

**Document of
The World Bank**

Report No.: 32688

PROJECT PERFORMANCE ASSESSMENT REPORT

ROMANIA

**RAILWAY REHABILITATION PROJECT
(CREDIT 3976-RO)**

June 21, 2005

*Sector, Thematic and Global Evaluation Group
Operations Evaluation Department*

Currency Equivalents (annual averages)

Currency Unit = Romanian Lei (ROL).

| | | |
|------|----------|-----------|
| 1996 | US\$1.00 | ROL 3,065 |
| 1997 | US\$1.00 | ROL 7,114 |
| 1998 | US\$1.00 | ROL 8,753 |
| 1999 | US\$1.00 | ROL15,147 |
| 2000 | US\$1.00 | ROL21,328 |
| 2001 | US\$1.00 | ROL29,053 |
| 2002 | US\$1.00 | ROL34,055 |
| 2003 | US\$1.00 | ROL34,122 |
| 2004 | US\$1,00 | ROL33,790 |

Abbreviations and Acronyms

| | |
|-----------------|--|
| CAS | Country Assistance Strategy |
| CEE | Central and East European Region |
| CFR SA | Infrastructure Company |
| CFR Calatori SA | Passenger Operating Company |
| CFR Marfa SA | Freight Operating Company |
| CIDA | Canadian International Development Agency |
| EBRD | European Bank for Reconstruction and Development |
| ECA | Eastern Europe and Central Asia |
| ERR | Economic Rate of Return |
| EU-PHARE | European Union Assistance Program for Eastern Europe |
| IBRD | International Bank for Reconstruction and Development |
| ICR | Implementation Completion Report |
| IRIS | Integrated Railway Information System |
| OED | Operations Evaluation Department |
| PAD | Project Appraisal Document |
| PMU | Project Monitoring Unit |
| PPAR | Project Performance Assessment Report |
| PSO | Public Service Obligation |
| RAP | Restructuring Action Plan |
| SAAF | Surplus Assets Disposal Company |
| SAR | Staff Appraisal Report |
| SNCFR | Societatea nationala a Cailor Ferate Romane (Romanian National Railways) |

Fiscal Year

Government: January 1 – December 31

| | | |
|---|---|--------------------|
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OED Mission: Enhancing development effectiveness through excellence and independence in evaluation.

About this Report

The Operations Evaluation Department assesses the programs and activities of the World Bank for two purposes: first, to ensure the integrity of the Bank's self-evaluation process and to verify that the Bank's work is producing the expected results, and second, to help develop improved directions, policies, and procedures through the dissemination of lessons drawn from experience. As part of this work, OED annually assesses about 25 percent of the Bank's lending operations. In selecting operations for assessment, preference is given to those that are innovative, large, or complex; those that are relevant to upcoming studies or country evaluations; those for which Executive Directors or Bank management have requested assessments; and those that are likely to generate important lessons. The projects, topics, and analytical approaches selected for assessment support larger evaluation studies.

A Project Performance Assessment Report (PPAR) is based on a review of the Implementation Completion Report (a self-evaluation by the responsible Bank department) and fieldwork conducted by OED. To prepare PPARs, OED staff examine project files and other documents, interview operational staff, and in most cases visit the borrowing country for onsite discussions with project staff and beneficiaries. The PPAR thereby seeks to validate and augment the information provided in the ICR, as well as examine issues of special interest to broader OED studies.

Each PPAR is subject to a peer review process and OED management approval. Once cleared internally, the PPAR is reviewed by the responsible Bank department and amended as necessary. The completed PPAR is then sent to the borrower for review; the borrowers' comments are attached to the document that is sent to the Bank's Board of Executive Directors. After an assessment report has been sent to the Board, it is disclosed to the public.

About the OED Rating System

The time-tested evaluation methods used by OED are suited to the broad range of the World Bank's work. The methods offer both rigor and a necessary level of flexibility to adapt to lending instrument, project design, or sectoral approach. OED evaluators all apply the same basic method to arrive at their project ratings. Following is the definition and rating scale used for each evaluation criterion (more information is available on the OED website: <http://worldbank.org/oed/eta-mainpage.html>).

Relevance of Objectives: The extent to which the project's objectives are consistent with the country's current development priorities and with current Bank country and sectoral assistance strategies and corporate goals (expressed in Poverty Reduction Strategy Papers, Country Assistance Strategies, Sector Strategy Papers, Operational Policies). *Possible ratings:* High, Substantial, Modest, Negligible.

Efficacy: The extent to which the project's objectives were achieved, or expected to be achieved, taking into account their relative importance. *Possible ratings:* High, Substantial, Modest, Negligible.

Efficiency: The extent to which the project achieved, or is expected to achieve, a return higher than the opportunity cost of capital and benefits at least cost compared to alternatives. *Possible ratings:* High, Substantial, Modest, Negligible. This rating is not generally applied to adjustment operations.

Sustainability: The resilience to risk of net benefits flows over time. *Possible ratings:* Highly Likely, Likely, Unlikely, Highly Unlikely, Not Evaluable.

Institutional Development Impact: The extent to which a project improves the ability of a country or region to make more efficient, equitable and sustainable use of its human, financial, and natural resources through: (a) better definition, stability, transparency, enforceability, and predictability of institutional arrangements and/or (b) better alignment of the mission and capacity of an organization with its mandate, which derives from these institutional arrangements. Institutional Development Impact includes both intended and unintended effects of a project. *Possible ratings:* High, Substantial, Modest, Negligible.

Outcome: The extent to which the project's major relevant objectives were achieved, or are expected to be achieved, efficiently. *Possible ratings:* Highly Satisfactory, Satisfactory, Moderately Satisfactory, Moderately Unsatisfactory, Unsatisfactory, Highly Unsatisfactory.

Bank Performance: The extent to which services provided by the Bank ensured quality at entry and supported implementation through appropriate supervision (including ensuring adequate transition arrangements for regular operation of the project). *Possible ratings:* Highly Satisfactory, Satisfactory, Unsatisfactory, Highly Unsatisfactory.

Borrower Performance: The extent to which the borrower assumed ownership and responsibility to ensure quality of preparation and implementation, and complied with covenants and agreements, towards the achievement of development objectives and sustainability. *Possible ratings:* Highly Satisfactory, Satisfactory, Unsatisfactory, Highly Unsatisfactory.

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Principal Ratings

| | <i>ICR*</i> | <i>ES*</i> | <i>PPAR</i> |
|-------------------------------------|---------------------|---------------------|---------------------|
| Outcome | Highly satisfactory | Highly satisfactory | Highly satisfactory |
| Sustainability | Highly likely | Highly likely | Highly likely |
| Institutional Development Impact | High | High | High |
| Bank Performance | Satisfactory | Highly satisfactory | Highly satisfactory |
| Borrower Performance | Highly satisfactory | Highly satisfactory | Highly satisfactory |

* The Implementation Completion Report (ICR) is a self-evaluation by the responsible operational division of the Bank. The Evaluation Summary (ES) is an intermediate OED product that seeks to independently verify the findings of the ICR.

Key Staff Responsible

| <i>Project</i> | <i>Task Manager/Leader</i> | <i>Division Chief/ Sector Director</i> | <i>Country Director</i> |
|----------------|----------------------------|--|-------------------------|
| Appraisal | Anita George | Ricardo Halperin | Michael Weihen |
| Completion | Antti P. Talvitie | Hossein Razavi | Anand K. Seth |

Preface

This is the Project Performance Assessment Report (PPAR) prepared by OED for the **Railway Rehabilitation** Project (Loan 3976) for Romania. The original amount of the loan was US\$120 million and was approved on January 18, 1996. The borrower was the Romanian National Railways (SNCFR), and after reorganization, the CFR SA (Infrastructure Company); the loan was guaranteed by the Government of Romania. The effective date of the loan was August 15, 1996, and the loan was closed on September 30, 2003, with all funds fully disbursed. The original closing date was to be December 31, 2001; the causes of the delay were the need to re-bid the Integrated Railway Information System (IRIS) component and because changes had to be made to the IRIS software.

The project was selected for assessment in order to draw lessons from the Romanian railways restructuring experience and the implementation of the staff reduction program as well as to verify the ratings.

OED prepared this report based on an examination of the relevant Staff Appraisal Report (SAR), Implementation Completion Report (ICR), legal agreements, project files and archives, as well as other relevant reports, memoranda and working papers. Discussions were also held with a number of existing and former Bank staff, in Washington as well as in Romania. An OED mission visited Romania in February 2005, conducted site visits, and discussed both the project and the effectiveness of Bank assistance with government officials and stakeholders. Their kind assistance is greatly appreciated.

The Bank has previously supported three other projects in Romania's transport sector, the first in 1980 and the second in 1981 were both completed satisfactorily. In 1993, a further project, co-financed with the European Bank for Reconstruction and Development (EBRD) and the European Investment Bank (EIB), was also completed successfully, with all project goals and objectives met.

The Bank, EBRD, and EU-Phare financed the Railway Rehabilitation Project with parallel financing arrangements and this PPAR reviews the project in its entirety. The Bank's portion was US\$120 million, the EBRD portion US\$72 million, and the EU Phare contribution US\$69.6 million. The client's Project Management Unit provided coordination for all participants in the project.

Following standard OED procedures, copies of the PPAR were sent to relevant government officials and agencies for their review and comments. No comments were received.

Summary

The collapse of Romania's centrally planned economy and its subsequent restructuring had significant impacts on the country's transport system. Prior to 1990, heavy industry, a large user of rail transport, was a sizable portion of the economy. The industrial sector has, however, declined sharply since the change to a market economy, and road transport has become a strong competitor to the railways. To survive, the railway needed to be radically transformed into a more efficient, commercially motivated organization. The **Railway Rehabilitation** Project supported this process, as assessed in this Project Performance Assessment Report (PPAR).

The overall project concept (US\$442.7 million) comprised contributions from three major sources. IBRD provided US\$120.0 million for renewal of approximately 900 kilometers of railway, establishment of an Integrated Railway Information System (IRIS), modernization of the telecommunications network, the purchase of a catenary tensioning machine, environmental mitigation measures, and technical services. EBRD provided US\$72.60 million for the rehabilitation of locomotives, provision of equipment for locomotive depots, and the refurbishment of coaches and wagons. EU-Phare provided US\$69.6 million for the replacement of equipment at interlocking stations, track material, the establishment of a print shop, and technical assistance. Each contribution comprised a separate sub-project financed in parallel, which taken together constituted the total scheme. The Romanian Government was to provide in addition local funds to the value of US\$120.8 million.

The first objective of the Bank-supported project was to support and deepen the major restructuring process that had already been initiated by the government. A second objective was to support a set of policy measures that were embodied in the new Railway Law, the Restructuring Action Plan (RAP), and the Performance Contracts between the operating companies and government.

The project was consistent with the Bank's Country Assistance Strategy which aimed to support the government's structural adjustment program and macroeconomic stabilization objectives. If CFR had not carried out the reform measures supported by the project, the railway would have remained an inefficient operator, ill equipped to compete in a market economy. The rail system would in that case have continued to be a burden on the country's financial resources.

The outcome of the project is rated **highly satisfactory** with both objectives described above being fully achieved. Track renewal and maintenance were completed in an exemplary manner; the telecommunications system was strengthened and expanded; and environmental testing laboratories were established. The IRIS was implemented for the infrastructure company and passenger and freight operators; its success was ensured through substantial technical assistance to the operating companies (CFR).

The institutional development impact is rated **high**. The project has led to very substantial institutional change, including the development of a legal and legislative framework that will help ensure the future viability of the rail sector in Romania. Another

positive institutional impact has been the enacting of legislation that gives private rail operators open access to CFR tracks. This has resulted in the emergence of private freight operators. The PPAR mission found these institutional changes to have been successful, from the perspectives of both the users and the operators.

Bank and borrower performances are rated **highly satisfactory**. The close monitoring of the project by the Bank led to increased technical assistance to support the implementation of the IRIS, a complex process. This technical assistance helped resolve difficulties between the contractor and the client and ensured that the implementation was a success.

The Project Management Unit within the railways was responsible for overseeing all components of the project implementation including the Bank, EBRD, and EU-Phare contributions. Close cooperation was maintained with Bank staff during implementation, and a good working relationship was established which contributed to success. This railway project has since been used in the Bank as an example of good practice in transitional economies.

The following lessons may be drawn from the experience of this project:

- Policy changes are more likely to be implemented successfully when Bank support is provided just at the time when public entities have *committed to the process of commercialization*, and supportive sector-wide reforms are being put in place;
- Where railway companies are moving toward commercial operation, their long-term financial health needs to be assured by *rationalizing subsidy support* and introducing *an appropriate costing model*;
- A critical success factor in a complex task such as the installation of an integrated management system is that *sufficient technical supervision and support* must be available to assist with resolving problems as they arise;
- Maximizing the benefits of a complex information system requires that *middle and upper level management see and understand the benefits* of using the system. Extensive training is important;
- *Public Service Obligation Subsidy* should be for specific services that the government considers socially necessary; such services should be transparent, explicitly defined and fully compensated as part of a Contract Plan.

Ajay Chhibber
Acting Director-General
Operations Evaluation

1. Background

1.1 Romania is located in the Central and East European Region (CEE) and has a land area of 237,000 square kilometers and a population of 22 million, making it one of the largest countries in the region. Across its northern border are Moldavia and Ukraine, Hungary and Serbia are to the west, the southern border is with Bulgaria, and the Black Sea lies to the east. Forty-six percent of the population is rural and about two-thirds of Romania's poor live in rural areas. The poverty rate is estimated at 29 percent and per capita income in 2003 was US\$2,310, compared with US\$1,100 in 1994.

1.2 Within a five-year period following the fall of communist government in December 1989, GDP declined by 30 percent, industrial output fell by 52 percent and exports by 55 percent. This trend continued, culminating in a severe economic crisis in 1998-99. After the crisis, strong investment and an increase in exports led to recovery and more moderate inflation, estimated at a 12 percent annual rate. Typical of most transition economies from the socialist period, the industrial and agricultural sectors' shares of GDP have declined. These sectors are traditional markets for rail transport.

1.3 This economic transformation has had a significant impact on the transport markets in Romania. Railways have lost traffic and market share to road transport and now face increasing strong competition from road as well as from private rail freight operators; a situation that is not likely to reverse itself.¹

1.4 Historically, Romania's economy relied primarily on its rail system. By comparison, the road infrastructure was poorly developed. Transport policy before 1990 was to promote rail transport and to discourage the extensive use of private vehicle ownership through regulation and legislation. In the 1980s, railway carried approximately 70 percent of the country's freight and more than 40 percent of its passengers.

1.5 Investment in transport infrastructure mirrored this transport policy. During the 1970s, most investment targeted rail transport; in the 1980s the focus shifted to water transport, had more than 50 percent of transport investment, with rail receiving 27 percent. Road investment had only 9 percent of total transport investment during the 1970s, decreasing to 5 percent in the 1980s. During the first half of the 1990s, there had been effectively no significant investment in any transport mode; only urgent capital repairs and some periodic maintenance took place with no new investment. When this project was initiated, during the mid-1990s, the railway desperately needed rejuvenation, both in its infrastructure as well as restructuring of the organization to survive in the new economic environment.

1.6 Romania is poised for possible accession to the European Union (EU) in 2007. The EU has several requirements for the reform of the structure of the railway organization and the relationship with government of its member states. Romania is

1. Centrally planned economies typically rely on rail transport for moving industrial output, while market economies are more prone to favor road transport, as commodities moved are typically high value consumer products. Romania has begun to experience this shift as their economy is transformed.

cognizant of these requirements and is undertaking reforms consistent with these EU regulations. Requirements for the railway include the separation of the infrastructure from the operating companies and “open access” of the rail infrastructure to private operators, with each operator paying an access charge. These and other provisions were incorporated in the Railway Law enacted in 1998 and continue to be in force.

1.7 The railway infrastructure of Romania has been divided into two parts: interoperable and non-interoperable. The interoperable sections (65 percent of the total) would be consistent with EU regulations and standards, while the remaining 35 percent would be transferred to private operators or local governments, or abandoned. This approach would enable the railways to make further reductions in their work force and streamline the rail operations, focusing on primary routes.

2. The Project

Project Objectives

2.1 *The first objective* of the project was to support and deepen the restructuring process of the railway, which the government and the railways had already initiated. The EU’s Directive on Railways stipulates that the railways should operate independently in a commercial manner in accordance with market principles. A new Railway Law has been enacted that provides for the restructuring of the railways of Romania. This law also provides for the State to compensate the railways for any losses incurred as a result of social tariffs applied to services undertaken as part of a Public Service Obligation (PSO). A multi-year Performance Contract that is linked with PSO payments has been signed between the government and the infrastructure (CFR SA) and passenger operating companies (CFR Calatori SA). *The second objective* was to support policy measures embodied in the new Railway Law, the Restructuring Action Plan, and the Performance Contracts that the Infrastructure and Passenger Companies had with the government.

2.2 The IBRD-funded components and objectives of the project are summarized in Table 2. The project objectives are quite general; they focus on the restructuring process of the railway and policy measures needed for the railway to survive in a competitive environment, based on commercial principles. In addition to the restructuring of the railway, and the reforms initiated within the government, there are several specific infrastructure improvement projects that need to accompany these changes. The components of the project are some of the specific improvements to the infrastructure of the railway that would enable the railway’s management to meet these project objectives.

2.3 While the amount spent for each specific component was higher than estimated at the time of project appraisal, the balance of the contingency was used to fund the overruns. The loan was fully utilized. In addition to the Bank-funded components, additional funding from the EBRD and EU-Phare provided for improvements to locomotive repair depots, rehabilitation of passenger coaches and wagons, as well as technical services.

Table 2: Railway Rehabilitation in Romania, IBRD Components and Costs

| Components | Costs (US\$ millions) | |
|--|------------------------------|---------------|
| | Appraisal | Actual |
| Track renewal and maintenance | 44.0 | 46.05 |
| Integrated railway information system (IRIS) | 22.0 | 33.54 |
| Modernization of telecommunications | 30.50 | 38.28 |
| Catenary tensioning machine | 1.60 | 0 |
| Environment equipment | 1.00 | 1.23 |
| Technical services | 0.60 | 0.90 |
| Physical and price contingencies | 20.30 | 0 |
| Total cost | 120.00 | 120.00 |

Project Components

2.4 One of the primary elements of the project was track rehabilitation. In the SAR, it was stated that 900 kilometers of track would be rehabilitated, and this was the basis of the economic calculations. All of the requested track maintenance machinery was procured and placed in service between the years 1998 and 2000. This machinery was stationed at each of the eight regions of CFR, with most of the equipment at the four regions along the strategic Corridor IV linking Western Europe and the Black Sea² and the remainder of the equipment in the other four regions. In fact, considerably more than 900 kilometers of track were rehabilitated using the equipment procured under the project. For example, there were four tamping machines and they were used over a total of 2,013 kilometers of track; the four ballast cleaning machines were used over 626 kilometers of track; other machines were similarly utilized. While it is not possible to identify specifically every track section that comprised the 900 kilometers rehabilitated under the project, it is evident that substantially more than the 900 kilometers specified were rehabilitated, rendering this part of the project an unequivocal success.

2.5 Under the project, a total of 3,500 kilometers of fiber optic cable were also installed, resulting in a greatly improved telecommunications network for the railway. By applying the contingencies still available, an additional 520 kilometers were installed.³

2.6 The telecommunications improvement component provided a more reliable communications system for railway operations, as well as the opportunity to sell

2. In Romania, this line passes through Timisorara, Brasov, Bucharest and Constanta.

3. With the savings through elimination of the catenary tensioning machine from the project, the installation of a further 429 km of fiber optic cable was made possible. The telecommunications system consists of the older analog system, mainly used for short distance communications, and the new fiber optic network, used primarily for long distance transmissions.

communications services on the open market. This system also provided the needed transmission platform to support the implementation of the IRIS system.⁴

2.7 The IRIS system had to be re-bid because of an underestimation of the costs involved. This re-bid resulted in the contractor responsible for implementation of the IRIS being allocated a pilot area between Bucharest and Brasov instead of the country-wide network, as originally envisioned, while CFR Infrastructure became responsible for the country-wide implementation.

2.8 EBRD funds were used for the rehabilitation of locomotives and rolling stock and for workshop machinery. As the railway had separated the freight and passenger services between Marfa and Calatori, respectively, by the time the loan funds became available, the money was also split between these two organizations. Both companies expressed complete satisfaction with the specifications of the works under the project and with the quality of product supplied.

2.9 The purchase of the catenary tensioning machine and wheel fault detector were dropped from the project and the funds made available to expand the telecommunications coverage of its fiber optic digital network. The reason for these deletions was due to the fact that the catenary tensioning machine was primarily for adjusting catenary on new line construction and there were no new electrification systems planned for the Romanian rail network. The reason for dropping the wheel fault detector was to allow each of the operating companies (Marfa and Calatori) to acquire the type of equipment most suitable for their needs, as the borrower was the Infrastructure Company. There was funding available from the EBRD to finance such equipment for the operators.

2.10 The completion of the digital telecommunications network has been a great success for the Telecommunications division as well as for its users. The PPAR team confirmed that additional funding enabled the digital network to be expanded beyond that which was originally envisaged and proved to be a positive aspect of the project implementation and benefited both freight and passenger operating companies. This also enabled the telecommunications department to sell communications services to outside parties.

2.11 The technical assistance component included management training and implementation of a traffic costing model. The management training included a study tour for environmental protection, support for the restructuring of the SNCFR, seminars and training programs focusing on changes needed in management culture to accompany

4. There are IRIS applications specifically for CFR Infrastructure; Marfa and Calatori. The Infrastructure company uses the data primarily for train operations control; all train movements are reported by each station and this information is transmitted to Bucharest where the entire system operations can be seen on a real time basis. This information is also available at the regional level. CFR Calatori uses IRIS for tracking train operations; maintaining a technical specification data base for their rolling stock and for tracking repairs performed on rolling stock. While some repair information is available, repair cost data are not yet input to the system. Marfa uses the IRIS for operational information about its trains; status of wagons within each terminal and for recording consignment notes for freight carried.

the railway restructuring, an overseas study tour of restructured railways and extensive training associated with the IRIS system.

Implementation Issues

Project Delays

2.12 The IRIS contract had to be re-bid as all bidders responded with prices well in excess of the amount budgeted for the task. This was due to the complexity of the project and the standards established for the work. The government, with the approval of the World Bank, prepared a revised TOR, with relaxed standards in several areas, though maintaining critical features of the project components and hardware.

2.13 The need for modified features in IRIS was also brought about by the changes in the railway organization that had occurred since project appraisal. In hindsight it was a bold decision to try to introduce a complex information system during such a period of upheaval. The Romanian railways (SNCFR) during 1995, was a single organization, providing all services. On October 1, 1998, the organization was split into 5 companies, providing specialized services. These companies were the freight operator (CFR Marfa SA), passenger operator (CFR Calatori SA), infrastructure (CFR SA), an organization responsible for selling redundant assets (SAAF SA), and a management services organization (SMF SA). The kind of management information system needed to be changed from the original specifications to accommodate this new organizational structure.

2.14 Although CFR Infrastructure has fully implemented the system for the purpose of evaluating track maintenance and equipment, as well as for monitoring all trains on a real-time basis, Calatori and Marfa so far have not fully implemented the data input for specific modules for their use. This issue is being addressed by the forthcoming Bank-funded Transport Restructuring Project in 2005 with additional staff and management training.

Traffic Costing System

2.15 A traffic costing system developed through a CIDA grant was installed temporarily on the railways' computers, but was soon abandoned in favor of a system more comprehensive and compatible with the eventual development of the IRIS and using Oracle as the central database technology. This will link the railway's financial information to the IRIS applications. Elements of the costing system that involved the allocation of joint costs to various services will be incorporated in the structure of the Oracle financial system, which is to be fully functional on all CFR operating companies by 2006.

2.16 The only problem with the decision to abandon the Canadian traffic costing system was that the more comprehensive costing system is likely to take several years to develop. The PPAR mission considers that it might have been prudent for the management of Calatori and Marfa to develop an interim costing system that has the capability of estimating costs by service type and route, for the purpose of route and

service profitability and for establishing a more service-specific PSO subsidy support system, as well as for the assessment of specific traffic for the development of pricing strategies.

Effectiveness of Parallel Financing Arrangements

2.17 The project incorporates contributions from three major sources – IBRD, EBRD, and EU Phare; the components funded by each organization were complementary and contributed to the successful achievement of the objectives.

2.18 The EBRD undertook an evaluation of its contribution to the project in its Expanded Monitoring Report of January 2002. In this report, the overall project performance was rated *Successful*; the second highest rating out of four possible ratings. The project was rated on nine criteria, with the second highest rating for all nine. The exception was the rating for *Overall Client Financial Performance*, which was rated as *Marginal* due primarily to continued losses by the operating companies.

2.19 These losses were due to the reduction in state budget support, increased operating costs and receivables. Annex B Table 3 shows the decline in all railway traffic units since 2000. Annex B Table 4 shows the increase in receivables, primarily for the passenger and infrastructure companies. Receivables for the freight company increased significantly in 2003. The reason for this pattern was the failure of major clients (mostly state-owned companies) to pay promptly. The history of government budget support is shown in Annex B Table 5. Subsidies did show a decline during 2000 and 2001, compared with 1999. However, in 2002, 2003 and 2004, state subsidies showed an increasing trend. During the recent several years, the total staff of all CFR companies has been reduced from 141,027 employees in 1995 to 74,285 in 2003. This demonstrated the good faith of CFR companies to control operating costs and to increase labor productivity.

2.20 In 2003, the infrastructure company had a loss of \$99 million, the passenger company lost \$240 million while the freight company had essentially break-even financial results. It is clear from the traffic volume pattern that both the freight and passenger operating companies are in declining markets. The companies need to continue to re-size their infrastructure and organizations to meet this increasing competition and to minimize losses. These are some of the important goals of the forthcoming World Bank Transport Restructuring Project in Romania.

2.21 The EU-Phare contribution (Phare funds were on a grant basis) was primarily for installation of new generation signaling equipment within the terminal areas of stations in Brasov, Arad, and Bucharest. Installations at Brasov and Arad were finalized during 2004 while the Bucharest installation is expected to be finished by mid 2005, when the Phare program will be completed.

2.22 There was no formal cooperation among the various lending organizations, but their efforts were effectively coordinated through the Project Monitoring Unit (PMU) within the CFR Infrastructure Company.

Decentralization of Managerial Services

2.23 Since inception of the project, the former SNCFR was reorganized into separate organizations responsible for track, freight operations, and passenger operations. In addition, there was a management services company created to enable the Ministry of Transportation to more closely monitor the activities of the operating companies. This organization was dissolved in 2002, with managerial functions distributed to each operating organization.

2.24 This decentralization of management has had a positive impact on the operating companies. It is consistent with the commercialization of operating companies by giving them maximum control over their business. In addition, the separation of Marfa from the other operating companies will simplify the procedures for privatization of this unit, which is being considered in the near future.

Need to Re-evaluate the Method for Allocating Electric Power Costs

2.25 There is still some element of cross-subsidy between freight and passenger service, particularly in the area of allocation of electric power costs. The method used to allocate track access fees has been revised in recent years and the existing distribution of these costs appears to be reasonable. The Calatori service amounts to approximately 41 percent of the total gross ton-kilometers, with Marfa the remaining 59 percent. During 2002, 35 percent of total track access payments were made by Calatori with the remaining 65 percent by Marfa.

2.26 Electric power costs, however, were nearly equally divided between Calatori and Marfa. Calatori gross ton-kilometers account for only 41 percent of the total. Based on the existing system of allocating electric power costs, payments by Calatori compared with usage appear excessive. This could be remedied by establishing through electric power consumption tests, indices of relative consumption by freight and passenger trains over selected track sections. This method could be used to distribute annual electric power costs between the two users. Regardless of the method used, a more appropriate distribution of electric power costs is needed, one which results in payments equivalent to the activity levels of each.

3. Results

*Objective 1: Support and deepen the restructuring process which the railways and government had initiated. **Fully achieved.***

3.1 Romania was acknowledged in a recent Bank publication evaluating railway reform in the ECA region⁵ as “one of the countries in the ECA region which reformed its railways earliest and most radically. The new companies which were formed in 1998 now have clear corporate identities and operate as independent commercial entities.” This underscores the clear success of the restructuring process in Romania and this view is endorsed by the Project Performance Assessment mission on the basis of their further evaluation. Some of the critical elements of the restructuring process included separation of non-core activities from the railway organization, reducing railway staff to enhance operational efficiency, and reducing railway infrastructure consistent with traffic levels. These measures were successfully executed by Calatori, Marfa, and the Infrastructure Company.

3.2 All EU directives with regard to legal and institutional structures for railways have been fully met in Romania, as a result of implementation of the project. Most non-core activities have been separated from the operating companies⁶ with the result that the numbers of employees in the operating companies have been reduced from 141,000 in 1995, at the start of the project, to 105,000 by 1998 and 74,285 in 2003. Labor cost as a percentage of operating cost has fallen from 40 percent in 1998 to 33 percent in 2003. The process of separating the remaining non-core activities is continuing and additional staff reductions are planned. Based on the preceding evidence, the PPAR mission concludes that the first objective of the project was *fully achieved*.

*Objective 2: Support policy measures embodied in the new Railway Law, the Restructuring Action Plan and the Performance Contracts that the Infrastructure and Passenger Companies had agreed with the government. **Fully achieved.***

3.3 The new Railway Law was adopted in 1998 pursuant to Government Ordinance no. 12/1998; this enabled the establishment of five separate companies of the former Romanian National Railways (SNCFR). The five companies included: freight operating company (CFR Marfa SA), passenger operating company (CFR Calatori SA), infrastructure company (CFR SA), a company established for the sale of surplus assets

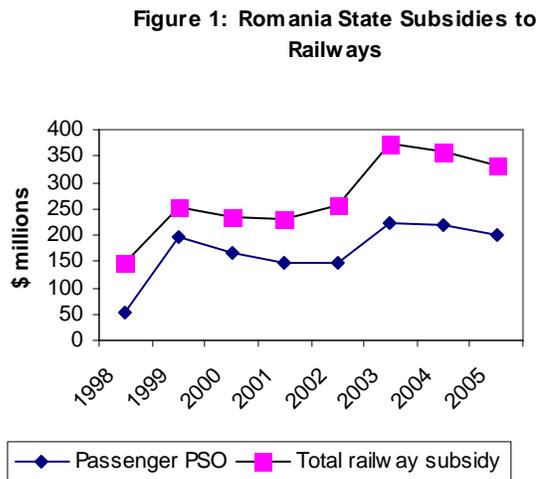
5. *Reform, Commercialization and Private Sector Participation in Railways in Eastern Europe and Central Asia*, January, 2005; Paul Amos.

6. By the end of 2004, 34 non-core activities have been separated from the operating companies; the non-core activities that remain within the railways include: CFR Infrastructure: IT center, telecommunications and emergency track repair; CFR Marfa; locomotive repair workshop; and CFR Calatori: coach repair workshop; locomotive repair workshop; ticket sales and sleeping car services. Total staff of these remaining non-core activities is 8,745.

(SAAF SA), and a management services company (SMF SA)⁷. The law also provided for the establishment of performance contracts between the government and the CFR and CFR Calatori. These contracts specified the government's contribution for infrastructure and PSO payments to CFR Calatori. These contracts are in force and are updated annually.

3.4 Figure 1 shows trends of PSO subsidies to Calatori, as well as total government subsidies to all railway companies, from 1998 (the year PSO subsidies commenced) to 2005 (estimated). PSO subsidies to Calatori amount to about 60 percent of total government payments to railway companies; the balance is composed of payments for subsidized tickets (student tickets, etc.); investment for passenger services and infrastructure, maintenance of infrastructure, and debt service for infrastructure and passenger services. The graph shows an increasing trend in subsidies until 2003, after which the level begins to decline.

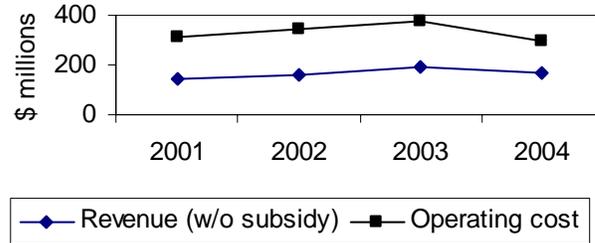
Figure 1: Romania State Subsidies to Railways



3.6 This trend of declining subsidies is mirrored by a slight improvement in Calatori's financial performance. Figure 2 shows revenue (excluding subsidies), operating costs and percentage of cost coverage from revenue from 2001–2004. Operating costs in 2004 appear to have slightly closed the gap between costs and revenue, compared with 2003.

7. The SMF was dissolved in November 2002 with managerial services incorporated within each separate company. The SAAF still exists, though with a diminished role, following the disposal of most of the surplus assets.

**Figure 2: Calatori
Revenue and Operating Cost**



3.5 Legislation also now permits open access to CFR Infrastructure tracks to private operators. Of the total ton-kilometers of freight moved by rail in Romania, the PPAR mission estimates that between 12 percent and 15 percent is now moved by private operators. Approximately 900 kilometers of “non-interoperable” lines have been leased to private operators and 400 kilometers have been closed by the end of 2004.⁷ This process is continuing and is considered to be a very positive trend.

3.6 The Restructuring Action Plan (RAP) specifies objectives, targets, and indices that were conditions of the loan agreement between the Bank and the borrower. The RAP was prepared before the loan effective date, but amended in 1999 to reflect the restructuring of the railways and the obligations of each of the newly-formed organizations. The RAP covered specific objectives for institutional organization and management, operations, marketing, infrastructure, traction and rolling stock, human resources, investments, finance and accounting, environment, implementation, and monitoring of the railway rehabilitation project and implementation of the RAP.

3.7 As of January 2004, each of these RAP items had either been completed or was ongoing. Each item included in the RAP is reviewed annually by the Bank, the government, and the borrower, as per the loan agreement conditions. Based on the current evaluation of these RAP items, good progress has been made in accordance with the agreements made at the time of the loan. The PPAR mission therefore concludes that the second objective has been *fully achieved*.

7. For these leased lines, the operator can use the track with no access charge, though the operator is liable for all maintenance on the track and right-of-way. The operator also pays applicable property taxes to CFR; CFR retains ownership of the tracks and land. In some cases, rolling stock has been transferred at no cost, to the operator. While this technique does provide an indirect subsidy to the operator, it is preferable to the alternative of closing the line with subsequent political difficulties.

4. Ratings

Outcome

4.1 The outcome of the project is rated **highly satisfactory**, based on the ratings for relevance, efficacy, and efficiency (discussed below). The track renewal and maintenance were completed; the telecommunications system was strengthened and expanded; and environmental testing laboratories were established. The IRIS was implemented for the infrastructure company and passenger and freight operators, its success ensured with substantial technical assistance to CFR. Very minor deficiencies in the project results are the lack of an interim costing system to more precisely quantify the financial shortfall for operating socially necessary services and the less than total use of the IRIS system by some users. These deficiencies are insufficient to justify reducing the outcome rating.

Relevance

4.2 The relevance of project objectives is **high**. The restructuring supported by the project was essential to help the railway adjust to increasing competition from the road sector and was fully in line with government's policy and may be regarded as a significant and necessary intervention. The objectives will continue to be relevant for the foreseeable future.

4.3 The project was also consistent with the Bank's Country Assistance Strategy (CAS), which supports the government's structural adjustment program and macroeconomic stabilization objectives. Rehabilitation of infrastructure, a major part of this project, was one of the Bank's priority lending areas. If the reform measures supported by the project had not been taken by the railway and government, the railway would have continued to be a burden on the country's financial resources.

Efficacy

4.4 The efficacy of the project is rated **high**, as both objectives were fully achieved and targets in some cases exceeded. Reorganization of the railway sector was accomplished, PSO contracts with the government were executed, and the Restructuring Action Plan was fully achieved. The EU requirements for institutional reform were also accomplished. The latter included the separation of the infrastructure from the railway operating companies, as well as establishing a policy to give private operators open access to the railway infrastructure. In addition, the establishment of a track access charging system has been established for all users.

4.5 The rehabilitation of track infrastructure and implementation of IRIS were completed successfully.

Efficiency

4.6 The efficiency of the project is rated **substantial**. The railway has significantly reduced its work force, made great advances toward commercialization, and the legal

groundwork has been established for a cost reimbursement mechanism for compensating the rail operators for maintaining socially necessary services. The efficiency of the project was also enhanced when the telecommunications department and the environmental department began offering their services to parties other than the railway operators, their primary clients. This development is a sign that the railway organization is becoming a commercially-oriented organization, expanding its revenue base.

4.7 The efficiency was partly diminished in the short term by the limited usefulness of the IRIS (because data is not entered by all operating companies), and the lack of an interim costing system. Some regional staff perceive IRIS as a threat to the continuance of their jobs, which accounts for lack of enthusiasm for the system in some quarters. These issues are recognized by CFR management and are also being addressed in subsequent Bank interventions. In particular, the Bank's Transport Restructuring Project for Romania (Project Appraisal Document October 22, 2004) includes a component "finance the completion of the National Data Transmission Network to facilitate implementation of IRIS in all of the railway service units. This will result in diversification of services and increase in quality of service offered to users, and improve interoperability with the European network."

4.8 An economic evaluation was conducted at appraisal separately for each major project component. The results were an ERR of 30 percent for track renewal and maintenance, 52 percent for the IRIS, and 27 percent for the modernization of the telecommunications network. Results for the track renewal and telecommunications modernization components remain valid, as these components were fully implemented and the inputs unchanged. On the other hand, while the hardware and software of IRIS have been implemented, the limited use of the system by the operating companies suggests that the 52 percent ERR has probably not been achieved and a lower figure applies. Nevertheless, the returns are clearly positive.

4.9 One further benefit attributed to IRIS in the project appraisal report was a reduction in payments to foreign owners of freight wagons, by reducing the time these foreign wagons spend in Romania. CFR Marfa must pay a daily hire charge while in Romania; the less time these wagons are in the country, the more money saved by CFR Marfa. However, no specific study has been undertaken to substantiate the impact of such savings, which undoubtedly do occur.

Institutional Development Impact

4.10 The institutional development impact is rated **high**. The project has led to crucial institutional changes that have established a legal and legislative framework for the future viability of the rail sector in Romania.

4.11 Another positive institutional impact has been the enacting of legislation that gives private rail operators open access to CFR tracks. This has resulted in the emergence of private freight operators (there are at present 13) primarily conveying oil, petroleum

products, and steel. The PPAR mission found these institutional changes to have been successful, both from the perspective of the users and the private operators.⁸

Sustainability

4.12 There is little doubt that the future benefits of the project will be continued and the project's sustainability can be ranked **highly likely**. The new Railway Law has provided the legislative context needed to implement the necessary reforms; the Restructuring Action Plan provides a comprehensive list of actions already begun by the railways and the Government of Romania is committed to ensure success of the restructuring program. The Bank is following up with the Transport Restructuring Project, to become effective in 2005, with assistance for technical cooperation and training for the commercialization of the railway industry; completion of the IRIS hardware and communications network; infrastructure maintenance, power supply, and signaling equipment; and systems for quality and environmental management.⁹

Bank Performance

4.13 Bank performance is rated **highly satisfactory**. The close monitoring of the project and the strong and very professional advisory role played by the Bank led to increased technical assistance to ensure the successful implementation of IRIS, a particularly complex process. Because of this strong technical support intervention, any difficulties between the contractor and the client were swiftly resolved and the implementation was highly successful. The Bank team also played an important role in the discussions of the necessary legal and institutional reforms of the railway sector, especially at the interface with daily operations and management. Training programs were organized to expand the comprehension of railway reform issues, using case studies of successful models from international experience.

Borrower Performance

4.14 Borrower performance was **highly satisfactory**. The Project Management Unit (PMU) was responsible for overseeing all aspects of the project implementation including the Bank, EBRD, and EU Phare contributions. Close cooperation was maintained with the Bank staff during implementation and a good working relationship was established, which contributed to the project's success. The government supported some very tough

8. Operators interviewed by the mission indicated that tariffs are similar to or lower than those of Marfa; service is much faster (for example, transit times of less than 12 hours instead of 2 or 3 days using Marfa); and profit margins are acceptable (in excess of 10 percent). Based on estimates of total traffic moved over the CFR during 2003, the PPAR mission estimated that these private freight operators have approximately 7 percent of the freight market in terms of train-kilometers, and 12 to 15 percent of the freight market, on the basis of ton-kilometers. While this indicates an opportunity for Marfa to streamline its service to better serve customers, it does indicate that definite advantages already are being seen (such as lower tariffs in improved service levels) of the institution of "open access" of rail freight transport in Romania.

9. Project Appraisal Document on a Proposed Loan in the amount of US\$225 million to the Republic of Romania for a Transport Restructuring Project; October 22, 2004.

adjustment and retrenchment decisions that were necessary to reduce the Railway's physical and human resources to match the market demand.

5. Conclusions and Lessons

Strong Advisory Role of the Bank

5.1 The Bank's *strong advisory support* role during the implementation phase of IRIS was key to the successful completion of this project component and should be replicated in similar projects in the future. This timely and effective intervention coupled to the Borrower's strong commitment ensured the project was a success. The close attention to facilitating the resolution of misunderstandings and giving examples of successful projects elsewhere also contributed substantially to the outcome.

Increase Usage of IRIS

5.2 Although IRIS has been implemented, it is not yet fully used. To ensure that it reaches its full potential, *additional training* for middle and upper management staff of Calatori and Marfa will be required. Impressing operating companies' managers of the benefits of more fully using the system should ensure maximum use. The management training and development component of the forthcoming Transport Restructuring Project will strengthen railway management training substantially.

5.3 It is also necessary to ensure that information already available from IRIS is included in concise reports given to railway management. Highlighting relevant data outputs in this way and bringing them to the attention of the responsible staff on a timely basis will help ensure better use of the data system.

Improve Traffic Costing Capability

5.4 The operating companies need to strengthen their *traffic costing* capability. This may take the form of an interim costing system prior to the full implementation of IRIS and Oracle that would have the capability to estimate costs of operating specific services on a route-specific basis.

Re-evaluate the Method for Allocating Electric Power Costs

5.5 There is still some element of cross-subsidy between freight and passenger service, particularly in the area of allocation of electric power costs. This causes a distortion in the market mechanism. A more appropriate *distribution of electric power costs* is needed - one which results in payments equivalent to the activity levels of each area of service.

PSO Subsidies to be Service-Specific

5.6 Public Service Organization subsidy payments made to CFR Calatori are based on estimated revenue shortfalls compared with costs to provide passenger services, with the constraint of available funds from the Ministry of Finance. While this is consistent with the objectives of the project, the PPAR mission considers that in future, the *PSO subsidy should rather be adjusted to support specific services* that the government considers socially necessary. A service-specific subsidy would ensure that government subsidy funds are supporting only those services that require such support with the remainder of services either commercially viable or abandoned. However, this can only be implemented when a traffic costing system is in place to evaluate specific services and/or routes.¹⁰

5.7 The following lessons may be drawn from the experience of this project:

- Policy changes are more likely to be implemented successfully when Bank support is provided just at the time when public entities have *committed to the process of commercialization*, and supportive sector-wide reforms are being put in place;
- Where railway companies are moving toward commercial operation, their long-term financial health needs to be assured by *rationalizing subsidy support* and introducing *an appropriate costing model*;
- A critical success factor in a complex task such as the installation of an integrated management system is that *sufficient technical supervision and support* must be available to assist with resolving problems as they arise;
- Maximizing the benefits of a complex information system requires that *middle and upper level management see and understand the benefits* of using the system. Extensive training is important;
- *Public Service Obligation Subsidy* should be for specific services that the government considers socially necessary; such services should be transparent, explicitly defined and fully compensated as part of a Contract Plan.

10. For example, recent studies (*Railway Modernization Project of Bucharest – Constanta Line; Management Assistance and Institutional Development Requirements, Interim Report #2; August 2004*) have demonstrated that, based on a proposed costing system format, intercity services probably meet their operating costs from revenues; and these services should be designated as commercial and should not be part of the subsidy. Other passenger services could be defined as social services and would be supported by the PSO subsidy payments.

Annex A. Basic Data Sheet

RAILWAY REHABILITATION PROJECT

Key Project Data *(amounts in US\$ million)*

| | <i>Appraisal estimate</i> | <i>Actual or current estimate</i> |
|---------------------------|---------------------------|-----------------------------------|
| Total project costs | 120.0 | 120.0 |
| Loan amount | 120.0 | 120.0 |
| Cofinancing | 142.2 | NA |
| Cancellation | - | - |
| Economic Rate of return % | 30 | NA |

Project Dates

| | <i>Original</i> | <i>Actual</i> |
|----------------------------|-----------------|---------------|
| Identification/Preparation | 09/22/1994 | 09/22/1994 |
| Board Approval | 01/18/1996 | 01/18/1996 |
| Effectiveness | 08/15/1996 | 08/15/1996 |
| Closing | 12/31/2001 | 09/30/2003 |

Staff Inputs

| | <i>Actual/Latest Estimate</i> | |
|----------------------------|-------------------------------|--------------------|
| | <i>No. of Staff Weeks</i> | <i>US\$ ('000)</i> |
| Identification/Preparation | NA | 315,197.00 |
| Supervision | NA | 800,337.00 |
| ICR | NA | NA |
| Total | NA | 1,115,534.00 |

The current accounting system no longer gives the detailed breakdowns requested in the above table.

Mission Data

| | <i>Date (month/year)</i> | <i>No. of persons</i> | <i>Specializations represented</i> | <i>Performance rating Rating trend</i> | |
|------------------------------------|------------------------------|---------------------------|--|--|---|
| Identificantion/Preparation | 10/10/1994 | 6 | Finn. Analyst6; Engineer; Economist; Environ. Specialist; Systems Analyst; Project Officer | S | S |
| Supervision | 10/18/1996 | 3 | Railway Engineer; Financial Analyst; Project Officer | S | S |
| | 10/14/1997 | 5 | Fin. Analyst; Systems Analyst; Transport Economist; Railway Specialist; Project Officer | S | S |
| | 11/11/1998 | 3 | Railway Specialist; Financial Analyst; Project Officer | S | S |
| | 04/05/1999 | 4 | Program Team Leader; Railway Specialist; Financial Analyst; Operations Officer | S | S |
| | 10/01/1999 | 1 | Sr. Transport Economist | S | S |
| | 10/01/1999 | 3 | Program Team Leader; Financial Analyst; Operations Officer | S | S |
| | 06/21/2000 | 1 | Team Leader | S | S |
| | 12/15/2000 | 3 | Sr. Evaluation Officer; Sr. Financial Analyst; Transport Specialist | S | S |
| | 05/25/2001 | 3 | Sr. Transport Specialist; Sr. Financial Analyst; Consultant | S | S |
| | 10/26/2001 | 3 | Transport Specialist; Financial Analyst; Consultant | S | S |
| | 02/15/2002 | 2 | Transport Specialist; Consultant | S | S |
| | 02/15/2002 | 3 | Transport Specialist; Financial Analyst; Consultant | S | S |
| | ICR | 05/16/2003 | 3 | Transport Specialist; Sr. Financial Analyst; Consultant | S |

Annex B. Romanian Railways Data Tables

Table 3: Romanian Railways Traffic Volumes

| Units | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|-------------------------|-------|-------|-------|-------|-------|-------|-------|------|------|------|
| Passengers (million) | 211.0 | 213.0 | 187.0 | 146.8 | 129.4 | 117.5 | 113.7 | 95.6 | 94.8 | 95.5 |
| Passenger Kms (billion) | 18.9 | 18.3 | 15.8 | 13.4 | 12.3 | 11.5 | 11.0 | 8.5 | 8.5 | 8.5 |
| Freight tons (million) | 105.1 | 105.0 | 93.9 | 78.5 | 82.9 | 71.5 | 71.8 | 68.1 | 68.8 | 64.2 |
| Ton Kms (billion) | 27.2 | 26.9 | 24.8 | 19.7 | 15.9 | 18.0 | 17.8 | 17.2 | 16.6 | 15.5 |

Source: World Bank; CFR data

Table 4. Romanian Railways – Receivables and Payables (US\$ millions)

| Account and Year | CFR Infrastructure | Freight | Passenger |
|---------------------|-----------------------|---------|-----------|
| <i>1999:</i> | | | |
| Accounts Receivable | 53 | 105 | 55 |
| Accounts Payable | 44 | 95 | 55 |
| <i>2000:</i> | | | |
| Accounts Receivable | 93 | 96 | 74 |
| Accounts Payable | 115 | 133 | 100 |
| <i>2001:</i> | | | |
| Accounts Receivable | 152 | 76 | 35 |
| Accounts Payable | 210 | 89 | 82 |
| <i>2002:</i> | | | |
| Accounts Receivable | 173 | 69 | 72 |
| Accounts Payable | 330 | 118 | 119 |
| <i>2003:</i> | | | |
| Accounts Receivable | 452 | 104 | 70 |
| Accounts Payable | 538 | 130 | 152 |

Source: World Bank; CFR data

Table 5. State Budget Support

| | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Lei/US\$1 | 2,033 | 3,083 | 7,168 | 8,876 | 15,333 | 21,709 | 29,062 | 33,055 | 33,210 | 33,210 |
| Passenger PSO | | | | | | | | | | |
| Billion Lei | | | | 465.0 | 3001.6 | 3623.2 | 4,242.2 | 4,850.5 | 7,361.9 | 7,239.1 |
| US\$ Million | | | | 52.4 | 195.8 | 166.9 | 146.0 | 146.7 | 221.7 | 218.0 |
| Subsidized Tickets | | | | | | | | | | |
| Billion Lei | | | | 72.2 | 162.7 | 591.6 | 268.7 | 633.9 | 629.0 | 800.0 |
| US\$ Million | | | | 8.1 | 10.6 | 27.3 | 9.2 | 19.2 | 18.9 | 24.1 |
| Investment for passenger services | | | | | | | | | | |
| Billion Lei | | | | | | | 338.5 | 1,035.2 | 660.0 | 490.0 |
| US\$ Million | | | | | | | 11.6 | 31.3 | 19.9 | 14.8 |
| Infrastructure maintenance | | | | | | | | | | |
| Billion Lei | 300.0 | 306.3 | 587.3 | 696.0 | 497.1 | 638.0 | 743.8 | 775.5 | 2,236.4 | 830.0 |
| US\$ Million | 147.6 | 99.4 | 81.9 | 78.4 | 32.4 | 29.4 | 25.6 | 23.5 | 67.3 | 25.0 |
| Investment for passenger infrastructure | | | | | | | | | | |
| Billion Lei | | | | 75.7 | 209.6 | 248.8 | 1,081.8 | 905.5 | 137.0 | 261.0 |
| US\$ Million | | | | 8.5 | 13.7 | 11.5 | 37.2 | 27.4 | 4.1 | 7.9 |
| Debt Service for infrastructure Company^{1/} | | | | | | | | | | |
| Billion Lei | | | | 4.2 | 13.6 | | - | 285.7 | 983.6 | 983.6 |
| US\$ Million | | | | | | | | | | |
| Debt Service for Passenger Company^{1/} | | | | | | | | | | |
| Billion Lei | | | | | | | | | 378.3 | 1,344.0 |
| US\$ Million | | | | | | | | | 11.4 | 40.5 |
| Sub-total Budget | | | | | | | | | | |
| Billion Lei | 300 | 306 | 587 | 1,313 | 3,885 | 5,102 | 6,675 | 8,486 | 12,386 | 11,948 |
| US\$ Million | 148 | | | | | | | | | |
| Budget as % of GDP | 0.4% | 0.3% | 0.2% | 0.4% | 0.7% | 0.6% | 0.6% | 0.6% | 0.7% | 0.6% |
| Local funds for EIB, ISPA, PHARE projects | | | | | | | | | | |
| Billion Lei | | | | | | 303 | 2005 | 2449 | 2374 | |
| US\$ Million | | | | | | 14 | 69 | 74 | 71 | 0 |
| Exemption of Arrears to the state ^{3/} | | | | | | | | | | |
| Billion Lei | | | | 5,390 | | | | | | |
| US\$ Million | | | | 607 | | | | | | |
| Total Budget Support | | | | | | | | | | |
| Billion Lei | 300 | 306 | 587 | 6,703 | 3,885 | 5,404 | 8,680 | 10,935 | 14,760 | 11,948 |
| US\$ Million | 148 | 99 | 82 | 755 | 253 | 249 | 299 | 331 | 444 | 360 |
| Budget as % of GDP | 0.4% | 0.3% | 0.2% | 1.8% | 0.7% | 0.7% | 0.8% | 0.7% | 0.8% | 0.6% |
| GDP | | | | | | | | | | |
| Billion Lei | 72,136 | 108,920 | 252,926 | 371,194 | 539,357 | 796,534 | 1,123,710 | 1,512,256 | 1,838,420 | 2,161,982 |
| US\$ Million | 35.5 | 35.3 | 35.3 | 41.8 | 35.2 | 36.7 | 38.7 | 45.7 | 55.4 | 65.1 |
| Arrears to the state budget and other social funds (on December 31) ^{2/} | | | | | | | | | | |
| Billion Lei | | | | 5,390 | 3,132 | 4,589 | 6,506 | 9,690 | 15,074 | |
| US\$ Million | | | | 607 | 204 | 211 | 224 | 293 | 454 | |

GDP: World Bank estimates

1/ Subsidy to cover principal repayment and interest

2/ Arrears to the state budget and other social funds include historical debt accumulated prior to the 1998 reorganization.

3/ SNCFR is in charge of reducing historical debt including arrears to the State budget, using the receivables outstanding as of October 1, 1998.