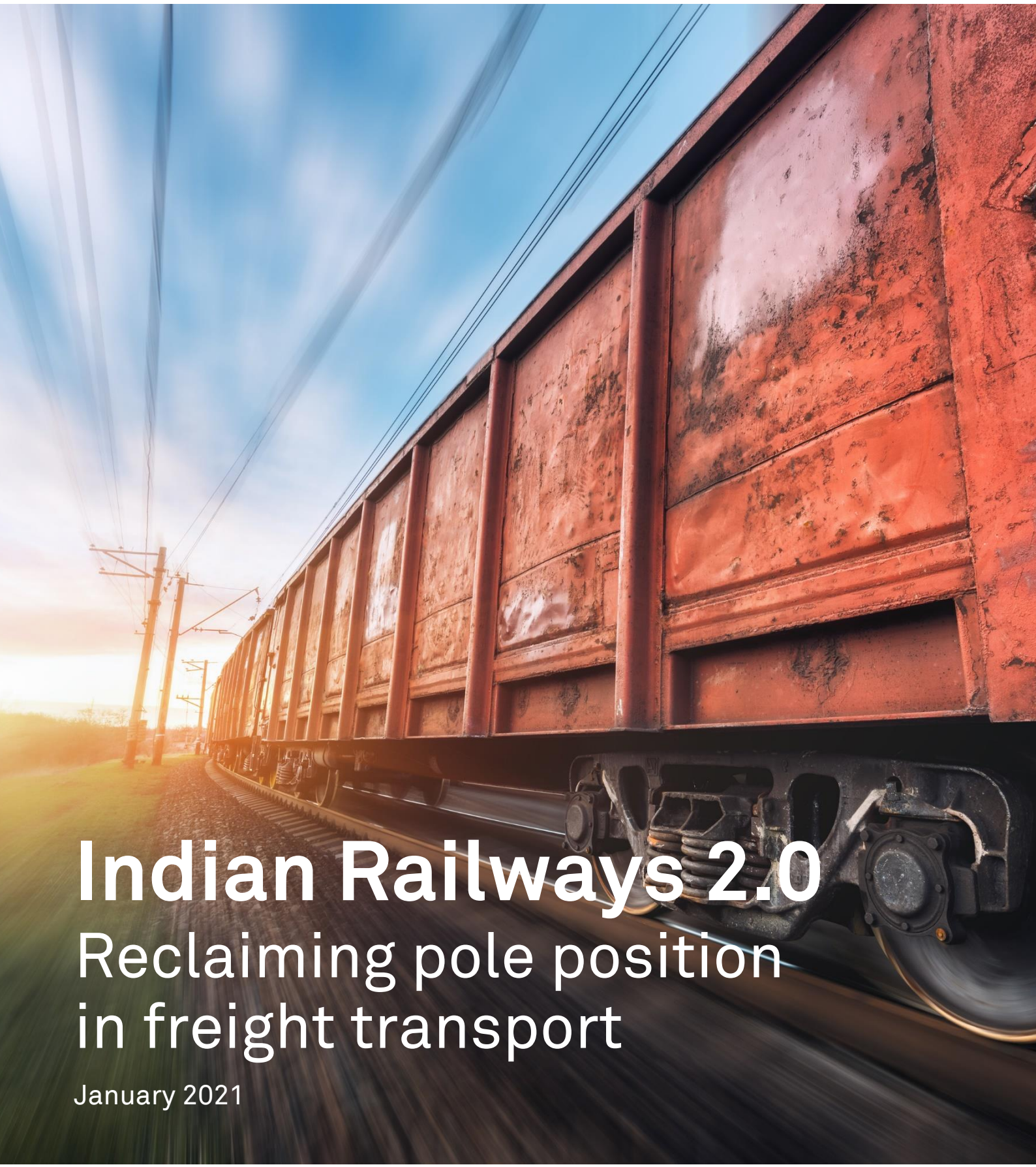
FICCI



Indian Railways 2.0

Reclaiming pole position in freight transport

January 2021

Infrastructure Advisory

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Message from the Minister

पीयूष गोयल
PIYUSH GOYAL

रेल, वाणिज्य एवं उद्योग तथा
उपभोक्ता मामले, खाद्य और सार्वजनिक वितरण मंत्री
भारत सरकार
Minister of
Railways, Commerce & Industry and
Consumer Affairs, Food & Public Distribution
Government of India



Message

As India moves closer to achieving an 'Aatmanirbhar Bharat' under the visionary leadership of Hon'ble Prime Minister Shri Narendra Modi ji, Indian Railways is leaving no stone unturned to turn this into a reality.

Indian Railways is one of the largest transportation and logistics systems in the world. It emerged as the lifeline for the nation during the COVID-19 pandemic in maintaining the supply chain for essentials and movement of citizens. Railways has undergone a radical change in mindset from "Passenger only" to "Freight on priority" and has shifted to an aggressive, competitive mindset and is now actively seeking customers. It is working towards expanding loading from traditional segments and attracting new customers, developing goods sheds through private investment and induction of new wagons. Additionally, Business development units (BDU's) have been set up in each zone to increase Railways freight share. The sector offers immense opportunities in rail modernization/ upgradation, Dedicated Freight Corridors, technology innovation and digitization amongst others.

I am delighted to note that FICCI and CRISIL have attempted to capture the opportunities and challenges in the sector through their white paper - "Indian Railways 2.0: Re-claiming Pole Position in Freight Transport". I congratulate FICCI and CRISIL for preparing this white paper and I hope the readers will find this useful.

Piyush Goyal

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Foreword from FICCI



Mr BVN Rao
Chairman, FICCI Committee on Transport Infrastructure and Business Chairman (Transportation & Urban Infra), GMR Group

I am happy to share with you the **FICCI-CRISIL** white paper on **"Indian Railways 2.0: Re-claiming Pole Position in Freight Transport"** to be released at the **Future of Rail Transport – 3rd edition of SMART Railways Conclave** organized by Federation of Indian Chambers of Commerce and Industry.

The Indian Railways is a symbol of a nation on the move. It is in a dynamic phase of growth with new initiatives offering world-class services in both freight and passenger transportation. The recently launched National Rail Plan builds emphasis on enhancement of infrastructural capacity along with strategies to chalk out a well-laid plan to increase railways market share in freight transportation from current 28% to 44% by the year 2051.

With this background, FICCI – CRISIL has prepared a comprehensive background paper on "**Indian Railways 2.0: Re-claiming Pole Position in Freight Transport**". The objective of this report is to study the rail freight transport in India. It analyses the initiatives being undertaken and examines key issues and challenges in the freight segment.

I hope you will find this report useful. We welcome your suggestions and feedback.

Foreword from CRISIL



Jagannarayan Padmanabhan
Director and Practice Leader - Transport
CRISIL Infrastructure Advisory

A modern and cost-efficient transport and logistics infrastructure network is the crucial cog on which India's vaunted ambition of becoming a global manufacturing destination rests.

And it is impossible to imagine such a network without the country's transportation behemoth – Indian Railways (IR), which carries ~8.4 billion of passengers and 1.2 billion tonne of freight annually – living up to its moniker 'lifeline of the nation'.

Currently, the country's logistics cost, estimated at ~14% of the gross domestic product (GDP), is significantly higher than other comparable economies, acting as a barrier for competitiveness of domestic products.

One of the major reasons for the high logistics cost is the skewed freight transport modal mix in the country, which is dominated by costly road transport. If the country is to become a global manufacturing destination, it is imperative that logistics costs decrease substantially.

The good part is, Indian Railways is cognisant of this requirement, and has taken multiple initiatives over the past few years to increase rail's share in freight transportation modal mix.

Notably, the capital outlay for railways has increased substantially from Rs 1,099 billion in fiscal 2017 to Rs 1,608 billion in fiscal 2021 and is expected to remain elevated in coming years. Specific measures have also helped the IR tackle challenges, especially the one heaped by the ongoing Covid-19 pandemic.

In this report, we have undertaken a comprehensive study of the Indian rail freight segment, the key challenges and initiatives, and opportunities for the private sector, and recommended steps that can ensure Indian Railways is able to achieve its target of 44% share in freight transport by fiscal 2051.

Our key recommendations include enhancing rail modal share for existing cargo and capturing new cargo categories; leveraging DFCs; establishing an independent regulator and enabling private investments in rolling stock.

I am sure you will find the report informative.

Executive summary

Overview of rail freight in India

A robust transportation and logistics infrastructure is crucial for economic development. To be sure, a modern, cost-efficient transportation infrastructure not only ensures an economy's competitiveness, but also provides the springboard for high industrial growth.

In India, railways has been the proverbial 'lifeline', given that Indian Railways (IR) carries ~1.2 billion tonne of freight and ~8.4 billion passengers, annually.

However, over time, the railways has lost considerable ground to other transportation modes, especially roads. Notably, within the freight segment, the share of railways was ~32% in fiscal 2019 vis-à-vis ~52% in fiscal 2008[1] (considering traffic with over 300 km of lead distance).

This shrinkage in the railway's share can be attributed largely to progression of road infrastructure and road transport industry, which gave a boost to road transportation, as well as changes in consumer behaviour and industrial and consumption patterns, which have increased the need for faster transit, service reliability and predictability. The situation has been further aggravated by capacity constraints in the railways, along with non-flexible policies, high tariff rates, and limited commercial and marketing initiatives, among others.

The deterioration in the share of rail in the freight modal mix is worrisome for not only the IR, but also for the economy.

Markedly, logistics cost in India, at ~14% of gross domestic product (GDP), is significantly higher than comparable economies, such as North America (8%) and Europe (9-10%).

With freight transport being eclipsed by costly modes, i.e. roads, the higher logistics cost for the economy can be partly attributed to the sub-optimal share of rail, given that transportation alone accounts for ~61% of the cost incurred in the logistics value chain in India.

The National Transport Policy Development Committee, 2014 took cognisance of this aspect and estimated that the modal share mix for rail and road needs to shift to 50:50 by fiscal 2032.

Realising the importance of aggregate level planning, the Ministry of Railways has formulated a Draft National Rail Plan, outlining strategies to achieve a freight modal share of ~44% by fiscal 2051 from the 32% in fiscal 2019.

The ministry has introduced several initiatives in recent years to tilt the scale, taking note that if the country is to become a global manufacturing destination, it will require a cost-efficient and modern transport infrastructure.

One of these initiatives is the Dedicated Freight Corridors (DFCs). The project, conceived last decade, has been fast-tracked and the rail transport sector is expected to undergo a paradigm shift once it is commissioned. Also being pursued are capacity augmentation, modernisation, operational changes, and organisational reforms.

The National Rail Plan also reiterates the need of diversifying the railway's freight mix in order to achieve the target.

Overview of IR's freight segment

The IR's freight basket has been dependent on select commodities, such as cement, coal, fertilisers, food grains, iron ore, and steel, which constitute over 75% of the total rail freight volume. Notably, coal alone

[1] Draft National Rail Plan, December 2020

accounts for ~50% of the freight volume and revenue.

The dependence on select commodities for freight traffic outlines the inherent risk from demand shocks from end-users of these commodities. Further, it has been observed that while the share of rail is high in conventional bulk commodities, its play is considerably low in high value and unconventional commodities.

For instance, for coal, the rail coefficient is ~65%, and for fertilisers, it is ~87%.

On the other hand, high value and unconventional commodities such as steel (52%), containers (24%), and cement (37%)[2] have a much lower rail coefficient.

Further, various zones of the IR have different shares with regard to their contribution to freight volume. The East Central, East Coast, South Eastern, and South East Central railway zones can be considered 'leaders' among all zones, contributing in excess of 10% freight volume individually to the IR.

The Central, Eastern, South Central, and Western zones can be considered 'challengers', each contributing 5-10% of the IR's freight volume.

The remaining nine railway zones can be considered 'followers', contributing less than 5%.

Notably, all these railway zones have different commodity profiles, and, hence, a customised strategy is imperative for further improvement in freight volume.

Trend of rail freight traffic

Rail freight traffic in volume terms logged a compound annual growth rate (CAGR) of 2.3% between fiscals 2016 and 2020, to 1,210 million tonne, with revenue totalling Rs 1,232 billion. A higher trajectory was cut short by a decline of 3% on-year and 6% on-year in coal and cement traffic, respectively, in fiscal 2020. During the fiscal, containers and iron ore, though, rose a healthy ~7% on-year each, followed by raw material for steel plants, pig iron, and finished steel, which expanded ~6% on-year, each.

In the initial months of fiscal 2021, traffic volume and revenue declined because of issues owing the Covid-19 pandemic. However, with measures taken by the IR and continuing restrictions in road transportation, traffic volume as well as revenue surpassed pre-pandemic levels in August and September 2020, respectively.

Key challenges for IR's freight segment

The freight segment of the IR, though growing in absolute terms, is constrained by several issues. The major issues are infrastructure and capacity. Both passenger and freight trains run on a common network. With the IR prioritising passenger trains over freight trains, transit time and transit time reliability of freight trains are significantly affected. But, as per a World Bank report, while ~60% of the capacity of the rail network is deployed for passenger transport, the segment contributes only ~30% to IR's freight revenue.

Another major issue for the freight segment of the IR is the price competitiveness vis-à-vis road transport. This is also due to additional costs pertaining to first- and last-mile connectivity in the case of rail transport. Moreover, stakeholders cite IR's uncompetitive freight charges as a key reason for the shift of freight from rail to roads, which can be partially attributed to extensive cross-subsidisation of passenger ticket prices by freight.

Further, IR's freight segment is highly dependent on a handful of commodities, primarily coal. Notably, coal, which contributes 48-50% of freight volume for the IR, is expected to log lower growth in the future owing to the emergence of renewable energy and the rise of pit head power plants.

[2] Draft National Rail Plan, December 2020

Therefore, diversification of the freight basket by focussing on non-conventional and high value commodities is imperative for the IR.

IR's initiatives for freight business

IR has been constantly undertaking measures to garner incremental freight volume. These include the recent launch of Freight Business Development Portal, setting up of zonal/divisional business development units, introduction of Vyapar Mala Express and Kisan Rails, and measures to provide first- and last-mile connectivity.

The IR also introduced short-term measures in the current fiscal to tackle challenges posed by the pandemic-induced lockdowns and economic downturn. These initiatives include tariff and non-tariff measures, such as waiver of stabling charges for container and automobile trains, withdrawal of surcharge on two point/mini rakes, discount on loaded containers and round trip traffic, long and short lead concessions, reduction of BCN rake size, relaxation in distance restrictions for mini rakes, and two point loading.

Further, infrastructure augmentation and modernisation have been among the top agendas of the IR in recent years. The capital outlay of the IR has increase 10% CAGR over fiscals 2017 to 2021. Furthermore, allocation of budgetary support in the capital outlay has risen 11% CAGR during the period.

Owing to the increased outlay, major infrastructure works, such as gauge conversion, new lines, and doubling and tripling projects, have also registered significant uptick in the last few years.

PPPs and private investments in rail freight sector

The IR has been cognisant of the importance of private sector participation in the development of the rail freight sector. Here, it has been rolling out a number of initiatives to facilitate private investments.





The participative models for rail connectivity projects have been garnering significant interest from the private sector. Notably, Mundra Port rail connectivity, Dhamra Port rail connectivity, Kutch Rail Company, and Pipavav Port rail connectivity projects have been undertaken under these participative models.

Further, in order to enhance rail's share in container transport, in 2006, the IR allowed public and private players to obtain licences for operation of container trains.

The investments by container train operators have been remarkable, and these players have been able to increase their rail share on the routes, by providing integrated logistics solutions, low transport costs/ short transport times, greater reliability, and customised solutions. However, continuous support will be needed by container train operators on various fronts to further make rail competitive for container transport.

Apart from these initiatives, the IR also took significant steps to attract private sector investments in rolling stock. In this regard, schemes, such as Liberalized Wagon Investment Scheme, Wagon Leasing Scheme, Automobile Freight Operator Scheme, Special Freight Train Operator Scheme, and General Purpose Wagon Investment Scheme have been introduced over the last few years. These schemes have undergone revisions and amendments on the basis of stakeholder concerns and suggestions, in order to make these further investment friendly.

Similarly, the IR has been promoting development of private freight terminals, rail sidings, and port sidings, among other terminal infrastructure, through private investments. Moreover, the Dedicated Freight Corridor Corporation of India Ltd (DFCCIL) is planning the development of multimodal logistics parks along the alignment of the DFCs, which can be a potential area of investment by the private sector.

Recommendations and way forward

The IR is on a transformative journey, and is undertaking various initiatives to provide a fillip to its freight segment. The recent Draft National Rail Plan is one step in this direction, providing strategies for augmenting freight volume and modal share.

Some of the other steps the IR can consider for fortifying its freight segment are:

Enhancing modal share in existing commodities and capturing new cargo categories: The first step towards increasing the IR's freight volume will be to enhance volume of the existing commodities, by increasing the modal share. Some of the commodities that can be targeted are automobiles, cement, containers, and steel. These products will require targeted and customised interventions to make rail competitive vis-à-vis road transport for the consignors.

Capturing new cargo categories: The IR should target new cargo categories through a multi-pronged strategy to generate higher freight volume and revenue. Some of the steps that can be taken in this context are:

- Improving existing infrastructure and operations through participation of logistics players
- Facilitating first- and last-mile connectivity
- Rejigging the parcel business strategy

Leveraging DFCs: IR's DFCs are expected to be a game-changer for the freight sector. The IR may consider the following to harness its full potential:

- Passing on the cost benefit to customers through reduction of tariffs
- Accelerating industrialisation along the corridors
- Developing logistics infrastructure along the corridors
- Allowing private players to operate trains on the DFCs, thereby leveraging the Track Access Charge Mechanism

Establishing an independent regulator: Setting up of an independent regulator has been a long-pending demand of the industry. The constitution of an independent regulator can be instrumental from two key perspectives: (i) rationalising the freight tariff by determination of optimum level of cross-subsidisation of the passenger segment with freight, and (ii) facilitating private participation by ensuring protection of their interests, and transparent dispute resolution at an arm's length from the IR.

A cue can be taken from the airports sector, where numerous public-private partnership (PPP) projects have been undertaken successfully after the setting up of the Airports Economic Regulatory Authority of India.

Enabling private investments in rolling stock: The IR has been actively undertaking measures to facilitate private investment in rolling stock. Though the industry has shown considerable interest in these schemes, and many players have inducted rakes by leveraging on these schemes, the results have not been commensurate with the potential of the schemes. One of the major objectives behind some of the schemes was to enable introduction of new design wagons that are capable of handling cargo that the IR traditionally does not cater to. Various players have also cited the desire to induct such new design wagons. However, as per feedback received from players, the approval process for new design of wagons by the Research Design and Standards Organisation (RDSO) is not streamlined, and at times unpredictable. Therefore, to facilitate private investments in rolling stock, and to enable induction of new design wagons on its network, the IR may consider streamlining the RDSO approval process, with stipulated requirements and timelines.

IR can also consider decoupling the rebates provided for investment in wagons from the cost incurred by it for similar wagons, and coming up with a single policy for wagon investments by merging the existing policies for private investments in wagons.



Introduction

Sub-optimal rail freight share hurts India's economic ambitions

Transportation infrastructure is crucial for overall economic growth and plays a catalytic role in the transition from middle- to high-income economy, as established through various empirical studies.[3]

Notably, the Indian transport sector's contribution to the economy has been significantly higher than the proportion of expenditure undertaken for the sector's improvement and maintenance.[4]

Indian railways (IR) – often called the 'lifeline of the nation' – is the backbone of the country's transportation infrastructure. Carrying ~1.2 billion tonne freight and ~ 8.4 billion passengers annually, IR plays an unparalleled role in meeting the country's transportation demand and supporting its economic growth.

However, the rising competition from other transportation modes, especially roads, has adversely impacted IR's market share in the passenger and freight segments. Notably, the modal share of railways in passenger segment has gradually declined from ~75% in 1950-51 to below 20% in the current scenario.

Further, the modal share of railways' freight transportation (for lead distance beyond 300 km), dwindled to ~32% in fiscal 2019 from ~52% in fiscal 2008.[5]

Also, the demand elasticity for rail freight transport – estimated by Indian Railways[6] at ~1.2x of the gross domestic product (GDP) growth – has remained at 0.8-1.0x in the recent past, indicating a decoupling of IR's freight traffic growth and GDP.

That said, the sub-optimal share of railways in freight transport is worrisome for the sector and the economy. Notably, in 2015, logistics costs in India were estimated at 14% of GDP), compared with North America's 8% and Europe's 9-10%[7] .

The higher logistics costs in the country can be partially attributed to the sub-optimal modal share of IR in the freight modal mix. Therefore, a balanced modal share is critical to support nation-wide logistics optimisation and fortify the economy and associated freight volumes.

The National Transport Policy Development Committee, 2014, estimated the modal share mix of rail: road needs to shift from 35:65 in fiscal 2017 to 50:50 by fiscal 2032. In an optimistic scenario, where both transportation modes excel in their respective domains, i.e., rail serving medium and long-distance (above 300 km) high-volume traffic, and road serving low-volume short-distance traffic in a complementary role, rail and road share could reach 52% and 49%, respectively.[8]

Why is railway freight declining?

According to the Economic Survey, 2017-18, the increasing competitiveness (tariff) of other modes of transport, mainly road, slowed down railways freight traffic. Road freight movement has grown enormously in recent times with improved infrastructure, and initiatives such as GST, electronic toll collection, and increase in axle loads for commercial vehicles. Moreover, road transport is preferred by consignors in several cases, even for long-distance hauling services.

The progression in the industrial consumption patterns has also changed the dynamics of freight transport, refocussing it towards faster transit, service reliability and predictability, and smaller parcel sizes.

[3] IMF, 2015
[4] http://www.oecd.org/derec/adb/39066399.pdf
[5] Draft National Rail Plan, December 2020
[6] UNEP – A Case Study of the Delhi-Mumbai Dedicated Freight Corridor
[7] World Bank – Unlocking India's Logistics Potential, Policy Research Working Paper, 2018
[8] Erstwhile Planning Commission, 2008 – Chapter XI

Moreover, capacity constraints on rail trunk routes, non-flexible policies, limited financial resources to maintain/develop new infrastructure, higher tariff rates, and the lack of commercial and marketing initiatives stand among other reasons for the decline in railways freight.

Indian Railways 2.0 - reclaiming market share, optimising modal mix

The Ministry of Railways has come up with several reforms in recent years, realising India's aspiration of becoming a global manufacturing hub and the need for a cost-efficient freight transport infrastructure. These initiatives cut across various facets, including the creation of new infrastructure and improvement/capacity augmentation of the existing one; modernisation, optimisation of the energy mix for operations; operational changes, organisational reforms, freight marketing, tariff rationalisation, and facilitation of private investments in rail infrastructure.

Among other initiatives, implementation of Western and Eastern dedicated freight corridors (DFCs), which were conceptualised in the past decade anticipating a quantum leap in rail freight transport demand, has been fast-tracked.

Creation of this seamless new freight-oriented infrastructure is expected to be a game changer for railways and the country's logistics paradigm. While some sections have already been commissioned in recent years, the project is expected to complete in the next couple of years. The ministry has planned further more DFCs to provide seamless and efficient rail logistics services across the major locations in the country.

IR has come up with the Draft National Rail Plan, with an ambitious target of achieving a freight transportation share of 44% by 2051 from the current 32%.[9]

The National Rail Plan estimates the freight contribution from conventional commodities, which currently contribute ~65% of the rail freight traffic, to reduce in the evolving transport ecosystem.[10] For instance, coal, which contributes 48-50% of IR's freight volume and revenue, is expected to log lower future growth due to the introduction of pit head power plants and increasing contribution of renewable energy, in line with the government's commitment towards sustainable development. Similarly, there is a limited scope of growth in rail freight traffic from iron ore, petroleum, oil and lubricants (POL), and food grains due to inherent features of these commodities, changing dynamics, and cost competitiveness from other transport modes. For example, slurry pipelines for iron ore, pipelines for POL movement, and small parcel size movement of food grains through road transport.

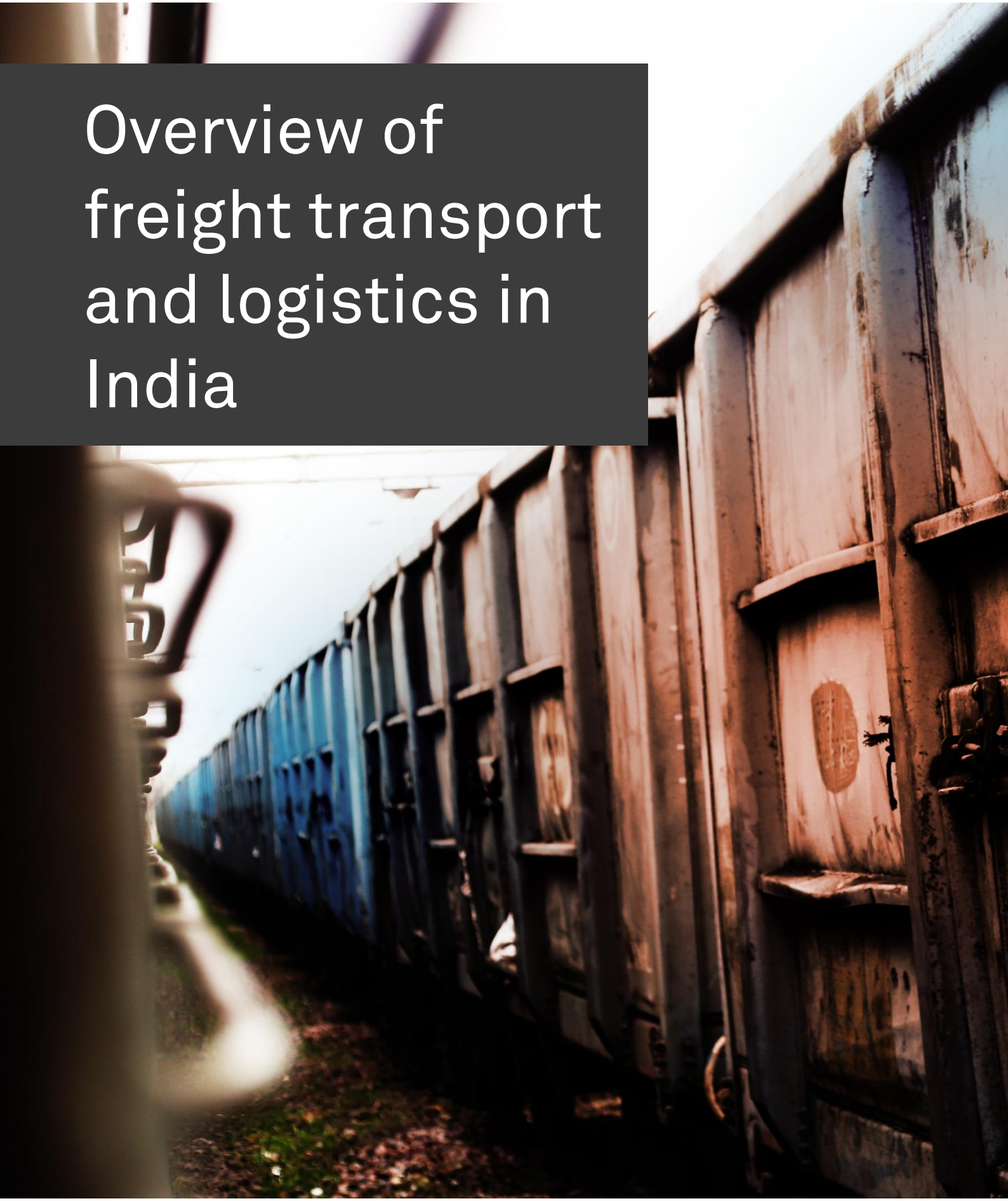
That said, IR needs to focus on non-conventional commodities, such as containers, and 'balance other goods', and high-value commodities, such as steel and cement, to achieve the desired modal share. Improvement in service quality, transit time predictability and reliability and reduction in logistics costs are expected to be key imperatives to capture the potential from these commodities.

This report specifically studies the Indian rail freight transport, identifies key issues and challenges in the rail freight segment, elaborates key initiatives, and provides key recommendations in the direction of IR's vision of achieving 44% share in freight transport by 2051.

The report identifies various zonal railways as leaders, challengers and followers, based on their contribution to freight volumes and revenues, and provides an overview of the potential areas to strengthen their positions in the freight business.

[9] Draft National Rail Plan, December 2020
[10] For leads beyond 300 km[11] Considering modal mix on overall freight basis. Railway's modal share is ~32% for freight plying beyond 300 km

Overview of freight transport and logistics in India



Efficient freight transport and logistics imperative for economic development

A competent system for freight transport and logistics services has proven to have a domino effect on the overall economy, triggering various economic mechanisms. Below is a schematic representation of these triggers:

Figure 1: Domino effect of efficient freight transport and logistics on economy

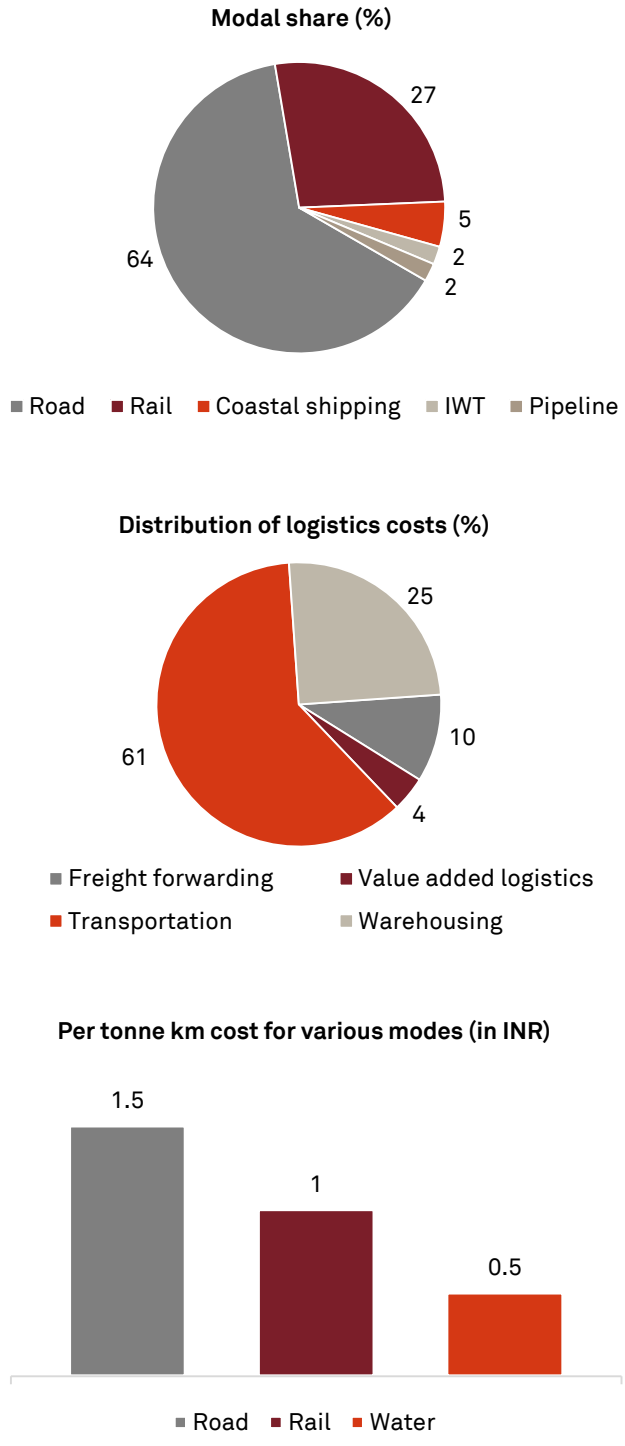
Enhanced efficiency and effectiveness of Indian freight logistics

1. Reduction in trade costs
2. Increased competiveness
3. Improved exports + increased investments
4. More jobs and better income opportunities
5. **Higher economic growth**

Source: World Economic Forum, CRIS analysis

While the Indian freight logistics sector has evolved considerably, a set of interconnected issues still need to be addressed. Among these issues, substantially higher logistics cost in India (~14% of GDP), than that in developed nations, hurt the competitiveness of Indian businesses. One of the major reasons behind high logistics cost in India is a skewed modal mix, wherein road transportation has the lion's share, followed by rail and waterways. Notably, the transport cost constitutes around 61% in the logistics cost value chain, and the dominance of road transport largely results in high overall logistics costs in the country.

Figure 2: Key features of freight logistics in India[11]



Source: National Rail Plan, Philip Capital, CRIS analysis; Modal share on an overall basis

[11] Considering modal mix on overall freight basis. Railway's modal share is ~32% for freight plying beyond 300 km

What twisted the modal mix?

IR was once the largest freight transport carrier in India, but gradually lost ground to roads. Road freight transport bloomed with increased investments and improvements in road infrastructure, while insufficient investments in rail infrastructure for capacity augmentation skewed the modal mix.

The road length in India increased at a CAGR of ~4.16 % between 1951 and 2017, whereas the rail track length increased at a mere ~0.7% CAGR. Railways used to handle ~89% of total freight in 1950-51, which gradually decreased to ~33% in 2007-08, and ~27%[12] in 2018-19. In the past six decades, rail freight loading has grown ~1,344% and passenger kilometres ~1,642%, while railway capacity, measured in route-kilometres, has grown only 23%.[13]

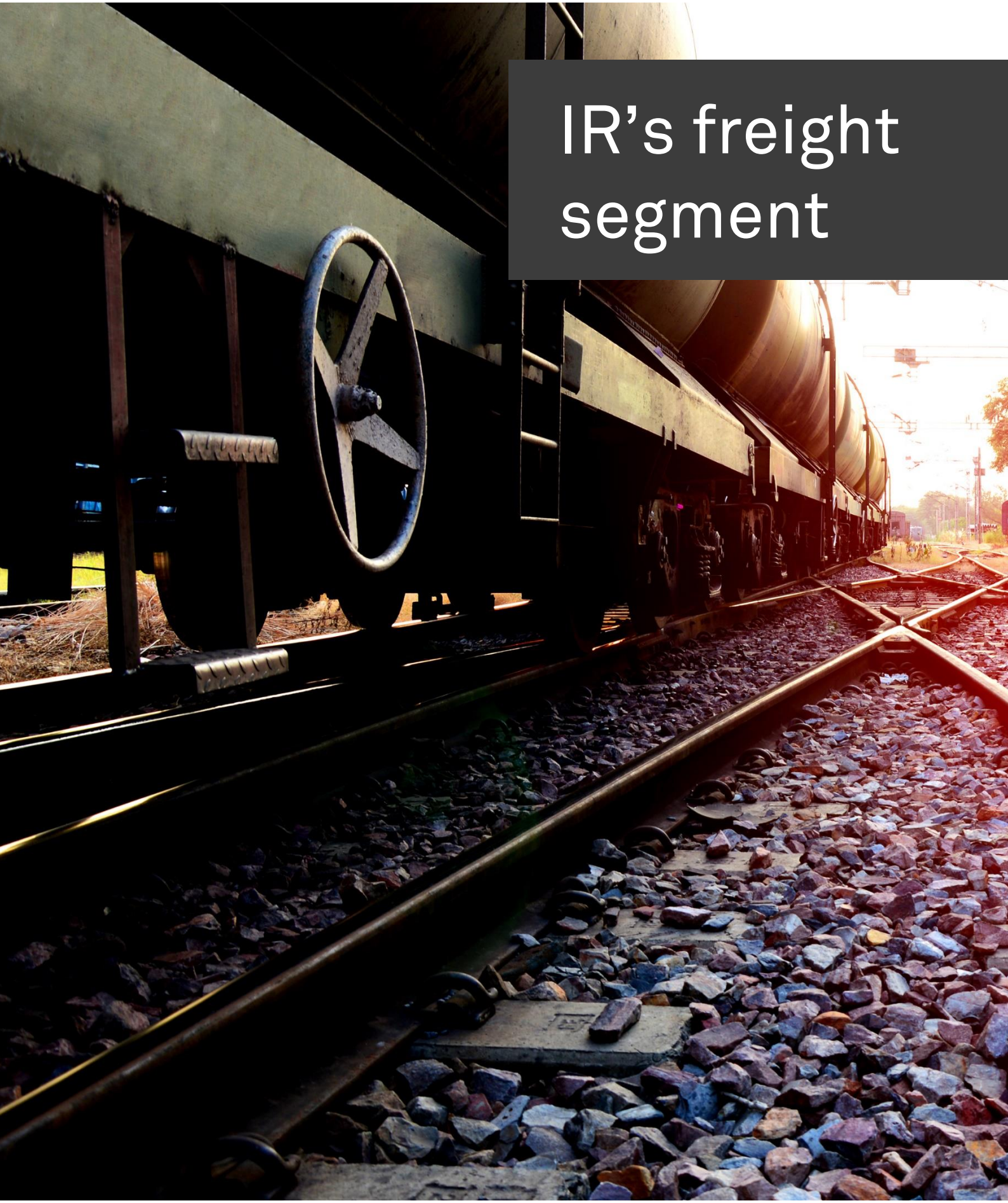
Amid the poor state of rail and the associated regulatory environment, a highly fragmented trucking industry emerged, amplifying road transportation. Around 77% of the truck owners have a fleet size of five vehicles or less. Further, there are approximately 5,000 intermediaries in the freight industry. Intense competition, limited regulation on overloading, and increased limit for axle loads for commercial vehicles resulted in low freight rates for road transportation. In addition, heavy government subsidies on diesel promoted a shift of freight to road[14].

Further, as per a World Bank Report, the railway pricing works on the principle of "what the traffic can bear" rather than "cost of service", resulting in cross-subsidisation from high- to low-value traffic to support government policies. The growth in road transport, with an associated shift of high-value traffic to road, restrained this practice, increasing losses for railways, as low-value goods were transported below-cost through rail transport. Decreasing operational surplus, in turn, curtailed investments, further impacting railways' ability to serve its customers.

Further, the declining cost of road transportation, coupled with the rising issues of rail transportation, including capacity constraints, high tariffs due to cross-subsidisation, and limited freight marketing initiatives, altered the modal mix.

[12] On overall freight volume basis - National Rail Plan and National Transport Policy Development Committee Reports
[13] Phillip Capital, 2016
[14] World Bank – Unlocking India's Logistics Potential, Policy Research Working Paper, 2018

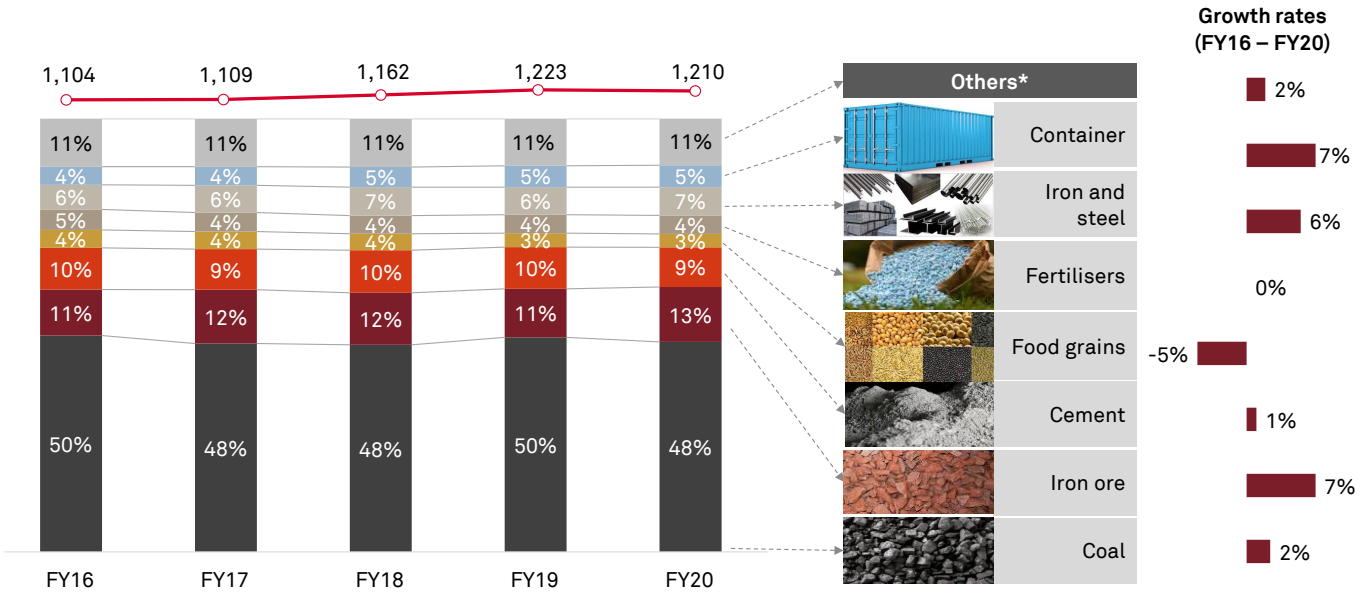
IR's freight segment



Overview

IR is among the world's largest rail networks, catering to transportation needs of the country's huge population. It caters to the freight transportation demand of the economy, especially bulk commodities, such as cement, coal, iron ore, fertilisers, petroleum, and food grains. The schematic below provides the trend in IR's freight segment by volumes and composition:

Figure 3: IR's freight basket trend (million tonne)

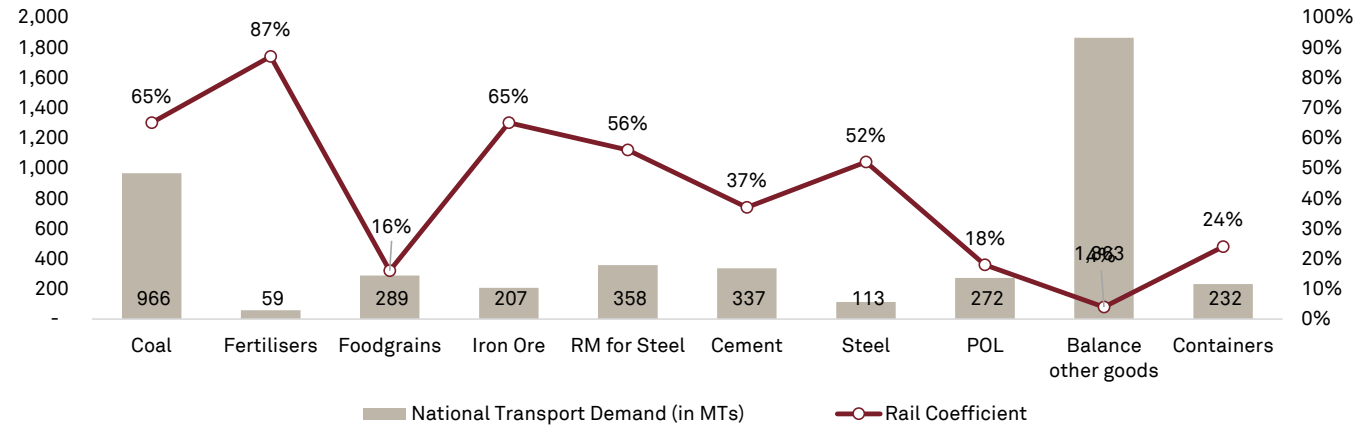


Source: Indian Railways Statistical Statements, CRIS analysis

IR's freight composition has remained dominated by bulk commodities, making it vulnerable to demand shocks from end users of these commodities. Notably, coal alone contributes around 48-50% of freight traffic volumes for railways, indicating the high dependency of railway freight on coal demand from the thermal power, cement and steel sectors.

The below chart indicates IR's high dependence on conventional commodities and limited presence of high-value and unconventional commodities.

Figure 4: National freight transport demand across commodities and corresponding rail coefficient (2018-19)



Source: National Rail Plan

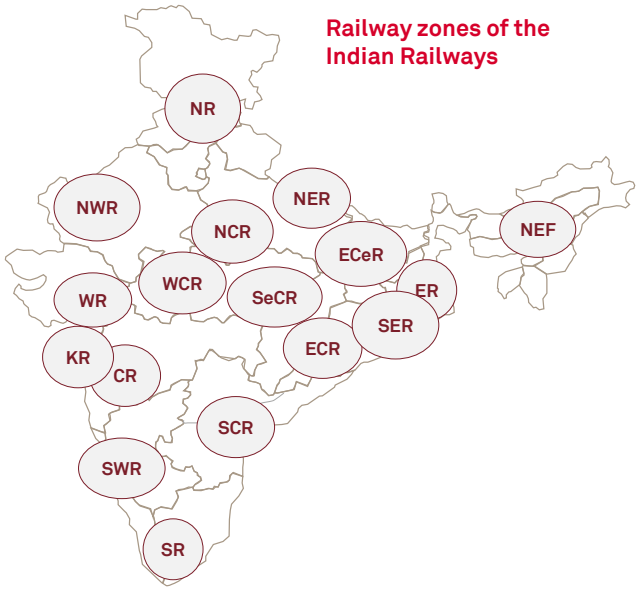
The existing rail coefficient is significantly low in high-value commodities, such as steel and cement, and unconventional commodities, such as containers and balance other goods.[15]

The analysis of freight traffic distribution among 17 railway zones describes their positioning in terms of their dependence on various commodities for traffic and competitiveness.

These railway zones are divided into three categories, based on their contribution to total freight volumes:

- Leaders: >10%
- Challengers: >5% and <10%
- Followers: <5%

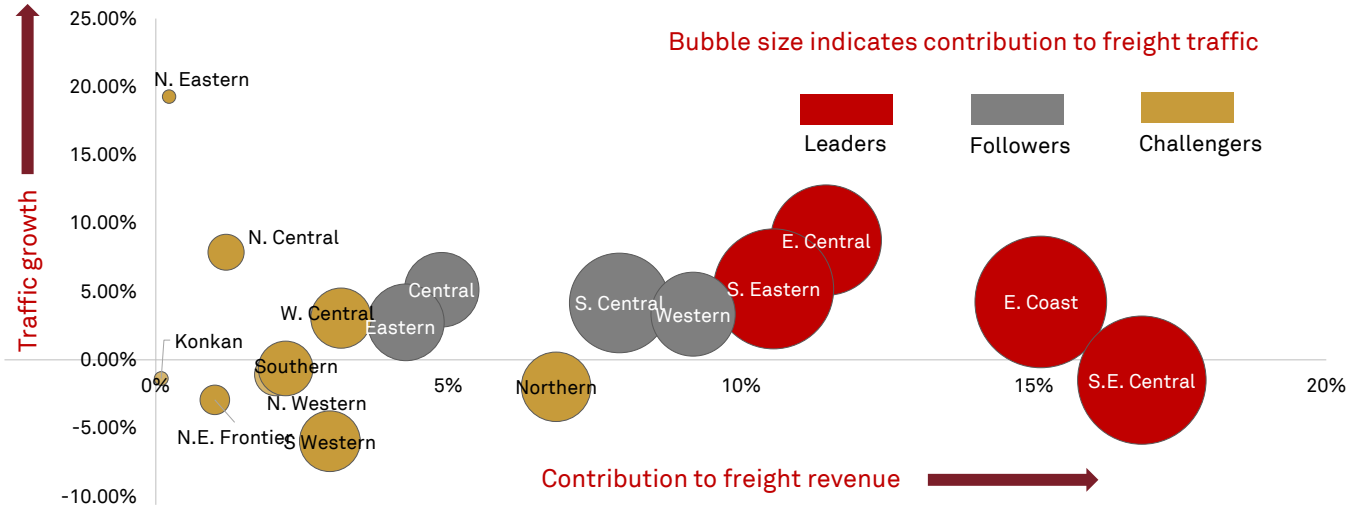
Figure 5: Geographical spread of IR zones



Railway zones	
Central	CR
Eastern	ER
East Central	ECeR
East Coast	ECR
Northern	NR
North Central	NCR
North Eastern	NER
NE Frontier	NEF
North Western	NWR
Southern	SR
South Central	SCR
South Eastern	SER
South East Central	SECR
South Western	SWR
Western	WR
West Central	WCR
Konkan	KR

Source: CRIS analysis

Figure 6: Relative position of various railway zones in the freight segment



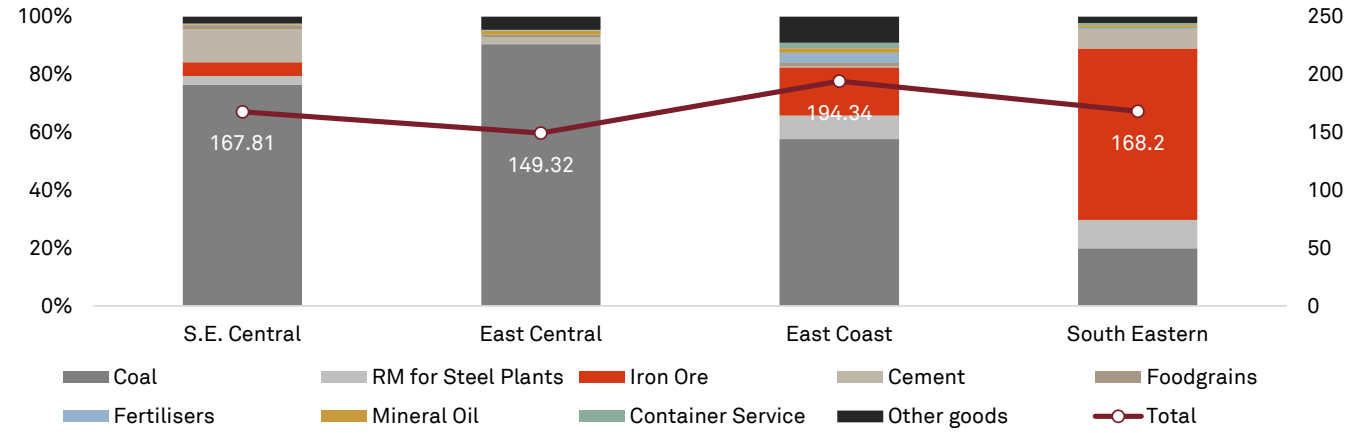
Source: Indian Railways Statistical Statements, CRIS analysis

[15] Includes automobiles, stones, non-ferrous minerals and other miscellaneous goods

The leaders

East Central Railway, East Coast Railway, South Eastern Railway, and South East Central Railway fall under the category of leaders, as they contribute more than 10% of freight volumes individually. These zones together account for ~56% of total freight volumes and ~54% of freight revenues. The schematic below provides an overview of the freight composition of these zonal railways:

Figure 7: Freight composition for leaders



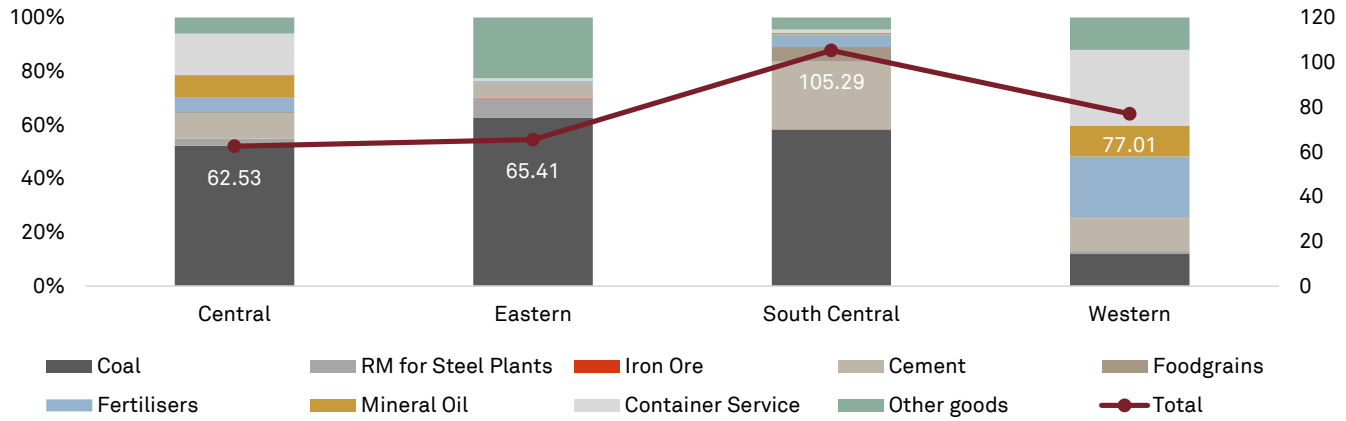
Source: Indian Railways Statistical Statements, CRIS analysis

These four players are frontrunners in terms of freight volumes, having a high dependency on coal and iron ore traffic. Notably, the South East Central Railway, East Central Railway and East Coast Railway have coal contributing 77%, 90%, and 58% to total freight volumes, while iron ore contributes 60% of total freight volumes for South Eastern Railways. These railway zones have been leading freight loading due to the geographic dividend (proximity to the mining areas). However, the high dependency on coal outlines the potential future risks from decreased coal consumption from the thermal power sector due to increased establishment of pit head power plants and rising contribution of renewable power sources, in line with the government's climate change initiative. That said, these players need to focus on other essential commodities in future to stay as leaders.

The challengers

As depicted in figure 6, four railway zones, i.e., the Central, Eastern, South Central, and Western can be considered challengers in the freight segment, contributing 5-10% of IR's freight volumes. They account for ~26% of volume and revenue in the freight segment. Figure 8 provides an overview of the freight composition of these zones:

Figure 8: Freight composition for challengers



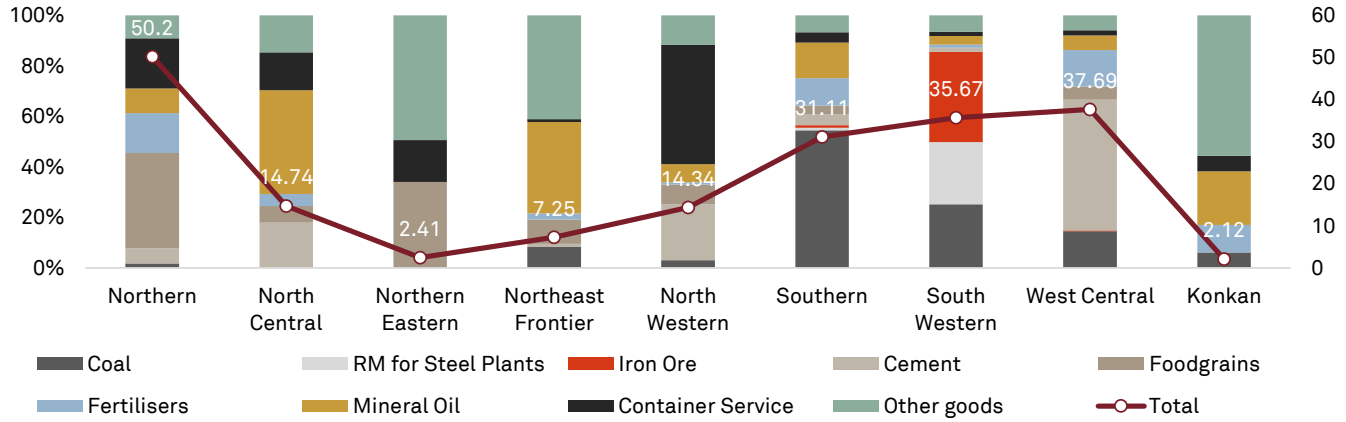
Source: Indian Railways Statistical Statements, CRIS analysis

While these zones have the potential to drive railway freight volumes and revenues, apart from Western Railway, the others in this category depend on coal, which has a limited potential for high growth. The Western Railway has a diversified freight portfolio with only 12% dependence on coal. The zone is a leader in container transport and accounts for ~35% of the container volumes handled by IR. Further, together with the Central Railway, it accounts for ~51% of total rail container traffic. The South Central Railway, leveraging its proximity to cement manufacturing clusters, has attained ~25% of freight volumes from cement traffic.

The followers

As depicted in figure 6, nine railway zones i.e., the Northern, North Central, North Eastern, North East Frontier, North Western, Southern, South Western, West Central, and Konkan Railways can be considered followers, contributing less than 5% individually to IR's total freight volumes. Collectively, these railway zones contribute ~18% volume and 20% revenue to the freight segment. Figure 9 below provides an overview of the freight composition of these zonal railways:

Figure 9: Freight composition for followers



Source: Indian Railways Statistical Statements, CRIS analysis

These zonal railways require focused and customised strategies to drive railway freight volumes and revenues. Of these zones, the Northern, Southern, South Western, and West Central Railways already contribute significant volumes and have relatively diversified freight portfolios. Building on the existing freight volumes can be a workable strategy for these zones.

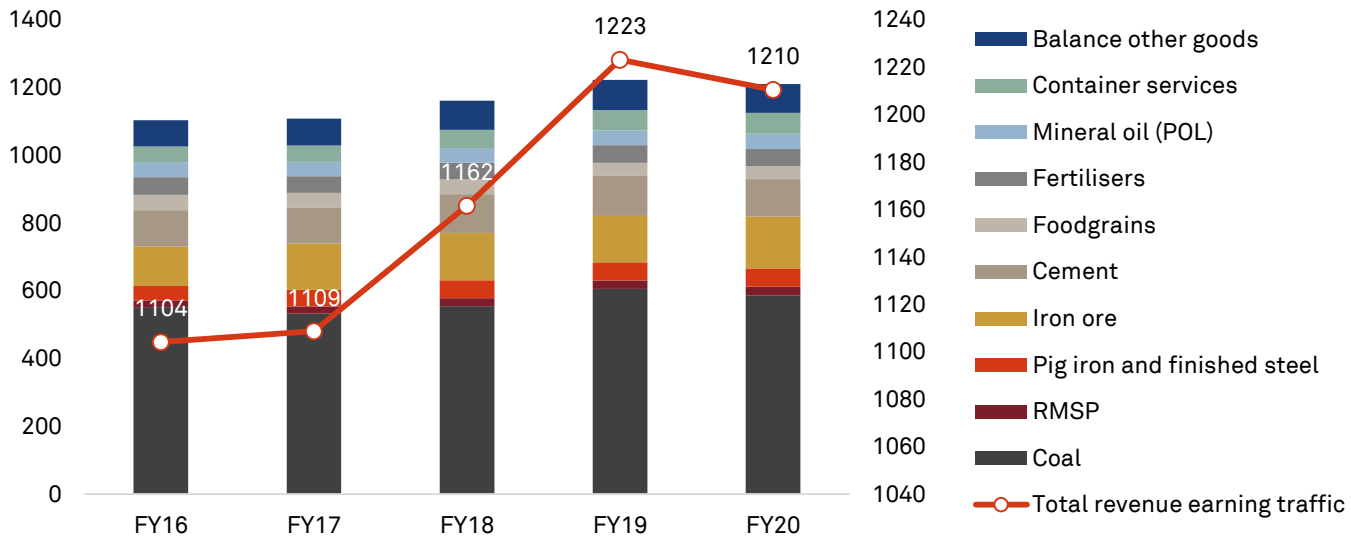
Performance review of the freight business

This section provides an assessment of the performance of IR's freight segment in terms of traffic volume and revenue. Further, it also provides an analysis of major commodities that are handled by IR.

Rail freight traffic trends

Rail freight traffic increased at a 2.3% CAGR by volume between fiscals 2016 and 2020. The subdued performance from coal and cement that declined 3% and 6%, respectively, in fiscal 2020 applied the brakes. Containers and iron ore grew a healthy ~7% over the period, followed by raw material for steel plants and pig iron and finished steel that expanded at ~6%.

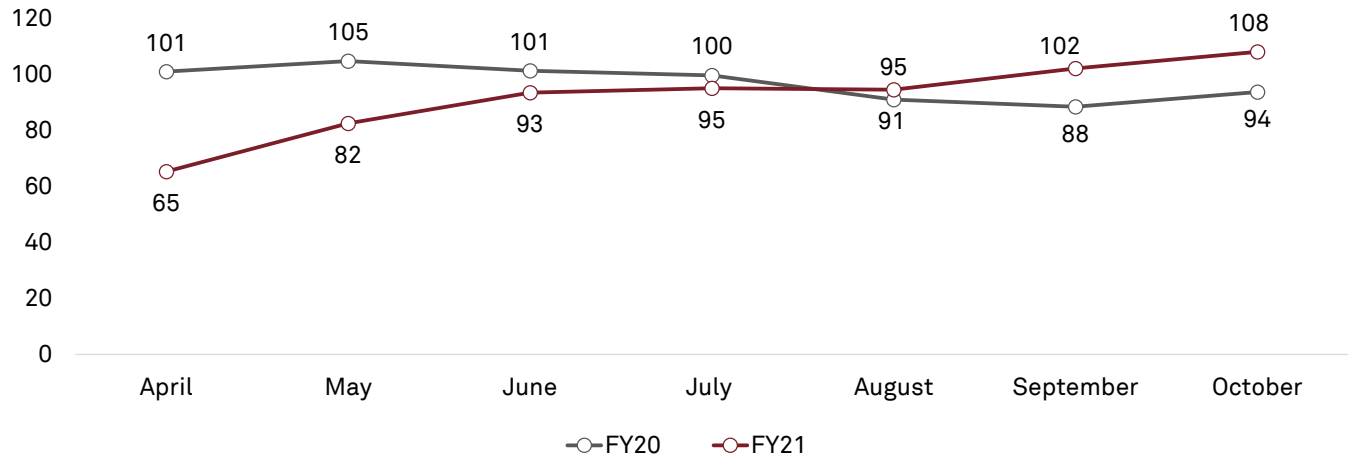
Figure 10: Rail freight traffic volumes trend



Source: Indian Railways Statistical Statements, CRIS analysis, Fig. in million tonne

Indian Railways has fixed a freight target of 1,267 MT for fiscal 2021 as per the budgetary estimate. There was significant on-year downfall in terms of traffic volumes in the initial period of the current fiscal due to the Covid-19-induced downturn and lockdown. However, freight traffic gradually revived and surpassed the 2019 levels from August, 2020. Overall, the total revenue-earning traffic in August, September and October of fiscal 2021 was ~12% higher compared with the same period in the preceding year. Figure 11 depicts the traffic volumes trend vis-à-vis the previous year:

Figure 11: Traffic volume picking up gradually in post-pandemic scenario



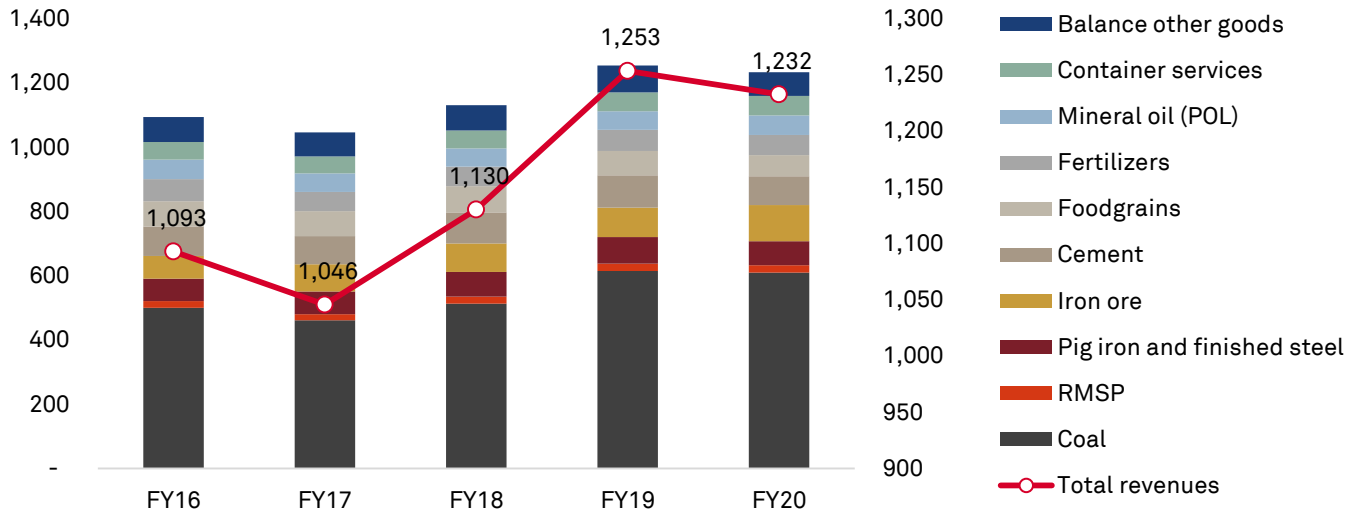
Source: Indian Railways Statistical Statements, CRIS analysis, Fig. in million tonne

To achieve the higher freight loading in fiscal 2021 vis-a-vis fiscal 2020, IR has prioritised market outreach, held multiple consultations with stakeholders/customers and provided incentives and concessions to boost traffic. IR is also coming up with 'Kisan Rail' services along various routes to capture the traffic of agricultural and perishable commodities.

Rail freight revenue trends

Freight revenue of Indian Railways increased at a ~3.1% CAGR between fiscals 2016 and 2020. Revenue growth was hit in fiscal 2020 due to the ~1% decline in traffic. Among all commodities, per-tonne revenue from iron ore grew at a healthy 7% CAGR over the period, while per-tonne revenue from other commodities, barring coal and food grains, followed a downward trajectory.

Figure 12: Rail freight traffic revenue trends

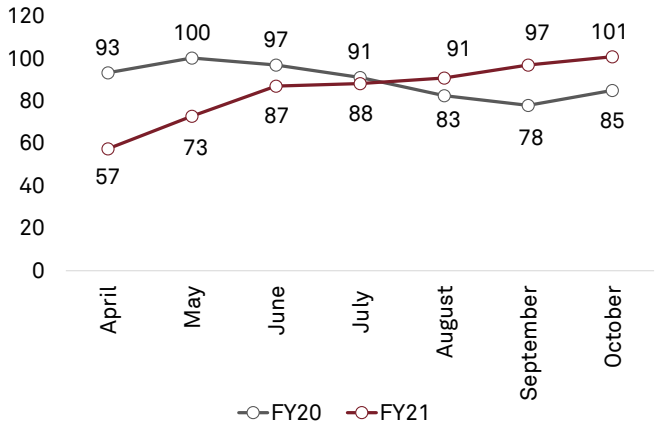


Source: Indian Railways Statistical Statements, CRIS analysis, Fig. in INR billion

Further, in fiscal 2021, freight revenues were hit initially with traffic declining on the back of the pandemic-induced downturn and lockdown. Coal, predominantly moved by railways, dipped, but this was compensated via the carriage of other bulk commodities such as steel.

However, along with the traffic, revenue has picked up gradually. Largely reaching the pre-pandemic level, it is expected to surpass the level in the coming months. Notably freight revenue in September and October of fiscal 2021 was ~24% and ~19% higher, respectively, when compared with the comparable period in fiscal 2020. Figure 13 provides an overview of the trend in freight revenues in the post-pandemic scenario.

Figure 13: Revenues picking up gradually in post-pandemic scenario



Source: Indian Railways Statistical Statements, CRIS analysis, Fig. in INR billion

Factors affecting railway freight in India

Coal, iron ore, cement, containers, food grains, and iron & steel, comprising ~80% of the total IR traffic, are among the key drivers of railway traffic in India. The associated dependencies of these commodities define the key factors affecting railway freight. The commodity-wise analysis in this respect is detailed in the subsequent section.

COAL

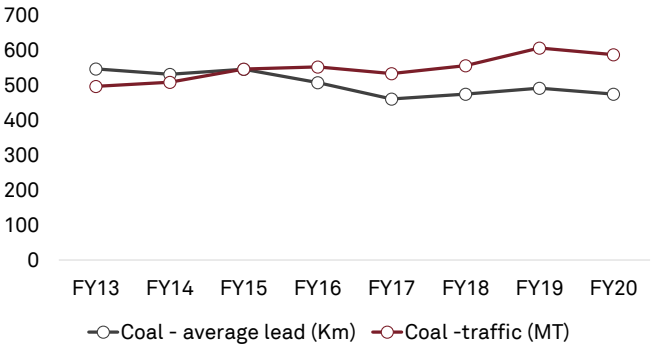


- The largest freight commodity transported by IR, both in volume and revenue
- In fiscal 2020, coal contributed to ~48 % of the total freight traffic and revenues

Contributing to ~48-50% of the total freight revenue and traffic, coal acts as a key enabler for achieving the target revenues and freight traffic for IR. The coal traffic for rail is primarily driven by thermal power plants (more than 65%), and other users such as cement plants (~23%) and steel plants (~9%). Any disruption in the demand from these end-user industries affect the rail traffic for coal.

The high dependency on coal highlights inherent risks for rail traffic growth in future. Notably, the government's push towards renewable energy is expected to lead to lowering of coal demand from the thermal power sector in future. Furthermore, the falling power plant load factors (PLFs), emergence of pit head power plants and coal-linkage rationalisation has led to a significant drop in the average distance of coal transported to thermal power plants, hence impacting railway revenue streams.

Figure 14: Traffic and average lead distance for Coal



Source: Indian Railways Statistical Statements, CRIS analysis, Fig. in INR billion

Indian Railways has responded to the falling lead distance of coal by raising coal freight charges at a higher rate than other commodities to offset the decline in coal revenues. Notably, the rail logistics cost in India is significantly higher than comparable economies. For instance, revenue per NTKM (net tonne kilometer) for coal in India for fiscal 2018 was INR 7.07 compared with INR 1.77 in Canada, INR 1.09 in Australia and INR 1.15 in the United States (adjusted for purchasing power parity)[16]. This may work for railways in the short run. However, in the long run, it will risk the end-user, especially thermal power plants, who will either find delivered coal prices more expensive than alternatives such as renewable energy or start preferring other modes of transportation such as trucks. Other areas of risks include power plants in coastal regions that import coal, or the rise of long-distance power transmission, especially via high-voltage DC (HVDC) that will lead to setting up of more pit head thermal power plants in future.

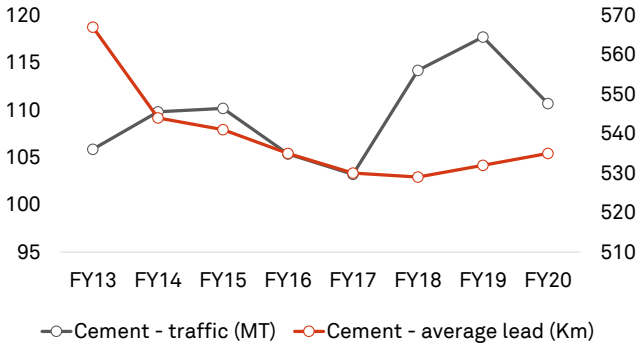
CEMENT



- A major freight volume and revenue contributor for Indian Railways
- In fiscal 2020, cement contributed to ~9% of the freight basket and 7% of IR's freight revenue

Globally, India is the second largest producer for cement after China. In fiscal 2020, cement contributed INR 89 billion to the railways towards freight as opposed to INR 100 billion in the previous year. The demand drivers of cement in India are primarily sectors that declined in fiscal 2020, i.e., the housing & real estate, public infrastructure and industrial development. The slow growth in cement demand generally leads to the capacity utilisation of cement plants declining, affecting profitability and encouraging the players to transport cement in smaller parcel sizes to keep the inventory costs low. Notably, road transport has an edge over railways in transportation of cement in small parcel sizes and this can affect the share of IR in cement freight traffic. Further, the last and first-mile costs incurred in case of rail logistics for bagged cement makes it less competitive vis-à-vis road transport. As per the National Rail Plan, the total logistics costs for bagged cement for rail are 18-22% higher than road transport.

Figure 15: Traffic and average lead distance for Cement

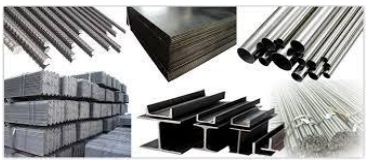


Source: Indian Railways Statistical Statements, CRIS analysis, Fig. in INR billion

However, going forward, the government's push towards infrastructure development depicted by the National Infrastructure Pipeline, programmes such as 'Housing for All', 'Bharatmala Pariyojana' and 'Smart Cities Mission', and expected pick up in real estate segment, would likely enhance cement demand and thus have a positive impact on cement traffic for rail. However, IR will need to make significant efforts to encourage bulk transport of cement that is comparatively competitive for rail vis-à-vis road transport.

[16] Draft National Rail Plan, Indian Railway

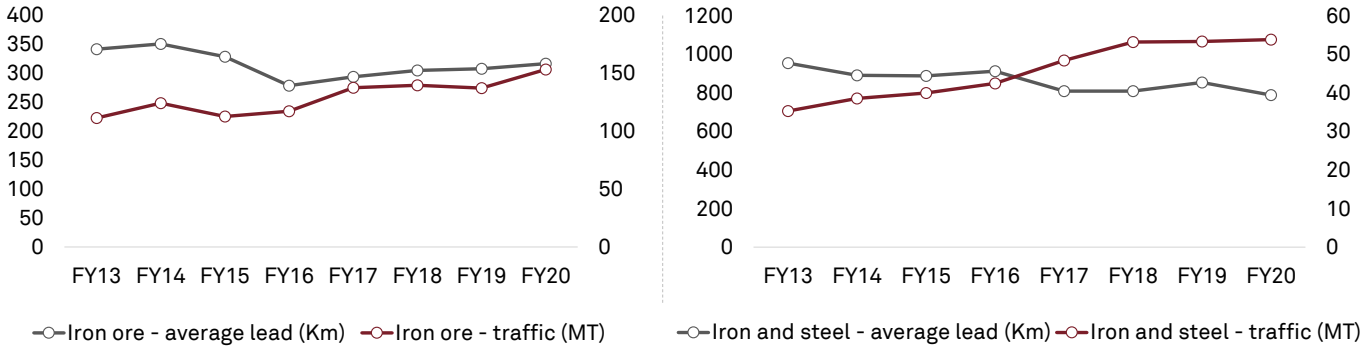
IRON ORE AND IRON & STEEL



- Second largest freight volumes and revenue contributor to Indian Railways over the past five years
- In fiscal 2020, iron ore and iron & steel contributed to ~17% of the total freight basket and revenues for IR

The iron ore, raw material for steel plants and iron and steel traffic is the second largest revenue and freight volume contributor for IR. Traffic from these commodities is primarily driven by the steel industry with iron ore exports traffic amounting to only 5-11% of the total traffic plying on rail. Because of its capability to handle high loads over a longer haul, rail becomes a key mode of transportation for both iron ore and the finished and steel products, currently catering to ~17% of the rail freight volumes. Though rail has been the preferred mode for transportation for bulk iron ore, road transportation has been able to capture significant volumes of finished products such as steel. This is even in cases where leads exceed 500 km owing to factors such as costly handling and additional last-mile costs associated with rail transportation as well as competitive freights offered by road transportation service providers.

Figure 16: Traffic and average lead distance for iron ore, iron and steel



Source: Indian Railways Statistical Statements, CRIS analysis,

As per the Draft National Rail Plan, an analysis of total freight costs incurred by Rashtriya Ispat Nigam Limited for transport of steel products across locations (1000+ km) revealed that the cost of rail transport is 7-40% higher than road transport. This scenario requires significant initiatives from IR to bring down the costs of steel transportation through rail to achieve a higher modal share.

The steel industry is primarily driven by construction, consumer durables sectors such as automobile, the capital goods sector, and other manufacturing. Of late, the steel sector has seen multiple headwinds due to slow down in these sectors. Indian steel demand for this fiscal is projected to decline by a sharp 20%[17] after growing 1.4% in fiscal 2020 to 100-MnT, mainly due to the adverse impact of the lockdown. However, going forward, steel demand is expected to pick up riding on infrastructure investments by the government and pent-up demand release, especially in construction and infrastructure, thereby providing an opportunity for rail to attract higher freight traffic.

[17] Research study by ICRA

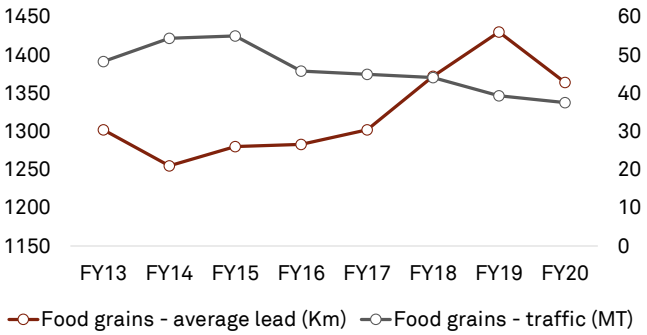
Food grains



- In fiscal 2020, food grains contributed ~3% to the total freight basket and 5% to IR's freight revenue
- Food grain traffic for rail is primarily driven by the demand from the public distribution system

IR handles pan-India food grain transportation — a key commodity that contributed 5% to IR's freight revenue in fiscal 2020. Punjab, Haryana and Madhya Pradesh account for ~90% of wheat produced in India. Similarly, Punjab, Haryana and Chhattisgarh account for ~76% of procured rice. As a result, most of the food grain traffic originates from Punjab and Haryana and is routed to south and north-east India. Considering the significant lead distance between the source and consumption centres, rail is better suited for transportation. However, decentralised procurement in different states has affected IR's food grain traffic as it has largely relied on food grain traffic originating from north India.

Figure 17: Traffic and average lead distance for various food grains



Source: Indian Railways Statistical Statements, CRIS analysis

According to the Department of Agriculture, Cooperation and Farmers Welfare's Third Advance Estimates for fiscal 2020, total food grain production in India is estimated at a record 295.97 million tonnes,[18] compared with 285.21 million tonnes during fiscal 2019. Compared with average food grain production over the last five years, i.e. fiscal 2014 to fiscal 2019, food grain production is expected to be ~25.89 million tonnes higher in fiscal 2020. The major reason attributed to this higher production is the cumulative higher rainfall in fiscal 2019.

IR's food grain traffic is expected to increase in fiscal 2020 on account of the surge in public distribution because of Covid-19. However, in the long term, it is expected to remain flat.

Containers

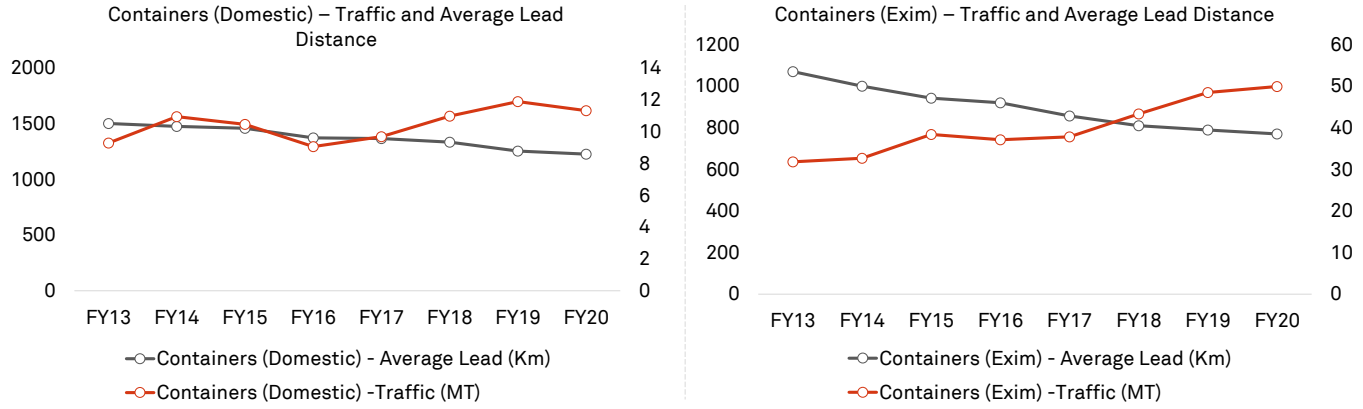


- In fiscal 2020, container volume contributed to around 5% of the total freight basket and 5% of IR's freight revenue

IR's container traffic comprises export-import (Exim) containers and domestic containers. Exim container traffic is largely driven by international trade whereas domestic container traffic is dependent on domestic demand for goods such as fast moving consumer goods (FMCG) and white goods that are often containerised for domestic transportation. Exim accounts for around 80-82% of IR's container traffic, while domestic accounts for 18-20%.

[18] Press Information Bureau, GoI - https://pib.gov.in/PressReleseDetailm.aspx?PRID=1624044

Figure 18: Traffic and average lead distance for container traffic



Source: Indian Railways Statistical Statements, CRIS analysis

Exim container traffic on IR's network has registered a healthy growth rate of ~9.7% over fiscals 2017, 2018, 2019 and 2020. However, as per the Dedicated Freight Corridors Corporation of India (DFCCIL), IR is estimated to have a modal share of only 22-25% in container traffic originating from ports and ICDs currently. This is largely because of higher tariffs for containers in case of rail vis-a-vis road transport on many of the origin and destination pairs and the unpredictability of transit time that often cause the consignors to choose road over rail. Furthermore, the lead distance for containers declined ~4% over fiscals 2017, 2018, 2019 and 2020.

After factoring in the growth potential of container traffic, IR undertook measures such as opening up the rail-based container traffic movement to private operators in 2006. Although such measures saw an initial increase in rail container traffic volume between 2007 and 2010, there has been limited growth in rail container traffic volumes thereafter.

DFC is likely to emerge as a game changer for IR and alter India's container transportation dynamics in the near future. The double-stacking of containers on the WDFC and doubling of length of trains from 700m to 1,500m is expected to handle more containers and reduce transit time for longer distances, thereby setting off its modal advantage.

In fact, the DFCCIL expects port and ICD rail traffic share to increase to 31% from 25%, as double-stack operations, assured transit times, and faster speed will increase container movement on DFCs.

The rail freight segment's key challenges

Infrastructure and capacity constraints

The sub-optimal modal share and stunted traffic growth of the rail network can be largely attributed to capacity constraints, coupled with the extensive development of roadways — a competing mode that has captured much of the freight share from railways. Moreover, capacity constraints have further aggravated congestion as the same rail network is shared by freight and passenger trains.

Given that IR prioritises passenger trains over freight trains due to its common network, the transit time and transit time reliability of freight trains are affected significantly. Notably, in fiscal 2020 until January, average speed of freight trains across various railway zones was ~17-30 kmph, while that of passenger trains was ~31-52 kmph[19]. Furthermore, as per a World Bank report, around 60% of the capacity of rail network is deployed for passenger transport, which contributed only ~30%

[19] Monthly Evaluation Reports, Statistics & Economics Directorate, Indian Railways

to IR's freight revenue.

The issues related to the IR's network's capacity constraints and the resultant congestion are major headwinds for busy routes, especially the Golden Quadrilateral, which links the country's four key metropolises, Mumbai, Delhi, Chennai and Kolkata. In terms of rail transport, the Golden Quadrilateral spans only ~9,100 km (16% of track length), but carries ~58% of freight and 52% of coaching traffic[20]. The congestion on these routes has led to longer lead times for container and dry-bulk movement, resulting in lower efficiency and higher logistics costs for consignors.

Among the key routes on the Golden Quadrilateral, the Delhi-Mumbai rail route, which links the northern hinterland with the ports of Gujarat and Maharashtra, is one of the busiest, with a capacity utilisation of ~115-150%[21]. Similarly, the Delhi-Kolkata route, which connects the coal mines in the east with the power plants in the north has been facing issues due to congestion.

In terms of building adequate infrastructure, acquiring land for this purpose is a significant building block. Land acquisition is difficult in major urban centres because of high cost and multiple land regulations. Moreover, as acquiring land falls under the purview of state regulations and multiple authorities, the process is long-drawn, thereby making it difficult for operators to get big chunks of land for commercial purposes. As most facilities for the maintenance of container freight wagons are available only at some places (and are government owned), utilising these locations efficiently is a significant challenge. Furthermore, most IR goods sheds are in a dilapidated condition and abandoned, leading to inefficiencies in the overall supply chain.

The commissioning and operations of the WDFCs and DFCs, currently under development, would be instrumental in alleviating IR's capacity-related challenges in the freight segment.

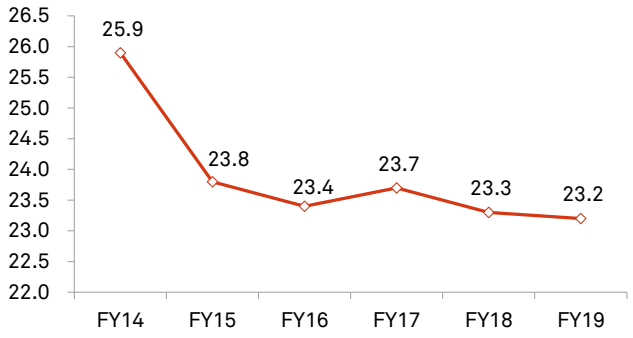
Transit time reliability

The time component of the logistics supply chain is a primary factor influencing the modal choice in freight transportation. IR has been unable to provide timely delivery of services, which is one of the reasons for the shift of short lead bulk traffic (cement, steel products and containers) or in some cases long lead traffic (such as automobile and parcels) to roadways. Due to infrastructure constraints and low priority vis-à-vis passenger trains, freight trains' transit time is elongated and unpredictable.

If the transit time becomes predictable, there is a significant opportunity for a modal shift in unconventional cargo (non-bulk cargo, agro-produce and e-commerce) and time-sensitive cargo (containers traffic, parcel) towards rail. Furthermore, to attract such commodities, it is necessary to increase the speed of freight trains along key corridors. Average speed of freight train, which albeit improved in fiscal 2014 to 23.7 kmph, declined over subsequent years. According to IR's annual statistical summary, the average speed of goods trains decreased at a CAGR of 1.6% from 25.5 kmph in fiscal 2013 to 23.2 kmph in fiscal 2019. However, the average speed of freight trains increased gradually on-year to 45.03 kmph in July 2020 from 23.22 kmph, as the number of passenger trains were reduced amid Covid-19 restrictions. Notably, IR was able to cater to significantly higher freight traffic during this period, thereby underlining the effectiveness of transit speed in attracting freight volume.

[20] https://pib.gov.in/PressReleasePage.aspx?PRID=1514320
[21] Sagarmala National Perspective Plan, April 2016

Figure 19: Average speed of goods trains



Source: IR, CRIS analysis

Price competitiveness vis-à-vis competing modes

Compared with its biggest competitor – road transport – IR's tariff rates are on the higher side due to additional costs pertaining to first- and last-mile connectivity. The following example illustrates cost to transport a 40-feet container from Jawaharlal Nehru Port(JNPT) for a distance of 500 km over rail or road as a mode of transportation.

Table 1: Cost comparison via road or rail for a 40-feet container from JNPT to a distance of 500 km (INR)

Cost component	Railways	Roads
Haulage charges	12,000	15,000
Charges for first/last mile road transportation and handling at origin and destination points	7,000	NIL
Total cost	**19,000**	**15,000**

Source: FICCI

Table 1 shows that because of the higher cost for rail first and last mile connectivity, IR loses its advantage of being a cheaper mode of transportation. Moreover, stakeholders cite IR's uncompetitive freight charges as a key reason for the shift of freight from railways to roads. Similar scenario can be observed in other commodities such as cement, and steel as explained in preceding sections having a negative impact on competitiveness of rail vis-à-vis road transport

An improvement in road infrastructure and faster transit through roadways have enabled road transporters to operator at lower cost and offer competitive rates compared with railways. Furthermore, the fragmented structure of the road transport industry allows consignors to negotiate better rates with road transport service providers. However, going forward, the development of DFCs is expected to help railways to become more cost competitive (if tariffs are revised) and provide it an opportunity to stimulate a modal shift towards railways.

Inadequate diversification of freight portfolio and limited play in high value and unconventional cargo categories

IR is highly dependent on coal and other bulk commodities as they account for a major share of its revenue. They generally comprise ~60-65% of IR's freight revenue and even a higher share in its operational surplus.

The Government of India's commitment to its sustainable development goals and its focus on developing renewable sources of energy are expected to reduce coal demand in the near future. This will disrupt coal generation and drive the share of renewable energy proportionately in states with significant solar and wind energy resources. Most of these states (that have abundant solar and wind energy resources) are far from coal mines, thereby reducing long-haul cargo transportation for IR.

Furthermore, high-voltage DC (HVDC) technologies have made it more efficient and cheaper to transmit electricity than transport coal by railways. Industry sources suggest that the cross-subsidisation model (currently used by IR) would, in the near future, result in freight rates rise that would make transporting coal (and thus thermal electricity) uncompetitive. There is, thus, a need for diversifying the historic commodity basket of railways and increase focus on other non-conventional/non-bulk cargo such as parcel, roll-on-roll-off, e-commerce, retail and white goods, and FMCG to increase IR's freight modal share.

IR's initiatives for freight business



IR has been consciously ramping up the rail modal share in freight transport by introducing several initiatives to drive rail freight traffic. While it undertook many initiatives during the general course of business, it undertook select ones in the wake of the pandemic. This section highlights IR's initiatives to stimulate and facilitate rail traffic growth under both these categories.

Initiatives and policies for stimulating the freight segment

IR has undertaken several policy initiatives and measures to stimulate rail freight demand and tap new cargo categories. These measures include concessions/incentives to customers, new services, infrastructure development and other planning initiatives at the organisational level. Some of the key initiatives are listed in Table 2.

Table 2: IR's key initiatives to stimulate the rail freight segment

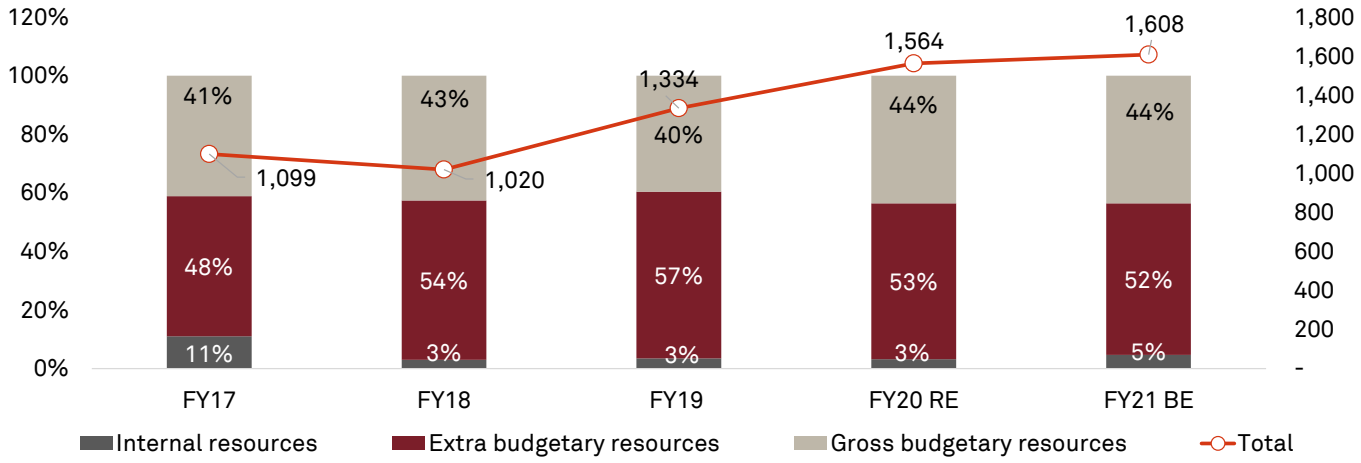
Sr. No.	Key initiatives
1	**Launch of Freight Business Development Portal:** IR launched the Freight Business Development Portal in January 2021 as a one-stop solution for new and existing rail freight customers
2	**Zonal/divisional business development units (BDUs) to increase freight traffic:** Under the directions of the Railway Board, Zonal Railways are setting up BDUs to encourage industry and business establishments to use IR's freight service. These units will be vital for increasing traffic along with strengthening IR's share in traditional commodities such as iron, ore, coal, and other metals
3	**Vyapaar Mala Express trains:** This is a special type of cargo service, where traders can book part of the goods carrying rake as per their requirements or supply orders. The first Vyapar Mala Express left from Kishanganj station (in Delhi) of Northern Railway on August 1 to Jirania station in Tripura under Northeast Frontier Railway (NFR). The train covered a distance of 2,360 km in 68 hours
4	**End-to-end logistics services in parcel business:** IR plans to gradually move away from leasing parcel space in trains and will introduce online booking of parcel space in trains of choice (on a first come first serve basis at pre-determined freight rates). Identification of terminals for conversion into dedicated parcel terminals is underway. Pilot project launched with 'Department of Posts' to provide door-to-door service to customers
5	**Last- and first-mile connectivity:** Zonal Railways appointed service agents to provide first and last mile service to customers. The list of such agencies will be available online to be chosen by customers
6	**Timetabled parcel trains:** In a major boost to the supply chain across the country, IR introduced unhindered services of time tabled parcel trains for nationwide transportation of essential commodities and other goods. This is expected to boost the availability of vital goods required for citizens, industry and agriculture
7	**Kisan Rail**: IR introduced the first Kisan Rail from Devlali to Danapur . This will be a game changer as it will ensure fast transportation of agriculture produce across the nation. Kisan Rail across other routes were also introduced during the current fiscal.
8	**Improvement of goods shed infrastructure:** 55 priority goods sheds have been taken up for major improvements. Efforts are underway to attract private players for the development of goods sheds as modern terminals
9	Allowing Lift On – Lift Off at Group I&II goods sheds/stations with permission from PCCM
10	Opening up of export traffic to Bangladesh for Parcels and Containers – July 10, 2020
11	Opening up of export traffic to Bangladesh for automobiles – August 12, 2020
12	Doubled the speed of freight trains from 23 kmph to 46 kmph[22]
13	Restrictions on co-using private sidings removed - 1,079 private sidings allowed to become private freight terminals effectively

[22] https://pib.gov.in/PressReleseDetail.aspx?PRID=1647330

Infrastructure development

After factoring in capacity constraints, IR has been prioritising infrastructure development, as evident from the significant increase in the capital outlay for asset creation in the past few years. Notably, the capital outlay for the IR increased at a CAGR of 10% over fiscals 2017, 2018, 2019, 2020 and 2021. Furthermore, budgetary allocation within the capital outlay increased at a CAGR of ~11.5% over the same period.

Figure 20: Capital outlay of Indian Railways (FY17 to FY21 BE, Rs billion)

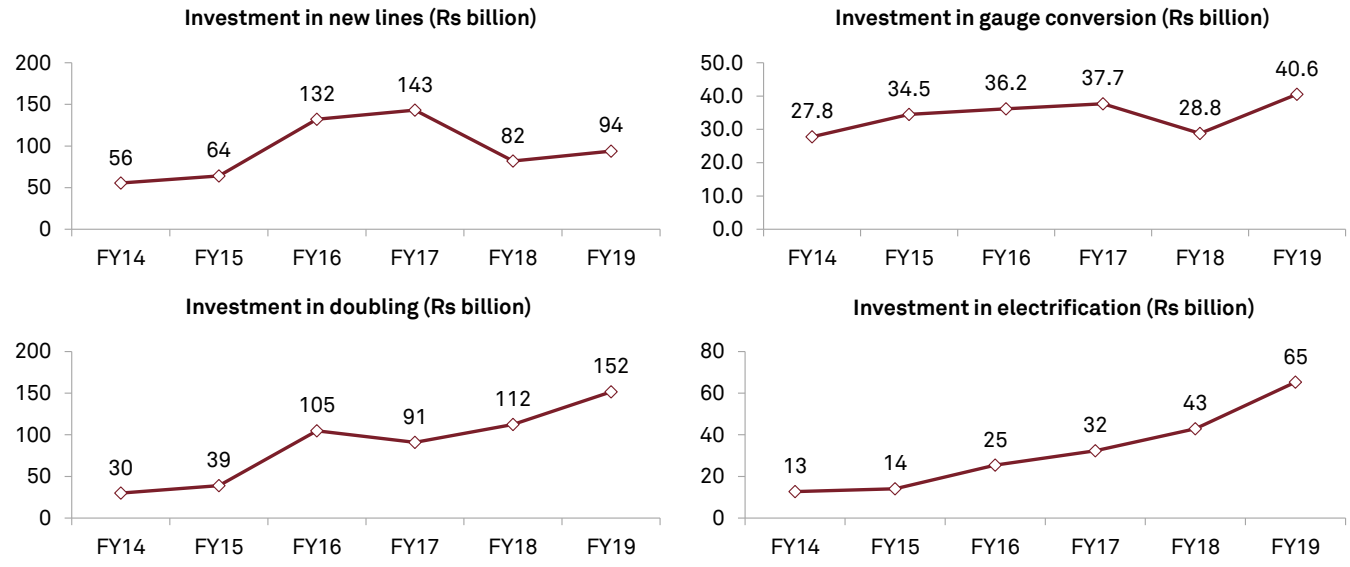


Source: Ministry of Railways – Demand for Grants 2020-21

Increased investments in infrastructure works

Indian Railways has ramped up investments in new line, gauge conversion, doubling and electrification projects in the past few years. The below schematic provides an overview of investments in these projects that registered a significant uptick in the past few years.

Figure 21: Investments in new line, gauge conversion, doubling and electrification projects



Source: Indian Railways Statistical Statements, CRIS analysis

The infrastructure development projects related to new line, doubling and gauge conversion accounted for 2,226 km in fiscal 2020, about ~50% higher than the average annual work in the past five years. Further, the total expenditure incurred on these projects in fiscal 2020 has been INR 398 billion, which has been recorded as the highest-ever yearly expenditure in the history of Indian Railways.

The result for most of these developments, such as increased traffic volume, better operating efficiency and shorter time delays, is expected to be realised in the coming years because of high gestation period of these projects

Initiatives for ease of business during the pandemic

Amid the challenges of Covid-19, Indian Railways focussed on increasing freight operations significantly throughout the country. Freight loading had returned to pre-Covid-19 levels in August, with a total loading of 81.33 million tonne in August 2020, 4.3% higher than the last year for the same month (77.97 million tonne). To boost freight operations in the wake of Covid-19, Indian Railways took a series of tariff and non-tariff measures.

Tariff measures: Some of the tariff related measures by Indian Railways to stimulate freight movement include waiver of stabling charges for private container and automobile trains until October 31, 2020, withdrawal of the busy season charge of 15%, withdrawal of 5% surcharge on two-point/mini rakes, a 5% discount on loaded containers, and discounted rates for round-trip traffic (RTT). Additionally, lead concessions were also introduced for customers with a long lead concession of 15-20% for coal, iron ore, and steel sectors, and short-lead concession of 10% to 50% for all sectors (except coal and iron ore).

Non-tariff measures: Some of the non-tariff measures taken by Indian Railways to boost freight traffic include, allowing two-point unloading for automobile traffic, and opening 23 more two-point combinations for the steel sector. Some other relaxations on restrictions were provided, including facilitating smaller parcel sizes by reducing BCN rake size from 57 to 42, and distance restrictions being relaxed from 400 km to 1,500 km for mini-rakes and from 200 km to 500 km for two-point loading.

Some other measures that have been implemented in the freight segment include:

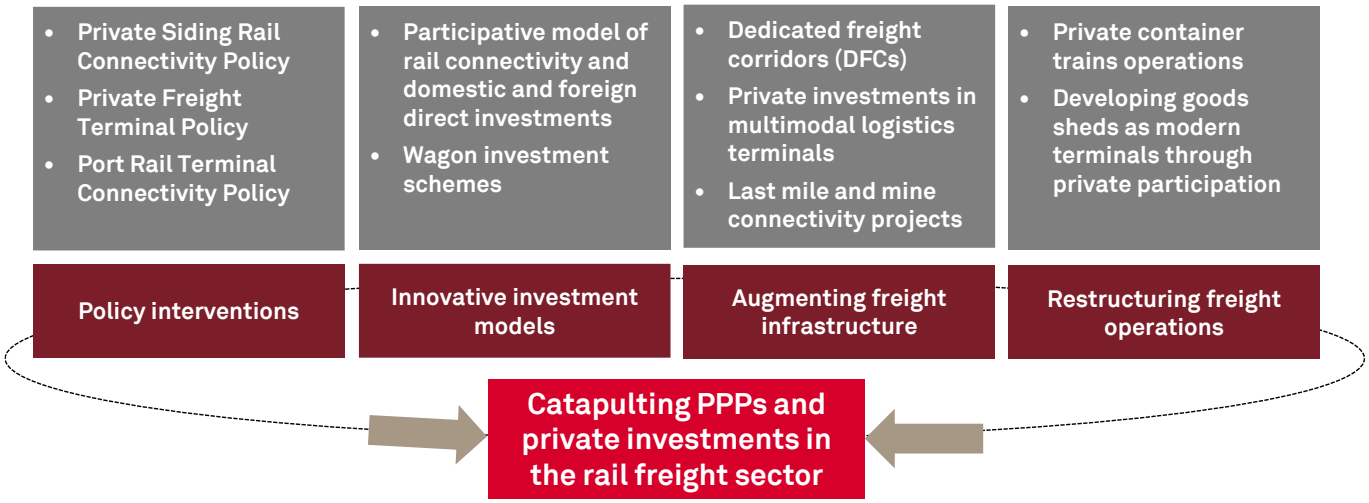
- **Relaxation for loading of steel pipes through Indian Railways –** This scheme is meant to relax the criteria for loading of steel pipes with a diameter of less than 16 inches. The charging is for 50 tonne only or actual weight, whichever is more, and for pipes with a diameter more than 16 inches, the charging will be for a maximum of 63 tonne (61 tonne for accepted CC + 6 routes) or actual weight, whichever is more, per wagon.
- **Freight Incentive Scheme for loading of fly ash** – This scheme aims at generating additional loading of fly ash and ensuring improved utilisation of rolling stock. A 40% concession on normal tariff rate of applicable class for fly ash loaded in open and flat wagons is provided. But, the customer has to give undertaking on F/Note giving consent for loading in open and flat wagons, and that they should be willing to bear the full risk of damage/pilferage of consignment.
- **Relaxation for loading of pet coke through Indian Railways** – This scheme deals with the charging of pet coke. This scheme is permitted for loading in BOXN, BOXNH and BOXNHS wagons. The tonnage for these wagons would be – BOXN: 63 tonne; BOXNHL 68 tonne (66 tonne for excepted CC + 6 routes); BOXNHS 63 tonne.

PPP and private investments in the rail freight sector



Recognising the need for an overhaul of rail freight transportation system in the country and to serve the potential quantum leap in freight transportation demand in future, Indian Railways has been considering the need for private investments in the rail freight sector. Numerous initiatives in this direction have already been taken by Indian Railways over years, while others are expected to be rolled out soon. The introduction of participative models for private investments in rail connectivity, private operations of container trains, private investments in wagons and development of terminal infrastructure are some of the major initiatives undertaken by Indian Railways.

Figure 22: Major initiatives to catapult PPPs and private investments in rail freight sector



Further, in view of the capacity constraints of the rail network, Indian Railways has already embarked upon a long-term plan to develop high-capacity and high-speed dedicated freight corridors (DFCs) along the Golden Quadrilateral. Although the majority of works have been carried out on an EPC basis for the two DFCs, Eastern Dedicated Freight Corridor (EDFC) and Western Dedicated Freight Corridor (WDFC), significant private investments and PPP opportunities prevail and would further open up with the upcoming four new DFCs (East–West Corridor, North-South Corridor, East Coast Corridor and Southern Corridor).

Various other initiatives in the form of policy support, such as the Private Siding Rail Connectivity Policy, the Private Freight Terminal Policy and the Port Rail Terminal Connectivity Policy, are already in place. Moreover, substantial interest from private players has been registered for private freight terminals, private sidings and port-rail connectivity projects, among others.

Participative models for investments in railways

In December 2012, with the objective of attracting private capital to boost rail infrastructure, Indian Railways issued the policy for participative models for rail connectivity and capacity augmentation to further the development of last-mile connectivity. The policy provides five models for implementation of various types of rail-connectivity and capacity augmentation projects as provided in the table below:

Table 3: Participative models for rail-connectivity projects facilitating domestic and foreign direct investments in rail projects

Item description	Non-governmental railway private line model	Joint venture model	Build, operate and transfer (BOT) model	Customer-funded model	BOT annuity model
Project development	By developer and examined by Indian Railways	By Indian Railways	By Indian Railways (appraisal as a PPP project)	By Indian Railways	By Indian Railways
Project structure	Developer to enter into an agreement with Indian Railways on its own or as a JV with infra finance and development institutions	Indian Railways or its PSU to hold a minimum 26% of equity in the JV	Developer to enter into concession agreement with Indian Railways	Customers to provide advance payment for project cost	Developer to enter into concession agreement with Indian Railways
Funds	Mobilised by project proponent	Debt to be raised through project finance route without any guarantee from the Central government	Mobilised by the developer	Customer to provide advance to IR	Mobilised by the developer
Land	Acquired by the developer, Indian Railways' land may be provided on lease/licence basis; Ownership of land to rest with developer	Acquired by IR at JV's cost or by JV itself; Ownership of land to rest with IR	Land acquisition to be done by IR at its own cost	Land acquisition to be done by IR at its own cost	Land acquisition to be done by IR at its own cost
Construction	By developer with certification from IR	By JV with certification from IR	By developer with certification from IR	By IR	By developer with certification from IR
Revenue model	Indian Railways to pay user fee for using the infrastructure; 95% of the revenue to be shared after deduction of operation and maintenance costs	Revenue stream of JV to be established through revenue apportionment from freight operation	Base tariff applicable at the RFQ stage, to be escalated at a rate linked to WPI. Ministry of Railways to pay 50% of apportionment freight revenue as user fee. The ministry will guarantee 80% of projected revenue during any year. In case the actual user fee in particular year is in excess of 120% or 150% of projected revenue, 50% or 75% of excess revenue, respectively, will be paid to the ministry by the concessionaire. This	Indian Railways will pay up to 7% of the amount invested through freight. Rebate on freight volume moved on the project every year until the funds provided by the project beneficiary are recovered with interest at a rate equal to the prevailing rate of dividend payable by Indian Railways to general exchequer at the time of	Payment to concessionaire will be through annuity, which is determined through competitive bidding

Item description	Non-governmental railway private line model	Joint venture model	Build, operate and transfer (BOT) model	Customer-funded model	BOT annuity model
			system has inbuilt incentive for the concessionaire to bring more traffic	signing of the agreement	
Concession period	No concession period and transfer of assets	30 years, subject to both upward and downward reduction, depending on shortfall/excess of traffic	25 years, may be extended up to 30 years in case of revenue shortfall	15-20 years, depending on feasibility	NA

Source: Indian Railways, CRIS analysis

Three of the aforementioned models (private line, JV and customer-funded) involve participation of private players as strategic investors and two other (BOT and Annuity models) are pure PPP models. The Mundra Port rail connectivity project and Dharma Port rail connectivity project are examples of successful projects under the Non-Government Railways Model. Further, the Pipavav Port rail connectivity project and the Kutch Rail Company Limited are the successful examples of projects executed on the joint venture model.

Container train operations

In January 2006, in a landmark initiative to introduce competition in the container operations segment, the government allowed the entry of private and public sector operators to obtain licences for running container trains on the IR network. Until then, the Container Corporation of India, a subsidiary of Indian Railways, was the monopoly operator of container trains in India. This initiative was the first significant move of its kind where private parties were allowed to make entry into the domain of railway operations with direct customer interface.

The entire network of Indian Railways was classified and grouped into four categories, based on the existing and anticipated traffic volumes of ports.[23]

Figure 23: Key categories of licences for private container train operators

Category I	• Rail corridors serving the routes from JN Port / Mumbai Port to National Capital Region area. This includes existing and future terminals falling in Delhi area linked to JN / Mumbai port.
Category II	• Rail corridors serving JN Port and its hinterland, other than Delhi area
Category III	• Rail corridors serving ports of Pipavav, Mundra, Chennai / Ennore, Vizag, Kochi, and their hinterlands
Category IV	• Rail corridors serving ports of Kandla, New Mangalore, Tuticorin, Haldia/Kolkata, Paradip, Mormugao, and their hinterlands

The investments and achievements by container train operators have been remarkable, and these players have been able to increase their rail share on the above routes by providing integrated logistics solutions, lower transport costs/shorter transport times, greater reliability, and customised solutions.

However, continuous support from Indian Railways on various fronts would be needed for success of this model. Operators should be liberally allowed to pick up entire containers from trains and drop them off on container trucks —'lift-on, lift-off' operations.

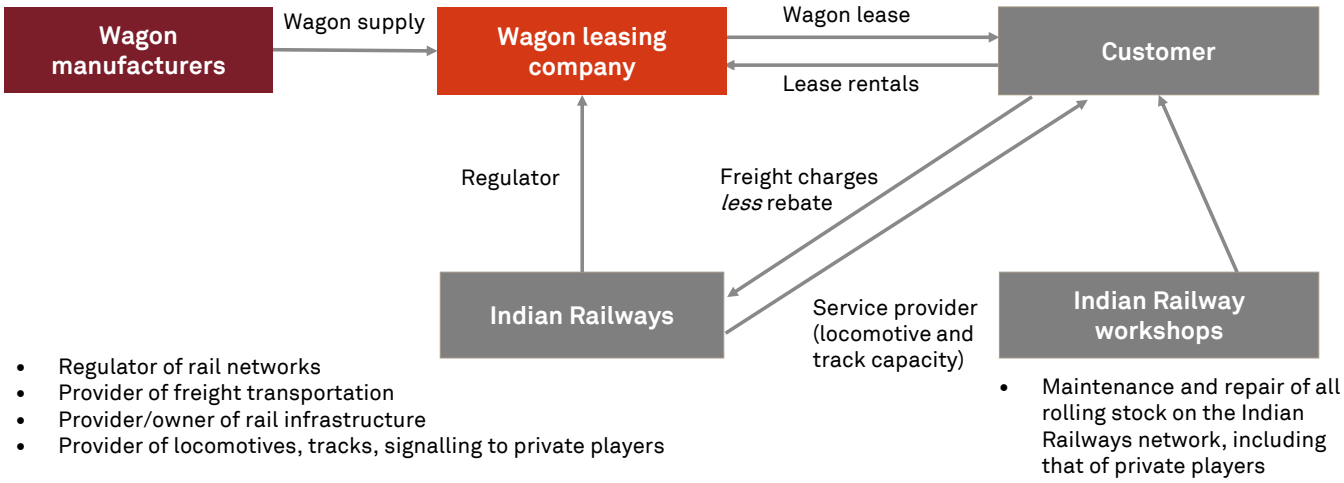
[23] http://www.wctrs-society.com/wp-content/uploads/abstracts/lisbon/selected/02200.pdf

Permitting 'lift-on, lift-off' would promote multimodal movement of cargo and also enable door-to-door operations. At present, Indian Railways permits such operations in [24]5% of the 258 container terminals. From the remaining terminals, operators are supposed to load and unload cargo (packets or sacks) from within the containers, while they are atop the wagon on the train.

Wagon investment schemes

IR has been rolling out various wagon investment schemes to attract private investments in rolling stock. In 2012, the first scheme to facilitate private investments in the wagon leasing market in India was launched. The scheme broadly has four major stakeholders, namely wagon manufacturers, wagon leasing companies, IR and end users. The interrelationship between the stakeholders is presented below.

Figure 24: Inter-relationship of various parties in wagon leasing arrangements



Source: CRIS analysis

The scheme's introduction further strengthened IR's ambitious goals of attracting private investments in rolling stock. Apart from the wagon leasing scheme, IR also has other schemes for attracting private investments in rolling stock customised for a specific category of investors. These schemes have seen a number of changes over the years based on the feedback received from the industry. As of now, the schemes in place for private investments in rolling stock include (following amendments) the Liberalised Wagon Investment Scheme (2018), the Wagon Leasing Scheme (2014), the Automobile Freight Train Operator Scheme (2014), the Special Freight Train Operator Scheme (2018), and the General Purpose Wagon Investment Scheme (2019). A glimpse of these schemes is as given below:

[24] Web sources; News articles

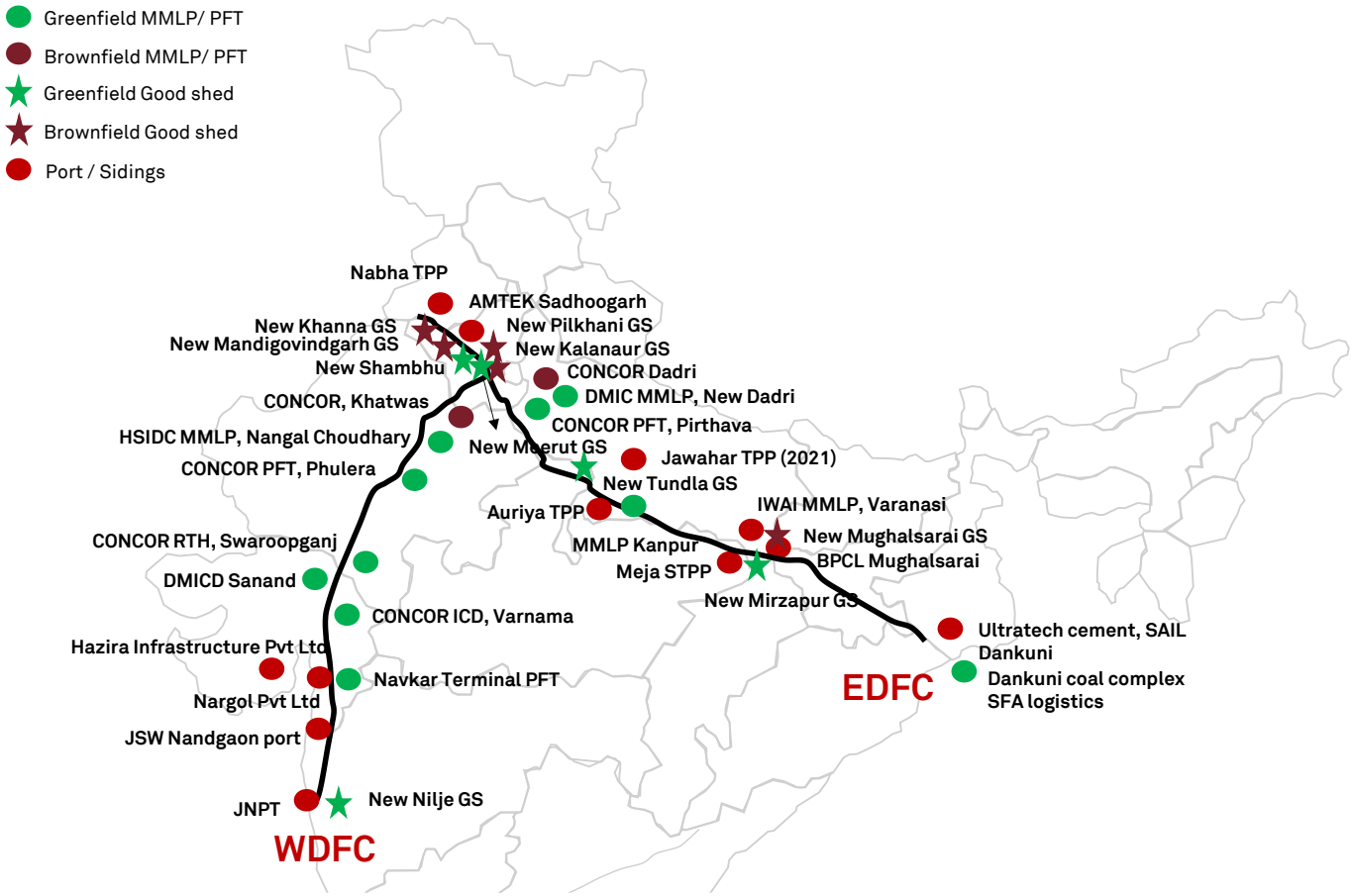
Figure 25 Overview of various wagon investment schemes

Liberalised Wagon Investment Scheme (2018)	• The scheme strives to attract private investments in high-capacity (2 tonne higher than the payload of extant wagons) and special-purpose (for a specific commodity or group of commodities) wagons to be run in pre-approved closed circuits • To attract players investments, the scheme provides 12% rebate on base freight and 0.5% for each additional tonne of payload for high-capacity wagons for 20 years; 15% rebate is granted for special-purpose wagons for 20 years	**Status as of March FY19** **84 rakes approved, 51 inducted**
Wagon Leasing Scheme (2014)	• This scheme allows induction of rakes on a lease basis through the PPP route. As per the scheme, procurement of wagons through the leasing route is permitted for only special-purpose wagons, high-capacity wagons, general-purpose wagons, and wagons for container movement • Leasing companies lease out rakes to end-users, logistics service providers	**137 rakes approved, 48 inducted**
Automobile Freight Train Operator Scheme (2014)	• The scheme permits procurement and operation of special-purpose rakes by private parties	**59 rakes approved, 19 inducted**
Special Freight Train Operator Scheme (2018)	• The scheme was introduced to increase Indian Railway's share in non-conventional traffic by introducing high-capacity and special-purpose wagons • Under this scheme, select commodities are allowed with different registration charges according to the commodity • To attract private players, the scheme provides 10% rebate on base freight and 2% for increase in throughput by 10%, capped at a maximum of 10% for high-capacity wagons for 20 years; 12% rebate is granted for special-purpose wagons for 20 years	**28 rakes approved, 7 inducted**
General Purpose Wagon Investment Scheme (2018)	• This scheme allows investments by private players in general-purpose wagons, addressing issues of wagon unavailability • Wagons to be run on approved routes; freight rebate of 10% for 15 years, capped to yearly and cumulative lease payments to be made to IRFC for similar wagons, and to recovery of capital cost of the rake	**77 rakes approved, 2 inducted**

Developing terminal infrastructure through private investments

Development of terminals through private investments would play a critical role in augmenting freight transportation facilities and services. For instance, both IR and private players can benefit if industries and logistics parks are set up in the vicinity of DFCs. Based on this concept, the Delhi-Mumbai Industrial Corridor (DMIC) and WDFC, and the Amritsar-Kolkata Industrial Corridor (AKIC) and EDFC were conceived. Various logistics parks and rail-junction facilities have been proposed along these corridors. The industries and logistics parks in the vicinity would have better access to DFCs, which, in turn, will garner traffic from these developments, creating a win-win situation for all. The progress of these industrial corridors, development of logistics parks and other private sector initiatives will be critical for the success of DFCs.

Figure 26: Private freight terminals, railway sidings and port connectivity projects along DFCs



Source: CRIS analysis; DFCCIL

Moreover, long-haul and point-to-point delivery challenges are hampering the movement of certain perishable commodities such as fruits and vegetables. Currently, railways plays a small part in the supply chain. The agri supply chain faces multiple challenges such as lower shelf life and cold chain requirements for storage and transportation, among others. Hence, to increase the share of agricultural traffic, including perishables, it will be pertinent to create facilities at railway siding, provide tailor-made containers for handling such kind of perishables and offer an assortment mix.

In 2018, 58 units were notified as private freight terminals handling 15 million tonne (MT) of cargo[25]. Further, 100% FDI is allowed under the prevailing policy in this segment and expected to attract private capital from foreign investors as well.

Moreover, the recent initiative to upgrade goods shed with modern handling facilities is also expected to provide immense opportunities to private investors in IR projects.

[25] India: Evolution of Integrated Logistics, JLL 2019

Recommendations and the way forward



IR has taken a number of initiatives to improve its freight traffic and revenues. This section outlines key recommendations that IR can implement to accentuate rail freight traffic and modal share in India.

Enhancing modal share in existing commodities and capturing new cargo categories

As discussed in the preceding sections, the stagnant freight portfolio is one of the key bottlenecks for IR's high traffic growth. Though there is a significant leeway in terms of an improvement in modal share and traffic volumes from many existing commodities, IR has to capture new cargo streams to achieve its target of gaining 44% modal share by 2051 and doubling freight volumes by 2040. Therefore, IR could consider the following measures:

Improving rail modal share for existing commodities in the freight basket

The first step towards increasing IR's overall freight volumes would be to enhance volumes in existing commodities by increasing the modal share. Some of the commodities that can be targeted are given below:

Cement

Cement accounts for ~10% of freight volume and ~7% of freight revenue for railways, highlighting its significance. However, the rail lead distance for cement has declined over the past few years. Notably, railways statistics and data from the Cement Manufacturers Association suggest that there has been an increasing shift in cement traffic from rail to roads. The cement industry has often cited various factors including high haulage costs, issues of multiple handling, and lack of wagons for carrying their loads for moving away from rail. Given this scenario, IR should undertake extensive consultations with the cement industry to identify key measures to attract cement traffic.

Further, given that bulk transport of cement is cost competitive vis-à-vis road transport, IR should establish bulk cement terminals and promote investments in bulk carrier wagons. It should be noted that commissioning of WDFC could accentuate freight traffic due to its alignment along the cement cluster.

Steel

India is currently the second-largest crude steel manufacturer in the world. Generally, steel is considered to have a high rail coefficient due to rail's capability to handle high loads over long haulage distances. However, it is estimated that IR currently transports significantly low volumes of the total steel and related products. Given that railways has the capability to provide specific wagons for steel loading and private players have also invested significantly in specialised wagons for steel loading, there are significant opportunities for railways in terms of steel traffic. For instance, IR can consider allowing and scaling mini rakes and multi point loading for steel to capture traffic from MSMEs, offering long and short lead discounts, and facilitating proliferation of 25-tonne axle loads, among others.

Containers

Given that containerised transport has registered significant growth in terms of international trade as well as domestic freight transportation (primarily for FMCG and white goods), this segment can offer an opportunity to railways. As of now, *IR* moves around 61MT of container traffic annually of which around 18%-22% are domestic containers. Currently, IR's share in export-import (Exim) container movement is estimated to be only 22%-25%. The consignors have often cited reasons such as high tariffs, issues in first and last mile connectivity, higher and unpredictable transit times as major reasons for rail not being the preferred mode for transportation of containers. During the lockdown, there was a significant shift of container traffic from road to rail observed at India's largest container port JNPT.

Notably, this provides a testimony of the possibility of shifting container traffic from roads to rail. Therefore, in consultation with industry participants, IR should develop a strategy for making rail the preferred mode for container transportation. These consultations should include all participants including logistics operators, consignors and ports, among others. Further, railways should also focus on enhancing domestic container volumes that have grown at only 2.8% between fiscals 2013 and 2020. Domestic container transport can enable the movement of FMCG products and white goods by railways. However, shorter and predictable transit times and last mile connectivity will be a key to spur growth in domestic container volumes.

Automobiles

The Indian automobile industry is largely present in the form of clusters primarily in Haryana, Maharashtra and Tamil Nadu. However, transport of manufactured vehicles is undertaken across all parts of the country. IR came up with the Automobile Freight Transported Operator scheme to capture this cargo stream. However, the scheme has failed to achieve critical mass. Therefore, IR should identify key measures to capture the traffic from this high potential segment. It could also make changes in the design of BCACBM wagons to enable the movement of two wheelers, SUVs and LCVs and enhance the capacity of wagons for double decker movement.

Capturing new cargo categories - transformation from transport service to logistics service provider

IR should target new cargo categories through a multi-pronged strategy to generate higher freight volumes and revenues. IR could take some of the following key steps to capture new cargo streams:

Improving existing infrastructure and operations through participation of logistics players

The railways has ~1,000 goods sheds, which are in a poor state and require rehabilitation. Also, most sheds do not have adequate infrastructure to handle all types of goods and commodities. The railways has formed a committee to formulate a policy for modernisation and privatisation of these good sheds. It aims to operate these good sheds as private freight terminals (PFTs) or dedicated parcel terminals. IR should involve logistics operators as strategic partners in its efforts to transform these goods sheds into multimodal terminals. The move will not only enable railways to develop these facilities as per their requirements but also help divert traffic from road to rail.

Ensuring first- and last-mile connectivity

The railways has recently announced two key initiatives for providing last mile and first mile services to the consignors. The first one is a pilot project with the Department of Posts at select locations and the second one is the listing of first and last mile services providers online to be chosen by the consignors. These initiatives could enable railways to capture new high-value cargo categories.

The railways may also consider collaborating with e-commerce companies, logistics players/cargo aggregators (already started to some extent in parcel trains started during lockdown) for this purpose. The collaboration with logistics players/cargo aggregators shall enable last mile connectivity to the railways that shall be essential for multiple cargo categories. In the long run, this is also an opportunity for railways to showcase its capability to serve non-traditional sectors and understand as well as resolve bottlenecks in provision of services to such sectors.

Parcel business strategy

The share of railways in overall parcels movement in the country is minimal, with a majority of parcel traffic routed through road transportation. Additionally, there has been a consistent decline in parcel movement growth on IR over years. Some major issues for parcel movement through railways include non-availability of space in trains for carriage of parcels; over-carriage of parcels; no prior intimation regarding arrival of parcels; damage during transit; and no segregation of space for parcel

loading/unloading at different originating and destination stations. In addition, handling of parcels in passenger area obstructs free movement. For development of the parcel business, the passenger business should be separated from it. There should be specific parcel vans and collaboration with key players to ensure timely intimation and aggregation of parcels to ensure full parcel rake(s).

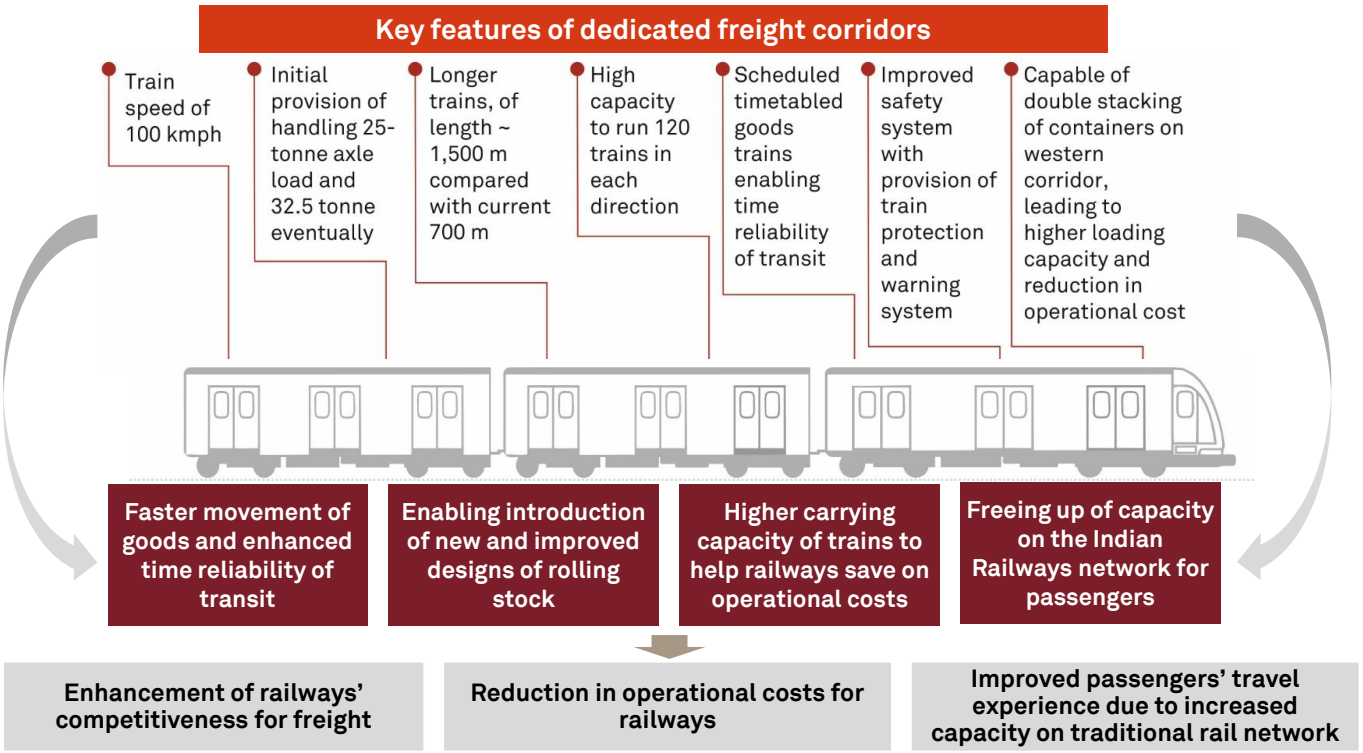
The railways recently announced a number of initiatives for its parcel business segment. However, ensuring a short lead time and predictability of transit time shall be of paramount importance for capturing the parcel business from roads. Further, to capture traffic from this segment, pick and drop kiosks can be developed at various major stations.

Leveraging DFCs

IR's DFC project is often considered a game changer for rail freight transportation in India. DFCs can provide multiple benefits to the rail freight sector, particularly with respect to addressing capacity constraints and on-time delivery. One of the major benefits that DFCs will yield to IR will be a reduction in operating costs. For instance, double-stacking of containers on WDFC and doubling of length of trains from 700 meters to 1,500 meters are expected to reduce IR's per-unit operating cost significantly. Further, the use of electric traction, instead of diesel traction, will also result in savings on energy costs. Overall, DFCs are expected to lower the operating cost of rail freight transport by about 40%. This will provide significant leeway to railways for rationalisation of tariffs, potentially engendering a significant modal shift from road to rail.

With state-of-the-art technology and design, DFCs will enable freight trains to operate at speeds as high as 100 kmph. Hence, the average transit time for freight movement is expected to shorten drastically, enabling faster movement of goods.

Figure 27: Benefits envisaged from dedicated freight corridors



Source: CRIS analysis

The MoR/DFCCIL may consider certain elements to harness the full potential of this world class infrastructure project. These include:

Passing on the cost benefits to customers – The resultant savings on operational costs due to commissioning of DFCs is expected to help railways immensely on the financial front. However, railways may consider passing on some of the cost benefits to customers through lower tariffs. The reduction in tariffs will not only enable railways to have a competitive advantage over other modes but also help the industry reduce logistics costs through a reliable and cost-effective mode of transport.

Accelerating industrialisation along the corridors – If industries are set up in the vicinity of DFCs, both railways and the industries will benefit. Recognising this, the Delhi-Mumbai Industrial Corridor (DMIC) and WDFC and the Amritsar Kolkata Industrial Corridor (AKIC) and EDFC were conceived. Though DMIC was approved in 2007 and AKIC in 2014, progress on these corridors has been limited. To leverage the full potential of DFCs, work on both the industrial corridors should accelerated in tandem with commissioning of DFCs.

Developing logistics infrastructure along the corridors – DFCs are expected to enable one of the most important features for a mode of transportation i.e., punctuality. This feature of DFCs can help railways tap unconventional cargo segments such as express logistics and perishables in the future to offset an expected decrease in coal requirements for power plants owing to expansion of renewables. This is notable in case of EDFC that expects 50%-55% of coal traffic.

However, to tap these segments, aggregation infrastructure shall be required that can amass goods at specific loading points and help in their transition to rail. Though logistics parks and facilities have been planned along the corridors, progress on their development has been limited. DFCCIL and DMIC are currently in the process of developing such logistics parks at some of the locations.





To explore this area holistically and strategically, DFCCIL may consider identification of specific locations across the entire alignment and development of build to suit logistics facilities therein, preferably through the PPP mode. This shall be instrumental in capturing agricultural cargo due to the element of seasonality and the resultant change in origins and destinations.

Also, to be an end to end-logistics services provider to its customers, DFCCIL may consider joining hands with some private sector logistics players to offer last mile connectivity and end-to-end solutions.

Allowing private players to run trains on DFCs – As per the institutional arrangement envisaged for operations of DFCs, IR will be the sole customer for DFCCIL, which will provide the infrastructure for the operation of trains. IR will pay a track access charge (TAC – user fee) to DFCCIL and other customers/freight operators shall be routed through it. To enhance competition in the sector and service levels, and leverage private sector capital for induction of world class rolling stock, IR may consider allowing private players to run freight trains on the DFC network by paying track access charge to DFCCIL. This is one of the models followed in many countries and several players operating internationally maybe interested in investing and operating in this area.

Establishing an independent regulator – spurring PPPs and tariff rationalisation

An independent regulator for the railway sector has been a long pending demand from the industry. Notably, the establishment of the Rail Development Authority was approved by the Union Cabinet in 2017. However, there has not been much progress on institutionalisation of the authority. The independent regulator shall enable growth of the railways through the following measures:

Rationalisation of freight tariffs

One of the major issues that has been plaguing the railway freight sector is high tariffs because of cross subsidisation of the passenger segment through freight. Notably, India has among the lowest passenger rail tariffs and the highest freight tariffs in the world, negatively affecting the competitiveness of rail as a mode of freight transport. This is further corroborated by the fact that the operating ratio in fiscal 2018 for the freight segment was ~58% vis-à-vis 192% for the passenger segment. Though cross subsidisation of the passenger segment through freight has merits, the extent of subsidisation is always debatable. Therefore, an independent regulator that has a mandate to determine tariffs and the level of cross subsidisation shall help IR achieve competitiveness as a freight logistics service provider.

Facilitating public-private partnerships

IR requires significant investments to relieve itself from capacity constraints and upgrade and modernise its infrastructure. Notably, the National Infrastructure Pipeline alone identified investment requirements to the tune of ~INR 12 trillion in the next five years. Given the inability of IR to generate internal resources and budgetary support, private investments shall be imperative. However, given that the railways is a monolithic organisation with all functions including policy making, infrastructure development and maintenance, transport service operators integrated within a single entity, private investors (especially foreign investors) are often sceptic about protection of their interests and dispute resolution.

This scenario in itself merits constitution of a rail sector regulator. Apart from fixing tariffs, the regulator can also play an independent role in promoting PPP in the railway sector. A cue can be taken from the airports sector where numerous PPP projects have been undertaken successfully after the establishment of the Airports Economic Regulatory Authority of India.

Enabling private investments in rolling stock

IR has been actively undertaking various initiatives to facilitate private investments in rolling stock. In this regard, various schemes have been introduced from time to time including the Own Your Wagon Scheme, Liberalised Wagon Investment Scheme, SFTO scheme, AFTO scheme, Wagon Leasing Scheme and the recent GPWIS scheme. Though the industry has shown considerable interest in these schemes and many players have inducted rakes leveraging these schemes, the results have not been commensurate with the true potential of these schemes. One of the major objectives behind some of the schemes in these categories was to enable introduction of new design wagons in the railways network that are capable of handling cargo that IR traditionally does not cater to. Various players have also cited the desire to induct such new design wagons. However, as per the feedback received from various players, the approval process for new design of wagons by the Research Design and Standards Organisation (RDSO) is not streamlined and sometimes unpredictable. Therefore, to facilitate private investments in rolling stock and enable induction of new design wagons on its network, IR may consider streamlining the RDSO approval process with stipulated requirements and timelines. This shall enable private players to invest in new design wagons in accordance with their needs. IR may also consider decoupling the rebates provided for investments in wagons from the cost incurred by it for similar wagons and coming up with a single policy for wagon investments by merging the existing policies.

Notes

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