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PROJECT PERFORMANCE ASSESSMENT REPORT

BRAZIL

**SANTA CATARINA STATE HIGHWAY MANAGEMENT PROJECT
(LOAN 3547S-BR)**

AND

REVIEW OF HIGHWAY CONCESSION PROGRAM

July 01, 2002

*Sector and Thematic Evaluation Group
Operations Evaluation Department*

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Currency Equivalents (annual averages)

Currency Unit = Brazilian Cruzeiros (Cr\$)

US\$1 = Cr\$ 280 (April 20, 1991)
US\$1 = BRL 2.3 (December 2001)

Abbreviations and Acronyms

BNDES	Banco Nacional de Desenvolvimento Economico e Social (National Economic and Social Development Bank)
DNER	Departamento Nacional de Estrada de Rodogem
TCU	Accounting Court of the Union
ICR	Implementation Completion Report
OED	Operations Evaluation Department
PPAR	Project Performance Assessment Report
EEPASA	Ferrovias Paulistas SA (Sao Paulo State Railways)
GOB	Federal Government of Brazil (Gobernó Federal)
GEIPOT	Empresa Brasileira de Planejamento dos Transportes (National Transport Planning Agency)
MR	Metropolitan Region (Regiao Metropolitana)
RFFSA	Rede Ferroviaria Federal S.A. (Federal Railways)
SNT	Secretaria Nacional de Transporte (National Transport Secretariat)
SP	Governo Estadual do Sao Paulo (State of Sao Paulo)
RJMTD	Rio de Janeiro Metropolitan Transport Decentralization Project
OED	Operations Evaluation Department
SARs	Staff Appraisal Report
STM	Secretary Metropolitan Transportation
RTCC	Regional Transport Coordination Commission
ANTP	National Association of Public Transport

Fiscal Year

Government: January 1 – December 31

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Operations Evaluation

July 1, 2002

MEMORANDUM TO THE EXECUTIVE DIRECTORS AND THE PRESIDENT

**SUBJECT: Project Performance Assessment Report on Brazil
Santa Catarina State Highway Management Project (Loan 3547S-BR)
Review of Highway Concession Program**

Attached is the Project Performance Assessment Report (PPAR) on the Brazil Santa Catarina State Highway Project (Loan 3547S-BR). The project was approved in fiscal 1993 for US\$50 million. It closed as scheduled, fully disbursed, on December 31, 1999.

The objectives of the project were to reduce the deterioration of the state road network and to achieve sustainable road maintenance through (i) prioritizing maintenance over new construction and (ii) improving the institutional framework governing road maintenance in the state.

The project achieved most of its key objectives, and its outcome is rated satisfactory. The project improved the condition of the road network in Santa Catarina, helped the Department of Roads (DER-SC) refocus on maintenance, and strengthened its capacity to manage the road network under contract with the private sector. The proportion of the state's road network in critical to poor condition was reduced from 31 percent at appraisal in 1991 to 12 percent in 1997, and to near zero percent at project completion.

The institutional development impact achieved by the project is rated substantial. A modern pavement management system was put in place, and there is some evidence that it is being used to prioritize road maintenance expenditure on economic grounds. Contracting with the private sector for road maintenance is widely used in Santa Catarina, and environmental screening is used in road development. The training and technical assistance have helped in modernizing DER-SC, and exposed the staff to international procedures in highway maintenance.

The sustainability of the project is rated likely. The roads were built to high technical standards, which will ensure that the benefit would last for the design period. But more important, the institutional basis for road maintenance has been established; maintenance is being carried out according to PMS plans and under contract with the private sector. Sufficient resources for road maintenance are also being allocated in the state, but these rely on government general budget allocations, which are sensitive to changing fiscal situations in the state.

Bank performance for the projects is rated satisfactory. The Bank's emphasis on road maintenance, and designing the project to achieve this goal is commendable since the lack of maintenance has been a perennial issue in the state. The Bank stayed focused on achieving this objective, and engaged the client in productive policy dialogue to change the incentive structure in DER-SC, and to shift the department's culture from a focus on construction to a focus on maintenance.

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Borrower performance is also rated satisfactory. The borrower was committed to the project, and DER-SC implemented the project reasonably well and complied with most loan covenants.

The broader review of the highway concession program draws the following conclusions:

Though it is still at an early stage, the Brazil highway concession program appears to be successful when measured by how investment, toll revenues, and operating costs have compared with forecasts. Particular concessions may be experiencing some financial distress, but given that some variation in concession performance is to be expected and that concessionaires would have built contingency ranges into their planning, the data across the concessions is not alarming.

However, the review also suggests that substantial challenges lie ahead. The long-term nature of road concessions with front-loaded investment, combined with what is often intense public scrutiny, ambiguous distinctions between appropriate public and private risk, and changing macroeconomic and political environment over the life of most concessions make highway concessions especially difficult policy and regulatory terrain.


Although Brazil has so far been relatively shielded from major economic crisis, the threat of a regional economic downturn, precipitated by the current economic crisis in Argentina, suggests that the economic environment for the highway concessions may be adversely affected. This could trigger regulatory disputes if concessionaires' financial hardships become a motivation to renegotiate or otherwise modify the terms of the contracts.

In addition, the concession program faces some risk of policy reversal due to changes in the political environment. The concession program has not been popular with truckers, who object to paying tolls. The toll charges have prompted protests and strikes by truckers. Some observers have suggested that this opposition is supported by political elements within Brazil who object to the government's privatization program more generally. While the broader public may not share this opposition to the highway concessions (in fact, some surveys have found public support for the road concessions), the existence of an organized opposition has contributed to the threat of policy reversal.

The review of the highway concession program confirms some key OED lessons:

- Tying highway rehabilitation to toll concessions provides a reasonable one-time solution to maintenance, but it cannot substitute for a sustainable highway maintenance program because concessioning is not an option for large portions of many networks.
- Front-loaded investments have significant benefits to users in the near term, but once the concession has done the initial investment, regulatory challenges may arise.
- Political opportunism can be a problem in the highway concessioning process, especially at the state level, which face less reputation risk for policy reversion.
- Highway concessions will inevitably require a flexible regulatory framework that can adapt to rapidly changing conditions.

Attachment



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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This report was prepared by Binyam Reja, who assessed the project in August 2001. The report was edited by William Hurlbut, and Romayne Pereira provided administrative support.

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Principal Ratings

	<i>ICR*</i>	<i>ES*</i>	<i>PPAR</i>
Outcome	Satisfactory	Satisfactory	Satisfactory
Sustainability	Likely	Likely	Likely
Institutional Development Impact	Substantial	Substantial	Substantial
Bank Performance	Satisfactory	Satisfactory	Satisfactory
Borrower Performance	Satisfactory	Satisfactory	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	Jacques Cellier	Asif Faiz	Armeane Choksi
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Preface

This is a Project Performance Assessment Report (PPAR) on the Brazil State Highway Management Project (Santa Catarina, Loan 3547S-BR), and a review of the Brazil highway concession program. The project was approved together with the Alagoas State Highway Project (Loan 35480-BR) in fiscal 1993 and closed on schedule on December 31, 1999. The loan amount for the Santa Catarina sub-project was US\$50 million at appraisal, which was fully disbursed at completion.

The PPAR confirms the ICR findings, and adds value to the ICR by also providing a review of the Brazil highway concession program undertaken by the federal government and selected states. The findings of the highway concession review are provided as PART II of this PPAR. The PPAR and the highway concession review will further OED's overall knowledge base on private sector development and reform in the transport sector.

The Operations Evaluation Department (OED) prepared the report based on an examination of the President's Report (Report No. P5733, December 1, 1992), Staff Appraisal Report (Report No. 10395, December 31, 1992), Implementation Completion Report (Report No. 20349, April 28, 2000), transcripts of Board proceedings, project correspondence files, Bank documents on other transport projects, and other Bank and non-Bank materials. In August 2001, an OED mission traveled to Brazil and the State of Santa Catarina to discuss the project with relevant government officials, representatives of the private sector, beneficiaries, and professional and trade organizations. Bank staff in charge of the project at headquarters and at the country office were also interviewed. The kind cooperation and invaluable assistance of all those consulted are gratefully acknowledged.

Following standard OED procedures, copies of the draft PPAR were sent to the relevant government officials and agencies for their review and comments. Comments received are attached as Annex C.

PART I: PROJECT ASSESSMENT

1. Background and Introduction

1.1 In the 1990s, much of the Bank's involvement in Brazil's highway sub-sector has been to support government initiatives for delegating highway management and operations to states, municipalities, and in some cases to the private sector. The 1988 Constitution decentralized fiscal revenues without changing the distribution of responsibilities among the three levels of government. This created a resource gap at the federal level for maintaining and expanding the road network. As a result, the federal government decided to reduce the size of the road network under its jurisdiction to those highways with national interest and to transfer others to state governments. In addition, the government started an ambitious program to concession more than 10,000 kilometers of roads with high traffic levels to the private sector. The concessioning program was assessed separately as part of this OED mission. The findings of that assessment, is provided as Part II of this report.

1.2 Much of Brazil's road network was built between the mid-1950s and the mid-1970s, mostly using funds from the National Highway Fund, which was established in 1945 and abolished in the 1980s.¹ Yet, after the initial road-building period, many highways were not adequately maintained, resulting in the disrepair of the roads. The percent of roads in poor condition (International Roughness Index, or IRI, greater than 5) went from below 20 percent in the late 1970s to approximately 30 percent in 1990.

**Table 1.1 Brazilian Road Network
(in thousands of kilometers)**

<i>Jurisdiction</i>	<i>Paved</i>	<i>Unpaved</i>	<i>Total</i>
Federal	52	15	67
State	85	114	199
Municipal	15	1,376	1,391
Total	152	1,505	1,657

Source: Brazil: Federal Highway Rehabilitation and Decentralization Project, Staff Appraisal Report No. 16425-BR, May 20, 1997.

1.3 Brazil's road network fell into disrepair in the past two decades largely because of three factors. First, the economic crisis that began with the oil shocks of the 1970s left fewer public funds available for supporting highway investments. Second, the 1988 Constitution transferred most road-user tax revenues to states and municipalities, without changing the split of road expenditure functions across levels of government. Third, and more important, the 1988 Constitution banned tax earmarking, leaving highway maintenance and development to be covered out of federal and state government budgets.² The net effect was that earmarked revenue sources at the federal level were eliminated while Brazil's economic crisis and structural adjustment of the 1980s created continuing stress on the federal and state budgets, leading to dramatic reductions in investment and maintenance of the road system.

Road Network

1.4 The Brazilian road network consists of 67,000 kilometers of federal roads and highways, 199,000 kilometers of state roads and highways, and 1,391,000 kilometers of municipal streets and rural roads, as shown in Table 1.1. The majority of Brazilian road network is of low quality:

1. Brazil: Federal Highway Rehabilitation and Decentralization Project, Staff Appraisal Report No. 16425-BR, May 20, 1997, The World Bank, Infrastructure and Urban Development Division, Country Department I, Latin American and the Caribbean Regional Office, Fed Hwy PAD, 1997.

2. Fed Hwy SAR, 1997, p. 6

only about 9 percent (152,000 kilometers) of the road network is paved. For both the federal and state road and highway networks, the highest traffic volumes occur in the states of the South and Southeast of Brazil.

Institutional Arrangement for Transport

1.5 According to Brazil's three-tier government structure, three levels of government—national, state, and municipalities—manage the road sector. The National Roads Department (DNER) manages interstate highways and some important state highways. The DNER is also responsible for administering the federal road concession program. The State Road Departments (DER) manage state highways in their respective states, and some important feeder roads. Like the DNER, the DERs administer state road concession programs in their respective states. Municipal governments are responsible for rural roads and urban streets.

1.6 On the federal level, with Bank support, the government recently carried out a reform program to restructure transport sector institutions. The reforms have created two national regulatory agencies, one responsible for roads, railways, and multimodal transport (ANTT), and the other responsible for waterways (ANTAQ). In addition, the restructuring created a Department of Transport Infrastructure (DNIT) within the Transport Ministry, which will be in charge of establishing standards and managing the planning, construction, rehabilitation, and maintenance of the transport infrastructure (road, railway and waterways) under the responsibility of the federal government. DNER in the process of being dissolved and its main responsibilities have been transferred to DNIT and ANTT. Other changes from the reform initiative include the creation of a Planning Secretariat in the Ministry of Transport, and dissolution of GEIPOT, the Brazilian Transport Planning agency, and the closure of the RFFSA, which is currently under liquidation following the privatization of the Federal Railways in a concession program supported by the Bank.

Bank Support in the Transport Sector

1.7 Since 1990, the Bank has approved 15 projects for US\$2.47 billion to support government programs in the transport sector—highways, railways, and urban transport (see Annex A for a list of Bank projects in the transport sector approved between fiscal 1990 and 2002). In addition, the Bank provided policy in support of the government's reform initiatives. In the highway sub-sector, the Bank approved six loans for US\$988 million for projects to support state-level highway projects and federal government initiatives to decentralize and concession highways. In railways, the Bank approved in 1996 the Federal Railways Restructuring and Privatization project for US\$350 million to facilitate the concessioning of the Federal Railways (RFFSA) and to assist in a staff retrenchment program. In urban rail transit, the Bank has approved nine loans between FY92-02 for US\$1.13 billion to support the transfer of CBTU systems to state governments, and to support state-level initiatives to improve the urban rail transit system in major metropolitan regions.

2. Project Overview

2.1 The Santa Catarina State Highway Management Project was part of the overall assistance strategy by the Bank to support state level initiatives in the road sector. The transfer of responsibility for the maintenance and operation of highways from the federal government to the state put more resource and capacity requirements on Santa Catarina, in general, and on its road agency, the Santa Catarina State Road Department (DER-SC) in particular. Therefore, there was a

need to provide direct support to the state to improve DER-SC's capacity to manage and operate a much wider road network, and to fill a critical financial gap for rehabilitating the road network.

2.2 Another rationale for the project was the past imbalance in resource allocations by the state between construction and maintenance, resulting in the sharp deterioration of the state road network. This required not only the rehabilitation of the road network through the provision of Bank financing, but also changing the incentive structure within the Santa Catarina DER to focus more on maintenance and use resources more efficiently. The latter was achieved by introducing appropriate maintenance policies and technologies, and the use of the private sector for carrying out road works under contract.

2.3 The objectives of the project were to reduce the deterioration of the state road network and to achieve sustainable maintenance through allocating more resources for maintenance and improving the institutional framework governing road maintenance in the state (See Box 2.1 for description of project objectives and components.)

Box 2.1 State Highway Management Project: Objectives and Components

Project Objectives

The main objectives of the project, as laid out in the Staff Appraisal Report (SAR), were to reduce the deterioration of the state road networks in Santa Catarina and improve their conditions by:

- a) Ensuring adequate priority and funding for rehabilitation and maintenance versus new construction in the state's road program
- b) Designing and implementing appropriate highway rehabilitation and maintenance strategies and programs, and strengthening the maintenance capabilities of the DER-SC through increased reliance on contracted, rather than force-account works, and through improved maintenance management system
- c) Develop and implement environmental guidelines for state roads
- d) Contribute to the resumption of economic growth by reducing the costs of road transport on the state highway networks.

Project Components

To achieve the above objectives, the project had the following components in the two borrower states:

Policy and Institutional Development Program

- Prepare and annually update the state's road expenditure and funding program, consistent with agreed criteria, priorities, and targets
- Develop and implement a pavement management system designed to help prepare and monitor appropriate rehabilitation and maintenance strategies and programs
- Strengthen the DER's contract and project management systems
- Develop appropriate capability in the DER and the state government to implement and monitor environmental standards and guidelines for state roads.

Investment and Maintenance Program

- Pavement rehabilitation, resurfacing, and routine maintenance components of the state's 1992-96 road program.
- Rehabilitation and resurfacing works on 1,448 kilometers of roads in Santa Catarina.

3. Project Outcome

3.1 This section assesses the outcome of the project by assessing the relevance of the project objectives and the efficacy and efficiency with which they were achieved.

Relevance: Focus on Maintenance

3.2 The relevance of the project is assessed as **substantial**. The overarching goal of the project to achieve a sustainable maintenance of the state's road sector by refocusing state authorities and DER-SC to provide more resources for maintenance, and introduce new policies and techniques to maintain the road network was consistent with the development priorities of the state and the Bank's sector assistance strategy. The goal was clearly laid out in the project objective as "ensuring adequate priority and funding for rehabilitation and maintenance versus new construction in the state road programs," and was supported by a specific project component, "prepare and annually update the state's road expenditure and funding programs, consistent with agreed criteria, priorities, and targets." The loan covenant also made it clear that DER-SC would prepare a multi-annual road expenditure plan and allocate sufficient funds to meet the targets for rehabilitation and maintenance. The fact that the project goal for sustainable maintenance permeated through the project objective, component and loan covenant shows the importance the Bank put on achieving this goal and the urgency of the maintenance crisis at the time of project approval. It also shows that the design of the project was internally consistent, which helped to focus both the borrower and the Bank to achieving this goal.

3.3 Ensuring sustainable maintenance necessitated several changes in the policy and institutional framework governing the road sector in Santa Catarina. In particular, the incentive structure in DER-SC needed change to focus more on maintenance, and less on new construction, and DER-SC needed to be more systematic in its planning procedures by using economic criteria to plan road maintenance programs and expenditure, rather than ad hoc administrative political considerations. DER-SC also needed to optimize its scarce resources by employing the private sector to carry out road works under contract, rather than its more costly and inefficient in-house labor force. There was also a need to introduce environmental planning in road works. These reform instruments to realign the incentives in DER-SC and introduce new policy and techniques for road maintenance were important components of achieving sustainable maintenance in the state.

Efficacy: Road Deterioration Reversed

3.4 The efficacy of the project is rated as **substantial**. Most of the roads planned for rehabilitation during appraisal were rehabilitated, and as a result, the overall condition of the road network has improved. According to data reported in the ICR, the proportion of the Santa Catarina network in critical to poor condition (International Roughness Index > 3.5) was reduced from 31 percent at appraisal in 1991 to 12 percent in 1997, and to near zero percent at project completion.³ The assessment mission traveled over a sample of roads in Santa Catarina and found the construction to be of good quality and holding up very well five years after the physical works were completed. The roads visited were among the more heavily traveled routes in Santa Catarina, where trucks constitute about 30 percent of the traffic, and connect the major North-South federal highway (BR 101) that goes from the northern part of the country all the way to Argentina.

3.5 Representatives of a trucking association in Santa Catarina were interviewed during the assessment mission to assess the impact of the improved roads on the trucking industry. The

3. Implementation Completion Report, Brazil State Highway Management Project, Report No. 20349, April 28, 2000.

representatives revealed that the rehabilitated roads have significantly reduced their operating costs and, more important, reduced the time it takes to traverse the state. They also stated that tariffs have been reduced recently in response to stiff competition in the trucking industry, which is coming from new businesses encouraged to enter the trucking sector because of the improved conditions of the state's road network. The increased competition in the trucking industry, however, is resulting in low profitability for the established truckers, who claim that they are as a result unable to make investments to renew their fleet and to pay the large amount of taxes they owe the government. Nevertheless, the users of the trucking industry appear to be benefiting from the improvements of state roads.

3.6 On the institutional side, a modern pavement management system was put in place, and there is some evidence that it is being used to prioritize road maintenance expenditure on economic grounds, rather on political considerations. Contracting is widely used in Santa Catarina, and environmental screening is used in road development. The training and technical assistance are helping in modernizing the road agency in Santa Catarina. DER-SC official interviewed during the assessment mission revealed that the project has helped them to modernize their agency and expose the staff to international procedures in highway maintenance.

Efficiency

3.7 The efficiency of the project is rated **high**. The ICR estimates an economic rate of return for this project at about 90 percent (versus 55 percent at appraisal). OED did not re-estimate the ERR, but finds the ICR ERR estimates to be reasonable. The re-estimation was done following the appraisal procedures, which was carried out using the well-established HDM- IV model for economic analysis of highway projects. The assumptions in the analysis were standard assumptions based on projected traffic, costs and benefits to users.

Outcome

3.8 Based on the above assessment, the outcome of the project is rated **satisfactory**. Most of the physical objectives and institutional development objectives were achieved. The project had a substantial impact on the condition of the road network in Santa Catarina, refocused DER-SC on maintenance and strengthened its capacity to manage the road network under contract with the private sector. All these point to the fact that the project's goal for sustainable maintenance is being met.

4. Institutional Development and Sustainability

Institutional Development

4.1 The institutional development impact is rated **substantial** on the basis of the following achievements.

4.2 ***Pavement Management System.*** As part of the institutional development effort, the project assisted in establishing a pavement management system (PMS) in DER-SC to improve the agency's road investment planning and expenditure procedures. The system, based on the HDM- IV model, is now used in DER-SC to program a multi-annual road maintenance and expenditure program, as well as for planning investment programs for financing by external partners, such as the Inter-American Development Bank.

4.3 DER-SC technical staff told the assessment mission that the introduction of the PMS has improved work planning, introduced a maintenance culture in the agency, and provided the department with a rational basis for determining future road works. According to the staff interviewed, ninety percent of road works are now prioritized using the PMS in contrast to the past practice of ad hoc planning for road works.

4.4 **Environmental Unit.** An environmental unit was created within the DER-SC as part of the institutional development efforts of the project. A new law in Brazil mandates that new infrastructure projects should undergo environmental screening. The project supported development of an environmental manual to be used by the environmental unit in its evaluation of transport projects. The manual borrows heavily from the Bank's environmental guidelines.

4.5 **Contracting Out Road Maintenance.** The project introduced in the DER-SC a move from carrying road maintenance using an in-house labor force, to contracting out with the private sector. This included piloting a performance-based rehabilitation and maintenance contract.

Sustainability

4.6 The sustainability of the project—resilience to risk of net benefits flows over time—is rated **likely**. The roads were built to high technical standards, which will ensure that the benefit streams will last their design period. But more important, institutional basis for road maintenance has been established: maintenance is carried out according to PMS plans and under contract with the private sector. Sufficient resource for road maintenance is currently being allocated, but road financing still relies on government general budget allocations, which are overly sensitive to changing fiscal situations in the state. If the fiscal situation in the state deteriorates, as it often does, the resources for road maintenance can be quickly exhausted. Therefore, Santa Catarina, and Brazil in general, may need to think about reducing its reliance on erratic government budgets for road maintenance, and explore alternative sources for road maintenance funding. The introduction of private sector toll road concessions is a step in the right direction, but these only cover a small portion of the network with high traffic, and, in Santa Catarina, the toll road concession policy has been suspended (see Part II for analysis).

Bank Performance

4.7 Bank performance is rated **satisfactory**. The Bank's emphasis on maintenance, and designing the project to achieve this goal is commendable in light of the fact that the perennial issue in the road sector in Santa Catarina, in Brazil more generally, has been the lack of adequate road maintenance. The Bank stayed focused on achieving this objective through out the project cycle. It also engaged the client in productive policy dialogue to change the incentive structure within DER, and to shift department's culture from a focus on construction to a focus on maintenance. The continuity of task team members, with one task manager through out the project cycle, bolstered the effectiveness of the Bank's policy dialogue and progress in project implementation. Interviews conducted DER-SC officials reveal that Bank support has been valuable. Especially valued by DER-SC officials are the Bank's contributions for institutional development, and its emphasis on maintenance, which they say has helped them to create a maintenance culture in the agency.

Borrower Performance

4.8 Overall, borrower performance is rated **satisfactory**. The borrower was committed to the project, and DER-SC implemented the project reasonably well and complied with most of the loan covenants.

PART II: TOLL HIGHWAY CONCESSIONS

5. The Highway Concession Program in Brazil

5.1 This section reviews the results of the highway concession program carried out by the Federation and selected state governments. Through several lending projects and non-lending policy dialogue, the Bank has been supporting the Federation, as well as selected state governments to promote private sector participation in highway investment, management and operations. The Brazil Federal Highway Rehabilitation and Decentralization Project has, as one of its objectives, a component to support the federal government to concession highways with high traffic volumes. Similarly, the Rio Grande do Sul State Highway Project has similar objectives to increase private sector participation in the road sector and to improve the supervision and monitoring of the state's highway concession program.⁴ In Santa Catarina, while the State Highway Project did not have explicit objectives for highway concessioning, the Bank has provided policy advice and financed a study for highway concessioning in the state.

5.2 The assessment of the highway concession program is based on data collected from the MOT, DNER and the Brazilian Association of Highway Concessionaires (Associação Brasileira de Concessionárias de Rodovias, ABCR). Some of the data may not be fully reliable because of the weakness in the data collection process of these agencies. Yet, these are the only ones available for now, and the reviewers have tried to corroborate the data with quality interviews with officials from various government agencies and representatives of the private sector and user groups.

5.3 The review focuses on assessing the relevance and efficacy of the concessioning program, as well as the regulatory environment and the sustainability of the concessioning program, and provides some preliminary lessons for broader applicability.

Motivation: Disinvestments in Highways

5.4 The Brazilian highway concession program was motivated by a crisis in road infrastructure investment and maintenance. Much of Brazil's highway network was built between the mid-1950s and the mid-1970s, mostly using funds from the National Highway Fund, which was established in 1945 and abolished in the 1980s. Investment in the transport sector in the 1960s accounted for 40 percent of total public capital formation in the country, and road building was a major part of that effort.⁵ Yet, after the initial road-building period, many highways were not adequately maintained. Investment in all transport sectors in Brazil fell from 3.3 percent of GNP in 1975 to 1 percent of GNP during most of the 1980s and 1990s.⁶

5.5 The disinvestment in Brazilian highways during the past two decades (and primarily during the late 1970s and 1980s) was due to three factors. First, the economic crisis that began with the oil shocks of the 1970s left fewer public funds available for supporting transport investment across all modes, including highways. Second, the 1988 Constitution transferred most road-user tax revenues to states and municipalities, without changing the split of road expenditure

4. Brazil: Rio Grande do Sul State Highway Management Project, Staff Appraisal Report, Report No. 16328-BR. Infrastructure and Urban Development Divisions, Latin America and Caribbean Region Office.

5. Fed Hwy SAR, 1997, p. 1

6. Fed Hwy SAR, 1997, p. 1

functions across levels of government.⁷ Third, and more important, the 1988 Constitution banned tax earmarking, leaving highway maintenance and development to be covered out of federal and state government budgets.⁸ The net effect was that earmarked revenue sources at the federal level were eliminated while Brazil's economic crisis and structural adjustment of the 1980s created continuing stress on the federal and state budgets, leading to dramatic reductions in investment and maintenance of the road system. While between 1954 and 1985, 115,000 kilometers of roads were paved in Brazil, only 3,000 kilometers of roads were paved between 1990 and 2000,⁹ and yet the need to pave roads in Brazil has not decreased, especially in the north and northwest of the country. In addition, the percent of roads in poor condition (International Roughness Index, or IRI, greater than 5) went from below 20 percent in the late 1970s to approximately 30 percent in 1990.¹⁰ A recent World Bank study estimates that US\$150 million annually is needed for routine maintenance of the non-concessioned federal paved road network, and an additional US\$4 billion is required to rehabilitate the non-concessioned federal and state paved road networks. But both the federal and state government currently do have enough resources to meet this substantial resource requirement to maintain and rehabilitate the road network, and hence the need to tap the private sector for some of the resource needs.¹¹

The Concessioning Framework

5.6 The Brazilian road concession program was conceived in the early 1990s as a partial solution to the disinvestment in and poor condition of the Brazilian highway system. The program was developed first under the direction of the federal government and then with leadership from various states in cooperation with the federal government. Currently, the 39 highway concessions in Brazil are a mixture of different administrative arrangements and concession models that fall into three categories, as described below.

5.7 **Federal Concessions:** The federal government originally concessioned five highway segments. Two more concessions that were originally delegated to the State Rio Grande do Sul for concessioning were returned to the federal government and now are part of the federal concession program administered by the DNER. The seven federal concessions under DNER administration cover slightly less than 1,700 kilometers, all concessioned in 1994–95 for periods ranging from 20 to 27 years (Table 5.1).

7. This is indicative of the changes in fiscal arrangements brought about by the 1988 Constitution. Other reports discuss the ways in which Brazilian public finance functions do not match revenue capacity and expenditure responsibilities across the levels of government in the federal system. See <WB Brazil public finance report>.

8. Fed Hwy PAR, 1997, p. 6

9. SIMFRE, Rodoviario, June 2001.

10. This is based on an HDM study of 38,566 kilometers of the Brazilian highway network, cited in Fed Hwy SAR, 1997, pp. 79-80.

11. World Bank, Brazil: Public-Private Partnership in Transport Infrastructure, Progress and Challenges.

Table 5.1 Concessions Administered by the DNER

Roadway/Section	Length (km)	Concessionaire	Concession Period	
			Begin	End
BR 101/RJ, Ponte "Presidente Costa e Silva"	13.2	Concessionária Ponte Rio – Niterói S/A – PONTE	1994	2015
BR 116/RJ/SP, Rio de Janeiro – São Paulo	402	Concessionária da Rodovia Presidente Dutra S/A – NOVADUTRA	1996	2021
BR 040/MG/RJ, Juiz de Fora - Rio de Janeiro	179.7	Companhia de Concessão Rodoviária Juiz de Fora - Rio S/A – CONCER	1996	2021
BR 116/RJ, Além Paraíba - Teresópolis – Entr. BR-040 (A)	142.5	Concessionária da Rodovia Rio Teresópolis S/A – CRT	1996	2021
BR 290/RS, Osório - Porto Alegre	112.3	Concessionária da Rodovia Osório – Porto Alegre S/A – CONCEPA	1997	2017
BR-116/RS-BR-293/RS-BR-392/RS, Pólo Pelotas	623.8	Empresa Concessionária de Rodovias do Sul S/A – ECOSUL	1998	20225
BR-158/RS-BR-287/RS, BR-290/RS-BR-392/RS, Pólo Santa Maria	201.8	Concessionária Santa Maria S/A – SANTA MARIA	1998	2025
Total	1675.3			

Source: *Ministerio dos Transportes, Departamento Nacional de Estradas de Rodagem (DNER), Diretoria de Concessões e Operações Rodoviárias, "Relatório Anual de Acompanhamento do Programa de Concessões de Rodovias Federais, 2000," p. 21.*

5.8 The federal concession program is part of a more ambitious plan by the federal government and the DNER to ultimately concession more than 10,000 kilometers of the federal highway system (about one-fifth of the paved federal highways in Brazil). Table 5.2 divides the federal concession program administered by DNER into four groups: concessions granted, concessions out for bid, concessions scheduled to go out for bid, and roads that are subject to feasibility studies. In addition to these, the federal government has delegated federal highways for concessioning by the states (see Para 5.9 below). The table illustrates the ambitious nature of the federal concession program. But it should be noted that no new federal concessions have been granted since 1995, except for those delegated to the state for concessioning. Although recently resolved, the Accounting Court of the Union (TCU) suspended the concession bids for the 2,718 kilometers of roads to review the transparency of the bids and ensure their consistency with federal laws and regulations.¹² As a result, some observers have argued that the federal highway concession program is at a standstill, with its future direction largely unknown¹³ (This issue is discussed in more detail in Chapter 7 on regulation and sustainability)

Table 5.2 Summary of the Federal Roadway Concession Program, as of 2000

Description	Length (km)
Roadway concessions granted	1680.1
Concession out for bid	2718.1
Concessions to go out to bid in 2001/2002	5182.8
Conducting feasibility studies	1102.6
Total	10683.6

Source: *Ministerio dos Transportes, Departamento Nacional de Estradas de Rodagem (DNER), Diretoria de Concessões e Operações Rodoviárias, "Relatório Anual de Acompanhamento do Programa de Concessões de Rodovias Federais, 2000," p. 15.*

5.9 **Federal Highways Delegated to and Concessioned by States:** In 1996, the Brazilian Congress passed the Delegation Law, which allowed the federal government to delegate federal highways to states for the purposes of concessioning. This was consistent with both the move toward private concessioning of infrastructure that was increasingly popular within Brazil at the time and the government's decentralization policy promulgated in the 1998 Constitution. The

12. Federal Highway Rehabilitation and Decentralization project, Project Status Report, June 7, 2001.

13. SIMEFRE report, p. 24

decentralization policy for highways entailed transferring approximately one-fifth of the federal highway system to states. Among other motivations, policymakers believed that state governments could combine state and federal highways into concession lots that would be more attractive to the private sector than lots composed of only federal or state highways.¹⁴

5.10 Three state governments, Minas Gerais, Paraná, and Rio Grande do Sul, originally participated in the delegation and concessioning program. These state-administered concessions have met various forms of resistance at the local level. The federal highways turned over to the State of Paraná have been concessioned, but the highways that were to be administered by Rio Grande do Sul, *Ecosul*, and *Santa Maria*, met with political resistance and have since been returned to federal control. Minas Gerais has not implemented the concession program yet.¹⁵

Table 5.3 Summary of Federal Highways Delegated to States for Purposes of Concessioning, as of 2002

<i>Description</i>	<i>Length (km)</i>
Concessions of the State of Rio Grande do Sul	1255
Concessions of the State of Paraná	1754
Concessions delegated to and operated by other states	5
Delegations being negotiated	635
Total	3649

Source: Ministério dos Transportes, Departamento Nacional de Estradas de Rodagem (DNER), Diretoria de Concessões e Operações Rodoviárias, "Relatório Anual de Acompanhamento do Programa de Concessões de Rodovias Federais, 2000," p. 15.

5.11 **State Concessions:** Some states pursued concessions of state highways on their own at roughly the same time that the federal government began the concession program for federal highways. Santa Catarina was a pioneer when it launched its concession program in 1993, but its two concessioned roads have not begun operations because of political opposition to tolls. States that have concessioned portions of their highway system include Sao Paulo (11 concessions), Rio Grande do Sul (7 concessions), and Paraná (6 concessions), and other small concession programs in other states, as listed in Table 5.4.

Table 5.4 State Highway Concessions

<i>Bahia</i>	<i>Espírito Santo</i>	<i>Paraná</i>	<i>Rio de Janeiro</i>	<i>Rio Grande do Sul</i>	<i>Santa Catarina</i>	<i>Sao Paulo</i>
CLN	Rodovia do Sol	Caminhos do Paraná	Rota 116	Brita	Ecovale	AutoBAn
		Econorte	Via Lagos	Convias	Linha Azul	Autovias
		Ecovia		Coviplan		Centrovias
		Rodonorte		Metrovias		Ecovias dos Imigrantes
		Rodovia das Cataratas		Rodosul		Intervias
		Viapar		Santa Cruz		Renovias
				Sulvias		Rodvias Das Colinas
						SPVias
						Tebe
						Triangulo do Sol
						Via Oeste

Source: Associação Brasileira de Concessionárias de Rodovias, <http://www.abcr.org.br>, accessed March 12, 2002.

14. Federal Highway Rehabilitation and Decentralization SAR, 1997, p. 53.

15. SIMEFRE, Serie Estudos: Rodoviário, Junho 2001; DNER report

5.12 Table 5.5 summarizes the length of the currently operating state or federally administered highway concessions in Brazil. All told, across the three different types of concessions, almost 10,000 kilometers of highways were concessioned during the 1990s. The extent of Brazil's highway concession program is large by comparison with most other countries in the developed or developing world. As can be seen from Table 5.5, the state concession program is a substantial part of the concession program in Brazil. So far the state concession program, including those delegated by the federal government, totals nearly 8,663 kilometers of roads, and this is likely to increase as the federal government completes its negotiations with states to delegate the remaining highways slated for decentralization and as the states continue with their concession program.

Table 5.5 Length of Federal and State Highway Concessions, as of 2000

<i>Government</i>	<i>Length (km)</i>	<i>Expansion (km)</i>	<i>Total Length (km)</i>
Federal	1,668	18	1,686
Bahia	182		182
Espirito Santo	46	27	73
Paraná	2,031	31	2,062
Rio de Janeiro	80	2	82
Rio Grande do Sul	1,628	11	1,639
Sao Paulo	3,427	274	3,701
Santa Catarina	524		524
Total	9,586	363	9,949

Source: ABCR (*Associação Brasileira de Concessionárias de Rodovias*) Annual Report, 2000, p. 8.

6. Results of the Concession Program

6.1 This chapter assesses the results of the concession program based on data from annual reports of the MOT, DNER, and ABCR, as well as interviews with government officials and private sector representatives. The assessment focuses on investment proceeds from the private sector, road improvements, and financial situations of the concessions.

Structure of the Concessions

6.2 Most of Brazil's federal and state concessions are granted on existing roads, designed to improve or expand existing highways rather than new projects.¹⁶ The basic structure of the federal and state concessions is similar. Each concessionaire is required to complete an initial program of emergency rehabilitation before tolls can be charged. This typically takes about six months, and often entails filling potholes, resurfacing, restoration, improving drainage, replacing signs, etc. The emergency rehabilitation and the later maintenance and investment program are specified in the bid document. After the emergency rehabilitation is complete, the concessionaire is allowed to charge a toll on the highway. The toll is regulated by either the federal highway department or the relevant state highway department. In the federal program, tolls are adjusted annually to account for inflation,¹⁷ but in state concessions fare setting and adjustments are less systematic.

16. The exception is a municipal concession in Rio de Janeiro.

17. Interview with Paulo Nunan, Chief, Division of Road Concessions, DNER, July 31, 2001.

Investment

6.3 Since its inception in 1994 to tap private investment for roads, the Brazilian highway concession program has generated R\$4.1 billion for highway investment through 2000. These investments are mostly from domestic private sources, but also include borrowing from IFC and IDB. Of the total investment, R\$1.62 billion was invested in federal concessions and R\$2.5 billion in state concessions. In addition, both the federal and state concessions are expected to generate an additional R\$12 billion by the end of their contract terms.

6.4 Table 6.1 shows projected and actual investment for the five original federal concessions plus the ECOSUL federal concession in Rio Grande do Sul. Investment through 2000 has exceeded the forecast in all but one federal concession (CONCER). The overall investment in the federal concessions through December 2000 was 2.3 percent more than forecast for the same period.

Table 6.1 Federal Concessions: Present Value of Investment (in R\$1000)

Concessionaire	Concession Period		Actual Through Dec. 2000	Forecast Through Dec. 2000	Forecast Through End of Contract	Actual (Dec. 2000) as % of Forecast Total
	Begin	End				
Ponte	1994	2015	103398	96971	117753	87.8
Novadutra	1996	2021	956345	938492	1425607	67.1
Concer	1996	2021	321004	326231	603840	53.2
CRT	1996	2021	93989	93913	208070	45.2
Concepa	1997	2017	125674	117257	230156	54.6
Ecosul	1998	2025	25740	23462	155007	16.6
TOTAL			1626150	1596326	2740433	59.3

Source: *Ministerio dos Transportes, Departamento Nacional de Estradas de Rodagem (DNER), Diretoria de Concessões e Operações Rodoviárias, "Relatório Anual de Acompanhamento do Programa de Concessões de Rodovias Federais, 2000," p. 8.*

6.5 In addition to the federal concessions above, Table 6.2 shows investment in state administered highway concessions in the states of Sao Paulo, Paraná, Rio Grande do Sul, Rio de Janeiro, and Espírito Santo. The highest investment has occurred in Sao Paulo, which has taken over R\$1.7 billion in investments from private concessionaires.

Table 6.2 Investment in State Highway Concessions, Selected States (R\$ 1000)

	1998	1999	2000	Total through 2000
Sao Paulo	176,774	421,341	1,110,060	1,708,175
Paraná	279,647	21,482	120,090	421,219
Other	66,000	57,551		123,551
RJ/ES			88,420	88,420
Total				2,524,405

Source: *Associação Brasileira de Concessionárias de Rodovias – ABCR, Annual reports 1998, 1999, 2000*

Front-Loaded Investment

6.6 The investment program for the federal concessions is front-loaded, as can be seen by Table 6.1, and the same is typically true for state concessions as well. Sixty percent of the investment program in the federal concessions has already been undertaken, with the Ponte concession reaching 88 percent of requirement in the first 5 years of its 20-year concession term. The front-loaded investment comes about because concessionaires are expected to undertake an emergency rehabilitation and improvement program before being allowed to charge tolls (para 6.2).

6.7 The front loaded investment for the emergency rehabilitation program has several advantages. Because tolls cannot be charged before initial investments are made, the government

has considerable leverage over the concessionaire in the early stages. Also, public support for the concession program is bolstered by the fact that tolls are not charged until visible improvements have been made as part of the emergency rehabilitation, making the benefits from the improvements immediate to the road user. Lastly, the rehabilitation is consistent with the goal of the concession program to improve the condition of highways that had typically fallen into disrepair.

6.8 But the front-loaded investment program opens up the concessionaire to regulatory and political risks during the long contract period, when the concessionaire expects to earn returns from his investment and when many unforeseen circumstances can emerge that could cut into the returns. These include economic shocks that could reduce revenues or increase costs, or political changes that could result in regulatory extortions, political opportunism, or outright policy reversals. The regulatory risks and challenges in the highway concession program are discussed in more detail in Chapter 8.

Road Conditions and Traffic

6.9 The effect of the investment program related to the emergency rehabilitation program was often dramatic. Some observers in Brazil commented that the concession program has improved the condition and safety of roads. Roads have been resurfaced, widened, equipped with roadside emergency service stations and call boxes, resulting in reduced travel time and fewer accidents. In the Novadutra concession, for example, the journey time from Rio de Janeiro to Sao Paulo has been cut in half from 12 hours to 6 hours.¹⁸

6.10 With the exception of the Novadutra concession, which showed a seven percent increase from 1999 and 2000, traffic volume on federal concessions was stagnant or showed only slight declines or increases from 1999 to 2000 (Table 6.3).

6.11 Opinion surveys show that today the public generally approves the program, because the infrastructure and the service have had significant improvements. However, the program also has some opposition from some users, especially the trucking industry. This group has expressed its dissatisfaction on the tariff level, which they say is high, and the number of toll plazas, which they consider too many (Regulatory challenges emanating from the opposition are discussed more fully in Chapter 8).

Table 6.3 Trends in Average Daily Traffic Between 1999 and 2000

<i>Concessionaire</i>	<i>Average Daily Volume</i>		<i>Volume in Passenger-car Equivalent</i>	
	<i>1999</i>	<i>2000</i>	<i>1999</i>	<i>2000</i>
Ponte	62883	62514	71342	69556
Novadutra	94294	100813	196129	206055
Concer	40438	38209	57531	55033
CRT	20987	22354	29424	31182
Concepa	42947	42396	59465	59742
Total	261549	266286	413891	421568

Source: Ministerio dos Transportes, Departamento Nacional de Estradas de Rodagem (DNER), Diretoria de Concessoes e Operacoes Rodoviaras, "Relatorio Anual de Acompanhamento do Programa de Concessoes de Rodovias Federais, 2000," p. 23.

18. SIMFRE

Toll Revenues

6.12 As shown in Table 6.4, the federal concessions have earned toll receipts that, through 2000, were 3.8 percent below forecasts. The most serious shortfall in receipts was in the Concepa concession—a 22 percent shortfall between expected and actual receipts. The Novadutra and CRT concessions have toll receipts that, through 2000, have essentially equaled forecasts.

Table 6.4 Cumulative Receipts (Forecast and Actual) Since the Beginning of the Concessions (in R\$1000)

Concessionaire		Through 1999		Through 2000	
		Forecast	Actual	Forecast	Actual
Ponte	Value	120213	110415	168632	150460
	%A/F		-8.2		-10.8
Novadutra	Value	741606	759928	1066797	1059360
	%A/F		2.5		-0.7
Concer	Value	187515	185940	264983	254243
	%A/F		-0.8		-4.1
CRT	Value	89297	92410	130626	131862
	%A/F		3.5		0.9
Concepa	Value	85571	69253	143535	111433
	%A/F		-19.1		-22.4
Total	Value	1224202	1217946	1774573	1707358
	%A/F		-0.5		-3.8

Source: *Ministerio dos Transportes, Departamento Nacional de Estradas de Rodagem (DNER), Diretoria de Concessoes e Operacoes Rodoviaras, "Relatorio Anual de Acompanhamento do Programa de Concessoes de Rodovias Federais, 2000," p. 25.*

Operating Costs

6.13 Table 6.5 shows forecast and actual operation costs for the five original federal concessions plus the Ecosul concession through 1999 and 2000. Novadutra and Concer, in particular, had higher than expected costs. For Novadutra, cumulative operating costs totaled 17 percent more than the forecast through the year 2000. For Concer, operating costs were 26 percent higher than forecast through 2000. Overall, the concessions had 13.5 percent more in operating costs than forecast.

Table 6.5 Operating Costs (in R\$1000)

Concessionaire		Through 1999		In 2000		Through 2000	
		Forecast	Actual	Forecast	Actual	Forecast	Actual
Ponte	Value	134330	133642	25787	26259	160117	159901
	%A/F		-0.5		1.8		-0.1
Novadutra	Value	354756	410991	121377	144188	476133	555179
	%A/F		15.9		18.8		16.6
Concer	Value	75877	103357	29427	29427	105304	132784
	%A/F		36.2		-		26.1
CRT	Value	47187	48272	18759	18759	65946	67031
	%A/F		2.3		-		1.6
Concepa	Value	19098	27045	11127	11216	30225	38261
	%A/F		41.6		0.8		26.6
Ecosul	Value	8899	8900	5893	5835	14792	14735
	%A/F		-		-1.0		-0.4
Total	Value	640147	732207	212370	235684	852517	967891
	%A/F		14.4		11.0		13.5

Source: *Ministerio dos Transportes, Departamento Nacional de Estradas de Rodagem (DNER), Diretoria de Concessoes e Operacoes Rodoviaras, "Relatorio Anual de Acompanhamento do Programa de Concessoes de Rodovias Federais, 2000," p. 26.*

Summary of Concessionaires Investment and Financial Health

6.14 Table 6.6 summarizes the investment, toll revenue, and operating cost information for the federal highway concessions as reported by the DNER. For each concession the table shows how investment, revenue, and operation cost has exceeded or fallen short of forecasts, cumulatively, through 2000. A positive value in a cell indicates the percentage amount that the actual investment, revenue, or operating cost exceeded the forecast. A negative value is the percentage amount that the actual fell short of the forecast.

Table 6.6 Investment, Toll Revenue, and Operating Costs, Compared to Forecasts, Cumulative Through 2000

	<i>Investment, Percent Over or Under Forecast</i>	<i>Toll Revenue, Percent Over or Under Forecast</i>	<i>Operating Costs, Percent Over or Under Forecast</i>
Ponte	7.4%	-10.8%	-0.1%
Novadutra	2.4%	-0.7%	16.6%
Concer	1.7%	-4.1%	26.1%
CRT	0.6%	0.9%	1.6%
Concepa	8.0%	-22.4%	22.6%
Ecosul	10.8%	N/A *	-0.4%
Total, all federal concessions	2.3%	-3.8%	13.5%

* As of the publication of the 2000 Annual Report on Highway Concessions (Ministerio dos Transportes, Departamento Nacional de Estradas de Rodagem (DNER), Diretoria de Concessoes e Operacoes Rodoviaras, "Relatorio Anual de Acompanhamento do Programa de Concessoes de Rodovias Federais, 2000,"), the Ecosul concession was not charging tolls.

Source: Compiled from information in Ministerio dos Transportes, Departamento Nacional de Estradas de Rodagem (DNER), Diretoria de Concessoes e Operacoes Rodoviaras, "Relatorio Anual de Acompanhamento do Programa de Concessoes de Rodovias Federais, 2000.

6.15 Table 6.6 points to some possible fiscal stress in the toll concessions, with revenues across the five federal concessions falling 3.8 percent short of projections through 2000 and operating costs and investment exceeding forecasts, by 13.5 percent and 2.3 percent, respectively, through 2000. The shortfall in toll revenues is not dramatic when summed for the five federal concessions, but both Ponte and Concepa are facing larger revenue shortfalls (10.8 percent below forecast for Ponte and 22.4 percent below forecast for Concepa). The Concepa concession, in particular, has experienced revenue shortfalls of 22.4 percent below forecast and operating costs that have exceeded forecast by 26.6 percent.

6.16 Though it is still at an early stage, the federal concessioning program appears to be successful when measured by how investment, toll revenue, and operating costs have compared with forecasts. Particular concessions might experience financial distress, but given that some variation in concession performance is to be expected and that concessionaires will have built some contingency ranges into their planning, the data across the federal concessions does not appear alarming.

Fiscal Impact

Concession Fees and Taxes

6.17 The concession program has had a beneficial impact on federal and state government fiscal situations. The governments receive concession fees and tax payments from the concessionaires, and more important, the fact that refurbishment has occurred with private sector funds frees some government money for other uses. Table 6.7 shows the concession fees and

taxes received by the Federation and selected state governments. The table shows the small magnitude of concession fees and taxes, which suggests that the majority of fiscal benefits are likely to come from the freeing up of government funds for other uses because of private investment in the highway system.

6.18 The bulk of the tax and fee revenues are from the concessions administered by the State of Sao Paulo. This is in part due to the bidding criteria, which opted for the highest concession fees to the government with a pre-determined toll rate, while the federal concession opted for the lowest toll rate. In Rio Grande do Sul, the toll rates were also predetermined, but here the bidding criteria was the aggregated length of highway sections around the pole incorporated into the concession for the given tariff.

Table 6.7 Concession Fees and Taxes (\$R)

Highway concessions	1998		1999		2000		Total (through 2000)		
	Concession Fees Paid	Taxes Paid	Concessi on Fees Paid	Taxes Paid	Concessi on Fees Paid	Taxes Paid	Concession Fees Paid	Taxes Paid	Total (concession fees +taxes)
Federal	14,962	26,664	11,480	18,123	11,560	36,540	38002	81327	119329
Sao Paulo	202,879	13,284	174,307	23,414	222,250	60,640	599436	97338	696774
Paraná	4,741	2,341	3,109	5,019	5,600	18,470	13450	25830	39280
Rio Grande do Sul	138	714	1,706	2,936	1,040	5,170	2864	8820	11704
Other	—	7,992	362	7,614	—	—	362	15606	15968
Rio de Janeiro – Espirito Santo	—	—	—	—	390	11,550	390	11550	11940

Source: Compiled from information in *Ministerio dos Transportes, Departamento Nacional de Estradas de Rodagem (DNER), Diretoria de Concessões e Operações Rodoviárias, "Relatório Anual de Acompanhamento do Programa de Concessões de Rodovias Federais, 2000.*

7. Sustainability and Regulation

7.1 While the highway concession program in Brazil appears to be successful so far, especially, when measured by the realization of investment, toll revenues, and costs, a broader review of highway concessions suggests that substantial regulatory challenges lie ahead. The long-term nature of road concessions, combined with what is often intense public scrutiny, ambiguous distinctions between appropriate public and private risk, and changing macroeconomic and political environments over the life of most concessions make highway concessions especially difficult policy and regulatory terrain. In particular, continued macroeconomic and policy stability will require particular attention in the regulatory process to ensure the sustainability (and expansion) of highway concession program.

Macroeconomic Risks

7.2 Toll road concessions worldwide have experienced problems with traffic projections due, in part, to unanticipated macroeconomic slowdowns. The Brazilian economy has been in recession or near-recession since the late 1990s. Although Brazil has so far been relatively shielded from major economic crisis, the threat of a regional economic downturn, precipitated by the current economic crisis in Argentina, suggests that the economic environment for the highway concessions can be adversely affected. This could trigger regulatory disputes if concessionaires' financial hardships become a motivation to renegotiate or otherwise modify the terms of the

contracts. Yet, it is not clear who should assume the risks of this downturn. Most of the concession contracts have “financial equilibrium clauses” that allow for contract readjustments if revenues or costs are affected by circumstances outside the control of the concessionaire. If economic downturns are interpreted as triggering this clause, readjustments could become common. Although many concessions have been renegotiated, tolls have been renegotiated in Parana and Rio Grande do Sul, and DNER has agreed to numerous design changes which have resulted in some tariff increases, renegotiation because of macroeconomic shocks would be a new issue for Brazil’s concession regime. Such renegotiations, if they occur, are fraught with political difficulty, typically testing the regulatory system. Fundamental issues such as the appropriate split of commercial risk across the public and private sector are typically reopened when unexpected economic downturns lead to calls for revisiting concession agreements.

Box 7.1 Flexible Regulatory Regime for Adapting to Macroeconomic Shocks

Least Present Value of Revenues One of the most promising regulatory tools to address long-term economic risks is the least present value of revenue (LPVR) auction scheme developed by Engel, Fischer, and Galetovic (1997). The LPVR auction proposes to award concession contracts to a bidder based on the lowest present value of revenues, and then adjust the length of the contract so that the concession terminates when the concessionaire earns the present value of revenues that were bid. If revenues grow more slowly than expected, as would occur in periods of economic downturn, the concession contract lengthens to compensate. Similarly, if revenues grow more quickly than anticipated, the concession contract shortens. The advantage of the LPVR auction is that it provides an *a priori* basis for readjusting the terms of the concession contract. Yet Brazil’s highway concessions were not bid using LPVR principles, and so adapting those principles to possible regulatory challenges created by a slowing economy will not be straightforward. Brazil’s highway concession contracts were typically awarded based on the lowest toll rates or the most valuable payment schedule or maintenance program. Regulatory agencies in Brazil might be advised to begin analyzing how expectations about program costs and revenue, combined with the terms of the winning bids, implied expected present values of revenues for the winning concessionaires. Such an assessment could be used to analyze whether and when the financial equilibrium clauses of the concession contracts should be triggered. Once triggered, an understanding of the implied present value of revenue in the contract could inform either a lengthening of the toll concession or the appropriate level of compensation from the government or reduction in specified maintenance to restore the concessionaire to the financial terms in the original bid.

Such a system, while having the advantage of consistency across Brazil’s 39 road concessions, would have some disadvantages. First, an approach such as the one outlined above implies some sharing of commercial risk on the part of the government, and the question of how much commercial risk should be borne by the government is itself a regulatory and political issue that should be addressed. Second, the desirable incentive and regulatory properties of LPVR auctions are best realized when the bid is awarded using LPVR criteria. Attempting to apply LPVR in mid-stream, as suggested here, provides somewhat less clarification for both the regulatory agency and the concessionaire. Finally, the high discount rates in long-term concessions limits the impact of the lengthening and reducing the concession period.

Still, despite these shortcomings, a modified LPVR technique can be a useful guide to how to adapt the road concession program and contracts to an economic downturn.

Source: Engel, Eduardo; Ronald Fischer and Alexander Galetovic 1997: “Privatizing Roads: A New Method for Auctioning Highways.” Viewpoint 112. Washington D.C.: World Bank. Reprinted in S. Smith, ed., *The Private Sector in Infrastructure*. Washington D.C., World Bank

Policy Stability

7.3 Beyond macroeconomic risks, any concession program faces some risk of policy reversion due to changes in the political environment. For the Brazilian highway concession program, such a risk may be non-trivial, even though most of the concession programs have so far

operated in stable political environments. The possibility of a shift in government ideology suggests that the regulatory system should be prepared for the possibility of policy reversion.

7.4 Policy reversion is more acute at state level, than at the federal level. Some have already occurred in limited but possibly important instances. In Santa Catarina, the government did not allow the concessionaire to charge tolls after the initial emergency rehabilitation was completed. In Paraná, the state government reduced tolls to one-half of the contractually allowed level before an election, but toll levels have since been allowed to return to the levels allowed by the contract. As mentioned earlier, two delegated highways in Rio Grande do Sul were returned to the federal government after the new state government that came to power failed to support the concession program. The return of the delegated highways to federal control did not alter the concession agreement—a hopeful sign for the stability of the concessioning program.

Regulatory Design and Commitment

7.5 Designing regulatory systems in the presence of changing, and unpredictable, political pressures has been the topic of much theorizing. In a series of articles, Spiller and various co-authors have discussed several relevant points (Levy and Spiller, 1994; Spiller, 1996; Spiller and Cardilli, 1997; and Spiller and Vogelsang, 1997). Concessions, according to this point of view, require credible commitment from both parties (the private operator and the government) if they are to successfully elicit private investment. Commitment from both sides has been problematic in cases in the past, but here we will focus on commitment from the government, because as political pressures change, governments can be tempted to unilaterally change the terms of concession agreements, in some cases expropriating (either directly or implicitly) some of the private investment. How, then, can regulatory systems commit to contracts that will typically outlast most governments and political moods?

7.6 Spiller (1996) notes three general characteristics of commitment that can reduce the chance of policy reversion in the case of utility concessions. First, either constitutional protections of contract rights or a common law tradition protecting contract rights, coupled with a politically independent judiciary, can reduce the ability of executive or legislative branches to change the terms of concession agreements. Second, contracts can be monitored by regulatory agencies that are shielded from direct political influence. Such agencies typically are directed by commissioners with terms that overlap and outlast their political appointees, such that the political makeup of the regulatory body is unlikely to directly affect the politics of the current government. In such agencies, commissioners, once appointed, can often only be removed for malfeasance or incompetence, again lessening the political pressure that can be brought to bear on the agency.¹⁹ Third, in some systems there are reputation costs in straying too far from the originally intended regulatory design. This is typically structured by having a politically appointed regulatory agency's decisions reviewed by a quasi-independent agency. Such review works best when professional reputations are affected by overturned decisions, so that agencies would be reluctant to be overruled often. Also, such arrangements are most appropriate when the agency directly responsible for oversight cannot be shielded from political pressure.

7.7 None of these elements are well developed in the Brazilian system of highway concessions. The judiciary in Brazil is independent, but court cases typically take years to be heard, and some observers interviewed for this review suggested that long delays in the court system cause most disputes to be settled out of court. The regulatory agencies that oversee the concessions, the DNER at the federal level and the state governments, answer to ministers who in

19. On these points, see, e.g., Spiller and Vogelsang, 1997

turn are appointed by elected officials. Hence political pressures can, in concept, exert substantial influence on highway concession regulatory decisions. So far, it is unclear whether there would be reputation costs in straying from the original concession design, but the lack of independent review of decisions made within agencies, couple with the policy reversions that have occurred in Santa Catarina and Paraná, suggest that reputation costs might not deter authorities from trying to reduce the concession program if political opinion changes.

Implications for Brazil

7.8 The current reorganization of transport regulation in Brazil has provided an opportunity to strengthen the regulatory environment. With Bank support, the federal government recently created two regulatory agencies, one to regulate ground transport, and the other to regulate water transport (ANTAQ). ANTT will assume the responsibility to regulate federal concessions from the DNER, which is in the process of being dissolved. Overseen by five directors (commissioners), who were recently appointed, ANTT will operate as an independent regulatory agency. The regulatory design for ANTT appears to be consistent with what is recommended in the literature for countries with weak judicial systems.

7.9 While the federal government initiatives and the Bank's support in strengthening the regulatory environment at the federal level is a step in the right direction, it is important to note that state level concessions will also require similar interventions. The regulatory issues at the state level are at least as challenging as the federal level. Faced with less reputational risk from international observers, state governments have proved to be more opportunistic and prone to arbitrary policy changes. The Bank therefore also needs to work with state governments to establish regulatory agencies and strengthen their capacity to oversee state concessions. The Bank should also develop more Analytical and Advisory Assistance (AAA) work to continue its engagement with the client beyond projects and to strengthen the regulatory environment.

7.10 In designing regulatory agencies at state level, attention should be focused on shielding state regulatory agencies from direct political influence. One option would be to set up a highway concession regulatory board similar to ANTT, which would rule on requested changes in state contracts. This might not be a legal body concerned with arbitration. Instead, such a commission would be tasked with ruling on changes in contracts if such changes were requested in accordance with the financial equilibrium clause of the concession contracts. The commissioners should be appointed to staggered terms to outlast the officials who appoint them, and should represent a cross-section of stakeholders. The commissioners should then be assured that they could only be removed for a reason related misconduct or incompetence. Such a body should be given sufficient staff and budget to evaluate technical questions. Over time, such an approach might prove useful for resolving disputes in a range of concession agreements that extend beyond highways.²⁰

20. In Rio de Janeiro, a regulatory agency was created to oversee, among other things, the Metro and rail concessions. But the agency created, ASEP, suffered from inadequate capacity and political interference (See OED PPAR on Brazil Urban Transport for discussion).

8. Conclusions and Lessons Learned

8.1 When judged by comparing investments levels with expectations, the program has so far been a success. Investment in the federal toll highway concessions through the year 2000 exceeded expected levels by 2.3 percent, and the highway concession program has led to several improvements in road conditions, safety, and in some instances capacity. While successful when gauged on a relatively narrow comparison of expected and actual investment, the highway concession program is, on the whole, difficult to evaluate, especially compared to other transport concessions such as freight rail or urban transport concessions. The freight rail concessions can be compared with much international experience in private freight rail operations, and the commuter rail concessions exist in sectors where it is difficult to make a profit in the private sector. Thus, based on international experience and the characteristics of the sector, it is easier to draw judgments about freight rail and urban transport PSD programs. The highway concessions are more ambiguous. While there is relatively little international experience with toll roads, neither theory nor practice suggests that such endeavors are inherently unprofitable. The toll corridors chosen for the concession program are heavily traveled, which makes them good candidates for private operation. Yet as the program evolves, there will inevitably be questions about how to split risks and rewards across the private and public sector, and partly because there is little experience with programs like Brazil's highway concessions, there is a thin body of theory and evidence to guide decisions about how such divisions should be drawn. Nevertheless, the Brazil experience provides some preliminary lessons in highway concessions.

8.2 ***Tying highway rehabilitation to toll concessions provides opportunities and risks.*** The Brazilian Highway concession program used private ownership as a source of emergency rehabilitation funds—an interesting approach for developing countries that lack funds to maintain and rehabilitate portions of the highway network. Yet the results in Brazil concession should be viewed with some caution. While the early stages have met with various signs of success—highways have been rehabilitated, with some support from the driving public, the toll concessions represent a “one-time” solution to maintenance problems, since large portions of many networks cannot be viably concessioned. The opportunities for concessioning highways are limited to routes with the potential for profit. Overall, toll concessions cannot substitute for sustainable highway maintenance programs, and Brazil needs to think more broadly about structural or fiscal reforms that can provide funds for road maintenance while pursuing highway concessions for rehabilitation and maintenance of some roads.

8.3 ***Front-loaded investments have significant benefits to users but pose regulatory challenges in the future.*** Investments in the highway concessions were front-loaded, so in future years there will be comparatively less investment even though tolls will continue to be charged. It is unclear how the Brazilian public will react in the future to tolls, and how politicians will respond to public pressure on paying tolls. Because of this, there is a risk politicians can behave opportunistically and expropriate private investment, explicitly or implicitly. There is a need to balance risk and return, or rights and obligations, across the public and private sectors. Yet this balancing act is fraught with considerable difficulty in the context of highways. Like other infrastructure systems, highways are fixed investments that provide highly visible services to the public. The visibility of the service, combined with a strong tradition of public roads even in many developing countries, leads to expectations of public rights. Also, the desired balance between public and private roles can change over time, posing difficulties for concession contracts that typically try to delineate static roles and obligations for the life of the contract.

8.4 ***Political opportunism can be a problem in highway concessions, especially at the state level.*** There have been isolated but possibly important instances of political interference in the concession process. In Paraná state, the government lowered tariffs on a toll highway below the

level specified in the contract, although the tariff has since been allowed to return to the level specified in the contract. In Santa Catarina state, a dispute between the government and the concessionaire has delayed the collection of tolls. It remains unclear whether these disputes signal an evolving trend or whether they will remain isolated instances.

8.5 ***Highway concessions will inevitably require a flexible regulatory framework that can adapt to changing challenges.*** The highway concession program was in many ways a pioneer, and fundamental questions have yet to be settled. There is reason to believe that concessionaires might come under some financial stress if macroeconomic conditions deteriorate and the political environment changes. Should these happen, the concessionaires might increasingly wish to renegotiate their contracts. This will test the program in ways that so far have not been realized. In particular, dispute resolution, which so far has been a relatively isolated part of the concession program, will likely become more important in the future. Hence, the regulatory regime being developed needs to be flexible enough to adjust to changing macroeconomic circumstances and to withstand political pressures.

8.6 Experience with concessions provides many reasons to believe that events will unfold that could not be anticipated in the contract. Road concessions typically last from 20 to 30 years. During that time, many unforeseen circumstance can emerge that would call for renegotiating the highway concessions. While contracts can try to specify what elements of risk should be borne by the private sector, a complete articulation of all possible risks and contingencies is difficult and likely impossible. Similarly, public perceptions of transportation needs will change. Rehabilitation of major highways might be welcome in early years, but as the memory of the rehabilitation fades, drivers might grow to resent paying tolls. Overall, toll concessions inevitably exist within contexts that will change during the life of the contract.

8.7 The implication is that toll concessioning must exist within a strong regulatory environment. Regulatory review is required in many highway concessions—and disagreements require court or administrative interpretation often enough that such occurrences should be anticipated during the contracting phase. This requires that institutional strengthening be a part of many toll concessions. Also, highway concessions should attempt to broadly articulate, at the contracting stage, how conflicts and unanticipated situations will be settled, and agree on a governance mechanism to resolve disputes and adapt to changing circumstances. This might involve specifying the form of administrative or judicial review that will be used for various circumstances.

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Annex A. Bank Transport Projects in Brazil (Approved FY90-02)

Project ID	Project Name	Sector	Fiscal Commitments	
			year	US\$ Million Status
P006444	HWY MGMT AND REHAB	Highways	1990	310 Closed
P006378	STATE HWY MGMT	Highways	1993	88 Closed
P006555	STATE HIGHWAY MANAGEMENT II	Highways	1994	220 Closed
P006532	FED HWY DECENTR	Highways	1997	300 Active
P034578	RGS HWY MGT	Highways	1997	70 Active
P040028	RAILWAYS RESTRUCTURG	Railways	1996	350 Active
P006379	METRO TRANSP.SPAULO	Urban Transport	1992	126 Closed
P006547	METRO TRANSP. RIO	Urban Transport	1993	128.5 Closed
P006564	BELO H M.TSP	Urban Transport	1995	99 Active
P038882	RECIFE M.TSP	Urban Transport	1995	102 Active
P006559	(BF-R)SP.TSP	Urban Transport	1998	45 Active
P043421	RJ M.TRANSIT PRJ.	Urban Transport	1998	186 Active
P048869	SALVADOR URBAN TRANS	Urban Transport	1999	150 Active
P060221	FORTALEZA URBAN TRANSPORT PROJECT	Urban Transport	FY02	85 Active
P051696	SÃO PAULO METRO LINE 4 PROJECT	Urban Transport	FY02	209 Active
				2,468.50

Annex B. Basic Data Sheet

Key Project Data²¹ (amounts in US\$ million)

	<i>Appraisal estimate</i>	<i>Actual or current estimate</i>	<i>Actual as % of appraisal estimate</i>
Total project costs	224.2	170.1	103%
Loan amount	88.0	69.8	79%
Date physical components completed	12/31/99	12/31/99	
Economic rate of return	55%	90%	

Project Dates

	<i>Original</i>	<i>Actual</i>
Identification/Preparation	78.4	188.8
Appraisal/Negotiation	51.8	186.8
Supervision	145.3	388.6
ICR	7.5	30.0
Total	283.0	794.2

Mission Data

	<i>Date (month/year)</i>	<i>No. of persons</i>	<i>Specializations represented</i>	<i>Performance rating</i>	
				<i>Implementation Progress</i>	<i>Development Objective</i>
Identification/Preparation					
Appraisal/Negotiation					
Dec. 91		6	ECN,2EGR,ENS,PRO,INST		
Supervision					
Nov. 92		4	ECN, EGR, ENS, INST	S	S
May 93		3	ECN, EGR, INST	S	S
Jan 94		3	ECN, EGR, INST	S	S
Jul 94		3	ECN, EGR, INST	S	S
Jan 95		4	ECN, 2EGR, INST	S	S
Jul 95		3	ECN, EGR, INST	S	S
Feb 96		4	ECN, 2EGR, INST	S	S
Nov 96		4	ECN, EGR, PRO, INST	S	S
May 97		4	ECN, EGR, PRO, INST	S	S
Oct 97		3	ECN, EGR, PRO	U	U
May 98		3	ECN, EGR, PRO	S	S
Mar 99		3	ECN, EGR, PRO	S	S
Nov 99		1	PRO	S	S
ICR					
Feb 00		2	EGR, PRO		

Abbreviations:ECN=Economist, EGR=Engineer, INST=Institutional Development Specialist, PRO=Project Officer

21. Project Data includes Alagoas State Highway Project.

Annex C – Borrower Comments

Official Communication No. 703/2002

Florianópolis, July 1, 2002

Mr. Alain Barbu, Manager
 Sector and Thematic Evaluation Group
 Operations Evaluation Department
 The World Bank

Dear Mr. Barbu:

The purpose of this letter is to transmit comments by the Highway Department – DER with respect to the Project Performance Assessment Report – BRAZIL produced by the Operations Evaluation Department.

Regarding Project PNMRE/SC (Santa Catarina State Highway Management Project – Loan 3547S-BR) our opinion is that the report is credible and we have nothing important to add. We would only note that on page 5, item 4.2 of the report it states that the DER has been using the HDM III, but in fact we are now using the updated version, HDM IV.

As regards the report entitled “Review of Highway Concession Program,” we have the following comments or clarifications concerning concessions involving the state of Santa Catarina, which you may find useful.

1. STATE HIGHWAY CONCESSIONS

The first case of a concession awarded by the State (competitive bidding began in 1993 and the contract was signed in December 1994) involved state highways leading to the north of Santa Catarina Island (Highways SC-400, SC-401, SC-402 and SC-403), a total of 35 km. of road.

ENGEPASA S/A was the successful bidder and set up LINHA AZUL S/A as its licensee.

Basically, the concession covered investments in doubling the width of Highway SC-401 (20 km.) in two phases and maintaining and operating the highways complex for 25 years.

The first stage consisted of the doubling of a critical 13 km. segment of Highway SC-401, to be completed within 24 months, after which toll collection would be permitted. The licensee was to finish the doubling of the remaining 7 km. of the highway during the subsequent 12 months.

Problems with funding by the company and shortcomings in fulfillment of the obligations related to the performance of the construction resulted in significant delays. Thus the ideal timing of the

STATE OF SANTA CATARINA
OFFICE OF THE SECRETARY - TRANSPORTATION AND PUBLIC WORKS
HIGHWAY DEPARTMENT
OFFICE OF THE DIRECTOR

--In 1998, a concession contract was signed for the BR-470 Highway System with ECOVALE, but the concession was never implemented because of opposition from the affected communities, after several public hearings and consultations. Meanwhile, the State Audit Office ruled that proper procedures had not been followed with the announcement for the competition, and ordered the proceedings annulled. In 2001, the contract was rescinded, the agreement with the DNER was cancelled, and the BR-470 returned to DNER jurisdiction.

--A concession contract for the Brusque system was signed with COLESC S/A in 1998 but this concession, too, was never implemented because of opposition from the affected communities. The State Audit Office also ruled that proper procedures had not been followed with this announcement and ordered the contract rescinded. The DER rescinded the contract in 2001.

I remain at your disposal for any further clarifications that may be necessary.

Very truly yours,

/s/ EDGAR ANTÔNIO ROMAN
Director General