

Corona Virus and India: Economic and Sectorial Implications

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Abstract: The corona virus outbreak labeled as Pandemic by the World Health Organization (WHO) on 11 March 2020, is a new public health crises threatening the world with the emergence. It is caused by Severe Acute Respiratory Syndrome Corona virus 2 (SARS-CoV-2). It is believed that the virus originated in bats and was transmitted to humans in Wuhan, Hubei province, China in December 2019. There have been around 15, 33,541 reported cases of corona virus disease 2019 (COVID-2019) and around 90,000 reported deaths as on 09/04/2020. The only methods to prevent the disease are quarantining and social distancing. While the disease may be prevented by quarantining and social distancing but it will result in the stoppage of various activities and thereby impacting the economy as whole. The study covers the impact of Corona Virus on Health care Sector, Pharmaceutical sector, Aviation sector, Railways, Ecommerce sector, Poultry sector, Automobile sector, Tourism sector, Hospitality, Real Estate, Sports Activities Consumer electronics, FMCG sector, Shipping industry, TV and Film Industry, Education sector, Stock Market and Banking Sector. Having considered the implications of the pandemic, the study also recommends the socio-economic and political measures to combat the situation that would help us revive in the post Covid-19 World.

Keywords—*Corona Virus, Economy, Industry, Pandemic, Quarantine, Social Distancing.*

I. INTRODUCTION

Global economy was not in a good shape in 2019. All the major economies were unable to sustain the growth rate achieved in 2018 and at the same time Indian economy was poised to become the fourth largest economy by 2026 in the world surpassing Germany. The global demand had dried up and the manufacturing sector was recession hit. Corona virus not only infected the lungs of human being but infected the lungs of economy by spreading recession to the service sector. The corona virus outbreak was labeled as Pandemic by the World Health Organization (WHO) on 11 March 2020.^[1]

COVID-19 Pandemic:

Corona virus disease also known as COVID-19 is caused by a virus called Severe Acute Respiratory Syndrome Corona virus 2 (SARS-CoV-2).[2] It is believed by many health experts that the new strain of corona virus probably originated in bats or pangolins. The reports of the first COVID-19 cases started in December 2019 at Wuhan, a city in the Hubei province of China. This virus spreads, primarily through droplets of saliva or discharge from the nose when an infected person coughs or sneezes, so it's

important that people who are infected should isolate themselves and should practice social distancing.^[3]

CURRENT SCENARIO OF INDIAN ECONOMY

The pandemic has hit the Indian economy at a time when growth has slowed to the lowest in a decade (2011-2020), investments are dwindling and a consumption recovery is halting. This has instigated economists to pare India's growth projection for 2020-21 closer to 5% from about 6% as estimated earlier. Moody's Investors Service said Covid-19 will likely depress global growth in 2020 below 2.5%, the recessionary threshold for the global economy^[4]

The Revised Budget Estimates for financial year 2019-20 in terms of fiscal deficit was Rs. 7.6 trillion which will further balloon amidst COVID-19 shock in the month of March 2020. Moreover economic impact of COVID-19 will be visible on the Budget Estimates of fiscal deficit for year 2020-21 which was approximated to Rs. 7.9 trillion.^[5]

Pandemics like SARS, Foot & Mouth, Swine Flu have created devastating economic effects historically. If we quantify few of the major pandemic like SARS, had an economic impact ranging from \$30-\$50 bn together for

China, HongKong, Singapore and Canada during 1998-2006, Foot & Mouth had economic impact for UK of \$25-\$30bn during 1998-2004, and Avian Flu had economic impact for Asia of \$5-\$10 bn during 2002-2005 (Kim, 2015). SARS-CoV-2 is expected to cross all the historical economic impacts.

II. REVIEW OF LITERATURE

Various pandemics in history such as Black Death Plague, Influenza, Ebola, SARS and the pandemic related crises have caused enormous negative impacts on health, economies, and security of nations in the world (Qiu et al., 2017). For example, during Cholera outbreak in Peru the estimates of total export losses for 1991 were found to be US \$12.9 million. The overall economic impact in monetary terms totaled to \$200 Millions which includes direct cost, indirect costs (Morbidity & Mortality), Exports, Tourism, Domestic Production and others (Susrez and Bradford, 1993). The impact of the SARS outbreak in 2003 was relatively moderate for the stock market as The Hong Kong Hang Seng Index went down only by 1.78 % between 12th March and 30th April. There was a 6.1 percent drop from the previous year in the retail sales figure of March which was HK\$14.17 billion. There was a decline in Retail sales of April of 15.2 % as compared to the figures of previous year. The economic impacts of SARS on consumption, tourism, and travel-related services were for temporary time basis (Siu and Wong, 2006).

Talking about the economic impact by Ebola, it is revealed that there was a decline in exports of 10 percent for Guinea, 38 percent for Liberia, and 20 percent for Sierra Leone. As per the CGE simulations done in the study, the estimated loss in exports due to the epidemic would be 30 percent, 14 percent and 10 percent in Guinea, Liberia and Sierra Leone respectively (UNDP Report, 2014). Due to Spanish Flu in Sweden there was negative labor supply shock, due to deepening of capital, wages increased whereas capital returns are reduced. The increasing wages increase the cost of producing human capital and thus resources are shifted to the production of final goods resulting in reduced growth rate of the economy (Karlsson et al., 2012). Rapid spread of the Black Death (Plague caused by black mouse) in Europe caused direct impacts on the economy and society through contraction in production and in consumption (Galán, 2013).

It is reported by the United Nations Economic Commission for Africa (ECA), COVID-19 has peeled off USD 29 Billion from African economies and it is estimated that, this crisis will wipe off 1.4% of the USD 2.1 Trillion cumulative GDP of Africa as more than ten countries within Africa have done total or partial shut-down in almost all sectors which has led many activities to be suspended (Kassema, 2020). It is known that countries like Spain, Italy, etc. did not practice quarantine initially

due to which the virus was widely spread in their country (Khan et al., 2020).

Due to ongoing lockdown and stoppage in economic activities, it is estimated that in 2020, there will be severe downfall of trade in every part of the world which will affect all sectors of the economy thereby impacting countries that are strong exporters as they will not have output for their local companies and those that are importers will face shortage of raw materials. It is expected by the World Trade Organization (WTO) that global trade will fall up to 32% this year due to the corona virus pandemic. (Fernandes, 2020)

There are verbal physical attacks and xenophobic attacks on people of Asia and descriptions of the Corona Virus as “the Chinese virus” are all connected in this long legacy of associating epidemic disease threat and trade with the movement of Asian people resulting into heavy & sudden losses in global stock exchanges and have led to risk of recession (White, 2020).

Over the last month, China has seen a dramatic reduction in its manufacturing Purchasing Managers Index (PMI) to 37.5, its lowest reading since 2004 and Covid-19 is expected to impact the \$294 million trade of India in Automotive, Electrical machinery, Wood products and furniture, Metals and metal products, Leather products, Chemical sector & Textile and apparel (Koshle et al., 2020)

COVID-19 can affect the global economy through impact on production, supply chain and market disruption and financial impact on firms and financial sector. According to the World Bank, Korea, Japan, and other Asian countries will likely experience slow growth in the first half of 2020 because of production slowdown in China. Many manufacturing firms rely on China for imported intermediate and also for sales in China to meet financial goals. The slowdown in economic activities and transportation restriction in affected countries will likely have an impact on the production and profitability of specific global companies involved in manufacturing and in raw materials used in manufacturing. It is known that Small and medium-sized firms may have greater difficulty surviving the disruption caused by COVID-19. As a result of temporary disruptions of inputs and/or production might stress some firms especially those with inadequate liquidity. There might be incorrect anticipation by Traders in financial markets There might be significant decline in equity markets and corporate bond markets, with investors preferring to hold government securities (particularly US treasuries) because of the uncertainty and pessimism created by the pandemic.^[6]

It is therefore important to understand that each epidemic/pandemic is unpredictable and unique and we are still learning and understanding about the critical features of COVID-19, therefore it is necessary to Update intelligence by tracking the latest information and being

beware of hype by thinking critically about the source of the information before taking steps on it. It is important for businesses to make sure that response is planned and balanced across: Communications, employee needs, travel, remote work, supply-chain, business tracking, and corporate responsibility. It is important have qualities of Resilience, Diversity, Modularity (assembling the business system in different ways), Evolvability, Prudence (avoiding hysteria), and embeddedness (living with values, not to survive at others' expense). (Barzani,2020)

Moreover The Economic cost of pandemics can be managed with the policies that help countries to combat with these pandemics when they occur. Betterment in Urban Infrastructure, Provision of clean water and Investment in proper sanitation can help to lessen the frequency of humans coming in contact with such dangerous pathogens. Improvement in technology will reduce the encumbrance of huge outbreaks. Epidemic Preparedness of various countries will help them to fight with such outbreaks over a period of time^[7]

PURPOSE

The purpose of this research paper is to a) to analyze the impact of corona virus on various sectors of Indian economy and b) to study the measures taken by them to reduce the impact. The scope of study is confined to Health Care Aviation, Railways, Ecommerce, Poultry, Automobile, Tourism, Consumer electronics, FMCG, Shipping, Sports activities, TV and Film Industry, Hospitality, Pharmaceutical, Education sector, financial sector and Banking Sector.

III. METHODOLOGY

Our approach is guided by Qualitative research method in order to gain insight of economic implications due to corona virus. Content analysis method is adopted by using literature of peer-reviewed journals of social sciences and medicine, periodicals released by international and national organizations, to rationalize the approach of study. Periodicals used in the study are selected keeping in mind the reliability, accuracy and adequacy of information. Periodicals such as Bloomberg and similar Financial digital content providers, WHO, Trading economics, National Herald, KPMG, World Bank, CAPA, Sea Intelligence Reports, CRISIL, Nielsen, Strategy Analytics, MPA(Media Partners Asia), India Ratings & Research, Newspapers and media content were studied to identify the sectors and economic variables requisite for the study. We extrapolated the measures taken to effectively deal with pandemic from these prior works of Daszak et. al., (2020), Busehet. al., (2020), and Junmo Kim (2015). Interpretation of data is textual and nonstatistical in nature.

IV. RESULTS AND DISCUSSION

AVIATION SECTOR

According to a report by CAPA (Center for Asia Pacific Aviation), Indian aviation sector is projected to incur a staggering USD 3.3-3.6 billion loss in the first quarter of the next financial year (2020-21) if flight services remain grounded till the end of June. India has abated operation of commercial flights till April 15, 2020 as part of larger efforts to prevent the spread of corona virus infections in the country.^[8]

TOURISM SECTOR

The cascading effect of the corona virus has incapacitated Indian tourism and hospitality industry. Foreign tourist arrivals (FTA) last month dropped 9.3 per cent month-on-month and 7 per cent year-on-year. It is estimated that a staggering ₹5 lakh crore will be on risk. In February 2020, there were 10.15 lakh FTAs, against 10.87 lakh in February 2019 and 11.18 lakh in January 2020.^[9]

RAILWAYS

Railways are the lifeline of the nation. According to the data provided by the ministry it is known that Indian Railways operates 13500 passenger trains and long-distance trains every day. An estimated loss of ₹1700 crore can hit the railways. According to the data, the cancellation of tickets caused a loss of ₹176 crore in the seven days to the Railways. (15th march to 23rd march)^[10]

HEALTH CARE SECTOR

According to the National Health Profile (NHP), 2019, health expenditure in 2015 was just 3.4%. The report also states 4, 19, 96,260 cases and 3,740 deaths from acute respiratory infection in 2018. In the same year, 7, 59,004 cases and 4,105 pneumonia deaths were recorded. This data is crucial because the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) causes respiratory distress and attacks the lungs. Moreover India has just 1.3 hospital beds and 0.8 physicians for every 1,000 people which make this situation very serious for India thereby putting a lot of burden on the Health Care Sector.^[11]

PHARMACEUTICAL INDUSTRY

Though India is one of the top formulation drug exporters in the world, the domestic pharma industry relies heavily on import of bulk drugs (APIs and intermediates that give medicines their therapeutic value). India imported around Rs 24,900 crore worth of bulk drugs in FY19, accounting for approximately 40 percent of the overall domestic consumption. With India's API imports from China averaging almost 70 per cent of its consumption by value, importers are at the risk of supply disruptions and unexpected price movements. For many critical antibiotics and antipyretics, dependency on imports from China is close to 100 percent.^[12]

HOSPITALITY SECTOR

Due to the coronavirus (Covid 19) pandemic the Indian hospitality industry will suffer losses of ₹620 crore. The hotel chain and standalone hotel segment will suffer losses over ₹130-155 crore and the alternate accommodation segment will make losses of about ₹420-470 crore and may be more than that. According to the report, the overall loss of total revenue for the around 140,000 branded/organised hotel rooms across the country will be between ₹130-155 crore. This will result in 27 percent to 32 percent erosion in the overall revenue as compared to last year.^[13]

E-COMMERCE INDUSTRY

As per the reports, five big tech giants, Apple, Amazon, Microsoft, Facebook and Alphabet have collectively lost US \$1.3 trillion in value over the past month as markets crippled by the spread of coronavirus.^[14] In India e-commerce is expected to have lost \$400 million in a week. India's largest e-commerce company Flipkart has confirmed that it will suspend all operations during the 21-day lockdown period.^[15]

POULTRY INDUSTRY

People are avoiding consumption of meat, fish, chicken, and egg etc. Due to the reduction in demand, the wholesale price of chicken had dropped by as much as 70 %. As a result, chicken was now available at Rs 100-150 per kg in retail compared with Rs 180-200 earlier. It is estimated that the industry might bear losses of approximately ₹22500 crore. Vijay Sardana, an agricultural economist and adviser of the Poultry Federation of India, said that there will be a loss of 75% in case of birds which will ultimately lead to revenue loss and will impact jobs of approximately two crore people employed in the poultry industry.^[16]

AUTOMOBILE INDUSTRY

As per the ET Auto report, the Indian auto sector earns gross revenue of around ₹ 2,000 crore each day and shutting down the production by the manufacturers will result in a revenue loss of up to ₹ 15,000 per day wherein the annual business of the sector stands at ₹ 7.8 lakh crore. It is estimated that approximately \$2 billion might be lost due to Covid. Additionally, the industry also contributes around 7.5 per cent to India's overall GDP, which accounts for 49 per cent of its manufacturing sector.^[17]

CONSUMER ELECTRONICS

A Recent report from research Strategy Analytics reported a significant 38% dip in Smartphone shipments in the month of February 2020 due to the Covid-19 Pandemic. According to Linda Sui, Director at Strategy Analytics, global Smartphone shipments descended from 99.2 million units in the month of February, 2019, to 61.8 million in February, 2020. This reduction is around 40%.^[18]

FMCG SECTOR

Due to the Covid-19 outbreak, safety and hygiene is on top of everyone's mind, Nielsen findings reveal that the sales of hand sanitizers has witnessed a 53% sales in February 2020 versus a year ago and 11% growth in the previous three months. The liquid hand wash sales growth was at 42% versus 28% in mid-Feb to mid-March last year. Sale of antiseptic liquids have jumped to 39% from 6% and toilet soaps to 8% from 7%. E-commerce order growth for hand sanitizers is 14 times the normal growth. In case of e-commerce, the order growth has witnessed more than two-fold jump witnessed in cooking oil, 21% in cooking mediums and 16% in packaged flour whereas Salty snacks saw growth of 84%, soft drinks at 68% and biscuits at 31%.^[19]

TELEVISION AND FILM INDUSTRY

As per the ET reports, the losses because of postponing of release of the films or shooting of under-production films could be in the range of ₹ 200-250 crore for the next two-three months.^[20]

REAL ESTATE

According to India Ratings, residential real estate demand is expected to decline in the financial year 2019-20 after showing a slight improvement over FY 2017-2019.^[21]

There has been a decline in residential sales across the top six cities in India from 279.6 million sq.ft. in 2019 to 204 million sq.ft. in Apr-Dec of FY20 i.e. 4 percent drop. Anurag Mathur Savills India CEO said that Housing sales will notice a sharp decline for at least the next one quarter. He also said that Even if the situation settles down quickly, it will take time for homebuyers to come back to the market.^[22]

Mumbai recorded the maximum yoy decline in housing supply by 61% and Pune recorded the decline by 56%, while Chennai and Kolkata were up 16% and 8%. Further, ICICI Securities said that in April-May 2020 new launches planned will be pushed back till at least September 2020 Last week. This epidemic was termed as a "black swan" moment for the Indian real estate sector by ICICI Securities.^[23]

SPORTS ACTIVITIES

Media Partners Asia has expected a 35% drop in sports-related media revenue generation in Asia-Pacific for the 2020 calendar year, effectively indicating a \$2.0 billion revenue loss globally. Numerous sporting events and the notable tournaments over the past few weeks have been cancelled or rescheduled because of the novel coronavirus.^[24]

SHIPPING INDUSTRY

As per the Sea-Intelligence reports corona virus has been costing shipping liners up to \$350 million in lost revenues every week. As per the sources, per day per vessel has weakened by more than 75-80% in dry bulk trade.^[25]

EDUCATION SECTOR

The education sector has been hit, with schools, colleges and other institutions ordered shut down. Most examinations have been cancelled or put off, assignments and important lectures are getting postponed. Due to lockdown and the outbreak, approximately 600 million learners across the globe (only school going students) were estimated to be affected due to the close down of educational institutes.^[26]

STOCK MARKET

Most Global Markets saw sharp declines, but India was the major market to log double digit % fall. Sensex declined from 41253.74 points in December 2019 to 29468.49 in March 2020 due to Covid-19 as FII and DII both creating selling pressures. At the forefront of the market fall have been banking and financial stocks, which enjoy high weighting in the benchmark indices. The Bank Nifty index is down nearly 50 per cent this year.^[27]

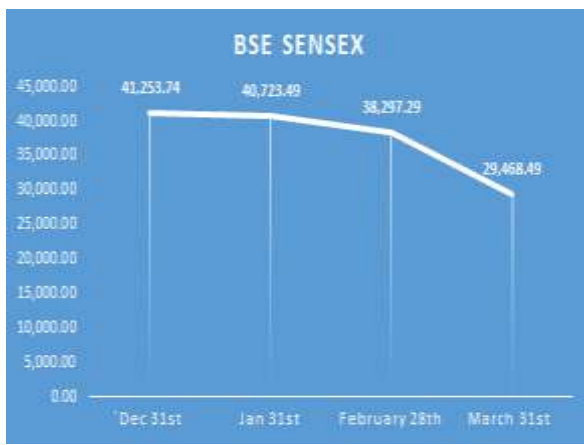


Figure 1 BSE SENSEX

<https://www.bseindia.com/Indices/IndexArchiveData.html>

The above data depicts that SENSEX is continuously sharply declining from December 2019 to March 2020 i.e. from 41,253.74 points to 29,468.49 because of the news of Outbreak of the Pandemic and so the investors have lost their wealth due to the crash in the market. And surely the market will take time to recover from such a heavy shock that hit the Indian stock market along with all the stock markets globally.

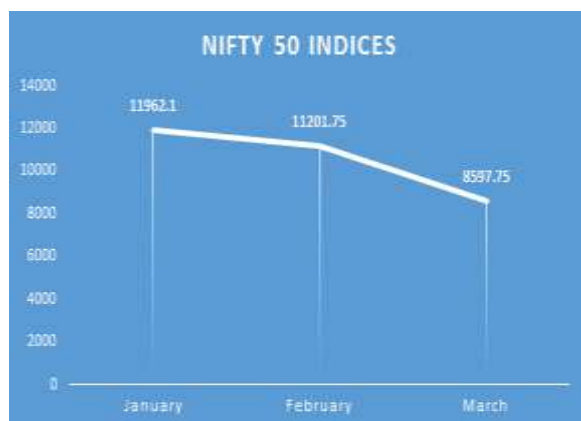


Figure 2 NIFTY INDICES

<https://www.niftyindices.com/reports/historical-data>

The above chart shows the Nifty 50 indices, this reflects a downfall in indices in the very first quarter of 2020 due to the outbreak.

BANKING SECTOR

In India, Banks have total exposure to Covid-19 hit sectors of more than Rs. 11 lakh crore. As per RBI's sectoral data, the loan outstanding against the trade (import and export industries) is the highest at Rs 5.19 lakh crore followed by MSMEs, where the outstanding loans are Rs 4.73 lakh crore. Transports operators owe Rs 1.41 lakh crore, and tourism, hotel and restaurants (Rs 45,394 crore).^[28]

V. FINDINGS AND RECOMMENDATIONS

In this section, we epitomize and organize findings and recommendations from our analysis of literature and analysis of implications on various sectors of Indian economy as follows:

Findings

Summarized table for Economic implications

Sectors	Estimated Loss	Remarks
Aviation	\$3.6 billion	
Tourism	₹5 lakh crore	
Railways	₹1700 crore	
Hospitality sector	₹625 crore	
E commerce	\$2400 million	(\$400 x 6)
Poultry	₹22,500 crore	
Auto industry	\$2 billion	
Television and Film industry	₹250 crore	
Sports activities	\$2 billion	
Shipping	\$2100 million	(350 x 6)

Table-1 Source: Created by authors based on data

Recommendations

- Since both SARS and SARS-CoV-2 appear to have an exotic animal origin there should be a ban on purchase, trafficking, sale of wild animals and prosecution of illegal activities. Moreover early recognition of the problem, early identification of infected patients and early mobilization of healthcare resources can contain the pandemic.(Yongshi Yang, FujunPeng, Runsheng Wang, Kai Guan, TaijiaoJiang,GuogangXu, Jinlyu Sun, Christopher Chang, 2020)
- In order to prevent the next epidemic and pandemic research and investment are very important in the following areas: a) Surveillance among wildlife to identify the high-risk pathogens they carry, b) Surveillance among people who have contact with

wildlife to identify early spillover events and c) Improvement of market biosecurity regarding the wildlife trade. Moreover international collaboration among scientists is essential to address these risks and prevent the next pandemic (Daszak et. al., 2020)

- Considering the nationwide lockdown the tax compliances deadline should be extended and taxes need to be reduced to minimize the impact of decline in demand. Manufacturing rules should be eased for essential commodities and import duties should be reduced for the same. Merchants, Retailers and consumers should be incentivized by reducing taxes and encouraging digitized payments
- Data from China, South Korea, Italy, and Iran indicate that the spread increases sharply with age and is higher in people with COVID-19 and underlying concurrent conditions Therefore targeted social distancing for these groups could be the most effective way to reduce the spread of disease(Roy M Anderson, Hans Heesterbeek, Don Klinkenberg, T Déirdre Hollingsworth , 2020)
- Analysis shows that most of the messages that are circulated on social media fall into the category of panic generation, fake information of prevention and cure and humorous messages. The news about the use of hydroxychloroquine as a potential prophylactic drug has led to irrational use of the drug by the common public that leads to stock outs resulting in missed opportunities for healthcare staff at risk to use it. It was thereby recommended that the messages should be forwarded responsibly by the people and the people receiving the messages should not apply anything without confirming the source. (K RajasekharanNayar , LalSadasivan ,BindyaVijayan ,MuhammedShaffi, Arathy P Rao, 2020)
- To provide immediate relief to the airlines with full input tax credit on all goods & Services , Aviation turbine fuel(ATF) needs to be brought under the ambit of GST @12%.There should be GST Holiday for all travel & tourism services. For the next one year, tax waivers should be provided to all the state Governments for entire Tourism Industry. Health care & Insurance Incentives should be provided. Marketing Campaigns should be carried out to promote domestic tourism.
- There should be gradual opening of markets or malls by following social distancing norms. Preventive measures should be taken to disinfect the markets or malls across all Tier1 & Tier 2 cities. To ease distribution, incentives should be provided to all Transport & Logistic operators.
- In the education sector, E-Content Development & E-training delivery should be encouraged by professional

development of teachers to teach and conduct assessments online. Health related courses should be incentivized to spread awareness among people. Higher Education Institutions & Schools should be encouraged to digitize the content and investment should be made to promote the remote delivery of courses.

- In the Pharmaceutical Sector, Dependence on China should be reduced for import of raw materials. Also the investment in Research & Development should be incentivized to enhance collaboration between industry & Academics.
- Therefore it is very crucial to encourage global public health research efforts that combine integrative, top down and bottom-up approaches to prevent disease and care considering knowledge and cultural sensitivity of local populations. (Aaron G. Buseh, Patricia E. Stevens, Mel Bromberg and Sheryl T. Kelber ,December 2014)

VI. CONCLUSION

It is thereby concluded that the problem has to be solved from roots by banning the trafficking of exotic animals and thereafter containing the pandemic by early diagnosis and proper treatment. Moreover investment in research has to be encouraged to prevent future pandemics. To tackle the situation of nationwide lockdown and to shift Business Landscape after Covid-19, Localization of Supply chain, digitalization, tax relief schemes by government, less dependence on imports and awareness regarding health care are strategically very important. Moreover, policies will need to evolve faster than the market and policy makers will need to be more responsive and inclusive in this agile environment. Hence we can say that measured, practical and informed approach from political and corporate leaders will enable economies to navigate in the post Covid -19 world.

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