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## The impact of COVID-19 on infrastructure

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### Abstract

One could wish to assume that the industry is better prepared for the second wave of COVID-19 than it was at the pandemic's start last year. When the first wave shook the world, it was an unparalleled occurrence. The Onset of the Second Wave, which has likely reached its peak, appears to have reintroduced a temporary bane in the Sector, which is now felt at both the development and building stages as well as the operations stage. However, the bane creates investment opportunities as the world becomes more prepared to deal with the epidemic. The article discusses the impact of the second wave. COVID-19's Impact on Infrastructure.

**Keywords:** COVID-19, unparalleled, reintroduced

### Introduction

The novel coronavirus ("COVID-19") pandemic is unprecedented, and its consequences continue to jeopardise the world economy's survival. The pandemic is wreaking havoc on a variety of industries and sectors, some more severely than others. The impact on infrastructure firms can be quantified at any point in the development, building, or operating phases. Contractors for EPC projects have declared force majeure and/or off-takers have defaulted. This results in liquidity constraints and funding shortfalls<sup>[1, 2]</sup>.

The Government may also prioritize its spending commitments in light of the pandemic, with a revised 2020 budget focusing more on recurring expenditure. This might have an effect on the annual infrastructure investment deficit in the short to medium term unless interventions are used. We discuss the impact of COVID-19 on infrastructure projects and assets in this post, as well as essential factors for responding to the pandemic's harmful consequences<sup>[1, 2]</sup>.

COVID-19, it goes without saying, has an impact on infrastructure-both existing and planned projects. Intuitively, we might understand that demand interruptions result in income losses for PPPs; the building is impacted; and future planning is extremely difficult while the sands continue to move<sup>[3]</sup>. At the World Bank, we have noted that in the medium term, we should anticipate a sustained decline in revenue, adverse effects on access to financing for projects that have not yet reached financial close, and possibly continued disruption of construction schedules for already-started projects as the virus' trajectory changes.

What are the long-term consequences of the toll infrastructure is taking on crisis recovery once we arrive? On the one hand, a decline in infrastructure balance sheets, development, and maintenance does not bode well-especially considering the sector's critical role in connecting people to employment, products to markets, electricity to hospitals, and internet connectivity to students. On the other side, we know from prior crises that many governments will employ infrastructure expenditure to stimulate their economies, providing a glimmer of hope for the industry and allowing it to continue improving people's quality of life globally.

Apart from the health sector, every sector in the world is in trouble as a result of Covid-19 and its economic impact beginning in January 2020. India's infrastructure industry is no exception, and it is suffering miserably from the impact of Covid-19, given the global interruption of critical infrastructure projects. Between December 2020 and February 2021, the global economy's prospects appeared to have barely changed. They were, however, repulsed with unremitting ferocity in March 2021 by a sledgehammer in the form of the second Covid wave. Inadequate investment and declarations of Force Majeure have resulted in funding gaps in infrastructure development. With oil prices in free fall, economies are fighting for survival, and even industrialized nations are on the verge of or already in recession<sup>[4, 5]</sup>.

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Given the dire circumstances during the first wave, it appeared as though financing in the infrastructure sector would suffer a short-term decline, all the more so given the Force Majeure condition announced by the Ministry of Finance, more precisely in relation to procurement, and the Ministry of New and Renewable Energy, specifically in relation to the Grid Solar Power Division. It did, as predicted. However, it was anticipated that after the pandemic was contained, the focus would shift away from crisis management and toward infrastructure investment. The collective wisdom of policymakers had to guarantee that they did not solely focus on future development but also took proper mitigating measures [5].

It is premature to estimate on the amount of economic stimulus that infrastructure spending will provide in the (hopefully near) future, especially as fiscal flexibility continues to tighten. However, attempting to quantify the pandemic's current impact on infrastructure projects is beneficial.

### Difficulties resulting from the lockdown

The lack of preparedness for the first wave created a slew of complications, as the globe was forced to transition from a physical form of functioning to a wholly virtual mode. While it benefited the information technology infrastructure industry, the sector was unprepared to handle such a burden. In a country like India, where language and technology are highly variable within a 5-kilometer radius, transitioning to a virtual style of operation during the shutdown was a significant difficulty. Uncertainty and initial denial exacerbated the pain, as the industry anticipated a return to normalcy after a few of weeks by breaking the chain and choosing to shut down activities at that time. While governments are better equipped to deal with such an event now, the suddenness of last year's lockdown left the business with little time to prepare for a Plan B. Uncertainty has been created by the virus's infectious nature and the absence of a confirmed therapy. The globe was adopting a trial-and-error approach to containing the virus's devastation to human life. While limiting the spread took precedence, the ambiguity regarding the status of the contracts remained a major concern as well. The majority of the first wave was spent assessing the situation, developing a strategy for mitigating the damage, and implementing corrective steps to address the lack of readiness [4].

### Invoking Force Majeure

During this time, the term "Force Majeure" gained prominence. Force Majeure dominated the headlines for a long time, with courts only considering urgent matters. Historically, courts used force majeure provisions to deal with natural disasters, strikes, explosions, and government actions. However, the act of God covered a pandemic but not to the same level. The most recent use of Force Majeure and its interpretation during a pandemic has required frequent court intervention. While most contracts in the infrastructure and construction space include a Force Majeure clause, such clauses were rarely used prior to Covid-19. Covid-19 has rewritten the law on Force Majeure, allowing for new interpretations of the Clause [4, 5].

Both Force Majeure and Act of God are covered by the Indian Contract Act, 1872. Section 32 of the Act deals with contingent contracts and states that if a contract is based on a future occurrence that cannot happen, the contract is

worthless. It is void if it becomes impossible due to an incident that the promisor could not prevent after the contract is established. Section 32 of the Act governs force majeure events related to a contract clause (express or implicit), whereas Section 56 of the Act governs force majeure events unrelated to a contract agreement (express or implied). The Ministry of Finance announced on 19-02-2020 that supply chain disruption due to COVID-19 outbreak shall be recognized as a natural calamity and covered under force majeure, and wherever appropriate, must apply [6]. It should be highlighted that this does not apply to all commercial transactions, as it only applies to supply chains. The force majeure clause was not defended by all parties. The clause must be included before signing the contract. Second, non-performing parties should verify the force majeure clause for reference of a pandemic. Third, the courts' interpretation of this provision differs, hence its applicability varies [7].

Before utilizing the force majeure clause, the performance must be objectively impossible, difficult, or the non-economic performance is insufficient. A party can only be prevented from performing its obligations by occurrences specifically stipulated in the contract [8]. Impossibility means a physical or actual impossibility.

### Exemptions from the force majeure clause

In the absence of a force majeure clause, the Indian Contract Act's section 56 applies. The condition stipulates that if unavoidable circumstances prevent the promise from performing an act, the contract is void. This allows the parties to demonstrate the "total" inability of contract performance due to a force majeure incident. In the sense that the contract's core premise should be ended, and the contract should not be performed further [7, 8].

### Second Wave and its Impact

The second COVID-19 wave in India has resulted in spiraling cases, limited treatment supplies, and increased mortality, particularly among the young. Understanding why the second wave was more harmful than the first should assist future control strategies target areas of concern [9, 10].

Studies have found pathogenic double-mutant and triple-mutant SARS-CoV-2 strains circulating in India. This virus has evolved in transmissibility and virulence. According to Moya and colleagues, increasing population density increases viral replication, mutation, and evolution. Numerous viral variants have persisted in the environment due to India's overpopulation and lack of a systematic containment strategy. The earlier discovered variants in other countries, such as B.1.351, B.1.1.7, and P.1, as reported by Boehm and colleagues, along with the new variations in India. The COVID-19 outbreak in India is being blamed on the SARS-CoV-2 double-mutant strain B.1.617, which has the structural alterations Glu484Gln and Leu452Arg in the spike protein. Consequences of Covid 19 should be addressed in all contracts (new and amended). While the owner/employer may not be eager to agree, the contractor should. Even though a prolonged pandemic causes slowdown and recession, contractors should not feel pressurized and avoid vulnerable contracts. Containment contracts would only result in future losses due to disease unpredictability and ineffectiveness [11, 12].

**Importance of infrastructure development** <sup>[13, 14]</sup>

- Necessary for growth: It is widely agreed that infrastructure investment is required for growth. Infrastructure provision is critical for prosperity and for growth to be inclusive.
- Economic development: It has the potential to alleviate widespread poverty, unemployment, backwardness, poor production, low productivity, and a low standard of living, among other issues.
- The following are some of the reasons why infrastructure investment is required for growth:
- Power shortages compel the economy to rely on expensive captive power, resulting in excessive costs and a lack of competitiveness.
- Inadequate transportation infrastructure creates bottlenecks in both the availability of raw materials and the movement of completed goods to markets.
- If farmers do not receive a fair price for their produce due to a lack of connectivity via high-quality rural roads, rural incomes remain low, undermining the benefits of high overall growth performance.

**The State of the Road Sector** <sup>[15]</sup>

- Importance of the Road Network in the Country: A well-developed road network is a necessary condition for the economy to grow rapidly. Roads connect inaccessible locations, open up formerly isolated regions, and promote access to markets, commerce, and investment.
- Multimodal transportation network: Roads should not be viewed in isolation but as an integral part of a multimodal transportation system that connects airports, railway stations, ports, and other logistical centers.
- Significant contribution to Gross Value Added (GVA): Road transport is the major method of transportation in terms of GVA and traffic share.
- The transport sector contributed around 4.77 percent to GVA in 2017-18, with road transport accounting for 3.06 percent.

**Railways Sector Situation** <sup>[16]</sup>

- Railway network scope: With over 68,000 route kilometers, Indian Railways (IR) is the world's third-largest network managed by a single entity. IR is the world's largest passenger airline and the fourth largest freight airline.
- Indian Railways place a premium on safety and cleanliness. Railway cleanliness initiatives include special campaigns under the Swachh Bharat Abhiyan (SBA) - Swachh Rail, Swachh Bharat.
- There is a need for additional development on the safety front.
- Upgrading and Privatization: A specific SPV has been established to carry out railway station modernization on a PPP basis. Adarsh Station Scheme is another project aimed at modernizing IR.
- Efforts to privatize the railways continue.

**The State of the Civil Aviation Industry** <sup>[17]</sup>

- Market size: India is the world's third-largest domestic market for civil aviation, after China and Brazil. India's civil aviation sector is a tough nut to crack.
- Airports are increasing capacity utilization through automation. Since the strategy for operationalizing

unserved airports began, a total of 43 airports have been operationalized (Udan). The following are some recent advancements in the field:

- In the World Economic Forum's 2019 Global Competitiveness Report, India was ranked first in airport connectivity, among seven other countries (the United States of America, China, Japan, and the United Kingdom).

**The State of the Shipping Industry** <sup>[18, 19]</sup>

- Sector scope: Around 95% of India's trade by volume and 68% by value is transported by sea.
- Sectoral issues: On the eve of independence, India's shipping tonnage was low (1.92 lakh Gross Tonnage (GT)). Following that, it progressively climbed but stayed stable at around 70 lakh GT in 2004-05.
- Despite having one of the world's largest merchant shipping fleets, India's contribution of total world deadweight tonnage (DWT) is only 0.9 percent as of January 1, 2019.
- India's existing fleet is also aging.
- In 2004-05, a new tonnage tax scheme was implemented, which helped the business. However, there are still lingering shadows of the global economic downturn's detrimental consequences on the industry.

**The State of the Telecommunications Industry** <sup>[17]</sup>

- Market size: Total telephone connections in India increased by 18.8% between 2014 and 2019. Urban areas are densely connected. Wireless telephony now accounts for 98.27 percent of all subscriptions, while landline telephones account for just 1.73 percent.
- At the end of September 2019, India's overall teledensity was 90.45 percent; rural teledensity was 57.35 percent, and urban teledensity was 160.71 percent.
- The private sector dominates, accounting for 88.81 percent of the total.
- Internet and broadband adoption in India has continued to grow at a rapid pace. Between 2014 and 2019, the total number of broadband connections more than doubled.
- Sector competition: There are four significant participants in the sector, three in the private sector and BSNL and MTNL in the public sector, all of which operate in mutually exclusive zones. Since 2016, the sector has been subjected to intense competition and price reductions by Telecom Service Providers (TSPs), putting the sector under financial strain. While some operators have declared bankruptcy, others have amalgamated in order to increase their viability.
- Revival plans: The tariff war has hurt BSNL and MTNL's cash flow, resulting in growing losses. The government's revival strategy for these PSUs includes the following:
  - Staff cost reductions through the Voluntary Retirement Scheme.
  - Spectrum allotment for 4G.
  - Asset monetization of BSNL/land/building, MTNL's tower, and fiber assets.
  - Restructuring of debt via sovereign guarantee bonds
  - Approval of the merger of BSNL and MTNL on a 'in-principle' basis.

### The State of the Telecommunications Infrastructure and Connectivity <sup>[20]</sup>

- Bharat Net Programme: Providing broadband connectivity to all 2.5 lakh Gram Panchayats (GPs) throughout the country in order to achieve the Digital India campaign goal of constructing broadband highways. The following are some specifics about the project:
- Optimal combination of optical fiber, radio, and satellite technologies
- Public Wi-Fi hotspots/access points
- Left Wing Extremism (LWE) Project for Areas in the North East Region.

### Petroleum and Natural Gas Situation <sup>[17]</sup>

- Market size: India is the world's third-largest energy user, behind the United States and China. India's energy requirements are met mostly by coal, crude oil, renewable energy, and natural gas, accounting for 5.8% of global primary energy consumption.
- Oil production performance: India's oil output is among the lowest among the world's major economies and has been dropping for some time. Domestic crude oil production has decreased both onshore and offshore.
- The drop in crude oil production may be attributed to natural decline in matured fields and the absence of significant finds.
- Additional refining capacity is required to accommodate the increased demand for petroleum fuels and petrochemicals.
- Natural gas production performance: PSUs dominate natural gas production, with their proportion increasing over time. Domestic natural gas production declined until 2016-17, but then stabilized in 2017-18.
- Government changes include the following: Simplified fiscal and contractual terms; Incentivizing gas production through market and price flexibility; and introducing cutting-edge technology and capital. Increased functional autonomy for National Oil Companies in order to collaborate; Private sector involvement.

### The state of the energy sector <sup>[21]</sup>

- Electricity sector improvement: The World Economic Forum (WEF) lauded India's rapid progress toward universal electrification.
- This was made possible by strong political commitment, a stable policy regime, and the use of grid expansion and decentralized generating sources, as well as a conducive climate for infrastructure investment. The majority of states have expanded their electricity supplies.
- Sector-by-sector distribution: Thermal power accounts for around 63% of total installed capacity and roughly half of generation capacity is in the private sector.
- Initiatives: Access to electricity is critical for inclusive growth and the promotion of ease of living. Several initiatives in the field include the following:
- Pradhan Mantri Sahaj Bijli Har Ghar Yojana (Saubhagya), which aims to electrify every household through last-mile connectivity.
- Electrification of all families on the Saubhagya portal, with the exception of a few households in Chhattisgarh's LWE-affected Bastar district.

### The State of the Mining Industry <sup>[17]</sup>

- Sector scorecard: India produces 95 minerals, including four hydrocarbon energy minerals (coal, lignite, petroleum, and natural gas), five atomic minerals (ilmenite, rutile, zircon, uranium, and monazite), ten metallic, twenty-one non-metallic, and fifty-five minor minerals.
- Performance: This industry supplies essential raw materials to a number of significant businesses. The contribution of the mining and quarrying sector to GVA (at current prices) was around 2.38 percent in 2018-19.

### Housing and Urban Infrastructure Situation <sup>[22]</sup>

- Sector scope: India is one of the world's fastest-expanding economies, with rising urbanization. Around 37.7 crore people lived in India's urban areas, accounting for around 31% of the total population, which is anticipated to reach 60.6 crores by 2030.
- Critical for growth: Cities and urban ecosystems are epicenters of economic growth. Cities and towns currently account for more than 60% of India's GDP. Housing and urban infrastructure development are critical components of achieving equitable and sustainable growth.
- Initiatives such as the Smart Cities Mission (SCM) and the Pradhan Mantri Awas Yojana-Urban (PMAY-U), which respectively mandate smart living and basic facilities for all qualified urban poor by 2022, have a multiplier effect on the broader economy.

### Significant difficulties confronting India's infrastructure industry <sup>[23, 24]</sup>

- Protracted gestation period: It might take several years or even decades for large infrastructure projects to finish and become profitable.
- Time and expense overruns: Completing infrastructure projects is a significant undertaking. They frequently exceed time and budget constraints, particularly in areas such as roads, highways, power, trains, and petroleum.
- In India, the primary difficulty is financing infrastructure projects. Banks are frequently hesitant to finance large infrastructure projects.
- The current shambles in India's banking system have exacerbated the difficulty of financing projects.
- Unrealistic targets: Indian infrastructure announcements have frequently been criticized for being implausible and impossible. Numerous established projects encounter implementation difficulties.
- There are worries about infrastructure projects' fiscal transparency and accountability.
- Inadequate private participation: While the PPP financing model is a viable option, it has not always proven successful. Delays in land acquisition, lax enforcement of contracts, and a variety of other problems inherent in doing business in India have all served to discourage private participation.
- Contract enforcement concerns considerably impair infrastructure projects' "bankability." <sup>[6]</sup>

### Conclusion

The second wave's influence on human life is clear. Investors in the infrastructure sector should take note of the rising immunization rates. Company capacity and backend infrastructure are being expanded to help the Sector. With

the infrastructure and emergency mechanisms in place, the second wave was considerably better. Given that the health care infrastructure hasn't collapsed further, Covid is less surprising. Improved risk-sharing through better and balanced PPP contracts, and contract integrity and enforceability are all needed to build a robust infrastructure bond market. India must enable easy access to inputs at reasonable prices for infrastructure and related enterprises. Administrative procedures must be simplified to be more responsive while remaining robust.

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