

Railways

NOVEMBER
2011



IBEF 
INDIA BRAND EQUITY FOUNDATION
www.ibef.org

For updated information, please visit www.ibef.org

Railways

NOVEMBER
2011

Contents

- ❖ Advantage India
- ❖ Market overview and trends
- ❖ Growth drivers
- ❖ Success stories
- ❖ Opportunities
- ❖ Useful information

For updated information, please visit www.ibef.org

Advantage India

Growing demand

- Increasing urbanisation coupled with growing income is driving passenger segment
- Growing industrialisation across country has increased freight traffic over the last decade

Attractive opportunities

- Freight traffic is set to increase manifold, thanks to investments and private participation
- Many metro rail projects are being envisaged across many cities over the next ten years

2015E

Freight
traffic:
1201.7 MMT

Advantage India

Increasing investments

- Government is investing heavily in the sector, to upgrade the railway infrastructure
- Sector has been witnessing increasing level of FDI participation over FY08-11

Policy support

- Government has increased the scope of PPP, to beyond providing maintenance and other such supporting roles
- Government is providing new lines, increasing the rolling stock to build up capacity

2008

Freight
traffic:
804.1 MMT

Source: Business Monitor International (BMI), Aranca Research

Notes: 2015E – estimated figure for 2015, MMT is million metric tonnes
FDI is Foreign Direct Investment, FY is Indian Financial Year (April to March)

Railways

NOVEMBER
2011

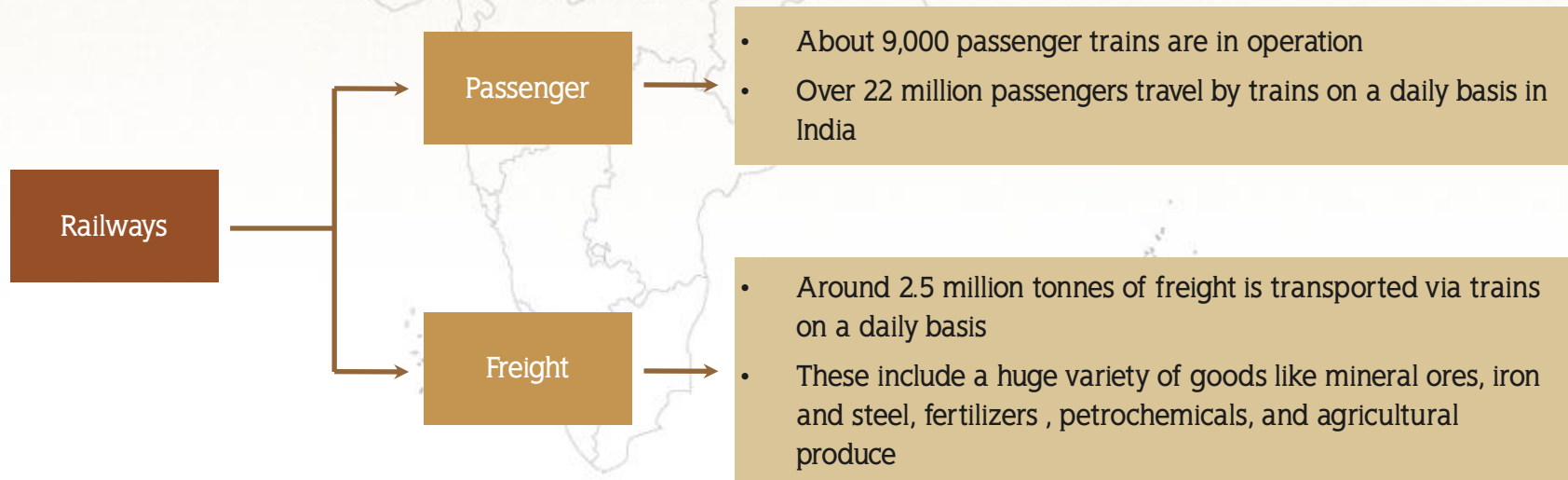
Contents

- ❖ Advantage India
- ❖ Market overview and trends
- ❖ Growth drivers
- ❖ Success stories
- ❖ Opportunities
- ❖ Useful information

For updated information, please visit www.ibef.org

Indian railways has two major segments

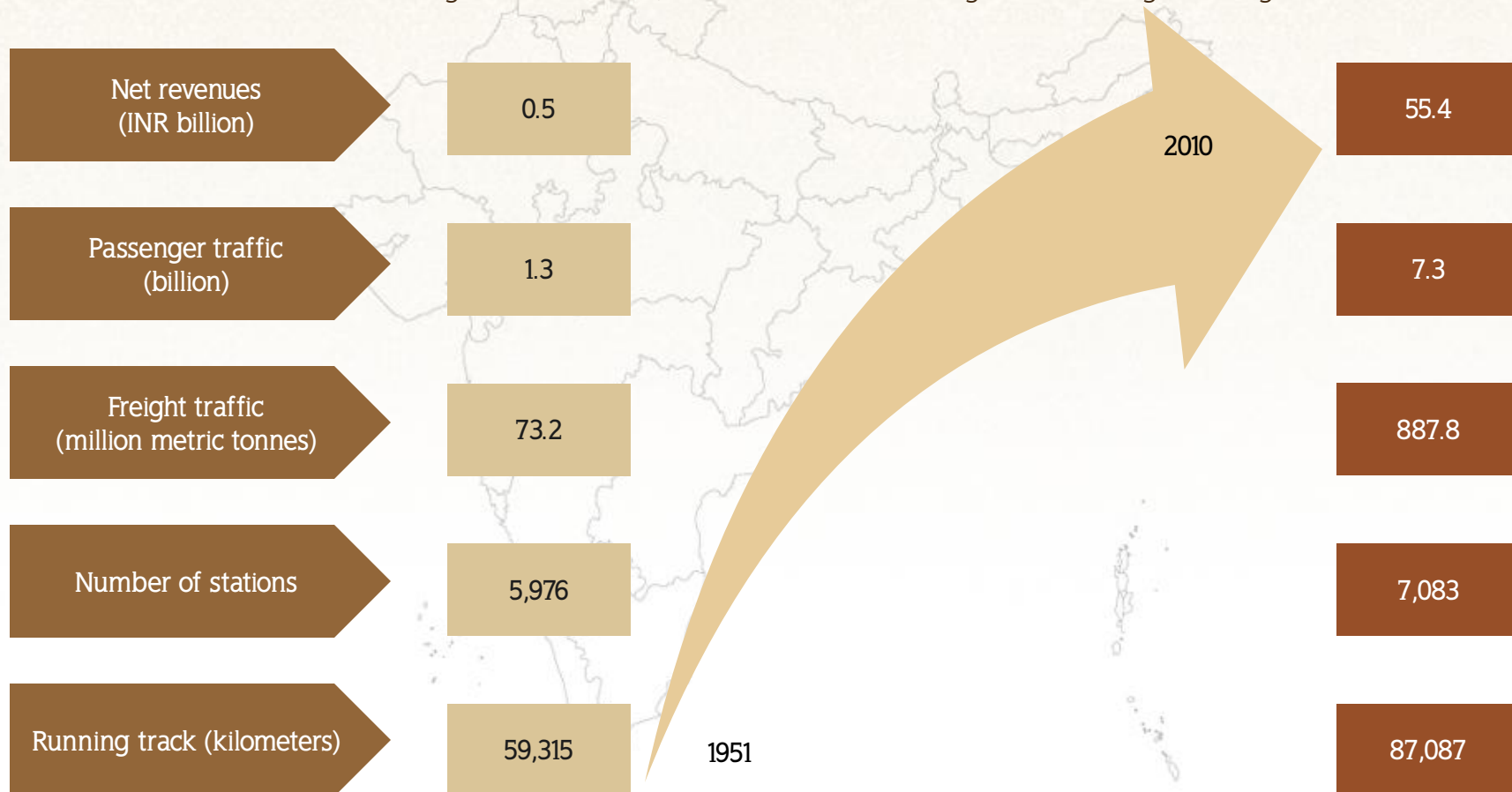
- Indian railways (IR) is –
 - A departmental undertaking of Government of India, which owns and operates most of India's rail transport
 - Overseen by the Ministry of Railways
- It has a total route network of about 64,000 kilometers spread across 7,000 stations
- Operates more than 18,000 trains every day
- It has 220,000 wagons, 45,000 coaches and 8,300 locomotives
- IR's total assets at the end of FY10 amounted to USD42.4 billion



Source: Ministry of Railways, Aranca Research

Evolution of railways in India

→ India has the world's fourth largest rail network, which is the second largest under single management



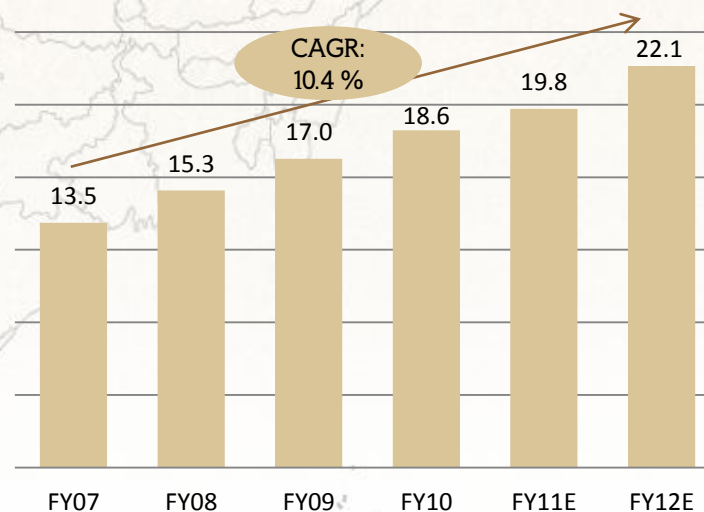
Source: Ministry of Railways, Aranca Research

Strong revenue growth for Indian railways over the years ... (1/2)

- Indian Railways is estimated to generate revenues worth USD22.1 billion in FY12
- Revenues expanding at a CAGR of 10.4 per cent over FY07-12

Notes: CAGR – Compound annual growth rate, E – estimate,
FY – Indian Financial Year (April – March)

Gross revenues over the past few years (USD billion)

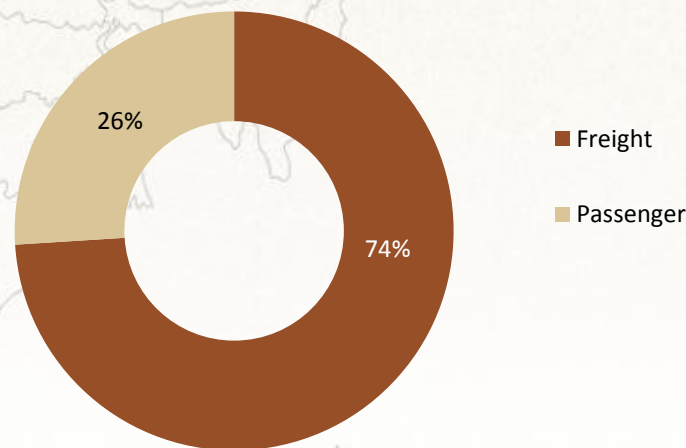


Source: Ministry of Railways, Aranca Research

Strong revenue growth for Indian railways over the years ... (2/2)

- Freight is the major revenue earning segment for the railways, accounting for 74 per cent of the total
- Profits from this segment are used to cross-subsidise the passenger segment

Revenue breakup, by segment (FY10)

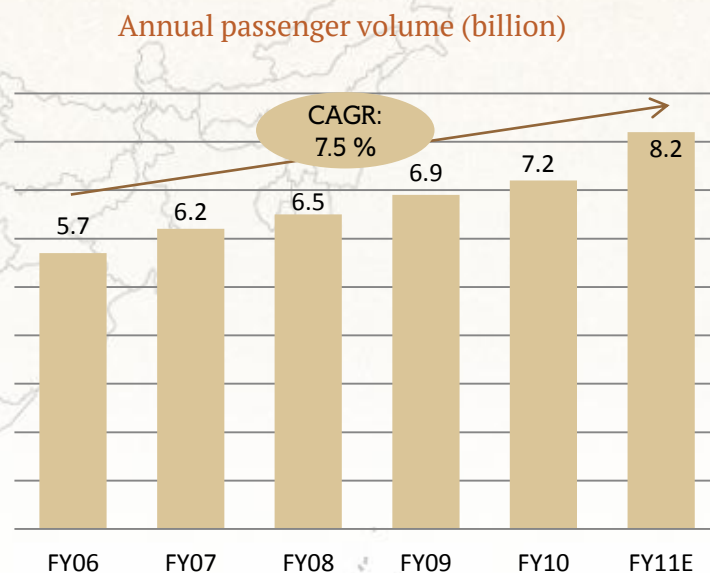


Source: Ministry of Railways, Aranca Research

Passenger and freight volumes witnessed healthy growth ... (1/2)

- Number of passengers travelling by train is estimated to reach 8.2 billion in FY11
- Annual passenger volumes expanded at a CAGR of 7.5 per cent during FY06-11

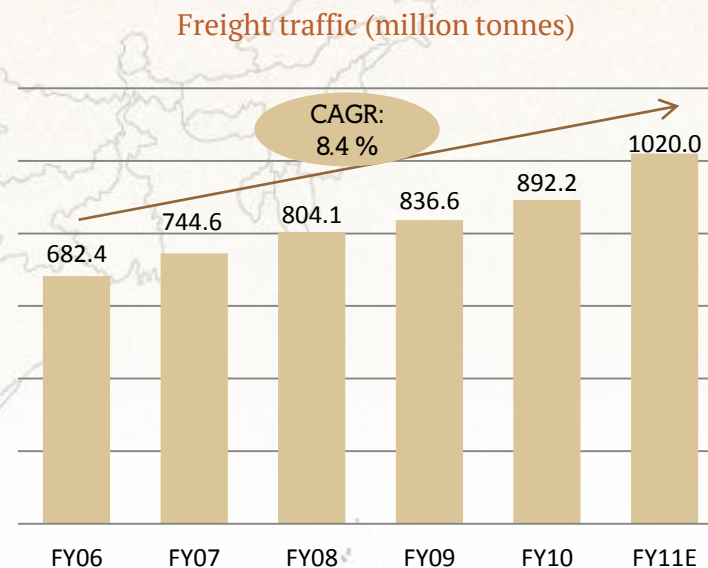
Notes: CAGR – Compound annual growth rate, E – estimate
FY – Indian financial year (April – March)



Source: Ministry of Railways, Aranca Research





Passenger and freight volumes witnessed healthy growth ... (2/2)

- Freight traffic aggregated 1020 million tonnes in FY11
- The figure has increased at a CAGR of 8.4 per cent during FY06-11



Source: Ministry of Railways, Aranca Research




Key players supporting the Indian railways

	Company	Project details
	Container Corporation of India Limited	<ul style="list-style-type: none"> • Navratna PSU under the Indian Ministry of Railways • It is a carrier, terminal operator and warehouse operator
	Dedicated Freight Corridor Corporation of India Limited	<ul style="list-style-type: none"> • Corporation run by the Government of India • Undertakes planning and development, mobilisation of financial resources and construction, maintenance and operation of the Dedicated Freight Corridor (DFC)
	Rail Vikas Nigam Limited	<ul style="list-style-type: none"> • SPV created by the Government of India • It builds engineering works required by Indian Railways
	RailTel Corporation of India Limited	<ul style="list-style-type: none"> • Installation of signalling to double railway lines between Gooty and Pullampet sections • It strives to modernise train control operation and safety system of Indian Railways

Source: Relevant company annual reports and websites, Aranca Research Notes: PSU – Public Sector Undertaking, DFC – Dedicated Freight Corridor, SPV – Special Purpose Vehicle

Private players are moving up the value chain

- Rail projects in India have typically been in the public sector domain
- Private players were involved in allied activities such as track laying and maintenance, maintenance of coaches and wagons, construction of bridges, stations, signaling, and telecommunications works

Company	Project details
 Punj Lloyd	<ul style="list-style-type: none"> • Construction of elevated metro rail viaduct in Delhi • Construction of a 300 km dedicated eastern corridor
	<ul style="list-style-type: none"> • Partial design and construction of a 4.7 km viaduct for east-west corridor of Kolkata Metro Rail Corporation Limited
	<ul style="list-style-type: none"> • Gauge conversion of VilluPuram-Mayiladuthurai section • Installation and commissioning of signaling and telecommunications facilities at NTPC

Expanding scope of PPPs

- The Railways Ministry has proposed for the development of 50 world-class stations in the PPP mode to improve and enhance rail infrastructure in the country
- Some recent PPP projects undertaken or under implementation include the construction of dedicated freight corridors, modernisation of metro stations, and manufacture of rolling stock, including coaches, wagons and locomotives through special purpose vehicles and R3i policy

Source: Relevant company Annual Reports and websites, Aranca Research Notes: NTPC – National Thermal Power Corporation, km – kilometers
R3i – Railways' Infrastructure for Industry Initiative
PPP – Public Private Partnership

Notable trends in Indian railways

Demand for urban transport

- There is a rapid increase in demand for urban mass transportation systems in the country
- Several metro rail projects are in progress to improve connectivity within cities

Mobile ticketing

- Indian railways (IR) launched mobile ticketing services in August 2011 to make the ticket issuing process more efficient
- Users can directly buy a ticket from their mobiles that would be delivered to them through a non-transferable SMS

International investment

- IR has attracted increasing investments from overseas through strategic alliances with various countries over the last few years
- Subsidiaries of foreign companies are being set up to cater to the huge demand offered by Indian Railways

High speed rails

- IR is planning to build six high-speed rail corridors to provide faster rail connectivity across the country
- The trains will be capable of running at speeds up to 300 kilometre per hour

Railways

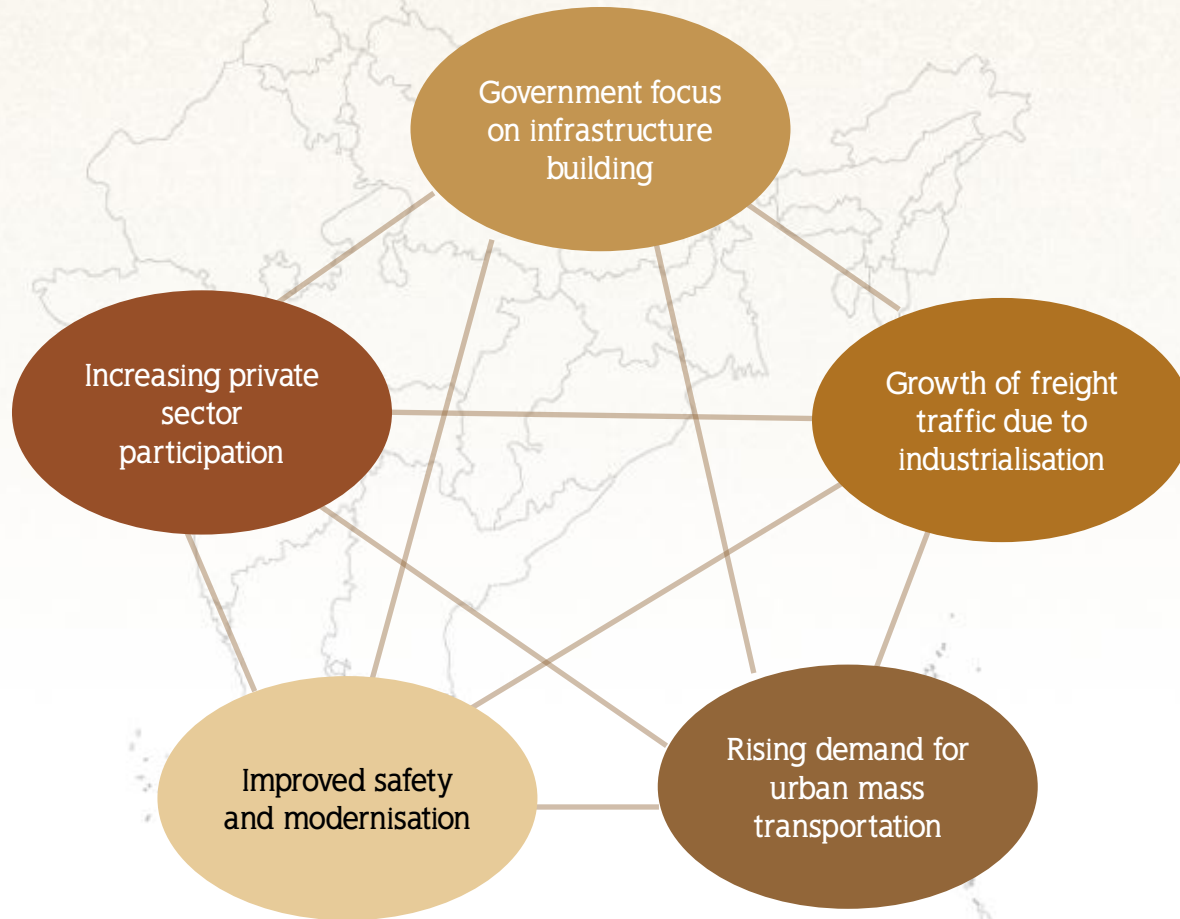
NOVEMBER
2011

Contents

- ❖ Advantage India
- ❖ Market overview and trends
- ❖ Growth drivers
- ❖ Success stories
- ❖ Opportunities
- ❖ Useful information

For updated information, please visit www.ibef.org

Strong demand and policy support driving investments

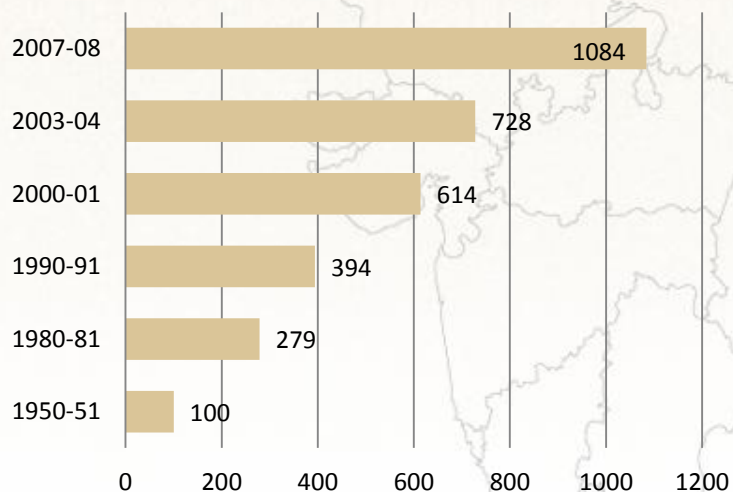


Rising income, urbanisation driving passenger traffic growth ... (1/2)

- Passenger traffic went up by more than 10 times over 1950-2008
- Increasing incomes has made rail travel affordable
- Urban population in India is increasing at 1.4 times the total population; this has led to increase in traffic between urban and rural areas in the country
- Improvement of urban-rural connectivity by rail has been another major contributor of passenger growth

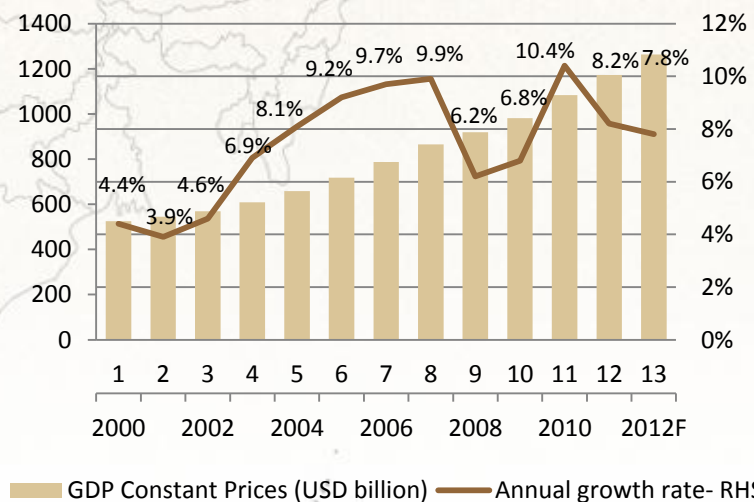
Rising income, urbanisation driving passenger traffic growth ... (2/2)

Passenger traffic growth index (1950-51 as the base year)



Source: Ministry of Railways, Aranca Research

Real income growth



Source: IMF, Aranca Research
Notes: F – forecast

The passenger segment offers a diverse mix of services

Train	Description
Duronto Express	<ul style="list-style-type: none"> • Non-stop point-to-point rail services • Connects metros and major state capitals of India
Rajdhani Express	<ul style="list-style-type: none"> • Air-conditioned trains linking major cities to New Delhi • One of the fastest trains in India with very few station stops
Shatabdi, Jan Shatabdi Express	<ul style="list-style-type: none"> • Intercity seater-type trains for travel during day
Garib Rath	<ul style="list-style-type: none"> • Fully air-conditioned trains, designed for those who cannot afford to travel in expensive trains such as Rajdhani and Shatabdi
Superfast Mail/ Express	<ul style="list-style-type: none"> • Trains that have an average speed greater than 55 kilometers per hour • Have an additional super-fast surcharge
Mail/ Express	<ul style="list-style-type: none"> • More stops than their super-fast counterparts • Stops only at relatively important intermediate stations
Passenger, Fast Passenger	<ul style="list-style-type: none"> • Slow trains that stop at most stations along the route • Low-cost alternative
Suburban trains	<ul style="list-style-type: none"> • Operate in urban areas • Usually stops at all stations and have unreserved seating accommodation

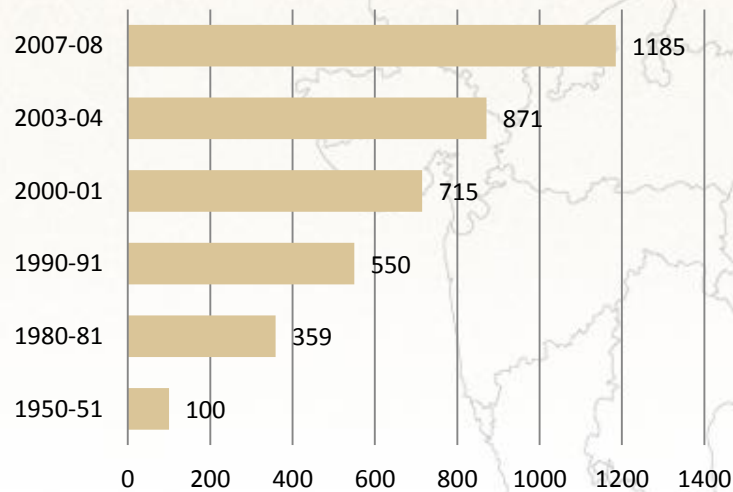
Increasing industrialisation increases freight traffic ... (1/2)

- Freight traffic went up by more than 11 times over 1950-2008
- This traffic is due to the increasing levels of industrialisation across the country as is evident from the growth of IIP over the last decade, which is back on track post 2009
- Increasing freight traffic is generated from these industries year-on-year which are spread out across the country

Notes: IIP is Index of industrial production

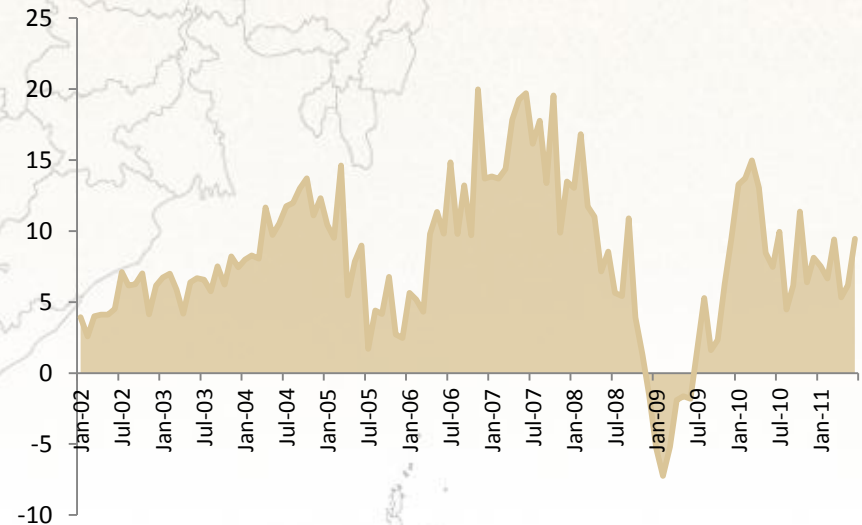
Increasing industrialisation increases freight traffic ... (2/2)

Freight traffic growth index (1950-51 as the base year)



Source: Ministry of Railways, Aranca Research

Index of industrial production



Source: Ministry of Statistics and Programme Implementation, Aranca Research

Policy and regulatory framework ... (1/3)

Dedicated Freight Corridor

- DFCCIL, a special purpose vehicle, was set up for implementing the DFC project, under the administrative control of the Ministry of Railways
- The plan is to construct dedicated freight lines along the eastern (Ludhiana to Dankuni) and western parts (Mumbai to Dadri/ Tughlakabad) of India
- Total length: 3,287 kilometres; total cost: USD10.3 billion
- Construction has started with the project scheduled for completion in FY17

Wagon Investment Scheme

- Indian Railways launched the Wagon Investment Scheme in 2005 to offer freight rebates and supply a guaranteed number of rakes for a period of 7 – 15 years for different types of wagons
- The Ministry of Railways has proposed to set up five wagon factories in Secunderabad, Bardhaman, Bhubaneswar/ Kalahandi, Guwahati and Haldia under the JV/ PPP mode
- It plans to procure 18,000 wagons during FY12

Source: Ministry of Railways, Aranca Research
Notes: DFC – Dedicated Freight Corridor, DFCCIL – Dedicated Freight Corridor Corporation of India Limited, JV – Joint venture

Policy and regulatory framework ... (2/3)

R3i policy

- Aimed at attracting private sector participation in rail connectivity projects in order to create additional rail transport capacity
- The policy allows for four models – (a) Cost Sharing-Freight Rebate, (b) Full Contribution- Apportioned Earnings, (c) Special Purpose Vehicle (SPV), and (d) Private Line

R2CI

- New policy initiated to improve rail connectivity to coal and iron ore mines
- It offers the developer involved in the construction of the line to levy a surcharge on the freight over a period of 10-25 years
- The policy has two models – Capital Cost Model, and the SPV Model. While the Capital Cost Model is relevant when there are two players, the SPV Model is intended for a situation where there are a large number of players

Source: Ministry of Railways, Aranca Research

Notes: R3i – Railways' Infrastructure for Industry Initiative, SPV – Special Purpose Vehicle, R2CI is Railways Policy for Connectivity to Coal and Iron Ore Mines

Policy and regulatory framework ... (3/3)

Railway budget FY12

- The budget earmarks an outlay of USD12 billion, the highest ever so far
- Projects targeted for completion in FY12 include new lines (1,300 kilometers), double lines (867 kilometers), and gauge conversion (1017 kilometers)
- In fact, new lines and gauge conversion form the most significant components of investment outlay for FY12 (apart from acquisition of rolling stock)

Key modernisation initiatives

- Anti-collision devices which were used on an experimental basis to improve rail safety in FY11 will be deployed on more routes across all zones
- Launched mobile ticketing services in August 2011
- Deployment of GPS-based 'fog safe' devices has been approved in the FY12 budget
- A modern signaling system, a train-protection warning system, and a special railway safety fund have been initiated to ensure passengers' security
- VSAT hub system was installed in April 2008 which brought stations in remote areas into the network

Source: Ministry of Railways, Aranca Research
Notes VSAT: Very small aperture terminal

Government's massive spending and increasing FDI inflow ... (1/2)

Projected investments during the 11th Plan (USD million)

	Mar '08	Mar '09	Mar '10	Mar '11	Mar '12	Total 11 th Plan
Rolling stock	1,407	1,622	1,869	2,149	2,479	9,527
Capacity augmentation	1,371	1,772	2,294	2,972	3,855	12,265
Safety and other works	2,890	3,344	3,874	4,494	5,216	19,819
Investment in PSUs	334	360	389	420	454	1,956
DFCs	236	426	772	1,311	2,568	5,313
Metro rail projects	892	1,009	1,120	1,236	1,408	5,665
Total	7,130	8,534	10,318	12,582	15,979	54,543

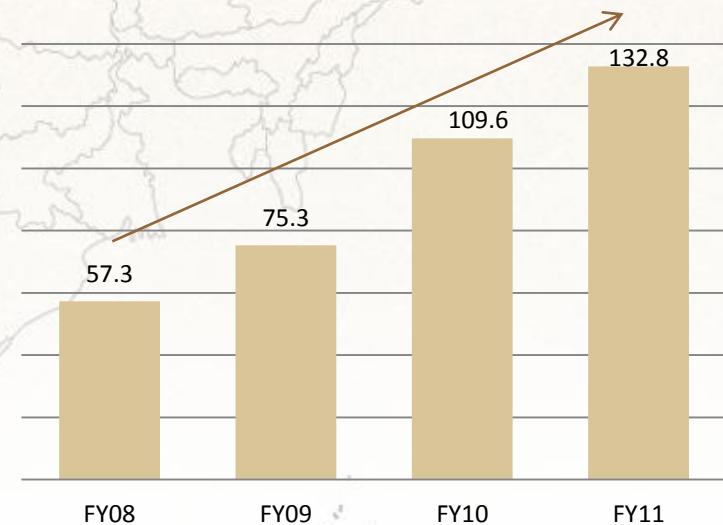
Source: Planning Commission, Aranca Research

Government's massive spending and increasing FDI inflow ... (2/2)

- Cumulative FDI inflows into the sector more than doubled in the three years since FY08
- In FY11, the figure stood at USD132.8 million

Notes: FDI – Foreign Direct Investment; FY08: Cumulative from April 2000 to March 2008 and so on.

Cumulative FDI inflows from Apr 2000 (USD million)



Source: Department of Industrial Policy & Promotion, Aranca Research

Railways

NOVEMBER
2011

Contents

- ❖ Advantage India
- ❖ Market overview and trends
- ❖ Growth drivers
- ❖ Success stories
- ❖ Opportunities
- ❖ Useful information

For updated information, please visit www.ibef.org

India stands out in comparison with most other countries

Country	Network length (km)	Number of employees (000s)	Passengers carried (million)	Passenger distances (billion km)	Freight carried (million tonnes)	Freight distance (billion km)	Number of locomotives	Number of coaches	Number of wagons (000s)
USA	226,706	187	26	9	1,775	2,820	23,990	1,186	475
Russia	84,158	1,128	1,280	173	1,344	2,090	12,063	33,955	567
China	63,637	2,067	1,287	690	2,624	2,211	17,222	42,471	571
India	63,327	1,406	6,219	695	728	4,810	8,110	43,124	208
Canada	57,042	34	4	1	313	353	2,947	595	98
Germany	33,897	231	1,835	75	273	91	4,128	17,537	96
France	29,488	166	1,097	84	106	42	4,289	15,973	33
South Africa	24,487	36	533	15	181	109	3,301	1,723	112
Japan	20,050	132	8,907	253	36	23	1,170	25,244	9
Australia	9,639	13	54	1	177	46	509	663	11

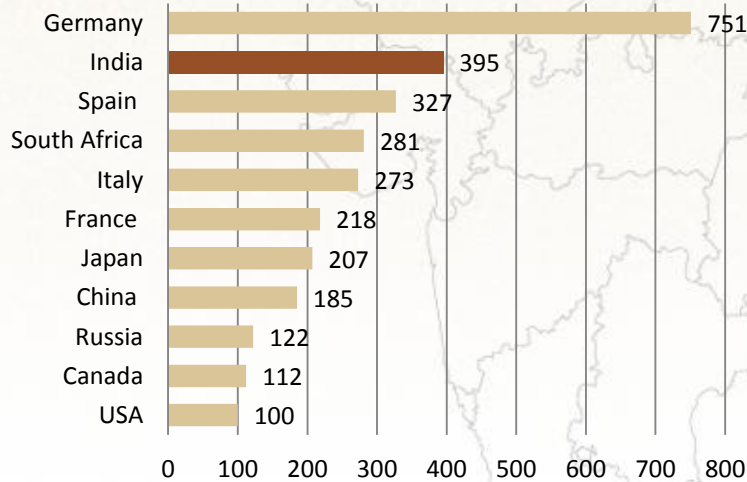
Source: Ministry of Railways, Aranca Research
Note: Figures are as of Dec '09

Cross-subsidising makes passenger travel affordable ... (1/2)

- Freight tariff on Indian Railways is the second highest in the world after Germany
- Major freight railways such as the US, China and Russia have one-fourth the freight rate compared to India
- Indian Railways charges higher freight tariff in order to cross-subsidise the passenger fares and make them affordable to the public. This is why the passenger fares were not increased in tandem with the rising costs over the years; in fact, fares have gone down in a few cases

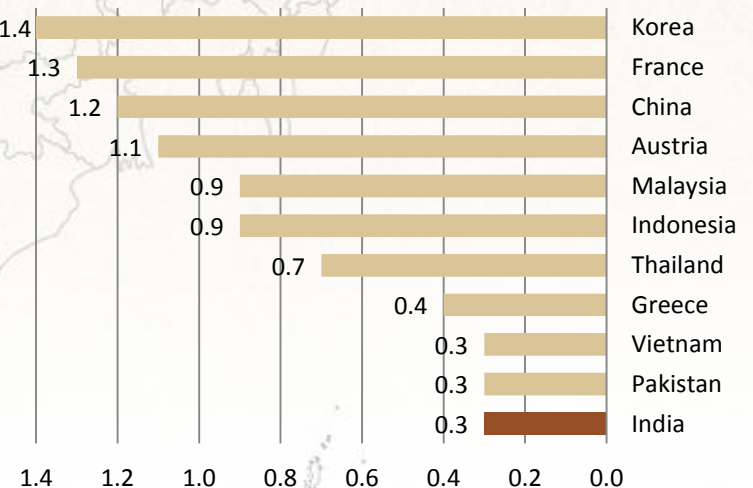
Cross-subsidising makes passenger travel affordable ... (2/2)

Average freight revenue per tonne kilometre (2009)



Source: World Bank, Aranca Research

Ratio of average passenger fare to average freight rates (2009)

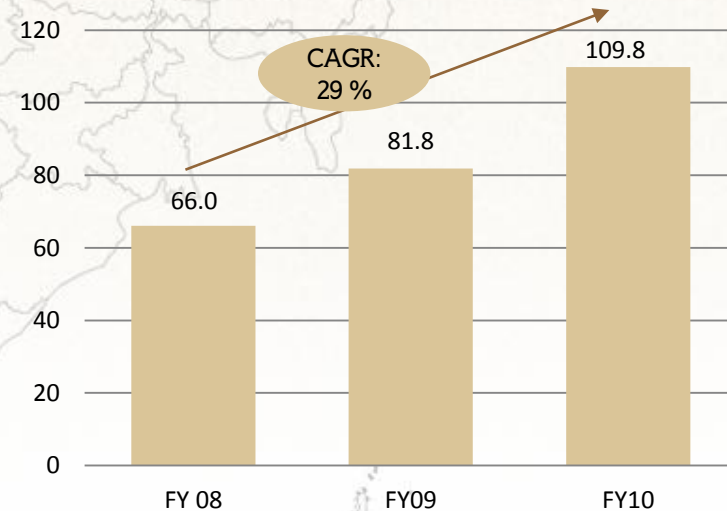


Source: World Bank, Aranca Research

Delhi Metro : A runaway public sector success ... (1/2)

- Revenues from traffic operations increased at a CAGR of 29 per cent during FY08-10 to USD109.8 million
- Average daily ridership increased to 1.8 million in July 2011 from 35,000 in February 2003, marking a CAGR of 60 per cent
- Total operational network across phases I and II spans 190 kilometres and covers 143 stations

Revenues from traffic operations (USD million)



Source: Delhi Metro website, Annual Reports, Aranca Research

Delhi Metro : A runaway public sector success ... (2/2)

Key success factors

- Coordinated and well collaborated effort from various government agencies for timely completion of the project
- Availed overseas financing to cover 60 per cent of the costs to ensure expedition of the project's execution
- Involvement of consultants from across the world with extensive experience – both technological and managerial – in the field

Salient features

- The capital cost of completion of Phase I has been estimated at USD2.2 billion, saving about USD125.0 million from the budgeted expenditure
- The phase was completed three years ahead of schedule
- Average duration of major tenders was nineteen days, compared with the three to nine months that is the norm

Notes: CAGR- Compound Annual Growth Rate
FY- Indian Financial Year

Railways

NOVEMBER
2011

Contents

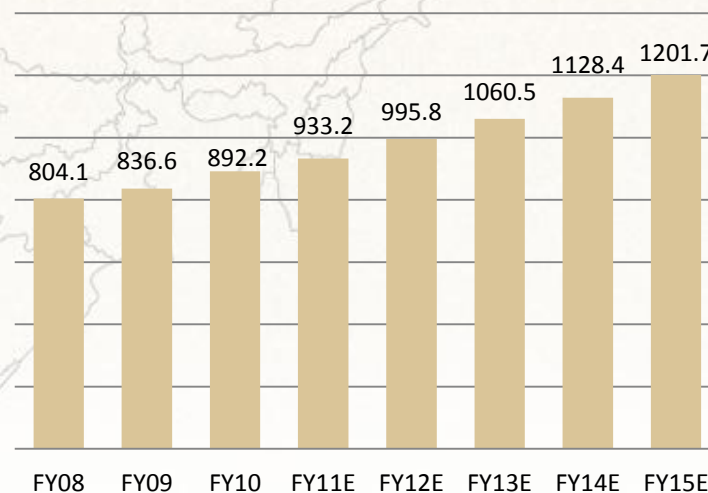
- ❖ Advantage India
- ❖ Market overview and trends
- ❖ Growth drivers
- ❖ Success stories
- ❖ Opportunities
- ❖ Useful information

For updated information, please visit www.ibef.org

Freight provides an attractive opportunity

- The government is investing heavily in building rail infrastructure in the country
- With increasing participation expected from private players – both domestic and foreign – due to favourable policy measures, freight traffic is expected to grow rapidly over the medium- to long-term
- This is expected to increase the railways' share in freight transport in the country by about 9 percentage points over FY10-FY12
- Railways has set a target of having a freight market share of 50 per cent by 2030 from 30 per cent in 2010

Freight traffic estimates (million metric tonnes)



Source: BMI, Aranca Research

Notes: E stands for estimates so that FY11E is an estimate for FY11

- With rapid economic growth and increasing industrialisation, freight traffic is expected to touch 1,201.7 million metric tonnes by FY15
- This marks a CAGR of 6.5 per cent over FY11-15

Growing number of metro projects in India

- Investments expected in metro rail networks in India: USD42 billion by 2020
- Amount invested so far: USD12.5 billion

Name of project	Estimated cost (USD billion)	Length of project (kilometres)	(Estimated) Date of completion
Delhi Mass Rapid Transit System Phase I	2.2	65.1	Nov 2006
Delhi Mass Rapid Transit System Phase II	1.1	121.8	Oct 2010
Delhi Metro Phase-II to Gurgaon	0.3	14.5	Aug 2010
Kolkata Metro Rail Project	1.0	14.7	2014-15
Bengaluru Metro Rail Project	1.7	42.3	Sep 2012
Hyderabad Metro Project	1.6	71.6	2013
Mumbai Metro Project Phase-II	1.6	31.9	2015
Chennai Metro Rail Project	3.0	45.0	2014-15

Source: Ministry of Urban Development, Concor, Aranca Research

Railways

NOVEMBER
2011

Contents

- ❖ Advantage India
- ❖ Market overview and trends
- ❖ Growth drivers
- ❖ Success stories
- ❖ Opportunities
- ❖ Useful information

For updated information, please visit www.ibef.org

Important bodies

Ministry of Railways

Rail Bhavan, New Delhi

Website: www.indianrailways.gov.in

Indian Railway Catering and Tourism Corporation Ltd

9th Floor, Bank of Baroda Building,
16, Parliament Street, New Delhi-110001.

Phone: 91 11 23311263/64

Fax: 91 11 23311259



Glossary

- **CAGR:** Compound Annual Growth Rate
- **FDI:** Foreign Direct Investment
- **FY:** Indian financial year (April to March)
 - So FY09 implies April 2008 to March 2009
- **DFC:** Dedicated Freight Corridor
- **DFCCIL:** Dedicated Freight Corridor Corporation of India Limited
- **PPP :** Public-private partnership
- **IIP:** Index of industrial production
- **R2CI:** Railways Policy for Connectivity to Coal and Iron Ore Mines
- **R3i:** Railways' Infrastructure for Industry Initiative
- **SPV:** Special Purpose Vehicle
- **USD:** US Dollar
 - Conversion rate used: USD1= INR48
- Wherever applicable, numbers have been rounded off to the nearest whole number

Disclaimer

India Brand Equity Foundation (IBEF) engaged Aranca to prepare this presentation and the same has been prepared by Aranca in consultation with IBEF.

All rights reserved. All copyright in this presentation and related works is solely and exclusively owned by IBEF. The same may not be reproduced, wholly or in part in any material form (including photocopying or storing it in any medium by electronic means and whether or not transiently or incidentally to some other use of this presentation), modified or in any manner communicated to any third party except with the written approval of IBEF.

This presentation is for information purposes only. While due care has been taken during the compilation of this

presentation to ensure that the information is accurate to the best of Aranca and IBEF's knowledge and belief, the content is not to be construed in any manner whatsoever as a substitute for professional advice.

Aranca and IBEF neither recommend nor endorse any specific products or services that may have been mentioned in this presentation and nor do they assume any liability or responsibility for the outcome of decisions taken as a result of any reliance placed on this presentation.

Neither Aranca nor IBEF shall be liable for any direct or indirect damages that may arise due to any act or omission on the part of the user due to any reliance placed or guidance taken from any portion of this presentation.