

Demand for Grants 2022-23 Analysis

Railways

The Railways finances were presented on February 1, 2022, by the Finance Minister Ms. Nirmala Sitharaman along with the Union Budget 2022-23. The Ministry of Railways manages the administration of Indian Railways and policy formation through the Railway Board. Indian Railways is a commercial undertaking of the central government.¹

Expenditure of Railways is financed through: (i) its internal resources (freight and passenger revenue, and leasing of railway land), (ii) budgetary support from the central government, and (iii) extra-budgetary resources (primarily borrowings but also includes institutional financing, public-private partnerships, and foreign direct investment). Railways' working expenses (salaries, staff amenities, pension, asset maintenance) are met through its internal resources. Capital expenditure (such as procurement of wagons and station redevelopment) is financed through internal resources, budgetary support from the central government, and extra-budgetary resources.

This note looks at the proposed expenditure of Railways for the year 2022-23, its finances over the last few years, and issues with the same.

Highlights

- **Revenue:** Railways' internal revenue for 2022-23 is estimated at Rs 2,40,000 crore, an increase of 19% over the revised estimates of 2021-22. In 2021-22, revenue is estimated to be 7% lower than the budget estimate.
- **Traffic revenue:** Total revenue from traffic for 2022-23 is estimated to be Rs 2,39,600 crore, an increase of 19% over revised estimates of 2021-22. Freight revenue is estimated to be Rs 1,65,000 crore in 2022-23, an increase of 14% over the revised estimates of 2021-22. The passenger revenue is estimated to be Rs 58,500 crore, an increase of 32% over a low base in 2021-22 (due to COVID-19). In 2021-22, passenger revenue is estimated to be 27% lower than the budget estimate, whereas freight revenue is estimated to be 5% higher than the budget estimate.
- **Expenditure:** The total revenue expenditure by Railways for 2022-23 is projected to be Rs 2,34,640 crore, an increase of 17% over revised estimates of 2021-22. In 2021-22, revenue expenditure is estimated to be 5% lower than the budget estimate. In 2022-23, capital expenditure is projected at Rs 2,45,800

crore, an increase of 14% over the revised estimates of 2021-22. The revised estimates for capital expenditure in 2021-22 is marginally higher than the budget estimate.

- **Operating Ratio:** Operating Ratio is a ratio of working expenses to the receipts from traffic. A lower ratio implies better profitability and availability of resources for capital spending. In 2022-23, the Railways' Operating Ratio is estimated to be 96.98%. This would be an improvement over the operating ratio of 98.93% in 2021-22 (revised estimates). Operating ratio of 96.15% was estimated at the budget stage in 2021-22.

2022-23 Budget announcements²

Key announcements and proposals related to Railways made in Budget 2022-23 include:

- Railways will develop new products and efficient logistics services for small farmers, and small and medium enterprises. It will also take steps towards integration of postal and railway networks to provide seamless solutions for movement of parcels.
- 100 PM-GatiShakti Cargo Terminals for multimodal logistics facilities will be developed over next three years.
- Multimodal connectivity between mass urban transport and railway stations will be facilitated on priority.
- 400 new-generation Vande Bharat trains will be manufactured over next three years.
- 2,000 km of network will be brought under Kavach, the indigenous technology for safety and capacity augmentation.
- 'One Station-One Product' concept will be popularised to help local businesses and supply chains.

For information on status of 2021-22 budget announcements, please see Table 12 in Annexure.

Overview of Finances

Railways' Internal Revenue

Railways earns its internal revenue primarily from passenger and freight traffic. In 2022-23, Railways is estimated to earn 69% of its internal revenue from freight and 24% from passenger traffic. The remaining 7% will be earned from other

miscellaneous sources such as parcel service, coaching receipts, and sale of platform tickets.

Growth in Revenue

Railways' total internal revenue for 2022-23 is estimated at Rs 2,40,000 crore, an increase of 19% over the revised estimates of 2021-22. In 2021-22, total internal revenue is estimated to be 7% lower than the budget estimate. While freight earnings are estimated to be 5% higher than the budgeted, passenger earnings are estimated to be 27% lower. In both 2019-20 and 2020-21, Railways' internal revenue registered a negative growth year-on-year (Figure 1 on next page). In 2019-20, freight revenue was 11% lower than the previous year, whereas passenger revenue was severely hit in 2020-21. Passenger services were suspended for about 10 days in March 2020 and through April-May 2020 to mitigate the impact of COVID-19.³ After that, services were resumed in a phased manner.⁴ Railways ran special trains in place of regular trains up until November 2021.⁵ Pre-COVID regular trains have been resumed since then.⁵ The second class of such trains continue to run as reserved, except if any relaxation permitted

in special case.⁵ Between 2018-19 and 2022-23, Railways' revenue is estimated to grow at a compounded annual growth rate (CAGR) of 5.9%. This is lower than the CAGR of 7.1% observed between 2012-13 and 2018-19. While revenue from freight traffic is estimated to grow at 6.7% between 2018-19 and 2022-23, revenue from passenger traffic is estimated to grow at 3.5%. Between 2012-13 and 2018-19, freight and passenger revenue had grown at a CAGR of 6.9% and 8.5%, respectively.

Shortfall in Revenue

As discussed above, Railways' internal revenue registered a negative year-on-year growth in both 2019-20 and 2020-21. This resulted in a significant difference in actual revenue as compared to the budget estimates (Figure 2 on next page). On average, between 2011-12 and 2018-19, internal revenue realised by Railways was 6% lower than the budget estimates. While freight revenue saw a shortfall of 3% as compared to the budget estimates during this period, the corresponding figure for passenger services was higher at 8%.

Table 1: Overview of Railways Receipts and Expenditure for 2022-23 (in Rs crore)

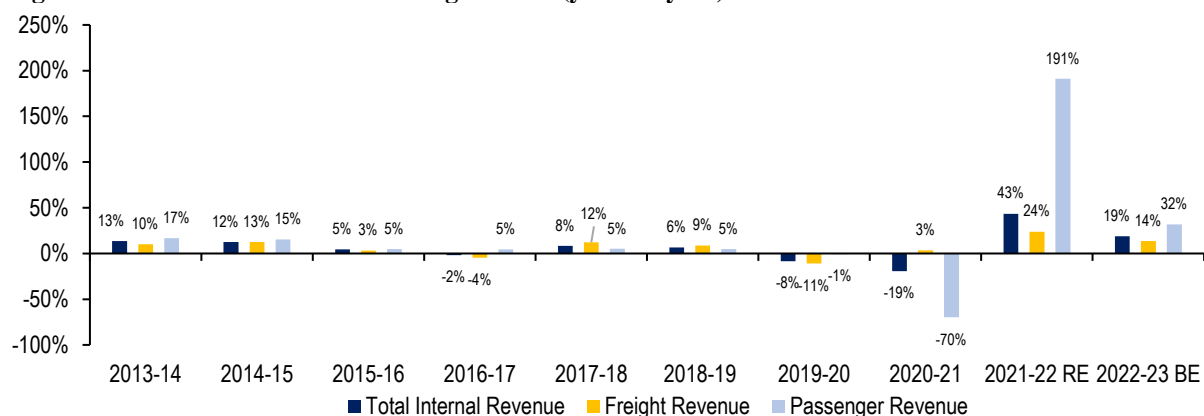
	2020-21	2021-22 BE	2021-22 RE	% Change (2021-22 BE to 2021-22 RE)	2022-23 BE	% Change (2021-22 RE to 2022-23 BE)
Receipts						
1 Passenger Revenue	15,248	61,000	44,375	-27%	58,500	32%
2 Freight Revenue	1,17,232	1,37,810	1,45,275	5%	1,65,000	14%
3 Other traffic sources	8,090	18,300	12,100	-34%	16,100	33%
4 Gross Traffic Receipts (1+2+3)	1,40,571	2,17,110	2,01,750	-7%	2,39,600	19%
5 Miscellaneous	213	350	250	-29%	400	60%
6 Total Internal Revenue (4+5)	1,40,784	2,17,460	2,02,000	-7%	2,40,000	19%
7 Budgetary Support from Government	29,926	1,07,300	1,17,300	9%	1,37,300	17%
8 Extra Budgetary Resources	1,23,196	1,00,258	95,200	-5%	1,01,500	7%
9 Special Loan from Govt.*	79,398					
10 Total Receipts (6+7+8+9)	3,73,303	4,25,018	4,14,500	-2%	4,78,800	16%
Expenditure						
11 Ordinary Working Expenses	1,35,845	1,54,399	1,49,800	-3%	1,70,000	13%
12 Appropriation to Pension Fund	523	53,300	49,000	-8%	60,000	22%
13 Appropriation to Depreciation Reserve Fund	200	800	500	-38%	2,000	300%
14 Total Working Expenditure (11+12+13)	1,36,568	2,08,499	1,99,300	-4%	2,32,000	16%
15 Miscellaneous	1,669	2,400	1,825	-24%	2,640	45%
16 Total Revenue Expenditure (14+15)	1,38,236	2,10,899	2,01,125	-5%	2,34,640	17%
17 Total Capital Expenditure	1,55,181	2,15,058	2,15,000	0%	2,45,800	14%
18 Appropriation of Special Loan from Govt.*	79,398					
19 Total Expenditure (16+17+18)	3,72,815	4,25,957	4,16,125	-2%	4,80,440	15%
20 Net Revenue (6-16)	2,547	6,561	875	-87%	5,360	513%
21 Operating Ratio	97.45%#	96.15%	98.93%		96.98%	

Note: *The central government provided a special loan from its general revenue for COVID related resource gap in 2020-21 and to liquidate adverse balance in Pension Fund in 2019-20.

#If the appropriation to the Pension Fund were to be per the requirement, the operating ratio for 2020-21 would have been 131.5%.

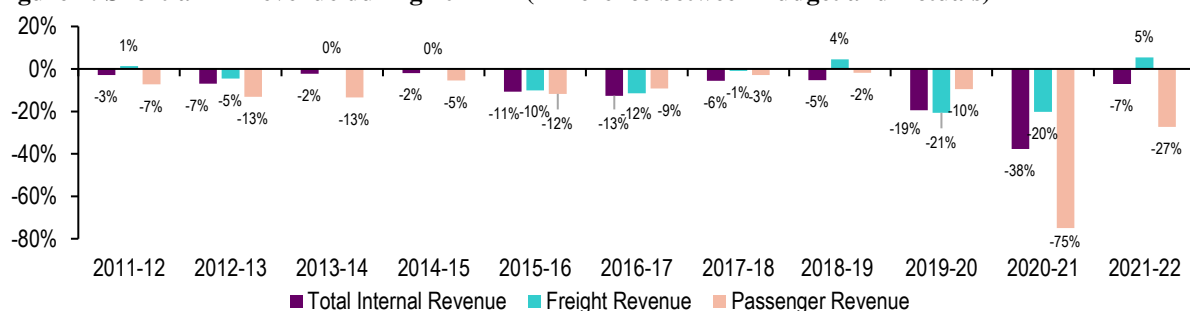
RE – Revised Estimate, BE – Budget Estimate.

Source: Expenditure Profile; Union Budget 2022-23; PRS.

Figure 1: % Growth in Revenue during 2013-23 (year-on-year)

Note: RE: Revised Estimates; BE: Budget Estimates.

Sources: Railways Budget of various years; Union Budget of various years; PRS.

Figure 2: Shortfall in Revenue during 2011-22 (Difference between Budget and Actuals)

Note: Revised estimates for 2021-22 taken as Actual.

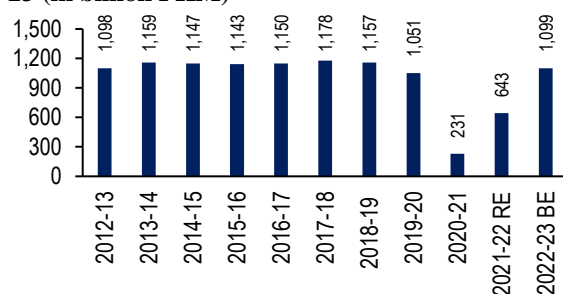
Sources: Railways Budget of various years; Union Budget of various years; PRS.

Challenges in raising revenue

Sluggish growth in traffic volume

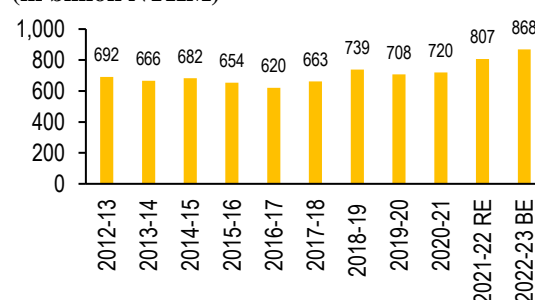
Over the last decade, both rail-based passenger and freight traffic have grown at a modest rate (see Figure 3 and Figure 4). Between 2012-13 and 2022-23, freight and passenger traffic volume are estimated to grow at a CAGR of 2.3% and 0.01%, respectively. This has affected Railways' earnings from its core business of running freight and passenger trains. Railways is estimated to register passenger traffic volume of 1,099 billion Passenger km (PKM) in 2022-23. 1 PKM implies 1 passenger was transported over 1 km. Passenger traffic in 2022-23 is estimated to be lower than every year between 2013-14 and 2018-19.

In freight traffic volume, there has been an uptick during 2021-22, which Railways expects to sustain in 2022-23. In 2022-23, Railways is estimated to register freight traffic volume of 868 billion Net Tonne km (NTKM), which is 8% higher than the revised estimates for 2021-22 (807 billion NTKM). This is mainly on account of estimated increase in coal freight (Table 2). In 2021-22, freight traffic volume as well as revenue is expected to be 5% higher than the budget estimate. 1 NTKM implies 1 tonne of freight was transported over 1 km. The freight traffic volume is estimated to grow at CAGR of 4.1% between 2018-19 and 2022-23.

Figure 3: Passenger Traffic Volume during 2012-23 (in billion PKM)

Note: RE: Revised Estimates; BE: Budget Estimates.

Sources: Railways Budget of various years; Union Budget of various years; PRS.

Figure 4: Freight Traffic Volume during 2012-23 (in billion NTKM)

Note: RE: Revised Estimates; BE: Budget Estimates.

Sources: Railways Budget of various years; Union Budget of various years; PRS.

Table 2: Trends in components of Freight Traffic Volume (in billion NTKM)

	18-19	21-22 RE	22-23 BE	% change 21-22 to 22-23	CAGR 18-19 to 22-23
Coal	311	314	354	13%	3.3%
Cement	68	77	84	9%	5.4%
Other goods	59	77	81	5%	8.2%
Iron ore	43	66	72	9%	13.5%
Foodgrains	58	77	65	-15%	3.3%
Container services	58	58	63	9%	2.1%
Pig iron & finished steel	50	51	57	10%	3.3%
Fertilisers	47	42	44	4%	-1.5%
Petroleum & lubricants	29	30	31	6%	1.7%
Raw material for steel plants	15	16	17	7%	2.4%
Total	739	807	868	8%	4.1%

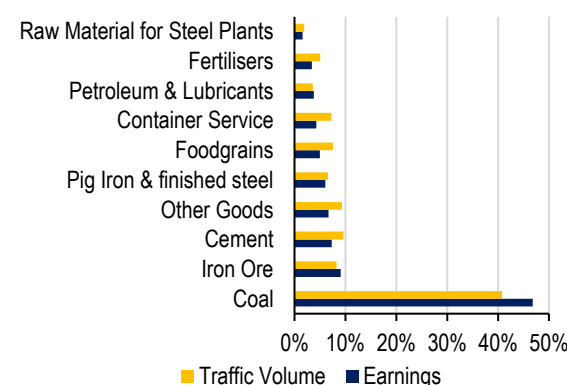
Note: RE: Revised Estimates, BE: Budget Estimates.

Sources: Union Budget of various years; PRS.

Note that over the years, Railways has steadily lost freight traffic share to other modes of transport. Share of Railways in total freight traffic had declined from 89% in 1950-51 to 30% in 2011-12.⁶ During the same period, the share of roads on total freight traffic increased from 11% to 61%. As per the draft National Rail Plan 2030 (NRP), the share of Railways in total freight traffic stood at 27% in 2020.⁷ NRP aims to increase Railways' modal share in freight traffic to 45% by 2050. NITI Aayog (2018) had highlighted a shortfall in carrying capacity and a lack of price competitiveness as some of the reasons for the decline in freight share.⁸ It had observed that since passenger and freight traffic run on the same tracks, India has not been able to increase speed or capacity in a significant manner when compared to global benchmarks. Note that various dedicated freight corridors have been planned by Railways for improvement in facilities for freight. It has taken certain initiatives to attract freight including: (i) operation of Kisan Rail to attract freight for agricultural produce (1,806 trains on 153 routes as of December 2021), and (ii) time tabled parcel services for courier and e-commerce companies.^{9,10}

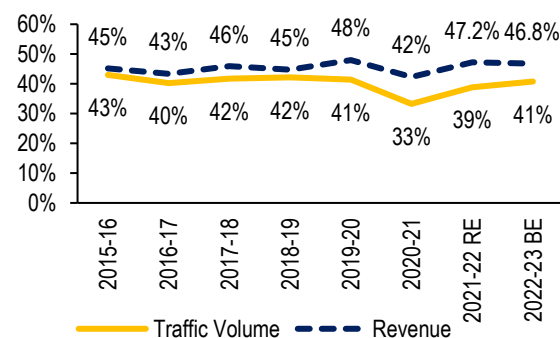
Dependence on coal for freight revenue

The freight basket has mostly been limited to raw materials for certain industries such as power plants, and the iron and steel plants (Figure 5). In 2022-23, three commodities are estimated to contribute 63% of the total freight revenue: (i) coal (47%), (ii) iron ore (9%), and (iii) cement (7%).

Figure 5: Estimated share in freight volume and freight earnings in 2022-23

Source: Expenditure Profile, Union Budget 2022-23; PRS.

While the share of coal in freight volume has been slowly coming down (from 43% in 2015-16 to 39% in 2021-22), its contribution to revenue has been increasing (from 45% in 2015-16 to 47% in 2021-22). This may be indicative of an increasing dependency on coal for revenue as compared to other items in the freight basket. However, as per the budget estimates, share of coal in traffic volume is estimated to increase in 2022-23, whereas its contribution to revenue is estimated to decrease.

Figure 6: Share of coal in Railways' freight

Sources: Railways Budget of various years; Union Budget of various years; PRS.

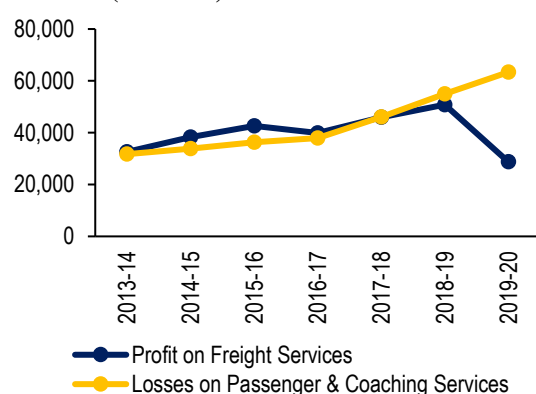
Implications of clean energy transition on Railways' freight revenue

In 2022-23, about 46% of the total coal freight volume is estimated to be for thermal power plants. As part of its initiatives in response to climate change, India has pledged to: (i) install 500 GW of non-fossil energy capacity by 2030, (ii) meet 50% of energy requirements from renewable energy by 2030, (iii) reduce carbon emissions by one billion tonnes by 2030, (iv) reduce carbon intensity of its economy to less than 45% by 2030, and (v) achieve target of net zero emission by 2070.¹¹ Action towards these targets would involve phasing down coal-fired power plants and other usage of coal. Any significant shift in coal usage in the country might pose a challenge for Railways' freight revenue and overall sustainability of its finances.¹²

Widening losses from passenger services

Passenger traffic is broadly divided into two categories: suburban and non-suburban traffic. Suburban trains are passenger trains that cover short distances of up to 150 km and help move passengers within cities and suburbs. Majority of the passenger revenue (94.4% in 2019-20) comes from the non-suburban traffic (or the long-distance trains). Over the years, Railways has been unable to meet its operational cost of passenger services. Except AC-3 Tier segment, all other segments of passenger services have registered losses during the 2015-20 period (Table 3). These losses are compensated by earnings from freight services. NITI Aayog (2016) noted that such cross-subsidisation has resulted in high freight tariffs.¹⁴ It also observed (2018) that high freight tariffs are one of the reasons for a sub-optimal share of Railways in freight.⁸

Figure 7: Losses on Passenger and Other Coaching Services vis-a-vis Profit on Freight Services (Rs crore)



Source: CAG; PRS.

Table 3: Operational profit/loss of various classes of passenger services (in Rs crore)

Class	2015-16	2016-17	2017-18	2018-19	2019-20
AC-1st Class	-176	-139	-165	-249	-403
1st Class	-58	-53	-35	-39	-38
AC 2 Tier	-463	-559	-604	-908	-1378
AC 3 Tier	898	1,041	739	318	65
AC Chair car	-6	118	98	243	-182
Sleeper Class	-8,301	-9,313	-11,003	-13,012	-16,056
Second class	-8,570	-10,025	-11,524	-13,214	-14,457
Ordinary Class	-13,238	-14,648	-16,568	-19,124	-20,450
EMU suburban services	-5,125	-5,324	-6,184	-6,754	-6,938
Total	-36,286	-37,937	-46,025	-55,020	-63,364

Source: CAG; PRS.

In 2019-20, Railways made losses of Rs 63,364 crore on passenger and other coaching services, a 15% increase in losses over the previous year (Rs 55,020 crore).^{12,13} Profit from freight services in 2019-20 was Rs 28,746 crore, inadequate to completely subsidise the losses from passenger

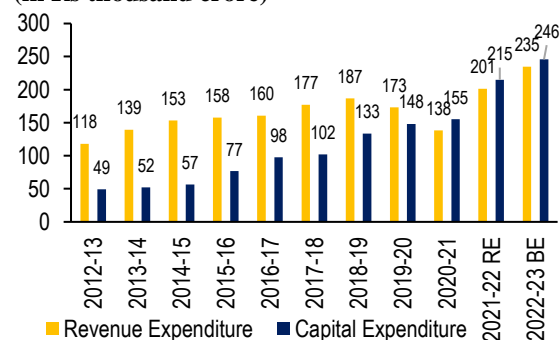
services.¹³ The revenue from passenger services was Rs 50,669 crore. Thus, Railways spent Rs 2.3 to earn one rupee from passenger services.¹³

Losses in passenger services are primarily caused due to: (i) passenger fares being lower than the costs, and (ii) concessions to various categories of passengers (senior citizens, National award winners etc.).¹⁴ Railways classifies these provisions as social service obligations. The Committee on Restructuring Railways (2015) had observed that several decisions on the Indian Railways such as increase in fares, introduction of new trains, and provision of halts are not taken based on commercial considerations.¹⁶ The Standing Committee on Railways (2020) had recommended that both freight and passenger fares should be rationalised prudently.¹⁵ It observed that any fare increase needs to take into account the competition from other transport modes.¹⁵ The Committee recommended that the social service obligations of Railways should be revisited.¹⁵

Expenditure

Over the last decade, Railways' expenditure has increased at a comparatively higher rate than its internal revenue. This is mainly on account of a higher capital spending supported by grants from the central government and extra-budgetary resources (Figure 8). Between 2012-13 and 2022-23, the internal revenue is estimated to increase at a CAGR of 6.6%, whereas revenue and capital expenditure are estimated to increase at a CAGR of 7.1% and 17.4%, respectively.

Figure 8: Railways' expenditure during 2012-23 (in Rs thousand crore)



Note: RE: Revised Estimates; BE: Budget Estimates.

Sources: Railways Budget of various years; Union Budget of various years; PRS.

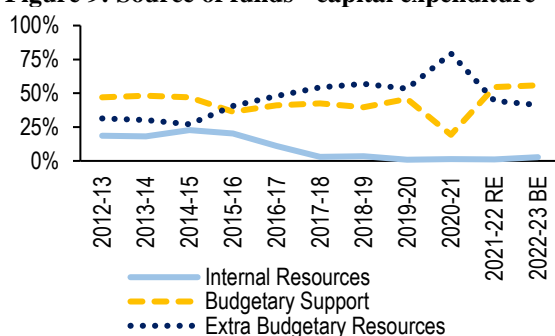
Reliance on budgetary support and extra-budgetary resources to fund capital expenditure

Owing to modest revenue surplus observed by Railways, capital expenditure has largely been funded through: (i) budgetary support from the central government, and (ii) extra-budgetary resources. For instance, only 2.8% of the total estimated capital expenditure in 2022-23 will be funded through internal revenue of Railways. Extra Budgetary Resources include market borrowings such as financing from banks,

institutional financing, and external investments. External investments in Railways could be in the form of public-private partnerships (PPPs), joint ventures, or market financing by attracting private investors to potentially buy bonds or equity shares in Railways. Railways mostly borrows funds through the Indian Railways Finance Corporation (IRFC). IRFC borrows funds from the market (through taxable and tax-free bond issuances, term loans from banks and financial institutions), and then follows a leasing model to finance the rolling stock assets and project assets of Indian Railways.

Up until 2014-15, budgetary support from the central government used to be the primary source for funding capital expenditure (Figure 9). However, between 2015-16 and 2020-21, the increase in capital expenditure was sustained through an increased reliance on extra budgetary resources. The Committee on Restructuring Railways (2015) had observed that increased reliance on borrowings could further exacerbate the financial situation of Railways.¹⁶

Figure 9: Source of funds - capital expenditure



Note: RE: Revised Estimates; BE: Budget Estimates.

Sources: Railways Budget of various years; Union Budget of various years; PRS.

In 2021-22 and 2022-23, budgetary support from the central government has seen a significant increase. However, note that this might have been made possible due to the central government running a large fiscal deficit in these two years (6.9% and 6.4% of GDP respectively).² The central government aims to bring down its fiscal deficit to 4.5% of GDP by 2025-26.² This might pose a challenge in sustaining the budgetary support levels seen in 2021-22 and 2022-23.

Table 4: Capital Expenditure (in Rs crore)

	2020-21 Actuals	2021-22 Revised	2022-23 Budget	% Change (21-22 RE to 22-23 BE)
Gross Budgetary Support	29,926	1,17,300	1,37,300	17%
Extra Budgetary Resources	1,23,196	95,200	1,01,500	7%
Internal Resources	2,059	2,500	7,000	180%
Total	1,55,181	2,15,000	2,45,800	14%

Source: Expenditure Profile, Union Budget 2022-23; PRS.

Inadequate resources for debt servicing

Railways pays lease charges to IRFC. The lease charges have a principal and interest component. The principal component of the lease charges forms part of the capital expenditure of Railways. In 2022-23, allocation towards payment of principal component of lease charges is estimated at Rs 22,188 crore, an increase of 51% over 2021-22 (Rs 14,702 crore as per revised estimates).

CAG (2020) had observed that ideally, the principal component of lease charges should be paid from the Capital Fund.¹² Capital Fund is a dedicated fund of Railways to repay the principal component of market borrowing and financing works of capital nature. However, no allocation has been made to this fund between 2015-16 and 2021-22. In 2022-23, apportionment to capital fund is estimated to be Rs 2,360 crore. The Ministry of Railways noted that appropriation to the Capital Fund is made from net revenue after meeting obligatory revenue expenditure.¹² The Ministry further observed that no appropriation is being made to the Capital Fund due to inadequate internal resources. Hence, gross budgetary support provided by the central government has been used to pay the principal component of lease charges. CAG (2020) observed that utilisation of gross budgetary support for repayment of lease charges is not a healthy trend as it deprives Railways of additional investments in capital works.¹² CAG (2019) had observed that if obligations towards IRFC have to be met from budgetary support, the government might as well borrow directly from the market, as the cost of borrowings would be lower.¹⁷

Future Capital Expenditure Requirements

The Ministry of Railways has prepared the National Rail Plan 2030 for augmenting its infrastructure during the 2021-51 period.⁷ The draft of the National Rail Plan 2030 (NRP), released in December 2020, noted that Railways could be left with a financing gap of over two lakh crore rupees for its capital expenditure projects in next five years.⁷ This relates to the funding gap for projects under the annual work plan of Railways and the National Infrastructure Pipeline prior to the National Rail Plan.⁷ The National Infrastructure Pipeline is a plan of infrastructure projects worth Rs 102 lakh crore between 2019-20 and 2024-25. It includes projects worth Rs 13.7 lakh crore for Railways pertaining to track infrastructure, terminal infrastructure, rolling stock, and urban public transport (Table 5 on next page). The draft National Rail Plan envisages an additional capital expenditure worth Rs 5.8 lakh crore during the 2021-26 period (Table 6 on next page).⁷ However, note that there may be some overlap in projects envisaged under the National Rail Plan and the National Infrastructure Pipeline.⁷

Table 5: Capital Expenditure Requirement for Railways under the National Infrastructure Pipeline (in Rs crore)

Year	Amount
2019-20	1,33,387
2020-21	2,62,465
2021-22	3,08,800
2022-23	2,73,831
2023-24	2,21,209
2024-25	1,67,870
Total	13,67,563

Source: Draft National Rail Plan, Ministry of Railways; PRS.

The draft National Rail Plan estimates that on average, funds available with Indian Railways for capital expenditure over the next five years will be: (i) about Rs 60,000 crore per annum as gross budgetary support, (ii) about Rs 7,000 crore per annum from internal resources, and (iii) a maximum of Rs 1,30,000 crore per annum from extra budgetary resources.⁷ It noted that it would be challenging to fund the projects envisaged under the National Rail Plan from internal resources due to persistently high operating ratio.⁷

Table 6: Proposed expenditure under National Rail Plan (in Rs lakh crore)

Head	2021 -26	2026 -31	2031 -41	2041 -51	Total
Dedicated Freight Corridors	-	1.5	0.5	0.3	2.3
High Speed Rail Corridors	-	5.1	2.9	7.0	15.0
Network improvements	1.3	0.7	2.2	1.8	6.0
Flyovers and Bypasses	0.8	-	-	-	0.8
Terminals	0.6	0.2	0.1	0.04	0.9
Rolling Stock	3.1	1.7	3.6	4.8	13.2
Total	5.8	9.2	9.3	13.9	38.2

Source: Draft National Rail Plan, Ministry of Railways; PRS.

Revenue Expenditure

In 2022-23, the total revenue expenditure by Railways is estimated at Rs 2,34,640 crore, which is an increase of 17% over the revised estimates of 2021-22 (Rs 2,01,125 crore). In 2022-23, key items of revenue expenditure include: (i) staff costs (43%), (ii) pension (22%), (iii) fuel (15%), and (iv) interest component of lease charges (9%).

Staff wages and pension

Staff wages and pension constitute about 68% of the Railways' estimated revenue expenditure in 2022-23. For 2022-23, the expenditure on staff is estimated at Rs 99,840 crore, which is an increase of 10% over 2021-22. The Committee on Restructuring Railways (2015) had observed that the Railways' expenditure on staff is extremely high and unmanageable.¹⁶ It also sees a significant jump every few years due to revisions by the Pay Commission. In 2021-22, staff wages are

National Monetisation Pipeline

In August 2021, the central government launched the National Monetisation Pipeline (NMP). NITI Aayog (2021) had noted that traditional sources of capital are expected to finance 83-85% of capital expenditure envisaged under National Infrastructure Pipeline.¹⁸ About 15%-17% of the aggregate outlay is expected to be met through innovative mechanisms such as asset recycling and monetisation. For NMP aims to monetise assets which are central to business objectives of a government body and are being utilised for delivering infrastructure services. The pipeline will be implemented over four years (between 2022-23 and 2024-25). Monetisation under NMP will not involve disinvestment and monetisation of non-core assets such as land, building, and pure play real estate assets.

Under NMP, value of Railways' assets to be monetised is estimated to be Rs 1,52,496 crore. This is about 26% of the value of all the assets of the central government covered under NMP (six lakh crore rupees in value terms).

Table 7: Railway assets to be monetised under NMP

Asset Class	Details
Railway Stations	400 (5.5% of total stations)
Passenger Trains	90 (5% of total trains)
Railway Track	1 route of 1,400 km (2% of network)
Konkan Railways	741 km
Hill Railways	four in number (a total of 244 km route)
Railway owned Goods sheds	265 (21% of total good sheds)
Dedicated Freight Corridor (DFC) track and allied infra	673 km (20% of total DFC network)
Railway colonies and stadia	15

Source: NITI Aayog; PRS.

estimated at Rs 90,619 crore at the revised stage, which is 3% less than the budget estimate. Note that Railways has a total of 15,07,694 sanctioned posts, out of which around 2,37,295 posts are lying vacant, i.e., there is a vacancy of about 16% (as of March 2020).¹⁹ If all of these posts were to be filled, staff costs for Railways would be higher than the current level.

Allocation to the Pension Fund in 2022-23 is estimated at Rs 60,000 crore, which is an increase of 22% over the revised estimates for 2021-22. Appropriation to the pension fund was much less than required in 2019-20 and 2020-21 (59% and 99% less than the budget estimate, respectively). A special loan of Rs 79,398 crore was extended by the central government to Railways to meet the obligations towards the pension fund for 2019-20 and 2020-21. In 2021-22, appropriation to pension fund is estimated to be 8% less than the budget estimate. The Standing Committee on Railways (2017) had observed that the pension bill may increase further in the next few years, as about 40% of the Railways staff was above the age of 50 years in 2016-17.²⁰ The Standing Committee on Railways (2020) noted that the new pension scheme implemented in 2004 to reduce the pension

bill will show results only around 2034-35.¹⁵ The Committee recommended that feasibility of bearing a part of pension liabilities from the general revenue of the central government till 2034-35 should be explored.¹⁵

The Committee on Restructuring Railways (2015) had also observed that employee costs (including pensions) reduce Railways' ability to generate a surplus and allocate resources towards operations.¹⁶ It had recommended that Railways should rationalise its manpower, and make the organisation more business-oriented. It should be amenable to private participation while retaining an optimal level of functional specialisation within.¹⁶

Fuel and electricity

In 2022-23, the expense on fuel and electricity is estimated to be Rs 31,854 crore, an increase of 15% over 2021-22 (Rs 27,629 crore).

Lease Charges

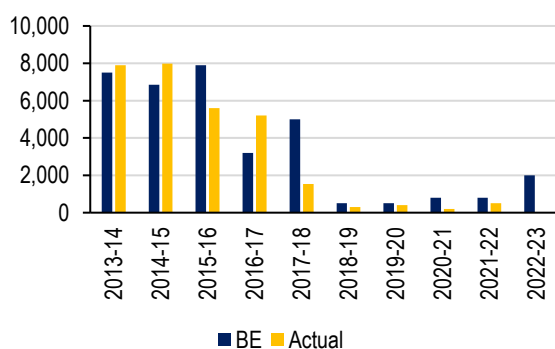
The interest component of lease charges forms part of the revenue expenditure of Railways. In 2022-23, Rs 20,013 crore is estimated to be spent on the interest component of lease charges, which is an increase of 33% over 2021-22 (Rs 15,068 crore).

Appropriation to Funds

Depreciation Reserve Fund (DRF)

Appropriation to the DRF is intended to finance the costs of new assets replacing old ones. In 2022-23, appropriation to DRF is estimated at Rs 2,000 crore. In the last few years, appropriation to DRF has declined (Figure 10). In recent years, appropriation has also been lower than the budget estimates. As per CAG (2021), at the end of 2019-20, the value of over-aged assets pending for replacement using this fund was estimated to be Rs 95,217 crore.¹³ This includes: (i) Rs 58,887 crore on track renewal and (ii) Rs 26,547 crore on rolling stock. It observed that in the backdrop of declining revenue surplus, replacement and renewal of over aged assets could become a burden for the central government.¹³

Figure 10: Appropriation to DRF (in Rs crore)



Note: BE: Budget Estimates; RE: Revised Estimates.

Revised estimates for 2021-22 shown as Actuals.

Sources: Railways Budget of various years; Union Budget of various years; PRS.

Private sector participation in operating trains

In July 2020, proposals were invited for private participation in the operation of passenger train services over 109 origin-destination pairs of routes through the introduction of 151 trains across 12 clusters.²¹ The private entity would be responsible for financing, procuring, operating, and maintaining these trains. Bids were opened in July 2021.²² In all, five bids were received for three clusters.²² No bids were received for the remaining nine clusters.²²

The Ministry of Railways observed that the decline in appropriation to DRF is due to major part of renewal and replacement works having safety implications being financed through Rashtriya Rail Sanraksha Kosh (RRSK).¹⁵ RRSK was created in 2017-18 to finance critical safety-related works of renewal, replacement, and augmentation of assets.

The fund has a corpus of one lakh crore rupees over five years (partially funded by the central government). Railways is required to allocate Rs 5,000 crore annually to RRSK during these five years.¹⁵ The Ministry observed that RRSK will not continue beyond 2021-22. Beyond 2021-22, all renewal and replacement works will be financed from DRF. This could lead to an increase in appropriation to DRF in the coming years. Note that allocation has been made towards RRSK in 2022-23 at the budget stage.

Rashtriya Rail Sanraksha Kosh (RRSK)

In 2022-23, Railways has allocated Rs 2,000 crore towards RRSK. However, the actual appropriation to RRSK has been less than the requirement of Rs 5,000 crore in all four years between 2018-19 and 2021-22. In 2021-22, at the revised stage, no allocation has been made towards the fund. The Ministry of Railways noted that the desired level of appropriation to RRSK has not been made due to adverse resource position.¹⁵ The Standing Committee on Railways (2020) observed that the purpose of RRSK is gradually being eroded due to non-appropriation of required funds from internal resources of Railways.¹⁵

Table 8: Appropriation to RRSK (in Rs crore)

Year	Budget	Actual	% change (Budget to Actual)
2017-18	1,000	0	-100%
2018-19	5,000	3,024	-40%
2019-20	5,000	201	-96%
2020-21	5,000	1,000	-60%
2021-22 RE	5,000	0	-100%
2022-23 BE	2,000	-	-

Note: RE: Revised Estimates, BE: Budget Estimates.

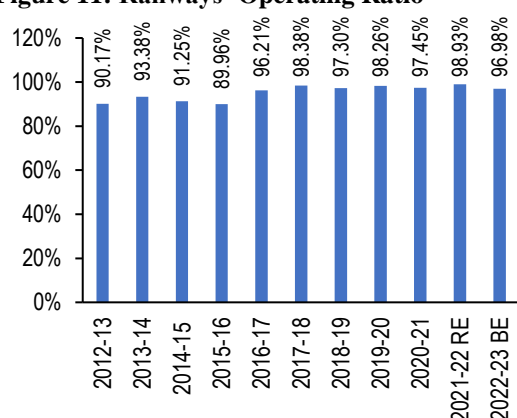
Sources: Union Budget of various years; PRS.

Revenue Surplus and Operating Ratio

Railways' surplus is calculated as the difference between its total internal revenue and its total expenditure (this includes working expenses and appropriation to pension and depreciation funds). In 2022-23, Railways expects to generate a surplus of Rs 5,360 crore. This is an increase of 513%

over revised estimates for 2021-22 (Rs 875 crore). In 2021-22, Railways had estimated a surplus of Rs 6,561 crore at the budget stage.

Figure 11: Railways' Operating Ratio



Sources: Railways Budget of various years, Union Budget of various years; PRS.

Operating Ratio is the ratio of the working expenditure (expenses arising from day-to-day operations of Railways) to the revenue earned from traffic. Therefore, a higher ratio indicates a poorer ability to generate a surplus that can be used for capital investments such as laying new lines or deploying more coaches. Operating Ratio of Railways has consistently been higher than 90% for more than a decade (Figure 11). In 2022-23, Railways has estimated an operating ratio of 97.0%, an improvement over operating ratio of 98.9% estimated in 2021-22. In 2019-20, the operating ratio worsened to 98.4% as compared to the estimated ratio of 95%. The CAG (2020) had noted that if certain advances for 2019-20 were not included in receipts for 2018-19, the operating ratio for 2018-19 would have been 101.8%.¹² If appropriation to the pension fund were to be as per the requirement, the operating ratio for 2019-20 and 2020-21 would have been 114.2% and 131.5%, respectively.^{23,24}

Network expansion and modernisation

Railways has not been able to meet some key physical targets for expansion and modernisation in recent years. It has missed its budget targets in all three years between 2017-18 and 2020-21 for: (i) construction of new lines, and (ii) gauge conversion (Table 9). While examining the progress of construction of new lines, the Standing Committee on Railways (2020) had observed that revision in allocation towards capital expenditure requires reworking of priorities and rescheduling of activities, which leads to tardy progress in the construction of new lines.¹⁵ In 2018-19 and 2019-20, Railways also missed targets for electrification of railway lines. Note that Railways aims to achieve 100% electrification of all broad-gauge routes by 2023. As per revised estimates for 2021-22, achievement will be less than the initial target in case of wagons and track renewals. Table 13 in annexure provides details on key physical targets.

Table 9: Physical targets- Underachievement

Indicator	2017-18	2018-19	2019-20	2020-21	2021-22 RE
Construction of new lines (Route Kms)	-49%	-52%	-28%	-43%	0%
Gauge conversion (Route Kms)	-50%	-40%	-32%	-22%	0%
Doubling of lines (Route Kms)	-45%	20%	-45%	-15%	0%
Wagons (vehicle units)	-48%	-20%	-24%	-16%	-20%
Track renewals (Route Kms)	12%	7%	15%	9%	-10%
Electrification (Route Kms)	2%	-12%	-37%	0%	0%

Note: RE: Revised Estimates. Positive number means higher achievement than targeted.

Sources: Union Budget of various years; PRS.

ANNEXURE**Table 10: Freight traffic details (traffic volume in million NTKM; Earnings in Rs crore)**

Commodity	2020-21		2021-22 Revised		2022-23 Budget		% change (2021-22 RE to 2022-23 BE)		% share in 2022-23 BE	
	Earning	Volume	Earning	Volume	Earning	Volume	Earning	Volume	Earning	Volume
Coal	49,578	2,39,390	68,520	3,13,869	77,250	3,54,008	12.7%	12.8%	47%	41%
Iron Ore	12,661	62,523	13,690	65,640	14,949	71,843	9.2%	9.5%	9%	8%
Cement	9,714	73,605	11,069	77,117	12,022	83,752	8.6%	8.6%	7%	10%
Other Goods	8,510	66,465	10,493	77,305	11,019	81,180	5.0%	5.0%	7%	9%
Miscellaneous earnings	1,493	-	2,600	-	10,000	-	284.6%	-	6%	-
Pig Iron & finished steel	7,417	49,123	9,036	51,437	9,970	56,755	10.3%	10.3%	6%	7%
Foodgrains	9,213	80,681	9,605	76,691	8,196	65,434	-14.7%	-14.7%	5%	8%
Container Service	5,114	55,331	6,452	57,653	7,042	62,815	9.1%	9.0%	4%	7%
Petroleum & Lubricants	5,727	29,970	5,879	29,644	6,227	31,396	5.9%	5.9%	4%	4%
Fertilisers	5,826	49,011	5,436	42,258	5,666	44,044	4.2%	4.2%	3%	5%
Raw Material for Steel Plants	1,979	13,663	2,494	15,616	2,659	16,650	6.6%	6.6%	2%	2%
Total	1,17,232	7,19,762	1,45,275	8,07,230	1,65,000	8,67,877	13.6%	7.5%	100%	100%

Note: NTKM – Net Tonne Kilometre (One NTKM is the net weight of goods carried for a kilometre).

RE: Revised Estimates; BE: Budget Estimates.

Source: Expenditure Profile; Union Budget 2022-23; PRS.

Table 11: Passenger traffic details (traffic volume in million PKM; Earnings in Rs crore)

	2020-21		2021-22 Revised		2022-23 Budget		% change (2021-22 RE to 2022-23 BE)	
	Earning	Volume	Earning	Volume	Earning	Volume	Earning	Volume
Total Suburban	589	30,075	1,259	73,721	2,623	1,57,435	108%	114%
Total Non-Suburban	14,659	2,01,051	43,116	5,68,914	55,877	9,41,692	30%	66%
<i>Sleeper Class (M&E)</i>	5,436	98,476	15,840	2,59,098	18,181	3,04,243	15%	17%
<i>Second Class (M&E)</i>	2,132	55,447	6,667	1,63,835	14,521	3,65,063	118%	123%
<i>AC 3 Tier</i>	4,750	32,174	14,128	97,538	12,905	91,149	-9%	-7%
<i>AC 2 Tier</i>	1,472	7,609	4,023	20,288	4,679	24,137	16%	19%
<i>Second Class (Ordinary)</i>	217	4,456	374	18,930	2,758	1,42,806	637%	654%
<i>AC Chair Car</i>	390	2,153	1,299	7,028	1,904	10,537	47%	50%
<i>AC First class</i>	233	671	612	1,751	636	1,860	4%	6%
<i>Executive Class</i>	28	72	156	386	205	520	32%	35%
<i>Sleeper Class (Ordinary)</i>	-2	-14	1	21	45	972	4,424%	4,529%
<i>First Class (M&E)</i>	2	1	15	16	25	27	65%	69%
<i>First Class (Ordinary)</i>	1	6	1	23	17	378	1,507%	1,543%
Total	15,248	2,31,126	44,375	6,42,635	58,500	10,99,127	32%	71%

Note: PKM – Passenger Kilometre (One PKM is when a passenger is carried for a kilometre).

RE: Revised Estimates; BE: Budget Estimates.

Source: Expenditure Profile; Union Budget 2022-23; PRS.

Table 12: Status of 2021-22 Budget Announcements for Railways

Announcement	Status
<ul style="list-style-type: none"> ▪ Monetisation of assets: Monetising operating public infrastructure assets is a very important financing option for new infrastructure construction. A National Monetisation Pipeline of potential brownfield infrastructure assets will be launched. Railways will monetise Dedicated Freight Corridor (DFC) assets for operations and maintenance, after commissioning. 	<ul style="list-style-type: none"> ▪ Land Monetisation: Rail Land Development Authority has been involved for monetisation of identified Railway assets of: (i) 111 Railway land parcels, (ii) 84 Railway colonies, (iii) four Hill Railways in Darjeeling, Kalka-Shimla, Matheran and Nilgiri, (iv) Karnail Singh Stadium & 15 other stadiums, and (v) 84 Multi-Functional Complexes (MFCs). 13 MFCs have been completed and balance are in different stages. ▪ Monetisation of DFC is planned to be taken up after the Western DFC and Eastern DFC become fully operational. ▪ Private Train Operators: Bids were invited in July 2021 for private sector participation in operating trains in 12 clusters. In all, five bids were received for three clusters. No bids were received for the remaining nine clusters. ▪ CONCOR Divestment: Central government is considering strategic divestment of 30.8% equity in CONCOR. Department of Investment and Public Asset Management has appointed Advisors for this purpose. Issuance of Expression of Interest is the next step in this process which will be issued after finalisation of Railway's proposed Land License Policy.
<ul style="list-style-type: none"> ▪ National Rail Plan (NRP): Indian Railways has prepared a National Rail Plan for India – 2030. The Plan is to create a 'future ready' Railway system by 2030. 	<ul style="list-style-type: none"> ▪ The NRP is already being used in prioritising projects as super critical/critical and fixing the timelines. Vision 2024 has been developed as part of NRP for execution of super critical/critical projects. ▪ The NRP has also emphasised the justification for new DFC corridors for which surveys are underway. ▪ In addition, the NRP lays a pipeline of projects to be completed by 2030, which are in process for inclusion in future budgets as per timeframe provided in the NRP.
<ul style="list-style-type: none"> ▪ Capital Expenditure: I am providing a record sum of Rs 1,10,055 crore for Railways, of which Rs 1,07,100 crore is for capital expenditure. 	<ul style="list-style-type: none"> ▪ In 2021-22, gross budgetary support for capital expenditure is estimated to be Rs 1,17,300 crore (revised estimates).
<ul style="list-style-type: none"> ▪ Commissioning of DFCs: It is expected that Western Dedicated Freight Corridor (DFC) and Eastern DFC will be commissioned by June 2022. The Sonnagar – Gomoh Section (263.7 km) of Eastern DFC will be taken up in PPP mode in 2021-22. Gomoh-Dankuni section of 274.3 km will also be taken up in short succession. ▪ New DFCs: We will undertake future dedicated freight corridor projects namely (i) East Coast corridor from Kharagpur to Vijayawada, (ii) East-West Corridor from Bhusaval to Kharagpur to Dankuni, and (iii) North-South corridor from Itarsi to Vijayawada. 	<ul style="list-style-type: none"> ▪ As of March 2021, total 1,110 Km has been commissioned out of total 2,843 Route km. Balance to be commissioned section-wise in phases by June 2022. Approval of Public Private Partnership Appraisal Committee received for Sonnagar-Gomoh section on December 27, 2021. ▪ Preliminary reports are targeted by January 2022 including FIRR and EIRR, and Final Reports by October 2022.
<ul style="list-style-type: none"> ▪ Electrification: Broad Gauge Route Kilometers (RKM) electrified is expected to reach 46,000 RKM by the end of 2021 from 41,548 RKM on October 1, 2021. 100% electrification of Broad-Gauge routes will be completed by December 2023. 	<ul style="list-style-type: none"> ▪ Total 47,807 RKM (74%) have been electrified up to December 31, 2021.
<ul style="list-style-type: none"> ▪ Introduction of Vista Dome LHB coaches: We will introduce the aesthetically designed Vista Dome LHB coach on tourist routes to give a better travel experience to passengers. 	<ul style="list-style-type: none"> ▪ 20 LHB VISTADOME coaches have been manufactured till December 31, 2021. (7 in 2020-21 and 13 in 2021-22)
<ul style="list-style-type: none"> ▪ Safety: The safety measures undertaken in the past few years have borne results. To further strengthen this effort, high density network and highly utilized network routes of Indian railways will be provided with an indigenously developed automatic train protection system that eliminates train collision due to human error. 	<ul style="list-style-type: none"> ▪ 23,215 RKM work has been approved by competent authority.

Source: Statement on Implementation of Budget Announcements 2021-22, Union Budget 2022-23; PRS.

Table 13: Key physical targets

	2020-2021		2021-2022		2022-23
	Budget Target	Achievement	Budget Target	Revised Target	Budget Target
Construction of New Lines (Route Kms)	500	286	300	300	300
Gauge conversion (Route Kms)	600	470	500	500	500
Doubling of Lines (Route Kms)	1,900	1,614	1,600	1,600	1,700
Rolling Stock					
a (i) Diesel Locomotives	...	10	0	0	0
a (ii) Electric Locomotives	725	754	905	981	685
b Coaches	6,534	4,903	6,695	8,115	7,551
c Wagons (vehicle units)	12,000	10,062	12,000	9,600	13,000
Track renewals (Route Kms)	4,000	4,363	4,000	3,600	3,700
Electrification Projects (Route Kms)	6,000	6,015	6,000	6,000	6,500

Sources: Union budget documents of various years; PRS.

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¹³ Report No 13 of 2021, Railways Finances, for the year ended March 2020, Report of the Comptroller and Auditor General of India, December 21, 2021, https://cag.gov.in/uploads/download_audit_report/2021/Railway%20Finance%20Report-13-2021-061c1c356591929.85046974.pdf.

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¹⁵ “3rd Report: Demand for Grants (2020-21) - Ministry of Railways”, Standing Committee on Railways, March 2020, http://164.100.47.193/lsscommittee/Railways/17_Railways_3.pdf.

¹⁶ Report of the Committee for Mobilization of Resources for Major Railway Projects and Restructuring of Railway Ministry and Railway Board, Ministry of Railways, June 2015, http://www.indianrailways.gov.in/railwayboard/uploads/directorate/HLSRC/FINAL_FILE_Final.pdf.

¹⁷ Report No 10 of 2019, Railways Finances, for the year ended March 2018, , Report of the Comptroller and Auditor General of India, December 2, 2019., [https://cag.gov.in/uploads/download_audit_report/2019/Report_No_10_of_2019_Union_Government_\(Railways\)_Railways_Finances.pdf](https://cag.gov.in/uploads/download_audit_report/2019/Report_No_10_of_2019_Union_Government_(Railways)_Railways_Finances.pdf).

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