

**GOVERNMENT OF INDIA  
MINISTRY OF RAILWAYS  
(RAILWAY BOARD)**

**No.2022/F(X)II/PD/1**

**New Delhi, dated 13.12. 2023**

The **General Manager**,  
All Indian Railways.

**Sub:** Productivity Test-reg. Standard Proforma for calculation of FIRR.

**Ref:** MF's letter No. F(X)II/2022/PD/1 dated 05.07.2023.

Vide Member Finance's letter referred above, Railways were advised to conduct Productivity Test for all those projects where it is due and to submit the report of such tests to Railway Board.

2. The productivity test reports submitted by various Zonal Railways have been examined in Board and it has been observed that no standard practice has been followed for calculation of FIRR for conducting the Productivity Test.
3. Accordingly, a standard proforma for calculation of FIRR has been prepared and is attached. An Excel sheet containing format for calculation of FIRR has also been uploaded in the website of Indian Railways (<https://indianrailways.gov.in/-->Railway Board-->Railway Board Directorates-->Finance-->Content of Finance/Expenditure>) for calculation of various parameters given in the enclosed standard proforma for calculation of FIRR. (Annexure A and B of this letter)
4. It is advised that any estimation, as prescribed in para 247 of finance code Vol I should be based upon only the CAGR and not on the basis of any other escalation factor.
5. The conclusion drawn should be based on the qualitative analysis and the same should be used in examination of DPRs for sanctioning of projects by all departments. PFAs should advise the corrective action to all concerned based upon the conclusions drawn.
6. Productivity test should be an exercise to be carried out for eligible projects at regular intervals (like years 10/20/at the end of life cycle, in case of new lines). The variation in O&M expenditure as well as revenue vis-à-vis initial projections should be highlighted separately. The expenditure and revenue data for each such completed projects should be captured regularly as prescribed in para 1519 of Accounts code Vol I.
7. Zonal Railways are advised to follow the standard format (para 3 above) for calculation of FIRR for conducting productivity tests in future.

**Encl:** As above

  
**(Ashish Singh)**  
**Director Finance (Exp.)**  
**Railway Board**

**Copy to:** PFAs, All Zonal Railways.

**Format for Calculation of FIRR for conducting Productivity Test**

Project Construction	Fin. Year	Cash Outflow					Cash Inflow					Net cash flow
		Total/ Addl Capital Cost	Rolling stock	Cost of replacement of assets based on codal life	Working/Add. Working Exp	Total Cash outflow	Revenue from Total/ Addl. Traffic	Savings due to avoidance of detention of locos/ diversion etc	Total	CRRM/ Terminal value	Total/ Additional revenue	
a	b	c	d	e	f	g	h	i	j	k	l	m
Years e.g.						c+d+e+f			h+i		h+i+k	l-g
-5												
-4												
-3												
-2												
-1												
0												
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
Till End of Project												

**Column references:**

Column	Remarks
a	Number of years of construction of the project is to be shown as (-). Number of years of completion of the life of the project after construction is to be considered for FIRR calculation (i.e. till end of the project).
b	Financial year of the project construction and life of the project is to be mentioned.

c	Capital cost will be taken as completion cost of the project. Sanctioned revised estimate/Completion report should be the source data for such figure.
d	The cost compendium of the rolling stock is to be referred for determining Rolling Stock cost. The useful life may be considered in accordance with Para 219 of IRFC Volume-I as amended from time to time.
e	Cost of replacement of assets based on codal life may be taken from estimated cost of the replacement with indexation. If the replacement of assets has already been done, then the actual cost of replacement may be taken.
f	Working expenses will be calculated as per excel sheet titled "Format for calculation of FIRR" uploaded on page of Finance (Expenditure) on IR Website ( <a href="https://indianrailways.gov.in/">https://indianrailways.gov.in/</a> --> <b>Railway Board</b> --> <b>Railway Board directorates</b> --> <b>Finance</b> --> <b>Content of Finance/Expenditure</b> ). Sheets to be filled in the excel sheet- <b>Input &amp; Traffic</b> . This will give Working expenses Goods/Coaching.
h	As mentioned in f above, Sheet to be referred-Earnings. This will give earnings figure.
i	As mentioned in f above, Sheet to be referred-Detention. This will give figures for detention savings.
k	As per Para 219 of Indian Railway Finance code Vol. 1.

## **Annexure B**

### **General guidelines for arriving at FIRR for conducting Productivity Test:**

- The data for filling the excel Sheet-Input & Traffic (as referred in (f) above) may be taken from Annual Statistical Statement (ASS) & End Result Freight/Coaching.
- If the figure of actual working expenses/revenue of earlier years is partially available for a period, the same shall be used for finding out CAGR and making future projections. The same can be used for projecting the working expenses/revenue till the end of the project.
- Expenditure which is not directly identifiable to the project shall be taken on distribution basis.
- As far as possible, the financial data may be taken from IPAS.
- FIRR shall be calculated using the interpolation method as per Codal provisions or with the help of above referred Excel sheet.
- As far as possible, the freight data may be taken from FOIS and Passenger data may be taken from PRIMES/PRS.

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