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Industry Report on Construction Industry in India

31st March 2024

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Annexure for Abbreviation used

GDP	Gross Domestic Product
GVA	Gross Value Added
IIP	Index of Industrial Production
PFCE	Private Final Consumption Expenditure
GFCF	Gross fixed capital formation
WPI	Wholesale Price Index
CPI	Consumer Price Index
y-o-y	Year on Year
m-o-m	Month on Month
IMF	International Monetary Fund
RBI	Reserve Bank of India
MOSPI	The Ministry of Statistics and Programme Implementation
Est., Adv. Est	Estimated, Advance Estimates
P, F	Projected, Forecast
USD	US Dollar
INR	Indian Rupee
Mn, Bn, Tn	Million, Billion, Trillion

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Global Macroeconomic Scenario

The global economy is now showing signs of moderate recovery as it posted a growth of 3.3% in CY 2022. But GDP growth will remain at a moderate level of 2.7% in CY 2023 and forecasted to improve to 2.9% in CY 2024. Global banks were carrying a historically high debt burden after COVID. Central banks took tight monetary measures to control inflation and spike in commodity prices. Russia's war with Ukraine further affected the global supply chains and inflated the prices of energy and other food items. These factors coupled with war-related economic sanctions impacted the economic activities in Europe. Any further escalation in the war may further affect the rebound of the economy in Europe.

While China was facing a crisis in the real estate sector and prices of properties were declining, with the reopening of the economy, consumer demand is picking up again. The Chinese authorities have taken a variety of measures, including additional monetary easing, tax relief for corporates, and new vaccination targets for the elderly. The government has also taken steps to help the real estate sector including cracking down on debt-ridden developers, announcing stimulus for the sector and measures to encourage the completion and delivery of unfinished real estate projects. The sector is now witnessing investments from developers and demand from buyers.

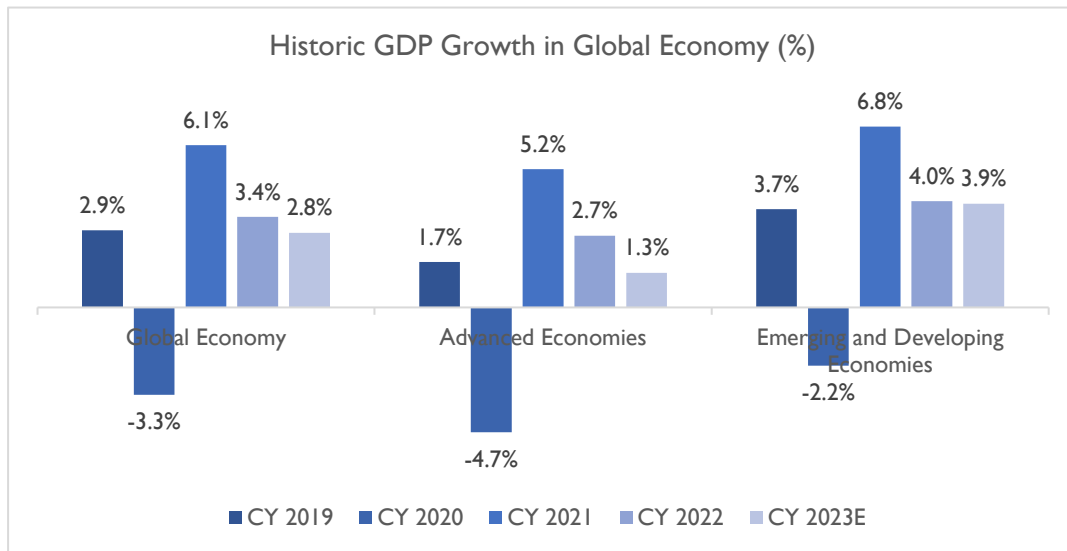
Global headline inflation is set to fall from 8.7 % in CY 2022 to 7.0 % in CY 2023, primarily on the back of softening commodity prices. Most of the central banks in the world has been increasing interest rates since CY 2021 to control inflation, and this is having an impact. With the sharp rise in policy rates, vulnerabilities in the banking sector have come into focus. Fears of contagion have risen across the broader financial sector, including non-banking financial institutions with regulators taking action to stabilize the banking system.

Global GDP Growth Scenario

The global economy started to rise from its lowest levels after countries started to lift the lockdown. The pandemic lockdown was a key factor as it affected economic activities resulting in a recession in the year CY 2020, as the GDP growth touched -3.3%.

In CY 2021 disruption in the supply chain affected most of the advanced economies as well as low-income developing economies. The rapid spread of Delta and the threat of new variants in mid of CY 2021 further increased uncertainty in the global economic environment.

Global economic activities experienced a sharper-than-expected slowdown in CY 2022. One of the highest inflations in decades forced most of the central banks to tighten their fiscal policies. Russia's invasion of Ukraine affected the global food supply resulting in a further increment in the cost of living. As a result, global growth declined from 6.1% in CY 2021 to 3.4% in CY 2022.

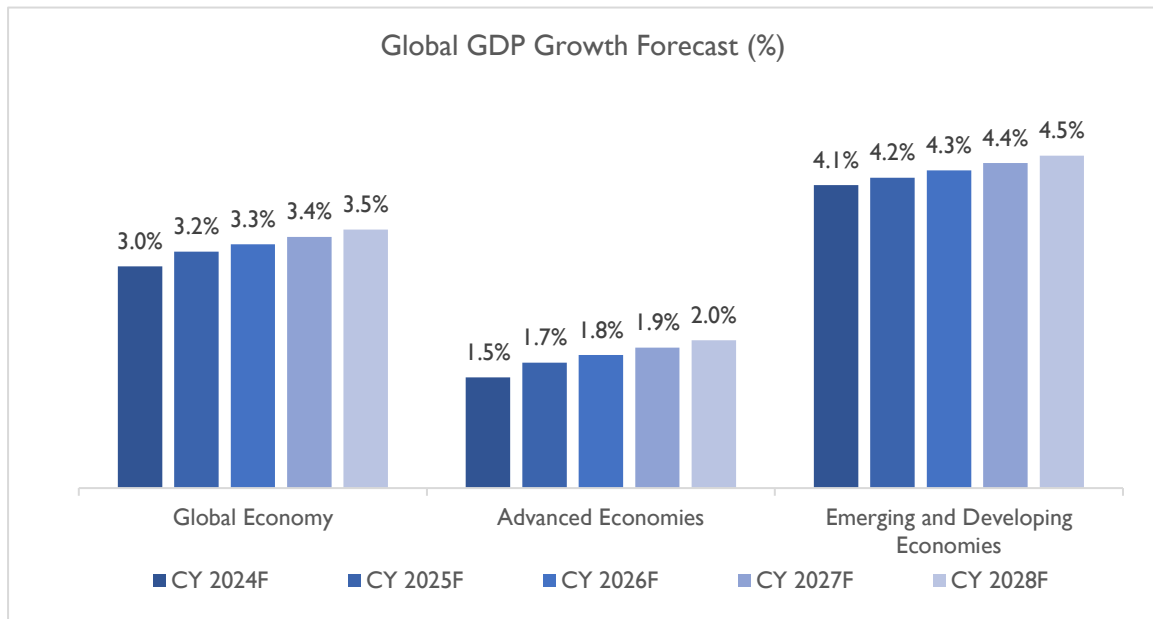


Source – IMF Global GDP Forecast Release 2023

Note: Advanced Economies and Emerging & Developing Economies are as per the classification of the World Economic Outlook (WEO). This classification is not based on strict criteria, economic or otherwise, and it has evolved over time. It comprises of 40 countries under the Advanced Economies including the G7 (the United States, Japan, Germany, France, Italy, the United Kingdom, and Canada) and selected countries from the Euro Zone (Germany, Italy, France etc.). The group of emerging market and developing economies (156) includes all those that are not classified as Advanced Economies (India, China, Brazil, Malaysia etc.)

In the current scenario, global GDP growth is forecasted to record a moderate growth of 2.8% in CY 2023 as compared to 3.4 % growth in CY 2022. While high inflation and rising borrowing costs are affecting private consumption, on the other hand, fiscal consolidation is affecting government consumption.

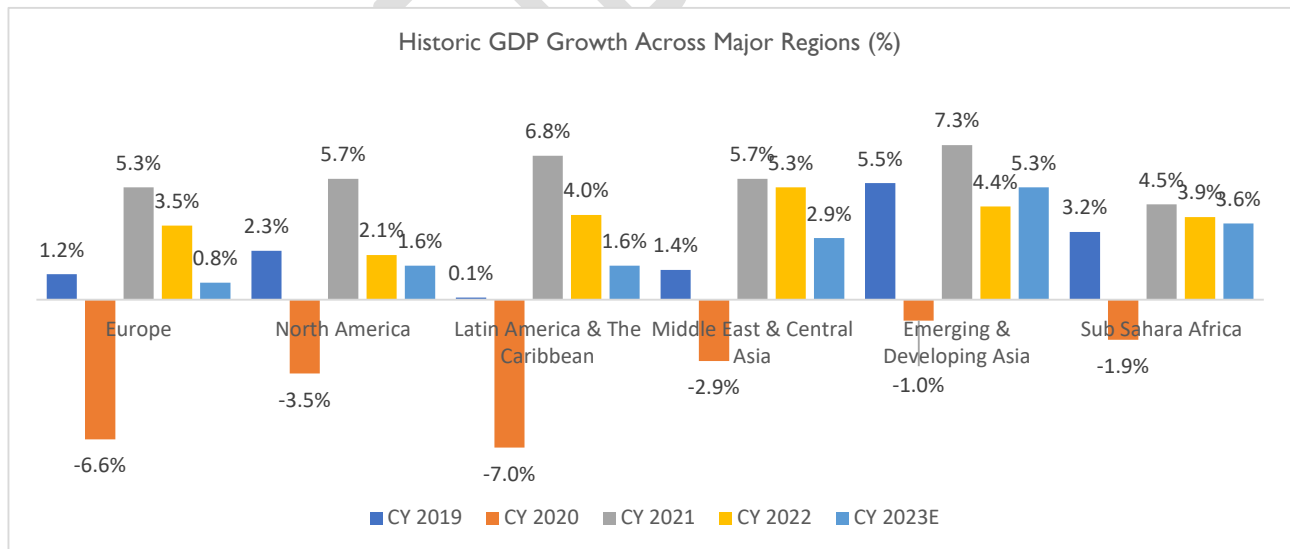
Flat growth in developed economies will affect the GDP growth in CY 2024 and global GDP is expected to record marginal growth of 3.0% in CY 2024. The current crisis in the housing sector, bank lending, and industrial sectors are affecting the growth of global GDP. Inflation forced central banks to adopt tight monetary policies. After touching the peak, inflationary pressures are slowly easing out. This environment weighs against interest rate cuts by many monetary authorities. The expectation is therefore still for slowing growth in the second half of CY 2023 and the first half of CY 2024.



Source – IMF Global GDP Forecast Release 2023, D&B Estimates

GDP Growth Across Major Regions

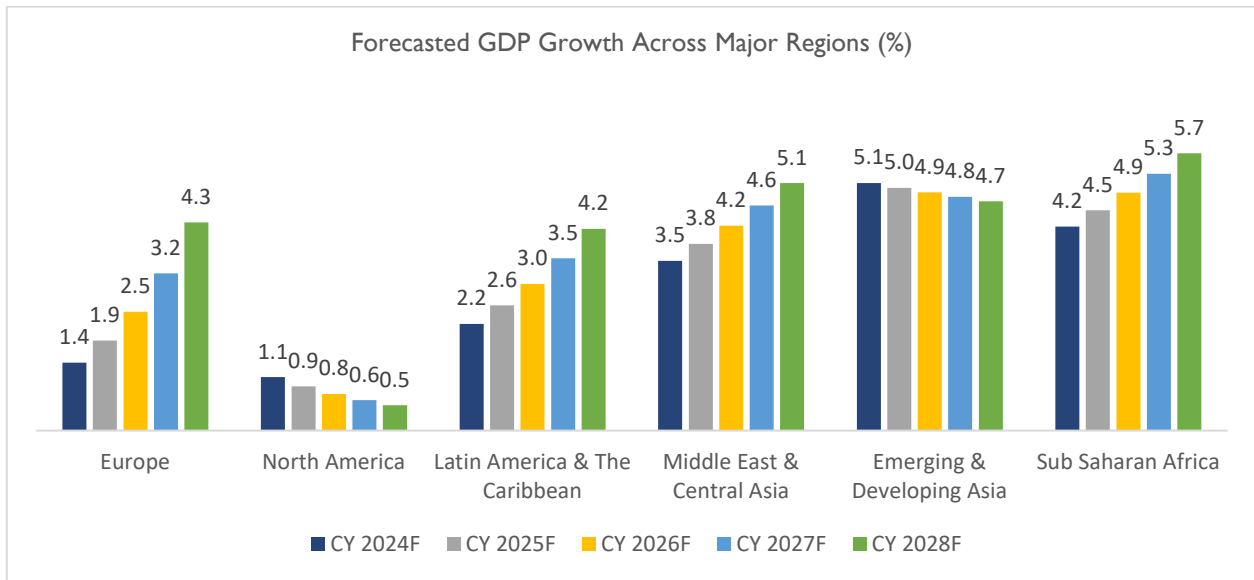
GDP growth of major regions including the United States, Latin America, Europe, Middle East & Central Asia, and Sub-Saharan Africa, are showing signs of slow growth and recession. Meanwhile, GDP growth in Emerging and Developing Asia (India, China, Indonesia, Malaysia etc.) is expected to increase from 4.4% in CY 2022 to 5.3% in CY 2023.



Source-IMF World Economic Outlook 2023

Except for Emerging and Developing Asia, all other regions are expected to record a decline in GDP growth rate in CY 2023 as compared to CY 2022. GDP growth in the United States is expected at 1.6% in CY 2023. Tight monetary and financial conditions coupled with high inflations are the major factors in this subdued growth.

Higher energy prices are curbing consumer demand in Europe's largest economies. Surging inflation and a decline in government spending are further affecting on an overall basis as Europe is expected to record GDP growth of 0.8% in CY 2023 as compared to 3.5% growth in CY 2022. China is expected to see strong increase in its GDP growth after the government has lifted the restrictions of its zero-COVID policy. China is expected to record a 5.4% growth in its GDP in CY 2023. Asian economies are expected to drive most of the global growth in CY 2023, as they will benefit from the ongoing reopening dynamics and less intense inflationary pressures compared to other regions.



Source-IMF, OECD, and World Bank, D&B Estimates

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India Macroeconomic Analysis

GDP Growth Scenario

India's economy is showing signs of resilience with GDP growing by 7.2% in FY 2023. Although this translates into a moderation in demand (compared to FY 2022), the GDP growth in FY 2023 represents a return to pre pandemic era growth path. Despite this moderation in growth, India continues to remain one of the fastest growing economies in the world.

Country	GDP Growth (2022)
India	7.2%
United Kingdom	4.1%
Italy	3.7%
Canada	3.4%
China	3.0%
Brazil	2.9%
France	2.6%
United States	2.1%
South Africa	2.0%
Germany	1.8%
Japan	1.0%
Russia	-2.1%

Source: World Bank

GDP growth for India refers to FY 2023 as per MOSPI

Countries considered include - Largest Developed Economies and BRICS (Brazil, Russia, India, China, and South)

Countries have been arranged in descending order of GDP growth

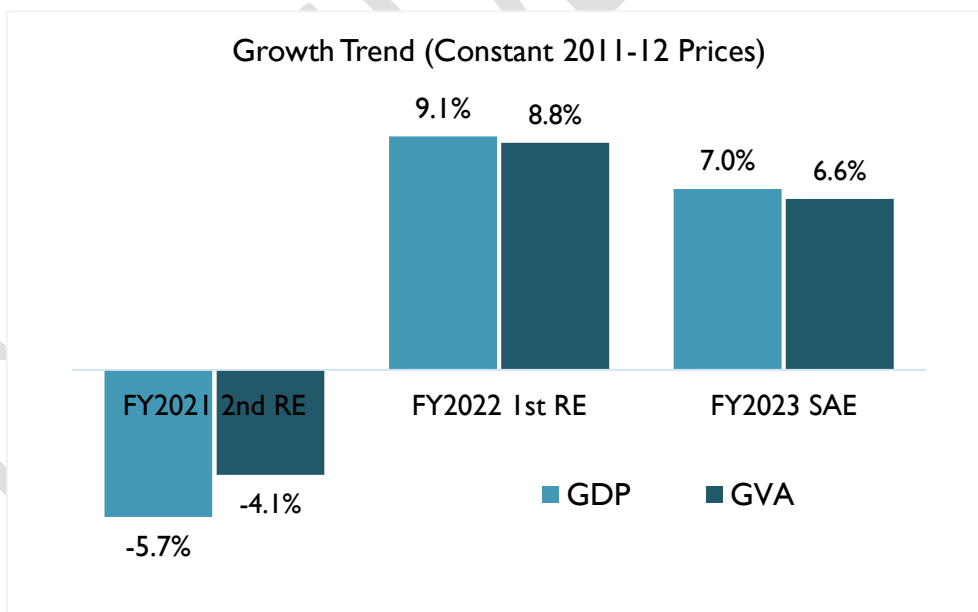
There are quite a few factors aiding India's economic recovery – notably its resilience to external shocks (ongoing Russia – Ukraine conflict) and rebound in private consumption. This rebound in private consumption is bringing back the focus on improvements in domestic demand, which together with revival in export demand is a precursor to higher industrial activity. Already the capacity utilization rates in Indian manufacturing sector are recovering as industries have stepped up their production volumes. As this momentum sustains, the country may enter a new capex cycle. The universal vaccination program by the Government has played a big part in reinstating confidence among the population, in turn helping to revive private consumption.

Realizing the need to impart external stimuli, the Government stepped up its spending on infrastructure projects which in turn had a positive impact on economic growth. The capital expenditure of central government increased by nearly 24.5% during FY 2023 as compared to the previous fiscal. The improvement was accentuated further as the Union Budget 2023-2024 announced 37.4% increase in capital expenditure (budget estimates), to the tune of Rs 10 trillion. The announcement also included 30% increase in financial

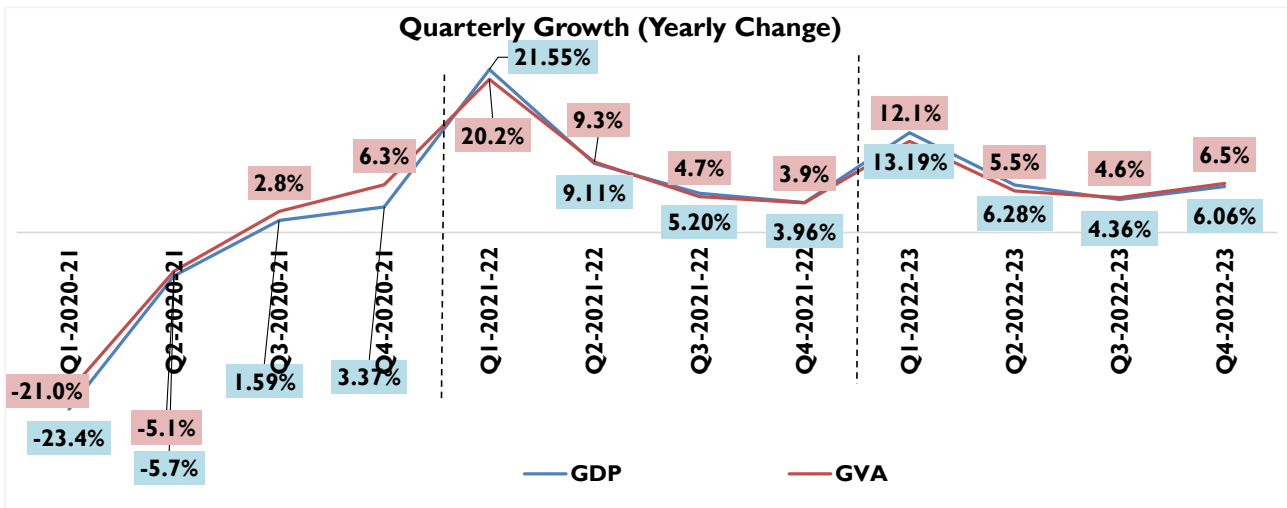
assistance to states at Rs 1.3 trillion for capex. This has provided the much-needed confidence to private sector, and in turn attracted private investment.

On the lending side, the financial health of major banks has witnessed an improvement which has helped in improving the credit supply. With capacity utilization improving, there would be demand for credit from corporate sector to fund the next round of expansion plans. Banking industry is well poised to address that demand. Underlining the improving credit scenario is the credit growth to micro, small and medium enterprise (MSME) sector as the credit outstanding to the MSME sector by scheduled commercial banks in the financial year FY 2023 grew by 12.3% to Rs 22.6 trillion compared to FY 2022. The extended Emergency Credit Linked Guarantee Scheme (ECLGS) by the Union Government has played a major role in improving this credit supply.

India's GDP in FY 2023 grew by 7.2% compared to 9.1% in the previous fiscal on the back of slowing domestic as well as external demand owing to series of interest rate hikes globally to tackle high inflation. The year-on-year moderation in growth rate is also partly due to a fading impact of pandemic-induced base effects which had contributed towards higher growth in FY 2022. On quarterly basis, the country growth moderated in Q2 and Q3 of FY 2023 which highlights impact of slowing economy on the back of monetary tightening. During Q3 FY 2023, the country's GDP grew by 4.36% against 6.28% y-o-y increase in the corresponding quarter last fiscal. However, the fourth quarter of FY 2023 saw a rebound in growth rate, indicating an optimistic scenario.



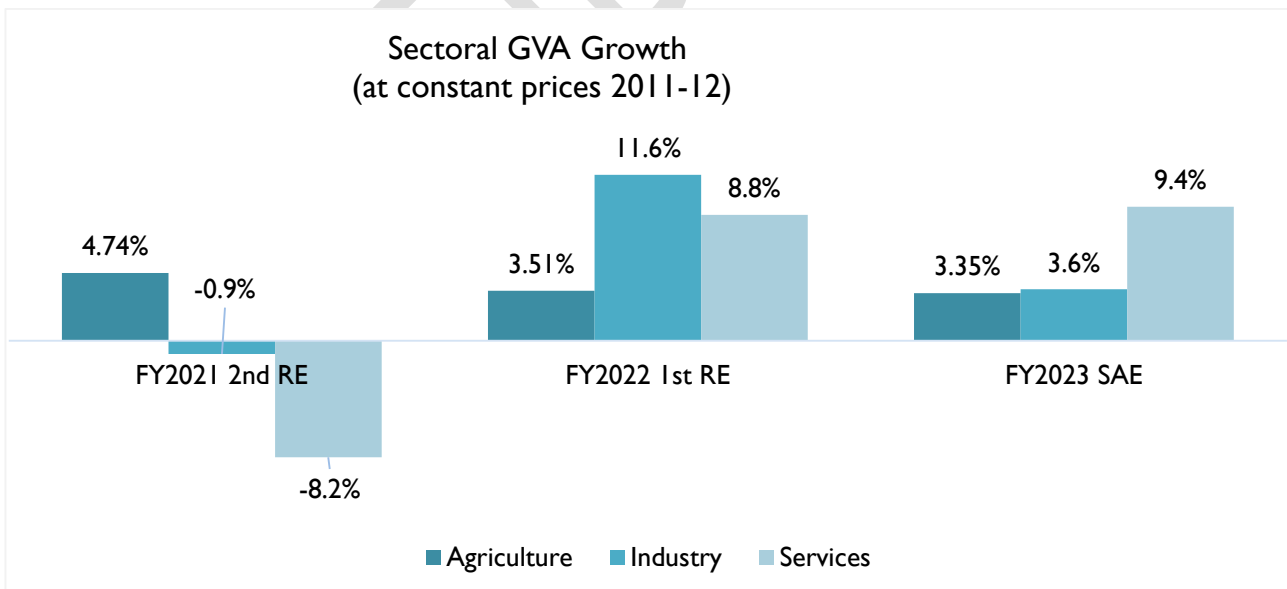
Source: Ministry of Statistics & Programme Implementation (MOSPI)
RE stands for Revised Estimates, SAE stands for Second Advance Estimates



Source: Ministry of Statistics & Programme Implementation (MOSPI)

Sectoral Growth Trend: Annual

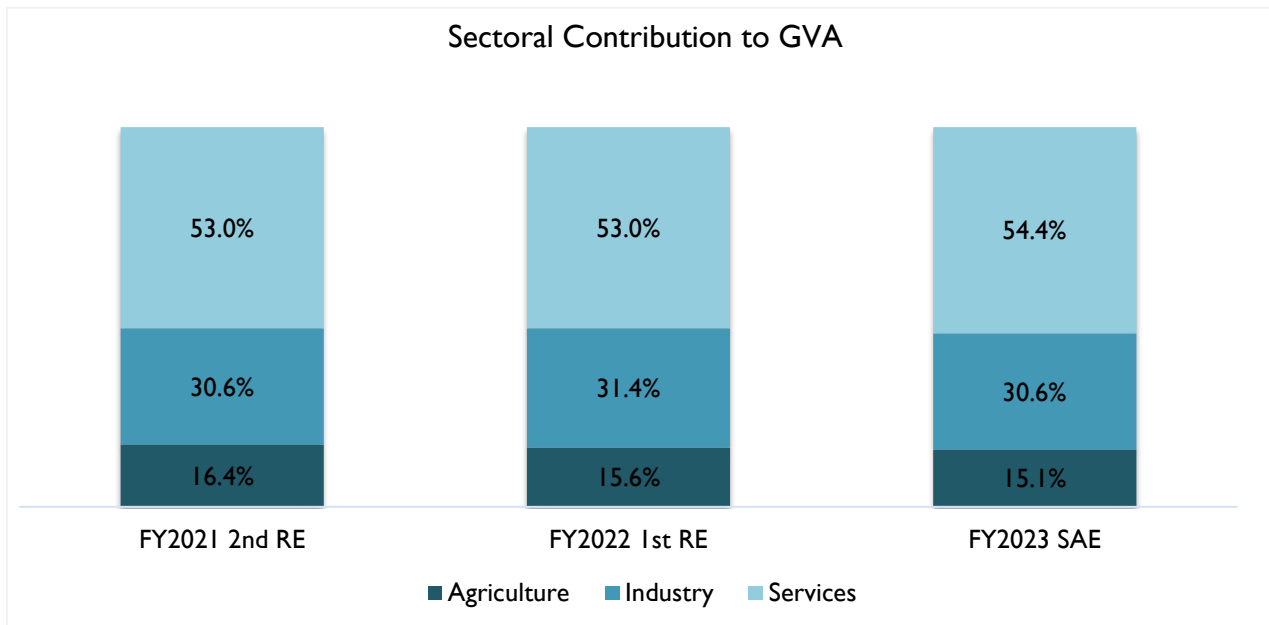
Sectoral analysis of GVA reveals growth tapered sharply in industrial sector which is estimated to have grown by just 3.6% in FY 2023 against 11.6% in FY 2022. In the industrial sector, growth across major economic activity such as mining, manufacturing, construction sector slowed registering a growth of 3.4%, 0.6% and 9.1% in FY 2023 against a growth rate of 7.1%, 11.05% and 14.8% recorded in FY 2022, respectively. Utilities sector too observed a marginal moderation in y-o-y growth to 9.2% against a decline of 3.6% in the previous years.



Source: Ministry of Statistics & Programme Implementation (MOSPI)

Talking about the services sectors performance, with major relaxation in covid restriction, progress on covid vaccination and living with virus attitude, business in service sector gradually returned to normalcy in FY 2022. Economic recovery was supported by the service sector as individual mobility returned to pre-pandemic level. The trade, hotel, transport, communication, and broadcasting segment continued to

strengthen and grow by 14.18% in FY 2023 against 13.75% in the previous year and financial services, real estate and professional services sector recorded 6.85% y-o-y growth against 4.73%. However, overall service sector growth was curbed by moderation in public administration and defence services sector which recorded 7.12% yearly increase against 9.7% increase in the previous year.



Source: Ministry of Statistics & Programme Implementation (MOSPI)

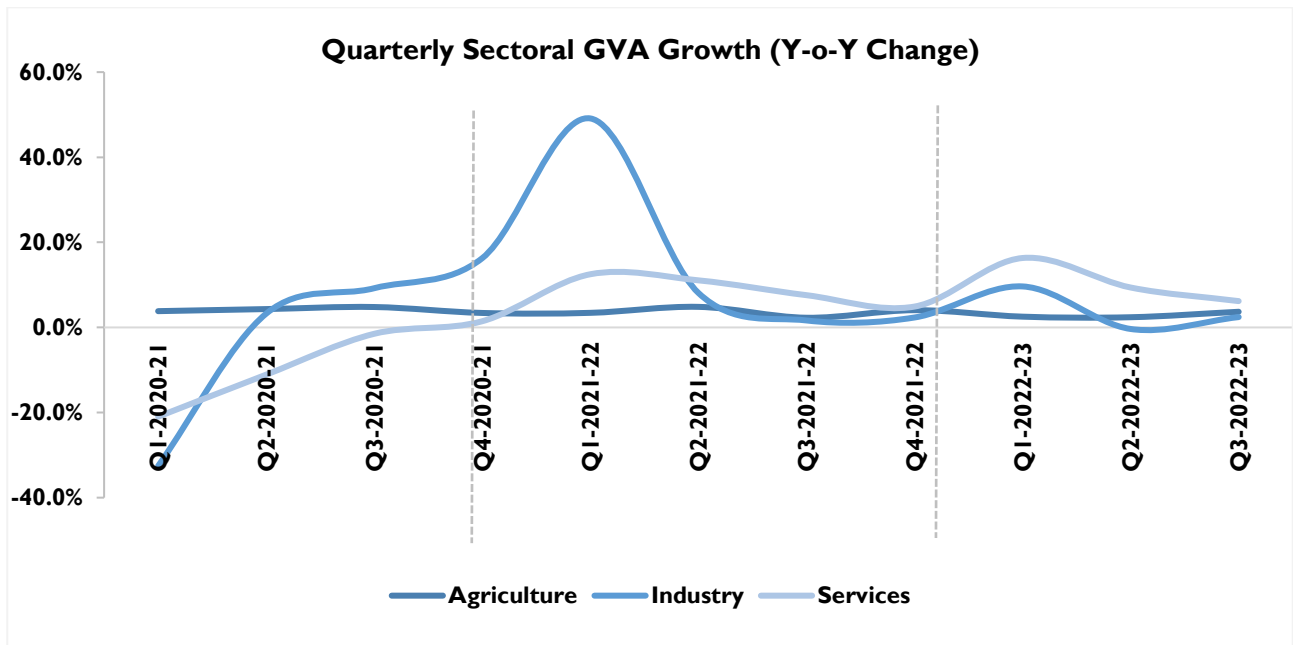
Sectoral Growth Trend: Quarterly

Quarterly GVA number indicated sustained weakness in economic activity during Q3 FY 2023 with manufacturing activity being the worst hit segment amongst the industrial sectors. India's manufacturing sector shrank by 1.1% on-year in Q3 FY 2023, a second straight contraction highlighting the continuing weakness in consumer demand and exports. In Q2 FY 2023, manufacturing sector output was down by 3.57%. While quarterly growth in both agriculture and other sectors within industrial sector strengthened during Q3 FY 2023.

Agriculture sector GVA strengthen in Q3 FY 2023 to register 3.68% yearly growth compared to both corresponding quarter last year (2.28%) and previous quarter (2.4%) in FY 2022. Any growth between 3.5-4% in farm sector is considered above the long-term trend line. Construction sector witnessed 8.39% y-o-y growth in Q3 of FY 2023 against 5.85% y-o-y growth in the previous quarter, mining and quarrying sector, and Electricity, gas, water supply & other utility services sector registered 3.7% and 8.24% y-o-y growth against -0.4% and 5.96%, respectively.

In Q3 FY 2023, yearly growth stood as 0.23%, 5.42% and 5.99% in construction, mining and quarrying and Electricity, gas, water supply & other utility services sector, respectively. Within service sector, quarterly growth moderated across all segments in Q3 FY 2023 against the previous quarter. Trade, hotel, transport, communication, and broadcasting segment observed 9.56% y-o-y growth in Q3 as compared to 15.64% growth in the last quarter. Other services sector broadly classified under Public Admin, Defence & Other

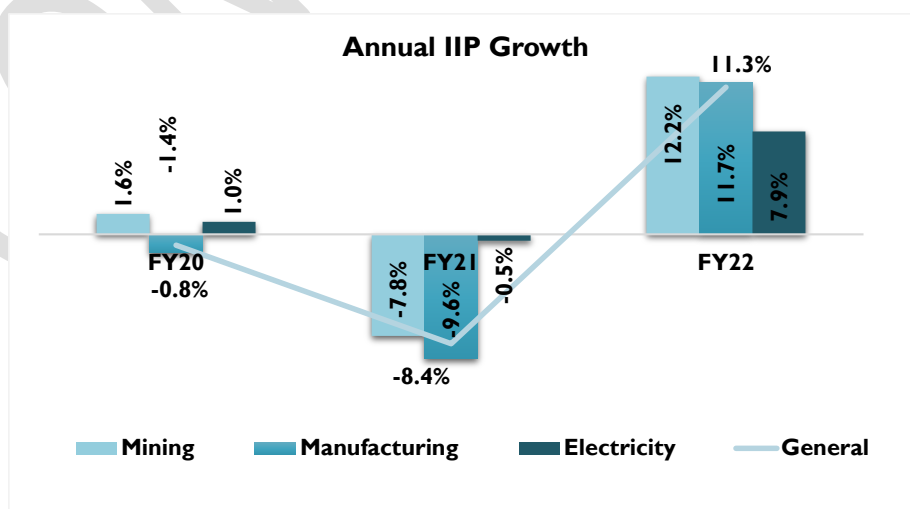
Services and Financial, Real Estate & Professional Services too observed 1.99% and 5.79% growth in Q3 FY 2023 against 5.57% and 7.13% y-o-y change in Q2 FY 2023.



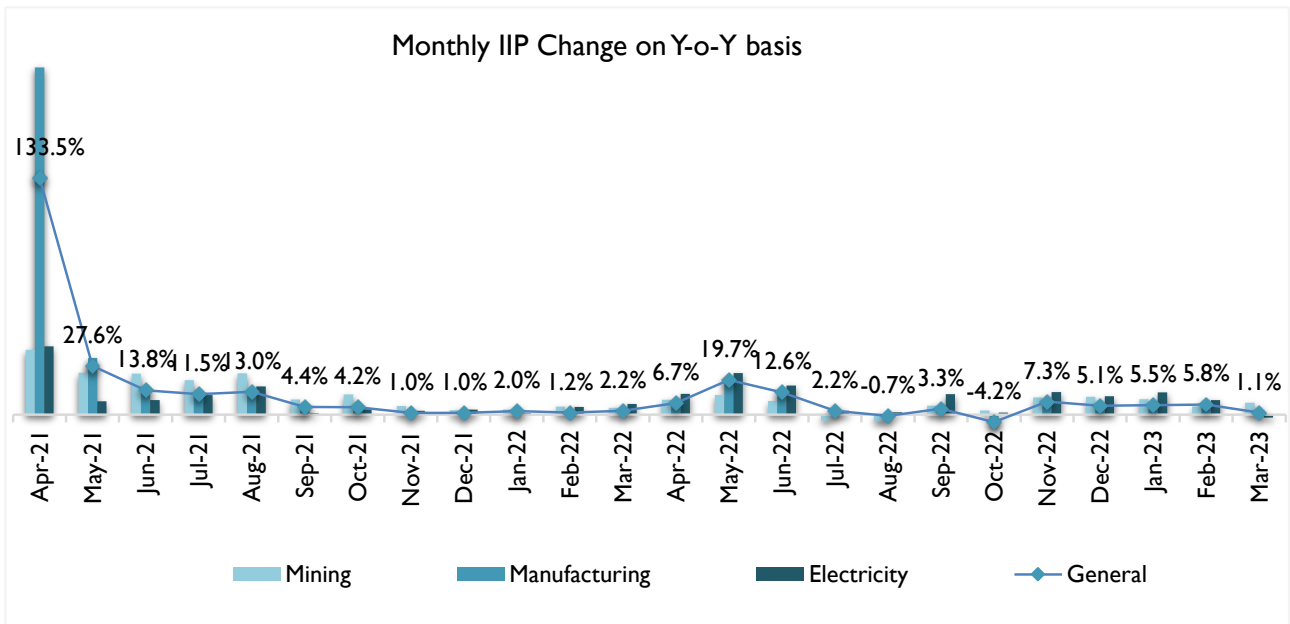
Source: Ministry of Statistics & Programme Implementation (MOSPI)

Index of Industrial Production

After experiencing three years of deteriorating industry growth, the country's Index of Industrial Production (IIP) index registered 11.3% y-o-y growth where growth was evenly spread across all sub-segments. Manufacturing index, with 77.6% weightage in overall index, registered 11.7% y-o-y growth in FY 2022 while mining sector index registered the highest growth. Classified based on usage i.e., infrastructure/construction goods, capital good, intermediate good and consumer durable outperformed over the other sector and registered healthy double-digit growth.



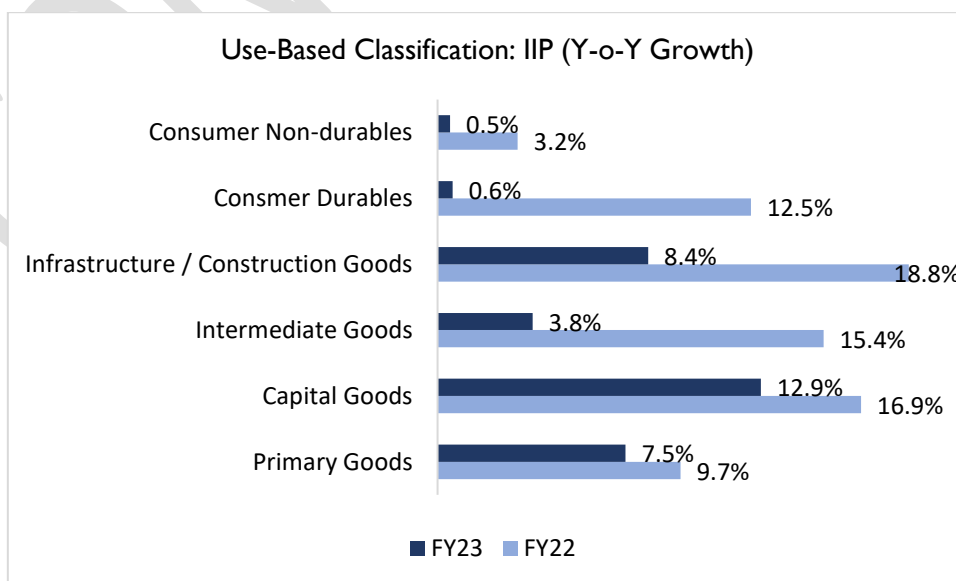
Source: Ministry of Statistics & Programme Implementation (MOSPI)



Source: Ministry of Statistics & Programme Implementation (MOSPI)

In FY22, IIP index improved steadily between March to May but moderated sharply in the subsequent three months and it measured lowest in October 2022 while it showed temporary improvement by growing at 7.3% in subsequent. However, IIP again moderated to register 5.1 % y-o-y growth in December 2022. Manufacturing activity which has 77.6% weightage in the overall index, grew by 2.6% in December 2022 while mining activity and electricity index grew by 9.8% and 10.4%, respectively.

On y-o-y basis, monthly IIP growth in December 2022 was relatively higher compared to previous year due to low base effect where overall IIP was adversely affected by onset of third wave of pandemic. Low base effect and year end festive sale are likely to support IIP growth in the coming month. However, moderation in external demand and consequent decline in trade have potential to affect manufacturing sector output and putting downward pressure on overall IIP growth.

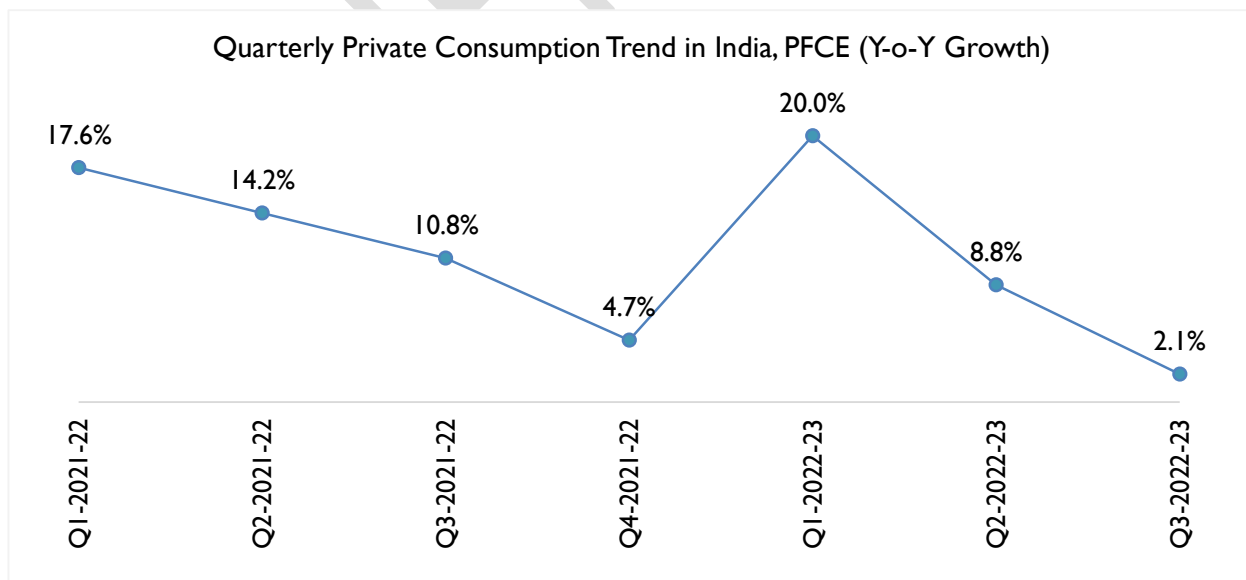
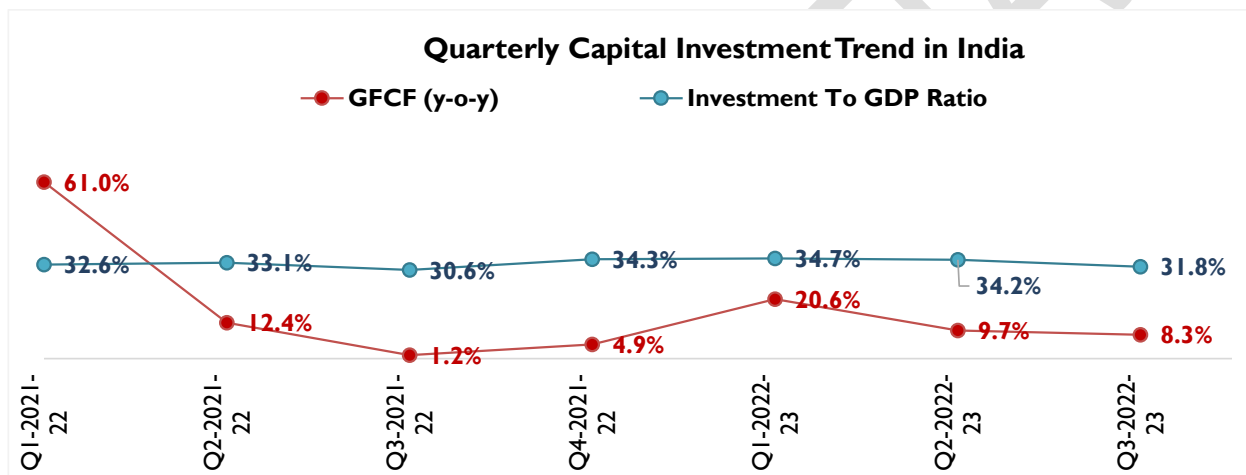


Sources: MOSPI

As per the use-based classification, growth in all segments deteriorated for FY 2023 as compared to FY 2022. Consumer good and intermediate goods were worst hit segments followed by infrastructure / construction Goods. The contracting IIP data points towards adverse operating business climate as global headwinds, high inflation, and monetary tightening started having adverse impact on manufacturing activity in FY 2023.

Investment & Consumption Scenario

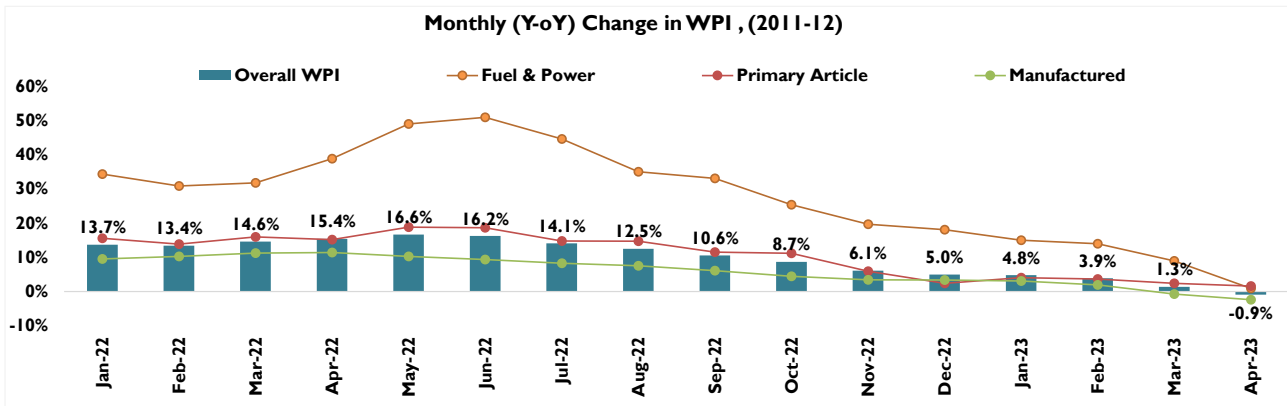
Other major indicators such as Gross fixed capital formation (GFCF), a measure of investments, moderated during Q2 FY 2023 and Q3 FY 2023 while 8% y-o-y growth number was encouraging against 1.2% yearly growth in Q3 FY 2022. Despite the festive season demand and largely a covid-free economy, Private Final Consumption Expenditure (PFCE) a realistic proxy to gauge household spending, observed a continued moderation in Q3 FY 2023 where yearly growth softened to 2.1% which was nearly 7% lower compared to Q2 FY 2023.



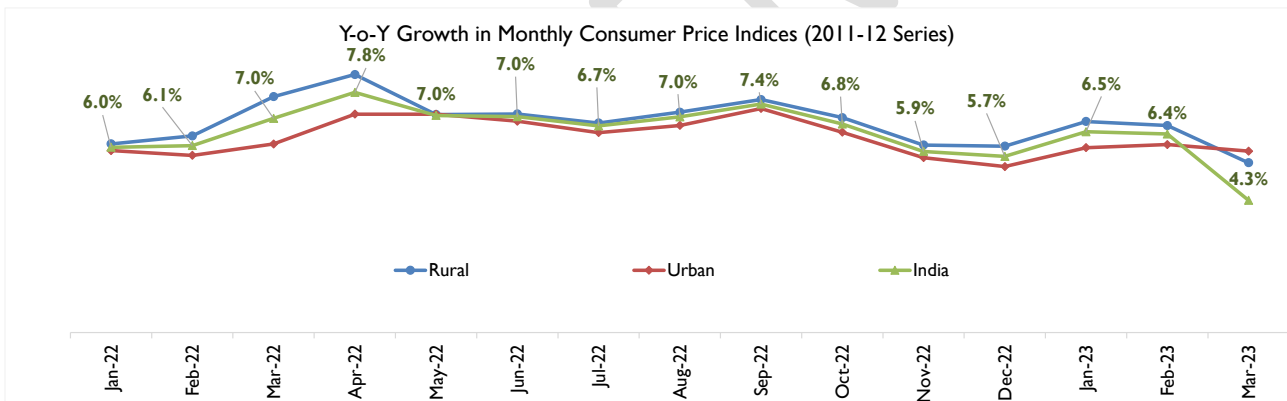
Sources: MOSPI

Inflation Scenario

Wholesale Price Index (WPI) is moderating on the back of softening of prices. Compared to April 22, WPI in April 2023 dropped by -0.9%. This is primary on the back of softening of fuel & power prices. Monthly y-o-y change (April 2023 v/s April 2022) for manufactured products was -2.9%, and this too contributed to the moderation in WPI. Softening prices of mineral oils, chemicals & chemical products, textiles, crude petroleum & natural gas, textiles, and food products. contributed towards moderation in WPI inflation.



Source: MOSPI, Office of Economic Advisor



Source: CMIE Economic Outlook

Retail inflation rate (as measured by Consumer Price Index) again jumped above 6% tolerance limit of the central bank in January 2023 after observing mild moderation in the previous two month. The overall CPI grew by 6.5% in January 2023 due to spike in food inflation and CPI food index grew by 5.9% during FY 2023 against 4.2% y-o-y growth in the previous year. Within food index, Cereals and product-led food inflation reached 16.1 per cent in January 2023 from 13.8 per cent in December 2022. As a part of anti-inflationary measure, the RBI has hiked the repo rate by 225 bps since May 2022 to current 6.5% (May 2023), with latest fourth round hike announced on 8 Feb 2023. The Reserve Bank of India has estimated an average inflation rate of 6.5% for FY 2023. Since then, retail inflation appears to be softening, as it grew by 6.4% and 4.3% respectively in February and March of 2023.

Growth Outlook

Amidst the difficult and uncertain external economic environment, the Indian government has delivered a balanced Union Budget which focuses on achieving an inclusive and sustainable growth while adhering to the fiscal glide path. Notwithstanding the external risk, there is a sustained momentum in economic activity supported by domestic drivers. The consumer confidence survey by the Reserve bank of India points towards rising confidence of households both for the current situation as well as the future expectations (for a one-year period).

Rural demand is likely to be boosted by good prospects for agricultural output and discretionary spending is expected to support urban consumption supporting. Resilient domestic financial markets, sturdy growth in credit and the government's thrust on capital expenditure is expected to drive momentum in investment activity. Capacity utilization in the manufacturing sector has surpassed its long period average. Thus, the stance taken by the government to not only emphasize on the top-down approach to growth i.e focusing on substantial capital outlay, but also to place focus on the bottom of the pyramid by trying to unleash the potential of the primary sector in the Union Budget should support India's growth momentum in 2023.

Some of the key factors that would propel India's economic growth in the coming years

Government focus on infrastructure development

Infrastructure development has remained recurring theme in India's economic development. As India aims to grow to a USD 5 trillion economy by 2027, Construction sector that include Infrastructure construction will be critical for boosting economic growth as it is the key growth enabler for several other sector. Infrastructure development provides impetus to other sectors like cement, bitumen, iron and steel, chemicals, bricks, paints, tiles, financial services among others. A unit increase in expenditure in construction sector has a multiplier effect on other sectors with a capacity to generate income as high as five times in other sectors. The sector enjoys intense focus from the Government which is well reflection in higher budgetary allocations. To push the infrastructure development, government has also announced higher budgetary allocation, various arrangement for raising funds through road asset monetization plan and converting of NHAI's existing InvIT into a public one is also planned. With economic targeting to reach USD 5 trillion economy by 2027, demand for various infrastructure facilities such as power, cargo movement, passenger movement is likely to grow which necessitate steady capacity addition in infrastructure facilities. Speedy progress and time-bound completion of infrastructure project would key factor to watch that will determine the sector performance.

The launch of flagship policies like National Infrastructure Pipeline (NIP), and PM Gati Shakti plan have provided the coordination & collaboration that was lacking earlier. Both NIP and PM Gati Shakti are ambitious billion-dollar plans that aim to transform India's infrastructure, elevating it to the next level. These projects are expected to improve freight movement, debottleneck the logistics sector, and improve the industrial production landscape, which would provide the incremental growth in GDP. In its Union Budget FY 2023,

the Government has increased the capital expenditure by 35% to nearly INR 7.5 lakh crore – which indicates the strong Government focus on improving the overall infrastructure landscape in India.

Development of Domestic Manufacturing Capability

The Government launched Production Linked Incentive (PLI) scheme in early 2020, initially aimed at improving domestic manufacturing capability in large scale electronic manufacturing and gradually extended to other sectors. At present it covers 14 sectors, ranging from medical devices to solar PV modules. The PLI scheme provides incentives to companies on incremental sales of products manufactured in India. This incentive structure is aimed to attracting private investment into setting up manufacturing units and thereby beef up the domestic production capabilities. The overall incentives earmarked for PLI scheme is estimated to be INR 2 lakh crore. If fully realizing the PLI scheme would have the ability to add nearly 4% to annual GDP growth, by way of incremental revenue generated from the newly formed manufacturing units.

Strong Domestic Demand

Domestic demand has traditionally been one of the strong drivers of Indian economy. After a brief lull caused by Covid-19 pandemic, the domestic demand is recovering. Consumer confidence surveys by Reserve Bank / other institutions are points to an improvement in consumer confidence index, which is a precursor of improving demand. India has a strong middle-class segment which has been the major driver of domestic demand. Factors like fast paced urbanization and improving income scenario in rural markets are expected to accelerate domestic demand further. This revival is perfectly captured by the private final consumption expenditure (PFCE) metric. PFCE as a percentage of GDP increased to nearly 59.2 during the first half of FY 2023¹, which is the highest level it has achieved during the past few years. Although pent-up demand has played a part in this surge, this is an indication of normalization of demand.

There are two factors that are driving this domestic demand: One the large pool of consumers and second the improvement in purchasing power.

- The share of middle class increased from nearly 14% in 2005 to nearly 30% in 2021 and is expected to cross 60% by 2047 (Placeholder1)². This expanding middle class household segment is fuelling India's growth story and would continue to play a key role in propelling India's economic growth.
- As per National Statistics Office (NSO) India's per capita income (in current prices) stood at INR 1.72 lakhs in FY 2023 which is nearly double of what it was in FY 2015. This increase in per capita income has impacted the purchasing pattern as well as disposable spending pattern in the country. Consumer driven domestic demand is majorly fuelled by this growth in per capita income.

Digitization Reforms

¹ India Economic Survey FY 2023, Full year data is yet to be released.

² As per the survey conducted by People Research on India's Consumer Economy. Households with annual income in the range of INR 5 – 30 lakh is considered as middle class households.

Ongoing digitization reforms and the resultant efficiency gains accrued would be a key economic growth driver in India in the medium to long term. Development of digital platforms has helped in the seamless roll out of initiatives like UPI, Aadhaar based benefit transfer programs, and streamlining of GST collections. All of these have contributed to improving the economic output in the country. Some of the key factors that have supported the digitization reforms include – the growth in internet penetration in India together with drop in data tariffs, growth in smartphone penetration, favourable demographic pattern (with higher percentage of tech savvy youth population) and India's strong IT sector which was leveraged to put in place the digital ecosystem. All these factors are expected to remain supportive and continue to propel the digitization reforms in India.

Construction Industry in India

India's construction industry is on a phenomenal growth trajectory, projected to reach a staggering USD 1.4 trillion by 2025, accounting for 8%-10% of India's GDP. This represents a significant leap from its current size of approximately USD 820 billion, showcasing the dynamism and potential of this sector. The Indian government's ambitious Gati Shakti National Master Plan plays a pivotal role in propelling the construction industry forward. This comprehensive roadmap aims to seamlessly integrate infrastructure development across various sectors, creating a national logistics network that will boost efficiency and reduce costs. The Bharatmala Pariyojana initiative complements Gati Shakti by focusing specifically on developing a world-class highway network spanning over 83,000 kilometers. This ambitious project comprises several expressways, ring roads, and economic corridors, aiming to improve connectivity, boost regional development, and facilitate trade. The booming construction industry is a significant job creator, directly employing millions of workers across various disciplines like engineering, construction, architecture, and skilled labor. Additionally, the sector indirectly supports numerous job opportunities in associated industries like manufacturing, transportation, and logistics.

Other Factors Mapping Economic Impact:

Increased investment: Government initiatives like Gati Shakti and Bharatmala Pariyojana attract significant private and foreign investments, stimulating economic activity.

Private sector participation: Public-private partnerships (PPPs) in infrastructure projects accelerate construction and inject private capital into the sector.

Technology adoption: Embracing digital platforms and automation improves efficiency, reduces costs, and fosters innovation in the sector.

Sustainability focus: Green building practices and energy-efficient technologies contribute to environmental sustainability and resource conservation.

Infrastructure Development: Improved infrastructure like roads, highways, railways, and airports enhances connectivity, reduces logistics costs, and facilitates trade, boosting economic activity across various sectors.

Urbanization: The construction boom fuels urbanization, leading to the development of new cities, townships, and commercial hubs, stimulating economic activity in these areas.

Real Estate Market: The construction sector is tightly linked to the real estate market, with increased construction activities driving demand for housing and commercial spaces, further influencing economic growth.

Key Segments of the Indian Construction Industry

Residential Construction: Building Homes for a Growing Nation

It is the largest Segment, representing approximately 60% of the industry, residential construction plays a dominant role. Rapid urbanization driven by a burgeoning middle class and economic growth fuels demand for new housing units, particularly in Tier 1 and Tier 2 cities. Government initiatives like Pradhan Mantri Awas Yojana (PMAY) aim to bridge the housing gap and provide affordable homes for low-income families. Preference for smaller apartments, smart homes, and integrated townships with amenities is gaining traction among the residents.

Commercial Construction: Skyrocketing Demand for Office and Retail Space

This segment is fuelled by Economic Growth i.e., Increasing business activity and foreign direct investment drive demand for office space in major cities. Growth of e-commerce and changing consumer preferences necessitate modern retail centers and logistics infrastructure. Emerging trend of Co-working and Coworking Spaces catering to the burgeoning freelance and start-up culture. Green buildings and energy-efficient technologies are gaining traction as environmental consciousness rises.

Industrial Construction: Gearing Up for Manufacturing Growth

Government's push for domestic manufacturing boosts demand for industrial infrastructure, including factories, warehouses, and power plants. Development of Special Economic Zones (SEZs) with dedicated infrastructure attracts foreign investment and manufacturing units. Dedicated industrial corridors like Delhi-Mumbai Industrial Corridor are facilitating industrial development and creating new construction opportunities. Focus on Automation and Technology such as Integration of automation and advanced technologies like robotics in manufacturing facilities requires upgrades and new construction.

Infrastructure Construction: Connecting India: Roads & Highways, Railways, Airports, and Ports

Road & Highways:

It is the Second largest network in the world aiming to add 22,000 km of highways by 2025, focusing on expressways and greenfield projects. Increased participation of private sector through Public-Private Partnerships (PPP) is accelerating project execution.

Railways:

It is the Fourth largest network in the world fuelled by undergoing rapid modernization and expansion with projects like Dedicated Freight Corridors (DFCs) and high-speed rail with Focus on electrification and technology by leveraging technology for automation and safety improvement initiatives.

Ports: Investment in port infrastructure development to improve capacity, efficiency, and trade connectivity.

Airports: Expansion and modernization of airports to cater to growing air traffic and promote regional connectivity.

A Look Ahead: The Future of Indian Construction Industry

With its robust growth trajectory, fuelled by government initiatives and private sector participation, the Indian construction industry is poised for an exciting future. Continued focus on technological advancements, sustainability practices, and skilled workforce development will be crucial to unlocking the sector's full potential and contributing to India's overall economic prosperity. The industry is expected to double in size within the next six years. Projections indicate the construction sector's contribution to India's GDP could rise to 15% by 2030, further solidifying its role as a critical economic driver.

Infrastructure Construction in India

The infrastructure construction segment in India is a key driver of economic growth and national development. It encompasses the development and maintenance of essential infrastructure like roads, highways, railways, airports, ports, waterways, power plants, and irrigation systems. This segment plays a crucial role in:

- Connecting people and places: Efficient transportation networks facilitate movement of goods and people, boosting trade and commerce.
- Stimulating economic activity: Infrastructure projects create jobs, attract investments, and spur development across various sectors.
- Improving quality of life: Access to clean water, sanitation, and reliable electricity enhances living standards and promotes overall well-being.

Key Segments of Infrastructure Construction:

Roads & Highways: India boasts the second largest road network in the world, but needs significant expansion and upgrades. Government initiatives like Bharatmala Pariyojana and Sagarmala aim to improve connectivity and logistics efficiency.

Railways: The Indian Railways network is the fourth largest globally, undergoing modernization with dedicated freight corridors and high-speed rail projects.

Airports: India plans to build and upgrade over 100 airports, expanding air connectivity and catering to growing passenger demand.

Ports: India's coastline offers immense potential for port development, facilitating international trade and boosting maritime connectivity.

Mapping the Role of Infrastructure Construction in Economic Development: A Multifaceted Impact

The infrastructure construction segment of the construction industry plays a critically important role in driving economic development, impacting multiple facets of a nation's growth.

Connecting the Economy:

Improved Transportation Networks: Efficient roads, highways, railways, airports, and ports facilitate the movement of goods and people, fostering trade, commerce, and logistics. This reduces transportation costs, increases market access, and boosts regional development.

Enhanced Connectivity: Infrastructure connects producers with consumers, enabling market expansion, stimulating industrial growth, and attracting foreign investments.

Job Creation and Economic Activity:

Direct Employment: Infrastructure projects are labor-intensive, creating jobs for engineers, construction workers, technicians, administrative staff, and various skilled and unskilled personnel. This injects income into the economy, leading to increased consumption and demand across sectors.

Indirect Employment: Infrastructure development stimulates associated industries like steel, cement, transportation, and manufacturing, generating additional job opportunities and promoting economic activity throughout the value chain.

Facilitating Trade and Investment:

Reduced trade costs: Improved infrastructure lowers logistics costs, making exports and imports more competitive and boosting international trade.

Attracting Investments: Modern infrastructure creates an attractive environment for domestic and foreign investments, leading to capital inflows and technological advancements.

Enhancing Quality of Life:

Access to Essential Services: Efficient infrastructure ensures access to clean water, sanitation, healthcare, and education, improving living standards and public health.

Urban Development: Improved infrastructure supports urbanization, providing housing, utilities, and amenities for growing populations.

Long-Term Growth and Sustainability:

Investments in infrastructure have a ripple effect by promoting innovation, productivity, and economic diversification, contributing to sustainable long-term growth.

Green infrastructure practices in construction like renewable energy projects and sustainable materials adoption help mitigate environmental impact and promote ecological harmony.

Railway Infrastructure in India: overview on track and station network

Ranked fourth globally, India possesses an extensive railway system, trailing only the United States, Russia, and China. The affordability and efficiency of railways persist as the favoured choice for long-distance travel among the majority of Indians.

Acknowledged as one of the world's largest railway systems under unified management, India's railway network excels in facilitating extended journeys and transporting bulk goods. Beyond being an economical mode of conveyance, it stands out as an energy-efficient means of transport.

As of March 31, 2023, India's railway tracks span 1,32,310 kms, encompassing broad gauge, metre gauge, and narrow gauge. Notably, the total double-line track extends to 26,578 kms. The commitment to expansion is evident in the achievement of 5243 km of New Line during FY 2022-23, with an average daily track laying rate of 14.4 kms – a historic high.

The railway infrastructure further encompasses 13,523 passenger trains and 9,146 freight trains operating daily. In the financial year 2022-23, the Indian Railways recorded its highest-ever loading of 1512 MT, showcasing the system's efficiency and capacity growth.

With approximately 7,335 railway stations spread across 17 zones and 68 divisions, India's railway network stands as a testament to its scale, efficiency, and crucial role in the nation's transportation landscape.

Railway modernization in India: focus on expansion / modernization of railway station network

India's railway journey began in 1832 with proposals in Madras. The first passenger train ran between Bombay and Thane on April 16, 1853, covering 34 kilometers with 400 passengers. The country's first electric passenger train operated between Victoria Terminus (VT) and Kurla on February 3, 1925. The reorganization of India's railways into regional zones began in 1951. In 1952, fans, lights, and sleeping accommodations were mandated across all classes of passenger accommodations.

Today, it has come very far. India's railway network is one of the largest in the world, serving millions of passengers and transporting goods across vast distances every day. As the backbone of the country's transportation infrastructure, Indian Railways plays a crucial role in connecting people, businesses, and

regions. In recent years, there has been a concerted effort towards modernizing and expanding the railway station network to meet the evolving needs of passengers and freight traffic.

The modernization of railway stations in India encompasses a wide range of initiatives aimed at enhancing infrastructure, amenities, and services to provide passengers with a world-class travel experience. This includes the construction of modern waiting halls, waiting rooms, restrooms, and passenger lounges equipped with amenities such as Wi-Fi connectivity, charging points, and digital display boards providing real-time information about train schedules and arrivals. Additionally, efforts are underway to improve accessibility for passengers with disabilities by installing ramps, elevators, and other facilities to ensure equitable access to railway services. Some of the developments are as mentioned below:

According to the latest report of Ministry of Railways in FY 2022, a total of 181 stations spread across various states have been earmarked for redevelopment under the oversight of the Railway Board's Rail Land Development Authority (RLDA). Among these, construction activities have been successfully concluded at Gandhinagar Capital and Rani Kamalapati railway stations, marking significant progress in station modernization endeavors. Additionally, construction projects are currently underway at several key locations, including Bijwasan, Gomtinagar (in collaboration with NBCC), Delhi Safdarjung (in partnership with IRCON), and IMS, Ajni/Nagpur (in association with NHAI), leveraging the Engineering, Procurement, and Construction (EPC) mode to expedite implementation.

In a bid to ensure seamless travel experiences for passengers, quick watering facilities have been strategically deployed at 33 stations to provide efficient water supply within the stipulated halt time of the trains. This initiative aims to guarantee the availability of adequate water in coaches throughout the duration of train journeys, enhancing passenger comfort and convenience. Presently, a total of 95 stations have been equipped with these quick watering facilities, with 26 stations receiving such provisions during the fiscal year 2021-22, indicating ongoing efforts to expand and improve passenger amenities.

In line with the government's vision of promoting sustainable development and green transportation, the modernization of railway stations in India also emphasizes environmental sustainability and energy efficiency. This includes the adoption of eco-friendly practices such as rainwater harvesting, solar power generation, and energy-efficient lighting systems to reduce the carbon footprint of railway operations. Furthermore, Indian Railways has demonstrated a strong commitment to environmental sustainability by achieving significant milestones in green certification and environmental management system implementation. A total of 32 railway stations and 32 railway buildings, including schools and hospitals, have been awarded "GreenCo" certification, highlighting compliance with rigorous environmental sustainability standards. Additionally, approximately 700 railway stations have been certified for the implementation of the Environment Management System ISO: 14001, reflecting a holistic approach to environmental stewardship and resource management within the railway ecosystem.

Aligned with the overarching objectives of the "Digital India" initiative of the Government of India, Indian Railways has implemented Wi-Fi internet services at 6,102 stations through RailTel's RailWire Wi-Fi network, including 15 stations in the Kashmir valley. This initiative constitutes one of the world's largest and fastest public Wi-Fi networks. Notably, 70% of the commissioned stations are situated in rural areas, thereby providing free high-speed Wi-Fi access to a significant portion of the rural population.

Furthermore, RailTel is actively deploying an IP camera-based Video Surveillance System at over 5000 railway stations, significantly enhancing passenger safety and security across the Indian Railways network. This initiative includes the integration of standalone video surveillance systems installed by respective zonal railways at various stations, enabling centralized monitoring of video recordings at the Divisional and Zonal headquarters. The system incorporates high-capacity storage devices at stations to archive CCTV footage for a specified duration. Phase-I of this project has already been completed at 303 stations.

A variety of amenities are available at stations to cater to the diverse needs of passengers, including 1926 Water Vending Machines, 1365 Multi-Purpose Stalls, 362 Book Stalls, 44 Miscellaneous/Curio Stalls, 03 exclusive Chemist Stalls, and 01 Book Stalls cum Chemist Corners. These facilities ensure the availability of essential items required by travellers during their journey.

Overall, the focus on expansion and modernization of the railway station network in India reflects a comprehensive approach towards transforming the country's railway infrastructure to meet the needs of the 21st century. By investing in infrastructure upgrades, enhancing passenger amenities, promoting environmental sustainability, and unlocking commercial potential, Indian Railways aims to create a modern and efficient railway network that serves as a catalyst for economic growth and development across the country.

Flagship Government Policies

Amrit Bharat Station Scheme

Recognizing the widespread preference for railways as the primary mode of transportation, the Indian government has underscored the significance of delivering top-notch facilities at railway stations. Aligned with this vision, the Amrit Bharat Station Scheme was initiated to revamp 1309 stations across the country.

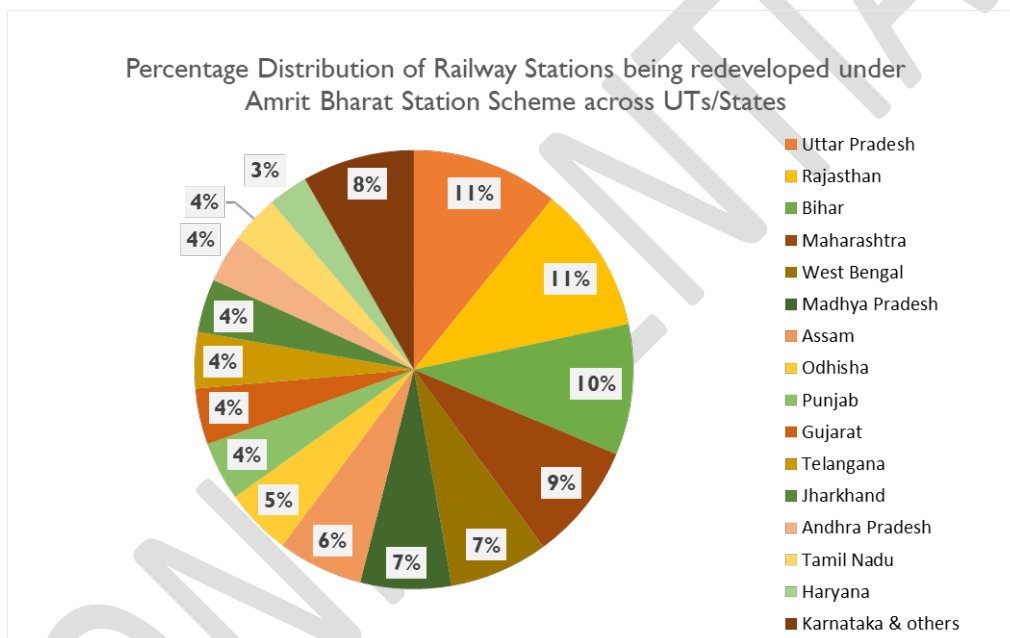
With a long-term perspective on station development, the Amrit Bharat Station scheme entails crafting Master Plans and implementing them progressively to enhance various station amenities. These improvements encompass bettering station accessibility, waiting areas, restroom facilities, installation of lifts and escalators as necessary, cleanliness initiatives, provision of free Wi-Fi, establishment of kiosks for local products through initiatives like 'One Station One Product', improvement of passenger information systems, creation of Executive Lounges, allocation of spaces for business meetings, incorporation of landscaping, and tailoring solutions to the unique needs of each station.

Moreover, the scheme underscores the refurbishment of station structures, integration of stations with surrounding urban areas on both sides, promotion of multimodal connectivity, provision of facilities for individuals with disabilities (Divyangjans), implementation of sustainable and eco-friendly measures,

introduction of ballastless tracks, inclusion of 'Roof Plazas' when necessary, and careful consideration of the feasibility and phasing of enhancements. The overarching objective is the transformation of these stations into vibrant city centres over the long term.

Under this scheme, redevelopment work has commenced for 508 railway stations at a cost exceeding Rs 24,470 crores. Comprehensive Master Plans are being devised for the evolution of these stations into 'City Centres,' with seamless integration on both sides of the city. This integrated approach aligns with the holistic vision of overall urban development centered around the railway station.

These 508³ stations are spread across 27 states and union territories, including 55 each in Uttar Pradesh and Rajasthan, 49 in Bihar, 44 in Maharashtra, 37 in West Bengal, 34 in Madhya Pradesh, 32 in Assam, 25 in Odisha, 22 in Punjab, 21 each in Gujarat and Telangana, 20 in Jharkhand, 18 each in Andhra Pradesh and Tamil Nadu, 15 in Haryana, 13 in Karnataka among others.



Source: Amrit Bharat Station Scheme

The redevelopment will provide modern passenger amenities along with ensuring well-designed traffic circulation, inter-modal integration and signage for the guidance of passengers. The design of the station buildings will be inspired by local culture, heritage and architecture.

One Station One Product (OSOP) Scheme

The One Station One Product scheme, unveiled in the Union Budget 2022-23, aligns with the 'Vocal for Local' vision of the Government of India, aiming to create a market for local/indigenous products and generate additional income opportunities for marginalized segments of society. This initiative seeks to enhance livelihood prospects for local artisans, potters, weavers/handloom weavers, craftsmen, etc., by establishing

³ No definitive information is currently available to confirm whether the 181 stations earmarked for redevelopment under the RLDA's purview are included within the 508 stations targeted by the Amrit Bharat Station Scheme.

sales outlets at railway stations nationwide. The pilot project, launched on 25.03.2022 for 15 days at 19 stations, informed the formulation of the OSOP policy on 20.05.2022.

Within this framework, Indian Railways provides uniquely designed sales outlets with a distinct appearance and logo at stations, developed by NID/Ahmedabad, to showcase, sell, and give heightened visibility to indigenous/local products for a nominal registration fee of Rs 1000/- for 15 days. Allotment occurs to applicants meeting the scheme's objectives on a rotational basis through draw of lots at stations.

As of 30.11.2023, 1189 OSOP outlets are operational at 1083 stations, allocated to local beneficiaries, including 184 artisans, 630 craftsmen, 147 weavers, 202 agricultural/forest product producers, among others. Up to November 2023, a total of 41,280 direct beneficiaries have availed themselves of the opportunities presented by the OSOP scheme.

National Railway Plan (NRP)

The National Rail Plan (NRP) for India, set for realization by 2030, is a strategic blueprint aimed at forging a 'future-ready' railway system. It seeks to proactively create capacity exceeding demand by 2030, fostering efficiency and profitability while accommodating periodic peaks and year-on-year growth in traffic demand with minimal future capital investment. The NRP envisions sustaining a 44% modal share for railways up to 2051, signifying a substantial role in the country's transportation landscape.

Emphasizing both operational capacities and commercial policy initiatives, the plan targets an increase in the railway's freight modal share from the current 28% to an ambitious 44% by 2051. The objective is to establish capacity ahead of demand, enabling the railway system to support a 44% modal share in freight traffic while maintaining sustainability. Diverse financial models, including Public Private Partnership (PPP), are under consideration to achieve these goals.

Recognizing Indian Railways as a growth engine, the NRP seeks to transform it into an efficient, greener, and modernized entity, offering cost-effective, safer, and reliable transportation for passengers and freight. The plan outlines a two-step transformation, with the first leap targeted by 2024 and the comprehensive vision for 2030.

The "Vision 2024/2024" framework identifies critical projects for completion by 2024, including 100% electrification, multi-tracking of congested routes, speed upgrades on key routes, and the elimination of level crossings. Indian Railways' impressive 7.5% increase in cargo transport in 2022, reaching 1,497 million tonnes, aligns with the NRP's goal of raising rail's freight share from 31% to 44% by 2051.

Key features of the NRP include formulating strategies for freight modal share, reducing transit time, launching Vision 2024 for accelerated project implementation, identifying new Dedicated Freight Corridors and High-Speed Rail Corridors, assessing rolling stock and locomotive requirements, and involving the private sector in operations and infrastructure development. This comprehensive plan reflects a commitment to shaping India's railway future with foresight, efficiency, and sustainability.

Green Initiatives

Indian Railways is committed to becoming a Net Zero Carbon Emitter by 2030 and has implemented a series of initiatives to reduce carbon emissions. These include the adoption of energy-efficient technologies such as fully transitioning to the production of three-phase electric locomotives with regenerative features, implementing head-on generation (HOG) technology, installing LED lights in buildings and coaches, using star-rated appliances, and promoting afforestation.

Additionally, the railway is tapping into the vast potential of renewable energy, particularly solar power, by utilizing the expansive land parcels available along the railway tracks. By October 2023, approximately 211 MW of solar plants, both rooftop and ground-mounted, and about 103 MW of wind power plants have been commissioned. Moreover, the railway has secured commitments for an additional 2150 MW of renewable energy capacity.

As part of its Net Zero Carbon by 2030 mission, Indian Railways has launched Mission 100% Electrification. This mission aims to electrify the entire Broad Gauge network in a focused effort to provide an environmentally friendly and clean mode of transport.

Indian Railways has achieved remarkable progress in electrification, with 21,801 KM of the broad gauge network electrified by 2014. As of November 2023, the total Broad Gauge (BG) network spanning 60,814 km has been electrified. Fourteen states and Union Territories have achieved 100% electrification of their rail tracks, including Chandigarh, Chhattisgarh, Delhi, Haryana, Himachal Pradesh, Jammu & Kashmir, Jharkhand, Madhya Pradesh, Meghalaya, Odisha, Puducherry, Telangana, Uttar Pradesh, and Uttarakhand.

High-speed trains & metro network: Mapping the impact on railway station infrastructure

The advent of high-speed trains and the expansion of metro networks have revolutionized the landscape of urban transportation systems worldwide. These modern modes of transit offer unparalleled speed, efficiency, and connectivity, reshaping the way people commute within and between cities.

Railway stations serve as vital hubs in the transportation network, facilitating the seamless movement of passengers and goods across vast distances. Traditionally, these stations have been designed to accommodate conventional train services, catering to the needs of commuters and travellers. However, with the introduction of high-speed trains and the expansion of metro networks, the demands placed on railway station infrastructure have evolved significantly.

With India witnessing a steep rise in its metro network, and the daily ridership across metro systems in the country crossing the 10 million mark, it is further expected to exceed 12.5 million in a year or two. As high-speed trains and metro networks become integral components of urban transportation systems in India, the expansion and modernization of railway station infrastructure emerge as imperative tasks. The introduction

of these advanced modes of transit necessitates significant upgrades to existing station facilities to accommodate the increased volume of passengers, trains, and associated services.

One of the primary considerations in expanding railway station infrastructure is the need to enhance capacity to handle higher passenger footfall and train frequency. With the introduction of high-speed trains and metro networks, there will likely be an increase in passenger demand for rail transportation. This surge in demand may necessitate upgrades to existing railway infrastructure, including tracks, platforms, and signalling systems, to accommodate higher passenger volumes and train frequencies. Thus, unlike conventional stations designed primarily for slower-moving commuter and freight trains, modern stations must contend with the rapid movement of passengers and trains inherent to high-speed and metro services.

Ticketing counters and fare gates are another area of differentiation. While traditional stations may rely on manual ticketing processes and turnstiles, modern stations implement automated ticketing systems and contactless fare gates to expedite passenger flow and reduce congestion. Features enabled in metro stations such as National Common Mobility Card (NCMC), which fall under the umbrella of the Prime Minister's 'One Nation One Card' initiative, enable seamless travel by metro rails and other transport systems across the country besides retail shopping and purchases. These innovations not only enhance convenience for passengers but also improve operational efficiency and safety.

Another key differentiation lies in the layout and configuration of station platforms. Unlike traditional platforms, which may be narrow and constrained, modern platforms for high-speed and metro services must be wider and more spacious to accommodate larger crowds and facilitate efficient boarding and alighting processes. Additionally, platforms may be equipped with advanced signalling and safety systems to ensure the smooth and safe movement of trains. Further, they should be designed to provide intuitive wayfinding, clear signage, and seamless connectivity between different modes of transportation.

Another crucial aspect of railway station modernization is the incorporation of sustainability principles into infrastructure design and operation. With growing concerns over environmental degradation and climate change, there is a heightened emphasis on reducing the carbon footprint of transportation systems. Therefore, integrating eco-friendly features such as energy-efficient lighting, rainwater harvesting systems, solar panels, and green spaces into railway station infrastructure is paramount.

In this regard, ten 'green stations' along the 16-kilometer Mumbai Metro Line 7, which operates from Dahisar East to Andheri East, have achieved the prestigious Platinum Rating awarded by the Indian Green Building Council (IGBC). Additionally, the Delhi Metro Rail Corporation (DMRC) made significant strides in sustainability by transitioning to a completely green operation in 2017. Recognized as the "World's First Green Metro," DMRC's achievement stems from its strict adherence to the green building guidelines established by the IGBC. Further, as of March 2023, all 27 elevated metro stations under Phase IV are being made future ready for solar plants. Thus, aligning with sustainability efforts will not only shape the direction

of railway infrastructure but also ensure its resilience and environmental responsibility in the face of evolving challenges, making it a crucial consideration for future developments.

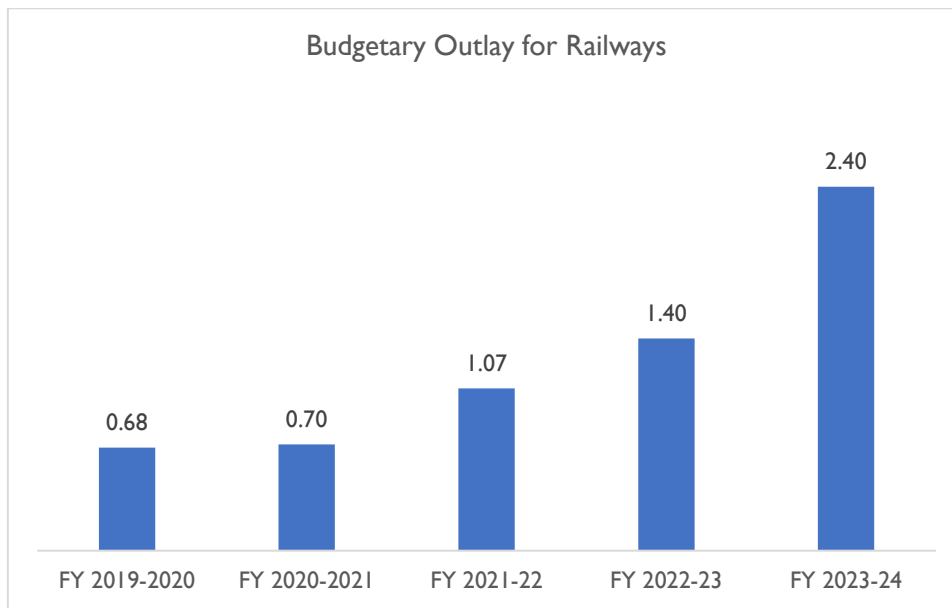
The integration of high-speed trains and metro networks with the existing railway network presents technical and logistical challenges. However, the expansion and modernization of railway station is imperative for enhancing the overall passenger experience. In India, the Delhi Metro project provides a compelling example of the integration of metro networks with existing railway stations. Stations such as New Delhi Railway Station and Old Delhi Railway Station have been redesigned and expanded to seamlessly connect with Delhi Metro lines, offering passengers convenient intermodal transfers and enhanced connectivity across the city.

The Pan-India integration of high-speed trains and metro networks with existing railway stations is crucial for ensuring seamless connectivity and efficient multimodal transportation. As these advanced transportation systems expand, it becomes imperative to establish smooth transitions between different modes of transit, facilitating convenient transfers for passengers and optimizing the overall efficiency of the transportation network.

Growth Forecast

With a staggering 126,366 km of track, India boasts the world's fourth-largest railway network. This translates to a formidable web of steel ribbons crisscrossing the nation, connecting remote villages to bustling metropolises. Spanning 67,415 km of routes, the network provides diverse travel options, catering to the needs of millions of passengers and facilitating the seamless movement of goods across the country. The presence of 7,335 stations, spaced conveniently at an average interval of 17 km, ensures that no region is left isolated. This high density underscores the railway's commitment to inclusivity and accessibility.

Remarkably, there has been a significant increase in funding for railway development, with allocations growing at a CAGR of 37% from FY 2020 to FY 2024. Furthermore, the unprecedented 71% annual growth in FY 2024 in budgetary allocations for this purpose implies the importance and intended growth for the railway network in India.



Source: As per Government of India

In August 2023, the Government of India approved seven multi-tracking projects totalling Rs 32,500 crore. These projects will span across 34 districts in nine states, namely Uttar Pradesh, Bihar, Telangana, Andhra Pradesh, Maharashtra, Gujarat, Odisha, Jharkhand, and West Bengal. This approval will extend the existing Indian Railways network by 2,339 kilometres and add 120 million tonnes of extra cargo handling capacity.

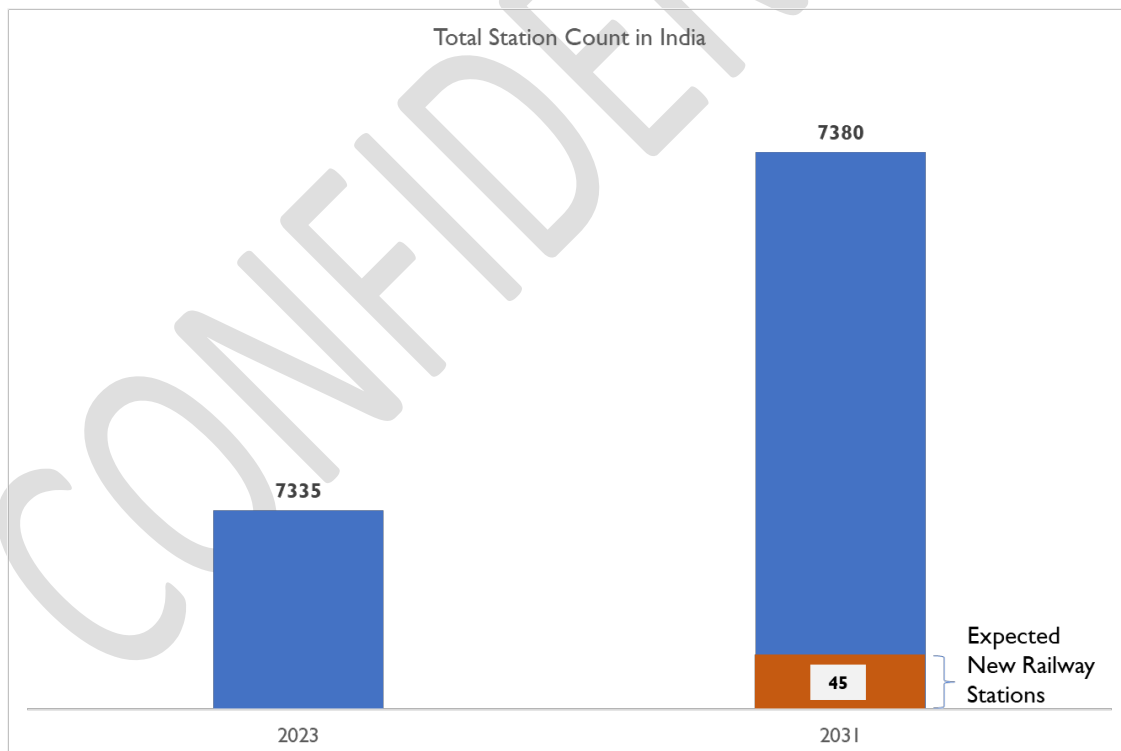
Among these projects, four have been sanctioned for doubling existing tracks, one for adding a third line, one for quadrupling the existing network, and one for multi-tracking. These projects include doubling the Gorakhpur Cantt - Valmiki Nagar Single Line section covering 96 kilometres at a cost of Rs 1,269.8 crore. Additionally, improving North East connectivity and doubling the Guntur - Bibinagar Single Line section spanning 239 kilometres will be carried out at a cost of Rs 3,238 crore. Doubling the Chopan- Chunar single line section across 102 kilometres will cost Rs 1,553 crore.

Furthermore, the doubling of the line between Mudkhed-Medchal & Mahbubnagar-Dhone section covering 418 kilometers is underway, with a budget of Rs 5,655.4 crore. The quadrupling between Samakhiali and Gandhidham in Gujarat over a 53-kilometer stretch has been approved at a cost of Rs 1,571 crore. Additionally, the construction of a third line between Nergundi - Barang & Khurda Road - Vizianagaram spanning 385 kilometers will cost Re 5,618 crore.

The Son Nagar Andal Multi-tracking Project, covering 374.5 kilometers, is one of the biggest projects approved by the cabinet in this round, with a total cost of Rs 13,606 crore. This project will cover parts of Bihar, Aurangabad, and Jharkhand.

India's railway infrastructure is undergoing substantial expansion to meet the escalating demands for travel and freight transportation, ensuring its readiness for the future. The government is deeply invested in this endeavour, backing it with policies such as the National Rail Plan and significant budgetary allocations.

The National Rail Plan aims to raise the modal share of railways in freight traffic to 45% by 2030, a significant jump from the current 27%. This translates to a massive and efficient movement of goods across the nation. Dedicated freight corridors, faster turnaround times, and competitive pricing are key elements in attracting more cargo onto the rails. Additionally, focus on specialized wagons for specific commodities and improved logistics integration will further enhance the attractiveness of rail freight. The plan anticipates a robust rise in passenger traffic, with a potential one billion passengers annually by 2030. This necessitates significant expansion in passenger-carrying capacity. Increased frequency of trains, introduction of faster and more comfortable services like high-speed trains, and improved last-mile connectivity will cater to the growing demand. Moreover, the plan emphasizes creating a seamless travel experience through digital ticketing platforms and modern amenities at stations. The plan envisions adding a staggering 780 new lines by 2031, with an average annual addition of 98 lines. This aggressive expansion will connect previously underserved regions, boosting economic activity and regional development. This dramatic increase in lines directly translates to a need for more railway stations. An additional 45 stations are slated to come up by 2031, bringing the total number to 7,380. These new stations will act as focal points for local communities, fostering trade, connectivity, and overall development. The aggressive increase in freight mix and passenger traffic, coupled with the rapid expansion of new lines, will inevitably generate the demand for more railway stations.



Source: As per Government of India

Indian Railways is chugging into a new era of passenger experience with a massive station redevelopment program. The government is investing over Rs 13,000 crore to transform 35 major stations across 14 zones into modern, state-of-the-art hubs.

Three railway station redevelopment/modernization projects have been announced by the central government, spanning across different zonal railways which includes Sanganer (Jaipur) Railway Station Redevelopment Project, with an estimated cost of Rs. 355 million, will transform Sanganer station into a world-class facility by North Western Railways. Shimla Railway Station Development Project, with an estimated cost of Rs. 135.1 million by North Railways and Anaparthi Railway Station Development Project, the Rs. 200 million project by South Central Railways. The Indian Railways has learned from its initial foray into PPP models and is now prioritizing the Engineering, Procurement and Construction (EPC) model. This means builders have a larger role to play, from design to delivery.

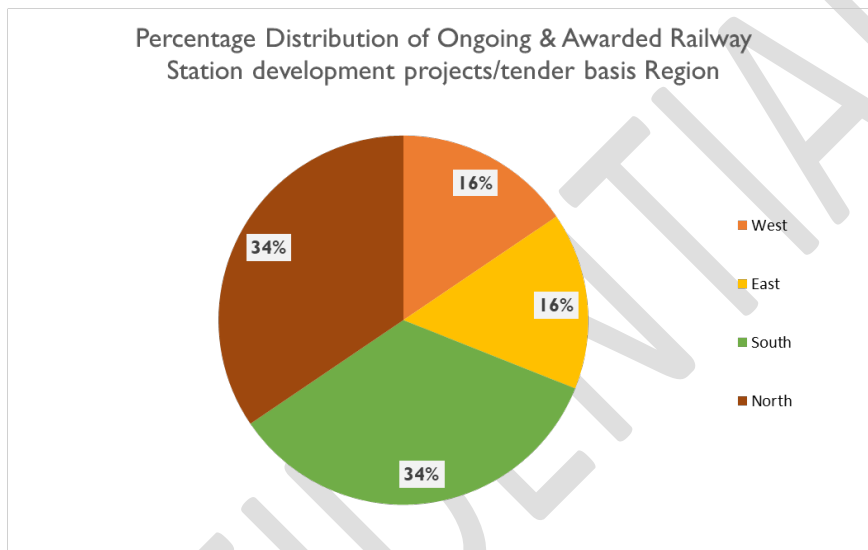
In terms of railway station infrastructure development plans, Rail Land Development Authority (RLDA), a statutory Authority, under the Ministry of Railways, has received 100 station re-development projects. The status for the same is as under:

Status	No. of Stations
Completed & commissioned	2
DPR finalised by RLDA, EPC Tender awarded by Zonal Railway	41
DPR finalised by RLDA, EPC Tender invited by Zonal Railway	5
DPR finalised by RLDA, under process for inviting tender	3
DPR finalised by RLDA, work awarded by Zonal Railway	1
DPR finalised by RLDA. EPC Tender awarded by RLDA. After award handed over to Zonal Railway	3
Master planning is in progress.	29
EPC Tender awarded, under execution of RLDA	12
EPC Tender invited by RLDA	2

The station is to be taken up on EPC by RLDA	1
Under Planning with Central Railway	1

Source: Rail Land Development Authority

Out of the 100 redevelopment projects received by RLDA, 61 projects accounts for the awarded and ongoing projects & tender cumulatively. The regional distribution of these projects is as:



Source: Rail Land Development Authority

Furthermore, as part of the Amrit Bharat Station Scheme, foundation stone for 508 stations is completed. Remaining 801 stations are yet to be planned and allocated. With heavy expansion plans and development changes underway in the nation, numerous opportunities are poised to emerge for railway station infrastructure development.

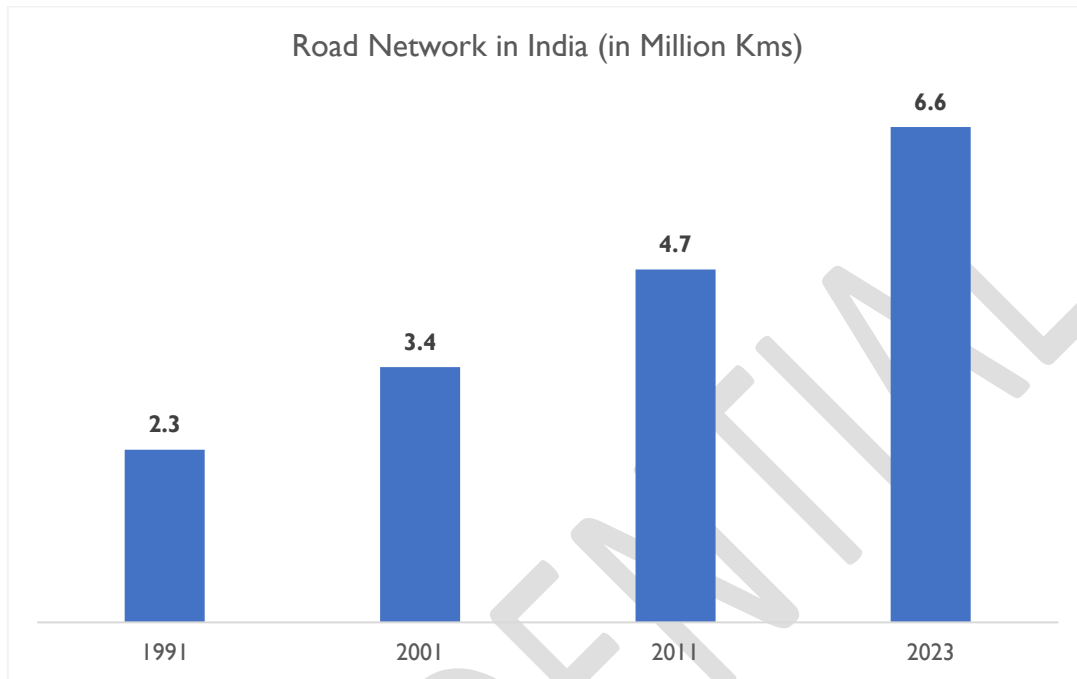
Road Infrastructure in India

India has a road network spanning approximately 6.6 million kms, making it the second largest in the world. This network – which comprises of national highways, state highways, district roads, and rural road – carries approximately 65% of country’s freight traffic and nearly 90% of passenger traffic.

India also has the second largest highway network in the world⁴, after the United States, spanning approximately 146,145 kms. The crown jewels of the network, NHs constitute only 2% of the total length but carry over 40% of traffic. These high-quality, multi-lane highways connect major cities, ports, and industrial

⁴ Referring to National Highways

centers. Since the 1990s, India has prioritized road development. Over 35,000 kilometres of four-lane expressways have been constructed, connecting major economic and cultural centres. The National Highways and Infrastructure Development Corporation Limited (NHIDCL) and the National Highways Authority of India (NHA) have played crucial roles in this expansion

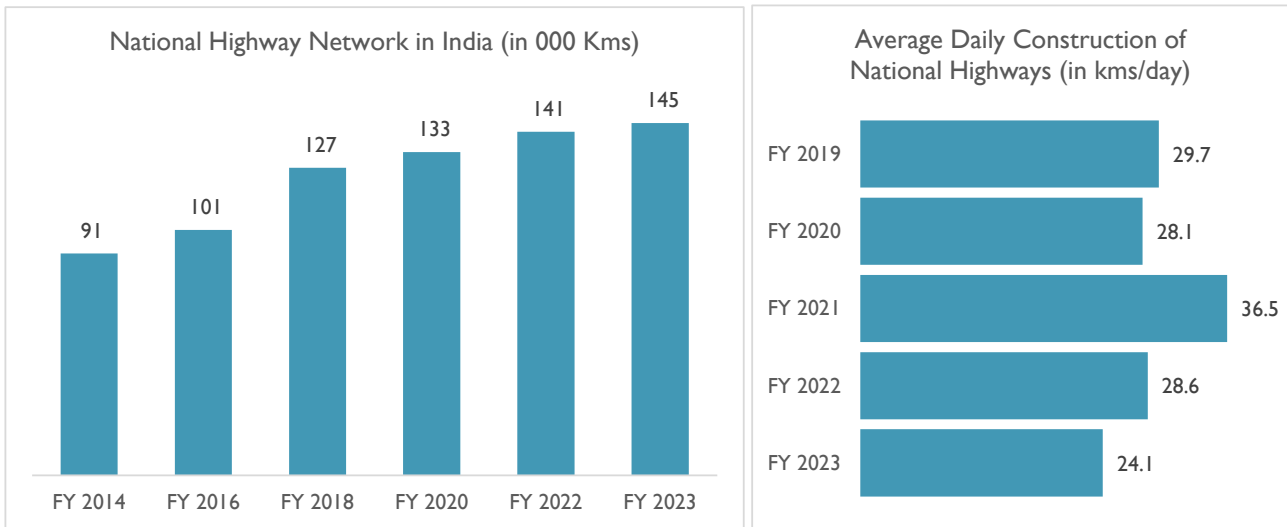


Source: Ministry of Road Transport & Highways, Government of India

National Highway Network in India.

Implementation of favourable policy measures / programs, and aggressive push by the Government to increase the road network has accelerated the pace of road construction in the country. The switch to a corridor-based highway development strategy adopted by the Government, beginning 2014 – 15, has improved the pace of construction. The annual addition in road network reached its fastest during FY 2021, when the pandemic induced a lockdown in the country. Between FY 2015 and FY 2023, nearly 54,000 kms of road was added to the national highway network in the country, thereby taking it from approximately 91,000 kms to its present stretch of approximately 145,000 kms.

Average daily construction rate reached its highest level of nearly 36.5 kms/day in FY 2021, as the industry was benefitted by the lockdown measures imposed after the spread of Covid-19 pandemic. Since then, the average daily rate has dipped, to nearly 24 kms in FY 2023.



Source: Ministry of Road Transport & Highways, Government of India, D&B Research, Average Daily Construction for FY 2023 is for period 1st April 2021 to 28 February 2023

Growth Trend

Over the years, the national highway network has undergone remarkable growth, evolving from a modest collection of roads to a vast expanse of well-connected highways. The pattern of growth in the network is characterized by distinct phases, where each phase has contributed to the network's growth and transformation. Among these, the Golden Quadrilateral and the North-South and East-West Corridors stand out as iconic examples that have played a pivotal role in shaping the expansion and connectivity of the network.

The Golden Quadrilateral program, initiated in the early 2000s, was a massive undertaking that aimed to connect several major industrial, agricultural, and cultural centers of India by connecting the four major metropolitan cities of Delhi, Mumbai, Chennai, and Kolkata through a network of high-quality highways. This project not only drastically reduced travel time between these economic centers but also spurred economic growth and trade across the regions it covered. The successful completion of the Golden Quadrilateral represented a significant leap forward in India's highway development efforts and showcased the country's capacity to undertake and execute ambitious infrastructure projects.

Similarly, the North-South and East-West Corridors are envisioned to enhance connectivity between the northern and southern regions, as well as between the eastern and western parts of the country, making them the largest ongoing highway project in India. These corridors are bringing together the previously disconnected areas into the fold of the national highway network, opening up new avenues for trade, tourism, and development.

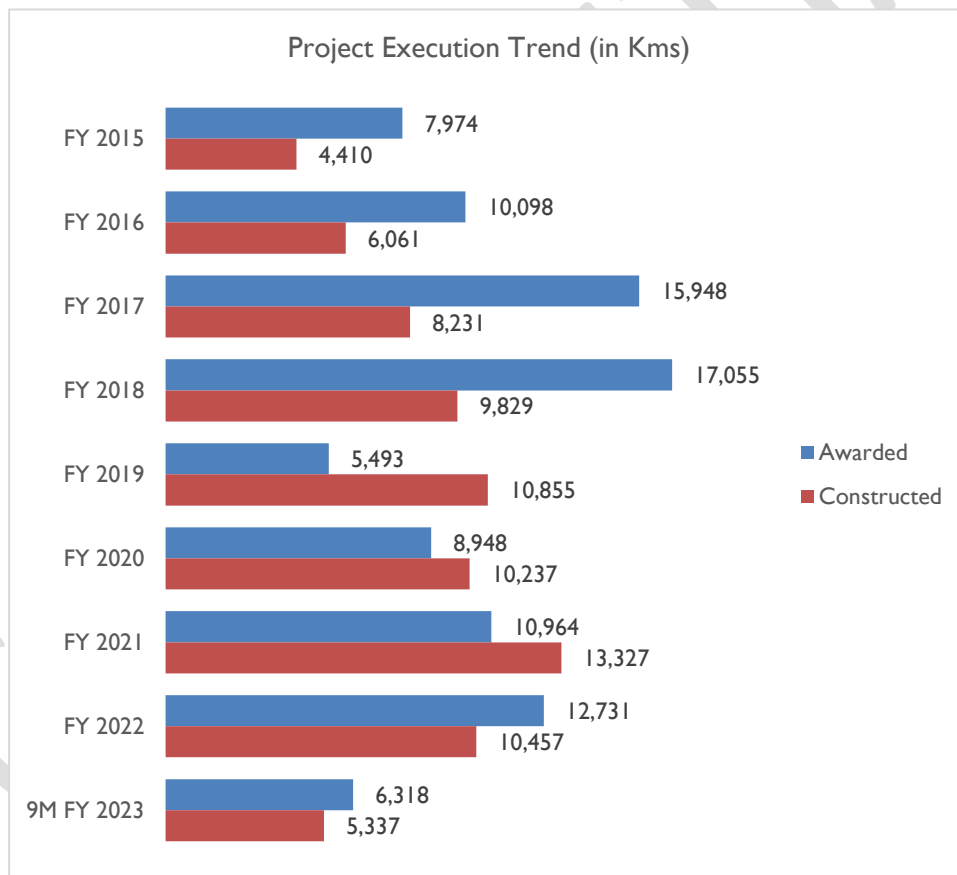
In terms of individual states, Maharashtra boasts the most extensive network of national highways, encompassing a total distance of approximately 18,500 kilometres and accommodating 102 national highways within its borders. Uttar Pradesh secures the second position with a road span of nearly 12,300 kilometres and 88 national highways within the state limits. Following closely is Rajasthan, which possesses approximately

10,700 kilometres of highways hosting 52 national highways, while Madhya Pradesh boasts 9,000 kilometres and 46 national highways. Coming in fifth, Andhra Pradesh encompasses 8,00 kilometres of highways hosting 47 national highways.

States which have the highest concentration of national highway network	
State	National Highway (in Kms)
Maharashtra	18,500
Uttar Pradesh	12,300
Rajasthan	10,700
Madhya Pradesh	9,000
Andhra Pradesh	8.700

Source: Ministry of Road Transport & Highways, Government of India

Project Execution Trends in National Highway Construction

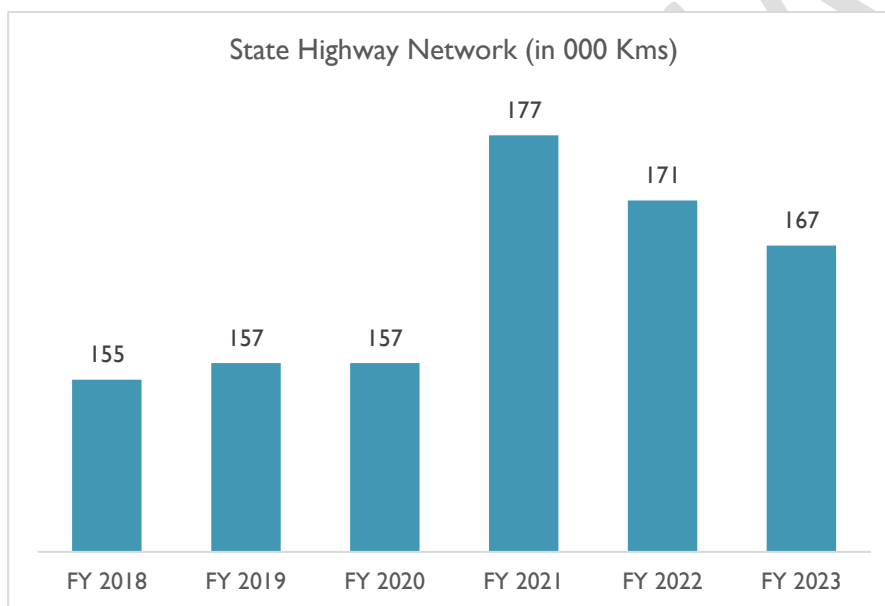


Source: Ministry of Road Transport & Highways, Government of India

Growth in Other Road Network

State Highways, the next major strategically important segment of Indian road infrastructure, accounted for nearly 3% of total network. Towards the end of FY 2023, the total network of state highways in India stood at approximately 167,000 kms. The total size of state highway network has seen a slight dip in the last couple of years as some of those state roads were reclassified and brought under the national highway segment – due to its strategic importance.

It is clear that national and state highways – two of the strategically important segment of Indian road infrastructure – accounts for less than 6% of the total road network in the country. The remaining 94% is accounted by other roads that are classified as district roads / rural roads / urban roads / project roads – depending on its location / program under which it was constructed / nature of paving.



Source: Ministry of Road Transport & Highways, Government of India

Key Demand Drivers

Growth in Population

Roads play a pivotal role in connecting not just major cities but also remote towns and even the smallest villages, serving as vital conduits for both vehicles and people. India, with its staggering population exceeding 1.428 billion individuals in 2023, represents a significant fraction of the global populace, constituting approximately 17.2% of the world's total inhabitants. Given this demographic enormity, the continuous development and enhancement of road infrastructure become nothing short of imperative.

Over the past 25 years, India's population has been on a persistent growth trajectory, averaging a 1.39% annual increase. Notably, in 1998, this growth rate reached 1.88%, while by 2022, it had moderated to 0.68%. This demographic expansion, while exhibiting fluctuations, highlights the nation's ongoing demographic dynamics. As the population continues to expand, so does the concurrent surge in demand for efficient transportation services and seamless connectivity.

In this context, the significance of robust and extensive road networks gains greater importance. These networks not only facilitate the movement of goods, services, and individuals but also catalyse economic development by fostering trade, tourism, and regional integration.

Urbanization

As per the handbook of urban statistics 2022, India's urban population has been on a steady rise, with urban dwellers accounting for over 469 million in 2021, a number projected to soar to over 558 million by 2031 and further exceed to 600 million by 2036.

This rapid urbanization represents the transformation occurring within Indian cities, as millions flock to urban centers in search of opportunities and a higher standard of living. However, this urban influx has given rise to a host of challenges, chief among them being increased congestion in urban areas. As more people gravitate towards cities, the existing road networks are under tremendous strain, resulting in traffic bottlenecks, longer commute times, and heightened pollution levels.

In response to this urban congestion, the development of road infrastructure has become an urgent imperative. The burgeoning urban population in India highlights the role of road infrastructure development, facilitating not only the movement of people and goods but also in alleviating the challenges posed by urban congestion.

Growth in Economic Activity

India's growing economic activities are propelling the development and expansion of road infrastructure across the nation. As the Indian economy continues its robust growth trajectory, it relies heavily on the presence of efficient transportation networks to facilitate the movement of goods and people. Roads play a vital role in opening up areas and stimulating economic and social development. They are essential for linking

producers to markets, connecting workers to jobs, providing access to education and healthcare, and supporting overall development.

The development of roads, particularly in rural and remote regions of India, assumes great importance in overall progress and inclusivity. According to data from the Ministry of Rural Development, approximately 91% of rural habitations in India are now interconnected by roads. This extensive road network serves as a lifeline, granting rural communities access to essential services such as healthcare, education, and markets. It not only facilitates the transportation of agricultural produce from farms to markets but also enables people in these areas to access healthcare facilities, send their children to schools, and engage in economic activities beyond traditional agriculture.

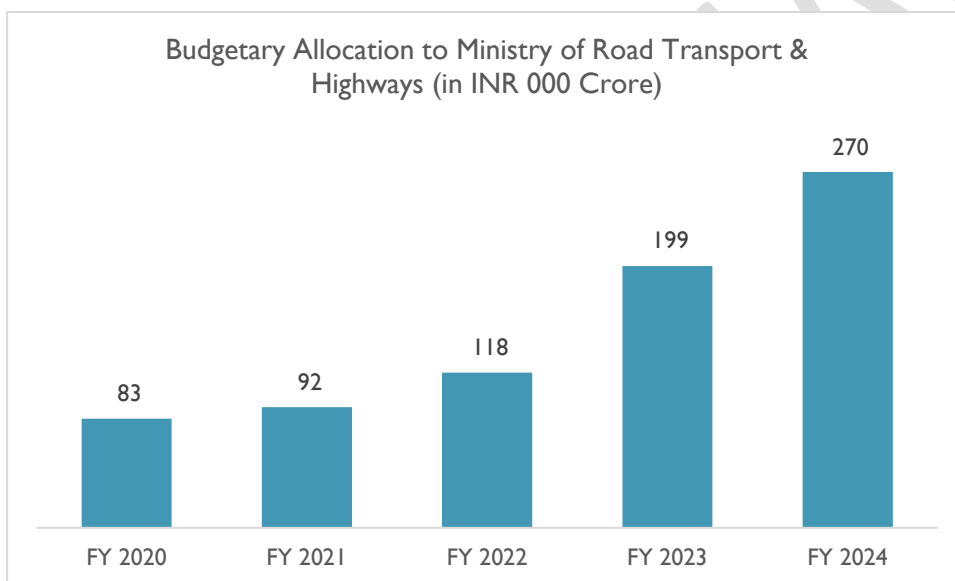
Trade Expansion

India's trade landscape has witnessed substantial growth, as evidenced by the positive trajectory of overall exports (Merchandise and Services combined) in FY 2022-23, projecting a significant 13.84% growth over the previous fiscal year. This growing trade expansion is reflected in the rising trade figures. In the fiscal year 2022-23, India's total trade is estimated at USD 770.18 billion, a notable increase from the previous year's USD 676.53 billion. This surge in trade activities highlights the necessity for a robust road infrastructure network to ensure the smooth and efficient flow of goods to ports and airports.

In addition, India's Foreign Trade Policy for 2023 aims for dynamic openness and consultative feedback, with a clear objective of achieving USD 2 trillion in exports by 2030. To realize this ambitious goal, a well-connected and modernized road network is crucial, enabling the timely and seamless transportation of export goods.

Budgetary Allocation for Road Projects

The budgetary allocation to the Ministry of Road Transport and Highways (MoRTH) by the Government of India has exhibited a significant and consistent upward trend in recent years, reflecting the government's commitment to infrastructure development and the expansion of road networks. In its latest budget (Union Budget FY 2024), the Government have allocated approximately INR 270,000 crore to MoRTH towards various projects. Compared to this, the annual budgetary allocation that was made during budget announcement FY 2020 was only INR 83,000 crore. The jump from INR 83,000 to INR 270,000 crore of allocation signals the aggressive commitments by the Union Government to develop the road infrastructure in the country.



Source: Union Budget Documents, Government of India

Project Implementation Modes in Road Infrastructure

Over the years, India’s road infrastructure construction segment has seen the introduction of multiple project execution models – ranging from Engineering, Procurement & Construction (EPC), Hybrid Annuity Model (HAM), and Build Operate Transport (Toll) models, to name a few. The move by the Government to increase private participation and private investment have played a key role in the formulation and implementation of these multiple models.

Largely, a move to a public private partnership (PPP) model in road construction away from only Government funded model has created a supportive ecosystem for the emergence of multiple project execution models. PPPs offer access to essential expertise for the planning and execution of large-scale projects, making them a versatile tool for fostering infrastructure development and innovation. Build Operate Transport (BOT) was the preferred project execution model in PPP projects.

Build Operate Transport (BOT) Model

BOT is a conventional PPP (public private partnership) model wherein the private partner is granted the concession to finance, build, and operate the project for a specified time (20-to-30-year concession period). The developer recoups their investment during this period by way of user charges / toll chargers. At the end of the concession period the developer hands over the project back to the public sector.

During O&M (Operation & maintenance) period, government and O&M by the concessionaire will manage toll collection. Under this model, amount financed by the concessionaire during construction period will be recovered by the government through annuity payment (biannually for 15 years) along with interest payment based (on reducing balance method @ Bank rate +x%). Thus, lender of the project will be at comfort with assured annuity payment and private sector will not have to bear traffic risk. Over the years, BOT route has witnessed several innovations, spawning several variants.

Build Operate Transfer (BOT) Model & Variants	
Build Operate Transfer (BOT)	The BOT model adheres to a classic PPP structure where the private partner takes charge of the entire project lifecycle, from design and construction to operation, before eventually returning the facility to the public sector. Crucially, the private sector partner assumes the responsibility for financing and upkeep, making it particularly suitable for greenfield projects. Furthermore, the public sector permits the private entity to charge users for the services provided, ensuring financial sustainability
Build Own Operate (BOO)	In the BOO approach, a private entity retains ownership of the newly constructed facility. The public sector, in turn, agrees to procure the goods and services delivered by the project under mutually acceptable terms and conditions. This

	arrangement allows the private sector to maintain ownership while facilitating public access to essential services.
Build Own Operate Transfer (BOOT)	In this variation of the BOT model, the project eventually transitions to the government or a private operator after the agreed-upon period. The BOOT concept is commonly employed in the construction of highways and ports, exemplifying its utility in facilitating private sector involvement in infrastructure development.
Build Lease Transfer (BLT)	Under the BLT model, the asset is leased to the public entity for a defined period, while ownership remains with the private company. Unlike some other models, the public sector assumes responsibility for financing the investment, making it a unique partnership structure.
Build Own Lease Transfer (BOLT)	In the BOLT strategy, the government grants a building concession to a private company, potentially including the design phase. The facility may initially be owned by a private business, which can subsequently lease it to the public sector. Ultimately, ownership of the facility is transferred back to the government after the lease term expires.
Design Build Finance Operate (DBFO)	The DBFO model places the private party in full control of the project, encompassing design, construction, financing, and operation throughout the concession period. This comprehensive approach streamlines accountability and can be particularly attractive to clients seeking a single point of responsibility for project delivery and operation.
Lease Develop Operate (LDO)	Primarily employed in the development of airport facilities, the LDO model retains public ownership of the newly constructed infrastructure while establishing a lease agreement with the private promoter. Payments are made to the public sector under the terms of this lease, making it a valuable tool for enhancing airport infrastructure.
Design Construct Manage Finance (DCMF)	Under the DCMF model, private sector entities construct and manage the asset for a predetermined period, which can span from 20 to 50 years. The government compensates the contractor for the asset's use during this time, potentially diverting public spending from significant infrastructure projects to fund other public initiatives. This model finds application in various sectors, including jails, courts, and public hospitals.

Hybrid Annuity Model (HAM)

To boost and attract investment in road infrastructure project, government introduced new Hybrid Annuity Model (HAM) which is a mix of Engineering, Procurement and Construction (EPC) and Build-Operate-Transfer (BOT) formats, with the government and private companies sharing the total project cost in the ratio of 40:60 respectively.

Under HAM, the concessionaire is responsible for design, building, finance (60% of the project cost) and then transfer the project at end of operation period (15years). During O&M (Operation & maintenance) period, government and O&M by the concessionaire will manage toll collection. Under this model, amount financed by the concessionaire during construction period will be recovered by the government through annuity payment (biannually for 15 years) along with interest payment based (on reducing balance method @ Bank rate +x%). Thus, lender of the project will be at comfort with assured annuity payment and private sector will not have to bear traffic risk. It will also reduce the initial capital outflow of the authority as against the investment made under EPC model.

Toll Operate Transfer (TOT) Model

The Toll-Operate-Transfer (TOT) model represents an innovative approach to capitalize on operational national highway projects. Investors participating in TOT offer a lump sum payment in exchange for the long-term rights to collect tolls, backed by a robust tolling system. In this framework, the highest bidder secures the privilege to operate and maintain existing road assets for a 20 to 30-year period, with the corresponding entitlement to toll revenues until that point.

One of TOT's primary advantages lies in its appeal to investors, as it obviates the need to initiate infrastructure projects from the ground up. This model effectively addresses the risk-sharing deficiencies often found in traditional Build-Operate-Transfer (BOT) agreements. Moreover, it serves as a consistent source of fresh funds for further investment in critical infrastructure.

The Indian government has embraced the TOT model as a means to bolster economic growth, envisioning the monetization of substantial infrastructure assets across sectors in the coming years through its Asset Monetization Programme. Specifically, under the asset monetization, the government aims to generate ₹85,000 crore by 2024-25. The monetization strategy for highways revolves around the TOT model, facilitating the infusion of private investment into the nation's infrastructure.

Structure of the Model

The government has granted approval for the National Highways Authority of India to undertake this initiative for public-funded NH projects that have been operational and generating toll revenues for a minimum of two years after the Completion of Development. The authorization process is subject to the approval of the

Competent Authority within the Ministry of Road Transport and Highways and NHAI, with individual cases being evaluated on a case-by-case basis.

Under the TOT Model, the right to collect and appropriate fees for selected operational National Highway projects, financed through public funding, is transferred to concessionaires, which can include developers and investors. In exchange for this right, these concessionaires make an upfront lump-sum payment to NHAI. The selection of projects for such rights assignment is based on their toll revenue potential. The concessionaires are responsible for the Operation & Maintenance obligations of these projects throughout the predetermined concession period.

To ensure transparency and uniformity in the selection of concessionaires, a transparent and standardized procurement process is adhered to, guided by a pre-defined and approved implementation framework. This approach not only facilitates the monetization of public-funded NH projects but also guarantees efficient management and maintenance of these assets, all while injecting private sector investment to support further infrastructure development in the nation.

Monetization Route & Status

The Ministry of Road Transport and Highways and the National Highway Authority of India have adopted various monetization avenues to enhance infrastructure development, with a focus on highways and associated assets. Currently, these monetization modes encompass three distinct approaches: the Toll-Operate-Transfer (TOT) model, Infrastructure Investment Trust (InvIT), and project-based financing, ensuring opportunities for all types of investors.

In FY 2024, MoRTH aims to mobilize substantial funds INR 15,000 crore is slated to be raised through project-based financing, which involves securitizing future toll revenues from high-speed corridors. Additionally, around INR 10,000 crore is planned to be generated through InvIT, an investment instrument resembling mutual funds, designed to accumulate capital from investors and invest in assets providing long-term cash flows. Furthermore, another INR 10,000 crore is targeted to be raised through bids under the TOT model, reflecting the government's commitment to leveraging this approach for infrastructure development.

MoRTH has already realized considerable success in asset monetization. By February 28, 2023, it had raised a total of INR 67,997 crore through various monetization methods over the past four years. Within this framework, approximately INR 26,366 crore has been raised by monetizing 1,614 kilometres of highways through the TOT model.

Current Status of TOT Projects

The National Highway Authority of India (NHAI) has adopted an ambitious plan for the toll-operate-transfer model in FY 2024. NHAI intends to invite bids for two bundles of TOT projects every quarter during this period. Bids for TOT bundles 13 and 14 were already invited in June, and the awards for these bundles are

expected to be finalized by the end of September. Subsequently, TOT bundles 15 and 16 have been identified and are currently in the finalization process.

The NHAI aims to raise approximately INR 7,500 crore from the asset monetization of TOT bundles 13 and 14. Furthermore, the projects under TOT bundle 15 are valued at around INR 1,500-2,000 crore, while those in TOT bundle 16 have a higher valuation, ranging from INR 6,000-8,000 crore.

NHAI has been instrumental in these efforts, having awarded six TOT bundles, namely ToT-1, 3, 5A1, 5A2, 7, and 9, resulting in the collection of Rs 26,366 crore from bids solicited for 11 TOT bundles. However, some TOT bundles, specifically bundles 2, 4, 6, 8, and 10, were annulled due to lower bids compared to the initial estimated concession value determined by NHAI.

While NHAI is actively pursuing TOT model projects, there have been some challenges in awarding contracts. Earlier this year, bids were invited for TOT bundles 11 and 12 with the aim of raising a total of Rs 7,000 crore. However, these bundles received lower-than-expected bids, resulting in a limited number of participants. In fact, it's anticipated that bundles 11 and 12 may be annulled due to the insufficient response from bidders.

Nevertheless, NHAI remains committed to advancing infrastructure development through the TOT model, with plans to open bids for TOT bundles 13 and 14 by the end of September. These bundles encompass various critical road projects, including the Kota Bypass on National Highway 76, the Gwalior-Jhansi route on NH75, the Delhi-Meerut Expressway on NNH-334, the Delhi-Hapur section on NH-24, and the Binjabahal-Teleibani road on NH6, illustrating the continued effort to leverage the TOT model for the nation's infrastructure growth.

Amendments & Changes

As per the latest report by Ministry of Road Transport and Highways, certain amendments have been introduced to the Model Concession Agreements (MCA) and Request for Proposal (RFP) of road construction models, reflecting a proactive approach to enhance implementation efficiency and address industry demands.

Under the Hybrid Annuity Mode, changes have been implemented to bolster bidder eligibility criteria. The Standard RFP document now incorporates provisions related to technical capacity thresholds, focusing on similar work experience for EPC projects involving Major Bridges and Tunnels. This amendment enables the National Highways Authority of India to secure concessionaires with pertinent experience for HAM projects involving such critical components.

Modifications have also been made to the HAM project's RFP and MCA clauses to streamline the project award process. The amendment allows for the Lowest Quoted Bid Project Cost (BPC) to serve as the basis for awarding HAM Projects. Additionally, Operation and Maintenance costs are now fixed as in EPC projects.

This change promotes transparency and efficiency by immediately identifying the winner after opening financial bids, aligning with the transparent process of the EPC mode.

In the realm of the Build-Operate-Transfer (Toll) model, changes have been introduced in the Model Concession Agreement. These changes permit a reduction in the ownership transfer timeline from 2 years to 1 year after the Commercial Operation Date (COD). This adjustment is set to free up equity and funds of construction companies, facilitating their involvement in other projects without undue financial constraints.

Additionally, the Ministry has taken measures to enhance contracting flexibility and ensure quality. Performance Security has been reduced from 5-10% to 3% of the contract value for existing contracts. However, additional performance security may be realized for abnormally low bids. Retention money release has been linked to work execution, and Performance Guarantee may be released on a pro-rata basis for HAM/BOT Contracts if the Concessionaire is compliant.

Moreover, additional changes were implemented to provide relief to contractors until October 31, 2022. These include the possibility of granting time extensions to Contractors/Concessionaires on a case-by-case basis. A waiver of penalties for the delay in submitting Performance Security/Bank Guarantee has been extended for new contracts initiated from April 2021 to June 2021, allowing a one-month grace period from the due dates. Consultants (I.E./ A.E./S.C.) are also eligible for time extensions on a case-by-case basis.

For BOT/ TOT Concessionaires, the reduction in user fee collection mandates a proportional extension of the concession period as outlined in the Concession Agreement. Similarly, for all National Highway Tolling Contracts, a reduction in fee collection can be offset in accordance with the User Fee Collection Contracts. Additionally, the achievement of Financial Closure for Concession Agreements entered between April-June 2021 may be extended by one month from the due dates, based on project location considerations.

Percentage Rate Contract (PRC) Model

The percentage rate contract (PRC) execution model is a widely used method for awarding and managing road infrastructure projects in India and around the world. In a PRC contract, the contractor is paid a pre-determined percentage of the estimated cost of each item of work completed in the project. This estimated cost is established beforehand in a Bill of Quantities (BOQ), which details the quantities and rates for various materials, labor, and equipment required for each project stage.

Structure of the Model

- **Tendering:** The client prepares tender documents outlining the project scope, specifications, and BOQ. Contractors submit bids with their percentage rates for each item in the BOQ.
- **Contract Award:** The client evaluates bids based on factors like experience, technical capabilities, and the proposed percentage rates. The contract is awarded to the most qualified bidder offering the most competitive rates.

- **Project Execution:** The contractor mobilizes resources, executes the work as per the BOQ and specifications, and submits regular progress reports with bills claiming payment for completed work based on the agreed rates.
- **Monitoring and Quality Control:** The client assigns engineers to monitor the project progress, ensure adherence to specifications, and verify the quality of work before approving bills.
- **Completion and Handover:** Upon project completion, the client conducts a final inspection and approves the final bill. The project is then handed over to the client.

Advantages:

- **Transparency and Simplicity:** The BOQ provides clarity on the scope of work and associated costs for both the client and contractor. This transparency minimizes disputes and simplifies contract administration.
- **Flexibility:** The model allows for adjustments to the project scope during execution. If unforeseen circumstances necessitate changes, the BOQ can be revised to reflect the additional or reduced quantities of work.
- **Faster Project Completion:** Since the contractor earns based on completed work, there's an incentive for faster project execution.

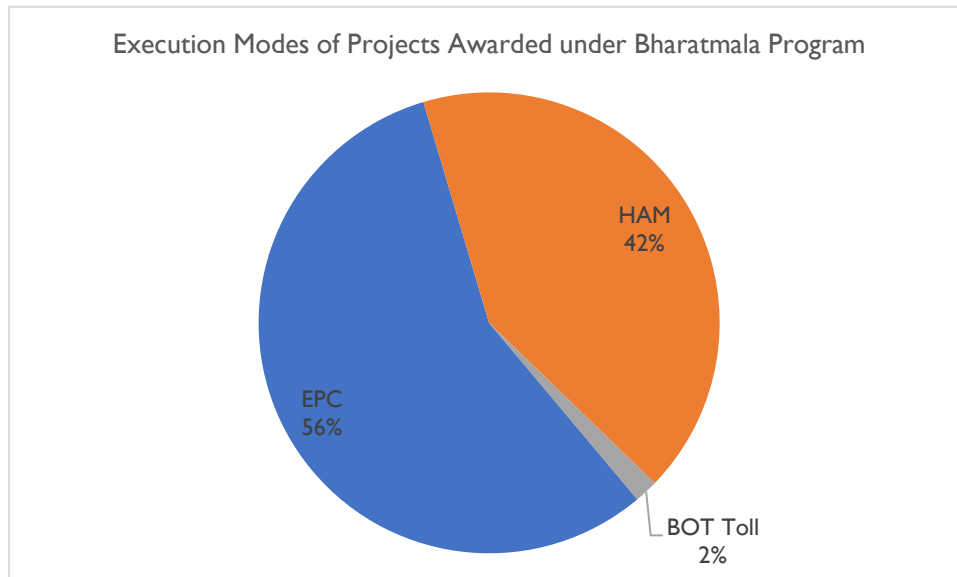
Disadvantages:

- **Accuracy of Estimates:** The success of the PRC model hinges on the accuracy of the initial cost estimates in the BOQ. Underestimations can lead to cost overruns for the client, while overestimations can disadvantage the contractor.
- **Limited Risk Sharing:** The contractor bears most of the risk associated with price fluctuations of materials and labor during the project. This can be a deterrent for some contractors.
- **Quality Concerns:** There's a potential risk of the contractor compromising on quality to reduce costs and maintain their profit margin.

Execution Mode: Prevalent Scenario

Projects Under Bharatmala Programme

Road construction projects under the program are executed by three modes: EPC, HAM and BOT. Out of this EPC and HAM accounts for 57% and 42% of the total road projects awarded (in kms) while only 2% is under the BOT route.

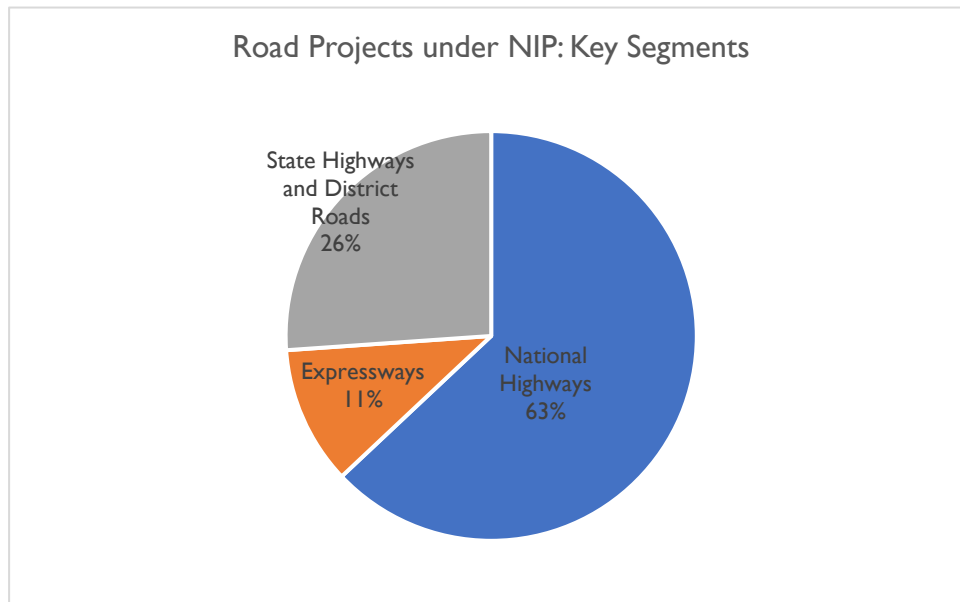


Source: MoRTH, 100% equals approximately 24,760 kms of awarded road projects

National Infrastructure Pipeline

The NIP unfolds a diverse range of projects spanning the infrastructure sector, each with its unique set of goals and objectives. Within this extensive framework, a substantial portion is dedicated to the roads sector, which forms the lifeline of India's logistics and transportation network. Over the period from FY20 to FY25, the NIP has allocated a total value of Rs 2,033,823 crore to the roads sector.

The road infrastructure segment is categorized into distinct project types, each with its strategic importance. Among the various project categories, National Highways projects take the lion's share, accounting for 63% of the resources allocated to the roads sector within the NIP. These projects aim to upgrade and expand the existing national highway network, enhancing their efficiency and capacity. The overall capital expenditure of Rs 1,280,640 crore is expected to be made from FY20 to FY25 to improve the existing and developing new national highways.



Source: Ministry of Finance, Government of India

Expressways, on the other hand, constitute another 11% of road infrastructure projects within the NIP. Over the period from FY20 to FY25, an estimated capital expenditure of INR 2,22,150 crore is earmarked for developing these expressways. Notable among these projects are the Delhi-Mumbai Expressway, Chennai-Bengaluru Expressway, Mumbai-Nagpur Super Expressway, Ganga Expressway, Purvanchal Expressway, and Bundelkhand Expressway. These expressways are poised to reduce travel times and enhance logistics, thus facilitating the movement of goods and people across the country.

The NIP also recognizes the significance of improving intra-state connectivity. To this end, it allocates an estimated total capital expenditure of INR 5,31,027 over the five-year period from FY20 to FY25 for the development of state highways and district roads. Some notable initiatives include the Versova-Bandra Sea Link, the development of the Chennai Peripheral Ring Road (in multiple phases), the upgradation of high-priority state highways in Tamil Nadu, inner ring roads across cities in Andhra Pradesh, and the widening and strengthening of state highways in West Bengal.

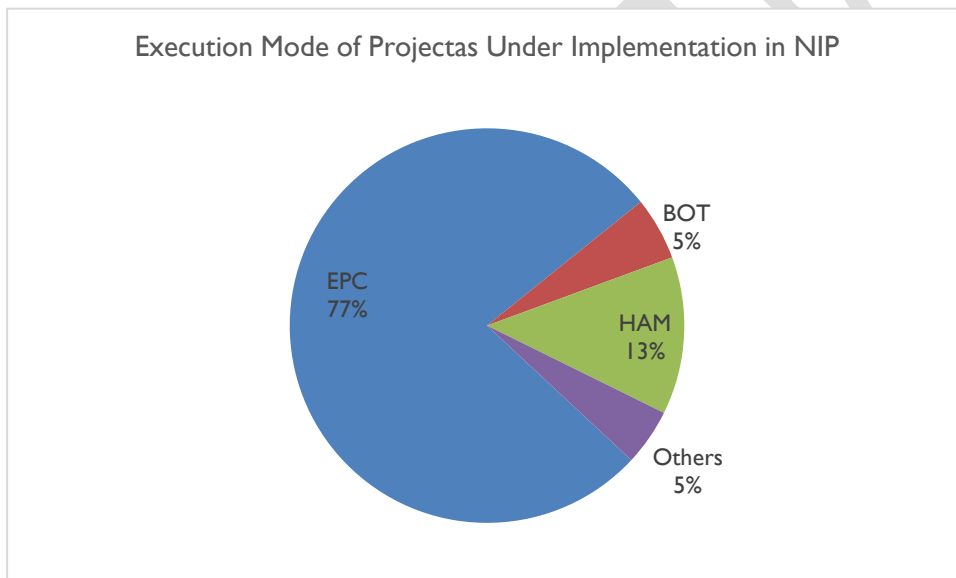
A total of 1,820 road projects are getting implemented under NIP, between the time period FY 2020 – 25. Nearly 53% of these projects are already under various stages of implementation while remaining are either under development or under conceptualization.

Projects Under NIP	
Under Implementation	968
Under Development	423
Under Conceptualization Stage	352

Uncategorized	77
Total	1820

Source: Ministry of Finance

Out of the total projects getting implemented, nearly 77% is getting done through EPC route while nearly 13% is getting done through HAM. The remaining 10% is getting executed through BOT / Item Rate contract / Annuity / SPV / Toll. While most projects follow the EPC route, there are exceptions that require innovative implementation models. For instance, the Mumbai-Vadodara section of the Delhi-Mumbai Expressway is being developed under the non-specified Public-Private Partnership (PPP) route. The Uttar Pradesh government has taken the lead in implementing projects like the Ganga Expressway, Bundelkhand Expressway, and Purvanchal Expressway under the EPC route. These projects are pivotal in transforming the state's transportation infrastructure and promoting economic activities.



Source: Ministry of Finance

Projects which are currently under development are planned to have only two modes of implementation: HAM and EPC. EPC takes more than 71% share in this aspect, while HAM comprises of remaining 29%. The NIP recognizes the potential of the hybrid annuity model (HAM) for certain projects. Thus, 239 projects under this model are in the conceptualization stage. Notable among them are projects such as the Dighi Ports-Dabhol-Guhaghar-Jaigad Ports-Deogad-Malwan-Vengurla and Arunda Link in Maharashtra with an estimated investment of Rs 9,660 crore, the Chennai-Salem Link in Tamil Nadu with an investment of Rs 9,680 crore, the Kappirikkad-Edapally road link in Kerala with Rs 11,430 crore, and the Kabrai-Kanpur Link in Uttar Pradesh with an investment of Rs 5,760 crore. These projects are expected to gain momentum in the coming years and contribute to India's infrastructure development.

Growth Prospects in Indian Road Infrastructure

The Indian Road sector is experiencing significant growth and is set to expand further in the future. The government has recognized the importance of improving transportation infrastructure and has taken initiatives to enhance the road network in the country. It is estimated that India will need to spend \$4.51 trillion on infrastructure by 2030 to achieve its vision of becoming a \$5 trillion economy by 2025. In line with this, the National Infrastructure Pipeline (NIP) has allocated a total capital investment of Rs 20.34 trillion for the highways sector by 2025.

Under the NIP, the government has already allocated INR 20.33 trillion for road infrastructure development during the period of FY 2020-2025. The budget for 2023-24 includes 100 critical transport infrastructure projects to improve last- and first-mile connectivity for various sectors such as ports, coal, steel, fertilizers, and food grains. These projects, with an investment of Rs 75,000 crore, including Rs 15,000 crore from private sources, have been prioritized.

The government has set ambitious targets for the highway sector, with plans to spend approximately Rs 17 trillion within the five-year period of FY 2020-2025. This investment will be focused on the construction of expressways, economic corridors, coastal and port connectivity highways, and border roads or strategic highways. The aim is to increase the total highways network to two lakh kilometers by 2025.

Furthermore, the government is emphasizing the need to adopt green technology in road construction. The National Rural Infrastructure Development Agency is targeting the construction of 50,000 km of rural roads by 2030, with a focus on utilizing green technology. In addition, the government plans to construct 26 Green Highways in India by 2024, highlighting its commitment to sustainable infrastructure development.

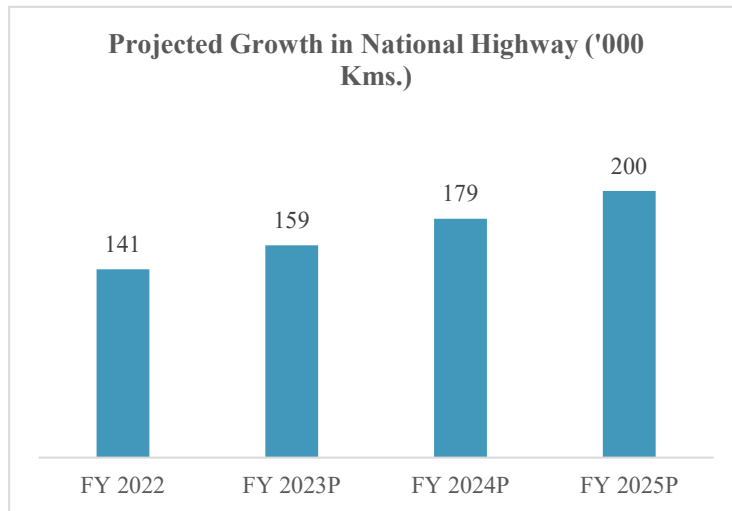
The growth potential of the Indian road sector is immense. The highway construction industry is projected to experience a significant growth rate of 133% by 2025. India aims to achieve a target of 60 km of road construction per day, already building a record-breaking 30 km per day. The government has also set specific targets for expressways and expects to see reduced travel time between major cities such as Delhi, Dehradun, Haridwar, Jaipur, Chandigarh, and Amritsar.

The Indian Road sector is poised for substantial growth in the coming years. With increased capital expenditure, improved infrastructure, and a focus on sustainability, India aims to enhance connectivity, boost economic development, and create more efficient transportation systems. The government's commitment to the development of the road sector will play a vital role in realizing its vision for a \$5 trillion economy and meeting the growing infrastructure needs of the country.

The Government has taken various measures to reduce delays and fast track many stuck projects to increase the per day construction target in the current fiscal . In the Union Budget 2023, the government has proposed an outlay of nearly INR 1,991.1 Bn Bn for the Ministry of Road Transport and Highways. This is 51.8% higher

than the revised estimates for 2021-22. The increasing government expenditure on the road network development in the country will give boost to the industry in coming years.

Basis the historical growth trend in road construction, the various demand drivers that are directly & indirectly impacting the road construction segment, the new growth forecast / targets set by the relevant Government agencies / ministries, D&B anticipate the national highway network to reach approximately 200,000 kms by FY 2025.



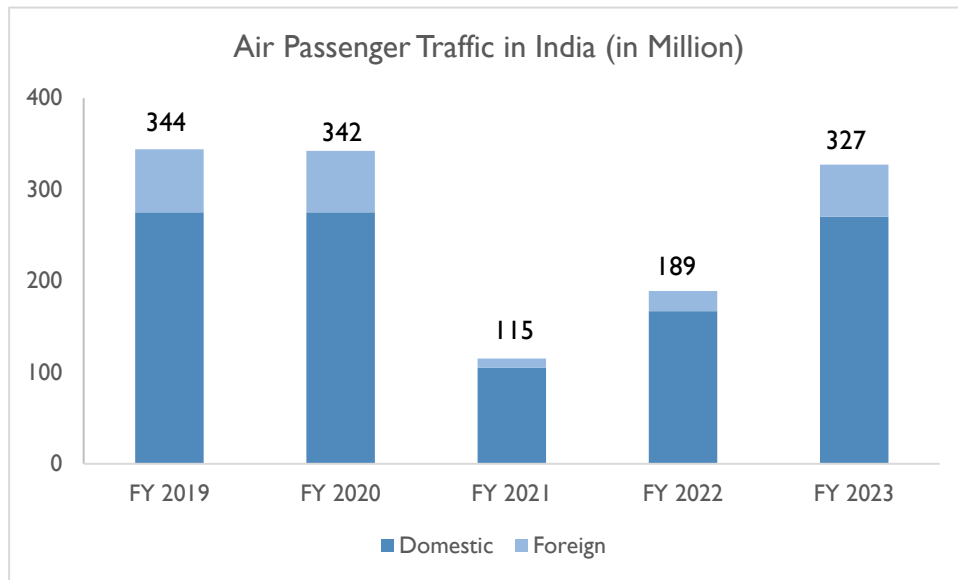
Source: As per Government of India

The historical data on road construction that has been used to analyse historical trend has been procured from public sources, including official publications & Government sources. This historical data along with growth forecast / targets outlined by Government agencies along with qualitative demand drives has been used by D&B to build assumptions on arriving at the growth forecast. However, the forecasts used to build assumptions are inherently uncertain and is subject to change as it is based on several assumptions and parameters / conditions, which D&B cannot foresee at this moment. Under such a scenario the above-mentioned forecast is subject to change, and the actual figures could be different from the forecast given above.

Undeterred by ongoing challenges, the Ministry has set an ambitious target of constructing 18,000 kms of national highway in FY 2023 increasing the per day construction target to 40 Kms per day. NHAI Chief also conveyed that all the balance work of Bharatmala phase-I will be tendered out by FY 2024 that will push the road construction. As per the target specified, the total national highway length that is planned to be achieved by FY 2025 is 2,00,000 kms which translate into a CAGR of 12.2% between FY 2022-25.

Airport Infrastructure in India

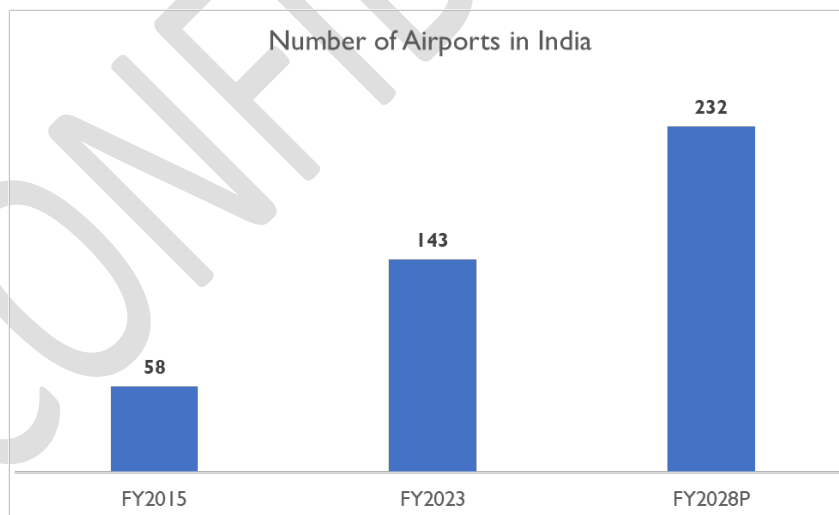
India has witnessed massive growth in air travel in the recent years, with annual rate of growth in air passengers trumping the growth rate in passengers carried by railways. India is today the third largest civil aviation market in the world, in terms of total number of air passengers carried per annum. As per, total passengers carried by Indian airlines peaked 344 million in FY 2019 while it hovered near same range in FY 2020 at 341 Mn before falling to 115.38 million in FY 2021 due to Covid induced restriction in travel. However, strong growth in airline traffic (both passengers and cargo) prior to FY 2021 have resulted in massive expansion in commercial aircraft stock in the country. During FY 2022, overall passenger air travel carried by schedule commercial aircraft surged by 64% to 188.9 Mn.



Source: Airports Authority of India

The air passenger traffic in India is expected double its 2019 market size by 2035 (as per IATA estimates it is predicted to reach 442 Mn by 2035) on the back of growing economy and expanding middle class. This has put pressure on the existing civil aviation infrastructure in the country.

In addition, the Indian government is investing heavily in the aviation sector. The government is building new airports, expanding existing airports, and improving air traffic management systems. According to the Airports Authority of India (AAI), in the last eight years, the number of airports in the country has increased from 50 to 148 in 2023, and over the next five years, 89 new airports are expected to be opened.



Source: Airports Authority of India (AAI)

Government Initiatives for expanding airport infrastructure

Driven by the rapid increase in passenger traffic, the UDAN scheme was launched on April 2017 to enhanced aviation infrastructure and air connectivity in tier II and tier III cities. Under UDAN, the regional air-connectivity in the country has significantly increased from 74 operational airport in 2014 to 141 currently. 68 underserved/unserved destinations which include 58 Airports, 8 Heliports & 2 Water Aerodromes have

been connected in the last five year under UDAN scheme. With 425 new routes initiated under the scheme, UDAN has provided air connectivity to more than 29 States/ UTs across the country.

Going forward, 68 new airports aiming to touch 100 airports are planned to be constructed by 2026 under this scheme. 220 destinations (airports/heliports/water aerodromes) under UDAN are targeted to be completed by 2026 with 1000 routes to provide air connectivity to unconnected destinations in the country. Under UDAN, 954 routes have already been awarded to connect 156 airports.

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Industrial Construction

India's industrial landscape is undergoing a transformative journey, fueled by ambitious government initiatives like "Make in India" and rapid economic growth. Amidst this transformation, the industrial construction segment stands as a key driver, laying the foundation for factories, power plants, logistics hubs, and other crucial infrastructure. The Indian industrial construction market is estimated to grow at a robust CAGR of 12% by 2027. This immense potential attracts both domestic and global players, leading to a vibrant and competitive landscape. Government spending on infrastructure development, rising automation in manufacturing, and expansion of sectors like chemicals, pharmaceuticals, and electronics fuel the demand for state-of-the-art industrial facilities.

The China Plus One strategy is an approach adopted by companies and countries to diversify their supply chains away from excessive reliance on China as a manufacturing and sourcing hub. The strategy emerged as a response to various factors, including rising labour costs in China, geopolitical tensions, trade uncertainties, and the need to mitigate risks associated with being overly dependent on a single country for production and sourcing.

India, being one of the largest economies in the world and home to a vast workforce and diverse manufacturing capabilities, has been actively leveraging the China Plus One strategy to attract investments and businesses looking to diversify their supply chains away from China.

India's vision of becoming 'Atmanirbhar' (self-reliant) and enhancing its manufacturing capabilities and exports has led to significant efforts and investment in the form of Production Linked Incentives (PLI) schemes. An outlay of INR 1.97 lakh crore (over US\$ 26 billion) has been announced in Union Budget 2021-22 for these schemes across 14 key manufacturing sectors from FY 2021-22. These PLI schemes are aimed at attracting companies looking to diversify their supply chains away from China. The incentives offered by the government, such as tax breaks and regulatory reforms, make India an attractive destination for businesses seeking to move their production from China to India. This proactive approach has further strengthened India's position as a preferred manufacturing base under the China Plus One strategy.

Additionally, The Indian government's commitment to creating a business-friendly environment has resulted in increased foreign direct investment (FDI) inflows in the country over the years. Since 2014-2015, when FDI inflows stood at US \$ 45.15 billion, now have shown consistent growth reaching a record high of US\$ 84.84 billion in the financial year 2021-22. The government's pro-business reforms, coupled with investment incentives offered under the PLI schemes, have played a vital role in attracting foreign investments and businesses seeking alternatives to China. Moreover, India has signed 13 Free Trade Agreements (FTAs) and six Preferential Trade Agreements (PTAs) so far, with ongoing FTA negotiations with the U.K, Canada, and the European Union expected to conclude, potentially opening up further opportunities for businesses exploring the China Plus One strategy. However, global uncertainties in FY 2023 resulted in a temporary

drop in FDI inflows to US\$ 70.97 billion. Nevertheless, India's proactive measures, investment incentives, and access to FTAs remain valuable drivers for businesses considering the China Plus One strategy.

Other factors that India leverages include its access to domestic market, where India's large and diverse consumer base provides significant opportunities for companies exploring the China Plus One strategy. By establishing a presence in India, companies can access and serve this vast market, offering a compelling reason for incorporating India in their diversification plans. The 'Atmanirbhar' vision also emphasizes boosting domestic manufacturing to cater to local demand, making India an appealing market for businesses aiming to tap into the country's consumption potential.

Another factor adding to this is India's location in South Asia, which makes it a strategic hub for companies looking to expand their operations beyond China. Its proximity to both the Indian subcontinent and Southeast Asian markets provides a unique advantage for businesses seeking to serve a wide geographical area. In addition to the geographical advantage and manufacturing capabilities, India's growing technology and innovation sectors are another significant draw for businesses diversifying their supply chains. With India increasingly investing in research and development (R&D) and innovation-oriented operations, companies have access to high-value opportunities to establish a presence in India and access its pool of skilled talent and cutting-edge research facilities.

Lastly, recognizing the importance of ease of doing business in attracting foreign investments, the Indian government has taken numerous steps to simplify regulations, reduce bureaucracy, and streamline approval processes. These efforts are aimed at creating a more business-friendly environment, making it easier for companies to set up and operate in India.

Key Segments of the Industrial Construction

Factory Buildings: This segment forms the backbone, catering to diverse industries with customized production spaces. Prefabricated structures and green building technologies are gaining traction for their efficiency and sustainability.

Power Plants: The growing demand for energy necessitates the construction of new power plants across various technologies, including thermal, renewable, and nuclear. Expertise in specialized construction techniques and safety protocols is crucial in this segment.

Logistics Infrastructure: Warehousing facilities, cold storage units, and inland container terminals are in high demand as India's logistics sector booms. Optimizing space utilization and integrating automation solutions are key considerations.

Chemical & Pharmaceutical Plants: Stringent safety regulations and specialized construction materials characterize this segment. Expertise in handling hazardous materials and adhering to environmental norms is essential.

Refineries: Construction of facilities for processing crude oil into usable products like gasoline, diesel, and petrochemicals. High safety standards due to the flammable nature of materials, robust containment systems to prevent leaks, and adherence to environmental regulations.

While significant progress has been made, challenges like inadequate infrastructure quality, skill gaps in the workforce, and limited access to financing remain concerns. The increasing integration of technologies like Building Information Modeling (BIM) and robotics is enhancing efficiency and reducing project timelines. Environmental considerations are gaining prominence, with green building practices and renewable energy solutions being incorporated into industrial construction projects.

Key Demand Drivers

Economic Factors:

- **Rising Domestic Consumption:** A burgeoning middle class with increasing disposable income drives demand for domestically produced goods, necessitating increased production capacity.
- **Export Potential:** India's young demographic and competitive labor costs make it an attractive destination for global manufacturers, leading to a surge in foreign direct investment and export-oriented industries.
- **Globalization and Trade Agreements:** Free trade agreements and a focus on reducing import dependence encourage domestic manufacturing, requiring expansion of industrial infrastructure.
- **Technological Advancements:** Automation and Industry 4.0 initiatives necessitate modern production facilities and upgraded infrastructure to support sophisticated technological integration.

Government Initiatives:

- **Make in India:** This flagship program incentivizes domestic manufacturing across 25 key sectors, providing tax breaks, subsidies, and streamlined regulatory processes. This directly increases demand for industrial infrastructure to house new manufacturing units.
- **Production Linked Incentive Scheme (PLI):** Offering financial incentives for specific sectors like electronics, pharmaceuticals, and automobiles, the PLI scheme attracts global players and stimulates domestic production, leading to increased demand for manufacturing facilities.
- **Infrastructure Development:** Massive investments in highways, ports, railways, and power grids create an enabling environment for efficient logistics and improved connectivity, boosting the attractiveness of industrial zones.
- **Skill Development Programs:** Initiatives like "Skill India" and "Make in India Skill Development Centers" bridge the skill gap in the workforce, ensuring a readily available pool of skilled labor for new industrial units.

Capital Expenditure Scenario Across Key Industries

Petroleum Refining

Over the past couple of decades India has swiftly grown to become one of the largest consumers of energy in the world, currently ranked as the third largest globally. Fast paced urbanization and industrialization together with steady increase in the number of vehicles have multiplied the demand for energy. By FY 2023, annual consumption of petroleum products reached 223 million tons per annum (mtpa) while domestic production reached 255 mtpa. Both production and consumption contracted in FY 2021 as a result of Covid-19 related disruptions but has recovered since then as economy rebounded.

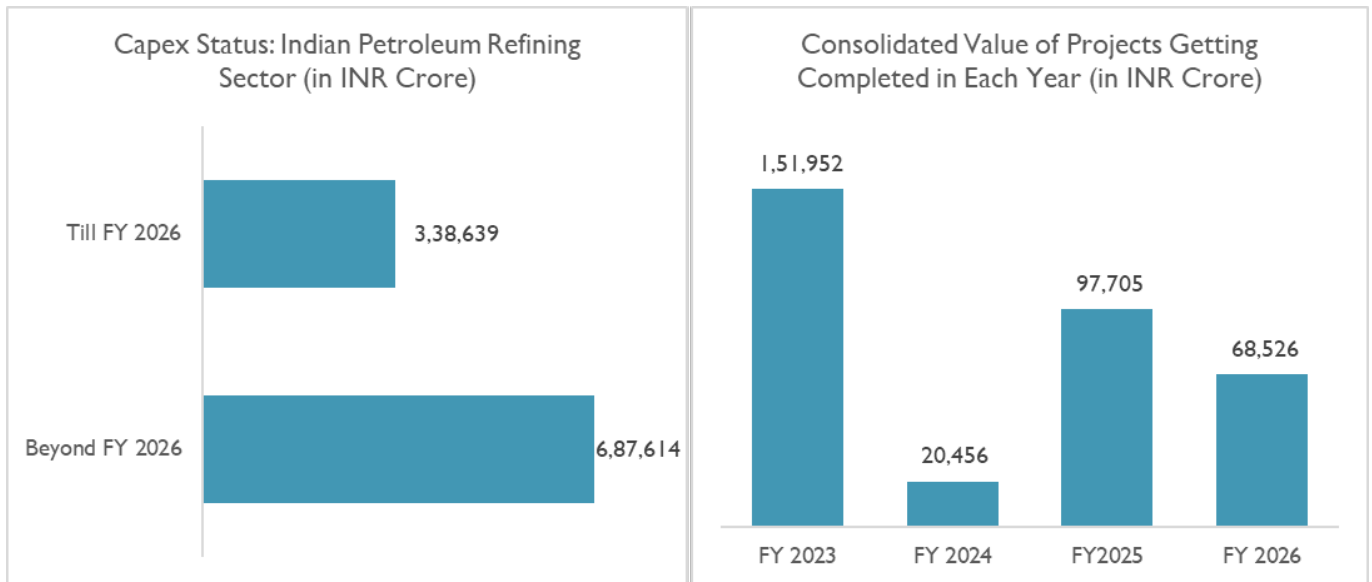
The strong growth in energy demand from industrial / transport / urban segments have resulted in oil refineries adding capacity. Between FY 2012 and 2023, India has added nearly 61 mtpa of crude oil refining capacity, taking the annual refining capacity to nearly 254 mtpa (as on end of FY 2023).

The energy demand in India is expected to grow at a strong pace, but the product mix is expected to undergo a transition in the long run, due to the aggressive focus on renewable energy. Nevertheless, the short to medium term demand for crude oil products (at least till 2030) looks strong. As per International Energy Agency, India's crude oil demand is expected to increase from 4.7 million barrels per day (mb/day) in FY 2021 to 6.7 mb/day in FY 2030 and to 8.3 mb/day in FY 2050.

With all major multinational institutions (like World Bank and International Monetary Fund) pointing towards a strong economic forecast for India, the demand for energy sources would remain robust. Based on this steady economic growth assumption, the annual consumption of petroleum products is expected to rise from 223 mtpa in FY 2023 to nearly 335 mtpa in FY 2030.

Approximately INR 339,000 crore worth of capital expenditure projects are currently under implementation in the industry, at various levels of execution. Of this nearly 50% is expected to be operational by the end of this year (CY 2023) with remaining spread over the next three years, extending till FY 2026. Beyond FY 2026, the capital spending visibility in the industry is pegged at approximately INR 688,000 crore⁵.

⁵ This includes projects that has been announced but yet to be started as well as projects whose completion stretches beyond 2026. This also include those investments that is tagged as live, but there is no detailed information on current status. Unless and until specified these investments are treated as live.



Source: CMIE

Upcoming Government Construction Projects

The Indian construction sector, a crucial pillar of the nation's infrastructure development, is experiencing a period of significant growth fueled by government initiatives and private investments. This growth is evident across various segments, including residential, commercial, and infrastructure projects. The government has launched several ambitious infrastructure projects like the Delhi-Mumbai Industrial Corridor (DMIC) and the Sagarmala project, driving substantial investments in the construction sector. Additionally, initiatives like the Smart Cities Mission and the Housing for All scheme are further propelling construction activities across the country. Private companies are actively participating in construction projects, contributing significantly to the sector's growth. This involvement is observed in various forms, including developing real estate projects, investing in infrastructure development, and partnering with public entities on government-led initiatives.

The northern region of India, comprising states like Jammu & Kashmir, Himachal Pradesh, Punjab, Haryana, Uttarakhand, Uttar Pradesh, Delhi, and Chandigarh, is witnessing a surge in construction activities. Several state governments in the region have prioritized infrastructure development and launched various initiatives to improve connectivity, boost tourism, and create new economic opportunities. These initiatives are translating into increased construction projects for roads, bridges, railways, and other infrastructure facilities. Rapid urbanization is creating a demand for new residential and commercial complexes in major cities like Delhi, Chandigarh, Lucknow, and Jaipur. This demand is driving the construction of new housing units, shopping malls, office spaces, and other urban infrastructure projects. The establishment of new industrial corridors and special economic zones in the region is attracting investments and leading to the construction of industrial facilities, warehouses, and logistics parks.

Building construction in government sector is experiencing substantial development, marked by a noteworthy 666 announcements made by various entities in the last 6 months. These announcements, spearheaded by the Central Government and state governments, underscore a booming future. Among the total

announcements, 582 are geared towards establishing new units, showcasing the extensive requirement in the country in various industries for building construction.

At the central level, the Government of India, has made 241 announcements. These announcements focus on the development of new units in various industries such as health, education, logistics, commercial complexes, textiles, railways, tourism, transport, hotel, among others emphasizing the strategic approach taken by the central government to bolster infrastructure in the country. Out of these c announced 241 projects by at central level, 137 are dedicated towards establishing new logistics infrastructure (including railways, roads, shipping lines among others), 15 new units announced cumulatively for tourism & hotel sector, 5 dedicated to establishing new healthcare units, , 2 are dedicated to establishing new education related buildings, and 1 for new housing construction units.

On a regional basis, state governments and state government statutory bodies have collectively announced 384 projects. Out of the 384 projects, 63 are dedicated to establishing new education related buildings, 53 towards establishing new logistics infrastructure, 35 new units announced cumulatively for tourism & hotel sector, 26 dedicated to establishing new healthcare units, 18 for new housing construction units, reinforcing the commitment of states towards enhancing overall infrastructure scenario. This collective effort by various central and state government reflects a holistic and collaborative approach towards the advancement of the infrastructure sector in India.

Some of the key projects announced by Central and State government in the last 6 months:

Central Government:

Company Name	Project Name	Cost (Rs.million)	Project Status	Industry Group	Ownership Group	Project Type
Ministry of Health & Family Welfare	Agartala Dental College Project	2020	Announced	Education	Central Government	New Unit
Ministry of Health & Family Welfare	Tripura Integrated Rehabilitation Centre for Drug Addicted Project	1219	Announced	Health services	Central Government	New Unit
Indian Railways	Second Four Lane Road Over Bridge between Khodiyar-Gandhinagar Road Project	1200	Announced	Road transport infrastructure services	Central Govt. - Commercial Enterprises	New Unit
Western Railways	Kolavada-Gandhinagar Four Lane Road Over Bridge Project	1200	Announced	Road transport infrastructure services	Central Govt. - Departmental Undertaking	New Unit
Western Railways	Khodiyar-Gandhinagar Four Lane Road Over Bridge Project	1010	Announced	Road transport infrastructure services	Central Govt. - Departmental Undertaking	New Unit

Ministry of Health & Family Welfare	Manipur State Mental Hospital Project	704.7	Announced	Health services	Central Government	New Unit
Ministry of Development of North Eastern Region, GOI	Milang-Pekimodi Road Project	693.5	Announced	Road transport infrastructure services	Central Government	New Unit
Ministry of Health & Family Welfare	Chumokedemia Multi-Speciality Hospital Project	600	Announced	Health services	Central Government	New Unit
Ministry of Health & Family Welfare	Chumokedima CIHSR Radiation Oncology Centre Upgradation Project	585	Announced	Health services	Central Government	New Unit
Ministry of Health & Family Welfare	Peren District HQ Hospital Project	500	Announced	Health services	Central Government	New Unit
Ministry of Development of North Eastern Region, GOI	Daido-Vawngkawt Road Project	331.9	Announced	Road transport infrastructure services	Central Government	New Unit

Source: CMIE Capex

State Governments:

Company Name	Project Name	Cost (Rs.million)	Project Status	Industry Group	Ownership Group	Project Type
Government of Madhya Pradesh	Bhopal Eight Lane Elevated Lake Road Corridor Project	31550	Announced	Road transport infrastructure services	State Government	New Unit
Delhi Public Works Department	Bawana to Auchandi Border Six Lane Elevated Flyover Project	4000	Announced	Road transport infrastructure services	State Govt. - Departmental Undertaking	New Unit
Government of Karnataka	Karnataka Railway Over Bridges Project	3500	Announced	Road transport infrastructure services	State Government	New Unit
Pune Metropolitan Regional Devp. Authority	Lonavala Glass Skywalk Project (Connecting Lion Point to Tiger Point)	3335.1	Announced	Road transport infrastructure services	State Govt. - Statutory Bodies	New Unit
Government of Karnataka	Sanduru Skill Academy Project	3000	Announced	Education	State Government	New Unit

Government of Haryana	AIIMS-Rewari Narnaul Road (NH-11) Six Lane Rail Overbridge Project	2510	Announced	Road transport infrastructure services	State Government	New Unit
Government of Karnataka	Bangalore K.C.General Mother and Child Hospital Project	1500	Announced	Health services	State Government	New Unit
Government of Maharashtra	Lakadganj Police Station-Wardhaman Nagar Flyover Project	1350	Announced	Road transport infrastructure services	State Government	New Unit
University of Delhi	Surajmal Vihar Delhi University East Campus Project	1200	Announced	Education	State Government	New Unit
Government of Karnataka	Mysore Maharani Arts And Commerce College Hostel Project	1160	Announced	Education	State Government	New Unit
Government of Tamil Nadu	Chennai Government Stanley Medical College and Hospital Critical Care Block Project	1120	Announced	Health services	State Government	New Unit
Government of Tamil Nadu	Tamil Nadu Multi-location Government ITIs Project	1110	Announced	Education	State Government	New Unit
Himachal Public Works Department	Bridge over Beas River (Pong Dam) Project	1036.5	Announced	Road transport infrastructure services	State Govt. - Departmental Undertaking	New Unit

Source: CMIE Capex

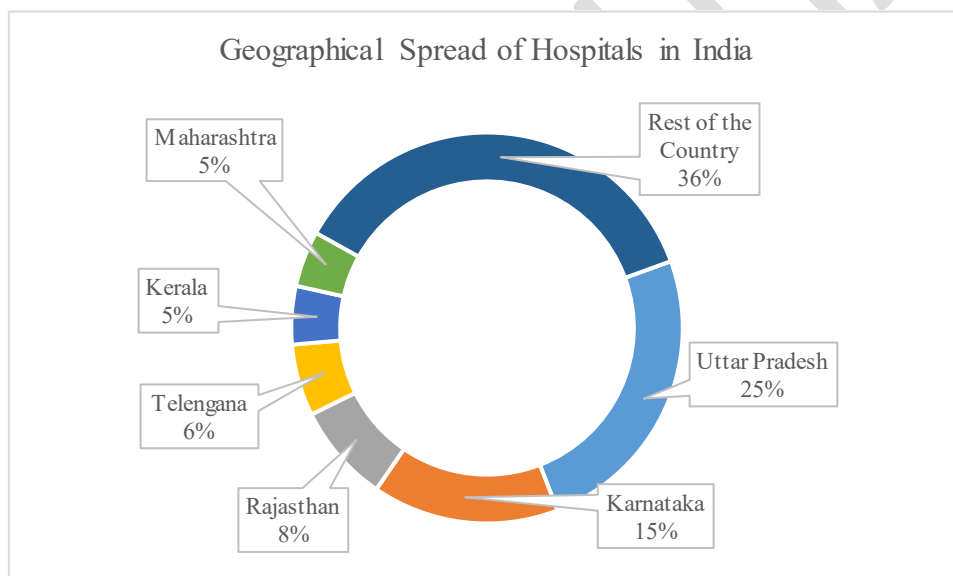
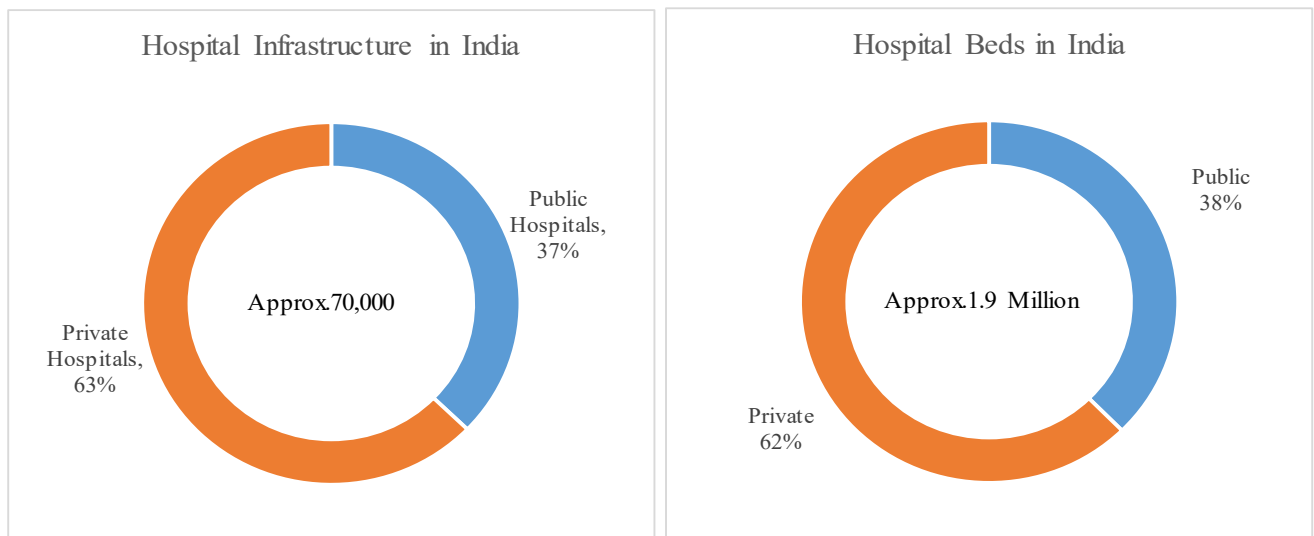
Institutional Construction

India's burgeoning population and economic growth necessitate not just robust industrial and residential infrastructure, but also a thriving institutional construction segment. This segment caters to the development of facilities crucial for public well-being and national progress, encompassing healthcare, hospitality, and education sectors.

Medical Collages & Hospitals Infrastructure in India

India has a pluralistic healthcare system where both public and private hospital sector plays an important role. The overall hospital infrastructure in India comprises of nearly 70,000 hospitals with approximately 1.9 million beds. Private sector accounts for nearly 63% of hospitals and 62% of hospital beds in the country. Uttar Pradesh leads in healthcare infrastructure in India, accounting for one fourth of total hospitals operational in

the country. Nearly 65% of hospital beds cater to the 50% population residing in 6 states – Uttar Pradesh, Karnataka, West Bengal, Telangana, Kerala, and Maharashtra.



Source: Center for Disease Research Dynamics, Economics & Policy Research published in April 2020,

Estimates suggest approximately 19 lakh hospital beds of which 95 thousand are ICU beds and of 95 thousand ICU beds, 48,000 ICU beds are equipped with ventilators in India. Majority of the beds and ventilators in India, are concentrated in seven States – Uttar Pradesh (14.8%), Karnataka (13.8%), Maharashtra (12.2%), Tamil Nadu (8.1%), West Bengal (5.9%), Telangana (5.2%) and Kerala (5.2%).

Growing Demand for Healthcare Services

Increase in ageing population, rising income, sedentary lifestyle amongst young population are the key drivers facilitating the growth of healthcare industry in India. Further, growing medical tourism in India at competitive cost, greater health awareness, increasing health insurance penetration are major enablers for development of world class private hospital infrastructure in India. Still majority of population falls in the middle- and lower-income group and have low affordability and therefore necessitate steady improvement in public healthcare infrastructure.

Furthermore, the outbreak of Covid-19 has further pressurized India healthcare industry across the value chain. Most recently, the surge in second wave of Covid-19 and subsequent acute shortage of hospital beds, ICU bed availability, medical professionals, lab testing and critical medical supplies such as oxygen, ventilators, medicine etc. has highlighted the shortcoming of Indian healthcare infrastructure even more. The pressing times has aggravated the demand scenario where medical facilities in India need to be scaled up to fulfill the healthcare need of constantly growing population.

Amidst growth led demand, and acute shortage of hospital infrastructure as well as of healthcare professionals, the sector provides vast opportunity for public as well as private players to set up specialty hospitals and multi-care specialty hospital and cater the unmet need of people.

Shortages in Healthcare Infrastructure

Indian healthcare industry is underpenetrated even though India accounts for about 20% share in global disease burden, but its share of healthcare infrastructure is much lower with only 6% share of global hospital beds and 8% share of doctors and nursing staff.

As per the WHO latest statistic, India had a ratio of 9.28 doctors, 23.9 nurses and 5.3 beds per 10,000 people, much lower against the global average of nearly 18 doctors, 39 nurses, and 32.9 beds per 10,000 populations. Currently, the government spending on healthcare is just 2.1% of the GDP (FY 2023 BE), which the government aims to increase to 2.5% by 2025.

Various industry players suggest that the government should bring domestic healthcare metric at par with western countries and scale up spending to ~8% of GDP. As per various industry estimates, the healthcare delivery infrastructure in India current face a shortfall of about 3.5 million hospital beds in public hospitals while including private sector capacity, the shortfall reduces to about 2.3 million beds. To meet the future need, an estimated capacity addition of about 600,000-700,000 beds is required over the next five to six years. This suggests an indicative investment opportunity of USD 25 Bn in Indian hospital segment.

Upcoming Medical Collage, Hospitals and Healthcare related construction

The Indian government is actively expanding its medical education infrastructure through construction of new medical colleges. The Union Health Ministry aims to set up 100 new medical colleges by 2027 by upgrading district hospitals. This initiative seeks to bridge the gap in healthcare infrastructure. In the previous phases of this scheme, 157 colleges were approved, with 93 operational and others under construction. These new colleges prioritize districts with a population exceeding 10 lakh and lacking existing medical colleges (private or government).

Several states in North India are witnessing medical college construction projects:

- Bihar: The Bihar Medical Service Corporation Ltd. (BMSICL) has proposed construction of medical colleges and hospitals in several districts, including Jamui, Buxar, Siwan, Purnea, Chhapra, Samastipur,

Mahua, Ara, and Begusarai. This initiative aims to strengthen medical infrastructure and education in the state.

- Delhi: Construction work on the Jamia Nagar Hospital and Medical College project in New Delhi commenced in 2023. This project involves building a 500-bed hospital and a medical college spread over 46 hectares. It's expected to be completed by the end of 2024, enhancing healthcare facilities in the national capital.

Some of the key ongoing projects around this sector:

Company Name	Project Location	Project Description
HSCC	AIIMS, Rajkot	Construction of Hospital, Academic Block, Residential Campus and Allied Buildings, etc. on Comprehensive Design, Engineering, Procurement and Construction (EPC)
HSCC	Chandrapur, Maharashtra	Construction of Medical College, Hospital, Hostels, Residences, and other allied Building works
HSCC	PGIMER, Chandigarh	Advanced Neurosciences Centre
HSCC	(Dausa, Hanumangarh, Alwar, Nagpur), Rajasthan	Construction of Academic Block etc. for the establishment of New Medical College
HSCC	Dr. RML Hospital, New Delhi	Construction of Hostel Block for Resident Doctor's for PGIMER,
HSCC	Rajkumari Amrit Kaur College of Nursing, New Delhi	Construction of Academic, Hostel Blocks and auditorium
HSCC	AIIMS, New Delhi	Expansion of Nation Referral & Research Institute For Higher Dental Studies
HSCC	Allahabad	Construction of Super Speciality Block

Source: HSCC (India) Limited

The Indian healthcare sector, integral to socio-economic progress, demonstrates robust growth through increased capital expenditure and strategic investments. India's hospital sector is witnessing a surge in capital expenditure, which reached its highest in a decade during FY23 and is expected to continue in FY24. Private equity firms are actively acquiring significant stakes in established hospitals, showcasing a sustained trend. In FY24, India's healthcare budget increased marginally to USD 10.76 billion from USD 10.40 billion in FY23, constituting 2.1% of the GDP. This sector's resilience and adaptability are evident in increased investments and strategic initiatives, positioning it for continued development. India is enhancing healthcare infrastructure by establishing hospitals in remote areas and implementing innovative solutions like solar power in regions

lacking grid connectivity. The northeast region has witnessed substantial development, with 7,588 Health and Wellness Centres (HWCs) established as of February 28, 2023.

The sector is experiencing substantial development, marked by a noteworthy 59 announcements made by various entities in the last 6 months. These announcements, spearheaded by the Central Government, state governments, and private Indian companies, with an effort to enhance medical education infrastructure in the country. Among the total announcements, 49 are geared towards establishing new units, showcasing a commitment to expanding healthcare facilities across the country.

At the central level, the Government of India, through entities like the Ministry of Health & Family Welfare, Ministry of Aayush, and Employees State Insurance Corporation, has made 11 announcements. Notably, all these announcements focus on the development of new healthcare units in specific areas, emphasizing the strategic approach taken by the central government to bolster healthcare services.

Private Indian companies, comprising significant players such as Baba Jaswant Singh Trust, Manipal Health Enterprises Private Ltd, and Narayana Healthcare Private Ltd, have contributed significantly, making 17 announcements. These announcements uniformly aim at establishing new healthcare units, reflecting the private sector's dedication to advancing healthcare infrastructure. The noteworthy contributions extend to renowned groups like Apollo, Brigade, DLF, and HGC, making 5 announcements for the development or extension of healthcare units. The Rainbow Group has also made commendable contributions with announcements of two projects.

On a regional basis, state governments and state government statutory bodies have collectively announced 22 projects, with Uttar Pradesh, Assam, and Telangana leading the way with four projects each. Maharashtra, Karnataka, Andhra Pradesh, and Himachal Pradesh have also announced many projects. Out of the 22 projects, 15 are dedicated to establishing new healthcare units, reinforcing the commitment of states towards expanding healthcare access, while the remaining projects focus on the extension or modification of existing facilities. This collective effort by various entities reflects a holistic and collaborative approach towards the advancement of the healthcare sector in India.

Some of the key projects announced in the north region in the last 6 months:

Uttar Pradesh

Company Name	Project Name	Cost (Rs.million)	Project Status	Location	District	State
Government of Uttar Pradesh	Prayagraj District Women (Dufferin) Hospital Renovation Project	75	Announced	Prayagraj	Allahabad	Uttar Pradesh
Government of Uttar Pradesh	Prayagraj Motilal Nehru (Colvin) Divisional Hospital Renovation Project	60.2	Announced	Prayagraj	Allahabad	Uttar Pradesh
Government of Uttar Pradesh	Prayagraj TB Hospital Renovation Project	24	Announced	Prayagraj	Allahabad	Uttar Pradesh

Government of Uttar Pradesh	Prayagraj Tej Bahadur Sapru (Beli) Hospital Renovation Project	190	Announced	Prayagraj	Allahabad	Uttar Pradesh
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Source: CMIE Capex

NCT of Delhi

Company Name	Project Name	Cost (Rs.million)	Project Status	Location	District	State
DLF Ltd.	Delhi Hospital Project	null	Announced	Greater kailash	South Delhi	NCT of Delhi
Modi Enterprises Ltd.	Saket (Delhi) Health City Project	40000	Announced	Saket	South Delhi	NCT of Delhi

Source: CMIE Capex

Himachal Pradesh

Company Name	Project Name	Cost (Rs.million)	Project Status	Location	District	State
Government of Himachal Pradesh	Shimla Sunni Hospital Upgradation Project	null	Announced	Shimla	Shimla	Himachal Pradesh
Government of Himachal Pradesh	Tanda Dr Rajendra Prasad Government Medical College Two Cath Labs Project	null	Announced	Tanda	Kangra	Himachal Pradesh

Source: CMIE Capex

Key Growth Enablers

Access to Huge Population Base and Improvement in Affordability

India is the most populous country in the world, home to one sixth of world population i.e. 1.4 Bn. Moreover, India's population is expected to increase from 1.21 Bn to 1.52 Bn during the period 2011-2036 - an increase of 25% in twenty- five years at the rate of 1.0 percent annually.

Urban population increased from 278 Mn to 373 Mn during the past decade (2001-11) and the proportion of urban population to total population increased from ~27.8% to ~31%. In the last decade, urbanization in India has increase at an average annual rate of about 2.4%. The share of urban population is further estimated to grow to about 35% of Indian population i.e., ~470 Mn by 2021 and later to 41.7% i.e. to 625 Mn by 2030 where 5 state in India namely Tamil Nadu, Gujarat, Maharashtra, Karnataka and Punjab will have more than 50% urbanization. Also, the number of metropolitan cities in India is projected to increase from 46 in 2011 to 68 by 2030. Increase in urbanization is directly related to the rise in service sector and the jobs created resultantly. Rapid urbanization and better employment have resulted in increase of the per capita private consumption expenditure (at current prices). Consequently, this growth in income has strengthened the demand for high quality healthcare facilities.

Increasing Geriatric Population

Proportion of population above 60 years of age (8.1% in 2020, National Health Profile 2022) forms a considerable percentage of the total patient base availing tertiary services. The patient base has been growing due to the combination of changing lifestyles & associated diseases, availability of cheaper lifesaving drugs, and improved access to healthcare services. Total number of people above the age of 60 reached ~8.6% of total population by 2011 from ~7% during 2001 and is further estimated to touch ~10.3% by 2036. Such a high population base of people in the age group 60 and above is bound to increase the demand for hospital care.

Penetration of Health Insurance

India's out-of-pocket expense on healthcare is significantly higher than the global average. Therefore, to lower down this high out of pocket expense, Indian population is increasingly resorting to the health insurance policies. Health insurance penetration is on rise due to inflationary healthcare cost, rising incidence of lifestyle diseases and rising income. Initiatives like AB-PMJAY provide comprehensive hospitalization cover to the bottom 40% of the country's population, while another 18% is insured through other government and group health schemes. Retail health insurance penetrates only a meagre 3.2% of the 138 crore population, leaving a huge part of it - 38.8%, which is about 56 crore individuals - unprotected from any sort of health insurance cover. However, the health insurance penetration is increasing year by year, which will make quality healthcare delivery available to masses at affordable prices.

Incidence of Lifestyle Diseases

Rise of sedentary lifestyle and increasing consumption of high fat foods has led to rising incidence of lifestyle diseases like diabetes, cardiovascular diseases, and hypertension amongst the working age group people. According to Indian Council of Medical Research (ICMR) report titled 'India: Health of the Nation's States', the contribution of Non-Communicable Diseases (NCDs) to total deaths in the country was 61.8% in 2016, as compared to 37.9% in 1990.

Population above 30 years of age in India is expected to have increased from 71% of total population in 2011 to 77% in 2021. This growing population in the segment and rising incidence of lifestyle diseases, the demand for tertiary healthcare infrastructure is set to witness robust growth.

Medical Tourism

India is ranked as the third most popular destination for medical tourism and constitutes more than 18% of the global medical tourism market. According to the Federation of Indian Chambers of Commerce & Industry (FICCI), nearly 6,50,000 medical tourists travelled to India in 2022 from across the world to seek medical treatment. Cost of specialized surgical procedures like heart surgery, bone marrow transplant, liver transplant is lower in India when compared with other countries. In certain cases, the cost differential is as high as 10-20%. As per Industry sources, the Indian medical tourism industry is growing at about 18% average annual growth and is estimated to reach USD 13 Bn by 2026. Availability of skilled doctors/nursing staff, cost competitiveness to conduct critical treatment, less waiting period and world class facilities developed by private hospital like Fortis, Wockhardt, Max among others facilitates medical tourism growth in the country.

Other Risks & Challenges

- **High realty cost:** High real estate cost and rental is the major constraint hindering fast expansion of the private sector in setting up new hospitals. Land acquisition, procedural delay and clearances are other hurdle associated with new projects. Major Private Players are thus resorting to mitigate this constraint by shifting to either rent model or exploring other alternatives such as O&M model which could provide asset light growth.
- **Long gestation period and capital-intensive nature of the sector:** Setting up of a hospital is highly capital intensive with long gestation and payback periods. For existing hospital set-up, businesses require capital for up gradation/ maintenance / replacement of equipment and expansion. Land and infrastructure costs account for up to 60-70% of the total capital expenditure. Therefore, raising capital at a reasonable cost remains a key challenge for the industry.
- **Dependence on imports for medical equipment:** Around 70% of medical equipment used in Indian healthcare sector are imported. Critical medical equipment like CT scan, MRI and PET are few of the major equipment imported to the country. Any hurdles / delay in imports would impact smooth functioning of the hospital. Further this high dependence on imports makes the sector vulnerable to foreign exchange fluctuations. In December 2014, government approved 100% FDI inflow under

automatic route in the medical devices industry which is likely to boost the local manufacturing and technology infusion in the sector and lower the import bill in future.

- **Limited number of qualified doctors and healthcare workers.** With respect to India, the country face considerable shortage of prescribed strength of medical personnel including doctors as well as nurses. India has close to ~706 medical colleges (as on October 06, 2023) and produces more than 90,000 doctors per annum. A high proportion of medical graduates’ head to hospitals in western countries because of better compensation, research opportunities, and quality of facilities available. With only 9.28 doctors available per 10,000 population, the healthcare sector is already under tremendous strain. Similarly, Indian hospitals also face a shortage of qualified nurses. In India, the overall nurse to patient ratio is just 2.10 nurses per 1000 population which is lesser than the World Health Organization prescribed norm (3 per 1,000). As per Niti Aayog, India currently faces a shortage of nearly 4.2 million nurses or nursing professionals in absolute terms.
- **Capital shortage:** Diagnostic and treatment techniques evolve at a fast pace in the healthcare delivery sector. To avoid the risk of becoming obsolete, hospitals will have to adopt latest developments in medical care as soon as possible. Hospitals thus would have to invest substantially at regular intervals. Inability to raise funds would thus impact the growth of the sector,

Indian Hotel Industry

Structure of the Industry

The country’s hotel industry consists of large Indian companies as well as most of the international hotel operators. There are hotels at every end of the value chain to cater to budget and/or premium consumers. However, the sector continues to be fragmented and the unorganized sector, comprising standalone hotels and resorts, has a major presence.

Organized Hotel Sector in the Country	
Budget Hotels	Also called Economy Class Hotels, Business Class Hotels and Discount Hotels, these offer basic infrastructure facilities and cater to middle class and upper-middle-class consumers.
Luxury Hotels	Offers best in class amenities in lodging and dining experience. Hotels belonging to this segment caters to a high-income consumer group.
Heritage Hotels	These are hotels converted from old palaces and mansions and provide guests with royal experience. These are mostly concentrated in the states of Rajasthan, Gujarat, and Madhya Pradesh

Resorts	Hotels established in hill stations and other tourist destinations. Located amidst natural habitat, these hotels highlight the solitude that they provide to guests.
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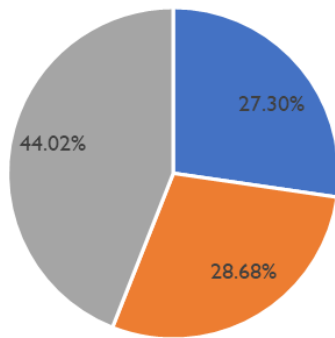
As per Ministry of Tourism, hotels in India are classified under the star rating system to conform to the expected standards for different classes of tourists, especially for international tourists. Under this system, hotels are given a rating, from One Star to Three Star, Four and Five Star with or without alcohol, Five Star Deluxe, Heritage (Basic), Heritage (Classic), Heritage (Grand), Legacy Vintage (Basic), Legacy Vintage (Classic) and Legacy Vintage (Grand) and Apartment Hotels.

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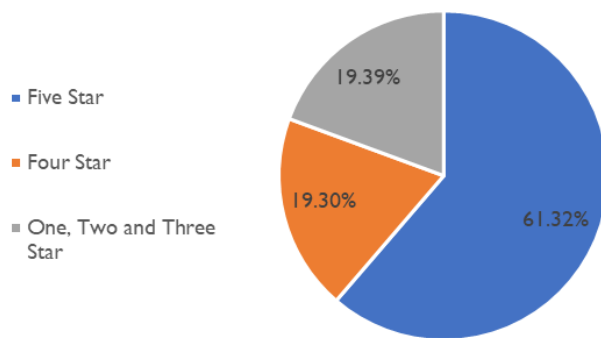
Current Scenario

As on YTD January 2024, there are nearly 1,264 hotels operating in India which together accounted for nearly 76,946 rooms. Bulk of these hotel (and hotel rooms) fall into the four and five-star category. Other segments include one-, two- and three-star hotels.

Percentage Distribution of Hotels in India
(On the basis of Star Category Hotels)



Percentage Distribution of Hotel Rooms in India
(On the basis of Star Category Hotels)



Source: Ministry of Tourism, Government of India, as on January 2024

Performance of Hotel Industry

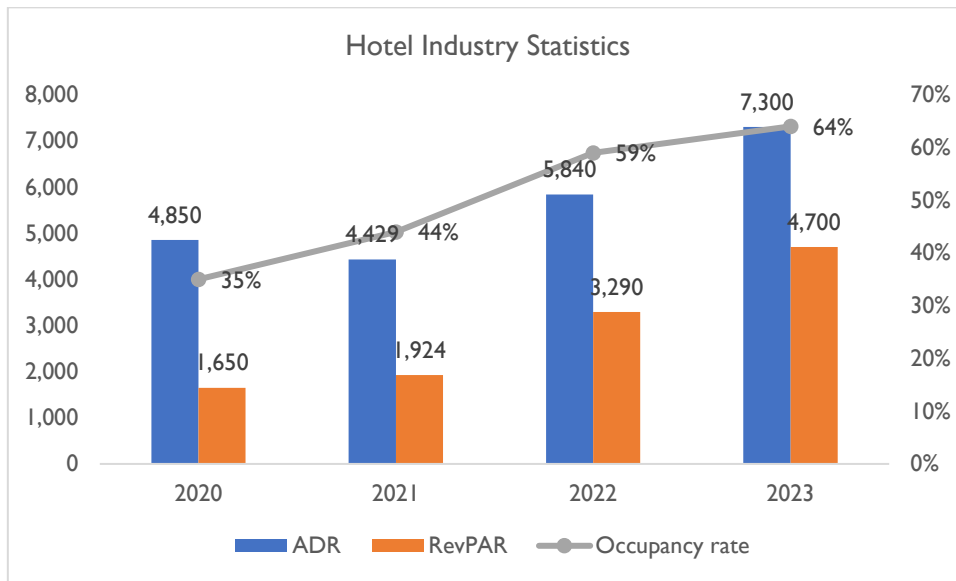
The Indian hotel industry in 2023 marked a significant chapter, witnessing a robust recovery post the challenges imposed by the Covid-19 pandemic. The Economic Survey 2023 highlighted the sector's resurgence, emphasizing improvements in key metrics such as occupancy rate, Average Daily Rate (ADR), and Revenue Per Available Room (RevPAR), which had returned to pre-pandemic levels.

According to the survey, the hotel industry reported a thriving scenario, with occupancies reaching around 68-70 percent in November 2022, completely recovering the average pre-pandemic level of 2019-20. The resurgence was attributed to factors such as the high vaccination rate in the country, effective pandemic management, and the resumption of regular international flights at full capacity, leading to a 52.9 percent year-on-year increase in overall aircraft movement between April and November 2022.

The Economic Survey also pointed out that the hotel industry had overcome a two-year hiatus, with a positive outlook for the future. The resumption of regular international flights, coupled with the successful hosting of various international events like the ICC Men's World Cup, contributed to the positive momentum. The survey anticipated a continued positive trend, forecasting an improvement in occupancy to 66 percent in 2023, accompanied by a 16-17 percent increase in ADR, resulting in a RevPAR of INR 4,690—almost 18 percent higher than the pre-pandemic RevPAR recorded in 2019.

In line with this, according to HVS Anarock, hotel occupancy rates in 2023 witnessed a notable rebound, reaching 61-65% in the first half of 2023. This surge, approximately 3 - 6% percentage point increase from

the same period in 2022, was propelled by a resurgence in domestic demand and a gradual return of international travellers.



Source: Industry Sources

CY 2023 is estimated to have reached an occupancy rate of 64%, up from 35% observed in 2020. Other key metrics such as ADR and RevPAR witnessed positive trends as well. India’s average hotel rates saw a strong increase of 30-32% in HI 2023 compared to HI 2022 and were 21-23% higher than in HI 2019. This steady rise in average rates helped the nationwide RevPAR to reach INR 4,700 in 2023. ADR increased from INR 4,850 in 2020 to INR 7,300 in 2023, with an anticipated further increase to over INR 8,000 in 2030. Similarly, RevPAR was expected to rise from approximately INR 3,300 in FY22 to Rs 6,000 in FY30. The recovery in these metrics signalled the industry’s ability to adapt and thrive in the post-Covid landscape.

Key Demand Drivers

The hospitality sector in India primarily thrives on tourism, which is an important source of foreign exchange and employment. Demand for hotel rooms is driven by the increased flow of travelers – tourists as well as business. Both leisure travel and business travel have witnessed positive development in the past few years, leading to a higher demand for hotel rooms.

Tourism Scenario

The emergence of India as a tourist destination resulted in an increase in tourist visits to India. India ranked 34th in Travel and Tourism Index 2019 amongst 140 countries (as compared to 40th rank amongst 136 countries included in the previous edition published in 2017). According to the World Economic Forum's (WEF) latest study, India ranked 54th in the global Travel and Tourism Development Index in 2022. The Travel & Tourism sector is estimated to have contributed around USD 29.96 Bn to the country's foreign exchange in 2019. By 2024, the industry's contribution to foreign exchange earnings is expected to reach USD 30 Bn.

In March 2023, Foreign Tourist Arrivals (FTAs) were 7.95 million, showing a substantial growth rate of 132.5 percent compared to March 2022. Between Jan-Oct 2023, India noted 7.24 million FTAs, as compared to 6.44 million in 2022 during the same period. As per the data furnished by the State/UT Government and other information available with the Ministry of Tourism, there were 1,731.01 million Domestic Tourist Visits (DTVs) all over the country during the year 2022, up from 677.63 million in 2021.

As the industry looks ahead to 2024/25, a positive outlook prevails despite ongoing global challenges. Niche tourism segments, including religious, spiritual, cruise, and medical tourism, are expected to contribute to sustained accelerated growth. The hosting of international events, such as the ICC Men's World Cup and G20, boosted demand in cities where these events took place.

In Feb 2023, Ministry of Tourism sanctioned 76 projects for Rs. 5,399.15 crore (USD 678.39 million) under Swadesh Darshan Scheme for development of tourism infrastructure in the country for under Swadesh Darshan Scheme for development of tourism infrastructure in the country. In Feb 2023, the Ministry of Tourism revamped its Swadesh Darshan scheme as Swadesh Darshan 2.0 (SD2.0) for development of sustainable and responsible tourist destinations. The objective for the Swadesh Darshan 2.0 scheme envisages increase in private sector investment in tourism & hospitality. It may help in increasing Public Private Partnerships (PPP) in the field of tourism and operation and maintenance of the created assets under the scheme.

The Ministry of Tourism along with Associations of Indian Universities (AIU) initiated a 12-episode webinar series under 'Azadi Ka Amrut Mahotsav' (AKAM) to engage and expose young minds of our country to the rich and diverse heritage of the country. Till the end of November 2022, a total of 165 Dekho Apna Desh webinars have been organized by the Ministry of Tourism.

Visa on Arrival Scheme

The Indian tourist visa-on-arrival scheme was first introduced in India on January 1, 2010. To boost tourism, the Indian government expanded this scheme in February 2014, making it accessible to travellers from 180 countries.

Subsequently, in November 2014, the Ministry of Home Affairs introduced Visa on Arrival with Electronic Travel Authorization for short-term visitors. On April 15, 2015, this service underwent a name change from Tourist Visa on Arrival-Electronic Travel Authorization to 'e-Tourist Visa' (eTV). Since the introduction of e-Tourist Visas, the annual influx has exceeded 2 million inbound travellers.

As of January 2024, India has embraced the e-visa facility, extending it to 171 countries. The e-visa is available in seven categories, including tourist, business, conference, medical, medical attendant, Ayush, Ayush Attendant, and Emergency. Entry through e-visas is permitted only at 31 designated international airports and 5 major seaports in India.

Under this facility, travellers must apply and pay online then present a print-out at a point of entry in India. Applications must be made at least 4 days to 120 days in advance of travel. Due to surge Covid-19 pandemic, international air travel to and from 107 immigration check posts was suspended by the MHA on March 23, 2020. Visa restrictions were gradually relaxed where foreign nationals from the U.S., the U.K, Germany, and France on are allowed on "business, medical and employment" visas while e-tourist visa is still suspended by the government. The facility is available to 171 countries, but after restrictions was restored only for 156 countries when relaxation was announced October 2020. Now, this count stands at 163. The visa fee has been rationalized and reduced wherein e-Tourists Visa fee reduced to USD 80 for 5 years, USD 40 for 1 year and one-month e-tourist Visa fee reduced to USD 10 for lean season and USD 25 for peak season.

Business Travel

Over the past two decades, the business environment in the country has improved on the back of growth in the service sector. This has triggered business travel and led to a demand for hotel rooms. The further frequency of international business travellers visiting the country too went up as the integration of Indian economy with global economy increased.

But in the past two fiscal, business sentiment in the country has dampened and most economic sectors are witnessing a slowdown. Cost cutting has become a norm in most of the sectors and companies are cutting down on travel. Reduced business travellers have severely impacted the revenue of budget hotels, which came up specifically to cater to the needs of business travellers. During 2022, business travel spending in India reached USD 35.6 Bn. Further, according to industry sources, a large portion of Indian businesses (67%) anticipated a surge in business travel during 2023, with 77% of them augmenting their travel budget.

Growth Outlook

The resurgence of the Indian hotel industry is anchored by several key factors, with the sustained growth of domestic leisure travel at the forefront. In the wake of the COVID-19 pandemic, a notable shift in travel preferences has emerged, emphasizing domestic exploration. This trend is anticipated to persist, providing a

consistent influx of guests to hotels across India. Furthermore, the rebound of meetings, incentives, conferences, and exhibitions (MICE) is contributing significantly to the industry's revival, as businesses resume normal operations.

The latter half of fiscal year 2024 is poised to witness an increase in Foreign Tourist Arrivals, propelled by the easing of international travel restrictions and a growing interest in India's diverse culture and landscapes. Notably, major international events such as the G20 Summit and the ICC World Cup 2023 have not only elevated the country's global profile but also attracted a substantial number of international visitors, bolstering the hotel industry.

Projections from the Hotel Association of India (HAI) indicate substantial growth, with the total contribution of the Indian hotel industry to GDP expected to rise from USD 65 billion in 2022 to USD 110 billion in 2027, exhibiting a CAGR of 11%. The domestic tourism forecast, including initiatives for infrastructural development and collaboration, indicates a significant increase in domestic tourist visits. HAI predictions suggest domestic tourist visits will surge from 1,731 million in 2022 to approximately 1.5 billion by 2030. Simultaneously, FTAs are projected to touch 25 million by 2030, reflecting a rising interest in India's diverse culture and landscapes among international tourists, leading to a boost in the hotel industry.

In the short term, ICRA estimates an improvement in premium hotel occupancy in India, reaching around 70-72% in FY2024, accompanied by an increase in Average Room Rates (ARRs) ranging from Rs 6,000-6,200. Despite the decade-high occupancy rates, Revenue per Available Room (RevPAR) is anticipated to remain 20-25% lower than the peak levels of 2008.

Looking at the medium-term outlook, the Indian hotel industry stands on positive ground, buoyed by factors such as improved infrastructure, air connectivity, favourable demographics, and the establishment of new convention centres. Major hotel chains are poised to benefit from expansions through management contracts and operating leases.

However, demand dynamics will vary based on location, competition, and property-related factors. Gateway cities like Mumbai and Delhi are expected to lead with occupancy rates exceeding 75%, driven by transient passengers, business travellers, and MICE events. Other cities like Pune and Bengaluru may experience improvement in FY2024.

The pandemic prompted cost-rationalization measures in the industry, resulting in expanded profit margins compared to pre-COVID levels. Additionally, the adoption of renewable energy sources has contributed to controlling operating costs.

Despite the surge in demand, the growth of supply in the hotel industry is projected at a CAGR of 3.5-4% over the medium term. However, supply is expected to lag behind demand due to land availability issues, particularly in premium micro-markets in metros and larger cities. This scarcity is prompting the rebranding and upgrading of existing properties and the development of new hotels in suburban areas.

Looking ahead, the Indian hospitality industry is poised for substantial growth, driven by both the significant domestic population base and rising international interest in leisure and business travel. This suggests that strategic initiatives, such as infrastructural development, effective collaboration, and the establishment of tourist zones, will play pivotal roles in boosting the hospitality industry.

Thus, the Indian hotel industry is set to witness a robust resurgence, fuelled by diverse factors that collectively paint a positive outlook for both short-term recovery and long-term growth.

Hotel Industry in India: Capital Expenditure

India's tourism sector is a rapidly growing economic force, exerting a substantial impact on employment and regional development while fostering a multiplier effect on associated industries. Projections indicate that by 2028, the country's tourism and hospitality industry is poised to generate revenue exceeding USD 59 billion, with Foreign Tourist Arrivals (FTAs) anticipated to reach 30.5 million. The hospitality sector is experiencing a notable resurgence in investment activity, rebounding from pandemic challenges. In the first half of 2023 alone, the industry saw a remarkable total deal volume of USD 175 million, building on the positive trend initiated in 2022 when the total deal volume reached USD 73 million. This positive trajectory is expected to continue into the second half of 2023, with an estimated transaction volume of around USD 88 million, extending into 2024.

In 2022, hotel signings reached a record-breaking 19,860 keys, with greenfield projects dominating the landscape, although brownfield projects gained ground, comprising 32% of the total signed rooms. The year 2022 also witnessed a record number of hotel openings, totalling 9,961 keys, with the midscale segment leading the market share, followed by the upscale, upper upscale, and luxury segments. The investment landscape remains enticing, supported by favourable macroeconomic factors, an expanding commercial market, and enhanced air connectivity, with expectations of heightened diversification into the hotel asset class by High-Net-Worth Individuals (HNIs).

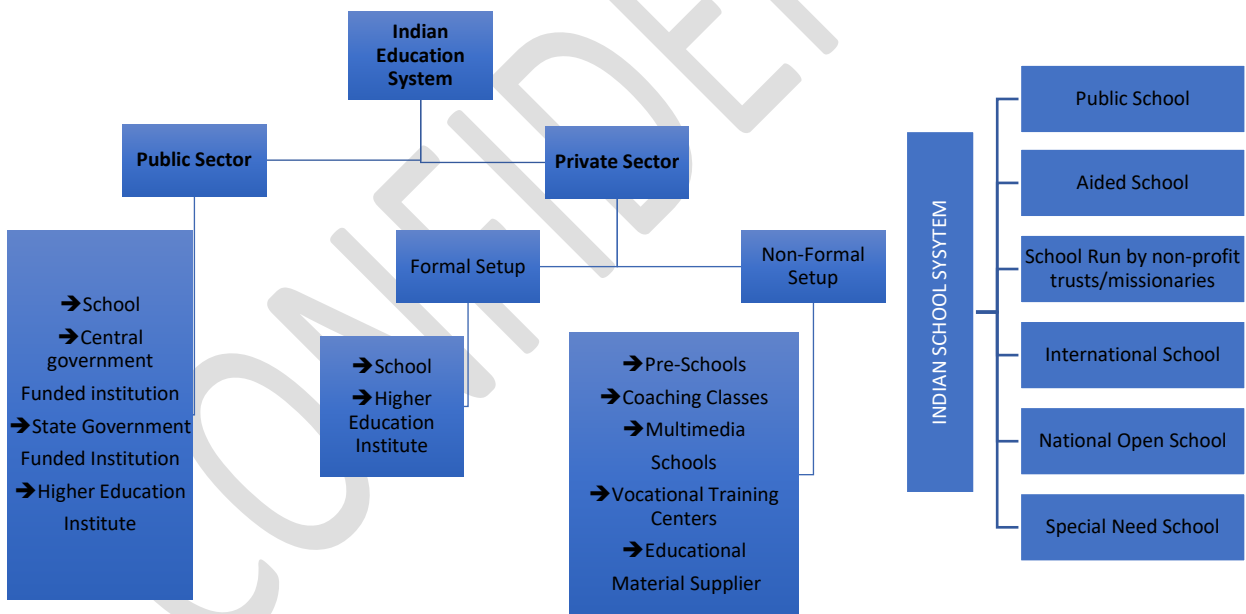
The hospitality landscape in India is witnessing dynamic growth, notably marked by the prolific announcements of hotel projects by key players in the last year. A closer look at the ownership structures reveals a notable trend, with 40 out of 63 projects spearheaded by private Indian companies, emphasizing the robust participation of domestic entities. Additionally, 11 projects are attributed to The Lemon Tree Group, followed by 6 & 4 projects announced by Tata Group and ITC Ltd. A total of 3 projects received backing from state governments, the rest projects were announced by Birla Aditya Group, Mahindra & Mahindra Group, Thapar, and Brigade Group.

The overwhelming majority of these endeavours, specifically 62 out of 63, are dedicated to establishing new hotels, reflecting the industry's forward-looking approach. This surge in hotel projects extends beyond major cities, with 34 out of 63 strategically located in Tier 2 or Tier 3 cities, a testament to the increasing demand for accommodation in these burgeoning urban centres. Furthermore, the diversity in hotel types is evident, with 22 out of 63 projects focusing on budget hotels, and 16 on luxury establishments.

In essence, these substantial investments underscore the resilience and adaptability of the hotel industry in India, positioning it as a key player in the global hospitality landscape. As the nation continues to attract diverse demographics of travellers, the strategic expansion and varied offerings herald a promising era for the hospitality sector, contributing significantly to India's economic growth.

Indian Education Sector

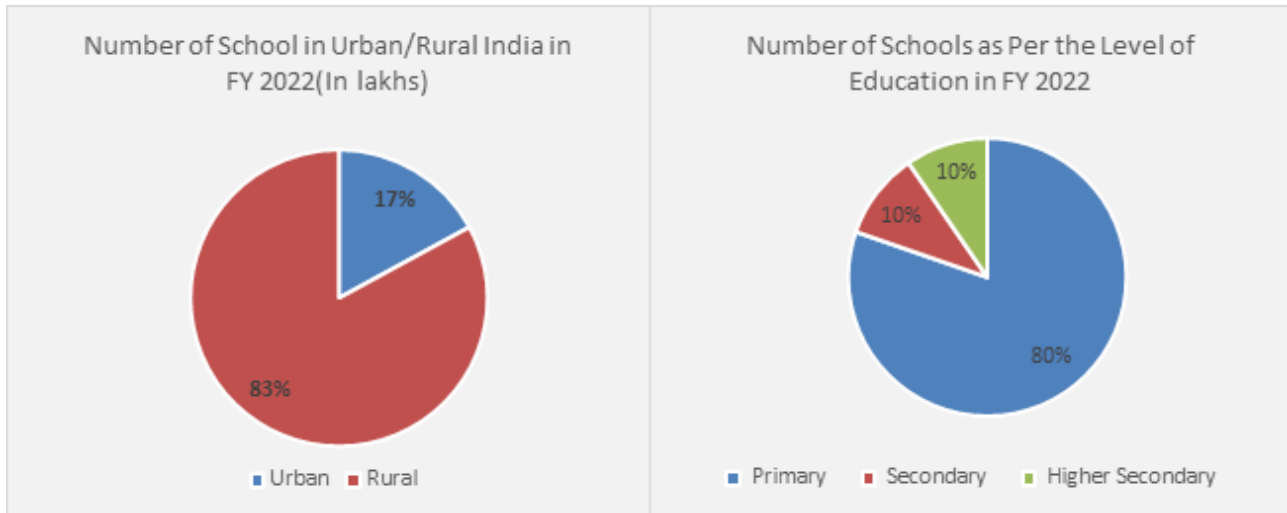
India has a significant presence in the global education industry. With a population of 580 million people aged between 5 to 24 years, India has massive potential in the education sector. The education system in India is diverse and renowned worldwide, consisting of both public and private institutions, and divided into formal and informal sectors. As of November 25, 2022, India had 1,072 universities, and over 250 million students attending schools, making it the country with the highest number of school-going students. The education sector in India was estimated to be worth USD 173 billion in FY 2023. Public institutions are government-run and offer free education up to a certain level, while private institutions charge tuition fees and are usually considered to provide better quality education.



Education is a crucial sector in India, with school education being a significant portion of the Indian education system. Primary school is officially defined as starting at six years of age, and compulsory education includes education from ages 6-14, up to secondary education. However, school education, beginning from informal sectors like kindergarten, caters to students between the ages of 3-17. Over the years, the education sector in India has undergone significant changes. Schools are divided into primary, secondary, and higher secondary categories.

School Education in India

The Indian School Education System strives to maintain standards and uniformity across the country while giving ample scope for the country’s diverse culture to grow and flourish. The school education sector has nearly 14.88 lakh schools, more than 95 lakh teachers, and nearly 26.5 Crore students of pre-primary to higher secondary levels, making the sector one of the largest in the world.

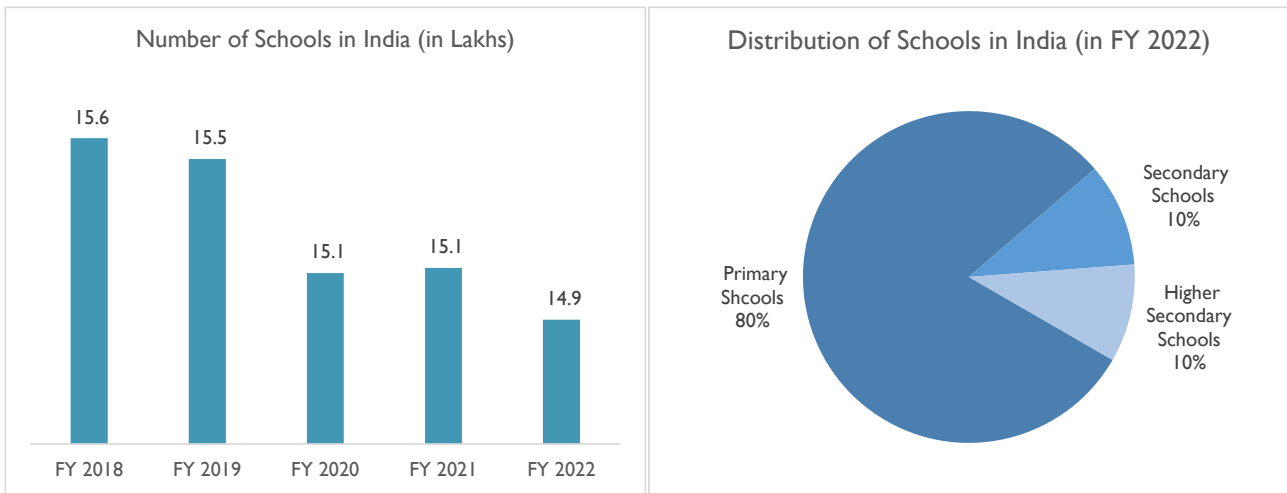


Source: UDISE+ Report 2022

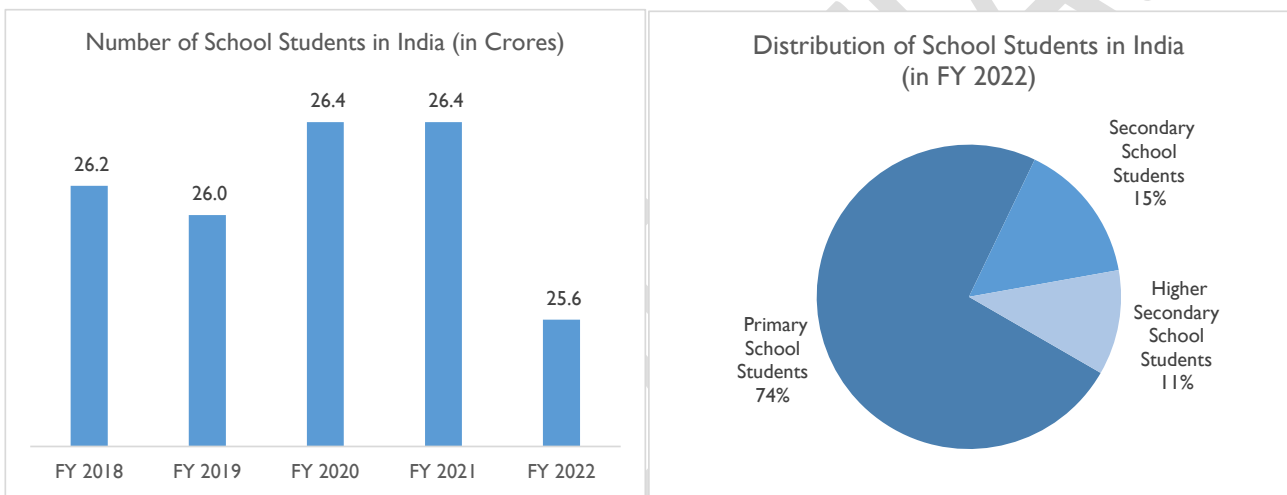
As per the Ministry of Education, India has 14.88 Lakh schools as of FY 2022, covering primary, secondary, and higher secondary. The majority of schools, 85.8%, are government-managed, while 2.9% are private and the rest are aided & other. Primary schools comprise the largest share of schools in India, with 11.96 Lakhs in operation in FY 2022, followed by 1.50 Lakhs of secondary schools and 1.42 Lakhs of higher secondary schools.

There are approximately 250,000 schools in urban areas and 1,200,000 schools in rural areas as of 2022. It is noteworthy that the number of schools in India has decreased since FY 2018, but this is solely due to the amalgamation of schools and not a decline in education standards. In FY 2017, there were 15.5 Lakh schools, which was an increase from 15.1 Lakhs in FY 2014. However, the trend of decreasing school numbers came to a halt in FY 2021 as the number of schools increased to 15,09,136 from 15,07,708 in FY 2020. We should also mention that the number of schools in the last fiscal year was 14.88 lakhs due to the amalgamation of schools across the country.

In these 5 years alone, more than 30 lakh students have been enrolled in schools in India, thus speaking at length regarding the awareness of the importance of education in India. Sure, there might have been some fluctuations, but what matters, in the end, is the overall notable increase in growth in the number of students in the 5 years span.



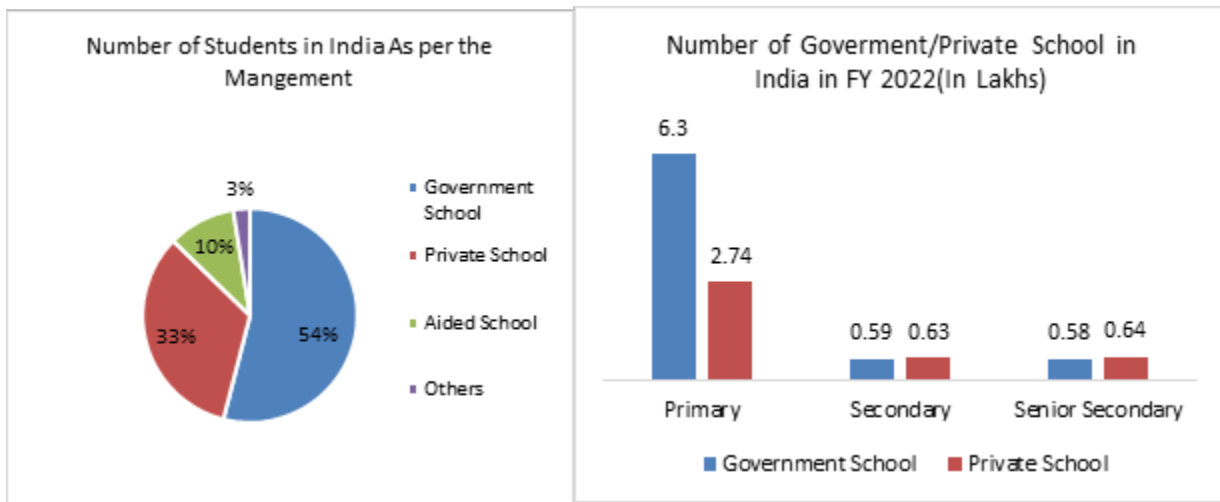
Source: Ministry of Education, Government of India



Source: Ministry of Education, Government of India

The education system in India is divided into government-managed and privately managed schools. According to the UDISE report for 2022, approximately 25.56 crores of students are currently enrolled in Indian schools, and over 54% of all students in India are enrolled in government schools, totalling 14.32 crores. The state of Bihar has the highest number of government school students, with a total of 2.19 crores, followed by Uttar Pradesh with 1.90 crores and West Bengal with 1.65 crores.

The number of students in private schools in India is 8.82 crores making up 33.3% of the total number of school students in India. Uttar Pradesh is home to 2.10 crores students, and it has 97,808 private school students in India, followed by Rajasthan with 75.84 Lakhs private Madhya Pradesh with 65.23 Lakhs private school students. Goa has the least number of government school students and is also known to be the state with the least number of private school students as well.



Source- Ministry of Education.

Based on the types, schools are segmented into co-education, girl-only, and boy-only, most of the schools in India fall under the co-educational schools, out of 14.88 lakhs total schools, 14.4 Lakhs schools in India are currently co-ed, which make up 97.2% of the total schools in India. As of 2022, the sum of girls-only schools in India is 29,656.

On the other hand, the number of boy's schools in India stands at 11,956. The number of co-educational schools in India is utterly high as compared to girls-only and boys-only schools. The latest UDISE+ report states that the total enrolment of students from primary to higher secondary levels of education was more than 25.38 crore in 2020-21. Out of these, 13.17 crore were boys, while 12.21 crore were girls. This is a prominent increase, almost 28 lakhs, from 2019-20. The school education sector in India shows an improvement in the ability of the system of school education over time, as the levels of upper primary, secondary, and higher secondary, school enrolment have increased.

Gross Enrolment Ratio describes the increase or decrease in the student's enrolment in a particular country, In India GER in primary schools has grown from 101.3% in FY 2019 to 103.3% in FY 2021 and then to 103.39% in 2022. Correspondingly, the Gross Enrolment Ratio of upper primary schools has recorded significant growth as it has increased to 94.67% in FY 2022, though it was only 92.2% in FY 2021.

For secondary schools, the Gross Enrolment Ratio stands at 79.56 in 2021-22 while it was 79.8% in FY 2021. The GER for secondary schools was only 76.9% in 2018-19. The lowest GER is observed in higher secondary levels, as compared to the other levels of school education. The GER in Higher secondary levels also represents a notable growth curve from 50.14% in FY 2019 to 57.56% in 2021-22.

The market size of primary and secondary schools is higher than that of higher secondary levels, due to the country's growing economy and huge population, the gross enrolment ratio in also increased in the past three years.

Upcoming Education/ Schools related construction

India's education sector stands at the forefront of global significance, fueled by its demographic advantage as the world's largest population in the 5-24 age group, numbering 580 million. With a pivotal role in the global education industry, India possesses an extensive network of higher education institutions. In FY24 (up to Sep 2023), the count of colleges reached 49,385, a notable increase from 43,796 in FY21 and 42,343 in FY20⁶. Similarly, the number of universities in India reached 1,196 in FY24, a significant rise from 760 in FY15. Notably, the education sector attracted USD 9.2 billion in Foreign Direct Investment from April 2000 to March 2023. The Union Budget for 2023-2024 allocated a historic INR 1.12 lakh crore (USD 13.5 billion), reflecting an 8.2% increase, highlighting the government's commitment to fostering educational development for national progress.

The Indian education sector is experiencing substantial development, marked by a noteworthy 66 announcements made by various entities in the last 6 months. These announcements, spearheaded by the Central Government and State governments, underscore a concerted effort to enhance the infrastructure of the Education sector. The 65 announcements are geared towards establishing new units, showcasing a commitment to expanding Education Infrastructure facilities across the country.⁷

At the central level, the Government of India, through entities like the Ministry of Health & Family Welfare, and Ministry of Tribal Affairs, has made 2 announcements. These announcements uniformly aim at establishing new units, reflecting the dedication to advancing Education infrastructure.

On a regional basis, state governments have announced 62 projects and state government statutory bodies announced one project. Out of 62 state government project announcements Bihar is leading with 11 projects. State Governments of Himachal Pradesh, Delhi, Andhra Pradesh, Maharashtra, Karnataka, J&K, Rajasthan, Punjab, Nagaland and West Bengal, and have also announced projects in the Education sector for the development of new units.

In conclusion, the robust surge in announcements and the significant growth in educational institutions underscore a transformative phase in India's education sector. The collective commitment from both public and private entities, coupled with a substantial increase in colleges and universities, sets the stage for a brighter future in shaping the educational landscape of the country. As these initiatives materialize, they promise to empower the youth and contribute to the nation's intellectual capital, fostering progress and innovation.

Some of the key projects announced in the north region in the last 6 months catering to education sector:

Company Name	Project Name	Cost (Rs.million)	Project Status	Industry Group	Ownership Group	Project Type
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⁶ UGC, India Ratings and Research FY19 Outlook

⁷ CMIE Capex

Government of Bihar	Akbarpur B.R. Ambedkar Residential School Project	460.7	Announced	Education	State Government	New Unit
Government of Bihar	Bahadurpur B.R. Ambedkar Residential School Project	460.7	Announced	Education	State Government	New Unit
Government of Bihar	Belaganj B.R. Ambedkar Residential School Project	460.7	Announced	Education	State Government	New Unit
Government of Bihar	Chhatapur B.R. Ambedkar Residential School Project	460.7	Announced	Education	State Government	New Unit
Government of Bihar	Dobhi B.R. Ambedkar Residential School Project	460.7	Announced	Education	State Government	New Unit
Government of Bihar	Masaurhi B.R. Ambedkar Residential School Project	460.7	Announced	Education	State Government	New Unit
Government of Bihar	Phulwarisharif B.R. Ambedkar Residential School Project	460.7	Announced	Education	State Government	New Unit
Government of Bihar	Sadar B.R. Ambedkar Residential School Project	460.7	Announced	Education	State Government	New Unit
Government of Bihar	Tikari B.R. Ambedkar Residential School Project	460.7	Announced	Education	State Government	New Unit
Government of Bihar	Vibhutipur B.R. Ambedkar	460.7	Announced	Education	State Government	New Unit

	Residential School Project					
Government of Jammu & Kashmir	Rakh Hoshiyari (Kathua) Government Homeopathy Medical College Project	700	Announced	Education	State Government	New Unit
University of Delhi	Surajmal Vihar Delhi University East Campus Project	1200	Announced	Education	State Government	New Unit

Source: CMIE Capex

Demand Landscape

Education is highly valued and considered essential for socio-economic development in India, as a result, there has been a substantial demand for both government-funded and private schools across the country. The demand for quality education has led to the establishment of a wide range of schools, including primary, secondary, and higher secondary institutions, as well as various specialized schools focusing on specific subjects. Several other factors contributing to the growth of the Indian school education sector are the increasing population, increasing awareness about the importance of education, rising middle-class income, government initiatives aimed at promoting education, etc. Here are some of the key reasons for the high demand for schools in India:

Increasing Population Density & Income

India's Huge population and rising middle-class income are the primary factors driving the Indian school market. With a 1.4 billion population India comes in the second position after China in terms of population and this depicts the huge consumer base for the school education sector with nearly 27% population coming under the age of 0-14 which is the school-going age. With a growing population, the strength of school-going aged children and enrolment rates also rise, leading to an increase in the demand for primary and secondary school levels. With the increase in middle-class income among the population, people are now able to afford higher-quality education, and this is expected to drive growth in the school market.

Expansion of Schools in Urban and Rural Areas

The school education sector in India is more developed in urban areas compared to rural areas. However, since 70% of India's population resides in rural areas, the number of schools in such areas is significantly higher than in urban areas. As of FY 2022, there are 12.34 Lakh schools available in rural areas and 2.54 Lakh in

urban areas. With urbanization on the rise, there will be an increased demand for schools in urban areas. People from rural and smaller towns are drawn to urban areas in search of better livelihoods, which contributes to the urban population and fuels the demand for schools.

Awareness about the benefits of education has been growing in rural areas, driven by exposure to media and information. Parents in rural communities are getting aware of the importance of schools to provide their children with an education that can enhance their quality of life. Education is often seen as a way to break the cycle of poverty in rural communities. Parents understand that education can provide their children with better opportunities for employment and socioeconomic advancement. Right to Education Act by the Indian government has improved access to education in rural areas. These initiatives have led to an increased demand for schools in rural communities.

Increasing Awareness of Education

Increasing education awareness has a significant impact on the demand for schools in various ways. As people become more informed about the importance of education, the benefits it offers, and the opportunities it provides, the demand for educational institutions tends to increase. As education awareness spreads, more parents and guardians recognize the value of education for their children's future, this leads to higher enrolment rates. In some regions of India, where education might have been historically undervalued, awareness often leads to heightened aspirations among parents for their children's education. Parents are more likely to seek out quality educational opportunities, leading to an increased demand for schools that offer better facilities and teaching methods. Education awareness campaigns often contribute to improved literacy rates.

Literacy rates in India are increasing as more people in India become literate, there's an increased demand for schools to provide basic education as well as opportunities for further learning. In earlier times girls' education was the challenging part of India's education sector but the importance of girls' education in India, led to increased demand for schools that encourage and support the education of girls.

Diversity of Curriculum

India with diverse education landscape, offering schools that follow different curricula, such as the Central Board of Secondary Education (CBSE), Indian Certificate of Secondary Education (ICSE), and various state boards. International curricula like the International Baccalaureate (IB) and Cambridge International Examinations (CIE) are valued by some families for their global recognition and emphasis on holistic education. This diversity caters to different preferences and demands.

Urban areas often offer a wider variety of schools with different curricula, including national and international boards, catering to diverse preferences and demands. On the other hand, In rural areas, there might be a preference for schools that teach in the local language and offer curricula that are appropriate to the local culture and context. With the increase in population, there's a diversity of educational needs and preferences, directing to a demand for schools offering different curricula, languages of instruction, and specializations to

cater to the varied population. India's constitution recognizes 22 official languages that are spoken by the population, and the choice of curriculum often comes with the choice of language of instruction as some curricula are offered in regional languages, while others use English as the medium of instruction, which influence the demand for specific curricula based on language preferences. The Central Board of Secondary Education (CBSE) and various state education boards offer curricula that are designed to align with national and regional education standards. On the competition level, schools that offer a variety of curricular options can attract a broader range of students and cater to the diverse educational needs and preferences of the population.

In conclusion, the school market in India marked by both progress and challenges in recent years the number of students has increased in the primary and secondary levels of school which shows that there are huge opportunities in the primary and secondary schools as the population of school-going-age people is increasing significantly. However, there is a need to elevate the quality of education through improved teaching methodologies, relevant curricula, and a shift from rote learning to critical thinking is essential to preparing students for a rapidly changing world.

Key Challenges

The school education system in India has witnessed a paradigm shift over the past few decades. Despite its long history of development, the Indian school education system is facing numerous challenges, including unequal access to education, outdated curricula, and insufficient funding. Regardless of the country's rapid economic growth, many rural and underprivileged communities still lack access to quality education. Low literacy rates have been observed in these areas, as well as in the high dropout rates for students from these communities.

Despite these challenges, however, the education system in India has made great strides in recent years, as the government of India has made significant progress in addressing challenges, and the country is now home to a large number of well-respected schools, universities, and colleges. With continued investment in India's education sector, India has the potential to become a leading center of learning.

Regulatory Landscape

Indian Government always pays attention to this sector as the education sector is the most crucial and important sector of any country. The Government of India has the largest share of the schools and students across the country providing education with nearly no expenses taken by the students. The Indian government is implemented various schemes and policies to strengthen the education system in India.

Right to Education Act

The Right to Education (RTE) Act, also known as The Right of Children to Free and Compulsory Education Act, is a legislation enacted by the Government of India in 2009. The purpose of this act is to provide free and compulsory education to all children in the age group of 6 to 14 years. The act also includes provisions for reserving a certain percentage of seats in private schools for children from economically weaker sections

and disadvantaged groups. The Act also applies to private schools, and they are required to admit these children and are reimbursed by the government for their expenses. The act rules also include the Norms and Standards set by the government, no detention policy, teachers require to possess the minimum qualifications prescribed by the National Council for Teacher Education (NCTE), the act promotes the establishment of School Management Committees (SMCs) and the RTE Act bans physical punishment and mental harassment of students.

National Education Policy

The Union Cabinet approved the National Education Policy (NEP) On July 29, 2020, with an aim to transform India into an energetic knowledge society and global knowledge superpower by making school and college education more holistic, flexible, multidisciplinary, suited to current needs, and aimed at bringing out the unique capabilities of each student. The objectives of the NEP policy are to enhance the teacher-learning process, technology upgradation, vocational studies, flexibility, and choices in the subjects, and promote education in the mother tongue. The National Digital Education Architecture (NDEAR) and the National Education Technology Forum were launched at the NEP 2020 event. The National Education Policy (NEP) 2020 highlights early childhood care and education. The 10+2 structure of school curricula is to be replaced by a 5+3+3+4 curricular structure corresponding to ages 3-8, 8-11, 11-14, and 14-18 years, respectively.

Samagra Shiksha

The Samagra Shiksha initiative was launched on 24 May 2018 by the Department of School Education & Literacy, it is a comprehensive program that includes various existing schemes like Scheme of Sarva Shiksha Abhiyan (SSA), Rashtriya Madhyamik Shiksha Abhiyan (RMSA) and Teacher Education (TE). Under Samagra Shiksha, EFC has approved a total outlay of 294283.04 crores over the period of five years from 2021-22 to 2025-26. As per the Union Budget 2022-23, allocation towards the Samagra Shiksha Scheme has increased by around 20.3%, from INR 31,050.16 crore (US\$ 4.16 billion) in FY22 to INR 37,383.36 crore (US\$ 5.01 billion) in FY23.

The objectives of the Samagra Shiksha scheme were to support states in the implementation of the Right of Children to Free and Compulsory Education (RTE) Act, 2009. The aim of the policy is to ensure that all children have access to quality education, regardless of their socio-economic background, gender, or physical ability, bridge the educational gaps, improvement of quality education, teacher training, and curriculum development, increase enrolment and reduce dropout rates in schools, especially for girls, children from marginalized communities, and those with special needs. The policy also aims to ensure that every child has a chance to complete their schooling with minimum spending, holistic development of students, life skills education, and vocational training to equip them for real-world challenges, empowering teachers, upgrading and improving school infrastructure, increasing community participation and focus on early childhood care and education (ECCE) for development of creative mind from early ages.

PM Poshan

Pradhan Mantri Poshan Shakti Nirman (PM POSHAN), formerly known as the National Programme of Mid-Day Meal in Schools, is a significant rights-based Centrally Sponsored Scheme under the National Food Security Act, 2013 (NFSA). This program is dedicated to enhancing the nutritional well-being of children enrolled in classes I-VIII in eligible schools. The aim of this initiative is to elevate the nutritional status of these children, thereby promoting their holistic growth and development. In FY 2023-24 budget allocation for the flagship scheme of PM Poshan has increased by 13.35% from INR 10233.75 crores in FY 2022-23 to INR 11600.00 crores in BE 2023-24.

PM Schools for Rising India Scheme

The PM SHRI scheme, launched in September 2022, introduces the establishment of over 14,500 PM SHRI Schools (PM Schools for Rising India) by enhancing existing schools managed by the Central government, State, UT Governments, and local bodies. The scheme is set to operate from 2022-23 to 2026-27, with a projected reach of more than 20 lakh students as direct beneficiaries. The scheme of PM SHRI schools is to be implemented with a total project cost of INR 27360 crore which includes a central share of INR 18128 crore for the period of five years from the year 2022-23 to 2026-27. The PM SHRI Schools will serve as showcases for the implementation of the National Education Policy 2020. These institutions will progressively evolve into model schools, exemplifying the principles of the NEP 2020. They will not only deliver high-quality education but also take the lead in fostering a nurturing, inclusive, and joyful learning environment. This environment will cater to the diverse backgrounds, linguistic needs, and varying academic abilities of students, aligning with the vision outlined in the NEP 2020.

Strengthening Teaching-Learning and Results for States

The STARS (Strengthening Teaching-Learning and Results for States) scheme, initiated by the Government of India, seeks to elevate the educational quality within schools, primarily at the elementary level. Supported through World Bank financing, the program concentrates on augmenting learning outcomes, enhancing teacher training, refining school administration, and establishing equitable pathways for quality education. Budget Allocation for FY 2023-24 for the World Bank-aided Scheme of STARS has increased by 45.45% from INR 550.00 crores in BE 2022-23 to INR. 800.00 crores in BE 2023-24.

STARS places emphasis on data-centric decision-making, inventive teaching methodologies, and comprehensive growth. It fosters strong collaboration with state and district authorities, tailoring interventions to ensure widespread access to high-quality education for all students.

Regular investment in the Education sector in India has increased the gross enrolment ratio of students in the primary. Secondary and higher secondary level. literacy rates in India also gaining remarkable growth, increase in investment in Budget allocation for FY 2023- 2024 will boost the school market in India.

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Competitive Landscape

Currently, thousands of small and medium-sized enterprises (SMEs) dominate the market, making it highly fragmented. While this fosters diversity and local expertise, it also leads to uneven quality as these quality standards can vary significantly due to varying levels of competence and technology adoption. Many SMEs operate in the informal sector, leading to issues with transparency, labor welfare, and environmental compliance. Smaller firms often lack the resources and expertise to handle large-scale projects, restricting their scope. In recent years, the industry has witnessed the rise of large construction conglomerates. These players have access to greater capital enables them to invest in technology, skilled manpower, and efficient project management. Their geographical spread allows them to compete for large-scale projects across diverse regions. They can handle complex projects spanning various sectors, mitigating risk and boosting profitability.

Currently, with multitude of stakeholders, Indian Construction industry is very fragmented comprising of many small players and few large players. Large players dominate construction of complex projects in road, power, ports, airport, industrial plants and railways as large infrastructure development require high up-front capital investment. Moreover, stringent technical ability norms, experience, and operational and financial parameters defined by contract awarding authorities limit entry of small players in large projects.

Need for high upfront investments and longer break-even period have restricted the entry of small players into the sector. Consequently, small players dominate in construction of urban / rural / district roads as bidding norms set by state agencies are relatively less stringent. Also, scope for these projects is limited making it unviable for larger companies that dominate large infrastructure development sector. Subsequently, smaller contract firms dominate this segment.

Price plays a significant part as EPC contracts are won based on technical capability as well as cost at which a firm can execute the project. A fine balance of technical capability and cost is required to win and execute an EPC contract.

Indian EPC companies have developed their reputation, based on their sector focus. Some have also expanded their operations in other sectors, thereby segregating the entire EPC space, based on operational segments.

EPC players can be broadly segmented based on the industry for which the work such as:

- **Infrastructure Construction/General Contracting:** This comprises of road, port, airport, railways and urban infrastructure and has been given as a priority sector status where government plays an active role of a facilitator. The level of competition is high in road sector whereas the port and urban infrastructure sector provides vast untapped opportunity. Facing high competition in infrastructure sector, many EPC companies has opted to diversify their sector reach (storage, water, ports) to protect their margins. The level of complexities is medium to high range in all sub- sector of infrastructure. Both domestic as well as foreign players have presence in this segment. High capex requirement restricts the entry of small player in this segment.

- **Building Construction (Residential & Commercial Segment):** This includes the real estate development, commercial complexes development. This segment currently faces a stiff competition as many big as well as small developers have presence in the market. Entry barriers are medium in this segment. Few foreign players too have presence in this segment. Sobha Developers Ltd. B L Kashyap, Shapoorji Pallonji etc. are the key players in this segment.
- **Power Sector (General Power EPC and Power Transmission, Solar Power):** Power sector growth is of key importance the growth of the economy. This competition level is high in this sector. Both domestic and foreign players have presence in this market segment. It provides attractive opportunity to the investor on the back of strong targeted growth low entry barriers etc.
- **Utilities Development:** This is another important sector necessary for the growth of the economy. Thus, government act as a facilitator promote investment in this sector and keeping the entry barrier low. The levels of complexities are very high in industry as quality standard and safety are key attribute to the industry. Over the year the sector has seen some maturity in terms of development but there still exist vast untapped opportunity. L&T , Punj Loyd, Essar Projects, Petron Engineering Construction Ltd.
- **Specialized EPC (Marine construction, industrial construction, Hydle projects, Railways, Tunneling, Mining etc.):** These segments offer a mixed opportunity portfolio to the investor on the back of different level of complexities, entry barrier, competition, government support, investment etc.

Based out of Bathinda, Girdhari Lal Construction is an EPC contractor that has executed many projects for Military Engineering Services (MES), National Buildings Construction Corporation Limited (NBCC) and Delhi Development Authority (DDA). Out of the station redevelopment projects awarded so far, Giridhari Lal Constructions has bagged 5 of them - Nagpur, Secunderabad. Bengaluru Yesvantpur, Surat and Jaipur. Ram Kripal Singh Construction Pvt Ltd, a Ranch-based engineering firm, has bagged 3 station redevelopment - Delhi Cantonment. New Jalpaiguri and Muzaffarpur.

Contractor	Station
Girdhari LAL Constructions Pvt Ltd	Nagpur, Secunderabad. Bengaluru Yesvantpur, Surat and Jaipur
Ram Kripal Singh Construction Pvt Ltd	Delhi Cantonment. New Jalpaiguri and Muzaffarpur.

Kamladityya Construction Pvt Ltd	Gaya, Bijwasan
Bridge & Roof Co. (India) Ltd.	Udhna, Ernakulam

Sports Infrastructure

India boasts a rich sporting history and talented athletes. To nurture this potential, good sports infrastructure is crucial. While significant strides have been made in recent years, there's still room for improvement. India's sporting landscape is undergoing a significant transformation, fueled by a growing focus on infrastructure development. This increased attention is driven by a two-pronged strategy: fostering a culture of mass participation in sports and nurturing potential champions on the global stage. This growth is crucial for nurturing potential athletes and propelling the country to the forefront of the global sporting arena. India's sports infrastructure landscape is a mixed bag. While the country boasts around 100 facilities meeting international standards, a significant portion of existing infrastructure, including grounds in colleges, universities, and community centers, requires improvement in utilization and maintenance.

The government is actively working on improving sports infrastructure through several initiatives:

Khelo India: This flagship scheme by the Ministry of Youth Affairs and Sports (MYAS) is a game-changer. It focuses on creating world-class infrastructure at the grassroots level, with over 280 projects sanctioned in the last five years. Khelo India Centers and Khelo India State Centres of Excellence are prime examples, providing training facilities and nurturing young talent.

Sports Authority of India (SAI): As the apex body under MYAS, SAI plays a critical role. It develops and manages national-level facilities, regional centers, and academies across the country, promoting a wider range of sports and talent identification.

National Pipelines:

National Investment Pipeline (NIP): Over 90 projects for stadiums and complexes are underway, with private sector participation expected to contribute 21%. One such project, the Vishakapatnam Sports City, is nearing completion (August 2024).

National Monetization Pipeline: This aims to unlock value from existing facilities. Two national stadiums and two SAI regional centers are slated for monetization through a model where private entities manage and develop them for a set period.

State Governments: States are taking ownership, with proactive measures like Haryana and Odisha. This strengthens the pan-India effort.

- Haryana: Invested heavily on infrastructure development to host the Khelo India Youth Games.
- Odisha: Constructed numerous multi-purpose stadiums in preparation for global sporting events like the FIFA U-17 Women's World Cup and Men's Hockey World Cup.

Public-Private Partnerships: A Winning Combination

The private sector is emerging as a key player. Many organizations are setting up academies and training centers, particularly at the grassroots level. This not only broadens accessibility but also infuses innovation and expertise into the system.

Focus on Accessibility and Upgradation:

The emphasis lies on creating accessible and well-maintained facilities. This includes:

- Upgrading existing infrastructure: Renovation and modernization of existing stadiums, sports complexes, and college grounds ensure their optimal utilization.
- Developing new facilities: Construction of new multi-purpose indoor stadiums, Khelo India Centers, and specialized training centers widens the range of options available.
- Standardization: The National Playing Fields Association of India (NPFAI) plays a crucial role in establishing and maintaining standards for playing fields, ensuring quality across the board.

Challenges

Despite the progress, certain hurdles remain:

- Uneven distribution: Infrastructure is concentrated in urban areas, neglecting rural talents. Bridging this gap is crucial for inclusive development.
- Maintenance and Upkeep: Ensuring proper maintenance of existing facilities is vital to maximize their lifespan and utility.
- Focus on traditional sports: While cricket receives significant attention, development of infrastructure for other sports needs acceleration.

India's sports infrastructure development is on a positive trajectory. Continued government and private sector investment, along with proper maintenance of existing facilities, are crucial. Addressing the lack of balanced facilities across various sports is essential to nurturing a well-rounded sporting ecosystem and fostering India's position on the global sporting stage. The potential revenue generation of \$2.2 billion in the sports infrastructure sector highlights the economic opportunities that go hand-in-hand with development. By overcoming these challenges and capitalizing on existing initiatives and pipelines, India can create a robust sporting infrastructure that empowers athletes, fuels a national sporting culture, and strengthens the country's sporting legacy.

Key Upcoming Sports Infrastructure Projects in India

Company Name	Project Name	Cost (INR Crore)	Project Status	Location	Sector
Uttar Pradesh Cricket Association (UPCA)	UPCA Cricket Stadium	330	Under construction	Gajari Village, Varanasi, Uttar Pradesh	Public
Rajasthan Cricket Association (RCA)	Anil Agarwal International Cricket Stadium	297	Under construction	Chaunp village, Jaipur, Rajasthan	Public
Ahmedabad Municipal Corporation (AMC)	Naranpura Sports Complex	590	Under construction	Naranpura, Ahmedabad, Gujrat	Public
Building Construction Department, Bihar	BCD Sports Academy and International Stadium	633	Under construction	Thera, Rajgir, Bihar	Public
Odisha Bridge and Construction Corporation Limited (OBCC)	OBCC Multipurpose Sports Facility	750	Pre-construction	Bhubaneswar, Odisha	Public
Public Works Department (PWD), Delhi	PWD Delhi Sports University	1000	Pre-construction	Ghevra, North West Delhi	Public
Ministry of Youth Affairs and Sports, Department of Sports	Jawaharlal Nehru Stadium Redevelopment	3000	Under Approvals	New Delhi	Public-Private Venture

Government Spending across industries creating a potential opportunity for construction sector.

Increased government spending across various sectors, like education, healthcare, and initiatives like the UP One Trillion Dollar Economy, creates a ripple effect of opportunities for the construction sector. Government spending on building new schools, hospitals, and upgrading existing facilities creates direct demand for construction services. This includes constructing classrooms, laboratories, libraries, dormitories, hospitals, clinics, and other related infrastructure. The ambitious infrastructure development plans under this UP's One Trillion Dollar Economy Initiative will require the construction of roads, bridges, railways, airports, industrial corridors, SEZs, smart cities, and tourist infrastructure, leading to a surge in construction activity.

Flagship Policies on Government Spending in Education Infrastructure Construction

The Indian government has implemented several flagship policies to enhance its spending and improve the overall effectiveness of the education sector. Here's an overview of some key initiatives:

Pradhan Mantri Schools for Rising India (PM SHRI):

Launched in 2018, with an objective to develop model schools across the country that provide high-quality education with modern infrastructure and amenities.

Infrastructure Focus:

- Envisions establishing 14,500 model schools across India. These schools will have state-of-the-art infrastructure, including smart classrooms, well-equipped science labs, computer labs, libraries, playgrounds, and sports facilities.
- Aims to create a holistic learning environment that fosters academic excellence, co-curricular activities, and skill development.

Samagra Shiksha Abhiyan (SSA):

Launched in 2018, SSA is an umbrella scheme aimed at providing universal access to quality school education from pre-primary to Class 12. It focuses on strengthening infrastructure, improving learning outcomes, and ensuring equity and inclusion in education.

Key features include:

- Free and compulsory education for children aged 6-14 years under the Right to Education (RTE) Act.
- Financial support for infrastructure development, teacher training, and learning materials.

- Special focus on bridging the gap in educational opportunities for disadvantaged groups like Scheduled Castes, Scheduled Tribes, and girls.

Rashtriya Madhyamik Shiksha Abhiyan (RMSA):

Launched in 2009, RMSA focuses on improving the quality of secondary education in India.

Key areas of focus include:

- Strengthening infrastructure in secondary schools, including classrooms, laboratories, and libraries.
- Enhancing teacher training and professional development for secondary school teachers.
- Providing scholarships for students from disadvantaged backgrounds.

Skill India Mission:

Launched in 2015, this mission aims to equip the Indian workforce with industry-relevant skills to enhance employability.

Key initiatives include:

- Setting up skill development institutes (SDIs) across the country.
- Offering skill development courses in various sectors like manufacturing, IT, and services.
- Providing financial assistance to individuals and organizations involved in skill development.

Flagship Policies on Government Spending in Healthcare Infrastructure Construction

The Indian government prioritizes improving healthcare infrastructure and access to quality medical services through dedicated policies and increased infrastructure spending. Some key flagship policies and their impact on healthcare infrastructure development:

Ayushman Bharat Yojana (ABY):

Launched in 2018, with an objective to provide comprehensive health coverage to over 500 million vulnerable and marginalized populations across India.

Focus on infrastructure:

- Strengthening existing primary healthcare centers (PHCs) and sub-centers: Upgrading infrastructure, including building new facilities, renovating existing ones, and equipping them with essential medical equipment.
- Establishing new Ayushman Bharat Health and Wellness Centers (AB-HWCs): These centers provide preventive, promotive, and curative healthcare services at the community level.
- Developing district hospitals and medical colleges: Expanding bed capacity, improving medical equipment availability, and upgrading facilities.

Pradhan Mantri Jan Arogya Yojana (PM-JAY):

Launched in 2018 (a sub-scheme under ABY), with an objective to provide cashless and paperless hospitalization for secondary and tertiary healthcare needs to beneficiaries under ABY.

Impact on infrastructure:

Incentivizes private hospitals to upgrade their facilities and expand bed capacity to cater to the increased demand from ABY beneficiaries.

Pradhan Mantri Swasthya Suraksha Mission (PMSSM):

Launched in 2016, with an objective to strengthen and upgrade existing healthcare infrastructure across the country.

Focus on infrastructure:

- Developing new medical colleges: Increasing the number of medical professionals and improving access to specialized care.
- Upgrading district hospitals: Enhancing infrastructure and facilities to provide advanced healthcare services.
- Setting up new AIIMS (All India Institute of Medical Sciences) and other medical institutions: Expanding access to high-quality medical care and education.

UP's One Trillion Dollar Economy Initiative: A Boon for the Construction Sector

Uttar Pradesh (UP), India's most populous state, has embarked on an ambitious mission to become a one-trillion-dollar economy by 2027. This initiative, driven by the Yogi Adityanath government, aims to transform the state's economic landscape through various measures, with the construction sector positioned to play a significant role in this journey.

Key Pillars of the Initiative:

Infrastructure Development: The government is heavily investing in building robust infrastructure across the state, including:

- Expressways and highways: A network of new expressways and the expansion of existing highways is planned to improve connectivity within the state and with neighboring regions. This will enhance the movement of goods and people, facilitating trade and economic activity.
- Airports and railways: Upgrading existing airports and developing new ones, along with expanding the railway network, will improve connectivity and attract investments.
- Urban infrastructure: Investments are being made in developing smart cities, improving sanitation and water supply systems, and creating new urban centers.

Focus on Manufacturing: The government is actively promoting the establishment of industrial corridors and special economic zones (SEZs) to attract investments in various sectors like food processing, textiles,

pharmaceuticals, and electronics. This will lead to a surge in demand for industrial and commercial construction projects.

Tourism Development: Initiatives are underway to promote religious tourism, heritage tourism, and eco-tourism, leading to the construction of new hotels, resorts, and tourist infrastructure.

Opportunities for the Construction Sector:

The focus on infrastructure development, industrial growth, and tourism within the one-trillion-dollar economy initiative presents immense opportunities for the construction sector in UP:

Increased Demand: The state government's ambitious infrastructure plans will require a significant workforce and resources in the construction sector. This includes building roads, bridges, airports, railways, and other infrastructure projects, creating a high demand for construction companies, engineers, skilled laborers, and material suppliers.

Specialized Construction Needs: The development of industrial corridors, SEZs, and other specialized projects will require expertise in industrial and commercial construction, creating opportunities for companies with relevant experience and capabilities.

Focus on Innovation and Sustainability: The government is emphasizing innovative and sustainable construction practices. This presents opportunities for companies specializing in green building technologies, prefabrication, and modular construction to participate in various projects.

Financial Performance

The financial performance of the construction industry can be described as average, with moderate revenue growth and stable profit margins. Between FY 2019 and 23, total sales have grown by a CAGR of 7.72%.

Expense Snapshot

	Raw Material	Power & Fuel	Salary & Wage	SG&A	Interest
FY 2019	44.6%	1.6%	6.1%	0.8%	4.0%
FY 2020	41.8%	1.7%	6.5%	0.9%	4.5%
FY 2021	41.4%	1.4%	6.7%	0.9%	4.2%
FY 2022	42.6%	1.7%	6.5%	0.7%	3.0%
FY 2023	43.5%	1.8%	6.5%	0.9%	2.9%

After a decline in FY 2020, the industry saw an increase in revenue from FY 2021 levels, where FY 2022 saw a y-o-y increase of approximately 21% and FY 2023 noted a y-o-y increase of 13%. As economies reopened and industries bounced back, there was a noted uptick in a wide array of construction and infrastructure projects.

Ranging between 41.4% to 44.6% of sales, the raw material expenses are the key element in the industry. The projects involve the construction and development of complex infrastructures, which require significant quantities of raw materials such as metals, concrete, aggregates, fuels, and various construction materials. Moreover, EPC projects require materials that meet specific quality and performance standards. Ensuring that the materials meet these criteria might involve sourcing higher-cost materials or additional quality control measures. Thus, this share is perfectly justified.

In the sample considered, raw material expenses have been increasing at a CAGR of 7.06% during FY 2019-23. FY 2022 saw a sharp rise in prices of raw materials, where they increased by 25% over FY 2021. Following this rise, FY 2023 too recorded an increase of roughly 16% over FY 2022. These rise in prices could be attributed to the supply-demand dynamics, geopolitical events, and market fluctuations leading to volatile raw material costs.

Salary and wages accounts for second largest share in cost components accounting for average share of 6.1% to 6.7% of net sales. Growing at a CAGR of 9.21%, salary and wages have increased by 18% and 12% annually in FY 2022 and FY 2023 respectively. On the other hand, Power & Fuel and SGA expenses have remained relatively stable through the year. Interest expenses declined in FY 2021 and 2022, and rose by 9.86% in FY 2023.

Profitability Margins

	Operating Profit Margin	Net Profit Margin
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FY 2019	15.5%	5.4%
FY 2020	16.9%	7.7%
FY 2021	23.5%	9.5%
FY 2022	13.8%	5.7%
FY 2023	11.6%	4.0%

The operating profit, as shown in the sample, has ranged between 11.6% to 23.5%. FY 2021 recorded the highest margins as raw material cost as a percentage of revenue in FY 2021 was the lowest in comparison to all years in the sample. Net profit margin, on the other hand, after showing an increase during FY 2019-2021, started declining to reach 4% in FY 2023 after a high of 9.5% in FY 2021.

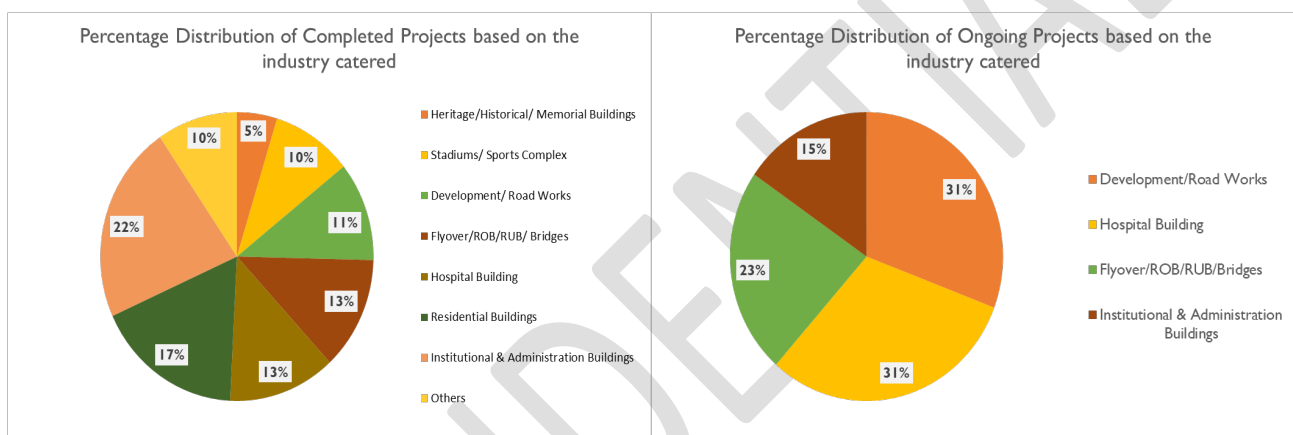
Key Ratios

Key Ratio	Average FY 2021,22 & 23
Return on Assets	4.5%
Return on Capital Employed	16.9%
Return on Networth	9.9%
Debt Equity Ratio	0.20
Interest Coverage Ratio	4.73
Current Ratio	1.43
Asset Turnover Ratio	0.73
Working Capital Turnover Ratio	3.50

Key Projects backed by Deepak Builder & Engineer Limited ⁸

The company has completed around 63 key projects and is involved in construction of 13 ongoing projects across various industries and sector. These include construction activity across key industries such Commercial complexes (Heritage Historical / Memorial Buildings & Stadiums / Sports Complex), Logistics (Road Works, Flyover / ROB / RUB / Bridges), Healthcare (Hospital Building), Residential Buildings, Education (Institutional & Administration Buildings), which reflects towards their diverse portfolio and ability to tap in and provide wide range construction services.

Out of the 63 completed projects, 14 were dedicated towards establishing new education related buildings (Institutional & Administration Buildings), followed by residential buildings, hospital buildings, logistics related infrastructure and commercial complexes.



Source- Deepak Builder & Engineer Limited

Major Ongoing projects being executed by Deepak Builder & Engineer Limited

Project Name	Awarding Entity	Cost (INR Crore)	Project Status	Location	Duration of the Project
CPWD tender for Buildings & Roads	Govt. of India Directorate, CPWD	650.00	Ongoing	CPWD works in whole of the Indian Union	5-year contract
Major Upgradation/ Redevelopment of Ludhiana Junction Railway Station	Northern Railway Authority	472.95	Under construction	Ludhiana	30 months
Major Upgradation/ Redevelopment of Faridabad Railway Station	Northern Railway Authority	240.10	Under construction	Faridabad	30 months

⁸ As per the information provided by Deepak Builder & Engineer Limited

Major Upgradation/ Redevelopment of Jalandhar Cantt Railway Station	Northern Railway Authority	95.93	Under construction	Jalandhar	17.7 months
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KPI Comparison

Company-wise Financials

Particulars	IRCON International Limited			
	September 30, 2023	March 31, 2023	March 31, 2022	March 31, 2021
Order book	NA	3,32,280	4,37,580	3,46,890
Revenue from operations (1)	55091.8	99,111.00	69,101.50	49,559.30
Growth in Revenue from Operations (2)	NA	43.43%	39.43%	-
EBITDA (3)	5495.3	8960.2	6378.2	6105.9
EBITDA Margin% (4)	9.97%	9.04%	9.23%	12.32%
PAT	3921.0	7,768.30	5,443.20	4045.6
PAT Margin %(5)	7.12%	7.84%	7.88%	8.16%
NAV (6)	58.11	55.06	49.13	4.69
RoE% (8)	NA	15.00%	11.78%	9.18%
RoCE % (9)	10.26%	14.63%	13.52%	13.6%

Particulars	Ahluwalia Contracts (India) Limited			
	September 30, 2023	March 31, 2023	March 31, 2022	March 31, 2021
Order book	NA	139306.7	130336.1	122625.5
Revenue from operations (1)	16651.62	28383.93	26924.69	19821.90
Growth in Revenue from Operations (2)	NA	5.42%	35.83%	-

EBITDA (3)	1877.14	3336.92	2857.44	1765.57
EBITDA Margin% (4)	11.27%	11.76%	10.61%	8.91%
PAT	1050.33	1941.62	1552.59	772.40
PAT Margin %(5)	6.31%	6.84%	5.77%	3.90%
NAV (6)	198.95	183.59	154.73	131.37
RoE% (8)	NA	15.79%	14.98%	8.78%
RoCE % (9)	12.26%	23.98%	24.33%	16.60%

Particulars	PSP Projects Limited			
	September 30, 2023	March 31, 2023	March 31, 2022	March 31, 2021
Order book	NA	50,520.00	43,240.00	41210
Revenue from operations (1)	11167.088	19,266.49	17,487.59	12,408.62
Growth in Revenue from Operations (2)	NA	10.17%	40.93%	-
EBITDA (3)	1501.238	2521.077	2777.625	1,517.34
EBITDA Margin% (4)	13.44%	13.09%	15.88%	12.23%
PAT	761.292	1330.182	1624.042	807.904
PAT Margin %(5)	6.82%	6.90%	9.29%	6.51%
NAV (6)	241.22	222.17	190.2	149.44
RoE% (8)	NA	16.63%	23.72%	15.02%
RoCE % (9)	14.29%	26.52%	35.88%	23.44%

Particulars	ITD Cementation Limited			
	September 30, 2023	March 31, 2023	March 31, 2022	March 31, 2021
Order book	NA	1,92,330	143920	98500
Revenue from operations (1)	33833.254	46749.198	32495.273	22083.188

Growth in Revenue from Operations (2)	NA	43.86%	47.15%	-
EBITDA (3)	3403.127	4458.348	3093.485	2134.366
EBITDA Margin% (4)	10.06%	9.54%	9.52%	9.67%
PAT	1058.339	1242.462	688.141	157.593
PAT Margin %(5)	3.13%	2.66%	2.12%	0.71%
NAV (6)	77.17	72.04	65.85	62.04
RoE% (8)	NA	10.04%	6.08%	1.48%
RoCE % (9)	16.1%	22.90%	17.05%	10.69%

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