



## 1. Project Data

<b>Project ID</b> P107559	<b>Project Name</b> CN-Guizhou-Guangzhou Railway	
<b>Country</b> China	<b>Practice Area(Lead)</b> Transport & ICT	
<b>L/C/TF Number(s)</b> IBRD-76780	<b>Closing Date (Original)</b> 31-Dec-2015	<b>Total Project Cost (USD)</b> 12,527,000,000.00
<b>Bank Approval Date</b> 16-Apr-2009	<b>Closing Date (Actual)</b> 31-Dec-2016	
	<b>IBRD/IDA (USD)</b>	<b>Grants (USD)</b>
Original Commitment	300,000,000.00	0.00
Revised Commitment	299,490,948.63	0.00
Actual	299,490,948.63	0.00

<b>Prepared by</b> Ranga Rajan Krishnamani	<b>Reviewed by</b> Robert Mark Lacey	<b>ICR Review Coordinator</b> Christopher David Nelson	<b>Group</b> IEGSD (Unit 4)
--	---	---	--------------------------------

## 2. Project Objectives and Components

### a. Objectives

The Project Development Objective (PDO) as stated in the Loan Agreement (Schedule 1, page 4) and the Project Appraisal Document (PAD, page 5) was:

**"To provide additional transport capacity and reduce transport time between the less developed western region in southwest China and the relatively more developed Pearl River delta region".**



**b. Were the project objectives/key associated outcome targets revised during implementation?**

No

**c. Will a split evaluation be undertaken?**

No

**d. Components**

This project was part of a wider national program of six railway projects that supported the construction of 2,660 kilometers (Km) of rail lines during the period. There was one main component.

**Railway line between Guiyang and Guangzhou.** (Estimated cost at appraisal US\$12,526.56 million. Actual cost at closure US\$13,054.98 million). This component aimed at constructing a new electrified rail line track for freight and passenger service (the GuiGuang line) between Guiyang in Guizhou Province - a relatively less developed western region in Southwest China - and Guangzhou in Guangdong province in the relatively more developed Pearl River delta region. There were four sub-components:

- (1) construction of about 857 km of the rail line and sub-grades, tunnels, bridges, culverts and buildings, acquisition and installation of goods (such as communications, signaling, mechanical and electrification equipment and concrete beams) and related technical assistance.
- (2) construction of new railway stations along the rail line mentioned above.
- (3) Resettlement and rehabilitation of displaced persons.
- (4) Consulting services.

At a level 2 restructuring on August 2nd, 2013, a number of changes were made: (i) following a new analysis of traffic flows, the Government decided to restrict the line to passenger traffic only, rather than as a mixed freight/passenger line as originally envisaged. The line would have an increased speed capability of 250 km/h to meet passenger demand requirements; the results framework was revised and the target pertaining to freight trains was dropped: (ii) a newly created entity - the GuiGuang- Guangzhou Railway Company Limited - took over project implementation, in line with the practice in other recent railway projects in China; and (iii) the disbursement categories were combined to enhance flexibility.

**e. Comments on Project Cost, Financing, Borrower Contribution, and Dates**

**Project Costs.** The total estimated project cost (including total baseline cost and costs associated with physical contingencies, interest during construction and IBRD Front-end fee) was US\$12,526.56 million. Actual cost at closure was 4% higher than expected at US\$13,054.98 million (and a cost overrun of 9% in Chinese Yuan). The actual cost was higher than expected due to the higher infrastructure standards for a 250 km/h line.

**Project Financing.** An IBRD loan of US\$300.00 million was the only external financing. At closure, US\$299.49 million had been disbursed.

**Borrower Contribution.** The Borrower contribution was estimated at US\$12,226.56 million. At closure, their contribution was more than planned at US\$12,755.49 million.

**Dates.** The project closing date was extended once by a year from December 31, 2015 to December 31, 2016 in order to complete the supplemental income programs related to land acquisition.



### 3. Relevance of Objectives & Design

#### a. Relevance of Objectives

Given the size of the country, the objective of increasing railway capacity of railways to meet the growing demand for rail services is highly relevant, as rail is more economical than road for long distance movement of both passengers and freight. Moreover, railways are more energy efficient and environmentally-friendly than other transport modes (except inland waterways). Railways are also more economical in terms of land use than roadways of similar capacity.

The importance of the PDO to the government was articulated in the 2004 Ministry of Railways' (MOR) *'Mid and Long Term Railway Development Plan (MLTRDP)* which articulated the construction priorities of China Railways and set the annual investment needs for railways to keep pace with growing demand at about US\$12-15 billion per year through 2020. Following the State Council approval of the 11th Five Year Plan for the 2006-2010 period, the annual investment needs had increased significantly above the level envisaged in the MLTRDP, to US\$45 billion in 2008. In 2008, in response to a growing global financial crisis, the government announced an economic stimulus package that included a huge increase in infrastructure spending, with an emphasis on railway development. This package, which coincided with appraisal, aimed at increasing the annual investment in railways to US\$60-90 billion over two years. The objectives were also aligned with China's 13th Five Year Plan for the 2016-2020 period, under the pillar of "establishing a new model of coordinated regional development."

The PDO are relevant to the Bank strategy for China. At appraisal, the project contributed to the priorities of the Country Partnership Strategy (CPS) for the 2006-2010 period, particularly the dimensions of: (i) integrating China into the world economy through reducing transportation times between southwest China and the Pearl River Delta Basin and its ports; (ii) reducing poverty, inequality and social exclusion through lowering costs of rail transportation services and improving connectivity to the inhabitants of the relatively poor provinces with the prosperous Pearl River Delta region; and (iii) managing resource scarcity and environmental challenges by enabling railways to attract and retain traffic that would otherwise be carried by road. The PDO continued to be aligned to the Bank Group's China CPS for the 2013-2016 period, on the dimensions of the improvement of transport connectivity for more balanced regional development.

#### Rating

High

#### b. Relevance of Design

The statement of the PDO was clear and the causal links between the project activities, their outputs and the final outcomes were logical. The intended final outcomes were measurable in principle.

The construction of new electrified rail line in conjunction with construction of new railway stations along the rail line would increase rail capacity for long haul movement passenger and freight traffic between the relatively less developed western region in Southwest China and the relatively more developed Pearl River delta region. The outcomes could be expected to contribute to the higher-level objective of integrating China into the world economy, reducing poverty and inequality within China through faster economic development



and reducing poverty of the less developed western region and addressing transport-related environmental challenges facing the Chinese economy. The design also identified the exogenous effects on the environment and incorporated measures for addressing such effects.

**Rating**  
High

#### 4. Achievement of Objectives (Efficacy)

##### **Objective 1**

###### **Objective**

To provide additional transport capacity between the less developed western region in Southwest China and the relatively more developed Pearl River delta region.

###### **Rationale**

###### **Outputs.**

Project outputs which were common to both objectives are as follows.

- Double-track electrified railway passenger-dedicated Line of 847 km from Guiyang in Southwest China to Guangzhou Province was constructed.
- The following goods were acquired and installed as targeted: Communication equipment (20 core fiber cable and Global System for Mobile Communications - Railway digital mobile communication system): Signaling and electrification equipment (Cab-signaling and Infrared hot box detectors): and, Maintenance vehicles (Catenary maintenance cars, test vehicle and wagons for carrying rail and other materials for the construction site).
- 21 stations were constructed at project closure as compared to the target of 30. This included construction of 16 new stations and upgrading of three existing stations and two final stations were developed outside the scope of the project.
- 342 bridges and viaducts, 233 tunnels and 100% of civil works were constructed as targeted.
- Consulting services were provided and training and study tours were conducted. No targets were set for these activities.

###### **Outcomes.**

The average number of pairs of express passenger trains operating per day between Guiyang and Guangzhou increased to 25 from a baseline of three. This exceeded both the original and the revised targets of 15 and 20 respectively. The ICR (page 12) reports that as of February 2017, there were 38 pairs of trains between Guangzhou and Guilin, of which 18 continued to Guiyang, and that there were five non-stop trains between Guangzhou and Guiyang.

A beneficiary survey was conducted to assess the benefits of the High Speed Line (HSL) at project closure.



A sample of 467 passengers was interviewed using the High Speed Rail on 12 trains. Given that the GuiGuang is well-known for its tourist attractions along the corridor, over 61% of the passengers on the HSL were tourists, while business travelers accounted for 36%. The survey found that the HSL was used by passengers from a broad range of income levels, with over 40% of travelers with an average monthly income of Yuan (CNY) 4,000 or lower. 36% of the passengers indicated that they would not have undertaken the trip in the absence of the HSL. One reason for the low proportion of business trips was the shortage of tickets, as the travel agencies had booked tickets well in advance.

The project contributed to providing additional transport capacity although only for passenger services traffic, since it was decided not to carry freight on the line. It is also unclear how much of the increased traffic noted on the HSR is due to factors beyond the project's control (such as accelerated growth of the economy).

**Rating**

Substantial

**Objective 2**

**Objective**

To reduce transport time between the less developed western region in Southwest China and the relatively more developed Pearl River delta region.

**Rationale**

**Outcomes.**

Average travel time between the western region of southwest China and the Pearl River delta region decreased from 1,500 minutes to 251 minutes, thereby reducing travel time by 83% as compared to the baseline. This exceeded the original target of 330 minutes and was marginally short of the revised target of 250 minutes.

The ICR (page 12) reports that High-Speed train fares were priced competitively against bus services and provided time savings relative to travel by bus services. The ICR however provides little details to support this assertion.

**Rating**

High

**5. Efficiency**

**Economic and Financial Analysis.** A Cost-Benefit Economic Analysis was conducted for the project's single component, which accounted for approximately 77% of the project cost at appraisal and about 74% at



closure. The project was expected to contribute to increased traffic volumes, both through diverting traffic from other transport modes (such as roads) and through increased frequency of rail services (service every hour as opposed to the existing services of twice a day). The project benefits were assumed to come through reduction in travel time and distance, freeing up capacity on the existing lines to handle the projected increase in traffic, and wider social and environmental benefits (such as reduction in road accidents, congestion and vehicle emissions). Other benefits which were identified but not factored in the cost-benefit analysis were potential agglomeration benefits (the notion is that a transport project that leads to reduction in travel times between regional economic centers can impact on companies' locational choices and agglomeration of companies in particular areas can generate positive externalities such as knowledge spillovers between companies and greater productivity due to greater competition). The Net Present Value (NPV) at 12% discount rate at project closure was CNY 128 billion as compared to the NPV of CNY 92 billion at appraisal. The ex post Economic Rate of Return (EIRR) was 18% as compared to the ex-ante EIRR of 16%.

**Operational and Administrative Efficiency.** The railway infrastructure activities were completed, with higher standards. The rail line was operational from December 2014 (prior to the estimated start in 2015). Based on the World Bank publication "*High-speed Railways in China: A look at Construction costs: China transport topics: No 9*", the estimated unit cost of this project at US\$14 million per km, was among the lowest in the world (ICR, page 14). The unit cost was also lower than the unit cost of other railway projects partly financed by the Bank in China with a maximum speed of 250 km/h which ranged between US\$17- US\$19 million per km. There was a cost overrun of 9% in Chinese Yuan terms on account of the higher design standard associated with a 250 km/h line. At loan closing, the Supplemental Income Program was not yet completed in one province (see Section 11 below).

## Efficiency Rating

Substantial

a. If available, enter the Economic Rate of Return (ERR) and/or Financial Rate of Return (FRR) at appraisal and the re-estimated value at evaluation:

	Rate Available?	Point value (%)	*Coverage/Scope (%)
Appraisal	✓	16.00	77.00 <input type="checkbox"/> Not Applicable
ICR Estimate	✓	18.00	74.00 <input type="checkbox"/> Not Applicable

\* Refers to percent of total project cost for which ERR/FRR was calculated.

## 6. Outcome

Relevance of the objectives to the government and Bank strategies for China is rated high, as is relevance of design, given the strong causal links between project activities, their outputs and intended outcomes. Efficacy of



the first objective - to provide additional express rail capacity - is rated substantial, although only for passenger services since it was decided not to carry freight on the line. Efficacy of the second objective - to reduce transport time between the less developed western region in Southwest China and the relatively more developed Pearl River delta region - is rated high, given that targets were exceeded. Efficiency is rated substantial. The ex post EIRR was higher than the ex-ante. Although some activities were not complete at closure, the High-Speed Rail line for passenger traffic was operational at higher standards in December 2014, prior to the estimated date, and the project had a lower unit cost as compared to similar Bank-supported projects in China.

**a. Outcome Rating**  
Satisfactory

## 7. Rationale for Risk to Development Outcome Rating

**Government Ownership and Commitment.** Given that government has been substantially investing in railways (see Section 3a above), the risk to government ownership and commitment is rated negligible.

**Technical Risk.** Given that similar High Speed Rail (HSR) lines were operating with high levels of safety and reliability in China since 2007 and China Railways (CR) has developed maintenance systems for infrastructure and rolling stock for these lines, the technical risk is rated negligible.

**Social Risk.** Rail passenger fares are regulated and set below cost recovery in China in line with the government policy of considering public transport as a social good. Price for rail services ranged from Chinese Yuan (CNY) 0.14 to RMB 0.21 per passenger-km for conventional trains, about RMB 0.35 for High Speed Rails with a design speed of 250 km/h and about 0.55 for the 350 kph trains. The price for railway tickets was competitive with alternative costs of travel (such as bus, air or even automobile) and given that passenger surveys showed that passengers were willing to pay a surcharge of 50% for high-speed services, the social risk is rated as negligible.

**Financial Risk.** The railway entity's direct operation costs are likely to be covered by income. However, traffic flows realized so far may not be enough to cover the expected maintenance cost of around CNY 1 million per route km. The risk is assessed as modest.

**a. Risk to Development Outcome Rating**  
Modest

## 8. Assessment of Bank Performance

**a. Quality-at-Entry**

The project built on the lessons learnt from six prior Bank-financed railway projects in China. As in the case of the two most recent projects (the ShiZheng Railway and the NanGuang Railway Projects), design envisaged





the creation of a company and eventual transfer of assets created by the project to the company by the Ministry of Railways (MOR), in order to strengthen ownership of the project. Though the IBRD contribution covered only 2.3% of costs, which was relatively low compared to most Bank-financed projects in China, the project enabled the Bank to support a much wider program of railway projects and also leveraged efficient use of Bank resources by extending the application of Bank requirements, especially with regard to safeguards over a much larger project. Appropriate risks were identified at appraisal including a high risk associated with land acquisition and resettlement, and substantial risks associated with environmental concerns (as the envisioned rail line was to be constructed in mountainous area with rich native vegetation and high biodiversity), traffic volume forecasts of a greenfield project, and risks associated with the modalities of transfer of assets to a yet-to-be-formed company. Appropriate risk mitigation measures (such as preparation of detailed environmental design plans to minimize unavoidable impacts and developing a network model by the Bank to predict traffic demand and comparing the results with the projections of the design institute), were incorporated at design. Appropriate arrangements were made at appraisal for fiduciary and safeguards compliance (see Section 10 below).

The design did not include provision to assess project progress at the implementation phase through a scheduled Mid-Term Review (MTR). However, the core Bank team was in the country office and this enabled frequent meetings with the client to follow-up on implementation of the railway program and provide constant support to the project.

### **Quality-at-Entry Rating**

Satisfactory

#### **b. Quality of supervision**

Twelve Implementation Status Reports (ISRs) were filed over a seven-year period, implying approximately two supervision missions per year. The supervision team was reportedly diligent and had the required expertise. The core supervision team located in the country office worked closely with the government, and this aided the completion of the rail construction activities which became operational prior to the estimated date. The supervision team provided support in addressing the construction challenges that arose during implementation (Borrower's ICR, page 49). The supervision team was proactive in analyzing the need for restructuring, given the adjustments in rail design, and appropriately adapted the project description and indicators to monitor performance of the dedicated passenger line. The team responded in a timely fashion to the request for restructuring of the project (discussed in section 9a). Arrangements were made during implementation for compliance with safeguards in the wake of the government's decision to make the rail line exclusively for passenger movement (see Section 11 below).

### **Quality of Supervision Rating**

Satisfactory

### **Overall Bank Performance Rating**

Satisfactory

## **9. Assessment of Borrower Performance**





### **a. Government Performance**

The government's commitment to meet the growing demand for rail services through increasing capacity was demonstrated by the increase in investment in the railway sector and contributing more than planned by way of counterpart funding. The government complied with loan covenants, including fiduciary and safeguards aspects. The Ministry of Railways demonstrated strong ownership of the project and changed the use of the line from mixed use to passengers only to meet the growing demand for passenger traffic, based on comprehensive network planning. The Ministry of Railways actively participated with the Bank supervision missions and this aided in completing the construction activities and operating the line prior to the estimated date.

There were some delays in the request for restructuring by the Ministry of Finance.

#### **Government Performance Rating**

Satisfactory

### **b. Implementing Agency Performance**

The Foreign Capital Technology Center (FCTIC) under the Ministry of Railways (MoR) was in charge of implementing the project. FCTIC, China Railway Corporation (CRC) and the GuiGuang Railway Company adhered to project implementation requirements, and this, in conjunction with their engagement with Bank supervision missions, contributed to the timely completion of the project. The newly created Railway Company (The GuiGuang Railway Company Limited) was formed as envisaged and the assets of the project were transferred to the company by the Ministry of Railways. The procurement activities were completed in a timely fashion. The GuiGuang Railway Company monitored resettlement and processed payment of compensation to project-affected persons and provided data on performance indicators when the newly created railway line was operational.

However, the Supplemental Income Program of two of the three provinces was not completed by project closure (see Section 10 below).

#### **Implementing Agency Performance Rating**

Satisfactory

#### **Overall Borrower Performance Rating**

Satisfactory

## **10. M&E Design, Implementation, & Utilization**

### **a. M&E Design**

There were three key M&E outcome indicators: the average number of pairs of passenger and freight trains, and the average travel time between Guiyang and Guangzhou. While the indicator pertaining to the average travel time was appropriate for measuring progress towards the objective of reducing transport time between the less developed western region in southwest China and the Pearl River delta region, indicators relating to



expansion of rail capacity did not fully capture the extent to which passenger demand was met at the corridor level, as these indicators focused only on the supply side. Further, these indicators did not measure the operation's impact or effectiveness in the long run. The two intermediate indicators measured progress of project output "percentage of Bank-financed goods contracted by value" and progress in physical terms. The Ministry of Railways through the Foreign Capital and Technical Import Center (FCTIC) and the China Railway Company were responsible for managing M&E.

## **b. M&E Implementation**

The key outcome indicators were adjusted during implementation to reflect the decision to operate only passenger trains on the line. The two key outcome indicators associated with pairs of trains of express passenger trains operated per day and the average travel time of express passenger trains were retained and the indicator associated with the freight train service was removed.

Data on baseline, target values and intermediate values were provided by the Ministry of Railways (MoR) through the Foreign Capital Technology Import Center (FCTIC).

## **c. M&E Utilization**

The ICR (page 7) reported that China Railway Corporation (CRC) supplemented the M&E framework with other tools to serve as a basis for evaluation and to inform decision making and resource allocation.

## **M&E Quality Rating**

Substantial

# **11. Other Issues**

## **a. Safeguards**

The project was classified as a "Category A" project for environmental assessment purposes. In addition to the environmental safeguard (OP/BP 4.01), four safeguard policies were triggered: Natural Habitats (OP/BP 4.04); Physical Cultural Resources (OP/BP 4.11); Involuntary Resettlement (OP/BP 4.12); and, Indigenous Peoples (OP/BP 4.10).

**Environmental, National Habitats and Physical Cultural Resources.** The GuiGuang Railway line was expected to traverse environmentally-sensitive areas, such as nature reserves, forest areas, tourist areas and cultural relics. The environmental issues identified at appraisal included construction impacts such as noise and vibration, community severance and safety, waste management and electro-magnetic frequency impacts (PAD, pages 79-80). According to the PAD, two separate Environmental Impact Assessments (EIA) were conducted, and a Consolidated EIA Report, an Environmental Management Plan, and an Environmental Assessment Executive Summary were prepared and publicly disclosed at appraisal. .

The ICR (page 8) reports that there was compliance with the Environmental Assessment, Natural Habitats and Physical Cultural Resources safeguards policies. It notes that most sensitive areas were either avoided



through alignment selection or crossed by tunnel or tunnel-bridge tunnel systems to minimize negative impact.

**Involuntary Resettlement and Indigenous People.** The GuiGuang Railway line was expected to traverse heavily populated areas (mega cities) at both ends of the lines as well as rural areas with dispersed population and ethnic minorities (PAD, pages 81). The final alignment was expected to affect 226 villages in 87 townships of 26 counties in Guizhou, Guangxi and Guangdong. The total land acquisition was expected to be about 32,617 mu (ancient unit of land area), including 18,776 mu of cultivated land. In addition, about 24,078 mu of land were to be temporarily occupied during construction. About 23,983 households (100,190 persons) were expected to be affected (including 63,164 people through land acquisition and 3,259 households with 11,041 people through house demolition in urban areas). In addition, 190 enterprises, seven schools and some infrastructure needed to be relocated. Approximately 1,600 ethnic minority households were expected to be relocated.

A Resettlement Action Plan (RAP), that was in compliance with the Bank requirements and endorsed by the Ministry Of Railways (MOR) and the local governments, was prepared and publicly-disclosed as required at appraisal (PAD, Pages 81-82). A Social Assessment (SA) was conducted at appraisal to identify areas with ethnic minorities and a Ethnic Minority Development Plan (EMDP) was prepared and publicly-disclosed at appraisal. The ICR (pages 8 and 9) reports that permanently acquired land affected 26,696 families (64,030 people) and temporary land acquisition affected 21,643 households (81,324 people) during implementation and that affected people were consulted and compensation provided.

When the project changed from a mixed-use line to a passenger dedicated line, the RAP was updated to reflect the new alignment, adding Supplemental Income Programs (SIPs) for each province (ICR, page 9): These Programs were: (i) Multiple Livelihood Funds and Scheme in Guizhou which aimed at providing, in addition to land compensation, livelihood funds to the affected population; (ii) a project-related social security program in Guangxi which provided social security funds for the qualified affected people; and, (iii) reserved land or fees in Guangdong which required that a certain percentage of the acquired land was to be used for development of the affected villages. The local governments were responsible for carrying out these programs and they were to be reimbursed by the China Railway Company, GuiGuang Company and the three provinces. The programs accounted for about three percent of total support to the project affected people and about half of it was still to be disbursed at project closure. The ICR (page 9) notes that the SIP for Guangxi province was completed by March 2017. The Task Team explained that the SIP for Guangdong Province would be completed in 2017. The ICR (page 9) notes that the Government and the Bank agreed that the Bank would continue to monitor the implementation of the SIP after the loan closed on December 31, 2016. The ICR (page 9) also notes both the China Railway Company and the GuiGuang Railway Company agreed to employ an external monitoring agent to prepare external monitoring reports on implementation status and that the Bank continues to monitor implementation of the program regularly.

## b. Fiduciary Compliance

The Foreign Capital and Technical Import Center (FCTIC) in the Ministry of Railways was in charge of financial and procurement management.

**Financial Management.** The center had managed several Bank loan projects. An assessment conducted at appraisal concluded that the center had the required ability to address the financial management issues (PAD,



pages 44 and 49). The ICR (page 8) notes that despite some minor delays, the financial management during implementation was in compliance with Bank policies, and that external audits were unqualified.

**Procurement.** At appraisal, an assessment was conducted of the implementing agency's ability to address procurement issues and the procurement risk was rated as Moderate. A procurement plan was prepared (PAD, page 53). The ICR (page 8) reports that the procurement management during implementation was in compliance with Bank policies and that there were no procurement issues during implementation.

**c. Unintended impacts (Positive or Negative)**

---

**d. Other**

---

**12. Ratings**

Ratings	ICR	IEG	Reason for Disagreements/Comment
Outcome	Highly Satisfactory	Satisfactory	Relevance of Objective and Design was High. Efficacy of one objective and Efficiency were rated Substantial, reflecting minor shortcomings.
Risk to Development Outcome	Negligible	Modest	There is modest financial risk associated with the financial viability of the newly created line.
Bank Performance	Satisfactory	Satisfactory	---
Borrower Performance	Satisfactory	Satisfactory	---
Quality of ICR		Substantial	---

**Note**

When insufficient information is provided by the Bank for IEG to arrive at a clear rating, IEG will downgrade the relevant ratings as warranted beginning July 1, 2006.

The "Reason for Disagreement/Comments" column could cross-reference other sections of the ICR Review, as appropriate.

**13. Lessons**

The following lessons are taken from the ICR, with some adaptation of language.

**(1) Unified control over railway program development, project design, financing and implementation can help in achieving overall success.** In the case of this project, the China Railway Corporation (CRC) was



solely responsible for planning, financing and implementing individual projects and creating delivery mechanisms. The unified control over the project enabled timely completion of activities.

**(2) Although agglomeration benefits have been recognized in theory with railway projects, there are few quantitative data to assess the results.** This may be due to the longer time span required for reaping such benefits. An ex post analysis after five or ten years after the railways have been in operation could be undertaken to assess the quantitative benefits.

**(3) The choice of a multi-project engagement can help the Bank in engaging in a broader policy dialogue and to support effective institutional change, even when the Bank financing is limited.**

Although Bank financing was limited to a small percentage of project cost, this approach enabled the Bank to support a much wider and unified program of railway projects, to provide holistic support through policy dialogue with the Ministry of Railways and China Railway Corporation on sector reforms, and to ensure the application of Bank safeguard policies.

**(4) Good preliminary design, strict control over compliance with standards and specifications can help in implementation of large and linear infrastructure projects.** In the case of this project an early and good preliminary project design was the basis for the feasibility report and initial cost estimates. The subsequent detailed design did not deviate significantly from the preliminary design. In addition, applicable standards and technical specifications for railway construction and material inputs were formulated and adhered to strictly. These factors helped in the timely implementation of a large project.

#### 14. Assessment Recommended?

No

#### 15. Comments on Quality of ICR

The ICR is concise, well-written and provides a good analysis. Given that this was classified as an Environmental "category A" project, the ICR provides a thorough description of the possible environmental impacts and measures taken to ensure compliance. The ICR draws good lessons from the experience of implementing this project.

More detail on the tools used by the China Railways Corporation (CRC) for supplementing the M&E framework would have been useful.

##### a. Quality of ICR Rating

Substantial