FINANCIAL ANALYSIS

A. Introduction

1. The financial analysis of the project comprises a fiscal sustainability analysis to assess the capacity of China Railway Corporation (CRC) to provide sufficient funds for all incremental recurrent costs to be incurred by the project. The financial analysis was carried out in accordance with relevant Asian Development Bank (ADB) policies and guidelines.[1]

2. The Ministry of Finance of the People's Republic of China is the borrower of the ADB loan. The executing agency is CRC and the implementing agency is Chengdu–Kunming Railway Company Limited.

3. The project has two outputs: (i) multimodal passenger hub developed and (ii) railway maintenance improved. The hub will include good intermodal connectivity, energy efficiency features, and earthquake-resistant design. The railway maintenance output will include procurement of railway track maintenance machines, track inspection and repair coverage, and capacity building for railway maintenance measures and training on advanced railway maintenance systems.

4. The project will not generate revenue for cost recovery because it is only part of the whole railway line. The financial analysis therefore comprises (i) projections of incremental recurrent costs, including operation and maintenance (O&M) expenditures required to ensure sustainability of the project benefits; and (ii) an assessment of CRC's capacity and the projected revenue of the railway line to finance the recurrent costs.

B. Major Assumptions and Methodology

5. The main assumptions of the financial analysis are as follows:
   - (i) The project will be implemented from 2019 to 2026, and the operation period will span 2026 to 2045.
   - (ii) All revenues and expenses are expressed in 2018 prices and in nominal terms. The revenue and expenditure projection was taken from the railway line feasibility study report which was conducted by Chendu–Kunming Railway Bureau and verified by the technical assistance consultant.
   - (iii) The average tariff for high-value cargo is assumed at CNY0.18 per ton-kilometer (km), excluding the railway construction fund surcharge, which averages CNY0.015 per ton-km. The passenger tariff ranges from CNY0.12 per passenger-km for local trains to CNY0.29 per passenger-km for high-speed rail operating at 160 km per hour. Other revenues (e.g., warehouse storage and parcel service in the train stations) amount to 4.5% of freight and 8.0% of passenger revenues.
   - (iv) O&M costs include personnel salaries and benefits, hub maintenance costs, administration, insurance, taxes, power costs, and other expenses such as depreciation. Wages are assumed to increase by 4% based on 5-year historical data (2013–2017), and benefits estimated at 33% of the annual wages.
   - (v) Residual value was calculated based on the economic life of fixed assets.

---

[1] ADB. 2014. Financial Management, Cost Estimates, Financial Analysis, and Financial Performance Indicators. *Operations Manual. OM G2/BP*. Manila; ADB. 2009. *Financial Due Diligence: A Methodology Note.* Manila; and ADB. 2005. *Financial Management and Analysis of Projects*. Manila.

(vi) United States dollar costs were converted to yuan at an exchange rate of CNY6.3341 = $1.00, which was the prevailing exchange rate as of 14 May 2018.
(vii) Interest and commitment charges during implementation will not be capitalized in the loan but will be paid by the executing agency.
(viii) Physical contingencies were computed at 5% of base cost, price contingencies account for cumulative cost inflation over the construction period, and domestic and international inflation assumptions are based on ADB projections (Table 1).

Table 1: Escalation Rates for Price Contingency Calculation
(%)

	Year								
Item	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**Average**
Foreign rate of price inflation	1.50	1.50	1.60	1.60	1.60	1.60	1.60	1.60	1.57
Domestic rate of price inflation	2.30	2.40	2.50	2.50	2.50	2.50	2.50	2.50	2.46

Source: Asian Development Bank.

6. The total project cost is $425.81 million. The summary cost estimates are presented in Table 2. ADB will provide the project with $120.0 million. The Government of the People's Republic of China will contribute $305.81 million, equivalent to CNY1,937.0 million. The financing plan for the project is presented in Table 3.

Table 2: Summary Cost Estimates
($ million)

Item		**Amount**[a]
A.	**Base Cost**[b]	
	1. Multimodal passenger hub developed	126.01
	2. Railway maintenance improved	240.69
	Subtotal (A)	**366.70**
B.	**Contingencies**[c]	**41.49**
C.	**Financing Charges During Implementation**[d]	**17.62**
	Total (A+B+C)	**425.81**

Source: Asian Development Bank.

Table 3: Summary Financing Plan

Source	**Amount** ($ million)	**Share of Total** (%)
Asian Development Bank	120.00	28.20
Government of the People's Republic of China	305.81	71.80
Total	**425.81**	**100.00**

Source: Asian Development Bank estimates.

C. Financial Sustainability Analysis

7. The financial sustainability analysis assesses the capacity of CRC and the projected revenues and expenditures of the railway line where the multimodal hub will be connected. CRC will be responsible for (i) counterpart funds during project implementation, (ii) servicing of the ADB loan, (iii) all O&M costs for the project-financed facility and the railway maintenance equipment, and (iv) the debt service payments after project completion.

8. CRC's historical financial data was analyzed to determine if the company can support the project. Counterpart financing amounts to $305.81 million (CNY1,937 million), which is too small

as compared to CRC's operation (Table 4). From 2016 to 2017, CRC's debt service coverage ratio increased by 0.10, even though the debt ratio stayed the same and the current ratio fell from 0.78 to 0.68. During the same period revenue increased slightly, with a stable operating ratio averaging about 82%.

Table 4: Historical and Projected Financial Statements of China Railway Corporation

Item	2015	2016	2017	2018	2019	2020
Total revenues (CNY million)	916,258	907,448	1,015,448	1,070,993	1,129,576	1,191,364
Business tax (CNY million)	(6.653)	(4,183)	(4,980)	(7,776)	(5,207)	(5,843)
Total revenues after business tax (CNY million)	909,605	903,265	1,010,468	1,063,216	1,124,369	1,185,521
Total expenses including depreciation (CNY million)	863,542	872,467	958,541	1,009,374	1,086,032	1,124,598
Depreciation (CNY million)	110,066	122,846	136,073	128,654	152,917	159,646
Operating profit (CNY million)	46,063	30,798	51,927	53,842	38,337	60,923
Other income and expenses (CNY million)	7,393	8,847	8,866	4,048	7,916	11,399
Total profit (CNY million)	53,456	39,645	60,793	62,483	49,349	71,325
Less: construction funds after tax (CNY million)	44,880	40,818	48,326	52,459	42,924	56,698
Profit before tax (CNY million)	8,576	(1,173)	12,467	10,024	6,426	14,627
Current assets (CNY million)	528,416	594,261	546,775	716,919	749,826	876,124
Long-term assets (CNY million)	5,717,454	6,657,000	7,101,612	7,891,862	8,939,943	10,030,371
Current liabilities (CNY million)	706,619	764,606	799,172	940,847	1,035,730	1,178,873
Long-term liabilities (CNY million)	3,388,526	3,950,738	4,188,678	4,680,410	5,287,386	5,940,470
Total Equity (CNY million)	**2,150,725**	**2,535,917**	**2,660,536**			
Cash, beginning of year (CNY million)	209,441	197,121	206,775	146,814	258,590	238,532
Total sources of funds (CNY million)	986,164	1,282,995	1,051,267	1,152,704	1,597,051	1,233,388
Total application of funds (CNY million)	998,484	1,273,341	1,111,228	1,040,928	1,617,109	1,173,874
Cash, end of year (CNY million)	197,121	206,775	146,814	258,590	238,532	298,047
Total Debt Service (CNY million)	**338,512**	**620,335**	**540,508**	**562,932**	**598,372**	**624,951**
Current ratio	0.75	0.78	0.68	0.76	0.72	0.74
Debt–equity ratio	1.90	1.86	1.87	1.88	1.88	1.88
Long-term debt / long-term debt + equity	0.61	0.61	0.61	0.61	0.61	0.61
Operating margin ratio (%)	5.03	3.39	5.11	5.03	3.39	5.11
Operating ratio (%)	82.84	82.99	81.39	82.84	82.99	81.39
Debt service coverage ratio	0.46	0.25	0.35	0.34	0.26	0.26

( ) = negative.
Source: China Railway Corporation.

9. The revenue of the railway line was projected based on the feasibility study report. Operating revenues from tariffs were projected based on forecast future traffic[2] on the line without regard to the projected traffic along the existing railway line, which will be closed at a later stage. Incremental cost and revenues associated with the railway track connectivity operations are also included. The increase in tariff is assumed based on the average revenue derived from freight

[2] Traffic volume for freight ton per km was reduced by 35% and passenger volume was estimated to be about 500–600 passengers per train in the first year of operations, as the existing line is still operational.

and passenger traffic of CRC, which increases every 7 years. Counterpart funding and incremental recurrent costs were compared with the income after tax. A threshold of 3% of total revenue was applied as test whether the commitment would have a significant financial impact on the railway line operations.

Table 5: Projected Revenue and Expenditure of the Railway Line

Item	2026	2027	2028	2030	2033	2036	2039	2043	Average
Total revenues (CNY million)	2,883.1	2,955.2	3,029.1	3,182.4	3,427.1	3,690.6	3,974.4	4,387.0	
Total expenditures (CNY million)	2,494.2	2,556.5	2,620.4	2,753.1	2,964.8	3,192.7	3,438.2	3,795.2	
Business and other taxes (CNY million)	144.2	147.8	151.5	159.1	171.4	184.5	198.7	219.3	
Income after tax (CNY million)	244.8	250.9	257.2	270.2	291.0	313.4	337.5	372.5	
Annual debt service and O&M (CNY million)	29.99	30.06	30.13	30.30	30.61	30.98	31.44	32.18	
Annual debt service and O&M as a share of revenues (%)	1.04	1.02	0.99	0.95	0.89	0.84	0.79	0.73	0.84

O&M = operation and maintenance.
Note: Figures are in nominal terms.
Source: Asian Development Bank estimates.

D. Conclusion

10. As the project will not generate revenue for cost recovery, the analysis focuses on the financial capacity of CRC and the projected revenue stream from the railway line to fulfill counterpart funding commitments and incremental recurrent costs. Based on CRC’s historical financial surplus and projected financial ratios, the required counterpart funding during project implementation is miniscule, and the project operation commitments are all less than 3% of projected revenue of the railway line. It is therefore concluded that the (i) financial impact to CRC’s operation will be minimal, and (ii) the revenue from the railway line can contribute the required funding under the project. It is anticipated that the railway line will also provide passengers with significantly faster and better services, which may justify the future increase in fares and will likely add financial revenues to the railway line, providing additional resource mobility. The project’s legal agreements will include assurances that additional resources will be made available as required.