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# DETAILED OVERVIEW OF THE INFRASTRUCTURE SECTOR IN INDIA

Final Report

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# Market Overview – Infrastructure

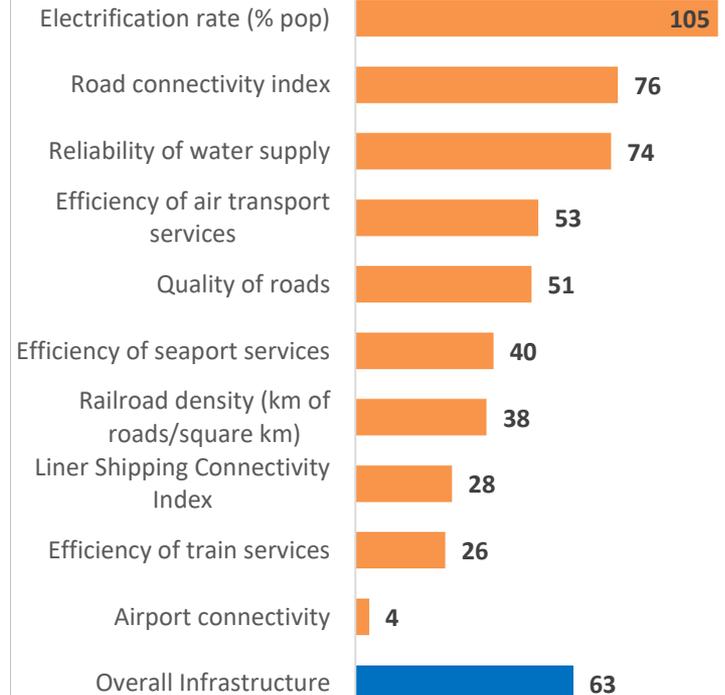
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## Infrastructure – Sector overview

- Infrastructure sector is a key driver for the Indian economy. The sector is highly responsible for propelling India's overall development and enjoys intense focus from Government for initiating policies that would ensure time-bound creation of world class infrastructure in the country
- Infrastructure sector includes 16 sectors: Railways, Roads, Power, Petroleum, Urban Development, Coal, Health & Family Welfare, Steel, Fertilizer, Shipping & Ports, Telecom, Mines, Atomic Energy, Heavy Industry, Defence Production & Civil Aviation
- In 2018, India ranked 44th out of 167 countries in World Bank's Logistics Performance Index (LPI) 2018
- India ranked 63rd out of 140 countries in overall infrastructure (The Global Competitiveness Report 2018 - World Economic Forum)

Source: World Economic Forum

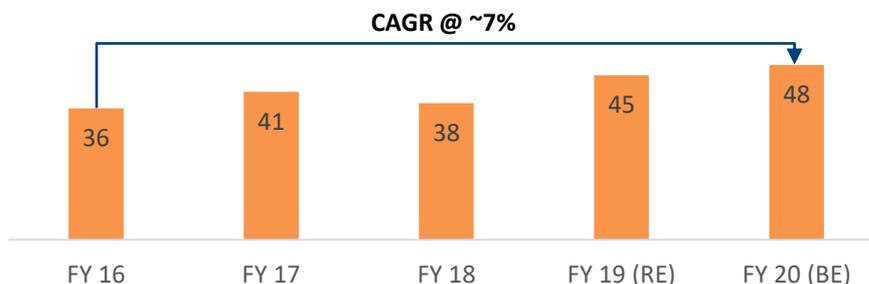
### India Ranking in Global Competitiveness Report – World Economic Forum 2018 (India Rank out of 140 Countries)



# Capital Expenditure by Key Infrastructure Segments

- Government capital expenditure is expected to grow 6.2% to USD 48 Bn in FY20E despite fiscal constraint and higher allocation towards rural economy. Government spending in key development areas continues to remain healthy
- Overall, the government spending in key development scheme is expected to grow 10.1% YoY to USD 38 Bn with major focus on railway and roads

## Total Capital Expenditure by Government (USD Bn)



Government allocation to key development schemes (USD Bn)	FY 16	FY 17	FY 18	FY 19 (RE)	FY 20 (BE)	CAGR (FY 16 - FY 20)
<b>Road</b>	<b>8.7</b>	<b>10.0</b>	<b>11.1</b>	<b>13.4</b>	<b>14.6</b>	<b>14%</b>
Pradhan Mantri Gram Sadak Yojana (Rural roads)	2.0	2.6	2.4	2.2	2.7	7%
Ministry of Roads, Transport and Highways	6.7	7.4	8.7	11.2	11.8	15%
<b>Urban development</b>	<b>4.2</b>	<b>5.3</b>	<b>5.7</b>	<b>6.1</b>	<b>6.9</b>	<b>13%</b>
<b>Railways</b>	<b>5.0</b>	<b>6.5</b>	<b>6.5</b>	<b>7.9</b>	<b>9.5</b>	<b>18%</b>
<b>Housing</b>	<b>1.7</b>	<b>3.0</b>	<b>4.5</b>	<b>3.8</b>	<b>3.7</b>	<b>22%</b>
Pradhan Mantri Awas Yojana - Gramin	1.4	2.3	3.2	2.8	2.7	17%
Pradhan Mantri Awas Yojana - Urban	0.2	0.7	1.2	0.9	1.0	47%
<b>Others (Shipping &amp; Power)</b>	<b>1.3</b>	<b>2.3</b>	<b>2.7</b>	<b>3.2</b>	<b>3.3</b>	<b>25%</b>
<b>Total</b>	<b>21</b>	<b>27</b>	<b>30</b>	<b>34</b>	<b>38</b>	<b>16%</b>

Source: Indian Budget Analysis

# Relevant infrastructure segments focused in this report

## Road Transport and Highways



India has the one of largest road network across the world, spanning over a total of ~6 Mn kms

## Railways



The Indian Railways is among the world's third largest rail networks. The Indian Railways route length network is spread over 115,000 km

## Shipping and Ports



India has 12 major and 205 notified minor and intermediate ports. ~95% of India's trading by volume and 70% by value is done through maritime transport

## Civil Aviation



Civil aviation in India is the world's third-largest civil aviation market and has emerged as one of the fastest growing industries in the country

## Urban Development



Urbanization in India began to accelerate after, due to the country's adoption of a mixed economy, which gave rise to the development of the private sector

# Road Transport and Highways

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## Sector overview

- India has second largest road networks in the world, spanning a total of 5,903,293 kilometers (3,668,136 miles) as of 31 January 2019
- This road network transports 64.5% of all goods in the country and 90 % of India's total passenger traffic uses road network to commute
- Road transportation has gradually increased over the years with the improvement in connectivity between cities, towns and villages in the country
- The private sector has emerged as a key player in the development of road infrastructure in India
- Increased industrial activities, along with increasing number of two and four wheelers have supported the growth in the road transport infrastructure projects

### Governing Ministry

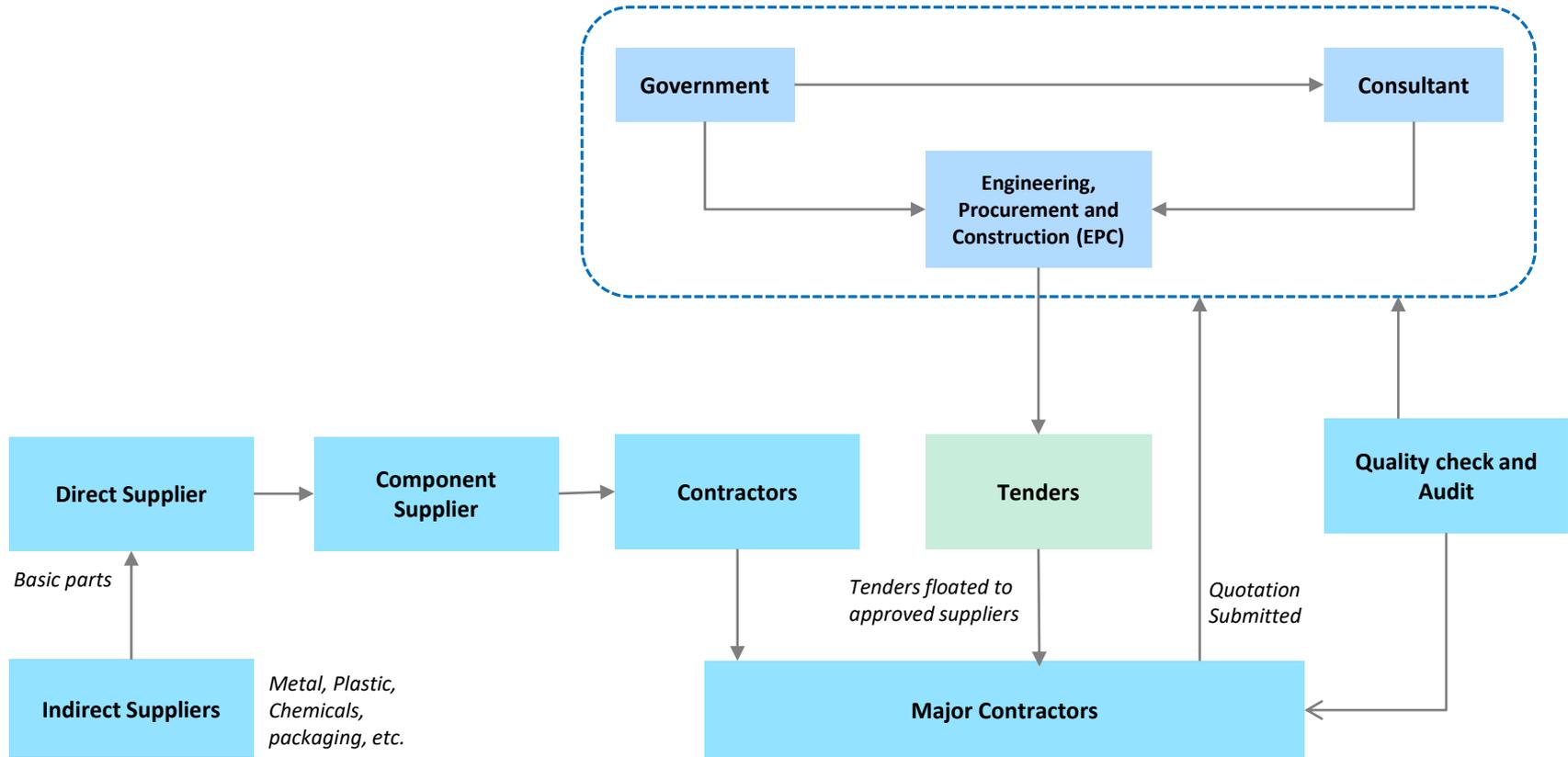
Ministry of Road Transport & Highways (MORTH) is an apex organization under the Central Government, is entrusted with the task of formulating and administering, in consultation with other Central Ministries / Departments, State Governments / UT Administrations, organizations and individuals, policies for Road Transport, National Highways and Transport Research

# Industry structure & market segmentation



Source: MORTH

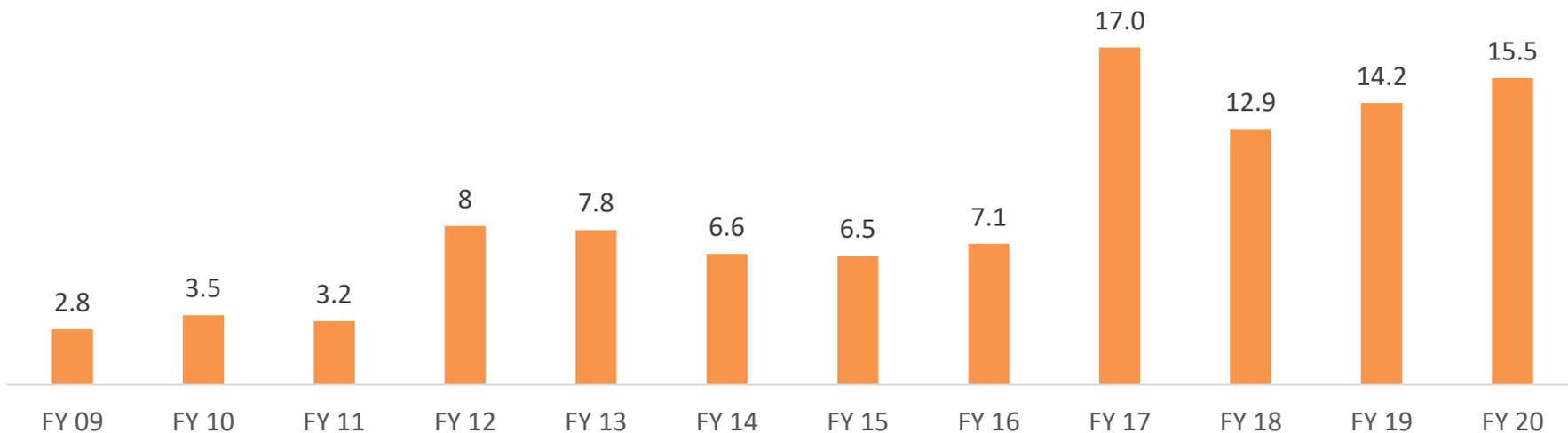
# Stakeholders involved



Source: Feedback BoK & Research Articles

## Market Estimates

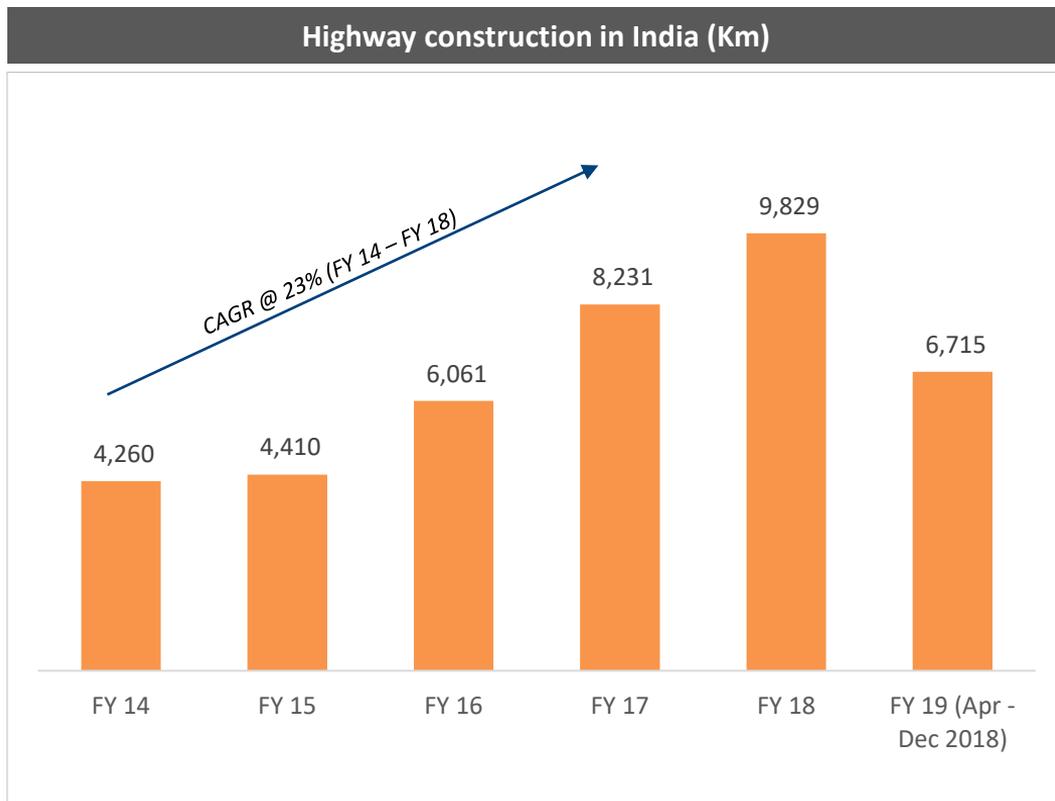
Outlay for roads under the respective Union Budgets (USD Bn)



- Roadways has been the key focus area for budget allocations over the years
- As per Union Budget FY 20, the government provided an outlay of USD 15.48 Bn under the Ministry of Road Transport and Highways
- Between FY09 and FY19, budget outlay for road transport and highways increased at a robust CAGR of 16.82%

Source: Indian Budget Analysis

## Highway construction in India



Source: MORTH; NHAI

- In FY18, 9,829 km of highways were constructed with an expenditure of USD 18.05 Bn. The Government of India aims to construct 65,000 km of national highways at the cost of USD 741.51 Bn by 2022
- In March 2019, National Highway projects worth USD 16 Bn were inaugurated
- The construction of highways reached 9,829 km during 2017-18, with an all-time high average pace of 27 km per day.
- During FY 18, 17,055 km road length was awarded as against 15,948 km during FY 17. The construction of national highways entailed an expenditure of USD 18 Bn during FY 18

## Participation of private players

- Until 2005, the road construction market was dominated by public sector companies
- With the emergence of private players over the last decade, the road construction market has become fragmented and competitive; players bidding for projects also vary in terms of size
- India has a well-developed framework for Public-Private-Partnerships (PPP) in the highway sector
- Asian Development Bank ranked India at first spot in PPP operational maturity and also designated India as a developed market for PPPs
- The government's policy to increase private sector participation has proved to be a boon for the infrastructure industry with a large number of private players entering the business through the public-private partnership (PPP) model

## Key domestic private players



- Major projects: Mumbai–Pune BOT Project, Pune–Nashik BOT Project, Bharuch–Surat BOT Project, Thane–Bhiwandi bypass 4 Lane Project, Thane Ghodbunder BOT Project, Ahmedabad–Baroda NH8, 6 lane of Agra - Etawah bypass



- Major projects: North Karnataka Expressway, West Gujarat Expressway, Noida Toll Bridge, Ahmedabad - Mehsana Toll Road, East Coast Road, Kotakatta Kurnool Road Project, East Coast Road, Hazaribagh Ranchi Expressway Ltd, Karnataka Toll Bridges



- Major projects: NH6 Dhankuni to Kharagpur, Sambalpur Baragarh, NH4 Belgaum Dharwad, NH-3 Pimpalgaon – Nashik – Gonde Road (JV with L&T), Jaora – Nayagaon Road, Chennai Outer Ring Road, Modhul – Nippani Road, Indore Edalabad Road, Wainganga Bridge, Ahmednagar Aurangabad Road



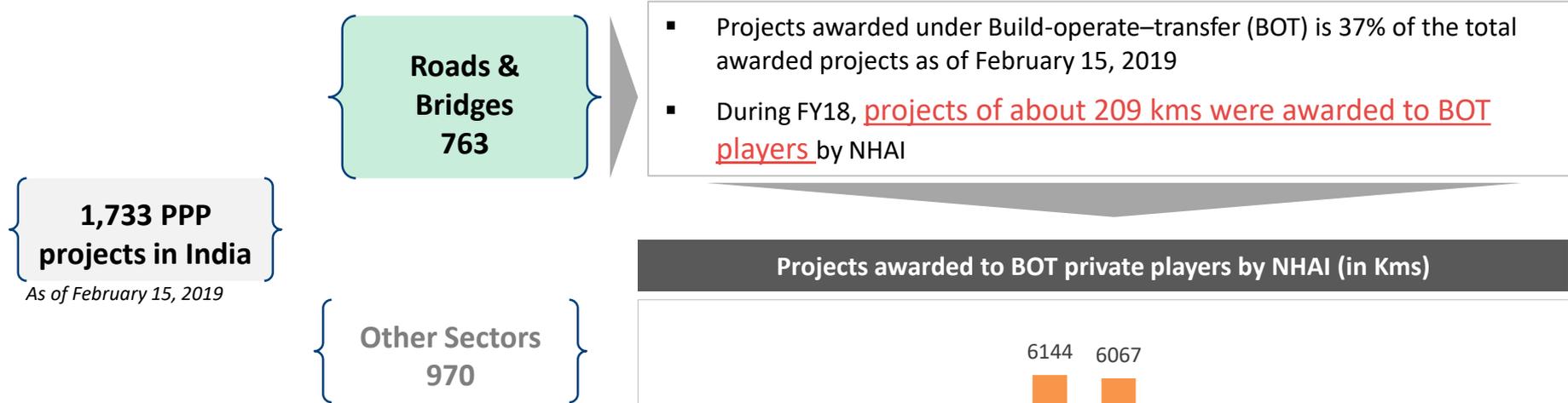
- Major projects: Bandra–Worli Sea Link, Badarpur Elevated Highway Project, Delhi Faridabad Elevated Expressway, Breakwater construction for new port at Ennore, Chennai, New Railway Line Project from Jiribam – Tupul



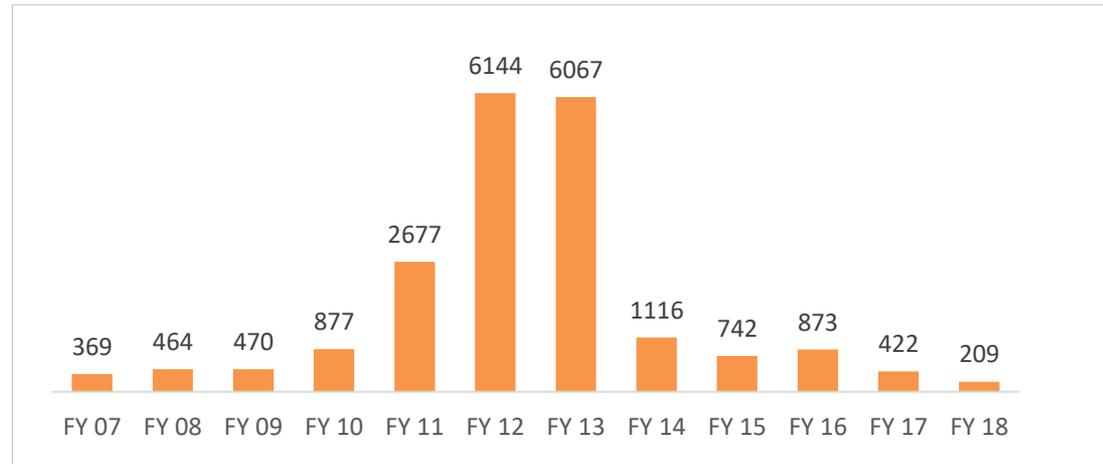
- Major projects: Tuni–Ankapalli Highway, Tambaram–Tindivanam Highway, Ambala–Chandigarh Highway

Source: Secondary Research; News Articles

# Private public partnerships (PPP) in road sectors



Projects awarded to BOT private players by NHAH (in Kms)



Source: Secondary Research; News Articles

## Key growth drivers

### Increasing Demand

- Growing vehicle population / increasing sales of passenger and commercial vehicles
- Increasing freight traffic
- Growth in logistics market (storage and transportation)
- Strong trade and tourist flows between states

### Government Support

- Greater government focus on infrastructure
- Standardized processes for bidding and tolling; clear policy framework
- Tax sops, FDI, FII encouragement
- Government permitting 100% foreign direct investment (FDI) in the road sector

### Increase in Investments

- Increasing project announcements by NHA
- Rising private sector participation
- Strong projected demand making returns attractive

## Government achievements & initiatives

### Following are the achievements of the government in the past four years

- The total national highways length increased to 122,434 kms in FY18 from 92,851 kms in FY14.
- The length of national highways awarded increased to 51,073 kms between FY15-FY18 from 25,158 kms in FY11-FY14.
- The construction of national highways increased to 28,531 kms between FY15-FY18 from 16,505 kms between FY11-FY14.
- The construction of national highway per day increased to 26.9 kms per day in FY18 from 11.6 kms per day in FY14

### Some of the recent government initiatives are as follows

- As of October 2018, total length of projects awarded was 6,400 kms under Bharatmala Pariyojana (including residual NHDP works)
- As of August 2018, a total length of 34,800 km road projects have been proposed to be constructed, under Bharatmala Pariyojana Phase-I
- As of August 2018, Government of India has approved highway projects worth USD 29.83 Mn to improve connectivity among Gujarat, Maharashtra, Rajasthan, Madhya Pradesh and Diu
- The government, through a series of initiatives, is working on policies to attract significant investor interest. A total of 200,000 km national highways are expected to be completed by 2022.

Source: Secondary Research; News Articles

# Government Policies

(1/2)

Theme	Brief
<b>Rural Development</b>	<ul style="list-style-type: none"> <li>▪ The <a href="#">Prime Minister’s Gram Sadak Yojana (PMGSY)</a> is a scheme for development of rural roads in India. The Government of India has succeeded in providing road connectivity to 85 per cent of the 178,184 eligible rural habitations in the country under the scheme</li> <li>▪ Under the Union Budget 2017-18, Government of India allocated an investment of USD 4.21 Bn for the Pradhan Mantri Gram Sadak Yojana (PMGSY)</li> <li>▪ The Government of India will spend around USD 14.29 Bn during FY18-20 to build roads in the country under Pradhan Mantri Gram Sadak Yojana (PMGSY).</li> </ul>
<b>Taxes and other sops</b>	<ul style="list-style-type: none"> <li>▪ Companies enjoy <a href="#">100 per cent tax exemption in road projects for 5 years and 30 per cent relief over the next5 years</a></li> <li>▪ Companies have been granted a capital of up to 40 per cent of the total project cost to enhance viability</li> </ul>
<b>Value Engineering Programme</b>	<ul style="list-style-type: none"> <li>▪ The Ministry of Road Transport and Highways, Government of India plans to implement '<a href="#">Value Engineering Programme</a>' in order to promote use of new technologies and material in highway projects being executed in India.</li> </ul>
<b>Encouragement of Infrastructure Debt Funds (IDFs)</b>	<ul style="list-style-type: none"> <li>▪ Government of India has set up the <a href="#">India Infrastructure Finance Company (IIFCL)</a> to provide long-term funding for infrastructure projects.</li> <li>▪ Interest payments on External Commercial Borrowings for infrastructure are now subject to a lower withholding tax of 5% vis-à-vis 20% earlier</li> <li>▪ IDF income is exempt from income tax.</li> <li>▪ In May 2018, IIFCL Mutual Fund launched <a href="#">infrastructure debt fund (IDF)</a> scheme with Corporation Bank, Oriental Bank of Commerce &amp; IIFCL as investors and Canara bank &amp; HUDCO as strategic investors.</li> </ul>

Source: Secondary Research; News Articles

# Government Policies

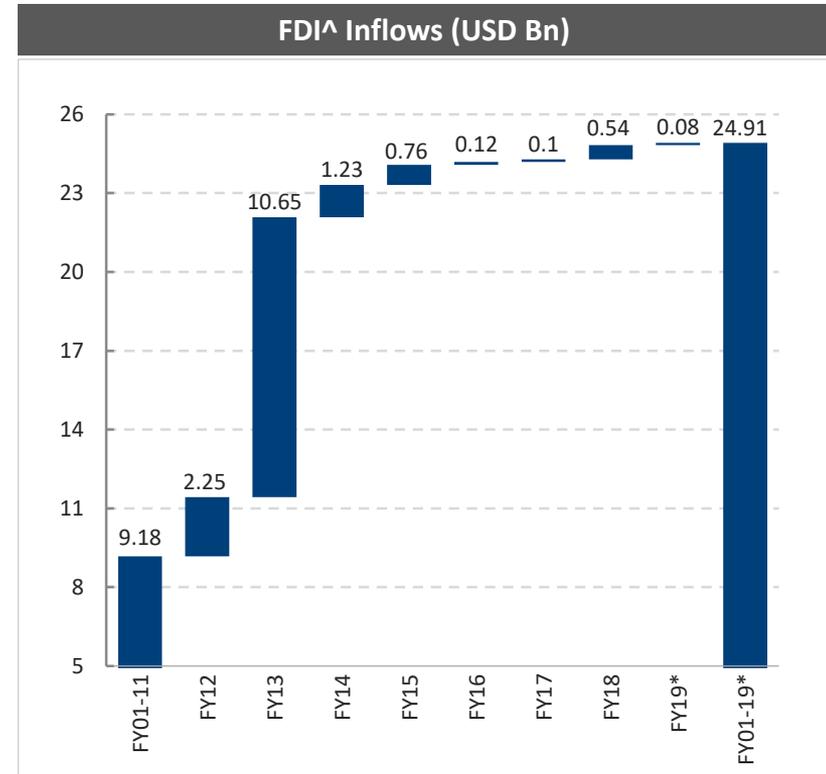
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Theme	Brief
<b>Goods and Services Tax (GST)</b>	<ul style="list-style-type: none"> <li>▪ The <u>GST on construction equipment has been reduced</u> to 18 per cent from 28 per cent, which is expected to give a boost to infrastructure development in the country</li> </ul>
<b>Bhoomi Rashi</b>	<ul style="list-style-type: none"> <li>▪ The portal accelerates the process of publication of notifications for land acquisition.</li> <li>▪ It has been useful in reducing the time taken for providing notification regarding approval and publication of land acquisition.</li> </ul>
<b>Bidder Information Management System (BIMS)</b>	<ul style="list-style-type: none"> <li>▪ BIMS is a database that provides information about bidders’ basic details, civil works experience, cash accruals and network, annual turnover, etc.</li> <li>▪ This portal will enable objective and transparent evaluation which will accelerate project implementation.</li> </ul>
<b>Central Road Fund (CRF)</b>	<ul style="list-style-type: none"> <li>▪ The <u>Central Road Fund (CRF)</u> assists the state government and union territories in the development of state roads.</li> <li>▪ The Central Road Fund (Amendment) Bill, 2017 has been passed by the Lok Sabha, Government of India which would result in revenues of USD 329 Mn for national waterways in the country.</li> </ul>
<b>Bharatmala Pariyojana Project</b>	<ul style="list-style-type: none"> <li>▪ A total length of 34,800 km road projects have been proposed to be constructed with an estimated outlay of USD 74.15 Bn, under Bharatmala Pariyojana Phase-I</li> <li>▪ As of November 2018, total length of projects awarded was 6,460 kms for a total cost of USD 21.07 Bn under Bharatmala Pariyojana (including residual NHDP works)</li> <li>▪ A total of <u>65,000 km of roads and highways are to be constructed under Bharatmala Pariyojana</u></li> </ul>

Source: Secondary Research; News Articles

## Key investments

- Government is expected to boost corporate investment in roads and shipping sector, along with introducing business-friendly strategies that will balance profitability with effective project execution
  - Cumulative FDI in construction development^ since April 2000 stood at USD 24.91 Bn as of December 2018
- Maif 2 Investments India Pvt Ltd became the first largest foreign investment in Indian roads sector under toll-operate-transfer (TOT) mode worth USD 2.50 Bn
- Some of the key investments and developments in the Indian roads sector are as follows:
  - A total of 892 km and 2,345 km national highway projects were awarded and constructed, respectively between April –August 2018.
  - The first phase of construction work of Mumbai's 29.2 km long coastal road commenced on May 2018



Source: Secondary Research; News Articles

^ - FDI in construction development Includes: Townships, housing, built-up infrastructure and construction-development projects

## Foreign investments in road sector (in recent years)

- National investment and Infrastructure Fund (NIIF) and Canadian PSP Investment's wholly owned subsidiary Roadis have announced a platform that will invest up to USD 2 Bn of equity in road projects in India (Year: 2019)
- Spanish infrastructure firm Abertis Infrastructure SA has agreed to buy two operational toll road assets in south India from Macquarie Group Ltd for about USD 150 Mn (Year: 2016)
- A consortium of investors led by Goldman Sachs Inc has agreed to invest USD 220 Mn in Essel Highways, the road infrastructure holding company of Subhash Chandra controlled Essel Group (Year: 2016)
- Brookfield Asset Management made its first significant investment in Indian infrastructure, buying six roads and three power projects from Gammon Infrastructure Projects Limited for USD 1 Bn (Year: 2015)
- I Squared acquired 100% of Jaipur Mahua Tollway Pvt Ltd (JMTPL) from Malaysia-based IJM Corporation for about USD 85 Mn (Year: 2014)

## Future Estimates

- The market for roads and highways is projected to exhibit a CAGR of 36.16% during 2016-2025, on account of growing government initiatives to improve transportation infrastructure in the country. Almost half (742) of the 1,531 PPP projects awarded in India until March 2018 were related to roads.
- In the coming years, NHAI's increased delegation autonomy along with Bharatmala Pariyojana initiative is expected to enable growth in awarding momentum
- NHAI plans to raise USD 770 Mn for construction of highways, tunnels and economic corridors in the country, and the ministry plans to monetize projects worth USD 2.2 Bn
  - Top priority has been assigned to correction of black spots on National Highways and significant thrust is being laid on road safety with USD 169 Mn being made available for this purpose
  - Several road connectivity projects with neighboring countries have been identified and innovative initiatives such as “electric taxi project”, and “closed toll policy” (where the toll will be charged) on basis of distance covered on the toll road are also underway

Source: Feedback Analysis; Secondary Research; News Articles

## Opportunity for private players

- The highways sector in India has been at the forefront of performance and innovation. The government has successfully rolled out over 60 projects worth over USD 10 Bn based on the Hybrid Annuity Model (HAM)
  - HAM has balanced risk appropriately between private and public partners and boosted PPP activity in the sector
- 'ONE MODEL' funding that has been gaining traction in recent years is 'engineering, procurement and construction' (EPC), which incorporates construction work by private developers and funding by the government
  - Engineering Procurement & Construction (EPC) – Making India brick by brick, after several years of PPP models being favored, more highway contracts are now being awarded on the EPC model
- In a bid to facilitate private funding further, 100 percent foreign direct investment is permitted into the road sector, unlike other areas, resulting in a growing number of foreign firms seeking to capitalize on its vast growth potential

# Railways

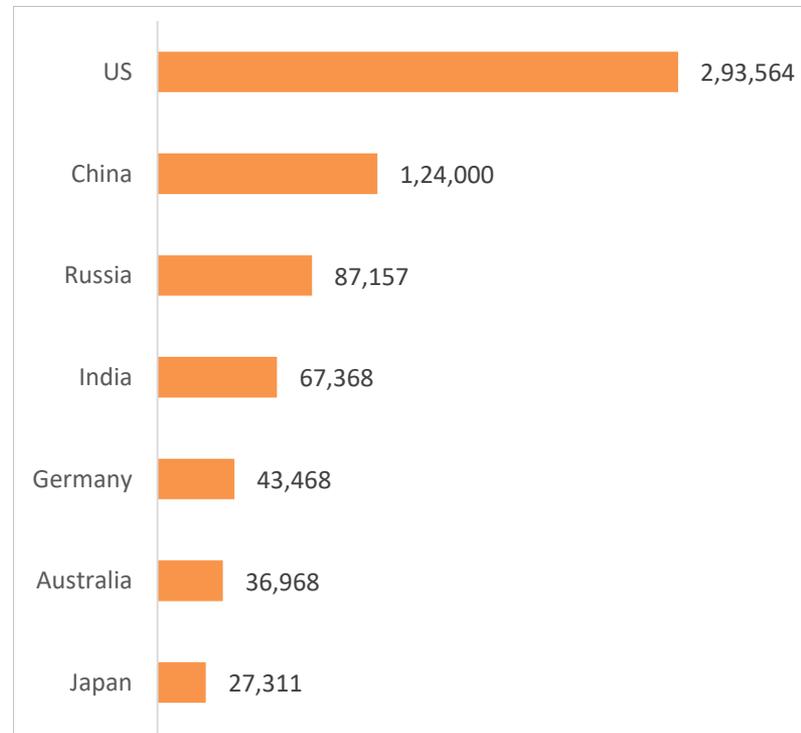
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## Indian Railways (IR) – Overview

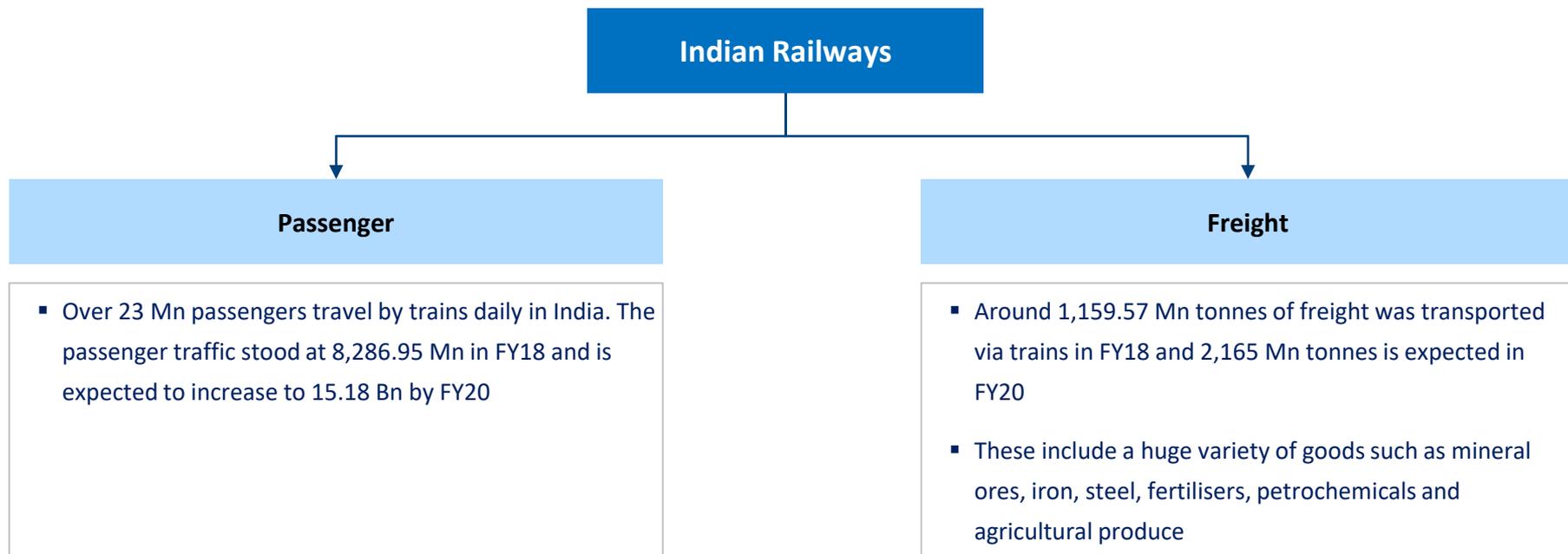
- Indian Railways (IR) is a departmental undertaking of the Government of India (GOI), which owns and operates most of India's rail transport. It is overseen by the Ministry of Railways
- The Indian Railways is among the world's 4<sup>th</sup> largest rail networks
- Indian Railways (IR) is a mammoth public sector organization that manages the fourth largest rail network in the world in size, with 121,407 kms (75,439 mi) of total track over a 67,368 kms (41,861 mi) route
- India's railway network is recognized as one of the largest railway systems in the world under single management

Source: Indian Railways

### Route length of railway network in kms



# Industry structure & market segmentation



# Indian Railways: Manufacturing Locations

## ● Locomotive

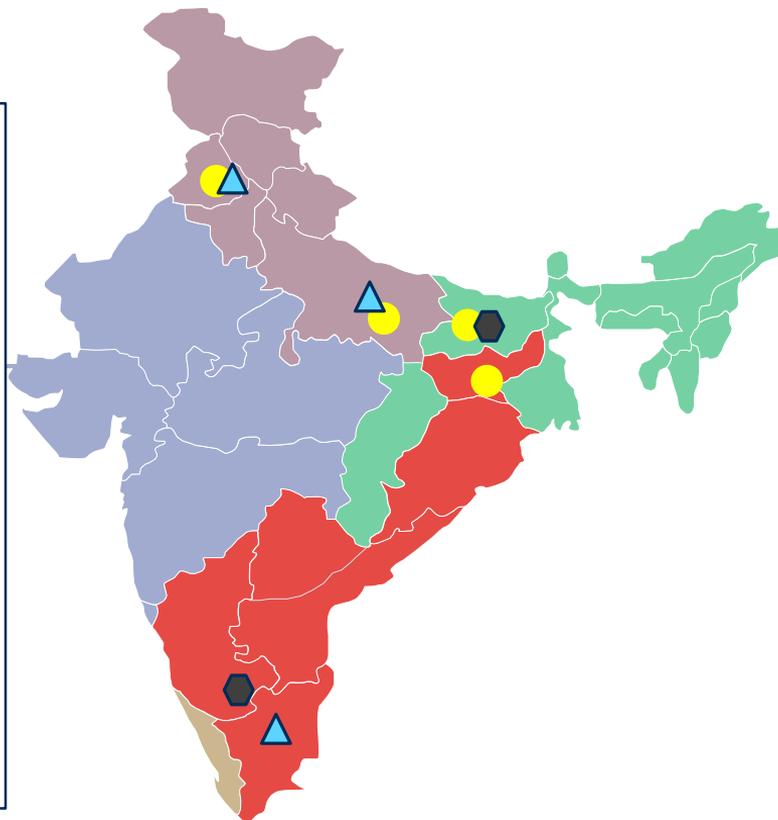
Chittaranjan Locomotive Works in Chittaranjan, West Bengal manufactures electric locomotives.

Diesel Locomotive Works in Varanasi, Uttar Pradesh makes diesel & electric locomotives.

Diesel Locomotive Factory in Marhowra, Bihar. It's a Joint Venture of Indian Railways and General Electric

Electric Locomotive Factory in Madhepura, Bihar. It's a Joint Venture of Indian Railways and Alstom SA

Diesel-Loco Modernisation Works in Patiala, Punjab upgrades & overhaul the locomotive



## ▲ Rolling Stocks

Rail Coach Factory in Kapurthala, Punjab

Modern Coach Factory in Raebareli, Uttar Pradesh

Integral Coach Factory in Chennai, Tamilnadu

## ● Wheel and Axle

Rail Wheel Factory in Bangalore, Karnataka

Rail Wheel Plant, Bela in Chhapra, Bihar

Source: Indian Railways

## Market Overview

- Revenue growth has been strong over the years. Indian Railways' revenues increased at a CAGR of 6.20% to USD 27.71 Bn during FY07-FY18. Revenue grew 5.67% YoY to USD 20.43 Bn during Apr 2018-January 2019 (Est.)
- Revenues from the sector are estimated to reach to USD 44.5 Bn by the end of FY20. Indian Railways has undertaken various measures to boost revenues including:
  - Passenger Earnings - introduction of new trains, operation of special trains during peak seasons, running premium special trains with dynamic pricing
  - Freight Earnings – reduction in distance of mini rakes, withdrawal of port congestion charge, rationalisation of Merry-go-Round policy
  - Parcel Earnings – leasing parcel space to private parties, liberalisation of parcel policy
  - Other Earnings – adoption of bulk advertising rights, vinyl wrapping of trains, right of way charges

### Gross revenue trends over the years (USD Bn)



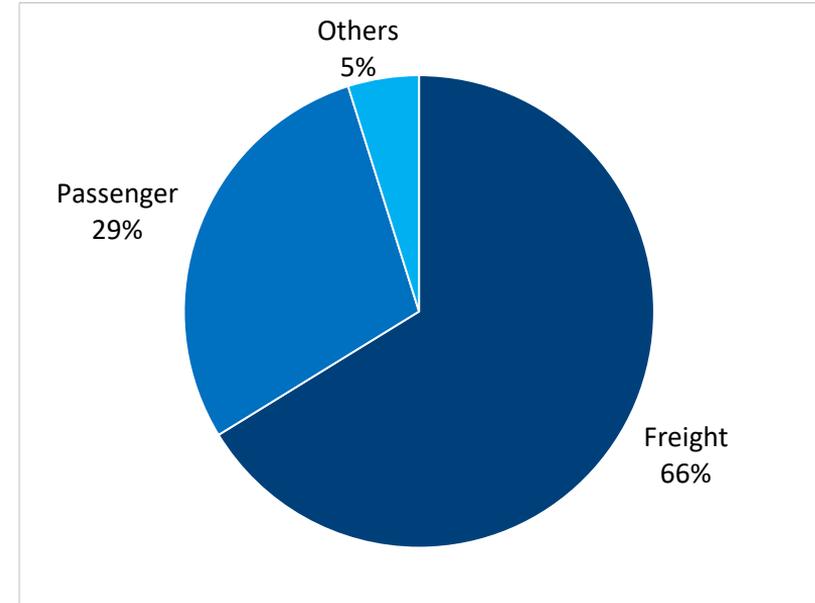
Source: Ministry of Railways

## Market by products / services

- Freight business for Indian Railway is supported by 9 commodities:
  - Coal, iron, steel, iron ore, food grains, fertilizers, petroleum products etc.
- Freight remains the major revenue earning segment for the Railways, accounting for 66.25 per cent of total revenues in FY19 (Provisional up to Jan 2019), followed by the passenger segment
- Profits from the freight segment are used to cross-subsidise the passenger segment

Source: Ministry of Railways

Revenue break-up by segment  
(traffic (Mn tonnes) FY19\*)



Others: Parcel & Other earnings

## Trends in passenger volumes

- Train travel remains the preferred means of long-distance travel for majority of Indians
- Increase in the demand for passenger trains is supported by urbanisation, improving income standards, etc.
- During FY18, passenger traffic in the country increased to 8.29 Bn and is further expected to advance to 15.20 Bn by FY20. Passenger traffic grew by 2.15 per cent year-on-year to 7.08 Bn during Apr 2018-Jan 2019 (P)
- In May 2018, IRCTC introduced Alternate Train Accommodation Scheme (ATAS) which aims to provide confirmed berths in alternate trains to waitlisted passengers. The scheme is expected to improve the experience of passengers of Indian Railways

### Trends in passenger volumes (in Bn)

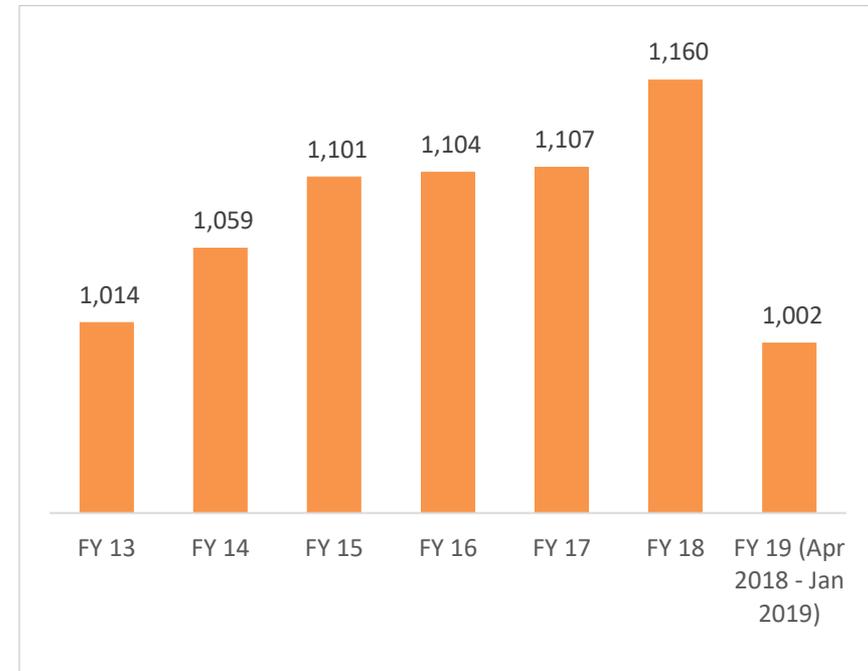


Source: Indian Railways

## Trends in freight traffic

- The government is investing heavily in building rail infrastructure in the country
- With increasing participation expected from private players, both domestic and foreign, due to favorable policy measures, freight traffic is expected to grow rapidly over the medium to long term
- Freight traffic carried by Indian Railways increased from 744.56 Mn tonnes in FY07 to 1,159.57 Mn tonnes in FY18
  - Freight traffic increased by 5.28 per cent year-on-year to 1,001.98 Mn tonnes during Apr 2018-Jan 2019 (P)
- Indian Railway estimates originating loading for freight business segment would increase to 2,165 MT by FY22

### Freight Traffic (Mn tonnes)



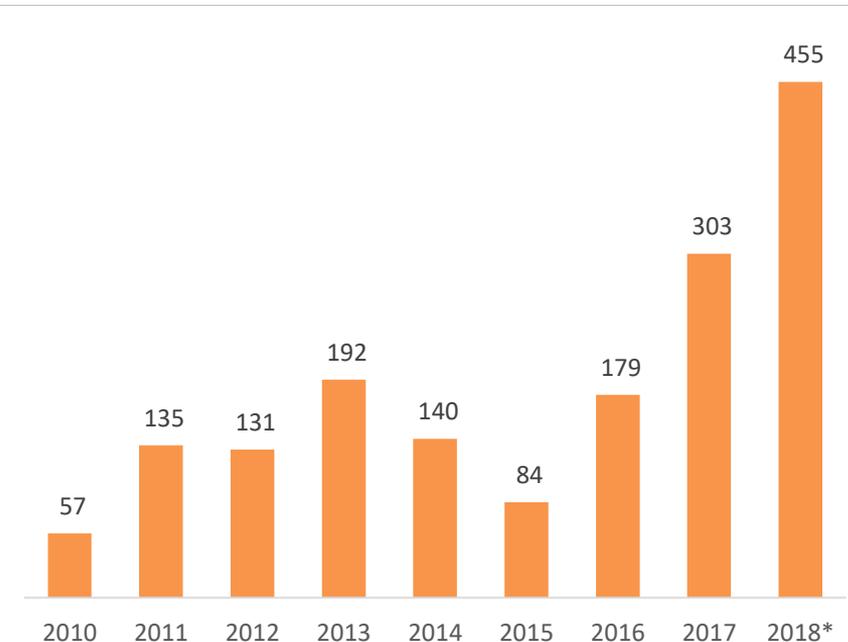
Source: Indian Railways

## Exports market

- India was among the top 20 exporters of railways globally, as of 2017
- India's exports of railways have grown at a CAGR of 27.05 per cent during 2010-2017 to USD 303.29 Mn. Exports of railways in 2018\* stood at USD 454.99 Mn
- The major exporting destinations in 2017 were Australia (USD 167.84 Mn), Myanmar (USD 22.27 Mn) and Bangladesh (USD 17.62 Mn)
- As of November 2018, Indian Railways is planning to come out with a new export policy for railways.

Source: Indian Railways

Exports of Railways (USD Mn)^



^Exports of Railway, Tramway Locomotives, Rolling Stock, Equipment  
\*Provisional data for Jan-Nov 2018

## Growth Drivers



### Growth in freight & passenger traffic

- The freight traffic is expected to grow to 2,165 Mn tonnes & the passengers volume to reach USD 217 Mn by 2020. Freight traffic is the major contributor to the railways revenue.
- Therefore, with increasing demand in these segments, the capacity and revenue generation of Indian Railways is expected to rise.



### High speed/ bullet train corridors

- Along with Japan partnership in building Mumbai- Ahmedabad high speed rail corridor, 5 other sites (Delhi-Chandigarh-Amritsar, Hyderabad-Dornakal-Vijayawada-Chennai, Howrah-Haldia, Chennai-Bangalore-Coimbatore-Ernakulam and Delhi-Agra-Lucknow-Varanasi-Patna) for similar corridors have been identified
- With this effort, congestion and travel time in railways will be considerably reduced, giving boost to Indian railways while posing competition to air travel industry



### Diamond and golden quadrilaterals

- The diamond quadrilateral (high speed rail network) connecting 4 mega cities (Delhi, Mumbai, Chennai and Kolkata) and the golden quadrilateral connecting (highway network) major industrial, agricultural, and cultural centres of the India is being planned and worked upon by the government.
- Projects like these will improve connectivity, and provide better service of travel and transportation leading to growth.

Source: Feedback analysis, analyst reports & secondary research

# Trends

(1/2)



## M-ticketing and E-ticketing

- As of July 2018, Indian Railways has decided to start accepting soft copies of documents placed in Digi Locker of customers.
- In May 2018, IRCTC introduced its mobile android app which can be utilised by IRCTC e-wallet users to book e-rail tickets.



## Travel Insurance Scheme

- Railways has rolled out its insurance scheme for passengers, under which they can buy a premium of 1.52 cents while booking a ticket to get an insurance cover of upto USD 1500.



## International Investment

- IR has attracted increasing foreign investments through strategic alliances with various countries over the last few years.
- In December 2018, France based Alstom announced plans to augment its coach production capacity at its facility in Sri City from 20 cars per month to 24 cars per month. Also, it will set up a new production line to increase capacity to 44 cars per month by the end of 2019



## Semi high-speed trains projects

- IR intends to look for cost effective options to increase speed to 160–200 km per hour on existing routes such as Delhi Chandigarh and Delhi–Agra.
- Companies from France, China and Russian have joined hands with Indian Railways to bring semi-high speed rail corridor projects on track.

Source: Feedback analysis, analyst reports & secondary research

# Trends

(2/2)



## Bullet Train

- Studies are being commissioned for other high speed routes in the diamond quadrilateral.
- India is keen on manufacturing and exporting bullet train coaches to possibly bring down the operating cost of Shinkansen trains
- Average speed of faster trains will increase from the existing 110 and 130 kmph to 160 and 200 kmph respectively
- The estimated value of the project is USD 14.52 Bn, which will reduce the duration of the journey by 2 hours. Construction of the corridor is expected to complete by 2023
- In Union Budget 2018-19, an amount of USD 1,000 Mn was allocated for the bullet train project..



## High-speed trains projects

- Indian Railways plans to build 7 high-speed rail corridors to provide faster rail connectivity across the country, for high speed train project, at a cost of USD 17 Mn
- Train 20' high speed next generation sleeper class train, which will replace Rajdhani Express, is expected to be rolled out by 2020.
- The Indian Railways has collaborated with the government of Japan for the construction of a high speed passenger train corridor between Ahmedabad and Mumbai. The government has set a target of commencing the train by 2023.



## New Services Launched

- In April 2018, Indian Railways decided to launch 10 new summer special trains that will operate between Mumbai and Varanasi.
- Under Budget 2018-19, railway lines of 4,100 kms will be commissioned and 600 stations will be targeted to be redeveloped during the year.
- Around 4,100 km of Railway lines are expected to be commissioned in 2018-19

Source: Feedback analysis, analyst reports & secondary research

# Challenges

(1/2)



## Project delay & cost overrun

- 213 projects out of 349 delayed projects of the central government belong to the railways, accounting to a cost over run of USD 247 Mn.
- Delay is also witnessed in approvals of infrastructure projects despite the government's effort of transparency and automation



## Over utilization of infrastructure

- 40% of the Indian railway tracks are utilized beyond 100% that pose considerable risk to passenger safety
- RAC in railways is an excellent example of over utilization of limited resources
- These issues shall be addressed with more capacity addition



## Safety

- There have been 586 accident in the past 5 years. Even though 2017-2018 has registered lower train accidents compared to previous years, apprehensions relating to
  - Derailments of trains
  - Signalling issues
  - Infrastructure overuse, continues to exist in public minds

Source: Feedback analysis, analyst reports & secondary research

# Challenges

(2/2)



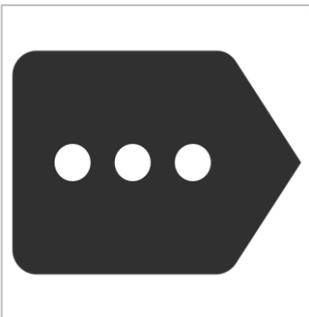
## Imbalanced revenue and infrastructure use

- Almost 65% of the total trains are dedicated towards passenger carrying that generates approximately 29% of the total revenue
- 66% of the revenue is generated by freight segment, which is only 35% of the total trains
- This improper revenue generation needs to be optimized in the long run



## Lack of technology

- Lesser share of investment in research & development of technologies in the Indian railways makes it globally incompetent
- Problems like congestions, trafficking and signalling need cutting edge technologies



## Other problems

- Other areas of concern in the Indian railways are
  - Late running of trains
  - Lack of cleanliness & security
  - Political interference
  - Operational inefficiencies
  - Low employee productivity

Source: Feedback analysis, analyst reports & secondary research

## Government Initiatives and policy support

S.no	Policy Support	Brief
1	<u><a href="#">Electrification goals</a></u>	<ul style="list-style-type: none"> <li>To reduce the cost and improve paybacks, the government aims to run all the 19,000 trains on electrical locomotives and save USD 1,517 Mn of diesel expenditure every year</li> <li>From 2014-2017, 17,165km route has been electrified. The remaining 24,400km is planned to be electrified in the next five years</li> </ul>
2	<u><a href="#">FDI</a></u>	<ul style="list-style-type: none"> <li>The government has allowed 100% FDI in railway infrastructure through automatic route to improve and add carrying capacity of passenger and freight trains</li> <li>The areas under focus are               <ul style="list-style-type: none"> <li>Suburban corridor projects</li> <li>High speed train projects</li> <li>Dedicated freight lines</li> <li>Rolling stocks, railway electrification</li> <li>Signalling system</li> <li>Training institutes, etc.</li> </ul> </li> </ul>
3	<u><a href="#">Raising non fare revenues</a></u>	<ul style="list-style-type: none"> <li>With the government's aim to reduce the dependency of its revenue on passenger and freight earnings, many advertising plans for revenue generations are to be incorporated</li> <li>The activities will include selling out station areas for hoardings and billboards, branding rights for trains, providing spaces for ATMs, etc.</li> <li>The shift to these modes is expected to generate revenue of USD 2,571 Mn.</li> </ul>
4	<u><a href="#">Incorporation of technologies</a></u>	<ul style="list-style-type: none"> <li>Railways have integrated catering, tourism, online booking, etc., under one subsidiary IRCTC</li> <li>It has also approved manufacturing of modern linked Hofmann Busch coaches</li> </ul>
5	<u><a href="#">Human capital building</a></u>	<ul style="list-style-type: none"> <li>The union cabinet will set up India's first National Rail &amp; Transport University in Vadodara to build skilled railway human resource</li> </ul>

Source: Indian Railways

## Capacity Addition Initiatives

### Separate dedicated freights corridors (DFC)

- Indian railways has negligible contribution in freight segments like consumer durables, automobiles, FMCG, etc.
- It aspires to contribute to 50% of India's total modal freight
- Therefore, the railways has plans to set up 6 separate DFCs, of which two (one on western route and one on eastern route) have already been tracked

### Passenger trains capacity

- Double decker coaches and longer trains are the future prospects of passenger capacity addition
- Also, the goal is to completely separate passenger and freight lines on high density lines

### Network expansion

- Government's aim is addition of 25,000km of new lines by 2020 via public private partnership
- Also, 6000km of route is expected to be quadrupled with separate passenger and freight double lines

### Metro railways

- Presently 537 km of metro sections are under construction
- The budget allocation for metro railway expansion for 2018-19 is USD 2,052 Mn.
- Moreover, initiatives towards creation of metros connectivity in cities like Lucknow, Ahmadabad, Hyderabad & Nagpur, Jaipur are taken

# Investments

## Investments

### FDI

- FDI in railway sector accounted for USD 8,330 Mn during 2000-2017
- An agreement is signed between Government of India and the Government of Japan to build Mumbai-Ahmedabad high speed rail corridor with financial aid of 81%

### Public private partnership

- Private companies like [Reliance Cement Company](#), [Hindustan Petroleum](#), [GMR Energy](#), [UltraTech Cement](#), [Adani Agri Logistics](#), [IOCL](#) and [NTPC](#) have invested around USD 286 Mn during the year 2016-2017 in setting freight terminals near their manufacturing plants
- Further, during the year 2017-2018, with increased freight traffic, another USD 714 Mn plan is laid for creating 60 more terminals via PPP

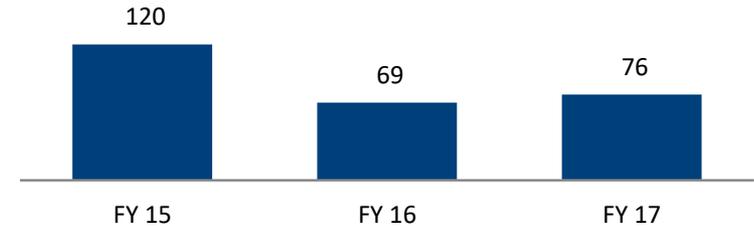
### Other investments

- [DFC](#) – USD 3,617 Mn have been spent between 2015-2017 towards implementation of DFCs
- An allocation of USD 1,143 Mn has been made for electrification of railway network with aim of reducing fuel cost
- Investment in [European Train Control System \(ETCS\)](#) has been made to build better infrastructure

Source: PIB GOI, MOR, InvestIndia

## FDI in Indian Railway

USD Mn



## Major Foreign Direct Investors

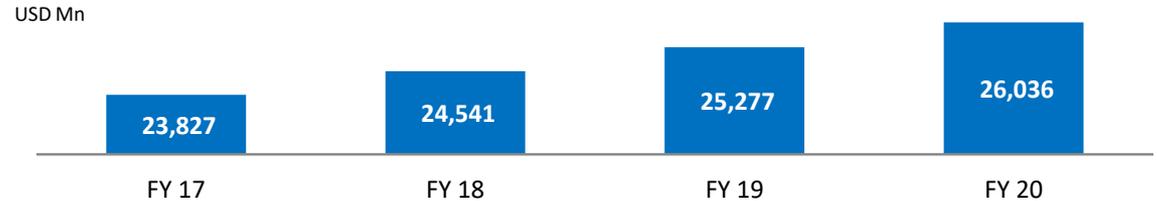
- EMD (USA)
- Bombardier Transportation (Canada)
- GE (USA)
- Siemens (Germany)
- Alstom (France)

# Indian Railways: Future outlook

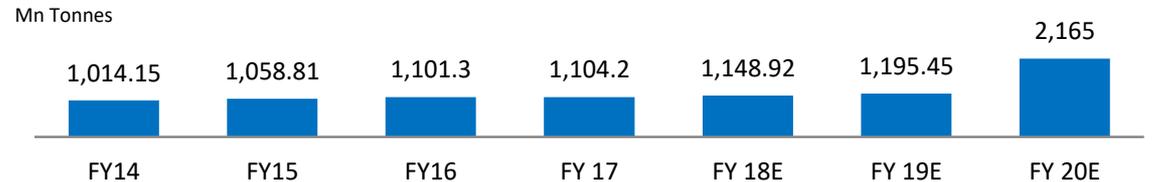
## Future Outlook

- The passenger traffic carried through scheduled carriers is expected to grow at a CAGR of 5.5% and by 2023, India is estimated to have 239 Mn flyers.
- Indian Railways revenue is expected to grow from USD 238 Mn in FY 17 to USD 26,037 Mn in FY 20.
- The Pass freight traffic is expected grow from 1,104 Mn tonnes in FY 17 to FY 2,165 Mn tonnes in FY 20.

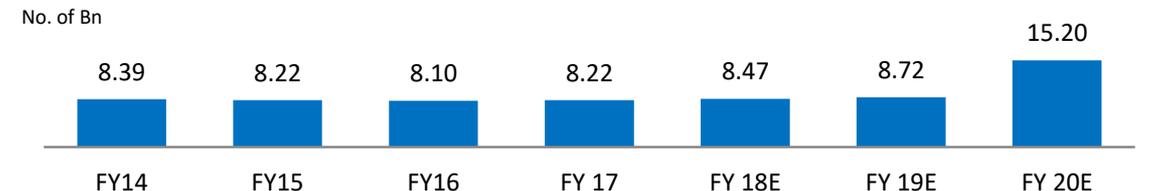
## Future Revenue of Indian Railways



## Present and Future Pass Freight Traffic



## Present and Future Passenger Volume



Source: Secondary Research & Indian Railway Vision 2020

## Business opportunities in related industries

### Advertisements

Companies can use railway provided advertisement spaces for the promotion of their products & services for varied reasons

- Railways can help companies reach out a huge crowd
- Audience will be of varied ages, income levels and backgrounds
- Unlike television advertisements, it cannot be ignored, etc.

### Rise in steel requirement for Railways

- For the requirement of 700 thousand MT of rails, Ministry of Railways has floated tender. This is a competition to the monopoly of its state-run steel provider like The Steel Authority of India
- Subsequently, it will be advantageous for Jindal Steel & Power Ltd., as it is the only private producer of this grade
- With more government investments on the way for track development, number of such projects and tenders are expected to rise

### Shift towards bio- toilets

- Firms like JSL Lifestyle, Amit Engineers, Victoria Auto, Oasis Fabricators, Omax Auto, Hindustan Fibreglass Works, Mohan Rail Components & Rail Fab and RailTech are benefitted as the government sources 80,000 bio-toilets from them
- With increasing capacity of passenger trains , more such procurements are expected to happen generating more business for the firms

### Allowance of private freight train operations

- There is a scope for entry of private entities in the Indian Railways as the government plans to allow private players with their own freight operations.
- They will be charged by the government for using the other infrastructure
- This move will break the age old monopoly of the public sector in railways

### Private modernization of stations

- The government has incorporated private modernization and development of railway stations
- 23 stations have been selected for revamping. The first contract is awarded to Bansal Constructions for Habibganj Stations
- Scope for other companies for grabbing such contracts is also available

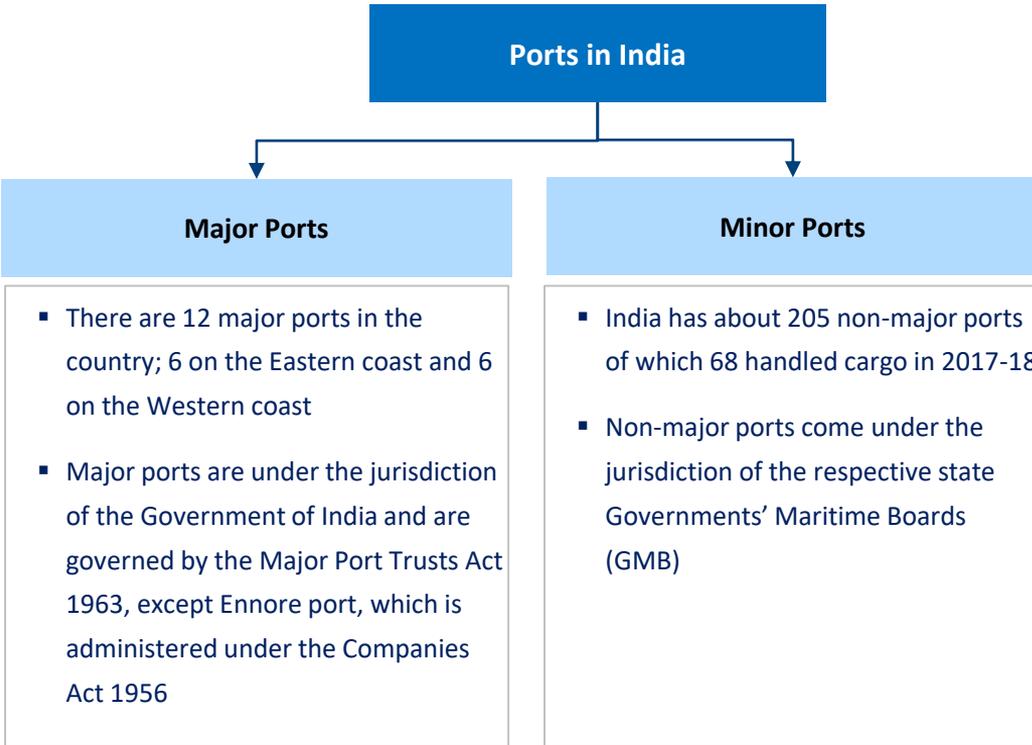
# Shipping & Ports

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## Shipping & Ports - Overview

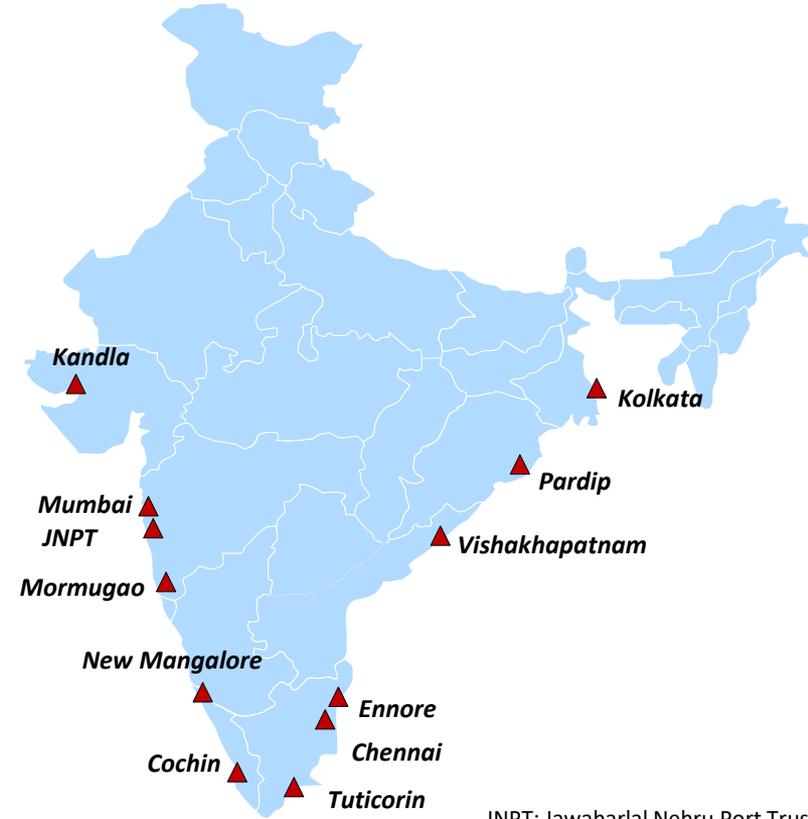
- India has 12 major and 205 notified minor and intermediate ports. Under the National Perspective Plan for Sagarmala, six new mega ports will be developed in the country
- The Indian ports and shipping industry plays a vital role in sustaining growth in the country's trade and commerce. India is the sixteenth largest maritime country in the world, with a coastline of about 7,517 km
- The Indian Government plays an important role in supporting the ports sector. It has allowed Foreign Direct Investment (FDI) of up to 100 per cent under the automatic route for port and harbor construction and maintenance projects
- It has also facilitated a 10-year tax holiday to enterprises that develop, maintain and operate ports, inland waterways and inland ports

# Major and Minor ports in India



Source: Secondary Research; News Articles

## Major Ports in India



JNPT: Jawaharlal Nehru Port Trust

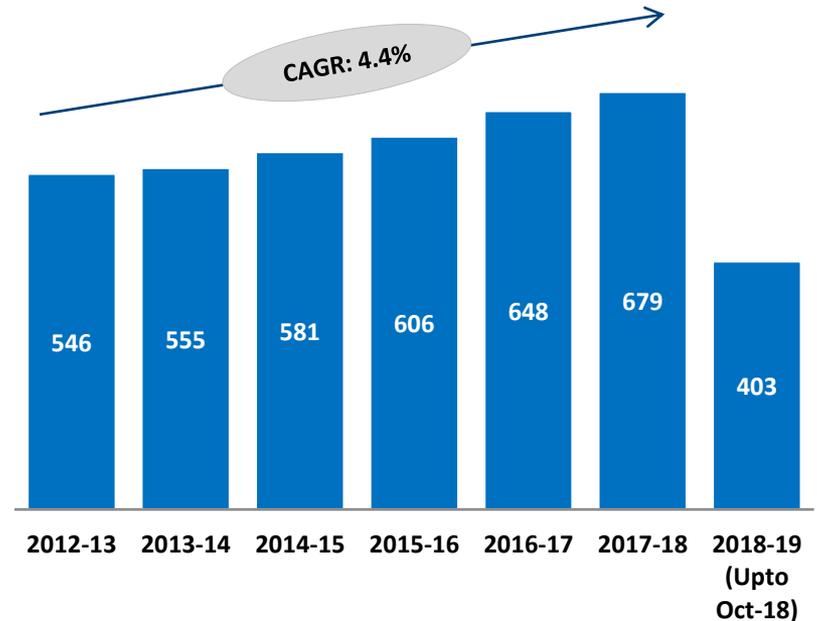
## Ports: Traffic handled at Major Ports

### Traffic handled At Major ports

- The total cargo traffic handled at major ports increased from 546 MT in FY 13 to 679 MT in FY 18. It grew at a CAGR of 4.4%.
- Cargo traffic reached 403 Mn tonnes in FY19 (upto October 2018).
- In March 2017, 16 new cargo scanners were installed across major ports in India. In the 1<sup>st</sup> phase, 5 of the 13 major ports i.e. Kamarajar (Ennore), New Mangalore, JNPT, Kolkata and Vizag will receive the scanners.
- The achievement of the Major Ports in terms of capacity augmentation, increase in traffic, improved operational efficiency and higher operating surplus has been made possible due to certain pro-active policy initiatives taken by the Ministry of Shipping.

### Traffic handled at Major Ports (FY 13-FY 18)

Value : in MT



Source: Feedback Analysis, News Articles, Analyst reports, Annual reports and Primary research

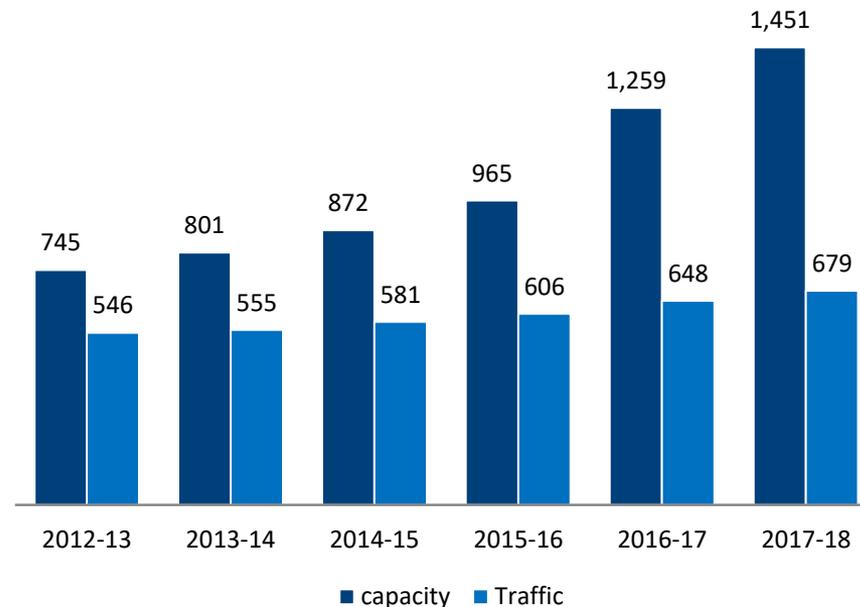
## Ports : Capacity v/s Traffic handled at Major Ports

### Ports: Capacity v/s traffic handled

- Capacity at major ports grew to 1,451 Mn tonnes in FY18 from 745 Mn tonnes in FY13.
- Utilisation rates of major ports in India such as JNPT port, Kandla port, Ennore port, etc., are much above the world's average
- As of February 2018, 21 dry port projects in India are under implementation.
- 12 Major Ports were identified under Sagarmala project, for cargo handling till 2035. The objective of this project is to promote port led development and to provide infrastructure to quickly transport goods to and from ports, with higher efficiency and at lower cost.

### Capacity v/s Traffic handled at major Ports

Value: in MTPA

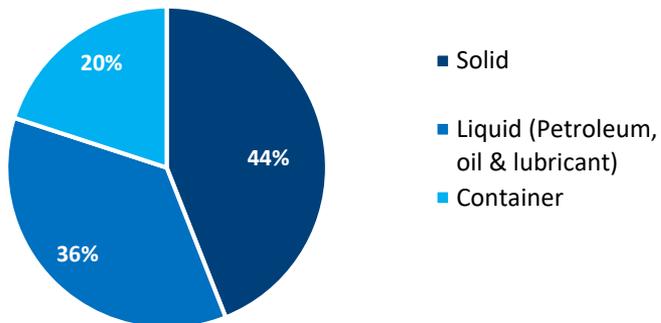


Source: Secondary Research; News Articles

# Ports: Share of Cargo Type at Major Ports

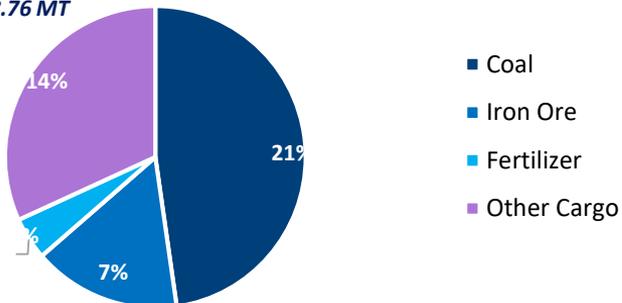
Market Share : By overall Cargo Type (FY 18)

Total : 679 MT



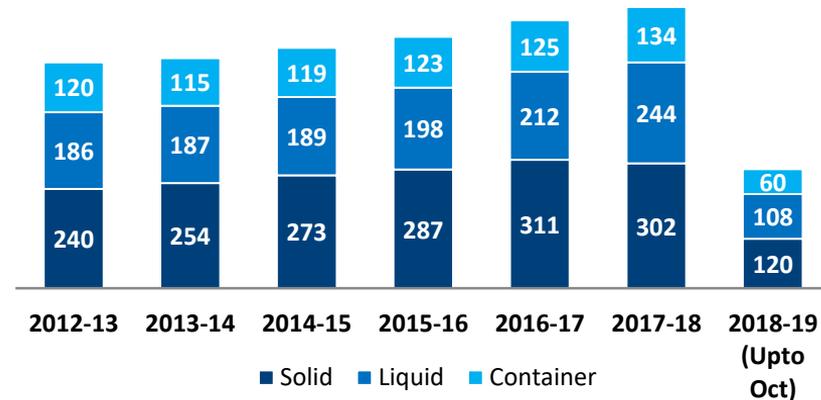
Market Share : By solid Cargo Type (FY 18)

Total : 298.76 MT



Cargo traffic at non-major ports (FY 13-FY 18)

Value: in MTPA



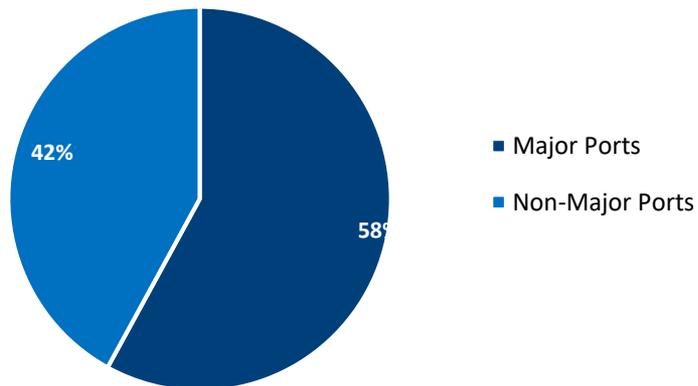
- **Solid cargo contributes the largest share** to all traffic handled at major ports in India, followed by liquid cargo and containers.
- Cargo traffic during FY18 for solid, liquid and container cargo was 302MT, 244MT and 134MT, respectively.
- In FY19 (upto August 2018), it was 120.19 MT for solid, 108.14 MT for liquid and 60.06 MT for container cargo.

Source: News articles, Analyst reports, Annual reports and primary research

## Ports: Non-Major Ports

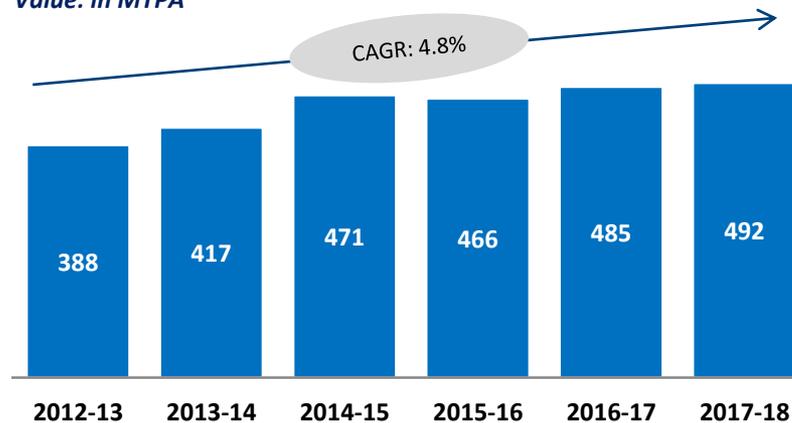
Market Share of Major and Non-Major Ports (FY 18)

Total : 1,171 MT



Cargo traffic at non-major ports (FY 13-FY 18)

Value: in MTPA



- Non major Ports handle around 42% of the total cargo. Non-major ports are gaining shares and a major chunk of traffic has shifted from major ports to non-major ports.
- The cargo traffic at major ports grew from 388 MT in FY 13 to 492 MT in FY 18. It grew at a CAGR of 4.8%.

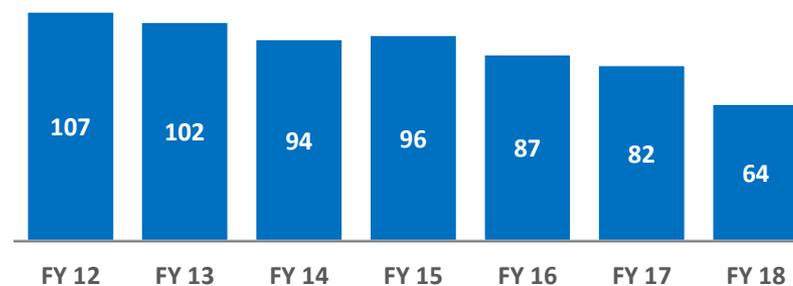
## Ports : Efficiency parameters at Major Ports

### Efficiency parameters at Major Ports

- Average turn around time is influenced by factors such as type of cargo, parcel size and entrance channel
- Turn around time at major ports in India has decreased at a rapid pace from 107 hours in FY12 to 64 hours in FY18
- While increasing the capacity of major ports, Ministry of Shipping has been striving to improve their operational efficiencies through policy interventions, procedural changes and mechanization. As a result key efficiency parameters i.e. Average Turnaround Time and Average Output Per Ship Berth have improved considerably.
- The average turn around time at major ports decreased from 107 hours in FY 12 to 64 hours in FY 18.
- The average output per ship birth increased from 14,576 tonnes in FY 17 to 16,166 tonnes in FY 18.

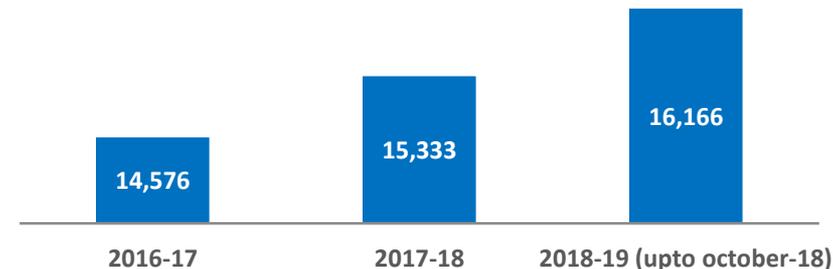
### Major ports : Turn around time

*in hours*



### Major ports : Average output per ship birth

*in Tonnes*



Source: Feedback Analysis, News Articles, Analyst reports, Annual reports and Primary research

## Growth Drivers



### Increasing demand for Cargo Transport

- India has huge landlocked region. Large population spread with rising disposable income
- Also, Huge investment in Infrastructure at coast Industrial development – such as power, plants/ steel plants.



### Government Initiatives and policy support

- The Government has allowed FDI up to 100% under the projects related to the construction and maintenance of ports and harbours. A 10-year tax exemption has been given to the enterprises engaged in the business of developing, maintaining and operating ports, inland waterways and inland ports.
- The Cochin Steamer Agents Association (CSAA) will take the lead to improve the cargo throughput by organising marketing initiatives in the hinterland in association with the port management, terminal operator and various other stakeholders. A 20 per cent growth target in container volume was fixed for 2014-15.
- The National Maritime Agenda 2010-2020 is an initiative of the Ministry of Shipping to outline the framework for the development of the port sector. The agenda also suggests policy-related initiatives to improve the operating efficiency and competitiveness of Indian ports.
- Sagar Mala project is the new initiative of the ministry

# Trends

# (1/2)



## Increasing private participation

- Strong growth potential, favourable investment climate and sops provided by state governments have encouraged domestic and foreign private players to enter the Indian ports sector. In addition to the development of ports and terminals, the private sector has extensively participated in port logistics services



## Setting up of port-based SEZs

- SEZs are being developed in close proximity to several ports, there by providing strategic advantage to industries within the SEZ zones. Plants being setup include–Coal-based power plants to take advantage of imported coal, Steel plants and edible oil refineries , Development of SEZs in Mundra, Krishnapatnam, Rewas and few others is underway .



## Focus on draft depth

- All the green field ports are being developed at shores with natural deep drafts and the existing ports are investing on improving their draft depth.
- Higher draft depth is required to accommodate large sized vessels. Due to the cost and time advantage associated with the large sized vessels, much of the traffic is shifting to large vessels from smaller ones, especially in coal transportation



## Ports to operate on Green energy

- Government of India is targeting to make the country the first in the world to operate all 12 major domestic government ports on renewable energy. The government plans to install almost 200MW wind and solar power generation capacity by 2019 at the ports. The energy capacity could be ramped upto 500MW in future years.

Source: Feedback analysis, analyst reports & secondary research

# Trends

(2/2)



## Specialist terminal-based ports

- Terminalisation: Focus on terminals that deal with a particular type of cargo
- This is useful for handling specific cargo such as LNG that requires specific equipment and hence high capital costs. Forming specialist terminals for such cargo result in optimal use of resources and increased efficiencies
- Examples of specialist terminals: ICTT in Cochin, LNG terminal in Dahej Port



## 'Landlord port' model

- To promote private investments, the government has reformed the organisational model of sea ports–
- From: A 'service port' model where the port authority offers all the services -To: A 'landlord port' model where the port authority acts as a regulator and landlord while port operations are carried out by private companies
- Major ports following 'landlord port' model: JNPT, Chennai, Visakhapatnam and Tuticorin.



## Rising traffic at non major ports

- With the increasing private participation in establishing minor ports. Cargo traffic handled by the minor ports are outpacing cargo traffic at major ports.



## Coastal Economic Zones

- The Government of India is planning to build 14 CEZs in the country to boost manufacturing and jobs. In November 2017, the first mega CEZ at the Jawaharlal Nehru Port in Maharashtra was cleared.

Source: Feedback analysis, analyst reports & secondary research

# Government Initiatives and policy support : SAGARMALA

(1/2)

## Sagarmala : Brief

- Sagarmala Programme is an initiative of Government of India to enhance the performance of logistics sector in India. The programme envisages unlocking the potential of waterways and coastline, to minimize infrastructural investments required to meet these targets.
- It entails ₹8.5 trillion (USD 120 Bn or €100 Bn) investment for setting up of new mega ports, modernization of India's existing ports, development of 14 Coastal Employment Zones (CEZs) and Coastal Employment Units, enhancement of port connectivity via road, rail, multi-modal logistics parks, pipelines & waterways and promote coastal community development.
- The Sagarmala Programme is the flagship programme of the Ministry of Shipping to promote port-led development in the country through harnessing India's 7,500 km long coastline, 14,500 km of potentially navigable waterways and strategic location on key international maritime trade routes.
- Sagarmala aims to modernize India's Ports so that port-led development can be augmented and coastlines can be developed to contribute in India's growth. It also aims for "transforming the existing Ports into modern world class Ports and integrate the development of the Ports.

S.no	Policy Support	No of Projects	Project Cost
1	Port Modernization	245	USD 20,220 Mn
2	Connectivity Enhancement	210	USD 34,924 Mn
3	Port-Linked Industrialization	57	USD 66,281 Mn
4	Coastal Community Development	65	USD 997 Mn
<b>Total</b>		577	USD 1,22,436 Mn

Source: Feedback Analysis, News Articles, Analyst reports, Annual reports and Primary research

# Government Initiatives and policy support : SAGARMALA

(2/2)

## Road connectivity Projects Under Sagarmala

State	Number of Projects	Length (km)	Cost (USD Bn)
Gujarat	4	690	3
Maharashtra	14	2,351	8.33
Goa	2	110	0.21
Karnataka	7	781	0.95
Kerala	21	220	0.69
Tamil Nadu	19	1,139	8.50
Andhra Pradesh	36	2,184	4.68
Odisha	4	62	0.10
West Bengal	5	275	1.44

- Enhancing connectivity to the ports and last mile connectivity are one of the main focus are as under Sagarmala programme. Road connectivity projects worth USD 25,680 Mn are being implemented in coastal states.
- More than 50 percent of rail connectivity projects identified under the programme are already in implementation stage.

## Road connectivity Projects Under Sagarmala

Status	Number of Projects	Length (km)	Cost (USD Bn)
Completed	13	426	0.40
Under Implementation	27	1,967	2.92
Pre-Implementation	30	1,854	3.93

## Multi modal Logistics Parks Under Sagarmala

Status	Number of Projects	Cost (USD Bn)
Completed	1	8.62
Under Implementation	9	267.65
Pre-Implementation	5	266.41

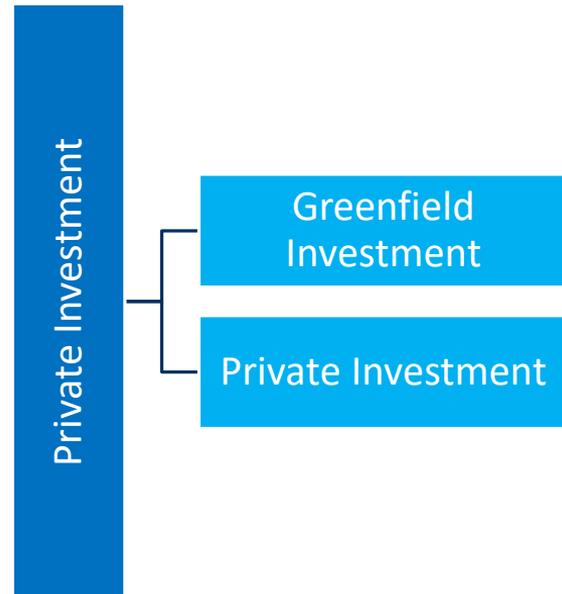
Source: Feedback Analysis, News Articles, Analyst reports , Annual reports and Primary research

# Ports: Private Players Participation

(1/2)

## Private Players participation: Brief

- [Essar Ports](#) will invest USD 70 Mn in Hazira port by 2020.
- Indian ports and shipping sector witnessed three M&A deals worth USD 29 Mn in 2017.
- [39 Public Private Partnership \(PPP\) projects are operational at a cost of around USD 2219.4 Mn and capacity of 240.72 Mn Tonnes Per Annum \(MTPA\)](#). 32 PPP projects at an estimated cost of around USD 3917.6 Mn and capacity 264.77 Mn Tonnes Per Annum (MTPA) awarded and are under implementation.
- In May 2017, [DP World](#) has agreed to develop Indian port projects and plans to sign an MoU with the National Investment and Infrastructure Fund (NIIF), the Indian wealth fund. The projects worth USD 1.3 Bn include the development of Sagarmala & Bharatmala projects.
- In January 2017, a new container service, operated by K Line, commenced operations between CITPL (Chennai International Container Terminals Pvt. Ltd) at Chennai port and the Far East.
- National Green Tribunal has given nod for construction of multi-crore '[Vizhinjam International Seaport Ltd \(VISL\)](#)'. The port is being developed by [Adani Group in collaboration with Kerala Government](#).



## Ports: Private Players Participation

(2/2)

### Terminals in major ports with private sector involvement

Terminals in major ports with private sector involvement	Port agency	Estimated cost (USD Mn)
Container terminal, Ennore	Ennore	293.1
LNG terminal, Cochin	Cochin Port Trust	729.1
Container terminal, NSICT	JNPT	156.3
Oil jetty related facilities (Vadinar)	Kandla Port Trust	156.3
Third container terminal (Mumbai)	JNPT	187.5
Crude oil handling facility (Cochin)	Cochin Port Trust	146.5
ICTT at Vallarpadam (Cochin)	Cochin Port Trust	262.9
Construction of SPM captive berth (Paradip)	Paradip Port Trust	104.2
Development of second container terminal (Chennai)	Cochin Port Trust	103.1

### Key private sector companies

Key private sector companies	Length (km)
Maersk	JNPT (Mumbai)
P&O Ports	JNPT, (Mumbai and Chennai)
Dubai Ports International	(Chohin and Vishahapatnam)
PSA Singapore	Tuticorin
Adani	Mundra
Maersk	Pipavav
Navyuga Engineering Company Ltd	Krishnapatnam
DVS Raju group	Gangavaram
JSW	Jaigarh
Marg	Karaikal

NSICT –Nhava Sheva International Container Terminal, Mumbai

ICTT –International Container Trans shipment Terminal

SPM –Single Point Mooring

# Civil Aviation

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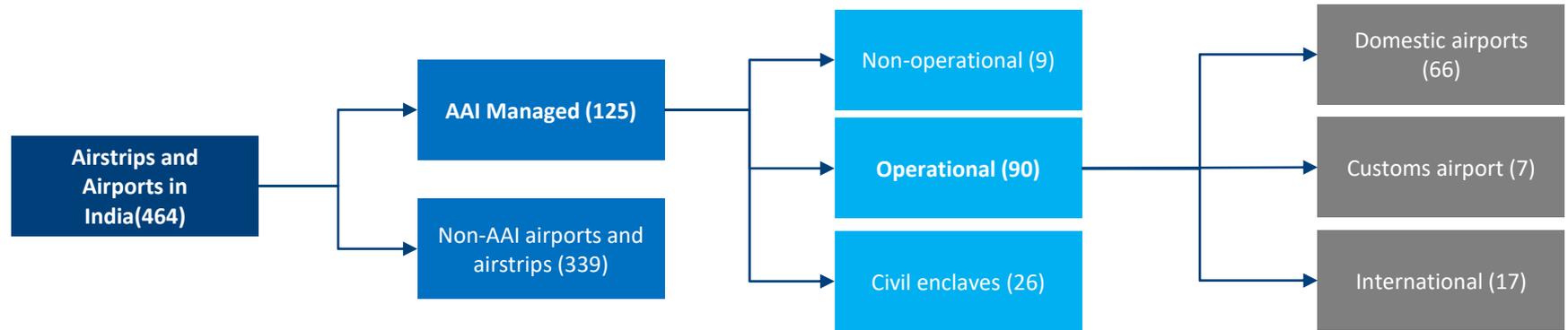
## Evolution of the Indian Aviation Sector

- India is the 7th largest civil aviation market in the world and is set to become the world's 3rd\* largest by 2024.
- In FY18, airports in India witnessed a domestic passenger traffic of about 243.28 Mn people.
- Investments worth USD 6 Bn are expected in the country's air port sector in 5years
- In-service fleet size of Indian airline stood at 588 airplanes, as of May 2018. It is further expected to grow to 1,100 planes by 2027.

S.no	Category	2000		2018
1	Scheduled airlines: distance flown (mn km)	199		1,382.74
2	Non –scheduled airlines in operation	39		206
3	Number of aircraft	225		588
4	Cargo handled	703,000		3,357,028
5	Number of operational airports	50		102

Source: Secondary Research; News Articles

# Airport and Airstrip Management Structure



Airports Authority of India (AAI) was –

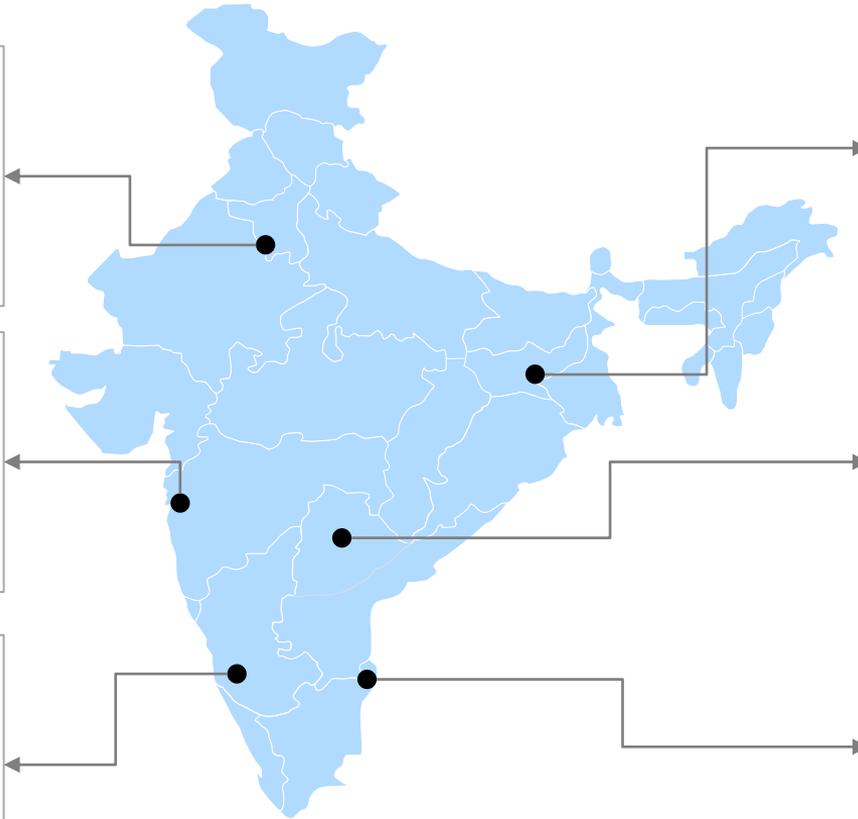
- Established in 1994 under the Airports Authority Act
- Responsible for developing, financing, operating and maintaining all government airports
- The Aircraft Act (1934) governs remaining airports

# Major Airports in India

**Delhi**  
 Passenger traffic handled in :  
 FY 16: 48 Mn  
 FY 17: 57.7 Mn  
 FY 18: 16.69 Mn  
 Apr-Nov 2018: 46.34 Mn

**Mumbai**  
 Passenger traffic handled in :  
 FY 16: 41.7 Mn  
 FY 17: 45.2 Mn  
 FY 18: 48.50 Mn  
 Apr-Nov 2018: 32.80 Mn

**Bengaluru**  
 Passenger traffic handled in :  
 FY 16: 19 Mn  
 FY 17: 22 Mn  
 FY 18: 26.91 Mn  
 Apr-Nov 2018: 21.78 Mn



**Kolkata**  
 Passenger traffic handled in :  
 FY 16: 12.4 Mn  
 FY 17: 14.35 Mn  
 FY 18: 19.89 Mn  
 Apr-Nov 2018: 14.32 Mn

**Hyderabad**  
 Passenger traffic handled in :  
 FY 16: 12.4 Mn  
 FY 17: 15.25 Mn  
 FY 18: 18.16 Mn  
 Apr-Nov 2018: 13.92 Mn

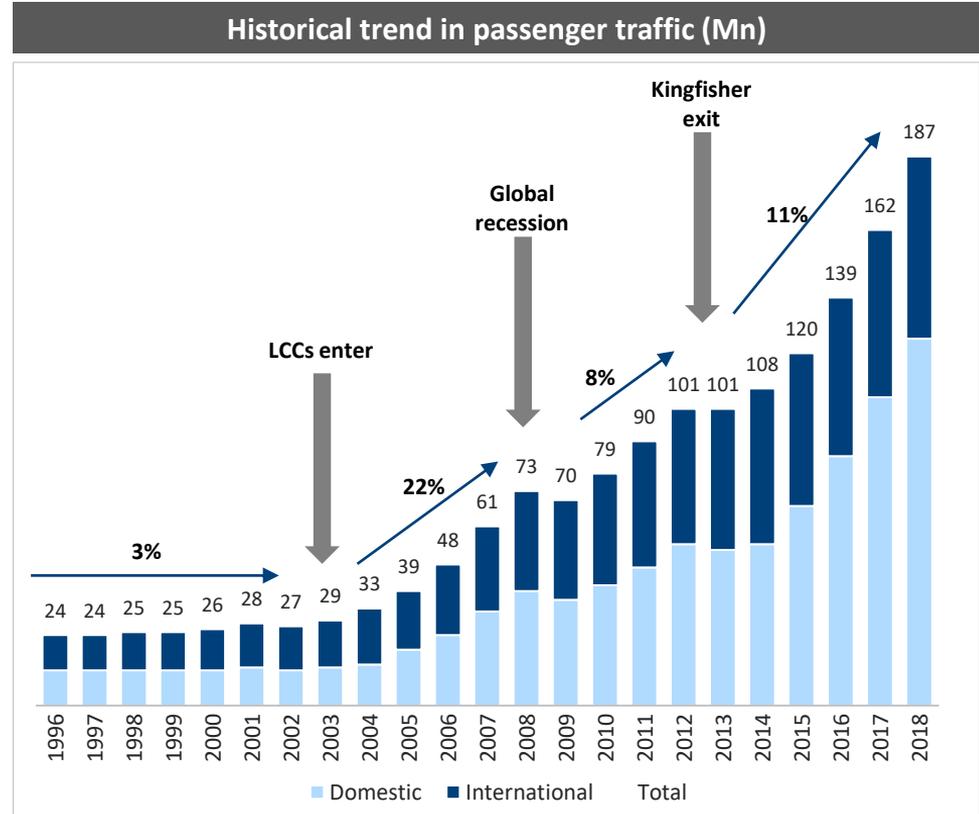
**Chennai**  
 Passenger traffic handled in :  
 FY 16: 12.4 Mn  
 FY 17: 14.35 Mn  
 FY 18: 19.89 Mn  
 Apr-Nov 2018: 14.32 Mn

Source: Secondary Research; News Articles

# Traffic trends

- While Indian aviation market has witnessed consistent growth over the last decade, air passenger traffic registered a decline during 2009 and 2013
- This was mainly on account of the global recession during 2009 and exit of Kingfisher Airlines in 2013
- As per DGCA, the growth in demand, measured by Revenue Passenger Kilometers (RPK), has consistently outpaced the growth in supply, measured by Available Seat Kilometers (ASK). This has resulted in an increasing domestic passenger load factor in India
- As per IATA, in March 2018, India registered the highest domestic load factor of 87.8% among top seven aviation markets in the world

Source: Global Aviation Summit (Vision 2040)



# Indian airport sector: Plan 2040

- The projected passenger traffic (to, from and within India) for FY 2040 is 1124 Mn
  - This comprises around 821 Mn domestic passengers and around 303 Mn international passengers (to and from India)
  - This is over six times the 187 Mn traffic recorded in FY 2018
- Handling this traffic will require a dramatic increase in airport infrastructure. Most of the large Indian airports are expected to be saturated over the next 10-15 years
- Overall, India may require around 190-200 airports in 2040. The incremental land requirement is expected to be around 150,000 acres

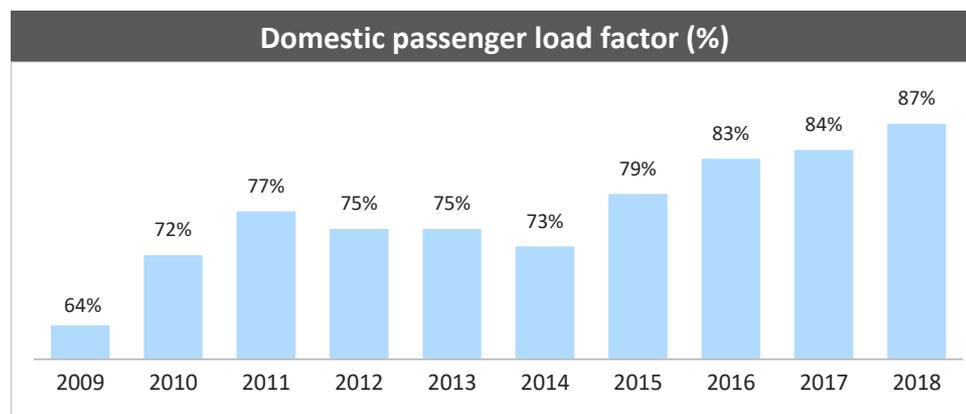
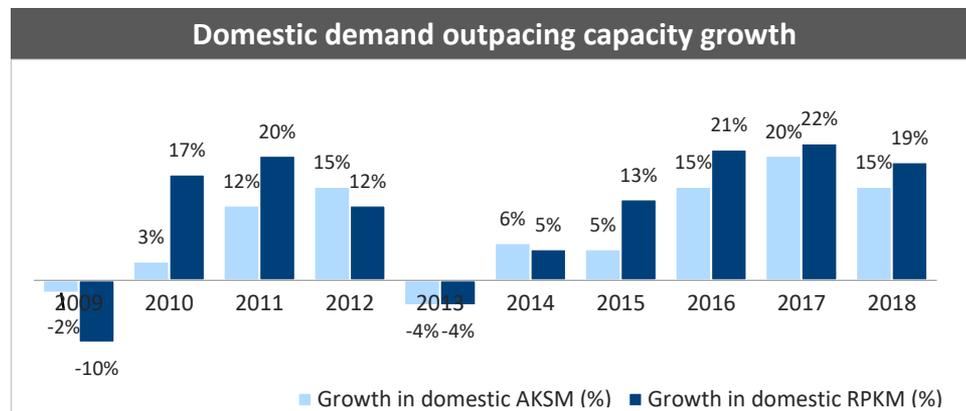
S. No.	Parameter	Year ended Mar 2018	Year Ended Mar 2040	CAGR (%)
1	Total Passengers (Mn)	187	1124	8.5%
2	Number of operational airports	99	190-200	3.0%
	Number of International airports	34	70	3.3%
3	Number of cities / regions with three airports	0	2	NA
4	Number of cities with two airports (within a 50 km radius)	0	31	NA
5	Number of airports with over 10 Mn passenger throughout	7	47	9.0%
6	Number of airports with over 1 Mn passenger throughout	37	84	3.8%
7	Land area under airports (acres)	90,000	2,40,000	4.6%
8	Cumulative cost of land acquisition and multimodal connectivity (USD Bn)	NA	30-50	NA
9	Cumulative capex for airport (USD Bn)	NA	40-50	NA
10	Total capex – land plus airport development (USD Bn)	NA	70-100	NA
11	Direct employment at airports – airport, retail, security ('000)	46	80	3.6%

Source: Secondary Research; News Articles

## Airlines performance

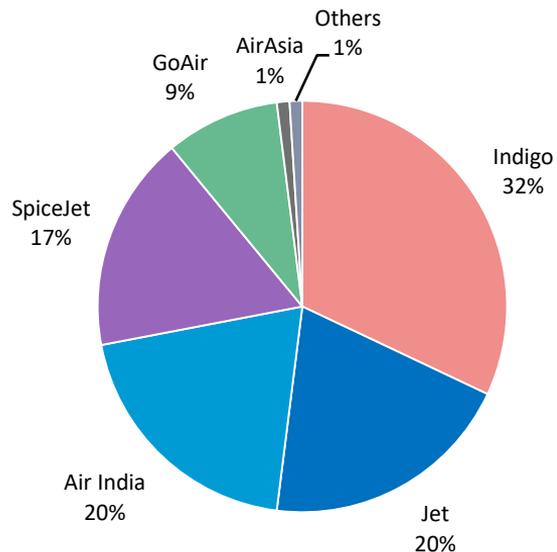
- The growth in domestic traffic has outpaced capacity growth in seven out of the last ten years. This has encouraged all major Indian carriers to place large aircraft orders.
- The growing demand is also reflected in load factors which have risen sharply in the last four years
- With increasing fleet and policy support, the share of Indian carrier on international traffic to and from Indian is growing
  - There are likely to be a temporary dip due to financial problems at two large Indian carriers, but it is likely to be compensated by fund infusions into them; and by other Indian LCCs likely to introduce wide-body aircraft on international routes

Source: Secondary Research; News Articles

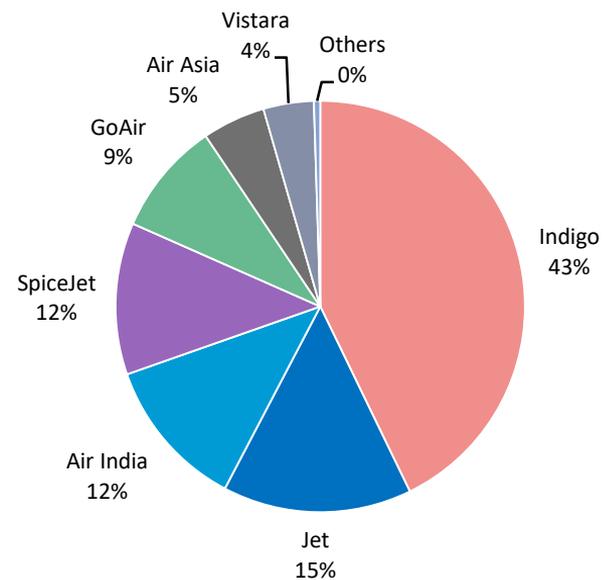


# Performance by airlines

Oct 2014



Oct 2018



**IndiGo is the leading carrier with its passenger market share steadily rising to over 43%.**

Source: DGCA

## Indian airline sector: Plan 2040

The Vision 2040 for the Indian airline section is summarized below:

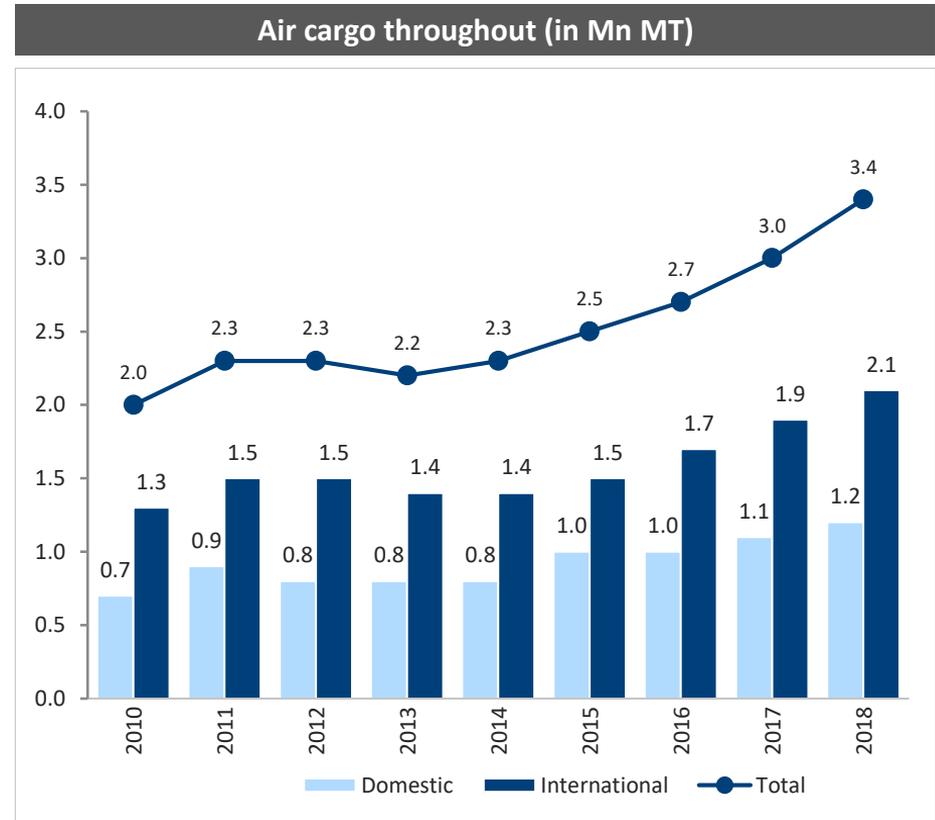
S. No.	Parameter	Year ended Mar 2018	Year Ended Mar 2040	CAGR (%)
1	Total Passengers (Mn)	187	1124	8.5%
2	Share of India in International traffic to and from India (%)	39%	45-50%	
3	Passengers handled by Indian carriers (Mn)	147	972	9%
4	Number of aircraft	622	2359	6.2%
	▪ Narrow body aircraft	503	1817	6%
	▪ Wide body aircraft	66	306	7.2%
	▪ Turboprops	53	236	7%
5	Value of aircraft fleet (USD Bn)	32	126	6.4%
6	Airline revenue (USD Bn)	13	63	7.4%
7	Airline employees (thousand)	67	212	5.4%

Source: Secondary Research; News Articles

# Aircargo market

- As per IATA, air cargo is expected to rise to 62.5 Mn MT in calendar year 2018 from 59.9 Mn MT in 2017
- Air cargo throughput in India increased by 12.7% to 3.35 Mn MT in FY17-18. International cargo contributes to 60% of total air cargo volumes in India and grew at 15.6% over FY 16-17
  - In comparison, domestic cargo grew by only 8% due to stiff competition from the trucking industry and various infrastructure challenges at Indian airports.
- Key growth drivers for air cargo include the growth in economy, fleet enhancement by Indian carriers, boom in e-commerce and express deliveries, several pro-industry policy initiatives by the government and investments in infrastructure

Source: Secondary Research; News Articles



## Future growth

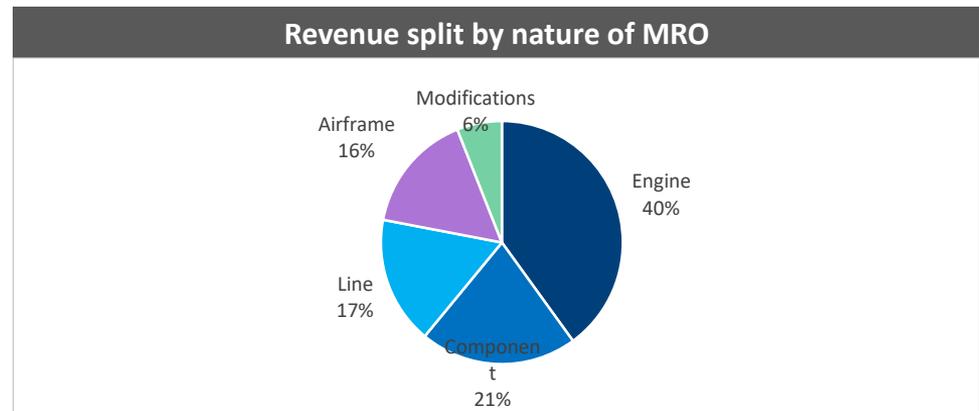
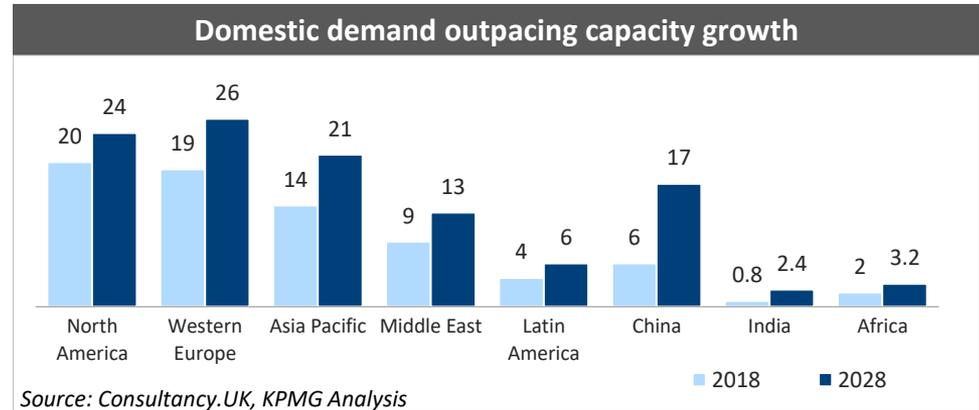
- According to ICRA, air cargo traffic in India is expected to grow by 60% in the next five years, but infrastructure and procedural bottlenecks continue to be major constraints
- Airports in India currently have a capacity to handle 4.63 Mn MT of air cargo per annum. Cargo handling capacity needs to increase by at least 2 Mn MT in the next five years.
- Air cargo traffic is concentrated at the major airports, with 6 airports accounting for 87% of the total cargo volume which is leading to terminal congestion at these airports

S. No.	Country	Cargo in FY 17-18 ('000 MT)	% Share
1	Delhi	963	28.7%
2	Mumbai	906	26.9%
3	Chennai	418	12.4%
4	Bangalore	348	10.4%
5	Kolkata	163	4.8%
6	Hyderabad	134	3.9%
	<b>All India</b>	<b>3,357</b>	

# Maintenance, Repair and Overhaul

- The current market size of the MRO industry in India is assessed at about USD 700-800 Mn which is expected to reach USD 1.2 Bn by 2020. India has the potential to become the third largest aviation market by 2022
- This demand is being driven by a fleet growing at 9.9% annually, from around 620 in FY 2018 to a projected fleet of over 2,300 in FY 2040
- With over 1000 aircraft currently on order, India is likely to become the third largest buyer of commercial passenger planes in the world, only behind the US and China
- The growth is being boosted by the expansion and development of new airports, fast expanding LCCs, a liberal FDI policy, rising adoption of new technology and focus on regional connectivity etc.

Source: Secondary Research; News Articles



## Upcoming MRO facilities

S. No.	Entity	City	Status
1	Jet Airways and BIAL	Bangalore	Signed agreement to set up MRO at Bengaluru airport
2	Lufthansa-Technic and GMR	Hyderabad	Signed agreement to set up MRO at Hyderabad airport
3	Boeing and Air India	Nagpur	Boeing plans to establish a USD 100 Mn facility at Mihan SEZ
4	Thales International	Gurgaon	An avionics maintenance centre is being planned
5	TAAL and Airworks	Mumbai	Plans to lease up to five hangers to develop a private airfield as an MRO and aviation park
6	Sabena Technic and TAAL	Hosur	Plans to develop an MRO at TAAL's airfield in Hosur
7	Airbus	Nashik	Tie-up with Hindustan Aeronautics (HAL), for setting up a USD 100 Mn MRO facility. Also signed MOUs with Maharashtra Airport Development Company
8	HAL and Pratt and Whitney, Canada	Bangalore	Engine Overhaul and maintenance services. This MRO would have yearly capacity of 150 aircraft

Source: Industry sources, media reports (Note: Some information could be erroneous)

## Growth Drivers



### Increasing demand for Air Travel

- Rising demand for air travel will prompt leading airports in the country to speed up their expansion plans,
- Coupled with increasing purchasing power and decreasing ticket prices, passenger numbers have grown phenomenally over the last few years, seeing consistent year-on-year growth.
- While efforts are on to expand the capacities of India's already over-burdened airports to handle the increasing number of passengers on flights, congestion is expected for the next 3-4 years.



### Investment by airlines

- As envisioned by the government, Indian airline carriers such as IndiGo and Vistara are actively procuring new aircraft to fill the demand and supply gap in tier-2 and tier-3 cities.
- In terms of the larger picture, Indian airlines are reportedly intending to buy a whopping 2,100 new aircraft for USD 290 Bn in a bid to increase flights and accommodate the ever-growing number of flyers.



### Government Initiatives and policy support

- The regulatory regime in India for airports is relatively new and evolving. There have been some positive regulatory developments, including clarity on treatment of non-aeronautical revenues for determining tariffs. Further consistent application of regulations will provide support for the credit profiles of Indian airports.
- A major driver of growth in the sector over the past few years has been government schemes like UDAN and NABH Nirman.
- The former aims to connect 56 and 31 unserved airports and helipads respectively, while the latter aims to expand India's overall airport capacity by more than five times so that they can handle up to a billion trips annually.

Source: Feedback analysis, analyst reports & secondary research

## Trends



### Rising private participation and Investments

- Currently, six international airports have been completed successfully under PPP mode.
- The sector is expected to witness investments worth USD 25 Bn by 2027.
- In November 2018, the Government of India approved a proposal to manage six AAI airports under public private partnership (PPP). These airports are situated in Ahmedabad, Jaipur, Lucknow, Guwahati, Thiruvananthapuram and Mangalore.
- Further, the Navi Mumbai airport is being developed under a PPP model by GVK Group subsidiary Mumbai International Airport (MIAL) and City and Industrial Development Corporation of Maharashtra Ltd (CIDCO) with an investment of USD 2,286 Mn.



### Greater use of non-scheduled airlines

- Rising business activity leading to higher demand for non-scheduled airlines
- As of October 2018, there are 106 operators (NSOP)



### Focus on non-aeronautical revenue

- Indian air ports are emulating the SEZ-aerotropolis model to enhance revenues; focus on revenues from retail, advertising, vehicle parking, etc.
- With the initiative of displaying “Art for a cause,” Nagpur airport became India’s first airport to take up the cause of empowering the girl child in a unique way.
- Absence of complementary meals in low-cost air lines have boosted the F&B retail segment at air ports

Source: Feedback analysis, analyst reports & secondary research

# Government Initiatives and policy support

(1/3)

S.no	Policy Support	Brief
1	<b>Greater focus on infrastructure</b>	<ul style="list-style-type: none"> <li>AAI is going to invest USD 2,143 Mn in 2018-19 for expanding existing terminal and constructing 15 new ones.</li> <li>The Indian government is planning to invest USD 1.83 Bn for development of air port infrastructure along with aviation navigation services by 2026.</li> </ul>
2	<b>Liberalization, Open Sky Policy</b>	<ul style="list-style-type: none"> <li>With the opening of the air port sector to private participation, six airports across major cities are being developed under the PPP model.</li> <li>Currently 60 percent of air port traffic is handled under the PPP model, while the remaining 40 percent is managed by the AAI</li> <li>Increased traffic rights under bilateral agreements with foreign countries</li> <li>India signed its 1<sup>st</sup> open skies agreement with Greece</li> <li>In May 2017, India and Spain signed an MoU for cooperation in civil aviation industry. The MOU would spur greater trade, investment, tourism and cultural exchanges between both the countries.</li> <li>In April 2017, Brussels Airlines launched its service from Brussels to Mumbai, its 1<sup>st</sup> flight to Asia. The launch is a part of Lufthansa’s group strategy to expand its business in India.</li> <li>In June 2018, India assigned an open sky agreement with Australia allowing airlines on either side to offer unlimited seats to six Indian metro cities and various Australian cities.</li> </ul>
3	<b>Northeast India</b>	<ul style="list-style-type: none"> <li>Over 30 airport development projects are under progress across various regions in North east India</li> <li>AAI plans to develop over 20 airports in tier II and III cities in next 5 years</li> <li>The AAI plans to develop Guwahati as an inter-regional hub and Agartala, Imphal and Dibrugarh as intra-regional hubs</li> </ul>

Source: Secondary Research; News Articles

## Government Initiatives and policy support

(2/3)

S.no	Policy Support	Brief
4	<b>Taxes and Duties</b>	<ul style="list-style-type: none"> <li>100 percent tax exemption for airport projects for a period of 10years</li> <li>Indian aircraft Manufacture, Repair and Overhaul(MRO) service providers are exempted completely from customs and counter vailing duties</li> </ul>
5	<b>Budgetary Support</b>	<ul style="list-style-type: none"> <li>In the Union Budget for FY18, Government of India has ear marked USD 100.4 Mn for Air India Limited.</li> <li>Also, an amount of USD 11.32 Mn has been allocated to Airports Authority of India for 2018-19.</li> <li>The government has allocated a sum of USD 32.44 Mn to Directorate General of Civil Aviation to implement various schemes.</li> <li>The government has also supported the Bureau of Civil Aviation Security with USD 10.81 Mn to meet their expenditure.</li> <li>Allocation to Civil Aviation ministry has been tripled to USD 943 Mn under Union Budget 2018-19.</li> </ul>
6	<b>National Civil Aviation Policy, 2016</b>	<ul style="list-style-type: none"> <li>The policy covers 22 areas of the civil aviation sector.</li> <li>Regional Connectivity Scheme (RCS)has been launched under the policy.</li> <li>Airlines can commence international operations and have to deploy 20 aircrafts or 20 percent of total capacity (which ever is higher)for domestic operations</li> </ul>

Source: Secondary Research; News Articles

## Government Initiatives and policy support

(3/3)

S.no	Policy Support	Brief
7	<b>Metro Airports</b>	<ul style="list-style-type: none"> <li>▪ The AAI aims to bring around 250 airports under operation across the country by 2020</li> <li>▪ The AAI has developed and upgraded over 23 metro air ports in the last 5years</li> </ul>
8	<b>Non-metro airports</b>	<ul style="list-style-type: none"> <li>▪ The AAI plans to spend USD 1.3 Bn on non-metro projects over the 5years (2013–17) ; mainly focusing on the modernisation and upgradation of airports; New airports at Itanagar, Kohima and Gangtok are also planned.</li> <li>▪ The Government of Andhra Pradesh is to develop green field air ports in six cities Nizamabad, Nellore, Kurnool, Ramagundam, Tadepalligudem and Kothagudem under the PPP model.</li> <li>▪ Upfront subsidy has been proposed through which non-metro airports would be funded by imposing 2 percent levy on both domestic and international airfares.</li> <li>▪ About 22 air ports to get connected under regional connectivity scheme of AAI.</li> </ul>
9	<b>Encouragement to FDI</b>	<ul style="list-style-type: none"> <li>▪ The GOI has allowed 100 percent FDI under automatic route for green field projects, whereas, 74 percent FDI is allowed under automatic route for brown field projects.</li> <li>▪ 100 percent FDI is allowed under automatic route in scheduled air transport service, regional air transport service and domestic scheduled passenger air line. FDI over 49 percent would require government approval.</li> <li>▪ Approval of 49 percent FDI in aviation for foreign carriers.</li> <li>▪ FDI in flows in India’s air transport sector (including air freight) reached USD 1,658.23 Mn between April2000 and June 2018.</li> </ul>

Source: Secondary Research; News Articles

## Successful PPP airports in India

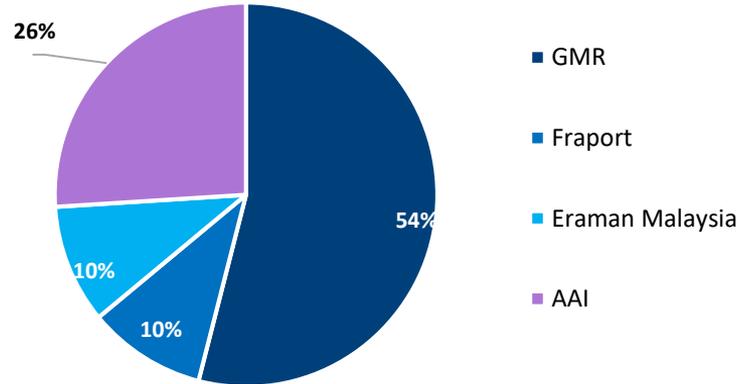
- Presently India has 5 PPP air ports each at Mumbai, Delhi, Cochin, Hyderabad and Bengaluru, which together handle over 55 percent of country's air traffic.
- Government of India has approved 15 greenfield PPP projects which are expected to increase the air traffic in India. These projects would be set up in Goa ,Navi Mumbai, Maharashtra, Bijapur, Gulbarga, Karnataka, Kerala, West Bengal, Madhya Pradesh, Sikkim, Puducherry and Uttar Pradesh.
- Government of Maharashtra has approved development of Nagpur airport on a PPP basis and allocated USD 14 Mn for it in State Budget 2018-19. The air port will be upgraded on a DBFOT basis with a private player operating it for 60 years.

S.no	Name of the airport	Operator	Type of Project/ PPP Structure	Revenue Sharing
1	Chhatrapati Shivaji International Airport	Mumbai International Airport Ltd (MIAL)	Brownfield/BOOT	38.7 per cent of gross revenue to be shared with AAI
2	Indira Gandhi International Airport	Delhi International Airport Ltd (DIAL)	Brownfield/BOOT	45.9 per cent of gross revenue to be shared with AAI
3	Rajiv Gandhi International Airport	GMR Hyderabad International Airport Ltd (GHIAL)	Brownfield/BOOT	Concession fees -4 per cent of gross revenue to be shared with AAI
4	Bengaluru International Airport	Bengaluru International Airport Ltd(BIAL)	Brownfield/BOOT	Concession fees –4 per cent of gross revenue to be shared with AAI
5	Cochin International Airport	Cochin International Airport Ltd (CIAL)	Brownfield/BOOT	Payment of dividend to the Government towards their 26 per cent of equity capital

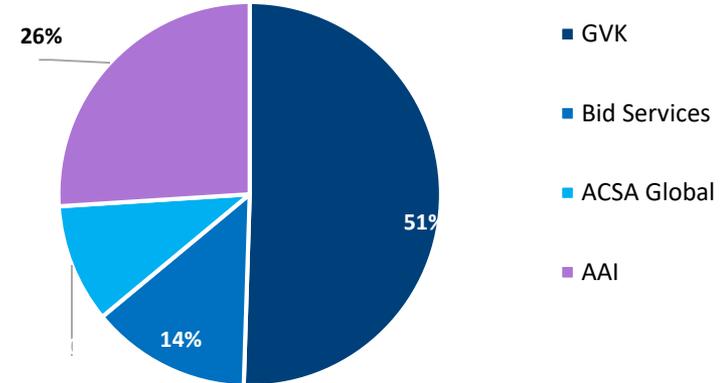
Source: Secondary Research; News Articles

## Civil Aviation : Major PPP airports and Shareholding

### IGI airport : Delhi



### CSI Airport : Mumbai

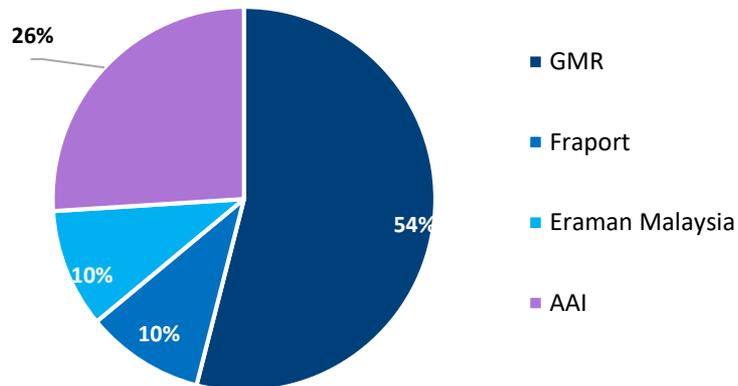


- Recourse to the Public Private Partnership (PPP) model has boosted private sector investments in airports. PPP route for five international airports (Delhi, Mumbai, Cochin, Hyderabad, Bengaluru) are the most noteworthy.
- 74 percent private share holding in IGI Airport (Delhi)-owned majorly by GMR (54percent), FraportAG (10percent), Eraman Malaysia (10percent); rest of the shares owned by AAI
- 74 percent private shareholding in CSI Airport (Mumbai) –owned majorly by GVK (50.5 percent), Bid Services Division (Mauritius)Ltd. (13.5percent), ACSA Global (10 percent); rest of the shares owned by AAI

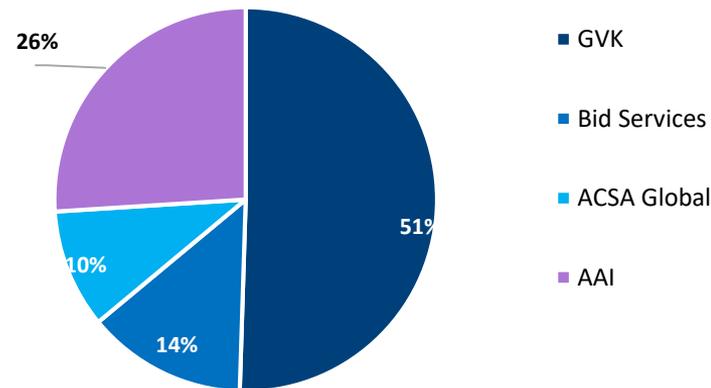
Source: News articles, Analyst reports, Annual reports and primary research

# Civil Aviation : Major PPP airports and Shareholding

RGI airport : Hyderabad



Kempegowda International Airport: Bengaluru



- 74 percent private share holding in RGI Airport (Hyderabad) owned majorly by GMR (63percent), Malaysia Airports Holdings Berhad (11percent); rest of the shares owned by Government of India (13percent) and Government of Andhra Pradesh (13percent)
- 74 percent share holding in Kempegowda International Airport (Bengaluru)– owned majorly by Siemens Project Ventures, Germany (40percent), Unique (Flughafen Zurich AG) Zurich Airport, Switzerland (17percent), L&T, India (17percent); rest of the shares owned by AAI (13percent) and KSIIDC ,which is an agency owned by the state of Karnataka, India(13percent).

Source: News articles, Analyst reports, Annual reports and primary research

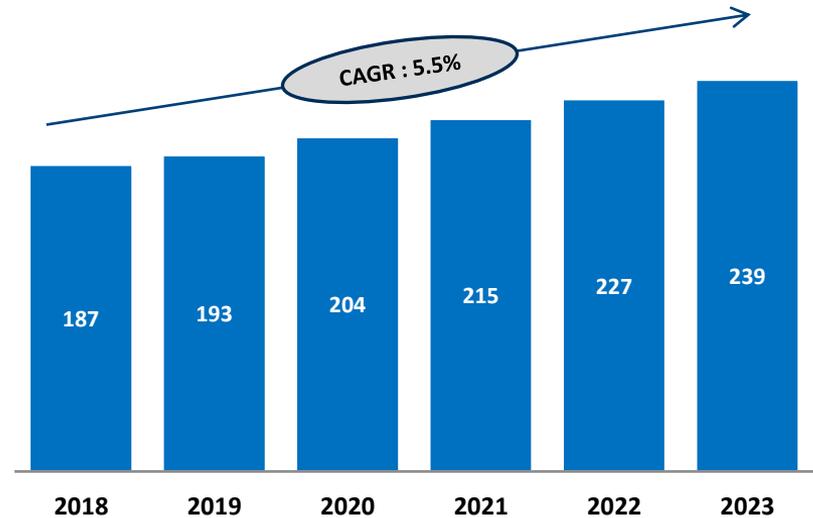
## Future Outlook: Passenger traffic carried by scheduled carriers over the past decade

### Passenger Traffic carried by scheduled carriers

- The passenger traffic carried through scheduled carriers is expected to grow at a CAGR of 5.5% and by 2023, India is estimated to have 239 Mn flyers.
- Growth in passenger traffic is expected continues since the new millennium, especially with rising in comes and low-cost aviation.
- India has become the third largest domestic aviation market in the world and is expected to overtake UK to become the third largest air passenger market by 2024
- Further, India is already the fastest growing domestic aviation market in the world and air connectivity in the country recorded the highest pace of 114 percent globally between 2013-18

### Future Outlook : Passenger Traffic carried by scheduled carriers

Value : in Mn



# Urban Development

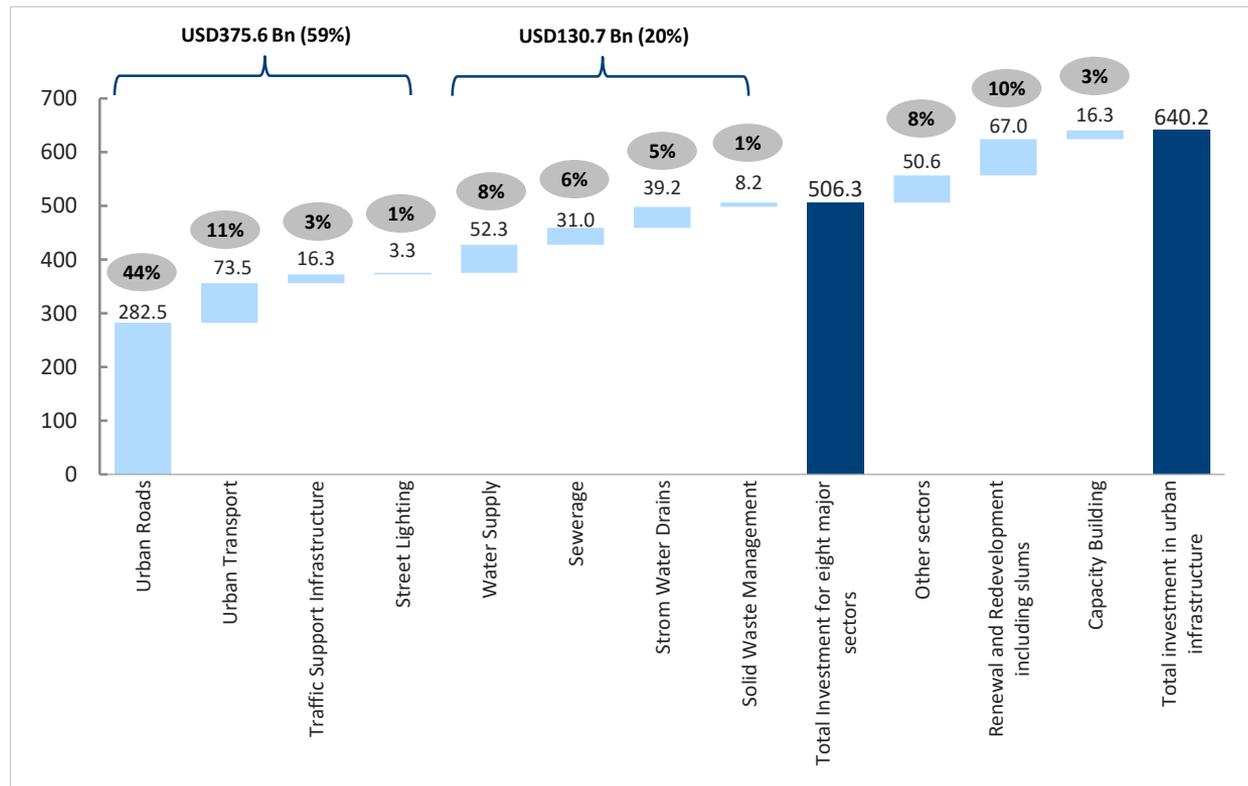
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## Overview of Urban Agglomerations in India

- India's urban population has increased from 222 Mn (26% of the population) in 1990 to 410 Mn (32%) in 2014 and is expected to reach 814 Mn (50%) by 2050
- Three of India's cities are among the most populous in the world: Delhi (25 Mn), Mumbai (21 Mn) and Kolkata (15 Mn) rank 2, 6 and 14, respectively
  - Yet, while India ranks second in the world in terms of urban population size, its current urbanization ratio is low compared to China (54%, 758 Mn), Indonesia (53%, 134 Mn), Mexico (79%, 98 Mn), Brazil (85%, 173 Mn) and Russia (74%, 105 Mn)

# Urban infrastructure and urban services

- According to the Government of India’s High Powered Expert Committee (HPEC), approximately USD 640.2 Bn is needed until 2031 for investment in urban infrastructure and services if India is to maintain and accelerate economic growth
- The investment required for the eight major sectors of urban infrastructure (roads, transport, traffic support, street lighting, water supply, sewerage, storm water drains and solid waste management) is estimated at USD 506.3 Bn



Source: Secondary Research; News Articles

## Urban Development : Segments

	Segments	Brief
<b>Urban Development</b>	<b>Residential Space</b>	<ul style="list-style-type: none"> <li>▪ Residential segment contributes ~80 per cent of the real estate sector.</li> <li>▪ New housing launches across top seven cities in India are expected to increase by 32 per cent year-on-year by 2018 end to 193,600 units.</li> </ul>
	<b>Commercial Space</b>	<ul style="list-style-type: none"> <li>▪ Few players with presence across India.</li> <li>▪ Most of the activity is in the leasing segment</li> </ul>
	<b>Retail Space</b>	<ul style="list-style-type: none"> <li>▪ FDI in multi brand retail to boost demand</li> <li>▪ In 2017, new retail space of 6.4 Mn was finished and supply of around 20 mn sq ft is expected in 2019.</li> <li>▪ Between 2015 and March 2018, the retail segment in Indian realty attracted private equity investments of around USD 786 Mn up to March 2018.</li> </ul>
	<b>Hospitality Space</b>	<ul style="list-style-type: none"> <li>▪ The country has 406 approved hotels with 31,944 rooms.</li> </ul>
	<b>SEZs</b>	<ul style="list-style-type: none"> <li>▪ As of July 2018, India had formally approved 420 SEZs, of which 223 were in operation.</li> <li>▪ Majority of the SEZs are in the IT/ ITeS sector.</li> </ul>

Source: Secondary research and primary research

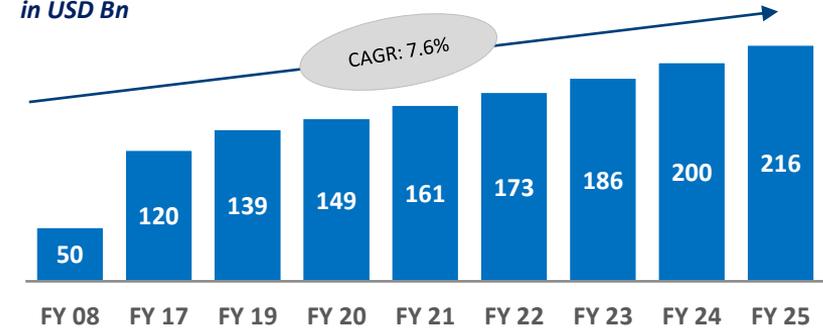
# Urban Development : Real Estate Market and Housing Shortage

## India’s Real Estate Market (USD Bn) : Brief

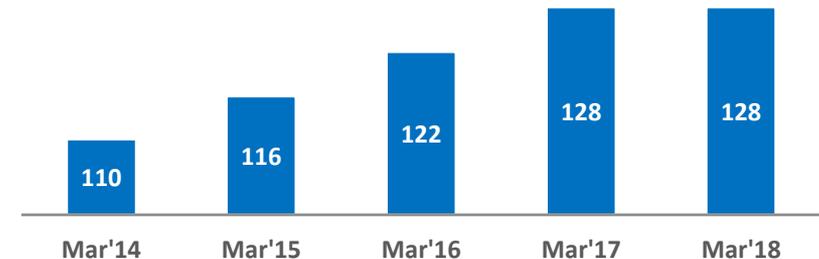
- Indian real estate sector is expected to grow from USD 120 Bn in FY 17 to USD 216 Bn in FY 25.
- Real estate sector in India is expected to reach USD 640 Bn by 2040. By 2025, it will contribute 13 percent to the country’s GDP.
- Rapid urbanisation bodes well for the sector.** The number of Indians living in urban areas is expected to reach 543 Mn by 2025. More than 70 percent of India’s GDP will be contributed by the urban areas by 2020.
- Increasing share of real estate in the GDP would be supported by increasing industrial activity, improving income level and urbanisation.
- Mumbai and Bengaluru have been rated as the top real investment destinations in Asia.
- Construction is the fourth largest sector in terms of FDI in flows.** FDI in the sector stood at USD 24.87 Bn from April 2000 to June 2018.
- Government of India’s Housing for All initiative is expected to bring USD 1.3 trillion investments in the housing sector by 2025.

## India’s Real Estate Market (USD Bn)

in USD Bn



## NHB India Housing Price Index\*



Source: Feedback Analysis, News Articles, Analyst reports, Annual reports and Primary research

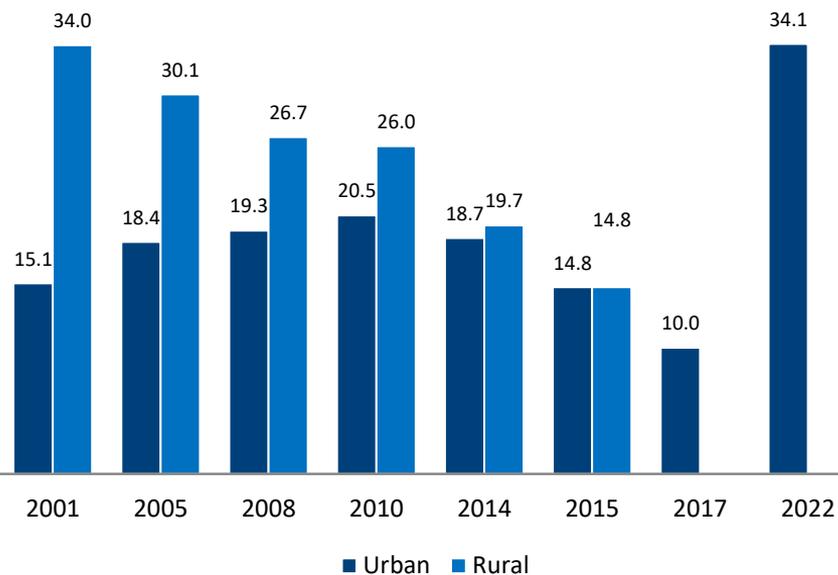
## Urban Development : Urban-rural housing shortage

### Urban-rural housing shortage

- The urban housing shortage in India is estimate data round 10 Mn units which is being addressed through [Pradhan Mantri Awas Yojana \(PMAY\), Urban](#), under which more than 6.85 Mn houses have been sanctioned up to December 2018.
- Significant increase in real estate activity in cities like Indore, Raipur, Ahmedabad, Jaipur and other 2 tier cities; this has opened new avenues of growth for the sector.
- Relaxation in the FDI norms for real estate sector has been done to boost the real estate sector.
- [Government's plan to build 100 smart cities would reduce the migration of people to metro and other developed cities](#)

### Urban-rural housing shortage

Value : in Mn



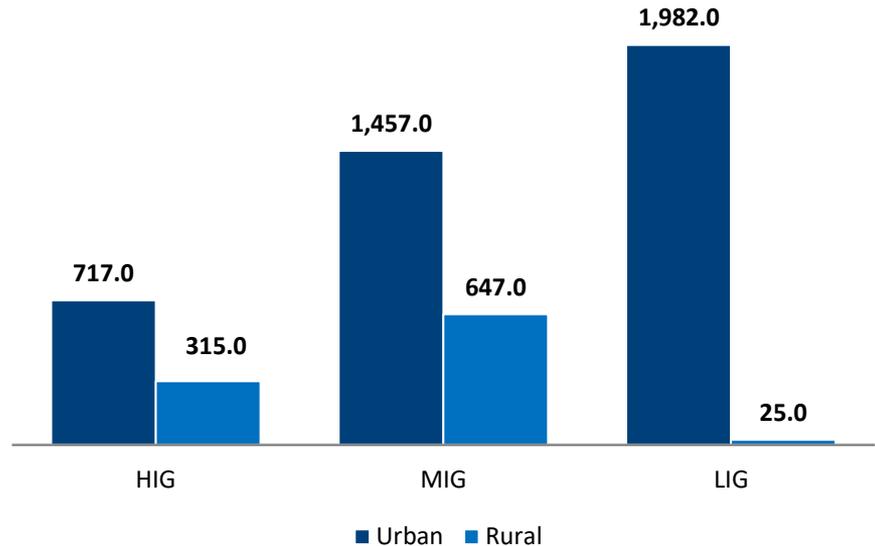
## Urban Development : Residential Space

### Residential Space : Brief

- A localized, fragmented market presents opportunities for consolidation with only few large, pan-India players such as DLF.
- More foreign players might enter the market as FDI norms have eased.
- Further more, norms on land acquisitions is expected to be relaxed.
- Rapid urbanisation, Growth in population, Rise in the number of nuclear families, Easy availability of finance, Repatriation of NRIs and HNIs and rise in disposable income are some of the factors that are expected to drive the residential space market.
- Housing sales are expected to increase by 16 percent year-on-year by 2018 end.
- NCR is expected to generate maximum demand in MIG and HIG category followed by Bengaluru.
- Developers now focussing on affordable and mid-range categories to meet the huge demand.

### Cumulative Housing Demand-Supply in Top 8 Cities ('000 units) 2016-20

Value : thousand units



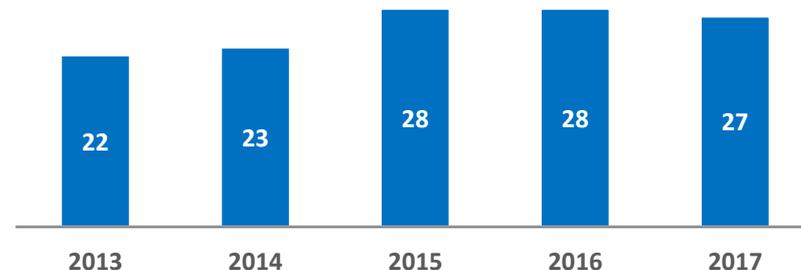
# Urban Development : Commercial Space

## Commercial Space : Brief

- Few large developers with a pan-India presence dominate the market.
- Operating model has shifted from sales to a lease and maintenance.
- Rapid growth in services sectors: IT/ITeS, BFSI and Telecom, Rising demand from MNCs, and Demand for office space in Tier-II cities is expected to drive the commercial space market.
- Commercial office stock in India is expected to cross 600 Mn square feet by 2018 end.
- Mumbai, NCR and Bengaluru accounted for 60 percent of total office space demand in India in 2017.
- Business activity shifting from CBDs to SBDs, Tier1 to Tier2 cities
- Co-working space across top seven cities has increased sharply in 2018 (upto September), reaching 3.44 Mn square feet, compared to 1.11 Mn square feet for the same period in 2017

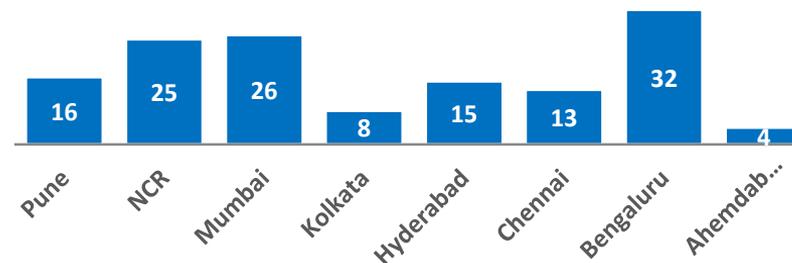
## Demand for Commercial Space in Top 8 cities

in Mn sqft



## City-Wise Commercial Space Demand (2013-17)

in Mn sqft



Source: Feedback Analysis, News Articles, Analyst reports, Annual reports and Primary research

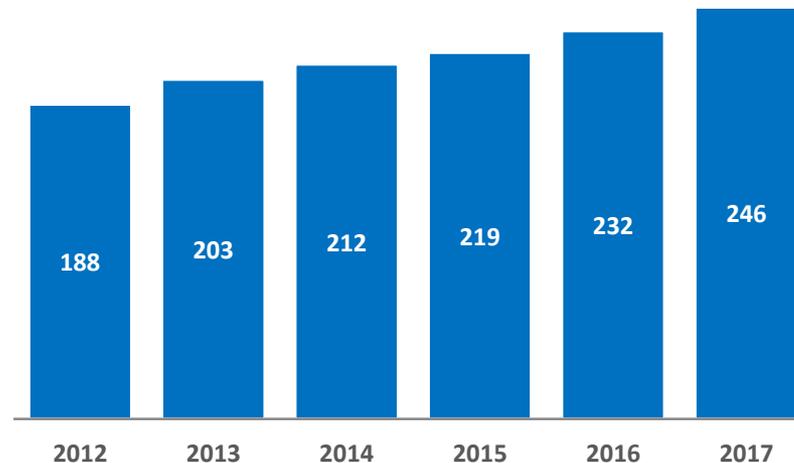
## Urban Development : Retail Space

### Retail Space : Brief

- Currently, retail accounts for a small portion of the Indian real estate market.
- Organised retailers are few and the organised retail space is mostly developed by residential /office space developers.
- Booming consumerism in India, organised retail sector growing 25-30 percent annually, Entry of MNC retailers., India's population below 30 years of age having exposure to global retail are expected to drive demand for organised retail are key drivers for growth in this segment.
- Around 32 new malls with area of 13.5 Mn square feet are expected to start operations in 2019
- Mumbai, National Capital Region (NCR), Bengaluru and Kolkata witnessed highest growth in retail real estate during 2018.
- Private equity investments in Indian retail assets increased 15 percent in CY 2017 to reach USD 800 Mn.
- During January – March 2018, private equity investors invested USD 136 Mn into Indian malls.

### Number of Malls in India

in Mn sqft



Source: Feedback Analysis, News Articles, Analyst reports, Annual reports and Primary research

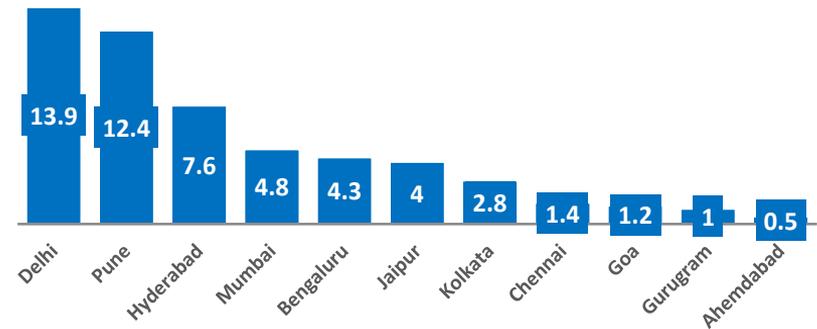
# Urban Development : Hospitality Space

## Hospitality Space : Brief

- NCR and Mumbai are by far the biggest hospitality markets in India, followed by Bengaluru, Hyderabad and Chennai
- Besides hotels, the hospitality market comprises service departments and convention centres.
- A robust domestic tourism industry, the increasingly global nature of Indian businesses boosting business travel, Tax incentives for hotels and higher FSI are key drivers to hospitality space.
- Service departments appear particularly attractive within the hospitality space
- Government initiatives to promote tourism in Tier 2 and Tier 3 cities is generating significant demand for hotels in such cities, especially for budget hotels.

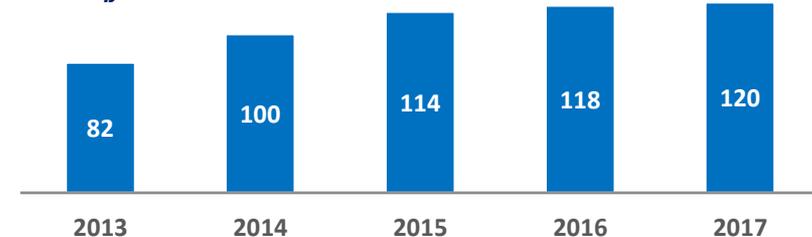
## Y-O-Y Growth in Rev Par in 2018

in percentage



## Trend Analysis (Stock -no of rooms) ('000)

in Mn sqft



Source: Feedback Analysis, News Articles, Analyst reports, Annual reports and Primary research

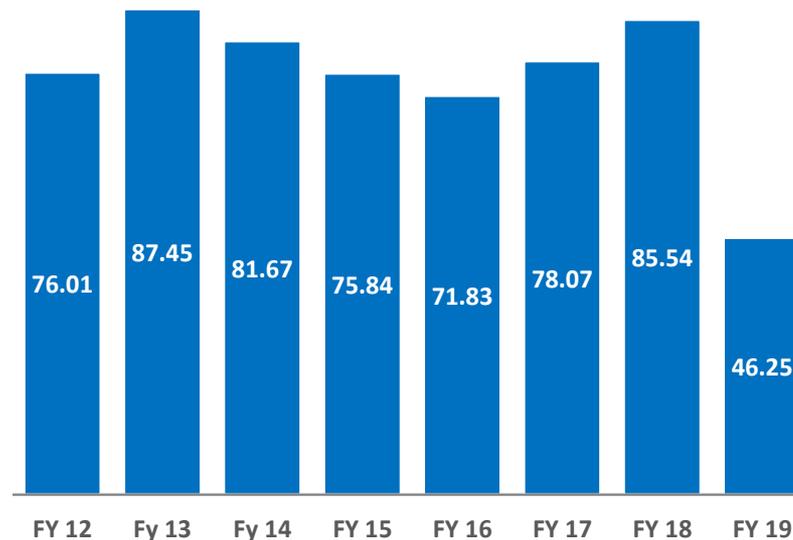
## Urban Development : SEZs Space

### Retail Space : Brief

- 100 percent FDI permitted in real estate projects within Special Economic Zone (SEZ).
- 100 percent FDI permitted for developing town ships within SEZs with residential areas, markets, playgrounds, clubs, recreation centres, etc.
- Exports from SEZs reached USD 46.25 Bn in FY19^.
- Industry players, including realtors and property analysts, are rooting for the creation of "Special Residential Zones" (SRZs), along the lines of SEZs.
- Minimum land requirement has been brought down from 1000 hectares to 500 hectares for multi-product SEZ and for sector-specific SEZs to 50 hectares.

### Number of Malls in India

in USD Bn



Source: Feedback Analysis, News Articles, Analyst reports, Annual reports and Primary research

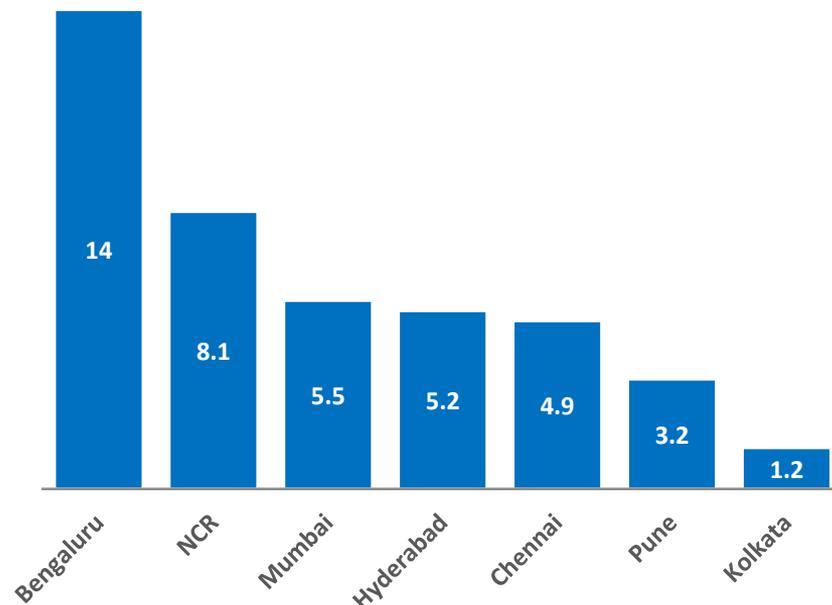
## Urban Development : Office Space

### Retail Space : Brief

- Office market has been driven mostly by growth in ITES/IT, BFSI, consulting and manufacturing. Moreover, many new companies are planning a foray into Indian markets due to huge potential and recently relaxed FDI norms.
- Commercial office stock in India was expected to cross 600 Mn square feet by 2018 end while office space leasing in the top eight cities is expected to cross 100 Mn square feet between 2018-20.
- Grade A office space absorption is expected to cross 700 Mn square feet by 2022, with Delhi-NCR contributing the most to this demand.
- Gross office absorption in top Indian cities has increased 26 percent year-on-year to 36.4 Mn square feet between Jan Sep 2018. [Office leasing in top eight cities increased by 60 percent between 2013-17.](#)

### Gross Office Space Absorption in 2018F

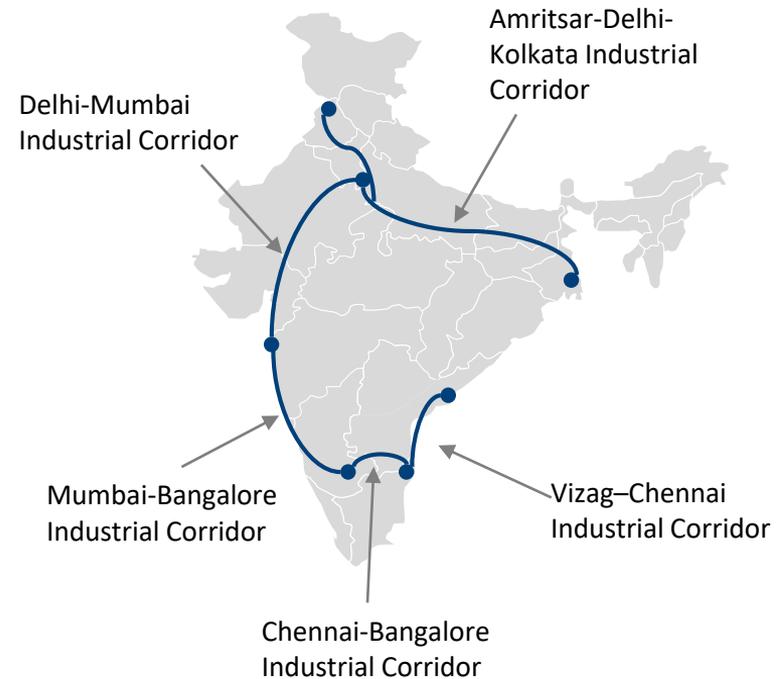
in Mn sqft



Source: Feedback Analysis, News Articles, Analyst reports, Annual reports and Primary research

## Existing Indian urban development projects: Industrial development

- The Government of India plans five industrial corridors that will provide an impetus to planned urbanization and manufacturing
- The DMIC is the only corridor currently under development
- The other four corridors are in the early stages of project development. A master plan has been developed for three cities in the Chennai-Bangalore Industrial Corridor (Punderi, Krishnapatnam and Tumkur)
- States have been asked to identify cities in the Amritsar-Delhi-Kolkata Industrial Corridor (ADKIC). The project influence areas for DMIC and ADKIC are 150-200 km on either side of their freight corridors



## Planned industrial corridors

Corridor	Status	Indian States	Key Players
<b>Delhi-Mumbai Industrial Corridor (DMIC)</b>	<ul style="list-style-type: none"> <li>Under Development</li> </ul>	<ul style="list-style-type: none"> <li>Haryana</li> <li>Gujarat</li> <li>Madhya Pradesh</li> <li>Uttar Pradesh</li> <li>Rajasthan</li> <li>Maharashtra</li> </ul>	<ul style="list-style-type: none"> <li>Equity holdings: Government of India 49%, Japan Bank for International Cooperation 26%, Housing and Urban Development Corporation 19.9%, India Infrastructure Finance Company 4.1%, Life Insurance Corporation of India 1%</li> <li>Concept: Government of Japan</li> <li>Master planners: AECOM</li> </ul>
<b>Chennai-Bangalore Industrial Corridor</b>	<ul style="list-style-type: none"> <li>Interim report on Regional Perspective Plan sent to Government of India</li> <li>Concept Master Plan and Development Plan expected by June 2015</li> </ul>	<ul style="list-style-type: none"> <li>Karnataka</li> <li>Andhra Pradesh</li> <li>Tamil Nadu</li> </ul>	<ul style="list-style-type: none"> <li>Equity holdings: (not available)</li> <li>Developers: Government of India with the support of the Japan International Cooperation Agency</li> <li>Consultants: PwC (Japan), Nippon Koei Company (Japan)</li> </ul>
<b>Mumbai-Bangalore Economic Corridor</b>	<ul style="list-style-type: none"> <li>Feasibility study is underway by Egis India Consulting Engineers in JV with IAU Ilede-France and CRISIL Risk &amp;, Infrastructure Solutions</li> </ul>	<ul style="list-style-type: none"> <li>Karnataka</li> <li>Maharashtra</li> </ul>	<ul style="list-style-type: none"> <li>Equity holdings: (not available)</li> <li>Developers: Government of India, Indian State Governments, Government of UK</li> </ul>
<b>Amritsar- Delhi-Kolkata Industrial Corridor (ADKIC)</b>	<ul style="list-style-type: none"> <li>An inter-ministerial group has submitted feasibility report to Government of India</li> </ul>	<ul style="list-style-type: none"> <li>Punjab</li> <li>Haryana</li> <li>Uttar Pradesh</li> <li>Uttarakhand</li> <li>Bihar</li> <li>Jharkhand</li> <li>West Bengal</li> </ul>	<ul style="list-style-type: none"> <li>Equity holdings: Government of India 49%,</li> <li>Balance equity to be taken by state governments and Housing and Urban Development Corporation (HUDCO)</li> </ul>
<b>Vizag-Chennai Industrial Corridor</b>	<ul style="list-style-type: none"> <li>Feasibility study underway by the Asian Development Bank (ADB)</li> </ul>	<ul style="list-style-type: none"> <li>Tamil Nadu</li> <li>Andhra Pradesh</li> </ul>	<ul style="list-style-type: none"> <li>Equity holdings: (not available)</li> <li>Developers: Government of India with support from ADB</li> <li>Consultants: PwC. John Arnold (consultant working under Government of India)</li> </ul>

Source: Secondary Research; News Articles

# Urban Development: Major Players

(1/2)

S.no	Players	Brief
1	<b>DLF Limited</b>	<ul style="list-style-type: none"> <li>Over the last decade, the DLF Limited has dominated the Indian real estate market with a network in 15 states across the country. The company has developed around 22 major colonies in Delhi such as Krishna Nagar, South Extension, Kailash Colony, Hauz Khas, Rajouri Garden and Shivaji Park.</li> <li>As of 2016, the net income of DLF Limited was USD 73 Mn, whereas the company's market capital is USD 2,905 Mn and known as one of the recognized real estate companies across the Indian continent.</li> </ul>
2	<b>Oberoi Realty</b>	<ul style="list-style-type: none"> <li>Oberoi Realty is owned by the Vikas Oberoi who is one of the richest billionaires in India. The company was started in the early part of 1980 and get listed on Bombay Stock Exchange in 2010. Since its establishment, the company has completed around 39 projects that span over the area of 9.16 Mn square feet of spaces across the Mumbai city.</li> <li>The market value of the Oberoi Realty is USD 1,143 Mn. The company is currently constructing Three Sixty West, which is the second tallest tower in India.</li> </ul>
3	<b>Prestige Group</b>	<ul style="list-style-type: none"> <li>Started their operation with a single project in 1986, the company has now completed more than 200 projects covering an area of 77.22 Mn square feet. As of the financial year 2015-16, the company's total turnover was around USD 503 Mn.</li> <li>Some of the well-known projects completed by the company are Prestige Ozone, Forum Value Mall, Prestige Golfshire, Prestige Lakeside Habitat, and The Collection, UB City.</li> </ul>
4	<b>HDIL</b>	<ul style="list-style-type: none"> <li>HDIL is a Mumbai based real estate company which is primarily engaged in the construction of the residential projects. Since its foundation in 2017, the company has completed projects of more than 100 Mn sq. feet in the real estate section.</li> <li>The company's total market value is USD 433 Mn and they are one of the best real estate companies India ever had.</li> </ul>
5	<b>Godrej Properties</b>	<ul style="list-style-type: none"> <li>Godrej Properties is one of the best real estate companies in India with its headquarters in Mumbai, Maharashtra.</li> <li>The company's total assets in 2016 were USD 243 Mn and they are presently working on residential, commercial and township projects that spread over an area of 11.89 Mn square meters.</li> </ul>

Source: Secondary Research; News Articles

# Urban Development: Major Players

(2/2)

S.no	Players	Brief
1	<b>PNC Infratech Ltd.</b>	<ul style="list-style-type: none"> <li>▪ PNC Infratech is one of the best Indian infrastructure and development companies, which was started in 1999.</li> <li>▪ The company has a priceless experience in the execution of several main infrastructure projects including airport runways, highways, bridges, power transmission lines, bridges and other related infrastructure construction projects.</li> <li>▪ Presently, they are running projects in 13 Indian states, such as Haryana, Delhi, Assam, Madhya Pradesh, Maharashtra, Tamil Nadu, Uttarakhand, and Uttar Pradesh among others.</li> </ul>
2	<b>Indiabulls Real Estate</b>	<ul style="list-style-type: none"> <li>▪ Indiabulls Real Estate was started by Sameer Gehlaut in 2005 when they started working on the projects of residential and commercial development in cities, such as Delhi, Bangalore, London and much more.</li> <li>▪ Since then, they have entered the list of top 10 real estate companies in India with a net worth of USD 688 Mn and total gross development value of USD 481.</li> <li>▪ Presently, the company is working on 15 projects in India, whose total saleable area is more than 35 Mn sq. feet</li> </ul>
3	<b>Brigade Enterprises</b>	<ul style="list-style-type: none"> <li>▪ Brigade Enterprises is one of the best property developers in India who primarily has business operations in the South India. Headquartered in Bangalore, the company's major operations in cities like Chennai, Hyderabad, Coimbatore, Kochi, and Mysore.</li> <li>▪ As of 2016, the market value of Brigade Enterprises is USD 240 Mn and they have a premier partnership with Housing.com who offer online sale services for their projects..</li> </ul>
4	<b>Omaxe</b>	<ul style="list-style-type: none"> <li>▪ Omaxe is one of the leading real estate companies in India that deserves to be a part of this list.</li> <li>▪ The company's network has reached eight states of the country where they have constructed integrated townships, group housing, office spaces, hotels and shopping malls.</li> <li>▪ The company's consolidated income in the financial year of 2014-15 was USD 204 Mn</li> </ul>
5	<b>Ansal Housing</b>	<ul style="list-style-type: none"> <li>▪ Ansal Housing is one of the premier real estate developers in India who have developed construction projects of around 76 Mn square feet over the last three decades. They are running projects in more than 22 cities like Meerut, Alwar, Jammu, Karnal and much more.</li> <li>▪ Presently, they are executing projects that cost more than USD 914 Mn in the market.</li> </ul>

Source: Secondary Research; News Articles

## Growth Drivers



### Economic growth along with growing urbanisation is boosting real estate demand

- The Indian economy experienced robust growth in the past decade and is expected to be one of the fastest growing economies in the coming years.
- By 2022, real estate and construction sector in India is expected to generate 75 Mn jobs and emerge as the largest employer in the country.
- Government initiatives such as various urban development policies and programmes (e.g., JNNURM) are expected to contribute to enhanced urbanisation.



### Rising tourist numbers boosting the hospitality sector

- The number of Foreign Tourist Arrivals (FTAs) to India increased 15.6 percent in CY 2017 to reach 10.177 Mn and reached 10.6 Mn between Jan-Dec 2018, showing a growth rate of 5.2 percent year-on-year.
- The Government of India has set a target of 20 Mn foreign tourist arrivals (FTAs) by 2020 and double the foreign exchange earnings as well. India's tourism and hospitality industry is anticipated to touch USD 418.9 Bn by 2022
- The growing in flows from tourists is expected to provide a fillip to the hospitality sector



### Ease in housing finances

- In order to boost affordable real estate, housing loans upto USD 50,000 in metro cities were included in priority sector lending by the RBI in June 2018. Loans under priority sector lending are relatively cheaper.
- Home loans in India are expected to grow 17-19 percent in FY 19, according to ICRA.

## Government Initiatives and policy support : RERA

(1/2)

*The Real Estate (Regulation and Development) Act, 2016 is an Act of the Parliament of India which seeks to protect home-buyers as well as help boost investments in the real estate industry. The Act establishes Real Estate Regulatory Authority (RERA) in each state for regulation of the real estate sector and also acts as an adjudicating body for speedy dispute redressal. The Law came into force on May 1, 2016 .*

All Projects will have to be registered with the authority

70% of buyers' money to be set aside in an escrow account to check fund diversion

*It empowers buyers to cancel booking and claim full amount with interest delay.*

*Penalty of 10% of project and jail term of up three years fro misrepresentation of facts*

*Strikes down inter-project cash flows.*

*Developer can begin sale only after getting all approvals*

*Mandates two-third customer approval for modifications in project specifications.*

Source: Secondary Research; News Articles

# Government Initiatives and policy support

(2/2)

S.no	Policy Support	Brief
1	<b>Housing for economically weaker sections</b>	<ul style="list-style-type: none"> <li>Under Union Budget 2018-19, Pradhan Mantri Awas Yojana (PMAY) (Gramin) was allocated USD 4,714 Mn while the urban programme of the scheme was allocated USD 450 Bn. The scheme is expected to push affordable housing and construction in the country and give a boost to the real estate sector.</li> <li>Affordable housing supply increased 100 percent quarter-on-quarter in April-June 2018.</li> <li>In February 2018, the National Urban Housing Fund (NUHF) was approved with an outlay of USD 8,571 Mn.</li> </ul>
2	<b>FDI</b>	<ul style="list-style-type: none"> <li>The government has allowed 100 percent FDI for townships and settlements development projects</li> <li>Provision for reduction in minimum capitalisation for FDI investment from USD 10 Mn to USD 5 Mn which would help in boosting urbanisation.</li> <li>In January 2018, Government of India allowed 100 percent FDI in single-brand retail trading and construction development without any government approvals</li> </ul>
3	<b>REITs</b>	<ul style="list-style-type: none"> <li>Real Estate Investment Trusts (REITs) in non-residential segment and Infrastructure Investment Trusts. REIT will open channels for both commercial and infrastructure sector. In September 2018, Embassy Office Parks announced that it would raise around USD 743 Mn through India's first REIT listing.</li> </ul>
4	<b>Land Acquisition Bill</b>	<ul style="list-style-type: none"> <li>In December 2014, the government passed an ordinance amending the Land Acquisition Bill</li> <li>This ordinance would help speeding up the process for industrial corridors, social infra, rural infra, housing for the poor and defence capabilities</li> </ul>

Source: Secondary Research; News Articles

## Urban Development: PE Investment

- *RBI proposed to allow banks to invest in real estate investment trusts and infrastructure investment trusts, attracting more institutional investors to such assets. Indian Banks, which are allowed to invest about 20 percent of their net-owned funds inequity linked mutual funds, venture capital funds and stocks, could invest in these trusts within this limit*
- *Private Equity and Venture Capital investments in the sector have reached USD 4.1 Bn between Jan-Nov 2018. Institutional investments in India’s real estate are expected to reach USD 5.5 Bn for 2018, the highest in a decade.*
- *KKR India Asset Finance invested over USD 500 Mn in residential projects in India In 2017*

### Top PE deals in Indian real estate sector in 2018

Investor	Investee	Stake (%)	Investment (USD Mn)
Blackstone Group Lp	India Bulls Properties Pvt Ltd and India bulls Real Estate Company	50	742
GIC	Exora Business Parks Limited	40	406
Brookfield Asset Management Inc	Essar Group -Equinox Business Park	100	384
Xander	Phoenix's Hyderabad office project	100	350
Piramal Fund Management	The Wadhwa Group	NA	235
CPPIB	Island Star Mall Developers Private Limited . (Phoenix Mills JV)	NA	185
ASK Property Investment Advisors	Shriram Properties Private Limited	NA	155

Source: Feedback Analysis, News Articles, Analyst reports, Annual reports and Primary research

# Thank You

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