ This will lead to more business flowing to MSMEs and start-ups	▶ GST Council needs to issue the order	-
	▶ Speedy approval of MUDRA loans and disbursements by CGTMSE	▶ This will support start-ups and help in more employment generation	▶ The government need to allocate more funds to MUDRA and CGTMSE ▶ There's an urgent need to remove bottlenecks, upgrade and digitize the application and disbursal procedure, as well as re-evaluation and benchmarking of disbursement criteria	▶ The key risk pertains to budgetary constraint. A mitigation measure could be in terms of 10%-20%.
Mobility curb	▶ Identification of key destinations where client deliverables are getting affected ▶ Prioritization of IT businesses in key geographies and development of travel protocol with practitioner countries for monitoring and regulation of travel	▶ These measures will improve ease of doing business and also reduce logistics constraint	▶ MEA should develop travel protocol in association with practitioner countries ▶ Key businesses in geographies must be mapped and key client deliverables should be identified in order to do a risk benefit analysis	▶ The practitioner countries may restrict immigration
Medium-term				

Categories	Areas of intervention	Possible impact/outcome	Efforts required	Possible risks/mitigation measures
Demand creation	▶ Thoroughly benchmark IT & ITeS policies with competing ASEAN nations, and include lucrative propositions to make it relatively more rewarding ▶ Support ITeS companies to rapidly shift services lines toward in-demand products and services during the crisis ▶ Create a centralized database of services offered by the registered IT companies and initiate aggressive marketing campaigns	▶ These measures would improve FDI inflow and also lead to growth in demand	▶ There's a need to establish a PMU and digitize investment promotion activities ▶ Creation of repository of companies planning to shift their bases and organizations planning to establish GICs in view of better crises management and companies planning to rapidly diversify ▶ Key support requirement and opportunities through webinars must be identified	-
Facilitation support	▶ Create a facilitation portal for connecting VCs/financial institutions and start-ups with established proof of concept	▶ This will encourage freshers to open new start-ups, leading to employment generation	▶ The state governments should promote start-ups initiatives	▶ MeitY as well as Start-up India have separate initiatives and synergies should be found between these two
Government approvals	▶ Extension of tax holiday to SEZ by another one year	▶ This will help in sustaining competitiveness of export firms	▶ MeitY should issue the order to implement this measure	-
Long -term				
Infrastructure development	▶ Establish Data Center Parks/Hyperscale Data Centers on PPP mode providing cost effective solutions through software defined technologies such as HCI ▶ Implementation of FTTx networks on PPP mode	▶ The investments may pour in from international cloud-based service providers ▶ As data requirement may grow exponentially, high-performance infrastructure will lead to the growth of rack density and high bandwidth services	▶ The establishment of suitable regulatory and policy ecosystem as well as zero GST rate will attract foreign investors ▶ The information on land banks and land allotment procedure should be in public domain through online mode ▶ The available infrastructure and facilities can be used for establishing data storage facilities on "pay per use" model	-

F. Leather

Sector overview

Leather is one of the most widely traded items in the world. India is the 2nd largest producer of footwear, 2nd largest exporter of leather garments, 3rd largest exporter of saddlery and harness items and 5th largest exporter of leather goods. Raw hides, processed leather skins, leather goods, leather garments, leather footwear, handbags, wallets, saddlery and harness are the widely traded leather items in India.

Importance of sector in India

- The Government of India has identified leather as one of the focus sectors because of its immense potential for export, growth and employment generation.
- The leather sector's total value stood at US$ 17.85 billion (INR 1.33 trillion) in financial year 2018-19 (Exports – US$ 5.85 billion, Domestic Market – US$ 12 billion). The CAGR of the sector for 5 years in India is about 8.6%.
- Shipment of different categories of footwears (leather, non-leather and components) accounts for about 50% of total exports.
- The labor-intensive leather sector, which is dominated by MSMEs, provides jobs to around 4.42 million people in the country.

Recent transformational developments in the sector

The leather sector had been marked by a co-existence of artisanal and organized leather processing units. Ethnic footwear manufacturers of Rajasthan and Maharashtra, which account for less than 5% of the total production, are the only dominant manufacturers in the artisanal sector today. The mechanization and modernization adopted by the organized leather sector from time to time has resulted in improved quality of leather products. However, the pace of modernization has been slow despite having access to best technology and trained workforce, owing to the present operation and management system.

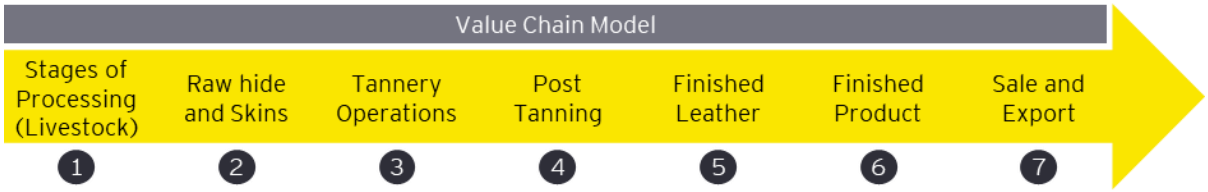
Important countries in the sector and India

An analysis of global market trends indicates that the lower fragment of leather market is dominated by China, while premium fragment is led by Italy. Vietnam has emerged as the foremost contract manufacturing country in the world for reputed global brands.

India accounts for about 13% of the world's leather production of footwear and leather products. The major production centers for leather and leather products are located in Tamil Nadu, West Bengal, Uttar Pradesh, Maharashtra and Punjab.

Value Chain

The leather sector value chain comprises four broad stages. During the first stage, raw hides and skins are obtained and in the second stage, they are converted into semi processed (pickled and tanned). In the third stage, fully processed (finished) leather is produced. In the final stage, leather products like footwear, garments and accessories such as watch straps, handbags, tabletops and notepad covers, as well as automotive or furniture upholstery are manufactured for the end consumers.



Value chain stage	Short-term impact	Medium-term impact	Long-term impact
Stage of processing (livestock)	▶ Unavailability of livestock ▶ Restricted operations	▶ Decrease in demand	▶ Reduction in the demand for unprocessed or non-certified meat products
Raw hides and skins	▶ Limited availability of raw materials ▶ Unavailability of workforce	▶ Increase in dependency on imports	▶ Challenge in import substitution
Tannery operations and post tanning	▶ Operational difficulties in opening of tanneries after lockdown ▶ Maintaining health and sanitization protocols	▶ Decrease capacity of production due to weak demand	▶ Cost effectiveness and environment challenges
Finished leather and products	▶ Halt in production due to cancellation of orders ▶ Transport and logistics issue due to restrictions	▶ Limited new orders from domestic and international market ▶ Delay in payments	▶ Reduce overall demand leading to less margins
Sales and export	▶ Negligible sales and export ▶ Closing of all retail and wholesale stores	▶ Travel restrictions leading to limited branding and marketing activities, especially in European and the US markets	▶ International competition from China, Vietnam and Bangladesh

Impact of COVID-19

The nationwide lockdown has led to temporary closures of factories and layoffs of low-wage unskilled laborers. Quarantine measures, closure of retail stores, illnesses, and salary reductions have suppressed consumer demand for leather products. Apart from weak demand, the manufacturers are also struggling with severe supply-side disruptions as workers are asked to stay at home in order to contain the spread of coronavirus pandemic.

For India, the overall trade impact is estimated to be at US$ 13 million[31] (INR 970 million) on leather products.

[31] United Nations Conference on Trade and Development (UNCTAD)

Interventions

I. Possible interventions by the Government

Categories	Areas of intervention	Possible impact/outcome	Efforts required	Possible risks/mitigation measures
Short-term				
Support business and labor	▶ Offer wage subsidy benefits to small industries and income support for contract workers for a period of 3 months (April-June 2020)	▶ The basic income will provide support to daily wagers	▶ There's a need to study the feasibility and impact assessment of quantum of subsidies to be given to workers	▶ Identifying the key beneficiaries for wage subsidies ▶ The usage of Aadhaar-based common database for disbursement of subsidies will prevent leakage and duplicity across schemes by Central/State governments
Policy interventions	▶ Increase import duties on leather finished goods and raw materials, which can be manufactured locally in the short-term	▶ This will lead to increase in sale of local products and also help in employment generation	▶ The government should issue notification for increase in import duty after analyzing products that can be manufactured locally	▶ There will be initial rise in raw material costs ▶ The required machineries and chemicals for finished leather production could be unavailable but the government can provide necessary common infrastructure support to overcome this
	▶ Reduce GST on all domestic leather finished products to 12% from 28%	▶ This will enable Indian leather products to become equally competitive to the low-cost imported products and lead to increase in domestic sale of leather products	▶ GST Council should issue the notification for revision of GST rate on leather finished products	▶ Revenue loss for the government may get compensated due to increase in sales in future
Medium-term				
Infrastructure (utilities)	▶ Provide grant-in-aid for development and maintenance of all common infrastructure, including CETP/ZLD in existing and upcoming leather parks/clusters	▶ This will enable leather industries get faster environmental clearances and also increase their production capacities	▶ The government should increase the fund allocation for setting up of CETP under sub scheme of "Leather Technology, Innovation and	-

Categories	Areas of intervention	Possible impact/outcome	Efforts required	Possible risks/mitigation measures
			Environmental Issues" of IFLADP scheme	
Transportation support	▶ Allow and incentivize ICDs/port agencies to collect goods to be exported from the manufacturing units	▶ This will be more WTO compliant and collecting agencies will be able to formalize and invest in specialized transport facilities ▶ The lower logistic and transportation costs should make industry equally competitive as compared to other countries	▶ Central/state governments will need to introduce a scheme for transportation of export goods from factories to port	-
Demand creation	▶ Bring Indian fashion brands to promote use of leather in garments, interior design, auto industry, furniture and many more areas	▶ This will increase demand of finished leather at various industry segments within India	▶ Leather associations like CLE can involve local and global fashion brands for promoting the use of finished leather goods	▶ There will be shortage of MSMEs that understand the requirements and ability to produce as per the standards. The government will need to run campaigns for such capacity building.
Long-term				
Infrastructure development	▶ Establishment of Mega Leather Park (minimum size of 300 acres) in and around existing leather clusters, with mandatory low-cost residential facilities for workers	▶ The localization of value chain for economies of scale model will reduce cost of production for leather goods	▶ The government should increase fund allocation under "Mega Leather, Footwear and Accessories Cluster" sub-scheme of IFLADP	▶ To avoid excess capacity, the government should develop the same on PPP model and in phases
	▶ For brownfield leather parks, build ZLD CFC by an SPV in PPP mode. The government should offer land and industry associations may provide commitment on volume of wastewater to be processed at indicative price range and annual escalation	▶ This will lower the overall cost for setting up a leather park and also help industries get faster environmental clearances	▶ The government should do feasibility study and draft model contract agreement	▶ The existing PPP guidelines may not be attractive enough in the post-COVID environment and therefore, these guidelines should be revisited in extensive consultation with the industry

Categories	Areas of intervention	Possible impact/outcome	Efforts required	Possible risks/mitigation measures
Stage of processing (livestock)	▶ Create and promote quality livestock breeds and increase awareness on importance of scientific methods of cattle breeding	▶ This will lead to better quality livestock as well as increase efficiency and productivity of animal husbandry	▶ The government should formulate schemes and entrepreneurship development programs to speed up the commercialization of livestock production	▶ There are stringent norms for animal breeding in states like Uttar Pradesh
	▶ Commercialization of livestock production to increase production of quality raw hides and skins	▶ The increase in production of high-quality raw hides and skins will help reduce dependency on imports		
Tannery operations	▶ Provide technological support for promotion of better preservation and processing of raw hides and skins to improve tannery operations	▶ This will improve the quality of finished leather products, reduce wastage and alleviate the impact on environment	▶ The government should come out with a policy to promote domestic manufacturing of tanning machines and chemicals	▶ To overcome shortage of subject matter experts, the government should launch awareness and capacity building campaigns
Finished leather products	▶ Enable capacity building by offering financial support to the industries for setting up of design centers, quality centers labs and training infrastructure	▶ This will lead to better quality of finished leather products in terms of market value with higher domestic and international demand and also help in creation of Indian global brands	▶ The government should increase fund allocation under "Promotion of Indian Brands in Leather, Footwear and Accessories Sector" sub-scheme of IFLADP scheme	▶ The industries may not want to invest in such unknown domain and hence, the government may initially invest in common infrastructure

G. Medical Devices and Equipment

Sector overview

The global medical devices and equipment manufacturing industry is expected to reach US$ 520 billion (INR 39 trillion)[32] by 2020. The growth will be driven by rising number of hospitals, increased access to healthcare facilities in emerging markets, awareness among people for regular medical check-ups to keep the ailments at bay and technological advancement in manufacturing of medical devices, among others. India's medical devices and equipment manufacturing industry features among the top 20 markets globally.

Importance of Sector in India

- The medical devices and equipment manufacturing industry has a huge growth potential given the under-penetration of medical devices in the country and the growing need for improved healthcare infrastructure and facilities.
- The existing market size of the medical equipment and devices industry in India is estimated to be US$ 11 billion (INR 825 billion)[33]. while it accounts for only 4%–5% of the country's US$ 96.7 billion (INR 7.25 trillion) healthcare sector.
- The domestic industry is witnessing a CAGR of 15.8%, vis-à-vis a CAGR of 4.1% for the global medical devices and equipment manufacturing industry.
- India currently has about 800 medical device manufacturers, with an average investment of US$ 2.3-2.7 million (INR 170-200 million) and an average turnover of US$ 6-6.7 million (INR 450-500 million)[34].

Indian market and important countries in the sector

India is considerably behind developed economies like the US where per capita spend on medical devices is about US$ 415 (INR 31,125). India's per capita spend on medical devices is the lowest among BRICS countries at about US$ 3 (INR 225), compared to US$ 7 (INR 575) in China, US$ 26 (INR 1,950) in Brazil and US$ 47 (3,525) in Russia[35].

The imported medical devices in India are given approval based on their prior approval from the US FDA or from the European Union. The country's underdeveloped regulatory framework is a significant obstacle for the foreign manufacturers of regulated devices. The Government of India has proposed to set up Medical Technology Parks to encourage domestic manufacturing of medical devices and equipment in addition to the existing specified zones.

Value chain

The Indian medical devices and equipment manufacturing industry heavily relies on imports from other countries in high-end equipment manufacturing. The industry, which has witnessed growth in the recent past, is now staring at uncertain future as the sector's value chain has been affected due to the coronavirus outbreak. The pandemic has pushed India into a crisis situation due to disruptions in the supply chain as the domestic manufacturers rely on international supplies and imports to fulfill their requirements.

---

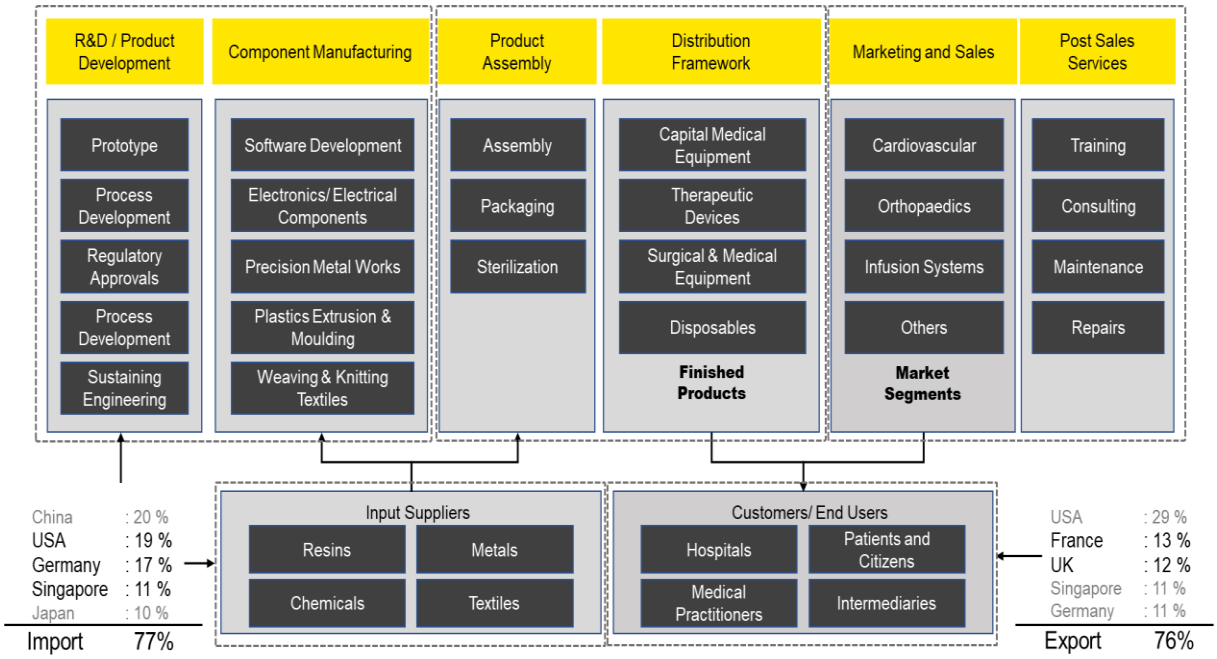
[32] Invest India (https://www.investindia.gov.in)

[33] Invest India(https://www.investindia.gov.in)

[34] Make in India (https://www.makeinindia.com/)

[35] Statista.com (https://www.statista.com)

The restrictions and measures adopted by various countries to prevent the spread of COVID-19 has halted the movement of goods across the border through international trade. The restrictions on the movement of people have disrupted the supply chains as the movement of goods has slowed, particularly components needed to make equipment such as ventilators and PPEs, which are required urgently by the patients and healthcare professionals.

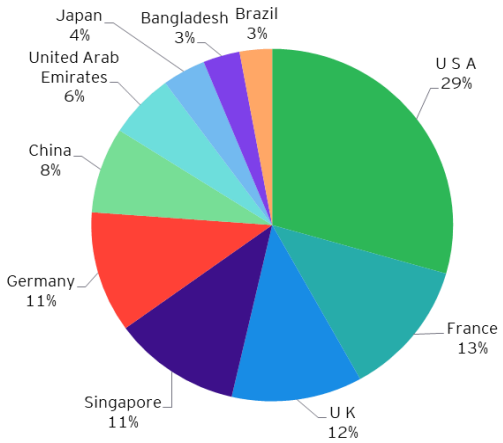


Export-import scenario

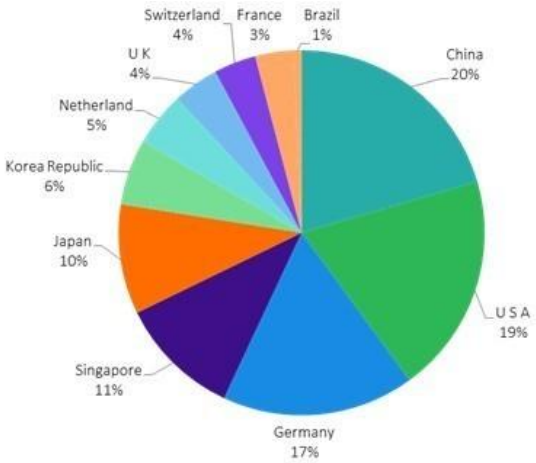
The medical devices industry in India comprises of large players (dominating significant market share), with relatively smaller presence of SMEs. The existing market size of the medical equipment and devices industry in India is estimated to be US$ 11 billion (INR 825 billion)[36]. Diagnostic imaging, consumables and other medical devices accounted for 86% of total medical devices exports from Indian industry in FY 2016-17. The US is the world's largest exporter, accounting for 29%[37] of the total exports, followed by France, the UK, Singapore, Germany and China, among others.

The medical devices industry has developed import dependency across all product segments. The Indian industry offers huge potential for investments in the medical device manufacturing with supportive regulatory ecosystem. China, the US, Germany, Singapore and Japan are the largest exporters of high technology medical equipment to India.

GLOBAL MAJOR EXPORTERS



MAJOR EXPORTERS TO INDIA



[36] Invest India(https://www.investindia.gov.in)

[37] DGFT analytics reports

Impact of COVID-19

The shortage of life-saving equipment and other essential supplies have flagged serious concerns about preventing the spread of coronavirus and assist affected patients. In particular, there's shortage of ventilators for treatment of COVID-19 patients, who require critical care, and PPE kits for the healthcare professionals. There's an urgent need for a rapid escalation in the manufacturing of full range of test kits such as self-administered and antibody tests.

To tide over this crisis, both central and state governments have turned to the private sector for assistance, not just in physical manufacturing but also for capabilities in design, procurement, assembly, testing and transportation. These kinds of requirements are likely to become commonplace as national leaders seek innovative solutions to the crisis.

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.

Interventions

I. Possible interventions by the Government

Categories	Areas of intervention	Possible impact/outcome	Efforts required	Possible risks/mitigation measures
Short-term				
Increased incentives for higher local contents	▶ Revise minimum limit for local content in domestic medical devices in India for more incentives (Note: *PLI Scheme - an incentive scheme for manufacturing of medical devices has already been notified*)	▶ The domestic procurement for local content will increase	▶ Ministry of Chemicals and Fertilizers needs to revise public procurement guidelines for medical devices ▶ The operational guidelines of the scheme should be in place and product coverage must be widened	-
Quality standard testing fee re-imbursement	▶ Re-imbursement of quality standard testing fee as due to lack of adequate quality testing framework in India, medical device manufacturers have to obtain US FDA/CE certifications, which are expensive	▶ This will reduce the cost of operation given the current COVID-19 scenario	▶ Ministry of Chemicals and Fertilizers may need to make amendments in Medical Device Rules, 2017	-
Medium-term				
Development of common infrastructure	▶ Provide Viability Gap Funding or grants to the industry to develop common infrastructure near major medical device clusters	▶ This will lower cost of operation for medical device manufacturers and that will eventually reflect in the competitiveness of domestic products in the international market	▶ Ministry of Commerce and Industry needs to identify medical device clusters (such as AMTZ in Andhra Pradesh, Medical Device Park in Hyderabad, and HLL Medipark Ltd in Tamil Nadu) for development of common infrastructure	-
Demand creation	▶ Cap on trade margins of medical devices, which are extremely costly, to control their prices in domestic market	▶ This will make medical devices accessible across different pockets of the economy and improve the demand for products	▶ Trade margins should be evaluated in detail for each segment and revised trade margins should be different for each category of the product	-

Categories	Areas of intervention	Possible impact/outcome	Efforts required	Possible risks/mitigation measures
Tax/duty modifications	▶ Offer short-term GST and Health Cess exemptions to minimize the cost of operations ▶ Reduce corporate tax to 10% from 22% for existing manufacturing companies for the medical devices industry	▶ The medical devices have become a priority goods in current crisis, and tax/duty modifications will help the existing players to handle liquidity situation	▶ GST Council and Department of Revenue, Ministry of Finance will need to come up with notifications for the GST and Health Cess exemptions, alongside reduction in corporate tax for existing players	▶ There will be temporary revenue loss for the government, but it can cap the maximum limit of exemption ▶ Due to higher demand, increased sales will compensate the revenue loss
Supply-chain measures	▶ Provide import duty and special additional duty exemptions on raw materials, parts and accessories for manufacture of medical devices	▶ The competitiveness of Indian medical devices will improve in the global market and boost India's exports given the higher global demand for medical devices	▶ CBIC must identify key products based on their potential in mid-to-long run scenario for duty exemptions	▶ There will be temporary revenue loss for the government ▶ This can be treated as short-term measures to reduce trade deficits, which shall ultimately compensate the revenue loss
Green channels	▶ Establish green channels (preferential clearance mechanism of medical devices/spare parts/raw materials) across all international airports and seaports to support the health ecosystem	▶ This will expedite the movement of critical items to other economies in current scenario alongside improving the international ties with unexplored territories	▶ DGFT should issue guidelines and provisions for such exclusive facilities for medical devices sector	-
Long-term				
Incentivize R&D	▶ Support R&D for manufacturing of high-end medical equipment such as CT, MRI and Cath Lab as India lags in R&D front of the value chain	▶ This will help in commercialization of technology know-how of premier institutions to build domestic capacity and eliminate import dependency ▶ This will also restrict import of cheap/sub-standard products from China and South Korea	▶ DRDO and ICMR should lead this initiative to build clusters to commercialize technological expertise/know-how	▶ There's resistance from DRDO due to structure and limitations ▶ India needs to establish an independent institution, supported by government bodies such as DRDO and ICMR

Categories	Areas of intervention	Possible impact/outcome	Efforts required	Possible risks/mitigation measures
	▶ Establish international ties to institutionalize leading R&D facilities in India *(Binational Industrial R&D Foundation is one such initiative, which is a catalyst for joint R&D between American and Israeli companies)*	▶ This initiative will ensure sustainable growth supported by long-term bi-lateral relationships	▶ The government should enable global collaboration and practitionership to develop India as a quality product hub	▶ There could be resistance from developed economies ▶ India can provide preferred trade benefits to such economies for medical devices and equipment
Boost exports	▶ Set up dedicated export promotion council for the sector to promote exports and assist domestic players in venturing into the new territories	▶ The industry is primarily dominated by international and large organizations. The sector's value chain requires a forward and backward linkage, which can only be achieved through development of MSME ecosystem, supported by export promotion council.	▶ Ministry of Commerce and Industry should establish a dedicated body for export promotion of medical devices and equipment sector	-
PPP model to utilize cost optimization and volume	▶ Develop new industrial parks for medical devices as the industry is concentrated in few parts of the geographies, impacting cost margins of medical devices	▶ The medical devices industry may experience exponential growth in the next 5 years and attractive market for private players makes a good case to develop new industrial parks for medical devices	▶ Ministry of Commerce and Industry needs to come up with an industrial proposal for the development of industrial parks through the PPP model	-

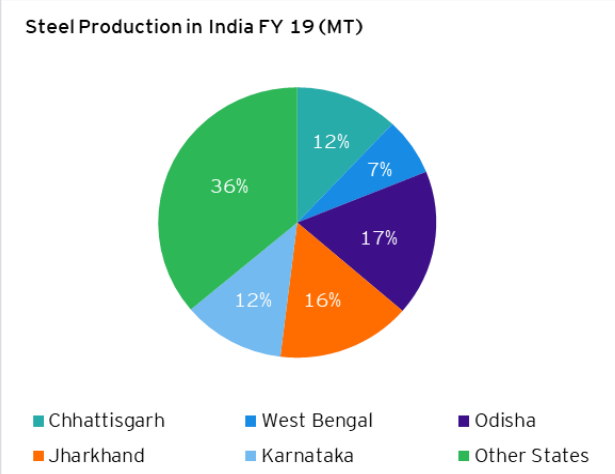
H. Metals – Steel and Aluminum

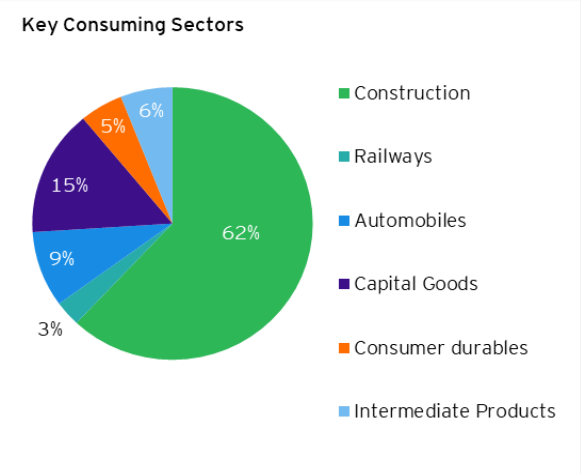
Sector overview - Steel

Iron and steel is 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.

Importance of sector in India

- The steel sector contributes immensely toward India's economic growth and accounts for 2% of the country's GDP.
- India is one of the few bright spots in the global steel industry and has become the world's 2nd largest steel producer, overtaking Japan. India produced 111.2 million tons of crude steel in 2019, up about 2% y-o-y, according to the World Steel Association.
- The government's thrust on infrastructure development and schemes such as 'Housing for All' and 'Jal Shakti' bode well for the growth of the Indian iron and steel industry. Railways and other infrastructure projects are expected to provide further imputes to the growth of the industry.
- The industry plays a crucial role in job creation in the country and employs more than 600,000 people. Chhattisgarh, West Bengal, Odisha, Jharkhand, Andhra Pradesh, Tamil Nadu, Gujarat and Karnataka are the major steel producing regions in the country.[38]



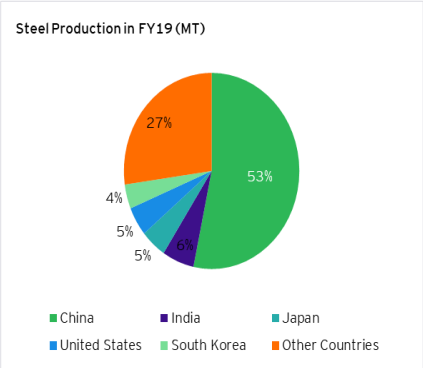


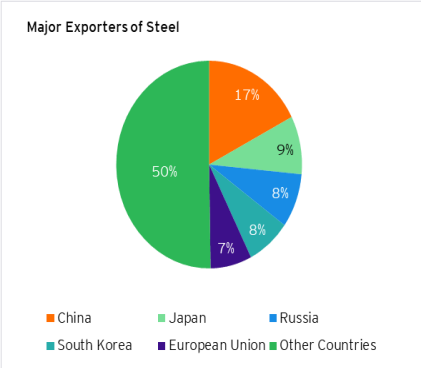
[38] https://pib.gov.in/newsite/PrintRelease.aspx?relid=191005

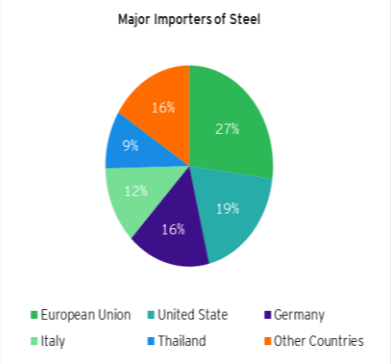
Global overview

The size of global steel industry is about US$ 2.9 trillion (INR 217.5 trillion) and accounted for 3.8% of global GDP in 2017[39]. The industry provides 96 million jobs worldwide. China is the world's largest steel producer followed by India, Japan, the US, Russia, South Korea and Germany, among others. Some of the leading players in the global steel industry include ArcelorMittal, China Baowu Group, Nippon Steel Corp., POSCO and HBS Group.

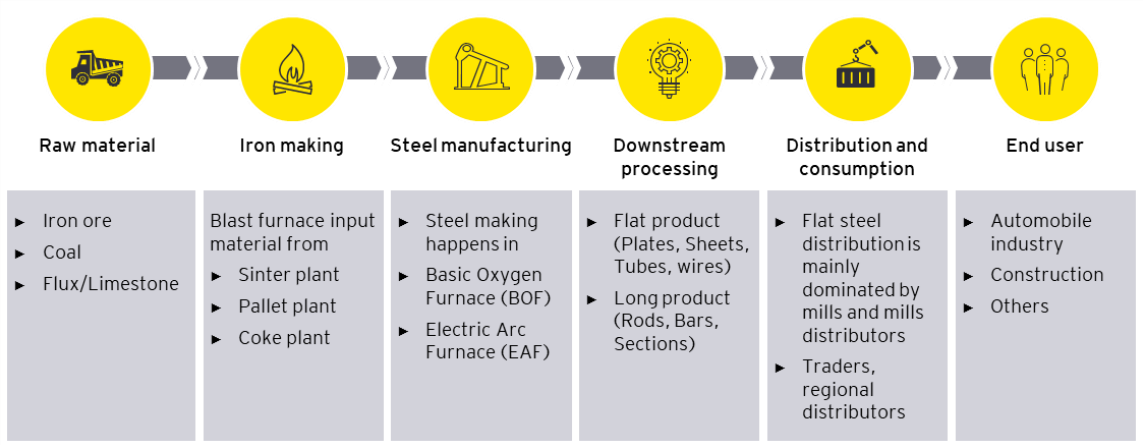
Global production, exports and imports







Value chain



*Steel service centers are also part of distribution and consumption segment of value chain

Impact of COVID-19

Most of the steel producers so far have displayed resilience and continue to maintain production levels because of prior signed commitments across the world. While steel production and allied activities such as mining are covered under the Essential Commodities Act, downstream activities such as service centers are not part of essential services, leading to disruptions in supply chain. As the pandemic crisis is still evolving and is likely to prolong than what is currently being anticipated, it remains to be seen how long steel companies will

[39] The Role of Steel in Manufacturing Economy by Oxford Economics

be resilient given that the steel demand may slow going forward. It is expected that the pandemic will have its visible impact in the coming 3-4 quarters.

The overall impact is likely to be manifested in the forms as listed below:

Most of the countries worldwide are expected to experience slow or negative economic growth and related disruptions in the coming 3-4 quarters. In all countries, this leads to:

- Disruption in labor supply, mainly due to social distancing, which also impacts the productivity
- Disruption to production resulting in lower capital productivity
- Government efforts to stimulate demand through increased spending
- Global supply chains do not operate as efficiently, creating a barrier to trade globally
- In addition, outbreaks of global protectionism would emerge creating further barriers to international trade

The relative impacts across countries are determined by factors such as the current reported infection rate, population density, strength of the health system, education levels and institutional capabilities.

Implications across various components of steel business

Key Implications	Parameters	Intensity	Possible impact
Demand implications	▶ Price of steel ▶ Availability of finished inventory ▶ Performance of end user industry	Medium	▶ Despite very weak demand, Chinese mills continue to produce steel at significantly higher rate. Delays in deliveries to domestic markets is forcing Chinese producers to consider export markets to prevent a build-up of inventory. ▶ Steel prices have been resilient in comparison to other industrial metals in the recent past. Prices in most regions are still holding up above the lows seen in February 2020. ▶ Downstream steel demand is going to be significantly impacted as manufacturing operations throughout the globe are temporarily idled. Similarly, the dramatic decrease in oil prices will impact OCTG producers. Though real estate and infrastructure development projects in developing economies such as India is likely to sustain the steel demand in the domestic market.
Supply chain implications	▶ Supply of raw materials ▶ Availability of spares, MRO supplies ▶ In-bound and out-bound logistics	High	▶ Steel companies, depending on size and location, typically have several thousand MRO products/spare parts that are maintained in their inventory at their sites or warehouses. Their replenishment to ensure continued operations would be severally hit due to restrictions in movement of transport both in India and globally. ▶ A shortage of upstream supply of raw materials (iron ore, coal, fluxes and consumables) mined and supplied to industry can significantly affect production of steel both in India and worldwide. ▶ Outbound shipment curbs from steel mills will hit supply of finished steel to end user industries. ▶ Steel industry is considered under Essential Services Maintenance Act, so plants are producing but operating at low capacity utilization.

Workforce implications	▶ Workforce (Labor/human resource)	High	▶ Isolation of workforce from exposure to the spread of infection would be a big challenge. ▶ Providing access to both high quality and scaled medical treatment if infection does occur within their operations or remote communities remains critical to the operations of the steel mills. Risk of re-infection would be an ongoing affair for a few quarters. ▶ Ferrying workforce to steel mills for uninterrupted production and maintenance process remains a challenge due to lockdown. Personnel in other organizational functions also face the same challenge, eventually impacting the overall performance of an organization.
Business continuity implications	▶ Liquidity ▶ Exposure to adverse commodity price movement ▶ Debt repayment	Medium	▶ Supplier's financial health is likely to deteriorate in the coming months, in a similar way for 12 months as seen after the Global Financial Crisis in 2007-08, leading to surge in insolvency cases. ▶ Steel mills are highly asset intensive and run 24/7 to maximize output and financial return on fixed costs. A low capacity utilization due to reduced workforce would create huge stress on their balance sheets. ▶ Revenue and profitability will decrease due to lesser demand in global market and shutdown of downstream industries. ▶ A large number of mills, especially the non-integrated units, are at risk of closure due to tighter cash flow compounded with weak demand.
Customer implications	▶ Contracts ▶ Covenants	Medium	▶ Customers are likely to delay acquisition of orders due to production cut at their downstream units. ▶ There would be substantial reduction in demand, supply shortages and so price predictions remain a challenge. ▶ Finance facilities are at risk of being affected by uncertain economic conditions, leading to breach of financial covenants. ▶ Delivery failure may lead to loss of customer and business for a few units.

Source: EY in-house study, primary interviews with leading steel mills in India

Sector overview - Aluminum

Aluminum is the second most used metal in the world after steel and finds applications in various industries, including automotive, building and construction, electrical, electronics and aerospace. The non-ferrous metal's unique properties such as light weight, corrosion resistance, recyclability, conductivity, ductility and high strength are some of the reasons for its increasing usages across a variety of industries. Aluminum segment includes primary aluminum, aluminum extrusions, aluminum rolled products and alumina chemicals.

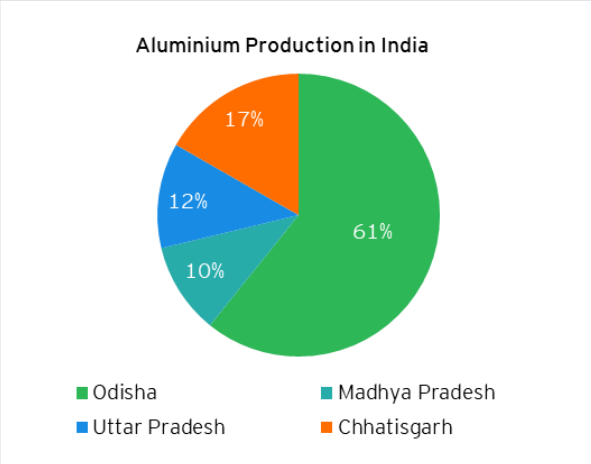
Importance of sector in India[40]

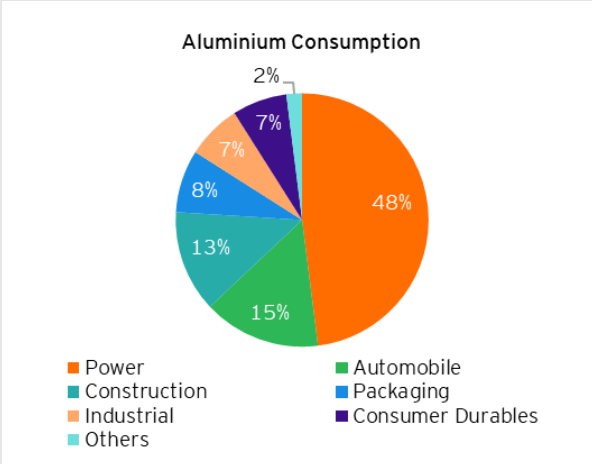
- Aluminum consumption in India is at 2.5 kg per capita, which is significantly below the global average of 11 kg per capita, and that offers a huge scope for increasing the per capita consumption.
- Even at such low consumption, aluminum contributes 2% to the country's manufacturing GDP. The contribution will increase as the consumption growth rises in the country.
- Aluminum consumption in India is driven by its use in the power (48%), automobile (15%), construction (13%), packaging (8%), industrial (7%) and consumer durables (7%) sectors.

[40] Niti Ayog Report on Need for Aluminum Policy in India

- The aluminum industry has a high direct and an indirect employment multiplier, creating close to 800,000 jobs.
- Aluminum production in India is majorly concentrated in mineral rich districts of the country. Odisha produces about 2 million metric tons of aluminum, accounting for 61% of the country's aluminum output.

Top 5 producer geographies and consumption sectors





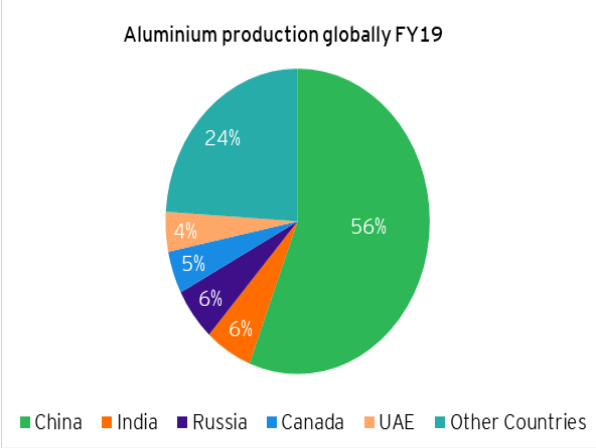
India's aluminum production is estimated to be over 3.5 million metric tons. The government-run National Aluminium Co., Vedanta Aluminium and Hindalco Industries are the major producers of aluminum in the country.

Global overview

China occupies the larger portion in global aluminum production with 56% share. Russia and India each produce 6% of the global aluminum output, followed by Canada at 5% and the UAE at 4%, among others. The total global aluminum production stood at 64.6 million metric tons in FY19. [41]

The global aluminum market, which was valued at US$ 147.2 billion (INR 11 trillion) in 2018, is expected to reach US$ 189.8 billion (INR 14 trillion) by 2026, registering a CAGR of 3.2% from 2019 to 2026, according to market research provider ReportLinker. The growth will be driven by transportation industry, construction activities, usage in packaging sector, advancement in aluminum manufacturing technologies and processing equipment.

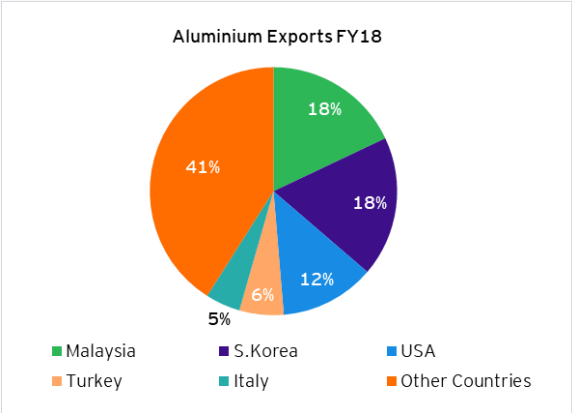
The market research firm expects Asia-Pacific to register substantial growth due to rising income of people in urban areas, rapid industrial development, and massive urbanization in emerging economies such as China and India. Major global players include Aluminum Corp. of China, Russia's Rusal and Alcoa in the US.

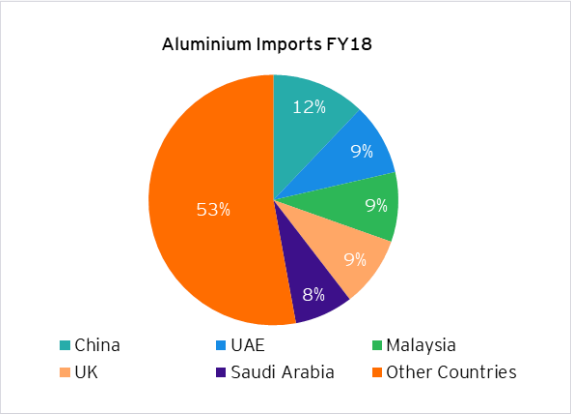


Exports and imports[42]

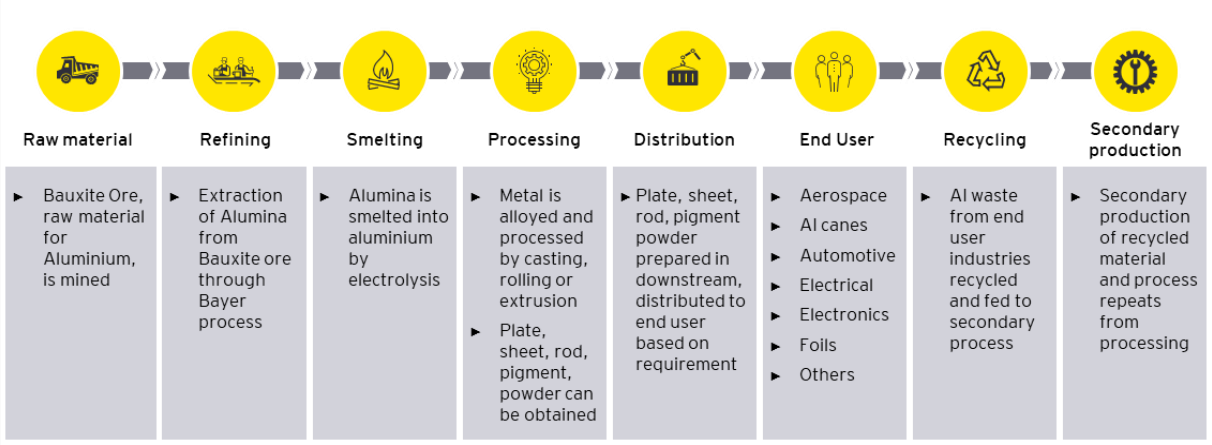
[41] USGS- Mineral Commodity summaries 2020

[42] Indian Mineral Book 2018, Aluminum and Alumina





Value chain



Impact of COVID-19

The global aluminum market is going through an uncertain period currently as weak demand, trade wars and supply constrains have limited growth opportunities. The pandemic outbreak has further aggravated the entire situation and the aluminum industry in India and globally will see a drastic impact on the demand and profitability in the coming days if the situation worsens further.

Implications across various components of aluminum business

Key implications	Parameters	Intensity	Possible impact
Demand implications	▶ Price of aluminum ▶ Availability of finished inventory ▶ Performance of end user industry	Medium	▶ Aluminum prices would be under pressure due to weak demand from end user sectors such as transportation, construction and aviation. Supply surplus in China is expected to further glut the market leading to price uncertainty. ▶ The contraction in domestic and import demand coupled with weak commodity prices are proving to be a double whammy for the aluminum smelters. ▶ Downstream aluminum demand is going to be significantly impacted as manufacturing operations throughout the globe are temporarily idled.
Supply chain implications	▶ Supply of raw materials	High	▶ Aluminum companies have several thousand MRO products/spare parts that are maintained

	▶ Availability of spares, MRO supplies ▶ In-bound and out-bound logistics	High	in their inventory at sites or warehouses. The replenishment of these products would be severally hit due to restrictions on movement of transport and this could pose a risk in running the plant operations smoothly. ▶ A shortage of upstream supply of raw materials (alumina, ore, coal, flux) and other consumables can significantly affect production of aluminum. ▶ Outbound shipment curbs from aluminum mills will affect supply of finished product to end user industry. ▶ Shutdown of non-ferrous industry in India as per the government guidelines during lockdown period will aggravate the supply side crisis post COVID-19.
Workforce implications	▶ Workforce ▶ (Labor/human resource)		▶ Isolation of workers from exposure to infection will be a big challenge. Providing access to both high quality and scaled medical treatment if infection does occur within facility or remote communities remains critical to operations of mills. Risk of re-infection would be an ongoing affair for a few quarters. ▶ Ferrying workforce to manufacturing units for uninterrupted production and maintenance process remains a challenge due to the ongoing restrictions on movement of people. Personnel in other organizational functions will also face similar challenges and this will eventually impact the overall performance of the organization.
Business continuity implications	▶ Liquidity ▶ Exposure to adverse price movement ▶ Debt repayment	Medium	▶ Cash flow, revenue and profitability will be under huge pressure for the next 3-4 quarters. ▶ Decline in commodity prices is expected to significantly reduce aluminum players' capacity to repay debt to their bankers/financial institutions.
Customer implications	▶ Contracts ▶ Covenants	Medium	▶ Customers are expected to delay acquisition of the order due to production cuts at their units. ▶ Price predictions to remain a challenge given weak demand and supply shortages. ▶ Finance facilities are at risk of being affected by uncertain economic conditions, leading to breach of financial covenants. ▶ Delivery failure may lead to loss of customers and businesses for some units.

Source: EY in-house study in consultation with industry

Interventions

i. Interventions by other countries

Countries	Interventions
China	▶ Total aid package worth RMB 2.6 trillion (INR 27 trillion), or 2.5% of GDP, for fiscal measures or financing plans, including tax relief and unemployment insurance[43] ▶ The People Bank of China expanded repo operations by US$ 174 billion (INR 13 trillion). The central bank extended loan to keep money market stable and banks to have more cash in hand[44] ▶ Additional financing support for corporates via increased bond issuance by corporates ▶ Promoting usage of AI, robotics and automation in industry to make up for labor shortages ▶ Chinese automakers operating at 32% capacity along with resumed construction on some parts of China helped in solving inventory issue for steel plants ▶ Increased VAT rebate on exports to 13% from 10% to boost exports
USA	▶ A US$ 2 trillion (INR 150 trillion) economic rescue package proposed for industries, including metal sector. The package will also provide US$ 500 billion (INR 37.5 trillion) fund to help hard-hit industries, US$ 350 billion (INR 26.25 trillion) for small-business loans, US$ 250 billion (INR 18.75 trillion) for expanded unemployment aid and at least US$ 100 billion (INR 7.5 trillion) for hospitals and related health systems[45] ▶ A 50% employee retention tax credit and suspension of the employer share of payroll taxes (the taxes that fund Social Security and Medicare) for two years
Japan	▶ Emergency economic package of JPY 117.1 trillion (INR 81 trillion), about 21.1% of Japan's GDP, which includes regaining of economic activities and enhancing readiness for future[46] ▶ US$ 2.2 billion (INR 165 billion) earmarked to support Japanese firms for shifting manufacturing out of China ▶ A new one-year facility offering loans against corporate debt as collateral @ 0% interest rate ▶ Special low interest loan program for large corporations with no upper limit for loan ▶ Safety net and crisis related guarantee program of up to JPY 280 million (INR 200 million) to support SMEs ▶ Flexibility in submission of various custom documents for imports and exports ▶ Additional extensions in tax return filing and other statutory payment deadline due to COVID-19
South Korea	▶ A financial relief package of about US$ 100 billion (INR 7.5 trillion) to companies affected from COVID-19 [47] ▶ Deployment of stabilization fund to protect key industries ▶ Creation of task force focusing on major national infrastructure projects ▶ Provision of temporary liquidity and funding to companies ▶ Job re-training for people who have lost jobs across industries ▶ The government will create 500,000 new jobs; and will also give monthly allowance to freelancers

[43] https://www.china-briefing.com/news/chinas-stimulus-measures-after-covid-19-different-from-2008-financial-crisis/

[44] https://www.reuters.com/article/us-china-health-cenbank/china-to-inject-174-billion-of-liquidity-on-monday-as-markets-reopen-idUSKBN1ZW074

[45] Times of India - US Congress, negotiators reach deal on $2-trillion coronavirus aid package

[46] https://www.imf.org/en/Topics/imf-and-covid19/Policy-Responses-to-COVID-19

[47] https://www.reuters.com/article/us-health-coronavirus-southkorea-toll/south-korea-doubles-coronavirus-rescue-package-to-80-billion-idUSKBN21B05X

ii. Possible interventions by the Government

Categories	Areas of intervention	Possible impact/outcome	Efforts required	Possible risks/mitigation measures
Short-term				
Fiscal measures and policy interventions	▶ Waiver of payments on royalty and contribution toward district mineral funds for a period of 6 months ▶ Reduction of import duty to half on the coking coal ▶ Inclusion of steel in priority sector lending norms and extension of validity of licenses and NOCs for another 6 months ▶ Six-month moratorium on payment of registration charges and upfront dues for newly auctioned mines ▶ Waiver of Busy Season Surcharge by the Railway Board	▶ These interventions will ensure liquidity across value chain of the sector with special focus to reduce the impact on profitability of firm and mitigate NPAs	▶ This requires immediate action plan from regulatory agencies headed by Ministry of Finance including CBIC and Ministry of Steel, in consultation with steel and non-ferrous industry bodies and associations, considering the financial implications ▶ Till 31 March 2021, Railway Board can: ▶ Waive the levy of Busy Season Surcharge on all steel making raw materials like iron ore, coal ▶ Extend the waiver for steel Products	▶ Injecting fiscal stimulus by doling out subsidies and effecting waivers will adversely impact the sovereign credit rating and financial parameters of the country ▶ A fund or SPV could be created, seeded by partial government funding (10%) and rest by financial institutions such as LIC, PFC, EPF, NIIF and IIFCL, among others
Boost demand	▶ Scale up government infrastructure projects like National Infrastructure Pipeline ▶ Reduce consumption tax on high steel consuming sectors like auto and construction ▶ Enable speedy clearance of contractors' dues	▶ This will reduce the inventory pile up and ensure adequate liquidity for the dealers	▶ A multi-ministerial high-powered committee may be constituted to enable the execution of suggested interventions	-
Medium-term				
Policies impacting export-import	▶ Restrict imports for 1 year. The government should restrict import of steel (barring special steels that are not produced in India) and aluminum by imposing safeguard duty on these products. ▶ Provide tax incentives for the usage of indigenous steel in government-funded real estate and infrastructure projects for 6 months	▶ This will protect domestic industries and support export of steel to other countries	▶ The government should establish committee for analyzing and making provision for import restriction for at least 1 year apart from offering tax incentive relaxation on usage of steel for government-funded projects	-

Categories	Areas of intervention	Possible impact/outcome	Efforts required	Possible risks/mitigation measures
	▶ Immediately ban all defective steel imports and non-standard materials ▶ Increase incentives on steel exports by 3% to improve export competitiveness and partially neutralize the current adversity in line with the action taken by China by enhancing the export benefit by 3%		▶ For emergency products, imports may be channeled through designated ports and proper licensing measures should be implemented	
Long-term				
Boost international trade	▶ Special export promotion scheme for developing markets such as SAFTA, Africa, Middle East, South America and CIS countries	▶ This will boost the international trade prospects for the sector with opening up of new markets for domestic players	▶ Ministry of External Affairs should execute the FTAs/PTAs, while Ministry of Commerce should formulate export promotion schemes	▶ The existing global economic climate and political diplomacy will impact the success of these interventions ▶ Country-wise risk analysis and comparative studies must be done to prioritize and derive optimum treaty conditions for trade

Reimaging supply chain

Prepare → Sense → Respond

SC resilience assessment and strategy

- Conduct end-to-end (E2E) supply chain risk assessment
- Stress test the supply chain
- War game supply crisis scenarios
- Identify critical risk scenarios
- Against each scenario, identify critical SC gaps and impacts
- Define potential responses
- Develop business case for different resilience investment interventions

SC resilience capability build-out

- Based on SC resilience strategy, invest in key SC capabilities
- Note the following examples:
- Visibility and monitoring capability
- Alternative BOMs – critical component alternatives
- Alternative supplier sourcing strategies
- Build in-network flexibility
- Develop agile planning capability – planning center coverage

SC risk intelligence monitoring

- Provide SC risk monitoring and reporting
- Use early warning system triggering predefined standard operating procedures to respond early to risks or disruptions
- Conduct new product risk assessments
- Review E2E SC demand and supply signal abnormalities/outliers
- Perform ongoing risk and controls assessments, including systems and facility risk and cyber reviews

SC risk response operating procedures

- Define plan B for specific disruptive events
- Develop plan B standard operating procedures and responses to the predefined supply disruption triggers
- Provide clear delegation of authority and decision-making
- Determine external and internal communication protocols
- Assess readiness to trigger plan B

Major crisis management

- Develop crisis management approach for major events where predefined responses are not adequate
- Create a crisis management framework
- Discover
- Triage
- Respond/communicate
- Resolve/new normal
- Provide crisis management governance, operating model, standard ways of working

I. Minerals – Coal, Bauxite and Iron Ore

Sector overview - Coal

Coal, a hard rock that can be burned as a solid fossil fuel, has many important uses globally. The most significant usages of coal are in electricity generation, steel production, cement manufacturing and as a liquid fuel. The global coal production increased by 3.3% y-o-y in 2018, thanks to rise in steam and coking coal production. The global coal consumption rose by 0.9%, driven primarily by China and India.[48] China is the world's leading coal producer with around 3.55 billion metric tons of production.[49]

Importance of sector in India[50] [51]

- The Indian coal sector contributes 1% to India's GDP and accounts for 55% of the country's primary energy needs
- India's total coal production in 2018-19 was estimated to be at 730 million metric tons. Thermal coal accounts for about 94% of the country's coal output and primarily for consumption in the electricity generation.
- The coal mining methods in India are usually opencast (93.7%) and underground (6.3%). The sector provides employment to thousands of people. Jharkhand, Odisha, Chhattisgarh and West Bengal are some of the major coal producing regions.

Impact of COVID-19

Parameters	Intensity	Possible impact
Supply of coal in downstream industry	High	Thermal power plants, steel manufacturing units and other industries, which use technology dependent on specifications of imported coal, may face a disruption in supply of raw materials due to lockdown and restrictions at supply side
Logistics		Transport of coal from producers to consumers in India may also be constrained due to ongoing restrictions and this will impact consumers from power and other sectors in lifting the raw materials within the stipulated timeframe in their FSAs
Demand of finished products		Reduced electricity generation and ceasing of operations of coal-based industries (cement and others) may suppress the demand in short-term[52]
Production	Medium	Under construction power generation units fueled by coal and dependent on foreign manufactured equipment may face hurdle in meeting timelines for planned installation, replacement of spares, repairs and upgradation. Ongoing private coal sector projects will face higher risks because of liquidity constraints and lack of long-term power sale contracts.[53]
Labor force	Low	While coal as an 'Essential Service' under Emergency Services Maintenance Act continues to be under production, the sentiment among laborers employed in the sector may be dampened due to increased health risk in the mining sector

[48] https://yearbook.enerdata.net/coal-lignite/coal-world-consumption-data.html
[49] https://www.iea.org/reports/coal-information-2019; https://www.worldcoal.org/coal/coal-mining
[50] Mining Contribution Index 2018, International Council of Mining & Metals
[51] Indian Minerals Yearbook 2018, Indian Bureau of Mines
[52] https://www.argusmedia.com/en/news/2086283-indian-coalfired-power-sector-braces-for-coronavirus
[53] https://www.argusmedia.com/en/news/2086283-indian-coalfired-power-sector-braces-for-coronavirus

Interventions

I. Possible interventions by the Government

Categories	Areas of intervention	Possible impact/outcome	Efforts required	Possible risks/mitigation measures
Short-term				
Domestic supply chain	▶ Implement provision of fuel supply agreements and allow utilization of 'Letter of Credit' for payment of coal rather than cash transactions, which is mandatory under FSA	▶ This may help sustain coal demand levels from power sector without the need for cash transaction and support the working capital cycle of power generators	▶ The states must ensure adherence to FSA norms strictly	-
	▶ Extend the period for lifting delivery orders and relax the validity period of FSAs until the situation normalizes	▶ This may prevent penal action against coal consumers because of failure to lift the ordered quantity within the validity period under the FSAs ▶ Also, in case of releases under e-auction schemes, it may not lead to forfeiture of earnest money deposit that normally happens	▶ The validity period for lifting delivery orders may be extended as per the state governments requirements considering the difficulties being faced in lifting of coal due to COVID-19 lockdown and restrictions	-
Fiscal measures and other policy interventions	▶ Railways should: ▶ Waive additional tariff on coal/coke ▶ Transfer part of their gross freight revenue to the industry ▶ Cut wharfage charges to zero	▶ This will mitigate losses arising due to delay in lifting of materials to some extent and lead to better management of working capital	▶ The railways should roll back the additional coal/coke tariff of 21% imposed earlier to compensate for the loss due to waiver of Busy Season Surcharge ▶ The railways can give 30 days' credit limit for 20% of the last quarter's GFR to the industry	-

Categories	Areas of intervention	Possible impact/outcome	Efforts required	Possible risks/mitigation measures
Medium-term				
Supply chain resilience	▶ Develop alternate sourcing channels for mining technology equipment, including mining transport equipment and mining equipment	▶ This will reduce risk of supply chain disruptions, owing to dependencies on certain countries like China, and improve the bargaining power of coal producers	▶ The mapping of lead suppliers for various mining categories needs to be done and following negotiations, the agreements should be finalized for onboarding suppliers	▶ The market intelligence and supplier discovery require constant updating and a PMU with specialized support may be required
Long-term				
Availability of raw materials	▶ Import-dependent power plants could explore options to adapt the domestic coal for usage	▶ This will lead to non-dependency on imported varieties of coal and also reduce high transportation cost of imported coal	▶ The mapping of blocks with high-quality coal and allocation process needs to be expedited ▶ The exploration of high-quality coal with higher calorific content and low ash content must be taken on priority	▶ The technology of industries, which are dependent on imported variety of coal, may not be compatible with domestic variety of coal ▶ The industries may look at upgrading or adapting the technology to use locally available coal

Sector overview - Bauxite

Bauxite ore is the main raw material in the aluminum making process. Bauxite reserve in India stood at 3.89 billion metric tons as of 1 April 2015. By states, Odisha alone accounts for 51% of the country's resources of bauxite, followed by Andhra Pradesh (16%), Gujarat (9%), Jharkhand (6%), Maharashtra (5%) and Madhya Pradesh and Chhattisgarh (4% each). [54]

Importance of sector in India[55]

- India is the 5th largest producer of bauxite in the world, accounting for about 7.3% of global production.
- Aluminum production in India has increased significantly in recent years to more than 3.5 million metric tons from 1.08 million tons in 2006-07, but bauxite output has not grown commensurately. The growth potential remains significant.

Impact of COVID-19

The pandemic is expected to impact the sourcing of raw materials, availability of workforce for production stages, logistics support in distribution channel for downstream processing and secondary production from recycled materials as demand from the end users will decrease.

Parameters (with high impact)	Possible impact
Raw materials	▶ For non-captive units, limited/controlled output from mines as labor unavailability and transportation bottlenecks may impact operations of refineries and smelters ▶ Short supply of imported raw materials like bauxite, coal, alumina pitch and aluminum fluoride used in refining and smelting process due to COVID-19 lockdown measures
Labor force	▶ Limited movement and inadequate lock-in facilities for labor to be a challenge for smelting factories/refineries. Additionally, the guidelines for social distancing while running of mines can pose operational challenges [56]
Financial position (revenue and profitability)	▶ Possible escalation in cost of imported raw materials may pose a threat to revenue and profitability of refineries and smelting centers ▶ Aluminum prices are also linked to the London Metal Exchange and hence, prices of the final goods may be prone to additional volatility
Production	▶ COVID-19 and lockdown-related measures may be a challenge to the continuity of the refining and smelting process ▶ It may take several days for a halted single pot to resume operations at full capacity. Since, several pot-lines are established for the smelting of alumina in large quantities, it can take several months for a unit to achieve full production capacity. ▶ Pandemic-related causes may result in additional stress to the falling production of aluminum. India's primary aluminum production declined by 1.6% to 3.05 million metric tons between April and January in FY 2019-20 mainly due to weak demand.[57]
Logistics	▶ Shipments of imported raw materials like bauxite, coal, alumina pitch and aluminum fluoride used in refining and smelting process may be held up at ports due to logistical issues pertaining to COVID-19
Downstream production	▶ Aluminum user industries such as automotive companies, aviation, defense, construction, foils, utensils and others can get impacted due to the lockdown and related restrictions ▶ Exports of low-grade alumina to China and other countries may be affected due to the restrained import and export conditions. China is one of the principal importers of low-grade bauxite

[54] https://ibm.gov.in/writereaddata/files/06262018131044Bauxite(AR)2017.pdf
[55] https://ibm.gov.in/writereaddata/files/11272019155844Bauxite_2018_FR.pdf
[56] http://www.dgms.gov.in/writereaddata/UploadFile/DGCircularNew.pdf
[57] https://www.thehindubusinessline.com/economy/COVID-19-impact-metal-firms-stare-at-uncertain-future/article31249577.ece

Interventions

I. Possible interventions by the Government

Categories	Areas of intervention	Possible impact/outcome	Efforts required	Possible risks/mitigation measures
Short-term				
Domestic supply chain	▶ State-agnostic cohesive guidelines on inter and intra state movements	▶ The uninterrupted supply of raw materials will support continuous processes like refining and smelting	▶ Ministry of Home Affairs should issue the guidelines as an amendment or addendum to the COVID-19 lockdown notification	▶ The operators and governments will need to take additional precautionary measures like regular sanitization to prevent spread of pandemic due to increased interstate movements
Enabling seamless operation	▶ Declare aluminum/primary aluminum production as essential commodity/service	▶ The continuous operation on a priority basis will ensure the availability of primary aluminum to the end users	▶ Ministry of Home Affairs should issue the guideline as an amendment or addendum to the COVID-19 lockdown notification	▶ The continuous operations will require industries to take additional measures to prevent workforce from health risks
Medium-term				
Policies impacting import-export	▶ Reduce import duties for raw materials used by aluminum refineries and smelters ▶ Exempt/reduce export duty of 15% for lower-grade bauxite	▶ This will reduce cost of production and make India's primary aluminum prices globally competitive, as countries like China impose 'nil' customs duties on raw materials used in aluminum smelters ▶ This will help increase exports as low-grade bauxite from India is mainly shipped to China where aluminum smelters blend it with superior quality ore sourced from Australia	▶ The government must revisit the duties after consulting stakeholders ▶ ***Import duty should be cut for:*** • Calcined petroleum: to 2.5% from 10% • Caustic soda dye: to 2.5% from 7.5% • Aluminum fluoride: to 2.5% from 7.5% • Coal tar pitch: to 2.5% from 7.5% • Green anode/pre-baked carbon anode: to 2.5% from 5%[58]	▶ The import duty reduction may make domestic suppliers uncompetitive

[58] https://m.miningweekly.com/article/indias-fimi-seeks-slew-of-tax-incentives-to-revive-domestic-mineral-industry-2020-01-07

Sector overview - Iron Ore

Iron ore is the basic ingredient and primary raw material for the iron and steel industry. Australia is the world's largest iron ore producer and exporter. Other major producers include Brazil, China, India Russia and South Africa.

Importance of sector in India

- India is one of the largest producers of iron ore globally and the mineral is a source of abundant foreign reserves by way of exports to countries such as China, Japan and South Korea.[59]
- India is estimated to have produced a total of 206.45 million metric tons of iron ore in 2018-19.
- The eastern state of Odisha accounts for half of the country's iron ore output. Other major producing regions are Chhattisgarh, Karnataka, Jharkhand, Goa, Andhra Pradesh, Madhya Pradesh, Maharashtra and Rajasthan.

A robust iron and steel industry is the base for a host of other sectors such as automotive, aviation and cement. Thus, it is imperative that special interventions and focused policy measures are implemented to safeguard the health of iron and steel industry.

Impact of COVID-19

Parameters	Possible impact
Labor force	▶ Laborer migration has accentuated workforce shortage, which has led to hampering the plants ability to function with full capacity or in some cases to a halt in production
Production	▶ Issues connected to labor and logistics will result in reduction in production capacity. A complete stoppage of production will make it extremely difficult to restart operations as mining is a continuous process
Logistics	▶ Inconsistency in logistics observed in delivery of materials for incumbent processes like sintering ▶ The inability to transport existing inventories to downstream units due to restrictions may have a significant impact on the overall operations
Demand of finished products (steel, iron, cement)	▶ A slowdown in automobile, aviation and construction sectors have halted or extremely weakened the demand given its direct relation with the steel industry

[59] *Supra* Note 1.

Interventions

I. Possible interventions by the Government

Categories	Areas of intervention	Possible impact/outcome	Efforts required	Possible risks/mitigation measures
Short-term				
Domestic supply chain	▶ Augment transport facility for, to and from mines, especially for non-captive units	▶ The business continuity risks for all downstream iron ore industries will be mitigated with the regularity in transportation of mined products	▶ There is a need for allocation of specific permits for trucks and provision of designated rest stations that are safe for truck drivers as well as addition of more goods trains and ships	▶ The risks include exposure to health hazards by drivers and other personnel, but this can be mitigated by issuing detailed safety procedure for all personnel involved
	▶ Rake allocation for the transportation of iron ore and coal from mines to ports	▶ This will improve the raw materials movement to the plants and help them achieve the full capacity utilization in lesser time	▶ The government should give 'Port to Plants' and 'Mines to Plants' the highest priority for the next 6 months for the integrated steel manufacturers	-
	▶ Freight rate reduction for long lead rail transportation for the movement of iron ore	▶ This will help in directly moving the materials from ports to plants by rail instead of multimodal and reduce the choking of ports and transport costs	▶ The percentage of reduction in rail lead base freight should be as below: ▶ 500 km to 1,000 km: 30% ▶ 1,000 km to 1,500 km: 35% ▶ > 1,500 km: 40%	-
Medium-term				
Government approvals	▶ Relaxation from eco-friendly measures such as afforestation.	▶ As a temporary provision, the relaxation in such compliance burden will support the industry revival/production	▶ Ministry of Environment and Forests should issue the notification providing relaxations from such requirements or offer any other feasible alternate options temporarily	▶ The environmental concerns, which may arise, can be mitigated through active monitoring of surrounding environment and conducting regular impact assessments
Long-term				
Future readiness	▶ Formulation of Joint Action Plan for any similar future incidents	▶ The lack of established protocols for COVID-19 like crisis affected the industries and the formulation of Joint Action Plan will offer a cushion to deal with any such crisis in the future	▶ The concerned industries/stakeholders should come up with a risk mitigation centers that provides for upskilling of existing work force, identification of alternate sources of raw material and capital to manage crisis	▶ The additional cost may be a challenge, but the third-party risk control centers may be set up on a PPP mode to share cost and expertise

J. Pharmaceuticals

Sector overview

The pharmaceuticals industry is a very crucial part of the global economy and a key source of medical innovation, which helps save lives. The long-term growth prospects of the industry remain upbeat given growing and ageing population, emerging medical conditions and emergence of new diseases. The Indian pharmaceuticals market is the 3rd largest globally by volume and accounts for about 10% of global production. In value terms, India is the 13th largest market in the world and accounts for about 1.5% share globally. The Indian pharmaceuticals market's size is estimated to be US$ 55 billion (INR 4.19 trillion). Broadly, the industry's structure is divided into active pharmaceuticals ingredients/bulk drugs and formulations. These are further classified into branded and generic categories.

Importance of sector in India

- India is a leading pharma exporter and accounts for a 20% share in global supply by volume. About 40% of generic demand is in the US and 25% of all medicine demand in the UK. India supplies 50% of global demand for vaccines.
- Indian drugs are exported[60] to more than 200 countries in the world, with the US, the UK, Canada and Middle East as the key market. The country's pharma exports stood at US$ 13.8 billion (INR 1.04 trillion) in FY20 (as of January 2020). The exports are likely to reach US$ 22 billion (INR 1.67 trillion) by 2020.
- The pharma sector provides employment[61] to 550,000–570,000 workforce as per India Skills Report 2016. The Indian pharmaceuticals market is expected to witness a CAGR of 12.9% over 2015–2020. The pharma industry attracted FDI inflow of US$ 11.27 billion (INR 845 billion) between April 2000 and June 2019.
- The Indian pharmaceuticals companies received a record 300 generic drug approvals in USA during 2017, where the generic market is expected to reach US$ 89 billion (INR 6.7 trillion) by 2021.

Major Indian clusters and significance

Himachal Pradesh, which is home to more than 300 pharma companies, is the pharmaceuticals hub of Asia. The state caters to 35% pharma demand across the region. Telangana is home to over 800 pharma/biotech units[62] and accounts for one-third of the overall production in India. Andhra Pradesh is popularly called as "Bulk Drug Capital" of India and aims at housing more than 300 companies.

Maharashtra, which accounts for about 13% of the total pharmaceuticals production in value terms, is the leading producer of vaccines in the country. Gujarat accounts for about 30%–35% of India's total production of pharmaceuticals products and around 28% of total exports from India. The state is home to 53% of total medical devices manufacturers in the country. Oher key pharma clusters are Madhya Paresh, Uttarakhand, Tamil Nadu, Karnataka and Haryana.

---

[60] EXIM databank, Ministry of Commerce, GoI

61 http://employmentnews.gov.in/NewEmp/MoreContentNew.aspx?n=InDepthJobs&k=156

[62] pharmaadda.in/list-of-pharma-companies-in-telangana

Value chain

To analyze the pharmaceuticals value chain, it is essential to map each component from raw material sources to end consumers and their role in the chain. Following are the major components of the pharma value chain:

Components	Description	Issues
Research and development	▶ R&D process is a critical component in the pharma value chain as it plays a vital role in drug development ▶ R&D involves the rigorous research tests that determine the curing suitability of the drug	▶ Difficult to start new studies and research due to the pandemic ▶ Drug discovery and development process require high level of investment and takes numerous years before it reaches the commercialization stage, if found successful ▶ Pharma companies are facing challenges of rising expenditure in research. Their prime focus lies in increasing the drug pipeline and reduce manufacturing costs
Sourcing/API/ bulk drug	Broadly, there are two categories of manufacturing required for drug production: ▶ API manufacturers, which produce the raw ingredients used in medicine, and ▶ Secondary processing: Conversion of the API into products suitable for administration.	▶ COVID-19 had a major blow on the pharma supply chains of China and India, which are largest producers of APIs and generics globally ▶ Generally, many companies have a stockpile of six months to one year. If restrictions keep extending and the production in China remains erratic, supply chain shortage will cause disruption everywhere ▶ Short-term scarcities affecting certain products – one such shortage has already been announced by the US FDA ▶ Slowdown in production of APIs has resulted in lower availability and higher costs for the materials required for generics production
Manufacturing/ formulation	▶ More than 30% of the APIs manufactured in India are exported to countries such as the US, the UK and Japan ▶ The market of API production in India stood at US$ 9.84 billion (INR 738 billion) in FY 2016 and is expected to see a CAGR of around 9% between FY 2016 and FY 2022. ▶ The manufacturing costs in India is one of the lowest in the world	▶ Shift in the demand of formulations, as antiviral use rises, and as other chronic conditions are left untreated by patients due to concerns over exposure to COVID-19 ▶ Diversification from the affected markets to less impacted markets. Many companies are vying to shift manufacturing or compensate for market disruptions by increasing manufacturing elsewhere. ▶ Increase in demand of certain medications such as Hydroxychloroquine and Chloroquine, the anti-malarial drugs touted as being effective against COVID-19
Logistics	▶ Pharma manufactured goods are supplied to a clearing and forwarding agent, a super stockist or a company-owned depot. These, in turn, supply to stockist from whose premise's goods are routed to wholesalers, medical institutions, hospitals and retailers. The retail pharmacy obtains products from the stockist or sub-stockist through whom it finally reaches the consumers (patients).	▶ Lane routings are impacted, leading to delays in their sea shipments and thereby, disrupting the supply chain. There is a substantial increase in air freight costs in the last few weeks, which is further increasing inputs costs of domestic manufacturers. ▶ Local commute within the country and in some cases within districts, is a major hurdle amid restrictions on movement
Exports	▶ The pharma exports stood at US$ 13.87 billion (INR 1.04 trillion) until January 2020 in FY	▶ India is the world's biggest supplier of generic medicines and imports 70%–75% of its APIs and key starting raw materials from

Components	Description	Issues
	2019-20. The shipments are expected to reach US$ 22 billion (INR 1.67 trillion) by 2020. ► In FY19, top importers of India's pharmaceutical products were the US (32.1%), Africa (17.96%) and European Union (15.70%)[63]	China. The virus spread will continue to disrupt the supply chain and that will inevitably lead to shortage of APIs and thereby, decline in production and exports of generic medicines ► The decision to restrict exports due to fears of internal supply shortages has far-reaching impacts, essential supplies like paracetamol, several antibiotics such as tinidazole and erythromycin, the hormone progesterone and vitamin B12 ► The US imports more than half of India's APIs and finished products, making it the largest consumer of pharma products

Impact of COVID-19

India imports about 70%–75% of APIs and key starting raw materials from China, the world's leading producer and exporter of APIs by volume, for meeting its bulk requirements.[64] Due to the supply chain disruptions, the cost has surged by 40%–50% in India for medicines such as paracetamol, penicillin and anti-asthma drugs. The domestic generic drug producers, who source APIs from China, are most likely to face the supply shortage, and this could lead to scarcities of certain products in the short-term.

The slowdown in imports has also affected the innovative drug developers. The manufacturers of branded pharmaceuticals may see a shift in their demand, both as antiviral use rises, and as other chronic conditions are left untreated by patients due to concerns over exposure to the pandemic.

The pharmaceutical units are currently operating at 40%–50% of their capacities because of unavailability of workforce[65] and curtailment of operations to only one shift at various plants. The restrictions on usage of public transportation as well as requirement for passes for traveling interstate or inter-district have also affected the movement of laborers and they are finding it difficult to reach manufacturing plants.

The non-availability of local transportations for dispatching materials is another major challenge during this pandemic lockdown as retailers, wholesalers and distributors are unable to receive the consignments.

The ancillary/allied industries to pharma sector, including some of the packaging materials for medicines, are yet to be brought under the purview of essential services. This has posed a challenge to the packaging vendors to source their raw materials for making the medicine packages and in storing materials, and there could be a significant impact on the pharmaceuticals production at a time when the country is going through the health crises.

The shortfall in pharmaceuticals production due to shortage of APIs and key starting raw materials will have a direct impact on the country's export of generic medicines worldwide as well as impede the development of drugs required to fight the pandemic.

[63] IBEF (https://www.ibef.org/download/Pharmaceuticals-December-2019.pdf)

[64] Economic Times, www.ameexusa.com

[65] CNBC TV18 (Pharmaceutical units are currently operating at 40-50% of manufacturing capacity because of unavailability of workforce)

Interventions

i. Interventions by other countries[66]

Countries	Interventions
USA	▶ Lengthen expiration dates to mitigate critical human drug shortages ▶ The Small Business Administration will distribute US$ 350 billion (INR 26.25 trillion) as loans to small businesses that can be partially forgiven to help small businesses that retain workers ▶ Main Street Lending Program to purchase new or expanded loans to small and mid-sized businesses
China	▶ Claim refunds of any incremental unutilized input VAT on monthly basis ▶ Export refund rate increased by 13% ▶ Extension of time for payment of social securities, with the extension time not exceeding six months
Japan	▶ Government expanded the volume of concessional loan facilities (interest free without collateral) primarily for micro, small and medium-sized business
France	▶ Liquidity support through postponements of social security and tax payments for companies and accelerated refund of tax credits (e.g. CIT and VAT) ▶ Support for workers' wages under the reduced-hour scheme ▶ Direct financial support for affected microenterprises, liberal professions, and independent workers
Russia	▶ Zero import duties for pharmaceuticals and medical supplies and equipment
Netherlands	▶ SMEs can postpone their loan repayments by six months ▶ Companies can defer tax payments

[66] https://www.investindia.gov.in/goverment-advisory?field_type_of_policy_value=Central%20Scheme, https://www.fda.gov/news-events/press-announcements/coronavirus-covid-19-supply-chain-update, https://www.healthleadersmedia.com/innovation/fda-takes-aggressive-measures-stimulate-covid-19-pharmaceutical-solutions, https://www.imf.org/en/Topics/imf-and-covid19/Policy-Responses-to-COVID-19#Z, https://www.uschamber.com/international-affairs-division/covid-dashboard

II. Possible interventions by the Government

Categories	Areas of intervention	Possible impact/outcome	Efforts required	Possible risks/mitigation measures
Short-term				
Competitive land and utility cost (for companies producing bulk drugs)	▶ Provide utilities and land at competitive prices to attract industries (especially for API producers) in three Bulk Drug Pharma Parks	▶ This will attract bulk drug manufactures, who have established operations in China due to favorable land and utilities costs, to set up their units in India	▶ The government may launch sector specific land allotment/leasing policy for Bulk Drug Pharma Parks/Integrated Pharma Parks, especially for API or bulk drug producers	▶ The other segments of pharma industry and other sectors may demand similar support on land pricing ▶ These benefits can be offered to them for limited period, but the support must continue for bulk drugs and other highly imported raw materials and ingredients for pharma sector to reduce their imports
Focus on production of key starting material	▶ Encourage small and medium scale industries to start production of molecules, i.e., KSM immediately and with minimum investment	▶ This will reduce dependability on China for import of raw materials and also lead to augmentation in domestic manufacturing and high efficiency due to reduction in logistics time ▶ This will also help in developing more firms in India with integrated value chain from production of raw materials to final product	▶ The government should identify all major firms and MSMEs as well as facilitate fast-track approvals and give incentives on additional investments to companies, which have current research and infrastructure to initiate operations	▶ The testing of products may pose challenges ▶ The government may support research by providing platforms for collaboration and development of necessary protocols
Coverage under Essential Commodities Act, 1955	▶ Coverage of allied/ancillary units such as packaging industry related to pharma sector under the Essential Commodities Act to avoid disruption at any point of value chain	▶ This will help avoid disruption of pharma value chain and product prices would be under control ▶ This will complement the production by pharma companies for quick mobility of medicines to the final consumer	▶ The government should identify all industries falling under allied/ancillary units to pharma sector through industry consultation and issue a notification on their coverage under the Essential Commodities Act	▶ There is no database available currently for companies such as packaging firms ▶ A centralized database management system may be developed to maintain such information

Categories	Areas of intervention	Possible impact/outcome	Efforts required	Possible risks/mitigation measures
Clearance of stocks	▶ Provide fast-track clearance of stocks at ports of entry	▶ This will provide logistical support and help maintain adequate supplies in the country in the current scenario	▶ The government may categorize pharma stocks under 'priority goods' to ensure fast-track clearance	▶ The other industries may also demand similar support and therefore, the status of 'priority goods' can be given only to pharma products for critical illness, or anti-viral, or geriatric patients
Medium-term				
Support development of critical infrastructure	▶ States need to bring pharmaceutical promotion policy to support establishment of pharma parks with all requisite infrastructure and supplement incentives offered by the Central government	▶ This will help attract pharma players to set up operations in recognized pharma parks wherein they can use common infrastructure ▶ This will also help in obtaining necessary approvals due to integrated value chain	▶ The Central government and state governments may come up with the plan to create a comprehensive ecosystem for import substitution	▶ There's a possibility of inordinate delay in implementation of such schemes ▶ The Secretary of respective state's Industries Department may identify nodal officer to ensure successful implementation
Investment in research and development	▶ Encourage R&D/innovation in development of APIs/intermediates through special incentive packages	▶ This will encourage R&D/innovation among companies and could also reduce R&D costs significantly through collaborative program between government and the industry	▶ The government should introduce special incentives such as enhanced tax advantages for incurring expenditure on R&D	▶ The audit mechanism for incentive utilization is difficult and therefore, a procedure should be developed for the audit mechanism
Long-term				
Operationalizing the bulk drug/ API pharma parks	▶ Take active measures to operationalize the Bulk Drug/API Pharma Parks identified across various locations and provide benefits like loans at lower interest rate/interest subvention and tax holidays	▶ This will reduce dependency on China and also ensure availability of cheaper raw materials to local pharma industries ▶ The pharma units operating in neighboring areas will also benefit from the Bulk Drug pharma parks	▶ A special taskforce comprising of representatives from Central and state governments as well as industry experts should identify procedures for ease of approvals and some exemptions	▶ The current challenges of COVID-19 may delay execution of Bulk Drug Park scheme ▶ The special taskforce may meet at regular intervals to ensure timely implementation and mid-course correction

Categories	Areas of intervention	Possible impact/outcome	Efforts required	Possible risks/mitigation measures
Focus on KSM	▶ Set production targets for KSM for plants the pharma parks	▶ This will reduce dependency on China for raw materials and also enhance export competitiveness	▶ The molecules need to be identified where additional incentives can be proposed/provided by the government	▶ The highly competitive price of KSM by China is a potential risk and therefore, the actual unit cost of all KSMs produced in India should be competitive vis-à-vis China to gain ground in the global market ▶ The production target for bulk drug may be centrally monitored to ensure all required KSM can be generated in requisite quantity

K. Plastic and Packaging

Sector overview

The growth of plastic and packaging industry has a direct correlation with the economic growth of nations. The industry, which has significantly diversified over the years, holds a special significance for a growing economy like India. From a value-chain perspective, plastic (polymer) is a by-product of petrochemical sector. Crude oil refinement produces various polymers, which is used in plastic manufacturing. Major raw materials required by the industry include polypropylene, high-density polyethylene, low-density polyethylene and PVC. However, with advancement in technology, renewable materials such as polylactic acid from corn and cellulosic from cotton linters are now being used as raw materials to manufacture plastic.

Importance of sector in India

- The Indian plastic industry is supported by spate of polymer manufacturers and plastic process machinery and mold producers in the country. The sector employs about 4 million people across more than 30,000 processing units. Of the total units, almost 85%–90% are SMEs[67].
- The domestic refining capacity ensures availability of raw materials to cater to the industry's needs. However, considering huge demand for plastic, about 50a% of the industry's raw material requirements is met through imports.

Different types of polymer and uses[68]

Polymer	Common uses	Properties	Recyclable?
1 PETE Polyethylene terephthalate	Plastic bottles (water, soft drinks, cooking oil)	Clear, strong and lightweight	Yes, widely recycled
2 HDPE High-density polyethylene	Milk containers, cleaning agents, shampoo bottles, bleach bottles	Stiff and hard-wearing, hard to break down in sunlight	Yes, widely recycled
03 PVC Polyvinyl chloride	Plastic piping, vinyl flooring, cabling insulation, roof sheeting	Can be rigid or soft depending on quantum of plasticizers added; used in	Often not recyclable due to chemical properties

[67] https://www.ibef.org/exports/plastic-industry-india.aspx

[68] https://www.grantthornton.in/globalassets/1.-member-firms/india/assets/pdfs/plastic-life-cycle-management_an-insight-into-plast-less-economy.pdf

Polymer	Common uses	Properties	Recyclable?
		construction, healthcare, electronics	
4 LDPE Low-density polyethylene	Plastic bags, food wrapping (e.g. bread, fruits, vegetables)	Lightweight, low-cost, versatile; fails under mechanical and thermal stress	No, rarely recycled
5 PP Polypropylene	Bottle lids, food tubs, furniture, houseware, medical use, ropes, automobile parts	Tough and resistant; effective barrier against water and chemicals	Often not recyclable
6 PS Polystyrene	Food takeaway containers, plastic cutlery, egg tray	Lightweight; structurally weak; easily dispersed	No, rarely recycled
7 OTHER Other Plastics (e.g. acrylic, polycarbonate, polylactic fibers)	Water cooler bottles, baby cups, fiberglass	Diverse in nature with various properties	No, due to diverse range of materials used and risk of contamination during recycling

Major growth drivers[69]

The plastic sector has seen huge traction and growth in recent years due to strong demand from several industries in India. Below are the major growth drivers for the plastic from some industries based on its end usage.

Industries	Growth drivers	End usage
Packaging	▶ Food/processed food ▶ FMCG items ▶ Packaged and fast food industry ▶ Single serve packs/power packs ▶ Textiles and toys	▶ Multilayer films ▶ BOPP Films ▶ Shrink and stretch wraps ▶ Thin wall molding ▶ Thermoforming, Blow molded containers
Infrastructure	▶ Building and construction ▶ Public utilities services ▶ Mega highway projects ▶ Rural electrification projects ▶ Mega irrigation projects ▶ Smart cities/AMRUT Cities	▶ Pipes (gas, water supply, sewerage, plumbing) ▶ Storage tanks ▶ Wire and Cable
Agriculture	▶ Advanced agricultural technology ▶ Government spending ▶ Distribution channel/refrigerated storage	▶ Greenhouse films ▶ Low tunnels ▶ Micro irrigation: drip/sprinkler ▶ Mulch films, Crates, pallets
Consumer durables	▶ Healthy economic growth ▶ Higher per capita income ▶ Greater disposable income	▶ Appliances: Washing machines, refrigerators, TVs, mobile phones, computers ▶ Household: furniture, toys, office equipment

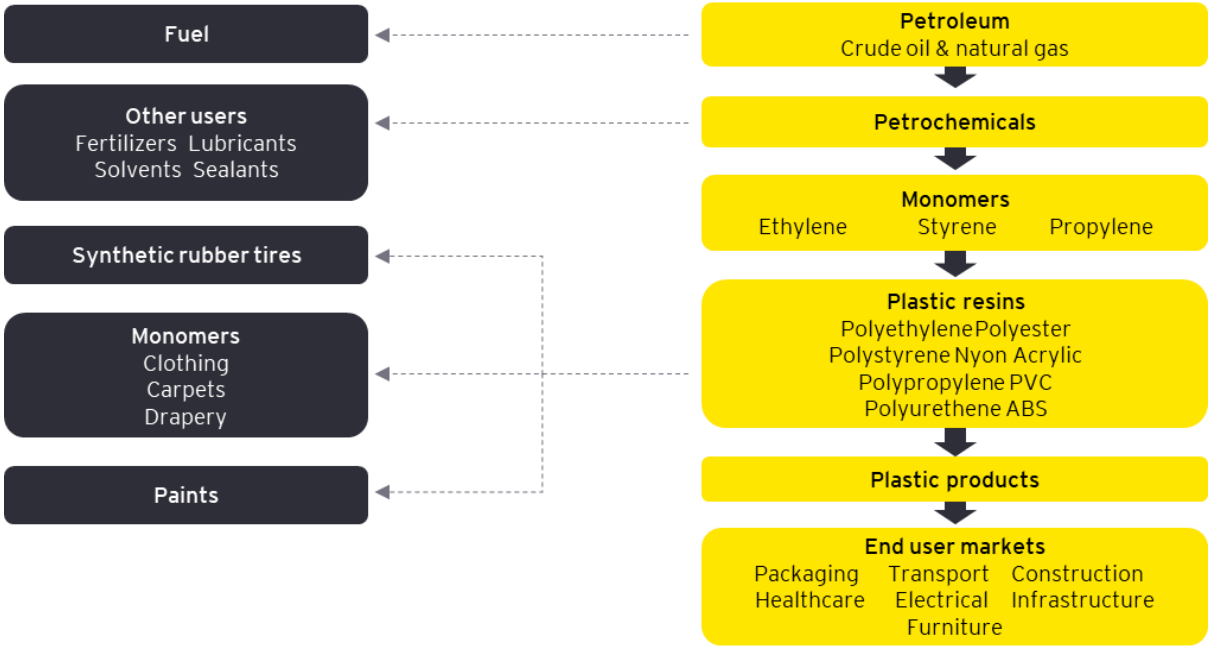
[69] PlastIndia Foundation, January 2018 Report

Healthcare	▶ India as a medical tourism destination ▶ Growing health awareness	▶ Heart valves, hearing aids, spectacles, prosthetics ▶ Packaging of medicines, devices ▶ Disposable Products: syringes, IV sets, blood bags, diapers, bed covers, pillow covers, gowns, masks

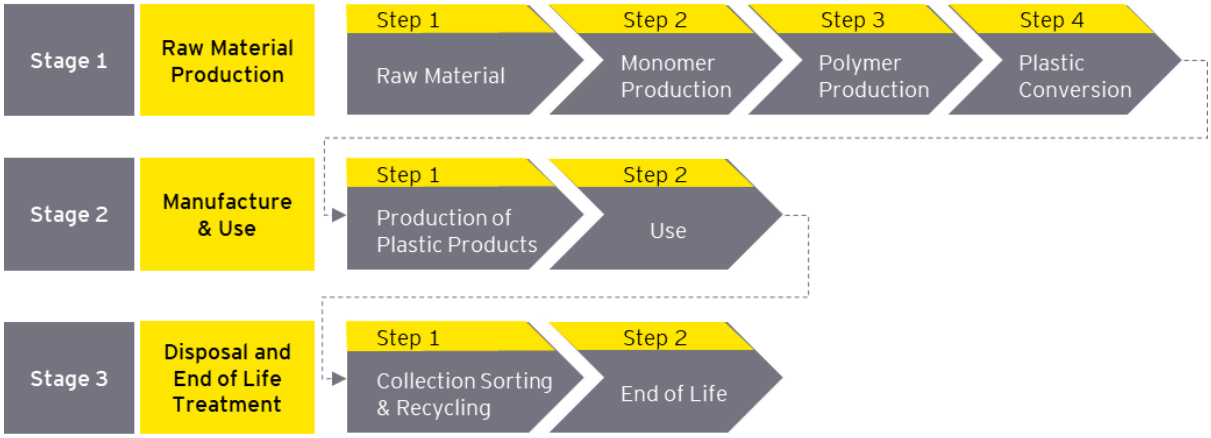
Value chain

The plastic industry draws its raw materials from petrochemical sector and growth in both the sectors is directly co-related. Like petrochemical sector, the entire manufacturing process of plastics can be classified into upstream and downstream.[70]

Upstream includes manufacturing of polymers, while downstream includes conversion of polymers into plastic articles.



Lifecycle of plastic products [71]



[70] https://gefmarineplastics.org/files/2018%20Mapping%20of%20global%20plastics%20value%20chain%20and%20hotspots%20-%20final%20version%20r181023.pdf

[71] https://www.unpri.org/plastics/risks-and-opportunities-along-the-plastics-value-chain/4774.article

Impact of COVID-19

The plastic industry is heavily influenced by the crude oil prices because of plastic's strong co-relation with the petrochemical industry. The coronavirus outbreak forced the countries across the globe to resort to lockdowns to contain the virus spread, hitting the oil demand and crude prices drastically.

The International Energy Agency in its April 2020 report said the impact of containment measures in 187 countries and territories brought the mobility almost to a halt as activity in the transportation sector fell dramatically almost everywhere. The Paris-based agency said global oil demand in April was estimated to be 29 million barrels per day lower than a year ago, hitting a level last seen in 1995. It also projected that the global oil demand will fall by a record 9.3 million barrels per day in 2020 versus 2019, erasing almost a decade of growth.

Slowing crude demand indicates that oil refineries are gradually reducing their throughputs as they are running out of storage space. However, refineries cannot lower their throughput beyond a point and would have to shut down operations if demand does not pick up, and this will impact the availability and prices of raw materials used by the plastic sector.

The industry is not facing any immediate shortage of raw materials because the demand from other sectors is muted. The availability of raw materials will increase while prices could come down as the lifting of lockdown will boost economic activities, thereby prompting refineries to increase their crude production in anticipation of higher demand.

In India, the industry will be affected due to slowdown in the overall economy. As the restrictions are relaxed, there will be significant demand from customers giving further upward push to the industry, whose revival is directly co-related with its major consumers from other sectors. However, the upswing in demand will be temporary, and the growth will taper gradually over the next six months as the COVID-19 situation stabilizes. China exports significant amount of plastic globally and most of the plastic units in the country are in affected areas. This will adversely impact the overall supply of plastic globally.

Key Exports from China impacted since majority of the factories, except steel, are in affected areas

COVID 19 Impact	Major Commodities Manufactured Province-wise and exported from China	Electronics (Mobile Handsets)	Textile RMG	Steel	Plastics	Leather & Leather Goods	Aluminium	Ceramics	Gems and Jewellary	Paper	Consumer Durables
	Hubei				■						
	Guangdong	■	■			■		■	■	■	■
	Zhejiang		■		■	■		■		■	■
	Henan					■	■			■	
	Hunan								■		
	Anhui				■					■	
	Jiangxi				■	■		■			
	Jiangsu		■	■	■					■	
	Chongqing										
	Shandong		■	■	■		■			■	
	Sichuan	■									
	Heilongjiang										
	Beijing										
	Shanghai				■						
	Fujian				■	■				■	
	Hebei			■		■				■	
	Shaanxi	■									
	Guangxi						■				
	Yunnan										
	Hainan										
	Shanxi			■			■				
	Guizhou										
	Liaoning			■							
■	Significant presence of the respective sector's manufacturing in province.										

Interventions

I. Possible interventions by the Government

Categories	Areas of intervention	Possible impact/outcome	Efforts required	Possible risks/mitigation measures
Medium-term				
Domestic production	▶ Focus on engineered plastic manufacturing	▶ The engineered plastic constitutes the major portion of India's total imports and this will help in capacity building of domestic players	▶ CIPET should play a key role in giving the initial push as it has all the required infrastructure	-
Plastic recycle	▶ Encourage adoption of plastic recycling in an organized way with proper guidelines and incentives to the players	▶ The sector formalization will motivate major plastic players to enter this industry and will also lead to 'Reduce, Reuse, Recycle, Disposal' usage model	▶ The state governments should come up with effective policies and guidelines to attract organized sector players in the field ▶ CIPET infrastructure/infrastructure available in plastic parks can be leveraged by other states/location for the adoption of the same	▶ The existing recyclers from unorganized sector need to support in capacity building
	▶ Create level playing field between recycled plastic and virgin plastic, as the production cost of virgin plastic is currently lower than the cost of producing recycled plastic (environmental cost is not taken into consideration)	▶ This will promote recycling and also motivate the private sector to produce plastic post recycling	▶ The government may impose higher GST on virgin plastic and levy a minimal GST on recycled plastic keeping in mind the larger benefit on environment safety ▶ The government also needs to create a level playing field in plastic manufacturing by incentivizing the recycling process especially for sorting, collecting and cleaning before recycling process	▶ The virgin plastic markers may oppose the higher GST as it will increase the price of their products ▶ The government should ensure effective implementation of Extended Producer Responsibility, an environmental policy approach, to mitigate the impact
Long-term				
Attract new players in sector	▶ Draft plans to establish India as a leader in the plastic and packaging industry and attract companies looking to move out of China	▶ This will help reduce cheap Chinese imports, leading to a positive impact on the demand and performance of the domestic plastic industry	▶ The government should leverage Invest India to devise strategy to attract firms willing to move out of China ▶ The states also need to come up with clear policy and guidelines for the entire value chain of plastic industry	▶ The interest of domestic players needs to be protected while devising strategy to attract other players

L. Real Estate and Construction

Sector overview

The real estate is the backbone of the construction and building materials industry. The real estate segment comprises of not just building spaces for residential, office, retail, hotels and leisure parks, but also infrastructure development projects such as roads and highways, seaports, airports, bridges, irrigation, water-supply and sanitation networks, education and healthcare facilities.

Importance of sector in India

- The Indian real estate market stood at US$ 120 billion (INR 9 trillion) in 2017 and is expected to grow to US$ 650 billion (INR 48.75 trillion) by 2025, thereby contributing 13% to India's GDP.
- Importance of construction sector in the Indian economy is evident from the fact that it accounts for 8.2% of GDP and employs about 12% of the workforce[72].
- Construction is the 2nd largest employer in the country after agriculture and is poised to grow by 30% over 2018-2028[73]. High employment in the sector is majorly due to forward and backward linkages with other sectors of the economy. Forward linkage is on account of demand on real estate and infrastructure development, while backward linkage is for construction sector supply chain, i.e., core materials, finished construction materials and construction equipment.
- To promote investment in the sector, the Government of India has pooled in resources for developing about 100 Smart Cities to support the urban real estate sector apart from focusing on affordable housing segment.

Recent developments in the sector

The sector has been marked with uncertainties in recent years due to the ever-changing tax and regulatory landscape and a complex transactions structure. The industry has seen some major turns in recent times from RERA, GST, ban on interest subvention scheme, the Insolvency and Bankruptcy Code (Amendment) Act, 2019, and the establishment of a "Special Window" for funding stalled housing projects that are in the Affordable and Middle-Income Housing sector. The real estate sector has been facing a liquidity crunch since 2018 having attributes to consequent implications of demonetization and recent cases like payment defaults by NBFCs and litigation involving some leading developers. The Real Estate Investment Trusts (REITs) have also made their presence felt in making funds available to support the development of real estate sector.

Sub-sector and geographical distribution

The residential sub-sector accounts for about 80% of the Indian real estate sector. It is a localized and fragmented market with limited number of companies operating at pan-India level. The supply of residential space faces severe shortage,[74] especially in urban areas.

The retail real estate market has been thriving, with demand rising to current level of around 20 million square foot, from 6 million square foot during 2017. Interestingly, the demand for co-working and co-living spaces across top seven cities of the country has increased sharply in the recent past.

---

[72] Study Report on "Impact of Investments in the Housing Sector on GDP and Employment of Indian Economy" (2014), by National Council of Applied Economic Research (NCAER).

[73] India Construction Sector 2019/2023, EMIS Insights Industry Report, 2019

[74] Cushman and Wakefield, ANAROCK Property Consultants

The Indian real estate market is majorly concentrated in mega cities like Mumbai, Bengaluru and New Delhi-NCR region, which are considered as high potential cities for real estate market. The second-class metro cities such as Ahmedabad, Indore, Rajkot, Pune and Hyderabad are also gaining importance given the population concentration in urban areas, and these cities have emerged as potential clusters for further development of real estate in India.

Key players

Indian real estate developers pool is predominantly dominated by few players such as DLF Group, Hiranandani Group, Raheja Group, Sobha Ltd. Lodha Group, Tata Group, Shapoorji Pallonji, Godrej Properties, Housing Development and Infrastructure Ltd., Indiabulls Real Estate, Oberoi Realty and Omaxe Ltd. However, many of the local real estate business is occupied by small builders and developers having regional business.

Impact of COVID-19

The sector has been facing challenges due to lack of funding, liquidity crunch, subdued demand on account of unaffordable prices, procedural delays in projects, high tax rates, lack of clear land titles and stricter government laws. The nationwide lockdown to curb the COVID-19 pandemic has further aggravated the challenges of the industry and both property sales as well as collections will get affected. Residential sales in India's top 7 cities is estimated to have dropped 42% y-o-y to 45,200 units in the first quarter of 2020 due to the considerable impact of the pandemic, according to ANAROCK, an independent real estate services company. According to CREDAI MCHI 's 'COVID-19 Impact: Real Estate' report, there was a 250% drop in home loan collections in March 2020 as compared to January 2020.[75]

Key sub-sectors with maximum impact

All sub-sectors of the real estate market – Residential, Commercial, Retail, Hospitality, Industrial and Investment, will feel the impact on supply as well as demand. The households planning to buy properties are likely to defer purchases in the near-term and this will have an impact on the real estate sales volume as well as prices. The cascading effect will be that developers and builders will continue to face liquidity crunch and inclined toward lowering prices to facilitate sales, thereby shrinking their profit margins.

The demand for office working space and occupancy level may fall due to work from home being propagated throughout the sectors. A similar impact may also be seen on the co-working and co-living spaces. Profit margins of realtors, mall operators and hospitality industry are likely to be affected adversely due to the lockdown and social distancing guidelines.

The disruptions in construction activities is likely to result in a hit of around 5%–8% on the revenue for FY20. The execution is also expected to be tepid in 1QFY21 and this trend will continue further due to the onset of monsoons in 2QFY21 when the construction activities are low due to weather conditions[76].

The construction industry and its diversifying impacts due to disruptions in the supply chains of building construction materials, construction equipment, labor and technologies will adversely impact each of the real estate sub-sectors in its own way.

Domestic value chain of key sub-sectors

The construction materials and equipment sector accounts for approximately 8.6% of India's GDP, while accounting for nearly two-third of the total construction cost on an average. The share of construction materials in project cost ranges from 40%–60% and the corresponding cost for construction equipment ranges from 5%–25%[25]. Construction materials and equipment comprises nearly 60%–80% of project cost in infrastructure projects like roads and housing. The share in projects like power plants and industrial plants, though relatively lower, is critical.

The construction industry, in value terms, was expected to witness a CAGR of 15.7% to reach US$ 738.5 billion (INR 55.38 trillion) by 2022. The sector contributes 55% share in the steel industry, 15% in the paint industry and 30% in the glass industry[77].

75 COVID-19, Impact : Real Estate, CREDAI, MCHI, 29 March 2020

[76] Indian Construction Industry: Has The Covid-19 Developed Cracks Beyond Repair For The Sector?, April 13, 2020, Care ratings.

[77] Weblink: https://www.investindia.gov.in/sector/construction as accessed on 11 April 2020

Interventions

i. Possible interventions by the Government

Categories	Areas of intervention	Possible impact/outcome	Efforts required	Possible risks/mitigation measures
Short-term				
Liquidity support	▶ Waiver of interest for a period of 6 months on home loans taken for projects under PMAY	▶ The EWS/LIG beneficiaries will have more disposable income for other priorities because of disruption due to COVID-19	▶ MoHUA should issue necessary directions and states must implement them through their agencies	▶ The implementing agencies will have to set right expectations and implement community sensitization measures as per PMAY with beneficiaries to prevent risk of higher NPAs
	▶ Double the funding for "Special Window" for financing stalled Affordable and Middle-Income Housing projects to US$ 6.70 billion (INR 500 billion) and expeditiously deploy it for managing stalled projects	▶ This will provide relief to developers that require funding to complete unfinished projects and consequently, ensure delivery of homes to buyers	▶ The government will have to allocate more funds and issue necessary directions	▶ Given the kind of return on investment expected by this fund, the projects likely to get funded are those that would have anyway found a way out. The government should act to lower the return expectation and mandate funding of projects wherein profitable projects are bundled with less profitable ones.
	▶ Convert amount deferred under 6 months moratorium into additional working capital	▶ This will increase the availability of additional working capital	▶ RBI may encourage banks to convert the amount deferred under 6 months moratorium into additional working capital	▶ The effective cashflows to banks will be impacted and deferred
Management od contractual obligations in construction contracts	▶ Allow inclusion of COVID-19 outbreak as a force majeure condition under Section 6 of RERA	▶ The developers will be able to address unforeseen losses, cost and time overruns incurred during this period	▶ The suitable amendment needs to be done under Section 6 of RERA	▶ There will be escalation in project cost, primarily because of higher labor charges and increased cost of materials due to disruption in supply chain. The government may allow higher number of working hours, especially during the rainy season, taking necessary precautions for workable conditions.

				▶ The buyers may cancel their booking, resulting into burden on the builder. The government may give some moratorium period to builders for such refunds, guarantee the refund and also offer tax incentives in case of delayed refund.
Demand creation	▶ Encourage states to partially waive off stamp duty in major metropolitan areas	▶ This may result in some pick-up in sales	▶ The states may issue necessary directions	▶ The states may lose some revenue, but the move will lead to higher disposable income and could result in multiplier effect due to higher registration
	▶ PMAY(U) may be made applicable for private land parcels for private developers	▶ This will improve supply as well as demand as buyers will have greater confidence on quality	▶ The government may issue necessary directive with guidelines to implement and monitor the scheme	▶ There are possibilities of lapses in implementation, but monitoring will ensure that private builders accountable for timely completion and delivery do their jobs
Policy interventions	▶ Increase limit for deductible amount of home loan under income tax provisions	▶ The people will have an additional reason to buy residential spaces and offtake will improve	▶ CBDT should issue necessary directions to make this possible	▶ The government will have to forgo some tax revenue but there will be multiplier positive effect of resulting economic activity.
	▶ Allow input tax credit for construction material, if it is being passed on to the end users	▶ This will decrease the cost of built up area and may result in pick-up in demand	▶ CBIC should issue necessary directions to allow this measure	▶ There will be some revenue loss and also possibilities that some developers may not pass on the benefit to the end users
Long-term				
Support liquidity and business	▶ Offer additional/top-up loans to contractors, builders and developers facing financial crunch, possibly without additional collateral	▶ The developers will be able to complete the projects instead of prioritizing on dwelling units over basic infrastructure	▶ The banks will require additional funds and also need to modify their due diligence procedure	▶ The banks will have to evaluate projects, where additional funding may be provided, keeping in view the price appreciation and resulting repayment of total loan
	▶ Acquisition of completed or near-completed assets	▶ The government will have assets for its own usage and can also sell later, while the	▶ The government will need to define criteria for assets (projects) that will be considered under this plan	▶ The government may issue asset-backed bonds with a sovereign guarantee to arrange funds for such acquisitions

		private sector will be able to meet its financial obligations	▶ The government will also clearly need to define about the eligibility of sellers, methodology for determining pricing of housing units, payment terms, fund utilization by the sellers, and the use of assets post-acquisition	▶ The government may set up independent committee of experts to determine the price for buy-out apart from looking at prevailing ready reckoner rates
	▶ Encourage establishment of REITs	▶ This will attract private investment and relieve the burden on formal banking institutions	▶ The government should initiate discussions with concerned financial institutions and other stakeholders	-
Enhance supply of built-up area	▶ More organized master planning and fast-track development of integrated towns adjacent to Tier-1 and Tier-2 cities ▶ Expedite implementation of large/regional infrastructure projects like DMIC and other industrial/defense corridors	▶ This will reduce pressure on Tier-1 and Tier-2 cities and result in equitable growth ▶ This will also generate employment opportunities and help in attracting investment in anticipated accelerated industrial development	▶ The government should expedite the process and monitor project implementation apart from seeking private sector participation	-

ii. Possible interventions by the private sector

Categories	Area of intervention	Possible impact/outcome	Efforts required	Possible risks/mitigation measures
Short-term				
Multi-purpose usage	▶ Convert near-ready or ready but unsold built-up spaces into make-shift offices for 2-3 months to cater to the entities whose offices lie under the red/containment zones or are unable to travel	▶ The developers will be able to see cash inflow, while businesses will be able to resume office operations	▶ The developers can provide basic office fit-outs like chairs, tables, air-conditioning, printer and internet connectivity	▶ The OC or approvals from the government may be pending ▶ The government may fast-track the process of giving these approvals on priority

	to their office in another state			
Long-term				
Supply of construction materials	► Collaborate to work together and with research institutions to build capacity to compete with cheaper imports and to provide quality products to developers and in open market	► This will reduce the dependency on imports	► The industry bodies need to reassess supply chains, areas of improvement and address the same in consultation with government, wherever support is required	► This could be a blessing in disguise for the indigenous production of imported goods such as metal panels, steel bars and heavy machinery

M. Retail and e-Commerce

Sector overview

India is the world's 5th largest global destination in the retail space. The sector brings together not just consumers, distributors and manufacturers, but also a host of ancillary segments like transportation, logistics and cold chains. The retail and e-Commerce sector can be broadly divided into the following sub-sectors: apparel, footwear & lifestyle, food & grocery, home improvement, consumer durables & electronics, jewelry and other specialty retail.

Importance of sector in India

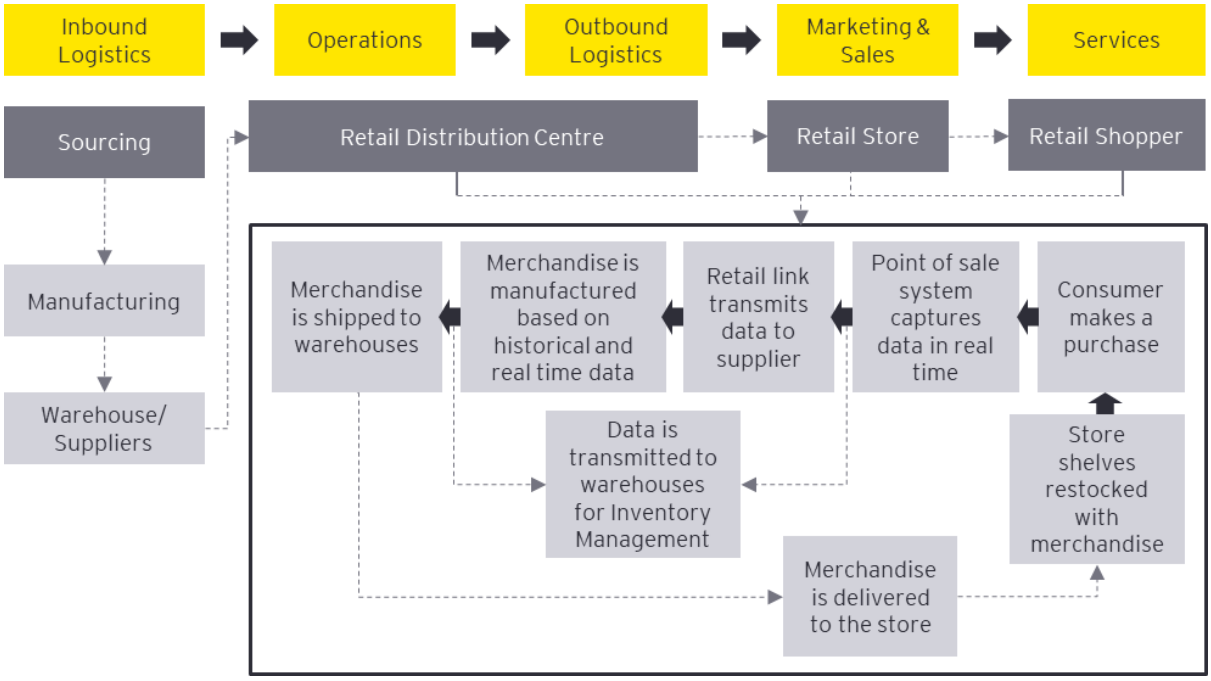
- The retail sector contributed nearly 40% to India's consumption and close to 10% of India's GDP as of early 2020.
- The organized retail in India is expected to penetrate deeper into tier-3, tier-4, and tier-5 cities and towns over the next few years.
- The burgeoning millennial population, growing middle-income households, and increasing women workforce provide a highly positive outlook for retail businesses in India.

Value chain

The retail value chain includes multiple layers for end products with shared components, facilities and capacities. The five major primary activities in the retail value chain are inbound logistics, operations, outbound logistics, marketing and sales, and services.

- **Inbound logistics:** Sourcing, manufacturing, material handling and warehousing.
- **Operations**: Transforming inputs into the final products.
- **Outbound logistics**: Order processing, inventory management, warehousing and distribution.
- **Marketing and sales**: Communication, pricing and store operations.
- **Service:** Delivery, installation and after-sales.

The following chart flow shows the retail value chain, starting from sourcing of raw materials till the product reaches the end- customer.



Impact of COVID-19

The coronavirus-related disruptions have dealt a major blow to most of the segments of retail sector and e-Commerce players. The nationwide lockdown not only forced majority of Indian retailers to shut their shops or curb operations, but also affected the sales of e-Commerce players such as Amazon India and Flipkart, which is owned by the U.S. retail chain Walmart Inc.

The e-Commerce business was affected during the two-month lockdown period due to the restrictions imposed by the government on selling of non-essential items and delivery-related bottlenecks to contain the spread of pandemic. The Indian retail sector is estimated to have lost more than US$ 1 billion (INR 75 billion) of online sales due to the lockdown, according to market research company Forrester.

The consumers have also postponed their non-essential purchases as they are grappling with the fear of job losses and pay cuts because businesses were hit due to the virus woes. As a result, apparel, footwear & lifestyle, consumer durables & electronics, and jewelry retailers have been hit hard. Food & grocery segment has relatively performed better as consumers have been focusing on meeting essential needs.

Despite the government's move to ease some curbs on restrictions, most sub-sectors of retail are likely to see production delays, store closures, reduced shipping and freight options. The companies will not be able to meet their operational expenses due to drop in revenue. The Indian and global retail sector is on a downward path as the consumer behavior shifts away from non-essential consumption to essential amid restrictions and supply disruptions.

An efficient and pre-emptive response to the economic consequences of COVID-19 by the government and private sector may provide the retail sector an opportunity to get back on the growth path.

Interventions

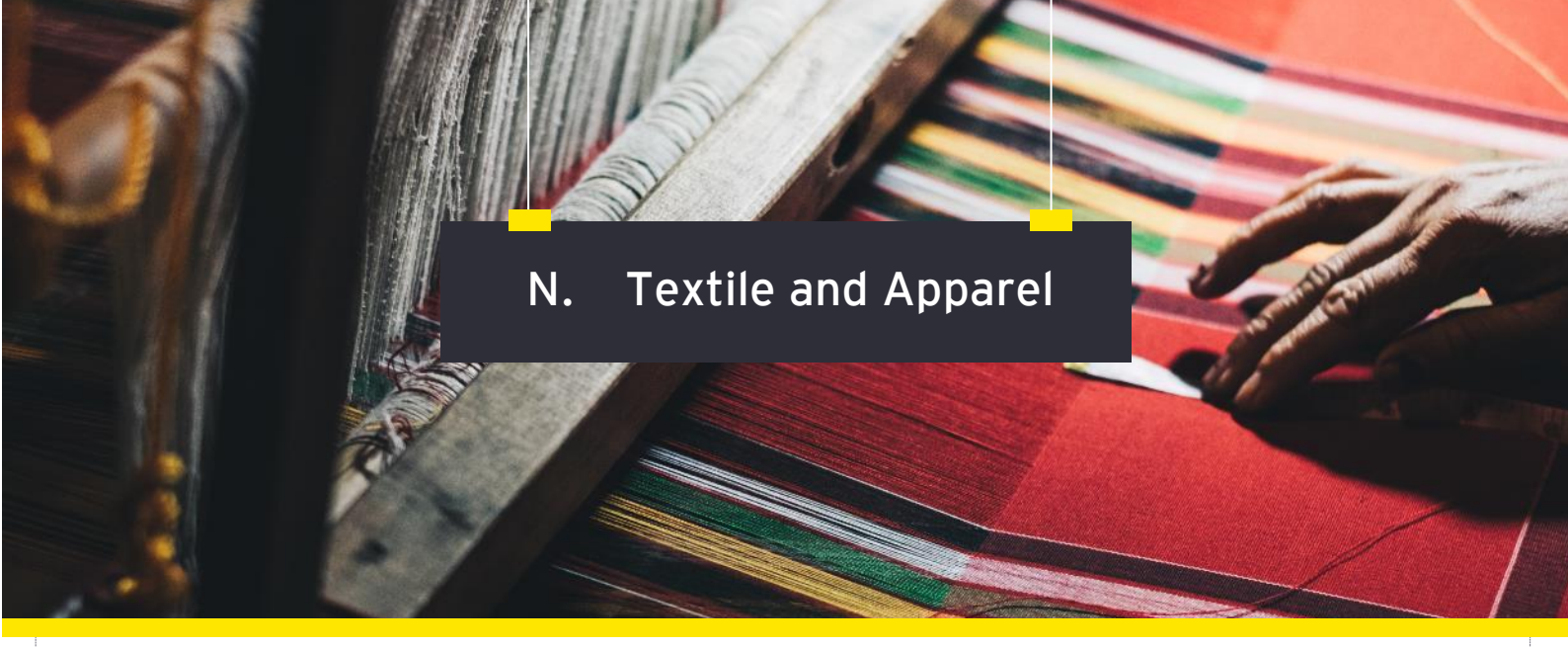
i. Possible interventions by the Government

Categories	Areas of intervention	Possible impact/outcome	Efforts required	Possible risks/mitigation measures
Short-term				
Domestic supply chain	▶ Agile response to demand and supply disruption is required while restarting the economy	▶ This will result in revival of the local economy, support logistics players and promote domestic manufacturing	▶ The government should expedite the approval of ePasses for logistics players and also set up temporary warehouses for wholesalers/big traders since existing facilities may be falling under the containment zones	▶ The COVID-19 spread risk may be mitigated by maintaining social hygiene norms
B2C and B2B facilitation through technology	▶ Utilize 'Aarogya Setu' app for connecting consumers with retailers, and retailers with distributors or manufacturers to facilitate the trade. The app should include information about availability of items/stocks and location (in free to operate zones), as well as payment options for placing the order and allow sellers to apply for ePass.	▶ This will promote local kirana stores and resolve issues around partial lockdown in different areas apart from helping in maintaining social distancing norms	▶ MeitY should build the features in the app while industries and retailers must register with their business details	▶ The local consumers and stores may not be tech-savvy enough to use the app, but government can launch a massive campaign to educate the consumers and train the sellers
Coverage under essential goods	▶ Classify laptops, smartphones, and work from home support equipment as essential goods	▶ This can ensure tapping of market opportunity with actual sales for e-Commerce platforms as well as standalone single-brand stores	▶ MHA and Department of Consumer Affairs should issue necessary notifications	-
Medium-term				
Unauthorized retail	▶ Enforce The Street Vendors (Protection of Livelihood and Regulation of Street Vending) Act, 2014 to create authorized vending zones and	▶ This will lead to formalization of unorganized retail economy, which is primarily cash run, and would also help the low-income segment of the society to take benefits	▶ The government and local authorities should set up dedicated zones in the city with operational guidelines and maintaining social hygiene	-

Categories	Areas of intervention	Possible impact/outcome	Efforts required	Possible risks/mitigation measures
	integrate street vendors/hawkers in formal economy	provided by the government as part of the formal economy	▶ The authorities should undertake phase-wise upgradation after initial registration of small retailers/hawkers, and issue personal QR codes to those vendors who do not wish to be or cannot be a part of these vending zones	
Policy interventions	▶ Rationalize commercial tariff rates to make power costs globally competitive	▶ The cost rationalization for retailers across the board (from kirana shops to shopping malls) will help in reducing operating costs	▶ The plan is already under consideration in the Ministry of Finance and an industry-led taskforce needs to study international pricing standards and benchmark charges ▶	▶ The taskforce composition should represent all stakeholders of the power value chain and decision-makers
	▶ Incentivize rail cargo to make transportation costs globally competitive	▶ The rise in use of parcel rails during the lockdown highlighted how effective rail transportation could be. However, freight costs are high as a means to cross-subsidize passenger rail fares and rationalizing these would make supply chains more effective.	▶ The plan is already under consideration in the Ministry of Finance ▶ MoCI and Railways would have to study international pricing standards and benchmark charges	▶ There's a need for expert consultation before implementing this measure
Government approvals	▶ Ease out norms for diversification/shift between items of retail and allow alternate usage of space like eatery or storage	▶ This will simplify the diversification process for retailers	▶ There should be a "Single Window" platform for the retail sector business clearances	▶ The breaching of laws/regulations may be controlled by the provision of self-declarations and surprise checks
Long-term				
Domestic supply chain and infrastructure	▶ Set up retail clusters and promote them extensively	▶ This will reduce dependency on imports of finished goods and also offer local employment and a medium for up-skilling of daily wage laborers	▶ DPIIT should classify retail as a priority sector under Make in India 2.0 and link it to new industrial infrastructure development policy/scheme	-

ii. Possible interventions by the private sector

Categories	Areas of intervention	Possible impact/outcome	Efforts required	Possible risks/mitigation measures
Short-term				
Finance assessment	▶ Conduct revenue forecasting and impact assessment to mitigate working capital distress	▶ This will help monitor regular cashflow for day-to-day operations	▶ There's a need for re-negotiation of payments terms with vendors and business practitioners as well as planning of workforce payment, including payroll-related expenses	▶ The liquidity risk assessment will help plan contingency and renegotiate terms with financial institutions, as well as allow big companies to adjust their supply chain to manage working capital
Medium-term				
Domestic supply chain	▶ Develop micro warehouse facilities near high demand clusters	▶ This will lead to demand stabilization and reduce transit time	▶ The government can provide incentives to encourage large players, but the private players will have to come forward and invest to build this infrastructure	-
Coupon pay-outs	▶ Provide option to avail part of the salary as retail product coupons (which is non-taxable) for employees	▶ The coupon pay-outs can support revival measures of the retail sector	▶ The companies should tie-up with retailers/e-Commerce players to provide such facilities to the employees	-
Long-term				
Product quality	▶ Develop product quality standards for hygiene and cleaning products	▶ This will help meet reported and anticipated spike in demand for products such as sanitizers and cleaning supplies	▶ The companies should re-invent marketing campaigns to underline the quality focus	▶ The cost increases that may not be passed on to the consumer can be bridged by focusing on scale and efficiency improvement



N. Textile and Apparel

Sector overview

The textile and apparel industry has one of the most scattered and globalized networks of organizations and stakeholders. Traditionally, the US, the European Union and Japan were the major consuming hubs and production was dominant in Asian countries. China, India, and lately Bangladesh still dominate in production, but they have also become consumption centers due to a growing population, robust economic growth and changing lifestyles. Increasing disposable income and rapid urbanization has led to a rise in the number of supermarkets and retail stores, thereby driving the overall market growth. India is the world's 4th largest producer of T&A and exported garments valued at US$ 16.2 billion (INR 1.2 trillion) during FY 2018-19, accounting for a market share of 3.3%.[78]

Importance of sector in India

- The T&A industry is the 2nd largest employment provider in India, after agriculture. The textile industry, which employs 45 million people, contributes about 18.1% of total employment in organized manufacturing sector in India. The industry contributes 2.3% to India's GDP and accounts for 12.6% of its manufacturing sector GDP. [79]
- India's T&A market, estimated to be at US$ 140 billion (INR 10.5 trillion) in 2018,[80] is likely to reach US$ 220 billion (INR 16.5 trillion) by 2026.[81] The domestic market was estimated to be US$ 100 billion (INR 7.5 trillion) in 2019.[82]
- The fundamental strength of the industry is its strong production base of wide range of fiber/yarns from natural fibers, synthetic/man-made fibers. The number of factories stood at 20,860 in 2018-19.
- India's export market is projected to reach US$ 82 billion (INR 6.15 trillion) by 2021.[83] The key export destinations are the US, the EU, the UAE, China and Bangladesh. The apparel sector contributes to 4.9% of India's total exports.[84]
- India is the largest producer of cotton and the 2nd largest producer of polyester, silk as well as man-made fibers and filament in the world. India, also the largest producer of raw jute and jute goods and the 3rd biggest exporter after Bangladesh, exported fibers worth US$ 3.03 billion (INR 227.25 billion) in FY19.
- A total of 19 dedicated T&A parks are functional in the country while 47 were under construction as of June 2018.[85] The industry attracted FDI worth US$ 3.1 billion (INR 232.5 billion) during 2018-19[86]

---

[78] http://www.aepcindia.com/performance
[79] https://www.investindia.gov.in/sector/textiles-apparel
[80] https://www.investindia.gov.in/sector/textiles-apparel
[81] https://www.televisory.com/blogs/-/blogs/global-textile-apparel-industry-india-s-position
[82] https://wazir.in/pdf/Wazir_Annual%20Report_Textiles_Soft%20Copy.pdf
[83] https://www.ibef.org/industry/textiles.aspx
[84] http://www.aepcindia.com/performance
[85] https://wazir.in/sitp-continuation-of-the-scheme-to-boost-investment
[86] https://www.business-standard.com/article/pti-stories/india-s-textile-and-apparel-exports-to-reach-usd-300-bn-by-fy25-invest-india-120011300912_1.html

Global market overview

The global textile and apparel market size was US$ 1.96 trillion (INR 147 trillion) in 2018 and is estimated to grow at CAGR of 4.3% from 2020 to 2027[87] owing to the increased demand for apparels, especially in developing countries.

China, India and Brazil are emerging as apparel retail markets and are projected to form significant alternate markets to the US, EU and Japan in future. Asia Pacific is the largest regional market and is anticipated to register a substantial CAGR of 5.6% in terms of value from 2020 to 2027[88].

The US, China, the UK, Singapore and Italy are the top five importers of silk from India while the UK, Korea, Italy, Japan, and China are the leading importers of Indian cotton.[89]

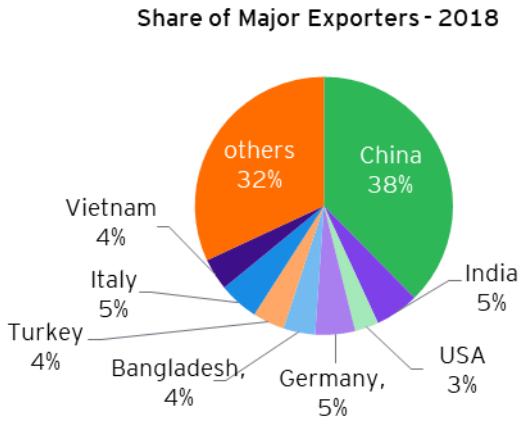
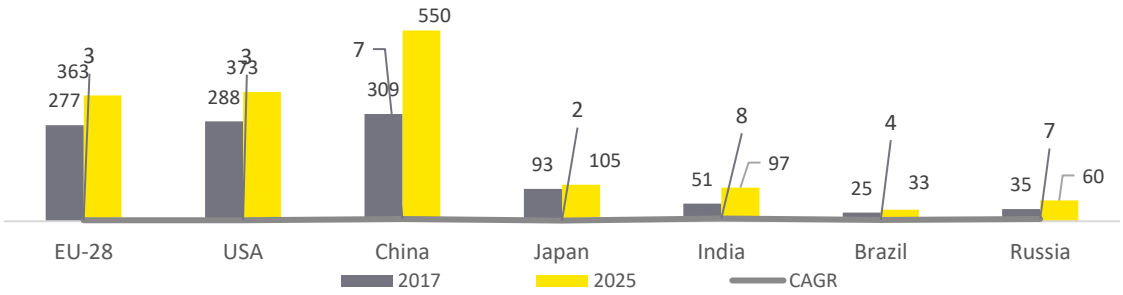


Figure: Apparel market size of top markets (Values in US$ Billion)



Indian clusters and challenges

India has the capability to produce value added garments, involving embroidery and handwork with innovation in pattern making and design, with minimal wastage, strong, innovative and creative design.[90] The western states of Gujarat and Maharashtra lead with the highest number of textile parks in India. Other key regions are Tamil Nadu, Andhra Pradesh, Punjab, Karnataka and Telangana. Despite being one of the key contributors to the country's GDP, the Indian T&A industry continues to face certain challenges, which are hampering its growth potential. These challenges include low productivity, increasing wages/input prices, import duty on specialty fabrics, inadequate research and development and lack of effective technology upgradation, high power tariff compared with other competing countries, interrupted and limited power supply, inverted duty structure and inadequate support to promote exports. Bangladesh and Vietnam incur higher input costs on raw materials compared to India, but these countries enjoy 5%–8% higher profit margins over India due to better productivity. Also, Bangladesh enjoys the privilege of Less Developed Country status, reducing effective import duty on garments to 0%, compared to 8%–9.3% levied on India by other countries.

[87] https://www.inkworldmagazine.com/contents/view_breaking-news/2020-02-19/global-textile-market-to-register-cagr-of-43-from-2020-to-2027-grand-view-research/
[88] https://www.grandviewresearch.com/industry-analysis/textile-market
[89] https://commerce-app.gov.in/eidb/
[90] https://www.indiantradeportal.in/vs.jsp?lang=1&id=0,30,50,163

Value chain

	Raw Material		Finished goods		
Key tasks	Farm	Textile mills *Spinning, weaving, Dyeing, Finishing*	Garment factories *Designing, cutting, sewing, Embellishing*		
	Fiber Natural / MMF	Fabric	Apparel	Home textiles	Technical textiles
Production	343.25 lakh bales	63.6 billion square meters	USD 108.5 Billion	USD 2.3 Billion	USD 32 Billion
Exports	USD 36.62 billion	USD 37.74 billion	USD 10.03 billion	USD 5.3 billion	USD 1.8 billion
Key players	Vardhaman texties, Nahar spinning mills, Bobay dyeing, Arvind Ltd.,Century, Suryalakshami cotton mills, JCT Ltd. , Bombay Rayon Fashion Ltd. Grasim Industries (Aditya Birla)		Orient craft, Shahi exports, Matrix Clothing; Pearl global, Aditya Birla Group, Biba apparels pvt. Ltd.	Alok industries, Welspun, Trident	Shakthi tech manufacturing India pvt. Ltd., Sterile tech India , Tex-tech industries (India) Pvt. Ltd.

Impact of Covid-19

The nationwide lockdown has brought the Indian T&A industry to a standstill, affecting companies and laborers across the value chain. As all the leading import markets, including the US and the EU are deeply impacted by the COVID-19 pandemic, retail and online sales have seen a sharp decline in the last 2-3 months. The global brands and buying houses are apprehensive about demand outlook and cancelling the orders across the globe. India's apparel industry stands to lose shipments worth more than US$ 3 billion (INR 225 billion) due to order cancellations and delays during the pandemic, according to survey of garment exporters across the country.[91]

The consumers are focusing on buying essential items given the impact of pandemic on jobs and uncertainty about the revival in near future, affecting the sales of apparels. To prop-up the sales, brands and retailers may have to reduce their selling prices, and this will their profit margins significantly. Garment exporters in India are already facing a crunch as buying houses seek discounts on completed orders and longer payment cycles[92].

The fear of pandemic and subsequent lockdowns has resulted in closure of factories/units across the supply chain. Majority of the factories, from stitching units to dyeing and spinning units have been shut, resulting into job losses for laborers. The survival of the industry, which largely consists of MSMEs, is at stake as their capacity to hold and pay the current staff and service debt obligations may not last for too long, given the cut in orders and payments.

Even post-lockdown, the operations are expected to remain under pressure due to liquidity crunch and need to follow the government guidelines to curb the spread of virus. It is expected that the guidelines will allow only limited number of people to work at a time and that too in shifts. The garment industry, being labor intensive, may continue to operate with average 50% utilization for the next six months due to such business continuity measures.

[91] https://www.just-style.com/news/timeline-how-coronavirus-is-impacting-the-global-apparel-industry-free-to-read_id138313.aspx

[92] https://www.just-style.com/news/timeline-how-coronavirus-is-impacting-the-global-apparel-industry-free-to-read_id138313.aspx

Interventions

I. Possible interventions by the Government

Categories	Areas of intervention	Possible impact/outcome	Efforts required	Possible risks/mitigation measures
Short-term				
Policy requirement	▶ The "New Textile Policy" should have focus on the impact due to COVID-19 and responses to protect the interests of the industry. The policy should also focus on building partnerships with new regions such as Japan and increasing exports of new products like textile machinery and technical textiles. ▶ Encourage states with T&A clusters to draft/redraft sector specific policies ▶ Set up taskforce or appoint nodal bodies at least in the T&A manufacturing clusters to ensure implementation of operating guidelines related to COVID-19	▶ These measures would increase opportunities to export to new markets, especially when there's uncertainty about the demand in the US and the EU, the prime markets for India	▶ The government should redraft the policy with rigorous stakeholder consultation and also ensure capability building to adhere to design and quality standards for new markets ▶ The government should also create customized SOPs for factories and units for ensuring implementation of COVID-19 guidelines ▶ The Ministry of Textiles' ongoing program to review ITPs should be taken-up on priority	▶ This must be a time-bound activity and needs immediate intervention and impetus from the government ▶ Many clusters in this sector work in community style (from homes) and therefore, monitoring the implementation of guidelines without decentralization of responsibilities may be difficult
Leverage technology	▶ Adopt usage of technological tools (three-dimensional visualization, virtual sampling, fit and prototyping) to minimize manual interventions at approval stage for fit and design ▶ Use SCBTS and Global Innovation and Technology Alliance going forward for implementation in medium scale enterprises	▶ This will reduce manual interventions in factories and also result in lower lead times	▶ The government should involve the industry and ensure capability building to promote the technology usage ▶ The budgeting should also be done for software procurement and implementation/development	▶ While some advanced technology institutes do teach and promote these tools, capacity building at the factory level will need impetus and scale from government ▶ The high cost of software and shortage of experts are possible hurdles. To address these issue, procurement and usage could be promoted at cluster-level for

				smaller players by adopting use and pay model.
Existing capacities utilization	▶ Focus on using factories and available labor for manufacturing technical textile for domestic market, particularly for automotive applications, medical textiles, protective clothing, PPE bodysuits ▶ Increase efforts to tap international markets for exports of medical textiles and protective clothing	▶ This will lead to efficient use of available capacities and help in capturing of increasing demand of technical textiles, replacing plastics and paper	▶ There is an urgent need to identify immediate requirements and available capacities for production and fixing price and quality with buyers ▶ The efforts should be focused on organized production and timely distribution given the current COVID-19 scenario	▶ There's lack of expertise to match global standards and need to change sewing machinery ▶ The government should launch awareness and capacity building campaigns and provide common infrastructure for usage by MSMEs
Domestic supply chain	▶ Government and large players should work toward building trust and partnerships among existing players to re-evaluate and relocate their existing businesses from China to India	▶ This will open new business channels beyond existing ones	▶ The government should help strategic partnerships by creating platforms, which allow background checks, especially through use technology like Blockchain ▶ The government should also revisit trade policies with countries such as Japan to ease apparel trade	▶ Most of the other competing nations like Bangladesh, Vietnam, Indonesia and the Philippines have been working in this direction and therefore, India must take these measures on priority basis
Fiscal incentives	▶ Increase in working capital limits by 20% through syndicate banks ▶ Reimbursement of 50% interest on working capital loan/cash credits	▶ This will offer immediate monetary relief to the industry for sustenance	▶ The Central and state governments should provide budgetary allocations	▶ This will lead to increased cost for the government but indirect benefits in terms of employment creation and income increase will be significant
	▶ Provide a level playing field to MMF manufacturers through a uniform GST of 5% from the inverted GST structure of 12%	▶ This will help India attract investments in the MMF market and the country's exports also would get a push	▶ The government should issue GST notification to enable this measure	▶ The losses for the government will not be material since lower GST will be compensated by increased volumes, but benefits will be significant
Medium-term				
Inventory management	▶ Allow companies to sell export surplus in the domestic market with permission of buyers (without	▶ This will result in efficient use of produced goods and monetary gains for factories	▶ The government and apparel coalitions should intervene to push for use of surplus inventory	▶ The contracts/patents are water-tight, and negotiations could be an uphill task apart

	getting into any IP or patent conflicts)		▶ The contracts should be re-evaluated and revised if required	from fear of counterfeits in future
New markets and products	▶ Identify and tap new markets beyond the US and the EU with focus on export of yarns and fabrics to other countries ▶ Explore exports of high value-added specialty products to Australia and Japan	▶ The domestic production can increase and achieve economies of scale while exports will get a boost	▶ Currently, most efforts are toward the promotion of finished goods (apparel) and there's a need for additional efforts in design and development of yarns and fabrics	▶ The government should launch large campaigns to help MSMEs identify export markets and standards, which need to be complied with, and provide common infrastructure for usage
Long-term				
Raw materials and sustainable clothing	▶ Create alternate base in India for raw materials that are majorly sourced from China ▶ Create base and expertise for 'Sustainable and responsible textiles and apparel'	▶ This will reduce procurement cost of raw materials and could also increase demand for responsible clothing due to its availability as a result of production expertise	▶ There's a need for evaluation of existing quality and supply of cotton and other raw materials in India as well as collaborations to upgrade the produce quality ▶ There should be collaborations with sustainable apparel coalitions to upskill on sustainable and responsible practices	▶ The government should provide working capital support to producers as well as the industry to compensate for the immediate high cost of implementation and changing the existing practices ▶ The close monitoring would also be required to ensure compliance with standards
Consolidation of value chain processes	▶ Consolidate most processes under one roof/in one area ▶ Review Integrated Textile Parks scheme, especially locating them strategically with logistic linkages	▶ This will reduce lead time and cost of production as well as improve quality control process	▶ A SPV should be formed for the management of governance structure ▶ The state governments should offer basic infrastructures like road, connectivity, power and water, while multiple government schemes can be dovetailed to provide additional grants to developers to ensure viability	▶ ITPs haven't met the desired success, so the government needs to draw learnings from the past and plan accordingly. This should primarily include extensive local industry engagement and best of hard and soft infrastructure availability.

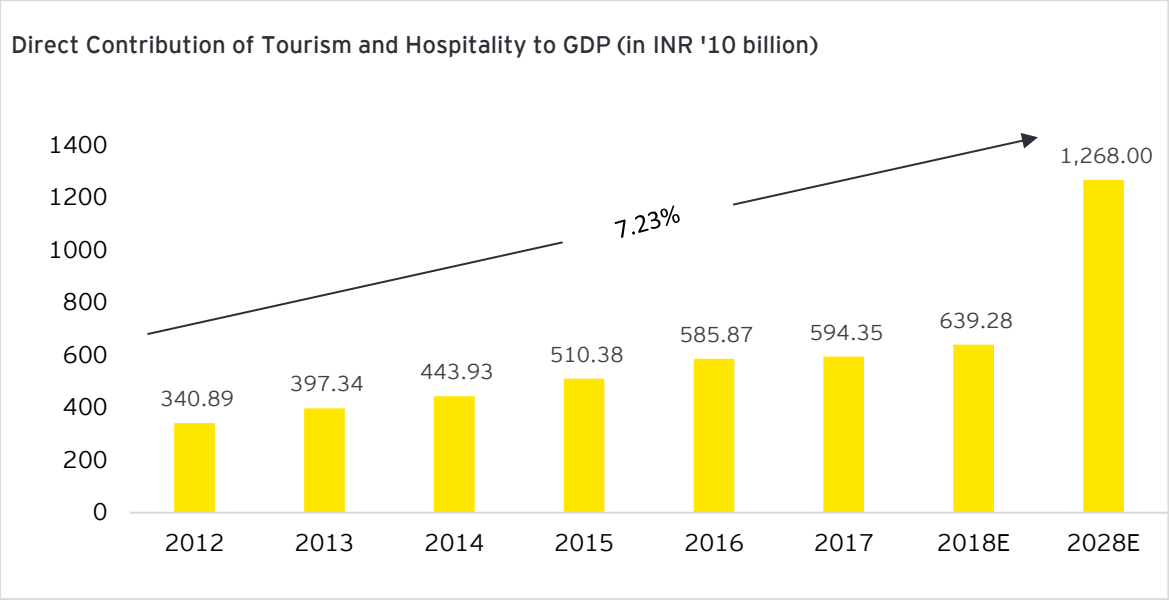
O. Tourism and Hospitality

Sector overview

The tourism and hospitality industry is one of the key revenue contributors of the economy. The industry not only creates thousands of jobs but also helps in the development of a country's infrastructure apart from supporting several sectors such airlines, transportation, food and beverages and support services. The industry enables the exchange of cultural ideas between foreigners and local citizens by bringing them closer.

Importance of sector in India

- India is the world's 7th largest tourism economy in terms of its contribution to GDP, according to the World Travel and Tourism Council.
- The tourism sector has been identified as one of the champion sectors by the Government of India as it is expected to create maximum jobs in India and globally.
- India is one of the world's fastest growing economies and is poised to be US$ 5 trillion (INR 375 trillion) economy by 2025[93]. The services sector will contribute significantly in the growth in the coming years.



Source: IBEF Report on Tourism and Hospitality, 2019

[93] https://www.businesstoday.in/current/economy-politics/modi-govt-5-trillion-gdp-target-by-2025-simply-out-of-question-says-former-rbi-governor-c-rangarajan/story/390818.html, accessed on 11th April 2020

Value chain

The tourism sector value chain comprises of various services availed by travelers and customers. Each segment of the value chain is directly impacted by the footfalls in that particular segment. Following are the major value chain of the sector:

At Origin	In Destination						
Travel organization & booking	Transportation	Accommodation	Food & Beverages	Handicrafts	Tourism assets in destination	Leisure, excursions & tours	Support services
Travel Agent and Tour Operators	Car Rental	Hotels	Bars & Restaurants	Handicrafts Shops	Cultural assets – archaeology communities, museums	Shows	Information Centres
Airline Company	Buses	Service Apartment	Night Clubs	Artisans	Intangible cultural assets – music, dance, legends.	Tourist guide organisations	Retail – Grocery Shop
	Taxi Companies	Home Stays	Fast Food	Handicraft workshops	Natural assets – lakes, rivers, forest, mountains, reefs etc.	Independent tourist guides	Laundry
	River Ferry	Hostels / Guest Houses	Itinerant food shops			Tourism packages	Security & bank services
	Informal Transportation	Online Platforms Airbnb, OYO	Kiosks			Wellness & SPA	Internet Cafes
			Food Souvenirs				Services by local community

Impact of COVID-19

The sudden halt and restrictions on movement of people and travel has significantly affected the industry. It is estimated that the impact on the tourism and hospitality industry will linger on for the longest time and the sector will take at least 12 months to see some revival, especially in terms of global tourist inflow.

Global

The United Nations World Tourism Organization in May said the COVID-19 pandemic has caused a 22% fall in international tourist arrivals during the first quarter of 2020. According to the United Nations specialized agency, the crisis could lead to an annual decline of between 60% and 80% when compared with 2019 figures and this places millions of livelihoods at risk in one of the most labor-intensive sectors of the economy. The UNWTO said the current 2020 scenarios indicate that the impact of the loss of demand in international travel could translate into: 1) Loss of 850 million to 1.1 billion international tourists, 2) Loss of US$ 910 billion to US$ 1.2 trillion (INR 68 to INR 90 trillion) in export revenues from tourism, and 3) 100 to 120 million direct tourism jobs at risk. The agency noted this is by far the worst crisis that international tourism has faced since records began (1950) and the impact will be felt to varying degrees in the different global regions and at overlapping times.

India

The Indian industry estimates an overall loss of US$ 67 billion (INR 5 trillion) and job cuts of around 40-50 million on account of the pandemic-led disruptions. Of the total losses, the organized sector in the industry is likely be hit the hardest, as per CII estimates. Branded hotels, tour operators, travel agencies are cumulatively expected to incur a loss of US$ 21 billion (INR 1.58 trillion).[94] It is expected that there would be almost negligible inflow of foreign tourists over the next 10-12 months. Thus, it is imperative to give special focus to the revival of the tourism sector.

The pandemic has affected the entire tourism value chain. Impact on the major sub-segments of the value chain are as below:

i. Travel organization and booking/transportation

Travel and tour operators play a vital role in bringing tourists in large numbers. Due to COVID-19, travel and visa restrictions have been imposed. The impact of COVID-19 on this segment includes:

- Cancellations of tours and packages already sold by agents/operators

[94] Source: https://economictimes.indiatimes.com/news/economy/indicators/indias-tourism-sector-may-lose-rs-5-lakh-cr-4-5-cr-jobs-could-be-cut-due-to-covid-19/articleshow/74968781.cms?from=mdr, accessed 11th April 2020

- Dismal bookings expected for the next 12 months in case of foreign tourists and 6 months in case of domestic tourists
- Organizations may resort to reduction in employee strength
- Indian Railways estimates loss of US$ 1.60 billion (INR 120 billion) in revenue earnings[95]
- The airline industry has been affected drastically due to restrictions on movement of people and curbs on international passenger flights. The entire value chain including airport operators, duty free shops, retail, food and beverage airport concessionaire, and inflight catering companies in the aviation sector are also in a state of crisis.
- The aviation industry is expected to incur losses of up to US$ 3.6 billion (INR 270 billion) in the June quarter, which includes domestic carriers incurring losses of about US$ 1.75 billion (INR 131.25 billion), airports and concessionaires between US$ 1.5–1.75 billion (INR 112.5–131.25 billion)[96]
- The domestic air traffic is likely to fall to 80-90 million against the estimated 140 million for FY 2020, while international air traffic is expected to reduce by 50% in the current financial year versus a year ago[97]
- With no tourist inflow, local transportation segment has been impacted in following ways – loss of revenue for aggregators and loss of income for drivers, thereby impacting livelihood

ii. Accommodation and hospitality/leisure, excursions and tours

Hotels, an important component in the entire value chain, contribute to the overall tourism experience through their facilities and services. The impact of COVID-19 on hotels are as below[98]:

- The overall occupancy in the branded hotels segment in 2020 is estimated to decline by 20% y-o-y
- Average Daily Rate is estimated to decline by 7-8% for the year and as a result, RevPAR will witness a significant decline of 31-36.2%
- Overall revenue of the Indian hotel sector is set to decline by anywhere between US$ 8.85-10 billion (INR 663-750 billion), reflecting an erosion of 39-45% as compared to last year
- The MICE segment, another critical part of the value chain, has also been significantly hit due to cancellation/postponement of travel and tourism events, exhibitions, meetings, conferences and entertainment events in India and globally. This has led to a huge loss for hotels, event organizers, sponsors, participants and other supporting service providers. The expected loss is around US$ 402 million (INR 30 billion) and there's risk of livelihood for over 10 million professionals engaged in this segment[99]
- Tour guides (independent and organizations) are dependent on the tourist inflow. They have seen a big hit on their income due to reliant on foreign tourist and it may take more than 12 months to see some recovery in their income.

iii. Local community

The income of local community engaged in tourism sector has been extremely affected with no tourist arrivals.

- There's almost negligible demand and opportunity for selling their products like souvenir, handicrafts, arts and craft and other items available for sale near monuments or tourist spots
- The losses incurred due to inability to sell perishable products and there's no scope for income opportunities in the near-term
- There's also unavailability of laborers/workers due to large scale migration post COVID-19 and restrictions on movement of people within the state and districts

In the current scenario, travel and tourism sector is completely shut. Also, the sector would see revival only in the longer time as compared to the manufacturing sector or other sectors under the services sector umbrella. Therefore, the government needs to implement several measures to revive the sector and support the livelihood of people.

---

[95] https://www.moneycontrol.com/news/trends/travel-trends/coronavirus-lockdown-railways-to-lose-over-rs-12000-crore-in-revenue-earnings-due-to-covid-19-crisis-5152931.html, accessed on 28th April 2020

[96] https://www.livemint.com/news/india/indian-aviation-sector-to-report-3-3-6-billion-losses-during-q1-fy21-11585136792144.html, accessed on 11th April 2020

[97] https://www.news18.com/news/auto/covid-19-impact-indias-domestic-air-traffic-to-fall-this-fiscal-only-90-million-travelers-expected-2567507.html, accessed on 28th April 2020

[98] https://www.hotel-online.com/press_releases/release/covid-19-impact-on-the-indian-hotels-sector/, accessed on 11th April 2020

[99] https://www.exhibitionshowcase.com/eema-projects-losses-to-the-industry-due-to-covid-19/, accessed on 11th April 2020

Interventions

i. Possible interventions by the Government

Categories	Areas of intervention	Possible impact/outcome	Efforts required	Possible risks/mitigation measures
Short-term				
Integrated marketing strategy	▶ Launch integrated marketing strategy through technology interventions for attracting domestic tourists. This should include promotion of health awareness, COVID-19 related guidelines and latest situation on websites and updates on reopening of locations	▶ This will help in gaining the confidence of visitors	▶ The state tourism departments should provide detailed marketing strategy for the destinations and also offer user-based app that can map the COVID-19 impacted zones and highlight locations that are safe for travel	▶ Too aggressive marketing may be inappropriate at this time so the strategy must be carefully planned ▶ The system needs to be regularly updated. Hence, the government should set up a mechanism for continuous updation
	▶ Develop virtual tours of key locations and promote through social media	▶ This will help in exploring the destination without personal visits	▶ The government should identify key locations to be taken up for virtual tour based on ease of availability of video, USP of the state and the destinations that have not been promoted until now. ▶ The necessary actions are needed from state tourism departments, hoteliers, travel agents and tour operators and online travel platforms	▶ The content to develop virtual tours may not be available and hence, the government may give special permission to authorities to click pictures and videos ▶ The government may also run crowdsourcing campaign to gather pictures, videos and information through digital means
Establishing support fund	▶ Set up tourism industry support fund	▶ This could help in continuity of employment and also offer financial support to the workforce unemployed due to COVID-19	▶ The state tourism departments and industry stakeholders should take the initiative to set up the corpus to support the affected employees in the tourism, travel and hospitality sector	▶ The monitoring of employees who are unemployed due to COVID-19 impact could be a challenge and therefore, genuine beneficiaries should be identified after careful consideration

Categories	Areas of intervention	Possible impact/outcome	Efforts required	Possible risks/mitigation measures
Government approvals	▶ Relax rules for alternate usage of hotel rooms, other hotel space and restaurant space for the next 3 months at least	▶ The utilization of existing spaces will increase, and some revenues could be earned	▶ The state governments should issue a notification to enable this measure	▶ The usage of alternate spaces should be allowed after giving due consideration to safety and security standards
	▶ Approval for opening of restaurant to cater to visitors for the dining facility in the large/mid segment hotels with strict guidelines on maximum capacity at a time ▶ Develop a protocol document - guidelines of operation of hotels, tourist spots/places, monuments, pilgrimage and spiritual centers for curbing the spread of virus	▶ These measures will generate some revenues and help the hotels manage their operating expenses as well as ensure hygiene and safety of everyone's health	▶ The state tourism departments should issue guidelines for health, hygiene and safety measures and implement mechanisms to track each location with the help of state health departments and industry stakeholders	▶ The industry players would need to set up mechanisms and may even need to modify infrastructure arrangements to ensure strict adherence to the maximum capacity and other protocols ▶ The government should set up teams to test monitor the same
Medium-term				
Demand creation	▶ Encourage start-ups and MSMEs in developing Wellness Tourism, Rural Tourism, Adventure Tourism and other niche and new tourism products as per the state's USPs ▶ Provide capital subsidy, marketing and promotion incentives for innovative tourism products	▶ The new attractions may increase the tourist inflow, leading to income and employment generation	▶ The incentives for developing niche tourism products requires involvement of state tourism departments, state MSMEs department and industry stakeholders	▶ The funds should be induced for providing incentives and creation of products and events
	▶ Organize "Tax Free Shopping Festival" in the country around November 2020, with well-planned crowd control measures	▶ This will not only attract foreign tourists but also increase their shopping spend	▶ There should be a coordination between Ministry of Commerce and Industry, Ministry of Tourism, Ministry of Finance and state governments to make this possible apart from implementing the "Tourist Tax Refund" provision of the GST Act	▶ The social distancing requirements may not get relaxed by that time and the fear of spread may discourage tourists and shoppers
	▶ Reduce GST to 6% from 18% for limited time	▶ This will encourage visits to	▶ The policy provision needs to be made by state tourism departments, Ministry of Finance	▶ This will reduce revenue for the Central and state governments

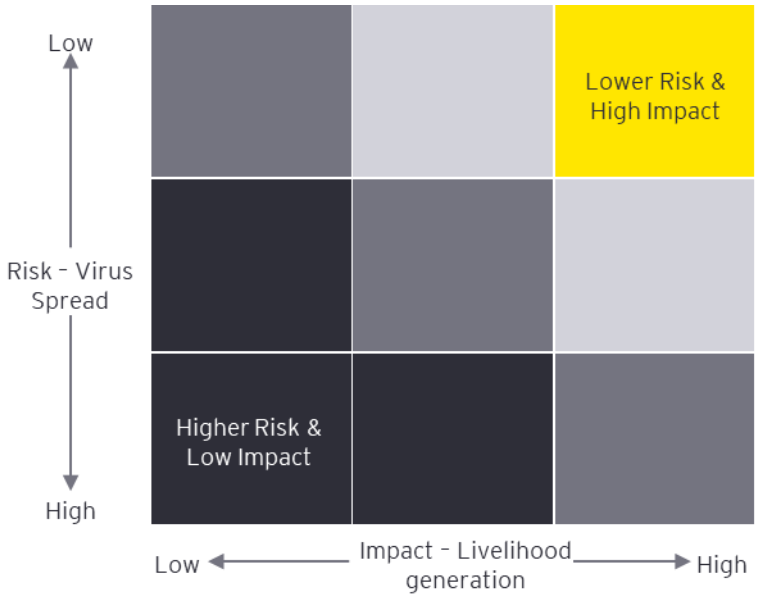
Categories	Areas of intervention	Possible impact/outcome	Efforts required	Possible risks/mitigation measures
Policy interventions and business support		hotels/restaurants due to reduced cost burden	and state commercial taxes department	
	▶ Usage of private facilities for government events and lodging-boarding	▶ This will increase revenue of private hotels	▶ The government should relax existing orders and the state departments must release new orders	▶ The state governments need to additionally spend, which might be lesser, otherwise rates may be negotiated accordingly
Leverage technology	▶ Integrated queue management at the tourist spots where number of visitors is very high ▶ Make online ticketing mandatory wherever possible	▶ This will help in managing the crowd and adhering to the social distancing norms	▶ There's a need to develop, deploy and manage IT systems at tourist spots	▶ The procurement and installation of such systems at tourist spots may be a time-consuming process ▶ The governments may set up dedicated teams on a mission mode for this and also launch campaign to increase awareness among tourists
Skill development	▶ Provide stipends and involve guides in preparing scripts for virtual tours, scripts for digital guides and develop unique experiences ▶ Digitally impart training/certification to interested employable people/youth to develop skills like foreign language, IT and soft skills	▶ This will result in content generation for the state tourism departments and also provide income for the guides ▶ The availability of trained human resources with better behavioral skills will enhance the country's image among tourists and would lead to more arrivals in the future	▶ This requires intervention of state tourism departments and Ministry of Tourism, which can enable registration of tour guides and engage training agency to improve their skills ▶ The stipends could be given through Central government's SWADESH scheme or state governments tourism promotion schemes	▶ The guides need to be convinced for digitalizing the scripts as they may see this as their job loss in future. The governments should assure them on their livelihood for the long-term too despite digital interventions. ▶ The governments should identify the target students and make effective digital learning experience and equally effective output
Long-term				
Policy interventions	▶ Exempt/relax direct taxation of Leave Travel Allowance if used fully every year for domestic travel ▶ Launch campaigns to encourage domestic travel	▶ This will motivate domestic travel every year	▶ Ministry of Finance should provide each year exemption for Leave Travel Allowance in income tax	-

ii. Possible interventions by the private sector

- Take health and hygiene measures like usages of masks and hand-gloves, contactless devices to monitor body temperature of staff and guests and install hand sanitizers at multiple locations
- Hotels chains to offer special membership packages along with focusing on ancillary revenues through non-core business such as gyms and spas
- Hotels/MICE units to focus on promoting wedding and special events after adhering to social distancing norms
- Tour operators to create special packages with reduced cost and new experience in consultation with hotels that attract domestic visitors

iii. Location evaluation matrix: phase-wise opening of regions/tourism spots

Different approach needs to be adopted while re-opening the tourist destinations at the end of the crisis. The approach needs to be developed based on the characteristics like location of destination – infected/not infected, healthcare infrastructure, livelihood generation capacity of the destination. The following matrix may be used to identify the destinations for opening in a phased manner:



The category (High, Medium and Low) of risk and impact can be identified based on the follow table:

	Low	Medium	High
Impact	▶ Small community size depending for livelihood ▶ Less number of tourism-related activities that have job multiplier effect	▶ Medium community size depending for livelihood ▶ Medium number of tourism-related activities that have job multiplier effect	▶ Large community size depending for livelihood ▶ Large number of tourism-related activities that have job multiplier effect
Risk	▶ Not infected area ▶ Better healthcare infrastructure ▶ Less densely populated ▶ Defined/fixed entry and exit points ▶ Availability of staff/workforce to execute and supervise the protocol manual	▶ Situated in district neighboring infected area/nearby infected area ▶ Town area ▶ Average healthcare infrastructure ▶ Medium densely populated ▶ Entry and exit can be controlled ▶ Less availability of staff/workforce	▶ Situated in infected area ▶ Urban area ▶ Weak healthcare infrastructure ▶ Very densely populated ▶ No fixed entry/exit points ▶ No workforce to supervise

Adapting to the New Normal

COVID-19-induced impact on the economy

With the widespread outbreak of COVID-19, nations across the globe, with India being no exception, are grappling to counter the threatening impact of the pandemic on the economic and regional stability. The significant implications of the coronavirus outbreak on the sustainability of businesses and employment is already evident from the negative sentiment being experienced by the economy. Some of the most evident indicators of negative sentiments include contraction in India's core sectors by 6.5% in March and a notable depreciation of the Indian rupee against US$. Also, the monthly unemployment rate in April has spiked to 23.5% from 8.7% in March 2020[100].

Some major sectors such as electronics, automobiles, entertainment, transport, tourism, and exports are in deep distress due to the disruptions in the global supply chain and routine operations. Below are some of the major common challenges triggered by the COVID-19 outbreak that are being or will be felt by the economy:

1

Increased labor demand-supply mismatch

- As per International Labour Organisation, COVID-19 pandemic is affecting 2.7 billion workers globally due to lockdowns. In India, the number of workers in the informal economy is and will continue to be severely affected by the lockdown and other containment measures.
- For the labor-intensive sectors such as textiles, agriculture, hospitality and mining, the cost of labor constitutes a major figure in the supply chain. With a significant dip in the business, Indian companies might look at layoffs, at least temporarily. Consequently, there will be shortage of workers due to the temporary migration of laborers to their homes, while simultaneously there will be a lot of people willing to work but with no jobs left.

2

Market demand shocks

- The pandemic will result into a sluggish or postponed customer demand due to job losses, reduced income levels and low sentiments due to uncertainty.
- The epidemic might stimulate the demand for first-purchase opportunity, but it is difficult to ascertain the magnitude of change in demand.

3

Supply chain disruptions

- Demand shock will lead to a fall in future sales and profitability of the firms. This, combined with heightened uncertainty, will result in closure of businesses and supply chain disruptions.
- Due to the high degree of integration and interdependence of value chains across economy and lockdown, the extent of impact on the economy will be multi-fold.
- India's high dependence on China will also cause major disruptions in the supply of raw materials.
- Most sectors are set to see production delays, reduced shipping and freight options, store closures, while drop in revenue may prevent companies from meeting operational expenses.
- Upon re-opening of production units across the globe, the availability of cargo vessels/carriers will be limited, and this will not only lead to delayed shipments, but also increased logistics cost

4

Liquidity crunch

- The Indian economy has been strained with working capital/liquidity crunch due to the production shutdowns in the wake of nationwide lockdown and continuing payments toward fixed costs
- Cash flow constraints will continue even post lockdown because of reduced demand, resulting in reduced inventory stockpile, with MSMEs being the worst hit
- Cashflow challenges might see increase in NPA levels due to non-repayment

5

Major impact on MSMEs

- MSMEs sector contributes to about 25% of India's GDP from services activities and over 33% to the manufacturing output of the country
- MSMEs work on shorter working capital cycles and hence, they are the most impacted due to the lockdown and nil demand of most products and services

[100] According to data compiled by Centre for Monitoring Indian Economy (CMIE)

Areas of interventions

While a combination of monetary, fiscal and financial market measures is needed to help the businesses and people cope with the crisis, some major common areas of intervention as the economy prepares to tap on the potential opportunities being presented by the "New Normal" scenario are as below:

- Enabling technologies and digitization
- Go local
- Supporting labor
- Enhancing infrastructure and utilities
- Doing business reforms
- MSMEs and trade promotion
- Incentivizing R&D
- Investment promotion and facilitation
- Taxation and other policy reforms

Under the above-mentioned groupings, some of the immediate measures the governments ought to undertake are:

- Immediate release of incentives under the industrial and sectoral policies
- Enact ease of not just doing business but resuming, diversifying and expanding too
- Allow extended operating hours, provide liquidity through bank guarantees and reduction in duties and taxes.
- Provide plug-n-play infrastructure and CFCs in districts, with focus on technological and export promotion
- Establish helpdesks and digital platforms to bring suppliers, buyers and logistics service providers closer
- Renegotiate and enforce FTAs, especially related to value addition clauses and change in import-export basket of India

Policy and strategic interventions

Doing business reforms	▸ The government should allow the firms to operate with the previously granted approvals (licenses/approvals/NOCs) for a period of next 6 months, especially for sectors such as electronics, apparels, tourism among others which have been affected adversely. ▸ To promote Make in India, offer GST refunds to all-new manufacturing plants/new expansions, which would come up in the year 2020 and 2021. ▸ Set up fast track judicial system to overcome the bottlenecks related to FDI. ▸ Streamline and expedite exporters' claims processes - duty drawback, GST refunds. ▸ Suspend tax audit and other compliance inspections for at least 3-6 months and give moratorium for fulfillment of different regulatory obligations.
Financial support	▸ Provide GST holiday for critical industries and allow GST collected by businesses to be used as working capital. Reduce custom duty. ▸ Moratorium on repayment of loans – principal and interest. Forego interest on late payment of advance tax till the situation becomes normal. ▸ Setup mechanism to push states for fast-track release of pending incentives and refunds to industry. Offer tax breaks for investing in specific sectors (beyond certain threshold). ▸ Working capital finance support to businesses through interest subvention or by giving guarantee to lender banks based on criteria like business liabilities and credit worthiness of the business.
MSMEs and trade promotion	On 14 May 2020, the Finance Minister announced about US$ 80 billion (INR 5.94 trillion) liquidity support with special focus on MSMEs, under the US$ 268 billion INR 20 trillion "*Aatma Nirbhar Bharat*'" economic stimulus announced by the PM. While this was a welcomed initiative, below are some other major areas of interventions for MSMEs: ▸ Negotiation of FTAs/PTAs with focus countries. Re-explore SEZs with exemption from all approvals, specifically for American and Japanese investors. ▸ Operationalize 'BharatCraft' urgently to facilitate real-time free flow of information about suppliers and buyers, and trade. ▸ Increase prevalence of 'Inspection by Exception', with stricter penalties, for next 1 year. ▸ Incentives such as GST refund for companies contributing in import substitution and export promotion

Way forward

In the way the "New Normal" wave is building up, India's (or for any country's) economy can swing in two extreme ways. It can either be pulled into a deep depression, or if the potential opportunities are embraced and a well-thought-through plan of action is developed and effectively executed, then the economy can catapult to recovery and consequent development. It is widely believed that the economic consequences of the COVID-19 pandemic will far outweigh any other crisis of the past. The entire global economy has come to a standstill with the imposition of lockdown aimed at controlling the spread of virus.

Over the last few decades, it has been observed that firms have increasingly started optimizing their value chain by restructuring their operations globally through outsourcing and offshoring to different countries. Today, the firms have consolidated their manufacturing base in low cost countries such as China, Vietnam, Taiwan, India and the Philippines to capitalize on the comparative advantages offered by these countries.

However, with the prolonging of the crisis, both regional and global value chains have been severely impacted. Because COVID-19 has led to lockdowns in most countries, suppliers in the chain are temporarily ceasing production, and logistics providers can no longer transport goods as seamlessly, particularly across borders. Thus, there is a pressing need to re-evaluate the global value chains wherein the manufacturing base may need diversification, the trade channels may need to be re-engineered, and the investment destinations may see a shift.

The initial pandemic outbreak in some of the major manufacturing countries has impacted all countries adversely and it has become more obvious than ever before to diversify the global manufacturing as well as supply base. This has probed consumption-driven developed economies such as the EU, Americas and Asia to rethink their business strategies, including relocating their industrial bases/operations.

In addition, with the complete disruption in global supply chains, these countries are also beginning to look at other nations to mitigate risks. It is, therefore, crucial for India to seize the opportunities of:

- Positioning itself as an attractive investment destination for companies looking to shift their operations from their current geographies of operations, and
- Feeding in to bridge the disrupted global value chains to emerge as a dependable exporter of diversified product and service lines.

The central ministries and state governments are working relentlessly to resolve broken supply chains, deteriorated budgetary metrices and economic downturn. However, this is a Catch-22 situation for the governments – if the lockdown is not lifted completely, the extent of recession will be unimaginable and as the lockdown is lifted, there is a high likelihood of the fast spread of virus. It is perhaps time that along with putting the efforts to develop a vaccine or cure for the virus, governments as well as businesses undertake serious industrial continuity planning.

Industry continuity planning

The current situation indicates that the restrictions may get extended in order to stop the spread of coronavirus. Accordingly, it is important that the government considers the below sooner:

- Since a lot of businesses are already experiencing tremendous liquidity and financial pressure, loan repayment defaults and bankruptcies for MSMEs to large business houses loom large. The first casualty was on 24 April 2020, when one of the major assets managing firms announced its decision to wind-up six of its schemes.[101] Stronger corporate governance mechanisms should be established to ensure companies are transparent in declaration of their financial positions. Similarly, a closer supervision of MSMEs financial health should be adopted.
- The importance of industry continuity planning needs to be recognized given such level of disruptions, which struck without warning, across sectors, industry players and geographies. The government should, hence, prepare exhaustive plans to manage the current outbreak, which may linger on for longer period, as well as for potential future disasters so that there's minimum disruption to the business ecosystem. This planning may include capacity building of human resource, current adoption as well as switchover to use of technology, preparing SOPs and creating reserves/funds for such situations.

The pandemic is teaching us to survive with minimum resources and making us recognize the importance of planning for an uncertain future. Perhaps, it is the nature's decree for us to 'go low and slow' but certainly this gives us an opportunity for - **Building a better working world!**

[101] Source: https://economictimes.indiatimes.com/markets/stocks/news/covid-19-crisis-franklin-templeton-voluntarily-winds-up-six-credit-funds/articleshow/75330181.cms?from=mdr

Abbreviations

The following abbreviations have been used in the report:

Abbr.	Description	Abbr.	Description
ACs	Air conditioners	kg	Kilogram
AI	Artificial intelligence	KSM	Key starting material
AMRUT	Atal Mission for Rejuvenation and Urban Transformation	KVKs	Krishi Vigyan Kendras
AMTZ	Andhra Pradesh MedTech Zone	L&D	Learning and development
APIIC	Andhra Pradesh Industrial Infrastructure Corporation	LCD	Liquid crystal display
APIs	Active pharmaceutical ingredients	LEDMA	LED Products Manufacturer's Association
APMCs	Agricultural Produce Market Committees	LIC	Life Insurance Corporation of India
ASEAN	Association of Southeast Asian Nations	LIG	Lower income group
ASPIRE	A Scheme for Promotion of Innovation, Rural Industries and Entrepreneurship	M&A	Mergers & acquisitions
B2B	Business-to-business	MCHI	Maharashtra Chamber of Housing Industry
B2C	Business-to-consumer	MEA	Ministry of External Affairs
BCD	Basic customs duty	MEIS	Merchandise Exports from India Scheme
BFSI	Banking, financial services and insurance	MeitY	Ministry of Electronics & Information Technology
BI	Business intelligence	MGNREGA	Mahatma Gandhi National Rural Employment Guarantee Act
BOPP	Biaxially oriented polypropylene	MHA	Ministry of Home Affairs
BPM	Business process management	MICE	Meetings, incentives, conferences, and exhibitions
BRICS	Brazil, Russia, India, China and South Africa	MIDC	Maharashtra Industrial Development Corporation
CAFÉ	Corporate average fuel efficiency	MMF	Man-made fiber
CAGR	Compound annual growth rate	MNCs	Multinational corporations
CAPEX	Capital expenditures	MoCI	Ministry of Commerce and Industry
CBDT	Central Board of Direct Taxes	MoHUA	Ministry of Housing and Urban Affairs
CBIC	Central Board of Indirect Taxes and Customs	MoRTH	Ministry of Road Transport and Highways
CE	Conformitè Europëenne	MRI	Magnetic resonance imaging
CETP	Common effluent treatment plant	MRO	Maintenance, repair, and operations
CFCs	Common facility centers	M-SIPS	Modified Special Incentive Package Scheme
CGTMSE	Credit Guarantee Fund Trust for Micro and Small Enterprises	MSMEs	Micro, small and medium enterprises

CIBIL	Credit Information Bureau (India) Limited.	MSP	Minimum support price
CII	Confederation of Indian Industry	MUDRA	Micro Units Development and Refinance Agency
CIPET	Central Institute of Plastics Engineering and Technology	NAT	Nucleic acid test
CIS	Commonwealth of Independent States	NBFCs	Non-banking financial companies
CKD	Completely knocked down	NCDs	Non-convertible debentures
CLE	Council for Leather Exports	NCR	National Capital Region
CPD	Cut and polished diamonds	NEV	Neighborhood electric vehicle
CREDAI	Confederation of Real Estate Developers' Associations of India	NIIF	National Investment and Infrastructure Fund
CSR	Corporate social responsibility	NOC	No objection certificate
CT	Computed tomography	NPAs	Non-performing assets
DGFT	Directorate General of Foreign Trade	OC	Occupancy certificate
DHI	Department of Heavy Industry	OCTG	Oil country tubular goods
DMIC	Delhi Mumbai Industrial Corridor	OEMs	Original equipment manufacturers
DPIIT	Department for Promotion of Industry and Internal Trade	OTT	Over the top
DRDO	Defence Research and Development Organisation	P&M	Plant & machinery
E2E	End-to-end	PCBA	Printed circuit board assembly
ELCINA	Electronic Industries Association of India	PF	Provident fund
EMC	Electronics manufacturing clusters	PFC	Power Finance Corporation
EOI	Expression of Interest	PLI	Production Linked Incentive
EPCG	Export Promotion Capital Goods	PMAY	Pradhan Mantri Awas Yojana
EPF	Employees' Provident Fund	PMAY(U)	Pradhan Mantri Awas Yojana (Urban)
ESDM	Electronics System & Design Manufacturing	PMU	Project monitoring unit
ESI	Employees' State Insurance	PPE	Personal protective equipment
ESIC	Employees' State Insurance Corporation	PPP	Public-private partnership
EU	European Union	PSUs	Public sector undertaking
EV	Electric vehicle	PTAs	Preferential trade agreements
EWS	Economically weaker section	PVC	Polyvinyl chloride
FAME-II	Faster Adoption and Manufacturing of Electric Vehicles-II	QR	Quick response
FDA	Food and Drug Administration	R&D	Research and development
FDI	Foreign direct investment	RBI	Reserve Bank of India
FICCI	Federation of Indian Chambers of Commerce and Industry	RERA	Real Estate Regulatory Authority
FIMI	Federation of Indian Mineral Industries	RFP	Request for proposal
FPOs	Farmer producer organizations	RTOs	Regional transport offices
FSAs	Fuel supply agreements	SAFTA	South Asian Free Trade Area
FTAs	Free trade agreements	SCBTS	Scheme for Capacity Building in Textiles Sector

FTTx	Fiber to the x	SEZ	Special economic zone
GDP	Gross domestic product	SGST	State Goods & Services Tax
GFR	Gross freight revenue	SIAM	Society of Indian Automobile Manufacturers
GICs	Global in-house centers	SIDBI	Small Industries Development Bank of India
GIDC	Gujarat Industrial Development Corporation	SIPCOT	State Industries Promotion Corporation of Tamil Nadu
GJEPC	Gem and Jewellery Export Promotion Council	SKD	Semi knocked down
GoI	Government of India	SLA	Service-level agreement
GST	Goods and Services Tax	SLBC	State level bankers committee
GVA	Gross value added	SMEs	Small and medium-sized enterprises
HCI	Hyper converged infrastructure	SOP	Standard operating procedure
ICDs	Inland container depots	SPECS	Scheme for Promotion of Manufacturing of Electronic Components and Semiconductors
ICE	Internal combustion engine	SPV	Special purpose vehicle
ICEA	India Cellular & Electronics Association	SRTCs	State road transport corporations
ICMR	Indian Council of Medical Research	STPI	Software Technology Parks of India
ICs	Integrated circuits	T&A	Textile & apparel
IESA	India Electronics and Semiconductor Association	TDAF	Technology Development & Acquisition Fund
IFLADP	Indian Footwear Leather and Accessories Development Programme	TVs	Televisions
IIFCL	India Infrastructure Finance Co. Ltd.	ULBs	Urban local bodies
IoT	Internet of things	UNCTAD	United Nations Conference on Trade and Development
IP	Intellectual property	UNWTO	United Nations World Tourism Organization
IPA	Investment promotion & facilitation agency	USP	Unique selling proposition
IPCA	Indian Printed Circuit Association	UT	Union territory
IT	Information technology	VAT	Value-added tax
ITeS	Information technology enabled services	VC	Video conferencing
ITIs	Industrial training institutes	VCs	Venture capitalists
ITPs	Integrated textile parks	ZLD	Zero liquid discharge

Special Thanks

We extend our gratitude to all the EY LLP experts for their invaluable contributions to this report:

- **Abhishek Gupta** | Partner | Government and Transaction Advisory Services
- **Agneshwar Sen** | Associate Partner | Tax and Economic Policy Advisory
- **Ajit Krishnan** | Partner | International Tax and Transaction Services
- **Angshuman Bhattacharya** | Partner | Consumer and Retail, Corporate Finance Strategy
- **Ashish Kulkarni** | Associate Partner | Clean Energy, Climate Change, Sustainability
- **Bhavesh Thakkar** | Partner| Tax and Regulatory, Indirect Tax
- **Mona Chhabra** | Associate Partner | Real Estate
- **Pinakiranjan Mishra** | Partner & Sector Leader | Consumer Products and Retail
- **Sailesh Rao** | Partner | Strategy and Operations
- **Som Kapoor** | Partner | Auto Sector

Our offices

Ahmedabad
22nd Floor, B Wing, Privilon,
Ambli BRT Road, Behind Iskcon
Temple, Off SG Highway,
Ahmedabad - 380 015
Tel: + 91 79 6608 3800

Bengaluru
6th, 12th & 13th floor
"UB City", Canberra Block
No.24 Vittal Mallya Road
Bengaluru - 560 001
Tel: + 91 80 6727 5000
Ground Floor, 'A' wing
Divyasree Chambers
11, O'Shaughnessy Road
Langford Gardens
Bengaluru - 560 025
Tel: + 91 80 6727 5000

Chandigarh
Elante offices, Unit No. B-613 & 614
6th Floor, Plot No- 178-178A,
Industrial & Business Park, Phase-I,
Chandigarh - 160002
Tel: + 91 172 671 7800

Chennai
Tidel Park, 6th & 7th Floor
A Block, No.4, Rajiv Gandhi Salai
Taramani, Chennai - 600 113
Tel: + 91 44 6654 8100

Delhi NCR
Golf View Corporate Tower B
Sector 42, Sector Road
Gurgaon - 122 002
Tel: + 91 124 443 4000

3rd & 6th Floor, Worldmark-1
IGI Airport Hospitality District
Aerocity, New Delhi - 110 037
Tel: + 91 11 4731 8000

4th & 5th Floor, Plot No 2B
Tower 2, Sector 126
NOIDA - 201 304
Gautam Budh Nagar, U.P.
Tel: + 91 120 671 7000

Hyderabad
THE SKYVIEW 10
18th Floor, "Zone A"
Survey No 83/1, Raidurgam
Hyderabad – 500032
Tel: + 91 40 6736 2000

Jamshedpur
1st Floor, Shantiniketan Building
Holding No. 1, SB Shop Area
Bistupur, Jamshedpur – 831 001
Tel: + 91 657 663 1000

Kochi
9th Floor, ABAD Nucleus
NH-49, Maradu PO
Kochi - 682 304
Tel: + 91 484 433 4000

Kolkata
22 Camac Street
3rd Floor, Block 'C'
Kolkata - 700 016
Tel: + 91 33 6615 3400

Mumbai
14th Floor, The Ruby
29 Senapati Bapat Marg
Dadar (W), Mumbai - 400 028
Tel: + 91 22 6192 0000

5th Floor, Block B-2
Nirlon Knowledge Park
Off. Western Express Highway
Goregaon (E)
Mumbai - 400 063
Tel: + 91 22 6192 0000

Pune
C-401, 4th floor
Panchshil Tech Park
Yerwada
(Near Don Bosco School)
Pune - 411 006
Tel: + 91 20 4912 6000

Ernst & Young LLP

EY | Assurance | Tax | Transactions | Advisory

About EY

EY is a global leader in assurance, tax, transaction and advisory services. The insights and quality services we deliver help build trust and confidence in the capital markets and in economies the world over. We develop outstanding leaders who team to deliver on our promises to all of our stakeholders. In so doing, we play a critical role in building a better working world for our people, for our clients and for our communities.

EY refers to the global organization, and may refer to one or more, of the member firms of Ernst & Young Global Limited, each of which is a separate legal entity. Ernst & Young Global Limited, a UK company limited by guarantee, does not provide services to clients. For more information about our organization, please visit ey.com.

Ernst & Young LLP is one of the Indian clients serving member firms of EYGM Limited. For more information about our organization, please visit www.ey.com/en_in.

Ernst & Young LLP is a Limited Liability Partnership, registered under the Limited Liability Partnership Act, 2008 in India, having its registered office at 22 Camac Street, 3rd Floor, Block C, Kolkata – 700016

EYIN2005-059
ED None

This publication contains information in summary form and is therefore intended for general guidance only. It is not intended to be a substitute for detailed research or the exercise of professional judgment. Neither EYGM Limited nor any other member of the global Ernst & Young organization can accept any responsibility for loss occasioned to any person acting or refraining from action as a result of any material in this publication. On any specific matter, reference should be made to the appropriate advisor.

AK1

ey.com/en_in

@EY_India EY EY India EY Careers India @ey_indiacareers