Demand for Grants 2024-25 Analysis

Railways

The Railways finances were presented on July 23, 2024, by the Finance Minister Ms. Nirmala Sitharaman along with the Union Budget 2024-25. Indian Railways is a commercial undertaking of the central government. The Ministry of Railways administers Indian Railways and forms policies through the Railway Board.

Expenditure of Railways is financed through: (i) its internal resources (mainly freight and passenger revenue), (ii) budgetary support from the central government, and (iii) extra-budgetary resources (primarily borrowings but also includes institutional financing and public-private partnerships). Railways' working expenses (salaries, pension, and asset maintenance) are met through its internal resources. Railways generate some surplus, which is not enough to cover its capital expenditure plans (such as construction of lines and procurement of wagons). Capital expenditure is supported by the grant from the central government and extra-budgetary resources. This note looks at the proposed expenditure of Railways for 2024-25, and the state of its finances over the last few years.

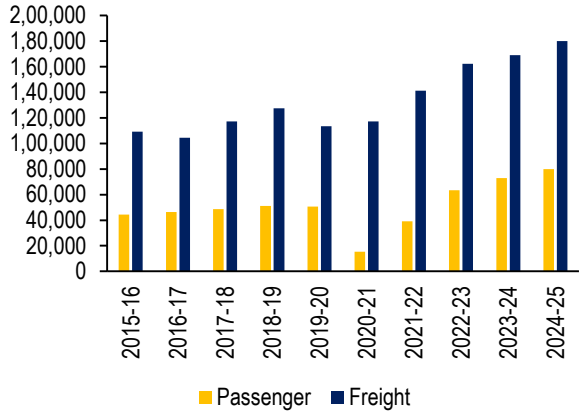
Highlights

- **Revenue**: Railways' internal revenue for 2024-25 is estimated at Rs 2,78,500 crore, an increase of 8% over the revised estimates of 2023-24.
- **Traffic revenue**: In 2024-25, traffic revenue is estimated to be Rs 2,78,100 crore, which is an increase of 8% over the revised estimates of 2023-24. 65% of this revenue is estimated to come from freight services (Rs 1,80,000 crore), and 29% from passenger services (Rs 80,000 crore).
- **Revenue Expenditure**: The total revenue expenditure in 2024-25 is projected to be Rs 2,75,700 crore, an increase of 7% over the revised estimates of 2023-24.
- **Capital expenditure**: In 2024-25, capital expenditure is estimated to be Rs 2,65,200 crore, an increase of 2% over the revised estimates of 2023-24. 95% of this expenditure is estimated to be financed through budgetary support from the central government. 4% will be financed through extra-budgetary resources and 1% through internal revenue.
- **Operating Ratio:** Operating Ratio is the ratio of working expenses to the receipts from traffic. A lower ratio implies better profitability and availability of resources for capital spending. In 2024-25, the Railways' operating ratio is estimated to be 98.2%. This is marginally lower than the operating ratio for 2023-24 as per the revised estimates (98.7%).

Trends in Revenue

The Indian Railways earns its revenue through its passenger, freight, and sundry receipts (rent, catering receipts, interest and maintenance charges from outside bodies, commercial utilisation of land and air space, commercial publicity on rolling stock and station buildings). Internal revenue of the railways is used for funding its working expenses, which include salaries, pensions, and fuel. Revenue from freight in 2024-25 is estimated at Rs 1,80,000 crore, which is an increase of 7% over the revised estimates of 2023-24. Passenger revenue at Rs 80,000 crore is expected to see a 10% growth from the revised estimate for 2023-24. Sundry earnings for 2024-25 are estimated at Rs 10,500 crore, an increment of 13% from the revised estimate for 2023-24. The figure below shows the growth of passenger and freight revenue over the last ten years.

Figure 1: Freight and passenger revenue between 2015-16 and 2024-25 (in Rs crore)



Note: Figures for 2023-24 are revised estimates and 2024-25 are budget estimates. In 2020-21, passenger services were suspended in part due to the COVID-19 pandemic.
Sources: Expenditure Profile, Railway Statements, Union Budget Documents, 2017-18 to 2024-25; PRS.

Freight revenue concentrated in bulk goods

Freight forms the primary source of revenue for Indian Railways (65% of the internal revenue in 2024-25). Mostly bulk goods are transported through Railway freight services.

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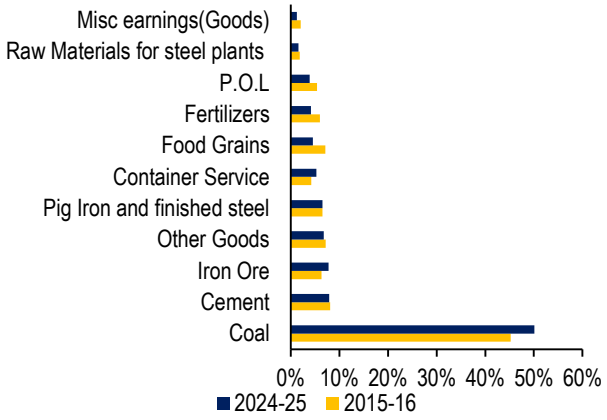
Table 1: Overview of receipts and expenditure (all values in Rs crore)

Sr. No.	Items	2022-23 Actuals	2023-24 BE	2023-24 RE	% Change (2023-24 BE to 2023-24 RE)	2024-25 BE	% Change (2023-24 RE to 2024-25 BE)
	Receipts						
1	Passenger Revenue	63,417	70,000	73,000	4%	80,000	10%
2	Freight Revenue	1,62,263	1,79,500	1,69,000	-6%	1,80,000	7%
3	Other Traffic Sources	14,303	15,100	15,900	5%	18,100	14%
4	Gross Traffic Receipts (1+2+3)	2,39,983	2,64,600	2,57,900	-3%	2,78,100	8%
5	Miscellaneous Receipts	194	400	700	75%	400	-43%
6	Total Internal Revenue (4+5)	2,40,177	2,65,000	2,58,600	-2%	2,78,500	8%
7	Budgetary Support from Government	1,59,256	2,40,200	2,40,200	0%	2,52,200	5%
8	Extra Budgetary Resources (EBR)	41,325	17,000	17,000	0%	10,000	-41%
4	Total Receipts (6+7+8)	4,40,759	5,22,200	5,15,800	-1%	5,40,700	5%
	Expenditure						
10	Ordinary Working Expenses	1,80,256	1,88,574	1,91,400	1%	2,05,000	7%
11	Appropriation to Pension Fund	54,700	70,516	62,100	-12%	67,000	8%
12	Appropriation to Depreciation Reserve Fund	700	1,000	800	-20%	1,000	25%
13	**Total Working Expenditure (10+11+12)**	2,35,656	2,60,090	2,54,300	-2%	2,73,000	7%
14	Miscellaneous	2,004	2,700	2,300	-15%	2,700	17%
15	**Total Revenue Expenditure (13+14)**	**2,37,660**	**2,62,790**	**2,56,600**	-2%	**2,75,700**	7%
16	**Expenditure from EBR and Budgetary Support (7+8)**	**2,00,582**	**2,57,200**	**2,57,200**	0%	**2,62,200**	2%
17	**Total Expenditure (15+16)**	**4,38,241**	**5,19,990**	**5,13,800**	-1%	**5,37,900**	5%
18	**Net Revenue (6-15)**	**2,517**	**2,210**	**2,000**	-10%	**2,800**	40%
19	**Operating Ratio**	**98.10%**	**98.45%**	**98.65%**		**98.22%**	

Sources: Expenditure Profile, Railway Statements, Union Budget Documents, 2024-25; PRS.

The Railways freight basket has not changed much in the last decade in terms of either traffic volume or share of revenue. In 2015-16, the share of revenue from transportation of coal was 45% of total freight revenue. In 2024-25, coal's share is estimated to rise to 50%. Railways' revenue from coal has medium-term risk factors if coal transportation were to reduce due to: (a) decrease in coal consumption for power generation owing to climate change concerns, and (b) increase in power plants near coal mines.

Figure 2: Contribution to freight revenue by key goods categories



Source: Expenditure Profile, Railway Statements, Union Budget Documents, 2017-18 to 2024-25; PRS.

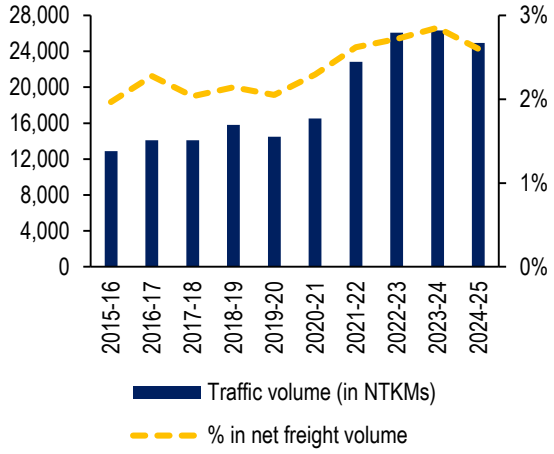
In the last decade, the share of revenue from items like cement, pig iron and finished steel, food grains, fertilizers, and P.O.L have reduced while the revenue share from iron ore and coal have gone up marginally (1.8% and 5% between 2015-16 and 2024-25, respectively). Another area where the Railways has augmented its share of revenue in the last decade is in container freight. Revenue from container services increased from 4% of total freight earnings in 2015-16 to 5.3% in 2024-25. In 2015-16, of container services accounted for 7% of overall freight volume. In 2024-25, this has increased marginally to 8%.

Share of domestic containers

Railway container traffic comprises of Export-Import containers (EXIM containers) and domestic containers. Domestic containers are predominantly used to carry non-bulk cargo such as fast-moving consumer goods (FMCGs), chemicals and pharmaceuticals.[1] Between 2015-16 and 2023-24, container traffic registered an annualised growth rate of 7%. In this period, domestic container traffic grew at an annualised rate of 9% and EXIM container traffic increased at an annualised rate of 6%. The share of domestic containers in total traffic volume is estimated to increase from 2% in 2015-16 to 3% in 2024-25. The Railways had introduced a policy to permit private operators to obtain licenses to run container trains in 2006.[2] As of August 20, 2018, 18 operators including the

Container Corporation of India have obtained licenses to operate container trains.[2]

Figure 3: Domestic container traffic (in NTKM)



Note: 1 NTKM: Net Tonne Kilometre (One NTKM is when one tonne of goods is carried for a kilometre).
Sources: Expenditure Profile, Railway Statements, Union Budget Documents, 2017-18 to 2024-25; PRS.

Low presence in consumer goods market

Consumable goods are an important segment of the country's logistics sector.[1] Online retail penetration is estimated to increase from 4.7% in 2019 to 10.7% in 2024.[1] This is expected to create a demand for transporting FMCGs, apparel, appliances, health, and personal care products. NITI Aayog observed that Majority of consumer goods are transported by road.[1] This is because road transport offers better last-mile connectivity than railways for consumer-based products.[1]

The National Rail Plan (NRP) has targeted to raise share of freight traffic by rail from current share of 27% to 45% by 2030.[3] A modal shift towards railways in share of consumer goods transported could help achieve the target set by the NRP.[1] The movement of non-bulk commodities over rail requires: (i) well-developed intermodal container terminals, (ii) suitable wagons, (iii) scheduled rail services, and (iv) first and last-mile connectivity options.[1]

Railway has taken several measures to promote intermodal connectivity and improve its model share in freight segment. These include: (i) tariff rationalization and tariff/freight incentive schemes, (ii) a new 'Gati Shakti Multi- Modal Cargo Terminal (GCT)' policy to facilitate development of cargo terminals, (iii) schemes to attract private investment in general and special purpose wagons and automobile carrier wagons.[4]

Freight cross-subsidises passenger services

In India, freight services cross-subsidise passenger services.[5] Freight charges were almost three times the passenger charges as of 2018-19.[1] This is in contrast with countries such as China and Japan where freight charges were lower than passenger charges.[1] NITI Aayog, reported that between 2009 and 2019, freight rates increased by 91%, whereas passenger fares increased by only 28%.[1] A higher charge for freight makes it less competitive than other modes such as roads.

Highly congested rail network slowing freight traffic

Railways classifies its network into: (i) high density network routes (HDN) and (ii) highly utilised network routes (HUN).[3] HDN routes comprise 16% of the total network and carry 41% of the total traffic. HUN routes comprise 35% of the total network and carry 40% of the total traffic.[3] As per the Draft National Rail Plan, about 80% of HDN routes and 48% of HUN routes see above 100% capacity utilisation, implying significant network congestion.

This congestion on existing networks has led to freight trains running at lower average speeds. Goods trains are typically expected to travel at an average speed of 75 kmph.[1] The average speed of goods trains in 2020 and 2021 was 40.6 and 36.5 kmph respectively.[6] The NRP has set a target of increasing the average speed of freight trains to 50 kmph by 2030.[3] One of the measures proposed to achieve this is through identification of dedicated freight corridors that would allow high speed transportation.[3]

Slow growth in traffic volume

Over the last decade, both rail-based passenger and freight traffic have grown at a modest rate. Between 2015-16 and 2023-24, freight traffic in terms of NTKM is expected to grow at an annualised rate of 4%. In 2023-24, as per revised estimates, passenger traffic was 11 lakh Passenger Kilometres (PKM), lower than 2015-16 level (11.4 lakh PKM). One PKM is when a passenger is carried for a kilometre. In 2024-25, passenger traffic is estimated to be 12.4 lakh PKMs.

Traffic trends between 2015-16 and 2023-24 are however different within the individual service segments. Traffic in AC segments has grown, with third AC segment growing at an annualised rate of 13% and executive class within AC section growing at an annualised rate of 16%. Within non-AC segment, there has been a decline in ordinary second class at an annualised rate of 20% and a growth in second class express train traffic at 2%. Express sleeper class also witnessed a marginal decline of 0.1% in traffic.

Dedicated Freight Corridors

Railways' share in freight traffic reduced from 83% in 1950-51 to 35% in 2011-12. To increase the modal share in freight, Railways introduced a plan to construct Dedicated Freight Corridors (DFCs) in 2005.[7] The Ministry of Railways noted that the Dedicated Freight Corridors will offer higher transport output and carrying capacity due to faster transit of freight trains.[8] These corridors would see the running of double stack container trains and heavy haul trains which would bring down the unit cost of freight transport.8 This is also expected to improve the supply chain for the industries/logistics players located in the corridor catchment areas leading to growth of EXIM container traffic as well.8

Two DFCs, namely the Eastern Dedicated Freight Corridor (EDFC) from Ludhiana to Sonnagar (1,337 km) and the Western Dedicated Freight Corridor (WDFC) from Jawaharlal Nehru Port Terminal (JNPT) to Dadri (1,506 km) have been planned by the Railways. The EDFC is fully operational whereas the WDFC is partially operational (1,220 km of 1,506 km as of February 2024).[9] In 2021, the Ministry of Railways had also approved the preparation of detailed project reports for DFCs on: (i) East Coast Corridor (1115 kms), (ii) East-West sub-Corridor (1868 kms) and, (iii) North South Sub Corridor (975 Kms).[10]

To improve passenger traffic, Railways has started new passenger trains. In February 2019, Railways introduced the first Vande Bharat express train. It is an indigenous semi-high-speed train.[11] As on July 19, 2024, 102 Vande Bharat AC chair car trains are operating across the Indian Railways.[12] Railways has also introduced Amrit Bharat sleeper trains in the non-AC segment.[13]

Widening Passenger Losses

Railways rationalised passenger fares in 2020.[14] AC fares were hiked by four paise per PKM whereas non-AC express and mail class fares were hiked by two paise per PKM.[14] Ordinary non-AC fares were raised by one paise per PKM.[14] Considering the affordability concerns of daily commuters, the Railways implemented no hike in suburban train fares.[14] Despite the rationalisation of passenger fares in 2020, the segment continues to register operational losses. Note that prior to this passenger fares were last rationalised in 2014.[14]

The Comptroller and Auditor General of India (CAG) (2021), observed that the operational losses in the passenger segment increased from Rs 36,286 crore in 2015-16 to Rs 63,364 crore in 2019-20.[15] These losses had further widened in 2021-22 to Rs 68,269 crore, which had to be cross subsidised entirely using the surplus generated from freight.[5]

Since 2016-17, losses in the passenger section have increased at a higher rate than the profits in the freight division. The losses are more pronounced in the non-AC section than the AC section. Except AC 3 tier and AC chair car (in few occasions), all other classes of passenger services have observed losses in every year between 2018-19 and 2021-22.

Table 2: Passenger Losses (in Rs crore)

Class	2018-19	2019-20	2020-21	2021-22
Total Losses	-52,700	-59,799	-68,305	-57,042
of which				
AC- 1st class	-249	-403	-719	-406
AC 2 Tier	-908	-1,378	-2,995	1,564
AC 3 Tier	**318**	**65**	-6,500	-698
AC Chair Car	**243**	-182	-1,079	-473
Sleeper	-13,012	-16,056	-20,134	-17,038
Second Class	-13,214	-14,457	-17,641	-16,393
Ordinary Class	-19,124	-20,450	-11,438	-15,282
Suburban	-6,754	-6,938	-7,799	-8,316

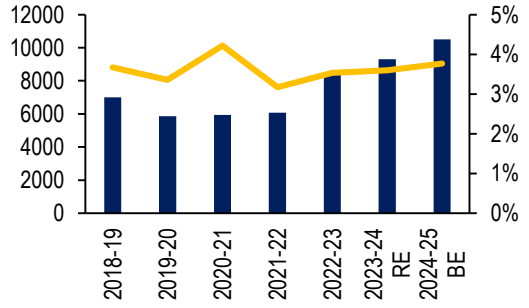
Note: Second Class refers to non-AC 2nd sitting class and Ordinary class refers to general (unreserved) class.
Sources: Report No. 13 of 2023, Railway Finances, CAG; PRS.

Losses in the passenger segment are due to Railways operating these services below cost as a part of their social service obligations.[16] The Standing Committee on Railways (2020) had recommended that both freight and passenger fares should be rationalised prudently.[16] It observed that any fare increase needs to consider the competition from other transport modes such road and air.[16] The Committee recommended that the social service obligations of Railways should be revisited.[16]

Sundry earnings below potential

Sundry revenue of the Indian railways is earned through the non-core operations of Indian Railways. These include catering services, advertisements on coaches and license fees on utilisation of land and buildings. As per the budget estimates of 2024-25, it is projected to be Rs 10,500 crore. Revenue under this head is estimated to register an increase of 13% over the revised estimate for the previous year. This is about 3.8% of the total estimated revenue receipts of the Indian Railways for 2024-25.

Figure 4: Sundry Earnings (as a % of total revenue)



Sources: Expenditure Profile, Railway Statements, Union Budget Documents, 2017-18 to 2024-25; PRS.

Since 2018-19, the contribution of sundry revenue to the internal receipts has remained stagnant at 4%. Over the past few years, Railways has announced several new policies such as: (i) advertisements in coaches and stations, (ii) Amrit Bharat station scheme to modernise a total of 1,275 stations across the Indian Railway system, (iii) setting up kiosks for local products through initiatives like 'One Station One Product', (iv) enhancing passenger information systems, and (v) establishing executive lounges and spaces for business meetings.[17]

Trends in Expenditure

High spending on salaries and pension

A major share of Railways' revenue expenditure is budgeted towards staff salaries, pension expenditure, fuel costs, and interest components of lease charges. On an average, Railways has spent 69% of its revenue (approximately 2/3^{rds} of revenue) on salaries and pension alone in the last 10 years. In 2024-25, 42% of the revenue will be spent towards staff salaries and 23% towards pension.

The Committee on Restructuring Railways (2015) had observed that the Railways' expenditure on staff is extremely high and unmanageable.[18] As of July 1, 2023, Railways had a total of 14,82,134 sanctioned posts.[19] Of these, 2,63,913 posts (18%) remain vacant.[19] If all these vacancies were to be filled, staff costs for Railways would be higher than the current level.

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.[16] The Standing Committee (2022) recommended that central government should consider providing support for pension expenditure from general revenue till 2034-35.[20]

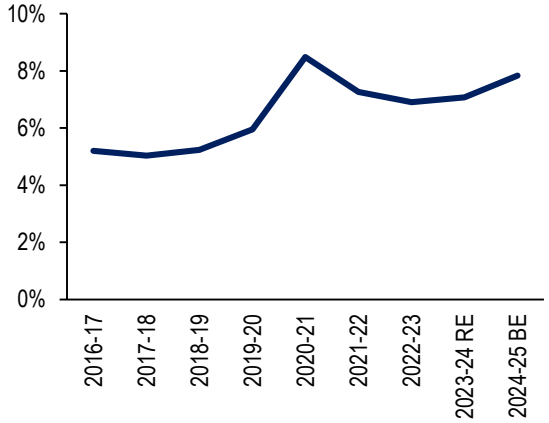
Rise in liability for lease charges

Extra budgetary resources include funds raised through IRFC.[5] IRFC borrows from market and follows a leasing model to finance the rolling stock assets.[5] Lease charges have both interest and principal components.[5] Expenditure on interest component of lease charges has increased over the last few years. Interest expenditure grew from Rs 8,598 crore in 2016-17 to Rs 16,584 crore in 2022-23. In 2024-25, it is expected to rise further to Rs 21,806 crore.

Poor surplus generation and operating ratio

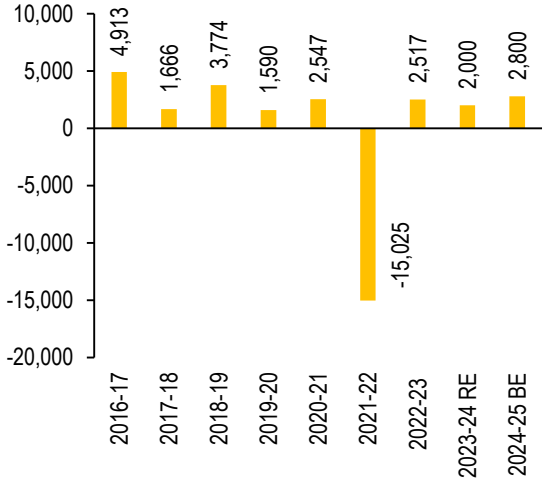
Overall, the average revenue expenditure of the railways in last decade has stood at 99% of its average revenue income. This has resulted in generation of poor revenue surplus for the railways.

Figure 5: Interest payments on lease charges (as % of revenue receipts)



Source: Expenditure Profile, Railway Statements, Union budget documents, 2017-18 to 2024-25; PRS

Figure 6: Revenue Surplus (in Rs crore)



Source: Expenditure Profile, Railway Statements, Union Budget Documents, 2018-19 to 2024-25; PRS.

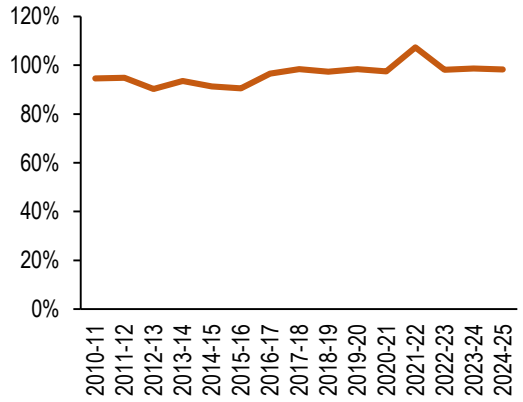
Operating Ratio is the ratio of the total working expenditure and the internal revenue of the Railways. It indicates how much the Railways spends to earn Rs 100. A higher operating ratio indicates poorer financial performance. Operating ratio has stayed above 96% since 2016-17.[16] Poor operating ratio has led to inadequate provisioning to various dedicated funds, and lack of funds for capital works.

The Standing Committee on Railways (2020-21) had recommended Railways to follow better fiscal discipline to improve the operating ratio. In 2021-22, Railways' operating ratio was 107.4%. This means that the Railways spent Rs 107 to earn Rs 100.

The CAG (2020) observed that in the absence of financial adjustments towards National Thermal Power Corporation (NTPC) and pensions respectively, the operating ratio of the Railways would have been higher than 100% in both 2019-20

and 2020-21 as well.[21] For 2024-25, the operating ratio of the Railways is estimated to be 98.2%.

Figure 7: Railway Operating Ratio



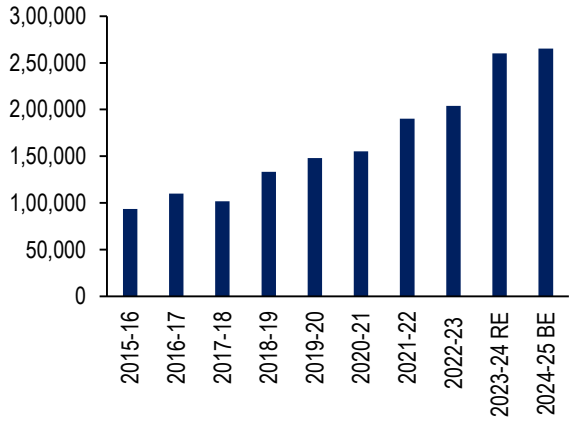
Source: Railway Statistical Publications, Year Books, 2010-11 to 2021-22, Ministry of Railways; Expenditure Profile, Railway Statements, Union budget documents, 2022-23 to 2024-25; PRS.

Dependence on central support and borrowings for capital works

Railways has been unable to generate revenue surplus to finance its capital expenditure. Despite this, Railways' capital expenditure has increased significantly in the last decade. The capital expenditure of the Railways grew from Rs 93,520 crore in 2015-16 to Rs 2,65,200 crore in 2024-25. This is an annualised increase of 12%. This has been financed through grants from the central government and extra budgetary borrowings. Capital expenditure is used to augment doubling and electrification projects, lay new lines, enable gauge conversions, and procure rolling stock.

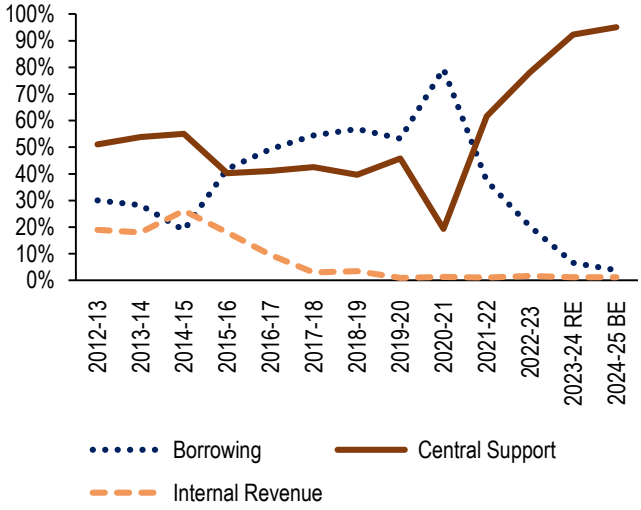
In the last decade, the average contribution of internal revenue towards capital expenditure has been 4%. In 2024-25, only 1% of capital expenditure will be financed from internal revenue.

Figure 8: Capital Expenditure (in Rs crore)



Source: Expenditure Profile, Railway Statements, Union budget documents, 2017-18 to 2024-25; PRS.

Figure 9: Financing Railway capital expenditure



Sources: Expenditure Profile, Railway Statements, Union budget documents, 2014-15 to 2024-25; PRS.

Underachievement of physical targets for capital works

Though the Railways has been increasing its capital expenditure in the past few years, achievement of budget target on capital works has been uneven. For instance, while the achievement on track renewals has generally been higher than budgeted, gauge conversion targets have not been met (Table 3). In 2022-23, new line construction was significantly higher than the budget target (1,815 route km against a target of 300 route km). However, it fell short by 4% in 2021-22.

Table 3: % Backlog in achieving physical targets

	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
New Lines	-49%	-52%	-28%	-43%	-4%	505%
Gauge Conversion	-50%	-40%	-32%	-22%	27%	-52%
Doubling	-45%	20%	-45%	-39%	24%	87%
Diesel Locos	2%	6%	-	-	-	3%
Electric Locos	13%	9%	10%	4%	23%	-16%
Coaches	-4%	18%	-2%	-25%	7%	-22%
Wagons	-48%	-20%	-24%	-16%	-30%	38%
Track Renewals	12%	7%	15%	9%	7%	41%
Electrification	2%	-12%	-37%	0%	6%	1%

Source: Physical Targets, Expenditure Profile, Railway Statements, Ministry of Railways, Union Budget Documents, 2019-20 to 2024-25; PRS.

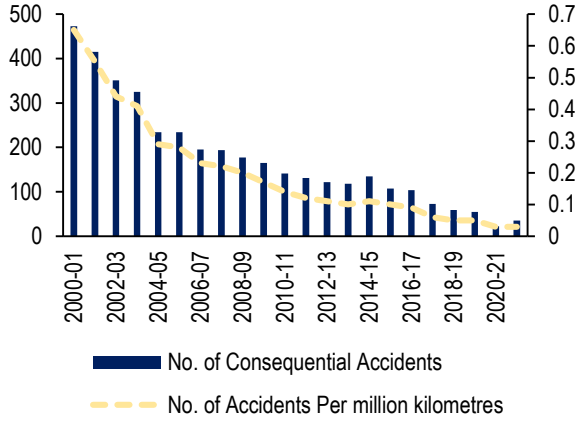
Railway Safety

Railway accidents

An accident refers to an occurrence that affects or may affect the safety of the railway, its engine, or passengers.[22] Consequential accidents have serious repercussions, and may include human injury, the

loss human life, loss to Railway property or interruption of rail traffic.[22] Consequential accidents typically involve collision, fire, or derailments.[22] Between 2000-01 and 2022-23, 3,913 consequential train accidents took place.[23] The number of train accidents has declined over the years. The Ministry of Railways also measures the impact of accidents in terms of number of accidents per million kilometres. In 2000-01, for every million kilometres, 0.65 accidents took place. This figure has reduced to 0.03 in 2021-22.[6]

Figure 10: Consequential rail accidents between 2000-01 and 2021-22



Source: Indian Railways – Safety Performance Fact Sheet, Lok Sabha Secretariat, July 2018; Railway Year Books from 2017-18 to 2021-22, Ministry of Railways; Consequential Train Accidents Have Declined over the years, PIB, Ministry of Railways, February 2, 2024.

Reasons for accidents

Inquiries into railway accidents across years have revealed some recurring reasons behind these events. Failure on part of the railway staff has caused 50% of all accidents that occurred between 2010-11 and 2021-22.[24] Accidents due to failure of railway staff continues to be the leading cause of accidents (see Annexure).[24] Between 2017-18 and 2021-22, the total share of accidents caused due to failure of railway staff was 69%. Other factors causing rail accidents include: (i) failure due to persons other than railway staff, (ii) equipment failure such as failure of locomotive, rolling stock, overhead wire, signalling and telecommunication equipment, (iii) incidental factors and other factors like sabotage and (iv) a combination of more than one of these factors.[22]

Types of accidents

Derailments, i.e., when the wheel of a train off loads from the track, account for 75% of the train accidents, followed by fires (9%) and level crossing accidents (8%). Level crossing accidents could occur at both manned and unmanned level crossings. As on March 31, 2019 all unmanned level crossings in the country have been eliminated.[29] According to the Indian Railways Technical Guide on Derailments published in 1998, derailments may be a consequence of: (i) failure of railway staff in properly examining railway equipment, (ii) inadequate maintenance of locomotives, passenger coaches and freight wagons, railway tracks, signals, and (iii) other operational irregularities.[30] Out of the 1,129 derailments that occurred between 2017 and 2021, 26% were linked to lack of track renewal works.[31]

Kavach system

To prevent collision related accidents, Railways has implemented the Kavach system. Kavach is a collision avoidance system that assists a train operator in maintaining the speed of the train within specified speed limits.[25] The system automatically applies brakes in case the train operator fails to do so.[25] The Ministry has estimated Kavach to cost Rs 50 lakh per route kilometre, and Rs 70 lakh per locomotive (engine of train).[26] As of 2021-22, the Indian Railways has a total route length of 68,043 kms and has 13,215 operating locomotives.

As of July 24, 2024, Kavach has been deployed on 1,465 km and 144 locomotives on the South-Central Railway.[27] As of July 24, 2024, the Ministry has spent Rs 1,217 crore on implementing Kavach.[27] Rs 1,113 crore is estimated to be spent in 2024-25 on this system.[27] The first tests for Kavach were conducted in 2016 and it was subsequently adopted as the national automatic train protection system in July 2020.[25] Presently there are three Indian original equipment manufacturers (OEM) who have been approved for development of Kavach.[28]

Funding Railway Safety

Safety works of the Railways are funded by three funds, namely the Depreciation Reserve Fund (DRF), Railway Safety Fund (RSF), and the Rashtriya Rail Sanraksha Kosh (RRSK fund).[32] RRSK fund was created in 2017-18 for five years with a corpus of one lakh crore rupees.[32,33] The assured annual outlay for the fund was Rs 20,000 crore every year, with Rs 15,000 crore as contribution from the central government and Rs 5,000 crore from the internal resources of Railways.[33] It has been extended for another five years from 2022-23.[34]

CAG (2022) observed that the railways have been falling short of funding the RRSK through its internal revenue due to inadequate revenue surplus.[5] In 2019-20, of the Rs 5,000 crore that had to be financed through railway internal revenue, only Rs 201 crore was transferred to the fund.[35] In 2020-21, the contribution of internal revenue had increased to Rs 1000 crore but was significantly lesser than the budgeted amount of Rs 5,000 crore.[35] No amount was budgeted for the fund from the internal revenue as per revised estimates of 2023-24 and budget estimates of 2024-25.[35]

Provisioning for over aged or depreciating assets is made through allocations to the Depreciation Reserve Fund.[36] The DRF is financed through the internal revenue of the railways.[36] The DRF has not been receiving sufficient fund appropriation from the budget in the past few years due to inadequate surplus. In 2021-22, Rs 800 crore was budgeted towards the DRF for renewal of over-aged assets. Against this amount, no expenditure was made.[35] From 2017-18 to 2022-23, the total amount budgeted towards the DRF was Rs 9,600 crore. Of which the Railways was only able to spend Rs 3,140 crore. Due to the poor utilisation of funds appropriated to the DRF, there has been a backlog in renewing over-aged assets. Under-provisioning for asset depreciation resulted in a backlog of asset replacement works at an estimated value of Rs 34,319 crore as of 2021-22.[5]

Annexure

Table 4: Passenger traffic details (traffic volume in million PKM; earnings in Rs crore)

	2022-23		2023-24 Revised		2024-25 Budget		% change (2023-24 RE to 2024-25 BE)		% share in 2024-25 BE	
	Earning	Volume	Earning	Volume	Earning	Volume	Earning	Volume	Earning	Volume
Suburban (A)	**2,639**	**1,14,350**	**2,632**	**1,18,435**	**2,860**	**1,26,136**	**9%**	**7%**	**4%**	**10%**
Non-Suburban (B)	**60,778**	**8,44,569**	**70,368**	**9,83,972**	**77,140**	**11,12,768**	**10%**	**13%**	**96%**	**90%**
AC First Class	929	2,935	1,231	3,882	1,357	4,277	10%	10%	2%	0.3%
AC 2 Tier	5,858	31,472	6,802	36,254	7,327	39,051	8%	8%	9%	3%
AC 3 Tier	21,345	1,55,765	26,167	1,87,050	26,584	1,90,032	2%	2%	33%	15%
Executive Class	285	723	572	1,383	644	1,556	12%	13%	1%	0.1%
AC Chair Car	2,296	12,286	3,158	16,179	3,845	19,700	22%	22%	5%	2%
First Class (ME)	28	20	30	18	37	22	25%	22%	0.05%	0.002%
First Class (Ordinary)	5	97	4	115	4	115	0%	0%	0.01%	0.01%
Sleeper Class (ME)	15,929	2,80,260	16,142	2,82,792	17,530	3,07,108	9%	9%	22%	25%
Sleeper Class (Ordinary)	6	94	6	93	6	93	0%	0%	0.01%	0.01%
Second Class (ME)	13,533	3,23,628	15,667	4,14,433	19,181	5,06,548	22%	22%	24%	41%
Second Class (Ordinary)	566	37,289	589	41,773	624	44,266	6%	6%	1%	4%
Total (A+B)	**63,417**	**9,58,919**	**73,000**	**11,02,407**	**80,000**	**12,38,904**	**10%**	**12%**	**100%**	**100%**

Note: PKM – Passenger Kilometre (One PKM is when a passenger is carried for a kilometre).
RE: Revised Estimates; BE: Budget Estimates.
Sources: Expenditure Profile; Union Budget 2024-25; PRS.

Table 5: Freight traffic details (traffic volume in million NTKM; earnings in Rs crore)

	2022-23 Actuals		2023-24 RE		2024-25 BE		% change (2023-24 RE to 2024-25 BE)		% share in 2024-25 BE	
	Earning	Volume	Earning	Volume	Earning	Volume	Earning	Volume	Earning	Volume
Coal	80,747	4,04,138	82,905	3,95,368	93,112	4,18,527	12%	6%	51%	45%
Other Goods	11,666	88,514	12,316	90,079	12,264	84,420	-0.4%	-6%	7%	9%
Cement	12,197	86,009	13,239	83,580	14,308	83,778	8%	0.2%	8%	9%
Containers service	7,082	72,451	8,403	73,104	9,524	72,833	13%	-0.4%	5%	8%
Food grains	10,038	83,756	8,241	60,493	8,174	56,988	-1%	-6%	4%	6%
Iron ore	12,314	57,979	13,925	63,777	13,982	59,737	0%	-6%	8%	6%
Pig iron and Finished steel	10,529	66,495	11,135	58,407	11,772	57,907	6%	-1%	6%	6%
Fertilizers	6,629	49,832	7,183	47,960	7,505	47,022	4%	-2%	4%	5%
Petroleum, Oil, and Lubricant	6,305	33,690	6,859	34,526	7,013	33,150	2%	-4%	4%	4%
Raw materials for steel plants	2,651	16,702	2,648	15,260	2,885	15,821	9%	4%	2%	2%
Miscellaneous revenue	2,104	-	2,200	-	2,347	-	7%	-	1%	0%
Total	**1,62,263**	**9,59,566**	**1,69,054**	**9,22,554**	**1,82,885**	**9,30,183**	**8%**	**1%**	**100%**	**100%**

Note: NTKM – Net Tonne Kilometre (One NTKM is when one tonne of freight is carried for a kilometre). RE: Revised Estimates; BE: Budget Estimates.
Sources: Expenditure Profile; Union Budget 2024-25; PRS.

Table 6: Details of capital expenditure (Rs crore)

Head	2022-23 Actuals	2023-24 BE	2023-24 RE	2024-25 BE	% change from 23-24 RE to 24-25 BE
New Lines (Construction)	24,663	31,850	34,410	34,603	1%
Gauge Conversion	2,877	4,600	4,279	4,720	10%
Doubling	30,043	30,749	35,046	29,312	-16%
Traffic Facilities-Yard Remodelling and Others	4,460	6,715	7,809	8,983	15%
Rolling Stock	44,293	47,510	50,325	52,314	4%
Leased Assets-Payment of Capital Component	17,456	22,229	21,300	24,270	14%
Road Safety Works-Road Over/Under Bridges	4,827	7,400	6,297	9,275	47%
Track Renewals	16,326	17,297	16,826	17,652	5%
Electrification Projects	6,658	8,070	8,361	6,472	-23%
Other Electrical Works incl. TRD	735	1,650	1,545	1,682	9%
Workshops Including Production Units	2,481	4,601	3,458	4,904	42%
Staff Welfare	421	629	733	815	11%
Customer Amenities	2,159	13,355	9,618	15,511	61%
Investment in Govt. Commercial Undertaking - Public Undertaking/JVs/SPVs	27,533	34,354	32,800	32,761	-0.1%
Metropolitan Transport Projects	4,500	5,000	4,601	4,090	-11%
Others	3,465	7,192	5,793	7,838	35%
EBR- Partnership	11,086	17,000	17,000	10,000	-41%
Total	**2,03,983**	**2,60,200**	**2,60,200**	**2,65,200**	**2%**

RE: Revised Estimates; BE: Budget Estimates.
Sources: Expenditure Profile; Union Budget 2024-25; PRS.

Table 7: Physical target and achievement for capital expenditure

Head	2022-23			2023-24			2024-25	% change from 23-24 RE to 24-25 BE
	Budget Target	Achievement	In %	Budget Target	Revised Target	% change	Budget Target	
Construction of New Lines (Route Kms)	300	1,815	605%	600	600	0%	700	17%
Gauge conversion (Route Kms)	500	242	48%	150	150	0%	200	33%
Doubling of Lines (Route Kms)	1,700	3,186	187%	2,800	2,800	0%	2,900	4%
Rolling Stock								
(i) Diesel Locomotives	100	103	103%	100	100	0%	100	0%
(ii) Electric Locomotives	1,290	1,086	84%	1,290	1,280	-1%	1,600	25%
Coaches	7,551	5,877	78%	6,978	7,000	0%	8,405	20%
Wagons (vehicle units)	13,000	17,935	138%	26,000	23,000	-12%	38,000	65%
Track renewals (Track Kms)	3,700	5,227	141%	4,800	4,800	0%	5,000	4%
Electrification Projects (Route Kms)	6,500	6,565	101%	6,500	6,500	0%	-	

Sources: Expenditure Profile; Union Budget Documents, 2023-24 and 2024-25; PRS.

Table 8: Apportionment to various funds from revenue (Rs crore)

Year	Capital Fund	Debt Service Fund	Depreciation Reserve Fund	Development Fund	Rashtriya Rail Sanraksha Kosh
2013-14	500	165	7,900	3,075	-
2014-15	6,233	57	7,775	1,375	-
2015-16	5,798	3,488	5,600	1,220	-
2016-17	2,398	0	5,200	2,515	-
2017-18	0	0	1,540	1,506	0
2018-19	0	0	300	750	3,024
2019-20	0	0	400	1,389	201
2020-21	0	0	200	1,547	1,000
2021-22	0	0	0	0	0
2022-23	0	0	700	1,000	1,517
2023-24 RE	0	0	800	1,000	1,000
2024-25 BE	0	0	1,000	1,000	1,800

RE: Revised Estimates; BE: Budget Estimates.
Sources: Expenditure Profile; Union Budget 2024-25; PRS.

Table 9: Types of rail accidents between 2010-11 to 2021-22

Year	Collision	Derailments	Level Crossing Accidents	Fire in Trains	Miscellaneous	Total
2010-11	5	78	53	2	1	139
2011-12	9	55	61	4	2	131
2012-13	6	48	58	8	-	120
2013-14	4	52	51	7	3	117
2014-15	5	60	56	6	4	131
2015-16	3	64	35	-	4	106
2016-17	5	77	20	1	-	103
2017-18	3	53	13	3	-	72
2018-19	-	46	6	6	1	59
2019-20	5	40	1	7	1	54
2020-21	1	16	1	3	-	21
2021-22	2	26	1	4	1	34

Source: Railway Year Books from 2015-16 to 2021-22, Ministry of Railways; PRS.

Table 10: Reasons for rail accidents between 2010-11 and 2021-22

Year	Staff failure	Non staff failure	Equipment failure	Incidental	Sabotage	Combination	No person responsible	Cause not established	Under investigation	Total
2010-11	58	58	2	3	16	2	0	0	0	139
2011-12	57	62	3	2	6	1	0	0	0	131
2012-13	41	58	7	6	3	0	0	2	3	120
2013-14	49	57	3	4	3	0	0	0	1	117
2014-15	58	57	3	8	2	0	0	2	1	131
2015-16	54	38	2	9	1	1	0	1	0	106
2016-17	64	22	2	6	2	3	0	0	4	103
2017-18	43	17	3	5	2	2	0	0	0	72
2018-19	42	9	2	6	0	0	0	0	0	59
2019-20	44	5	4	1	0	0	0	0	1	55
2020-21	16	4	0	0	0	0	1	0	0	21
2021-22	20	4	4	3	1	0	2	0	0	34

Source: Sources: Railway Year Books from 2015-16 to 2021-22, Ministry of Railways; PRS.

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