Best Practices in Public-Private Partnerships Financing in Latin America: the role of guarantees
Best Practices in Public-Private Partnerships Financing in Latin America: the role of guarantees

Washington, DC
January 2012
Best Practices in Public-Private Partnerships Financing in Latin America: the role of guarantees
Foreword

Latin America has seen buoyant investment in private infrastructure projects over the period since 2005, weathering the global financial crisis better than most regions and even seeing an upsurge in investment in the first half of 2011, according to recent figures from the World Bank-PPIAF Private Investment in Infrastructure database. Brazil and, to a lesser degree, Mexico and Peru have driven the recent increases in investment, which has been concentrated in energy and transport public-private partnerships (PPPs).

While all of this is positive, there remain serious challenges. Following the global financial crisis, the higher cost and lower availability of debt and an increase in risk aversion have meant governments have had to resort to increased support to PPPs to enable them to go forward. This has taken the form of subsidies or payments under PPP contracts as well as increased risk-bearing. While necessary to ensure projects reach financial closure, increased support raises questions about the value-for-money of doing projects as PPPs, the specific risks governments should bear and the type and the nature of grant and subsidy support that should be provided. Guarantee and or subsidy schemes have to be run to have the maximum impact and also satisfy the concerns of private sector investment. Governments are also looking to mobilize additional sources of financing in the light of reduced financing from traditional sources, including commercial banks. This may require looking at ways to “crowd in” financing from pension funds, including developing new investment vehicles and new approaches that can facilitate increased participation in PPPs by institutional investors.

This is one in a set of three reports looking at the three key areas – the design and use of subsidy schemes to promote PPPs, the use of guarantees to support PPPs, and innovative approaches to financing PPPs - which draw on recent experiences from Latin America and elsewhere. The reports look at actual case studies of programs, projects and approaches in these areas and evaluate their impact and their success. As such they provide a rich set of resources for policy-makers and practitioners in the field of PPPs. These reports were developed by consultants (subsidies – Castalia Strategic Advisors; guarantees - Sergio Alejandro Hinojosa, consultant; and financing - Sergio Bravo Orellana, consultant) under a work program managed by Lincoln Flor, Senior PPP Specialist in WBI. They were possible only with the generous support from and collaboration with the Ministry of Economy and Finance of the Government of Spain, as well as the World Bank teams of the LAC Sustainable Development Department (LCSSD). The reports benefitted from comments...
from Shyamala Shukla (WBI), Miguel Almeyda (FOMIN-IDB), Issac Averbuch and Marcelo de Lima (Federal PPP Agency, Brazil), Mauricio Gutierrez (Project Finance Associates), Sebastian Quijada (The Royal Bank of Scotland RBS Global Banking and Markets) and Heinz Roque (IKONS ATN).

Clive Harris
Manager, Public-Private Partnerships
World Bank Institute
January 2012
# Table of Contents

Abstract ........................................................................................................... 13  
Executive Summary and Conclusions .............................................................. 15  
Lessons Learned ............................................................................................ 27  
Document Structure ....................................................................................... 31  

I. GENERAL METHODOLOGY ........................................................................ 32  
1.1. Best practices ....................................................................................... 32  
1.2. Criteria applied to the selection of the specific case studies in each country ........................................................................... 34  
1.3. Source of information .......................................................................... 36  

II. CONCEPTUAL CONTEXT FOR THE ANALYSES OF GUARANTEES IN PPPS SCHEMES ........................................................................................................... 38  
2.1. Financial structure in PPPS ................................................................. 38  
2.2. Importance of contracts in the financing of projects ......................... 38  
2.3. Typologies of guarantees for project finance in PPP’s ................................................................. 39  
2.4. Financial guarantees: Definitions .................................................... 40  
2.5. Types of financial guarantees ........................................................... 41  
2.5.1. Full wrap financial guarantees .................................................... 41  
2.5.2. Partial credit guarantees ............................................................... 43  
2.5.3. Comparison between full wrap and partial credit guarantees ........................................................................... 43  
2.6. Cost of financial guarantees and form of payment ........................... 46  
2.6.1. Full wrap guarantees ................................................................. 46  
2.6.2. Partial credit guarantees ............................................................... 48  
2.7. Application of financial guarantees to the financing of PPP projects ........................................................................... 48  

III. FINANCIAL GUARANTEES PROVIDED BY BANOBRAS AND FONADIN IN MEXICO ........................................................................................................... 50  
3.1. BANOBRAS ....................................................................................... 50  
Partial Credit Guarantees ........................................................................... 50  
Mechanics of the GPO ................................................................................. 51  
Contract Payment Enhancement Guarantee (CPEG): ........................... 52  
Mechanics of the CPEG ................................................................................. 53  
Additional forms of guarantee support for PPP projects ........................................... 53
Possible reasons for the limited activity of BANOBRAS in providing financial guarantees ................................................................. 54

3.2. FONADIN ........................................................................................................................................................................... 55
Case Study I: BANOBRAS’ First Partial Credit Guarantee (GPO) ............................................................ 59

IV. BRAZILIAN GUARANTEE SCHEMES ................................................................................................................................. 61
4.1. Federal Guarantee Fund (Fundo Garantidor de Parcerias Público – Privadas - FGP) ..................................................... 61
Financial and fiscal aspects ..................................................................................................................................................... 62
Stability of the FGP equity ..................................................................................................................................................... 62
FGP guarantees ........................................................................................................................................................................ 63
Case Study II: Pontai-Irrigation project ................................................................. 66
Possible reasons for the limited activity of FGP in providing financial guarantees .................................................... 67

4.2. Guarantees offered at the state level .................................................................................................................................. 69
4.2.1. São Paulo ........................................................................................................................................................................... 69
Companhia Paulista de Parcerias – CPP (Paulista Partnership Company) and the guarantees at state level ................ 69
Project Eligibility ................................................................................................................................................................. 70

4.2.2. Minas Gerais ..................................................................................................................................................................... 70
Guarantee fund ........................................................................................................................................................................ 70

4.2.3. Bahia ................................................................................................................................................................................ 71
Guarantee PPP fund ................................................................................................................................................................. 71

4.3. Identifying best practices ..................................................................................................................................................... 72
4.3.1. Minas Gerais ..................................................................................................................................................................... 72
Case Study III: Arrangements and guarantees provided in PPP Projects MG-050 ............................................................... 72
Road MG-50 Project ................................................................................................................................................................. 72
Arrangement presentation: ..................................................................................................................................................... 73
Parts involved in the arrangement: ........................................................................................................................................... 73
Risks and Costs of the Arrangement to the Private Partner ............................................................................................. 74
Case Study IV: Prison Complex Project ............................................................................................................................... 75
Arrangements and guarantees provided in PPP Projects Prison Complex .................................................................................. 76
Parties involved in the arrangement ........................................................................................................................................ 76

4.3.2. Bahia ................................................................................................................................................................................ 77
Case Study V: Jaguaribe System of Oceanic Disposal Project .............................................................................................. 77
Guarantee Summary ................................................................................................................................................................. 78

V. GUARANTEES GRANTED BY THE PUBLIC SECTOR: NON FINANCIAL OR CONTRACTUAL EXPLICIT GUARANTEES (CEG) .............................................................................................................................. 79
5.1. The Minimum Revenue Guarantee ..................................................................................................................................... 79
5.2. Revenue Sharing ............................................................................................................................................................... 82
5.3. The Least Present Value of Revenues Mechanism ................................................................. 82
5.4. Revenue Distribution Mechanism (RDM) ........................................................................ 83
5.5. Exchange Rate Hedging Mechanism (ER) ........................................................................ 83
      Other Hedging Mechanisms .............................................................................................. 86
5.6. Financial- Economic Equilibrium of contracts ................................................................. 86
5.7. Case Studies ......................................................................................................................... 92
      Case Study VI: Regulation of the Minimum Annual Revenue Guaranteed in the Concession Contract for the Port of Paita in Peru ................. 92
      Case Study VII: The 4th Line of the Metro of Sao Paulo ................................................. 94
      Case Study VIII: Concession for the El Dorado airport second runway ....................... 97
      Case Study IX: Tender Process through Least Present Value of Revenues Mechanism for Route 68 Santiago-Valparaiso Highway Concession (LPVR) ................................................................................. 100
      Case Study X: Ruta del Sol in Colombia ........................................................................... 103
      Case Study XI: Revenue Distribution Mechanism (RDM) for Concession Route 5 Santiago – Talca Stretch ................................................................. 107
      Case Study XII: Electricity Transmission Concessions in Brazil ................................. 107
      Case Study XIII: Explicit Contract Guarantees and Risk Sharing Policy in Chile ............ 112

VI. CASES STUDIES ..................................................................................................................... 115
      Case study XIV: The Monolines – Best practices of the industry for the financing of PPP projects .................................................................................... 115
      Case study XV: Fully wrapped toll road bond in Mexico: Monterrey – Cadereyta Toll Road ................................................................. 117
      Case study XVI: Structured Public Finance Transactions in Subnational Public Sector in Mexico .................................................................................................. 120
      Case study XVII: The Partial Credit Guarantee (PCG) for the IIRSA North Amazon Axis ................................................................................................. 127

References .................................................................................................................................. 142
Web pages .................................................................................................................................. 143
Tables

Table 1: Description of the countries under study ............................................. 33
Table 2: Resume of Case Studies ........................................................................ 35
Table 3: Source of Information ......................................................................... 37
Table 4: Full Wrap vs Partial Credit Guarantees Comparison ............................ 44
Table 5: FONADIN’s Guarantees ...................................................................... 58
Table 6: Modality of Guarantee - Asset .............................................................. 65
Table 7: Highway MG-050 ................................................................................. 72
Table 8: Prison Complex ..................................................................................... 75
Table 9: Jaguaribe Oceanic Disposal ................................................................. 77
Table 10: Guarantees Comparative Analysis in Brazil (Federal – Sao Paulo - Minas Gerais) ............................................................... 78
Table 11: Financial-Economic Equilibrium Degree of Importance ....................... 87
Table 12: FEC’s Regulation ................................................................................ 91
Table 13: Main Non-Financial Guarantees ......................................................... 92
Table 14: Minimum Annual Revenue Guarantee 1and 2 Stages ......................... 93
Table 15: Linea 4 – Yellow – SP Subway .............................................................. 94
Table 16: Guaranteed Minimum ........................................................................ 98
Table 17: Tendering offering ............................................................................. 100
Table 18: MRG Bidder’s Requirement ................................................................. 101
Table 19: Description and Disbursement Mechanism of Future Appropriations ......................................................................................... 105
Table 20: Summary of Main Terms .................................................................. 105
Table 21: Major Power Transmitters of Brazil, 2008 ......................................... 108
Table 22: Explicit Contract Guarantees .............................................................. 114
Table 23: Monoline Ratings pre and post crisis ................................................ 115
Table 24: Local Tax Securitization in Subnational Entities in Mexico ................. 125
Table 25: IIRSA Peruvian Projects .................................................................... 128
Table 26: Prequalified Bidders in IIRSA North ................................................... 129
Table 27: Multilateral’s Rating in 2004 ............................................................... 134
Table 28: Multilateral Organizations offering PRG’s ........................................... 135
Table 29: Guarantee Pricing ............................................................................. 136
Table 30: Transaction Resume .......................................................................... 140
Figures

Figure 1: Comparison of Credit Enhancement Process ................................................. 46
Figure 2: National FGP Structure .............................................................................. 61
Figure 3: Guarantees Payment Trigger ...................................................................... 64
Figure 4: MG-050 Transaction Arrangement* .......................................................... 73
Figure 5: MG-50 Financial Arrangement* ................................................................. 73
Figure 6: MG-50 Guarantees Operation ..................................................................... 74
Figure 7: Prison Complex Transaction ...................................................................... 76
Figure 8: Prison Financial Arrangement .................................................................... 76
Figure 9: Prison Guarantees Operation* .................................................................... 77
Figure 10: Minimum Revenue Guarantee when is activated ..................................... 81
Figure 11: Exchange Rate (ER) .................................................................................. 85
Figure 12: Demand Risk Mitigation Bands ................................................................. 96
Figure 14: State of Michoacán Payroll Taxes ............................................................ 121
Figure 15: Local Tax Securitization in Mexico ........................................................... 124
Figure 16: Sonora’s Securitization Transaction .......................................................... 126
Figure 16: Rating Approach ..................................................................................... 131
List of Acronyms, Abbreviations, and Definitions

BANOBRAS  National Works and Public Services Bank
BCIE  Central American Bank for Economic Integration
BNDS  Brazilian National Development Bank
CAF  Corporación Andina de Fomento
DS  Debt Service
DSCR  Debt Service Coverage Ratio
ECG  Explicit Contractual Guarantees
EPC  Engineering Procurement Contract
FONADIN  Fondo Nacional de Infraestructura del Gobierno de México
FXI  Foreign Exchange
GPO  Timely Payment Guarantees
IADB  Inter-American Development Bank
IFC  International Finance Corporation
INCO  Instituto Nacional de Concesiones, Colombia
KPI  Key Point Indicators
LAC  Latin-American Countries
LPVR  Least Present Value of Revenues
MDB  Multilateral Development Banks
RDM  Revenue Distribution Mechanism
MRG  Minimum Revenue Guaranteed
MIGA  Multinational Investment Guarantee Agency
MMCR  Major Maintenance Reserve Account
MTC  Ministry of Transportation and Communications - Peru
OMCR  Operation Reserve Account
PCG  Partial Credit Guarantees
PPP  Public – Private Partnerships
PRG  Partial Risk Guarantee
PROINVERSION  Private Investment Promotion Agency - Peru
RA  Reserve Accounts
RFP  Request for Proposal
SCT  Secretariat of Communications and Transport
SPV  Special Vehicle Purpose
WB  World Bank
WBI  World Bank Institute
This report examines the financial and non-financial (contractual) guarantees that have reinforced the financing for infrastructure projects developed through PPP schemes in Latin America by reviewing the experiences of Brazil, Colombia, Chile, Mexico and Peru. As such, financial guarantees offered by the Brazilian government, through the creation of the Fundo Garantidor de Parcerias (FGP) in 2005, have had low activity. To date, the USD 2 billion guarantee fund initially established has been reduced to USD 200 million, and only one transaction has been approved. A similar situation has occurred in Mexico with the financial guarantees offered by BANOBRAS and the National Infrastructure Fund (FONADIN). Both in Brazil and Mexico, the financing of public infrastructure with private sector participation, at both the federal and state levels, has been led by the banking system, and financial guarantees have not been used as expected. As a sort of “replacement”, protection schemes for the financing parties have been implemented, consisting in the creation of special accounts (or trusts) to ensure the liquidity of debt repayment, and the pledging of the revenues that support the claims. For instance, in both countries the expected cash flows of federal participation revenues have served to guarantee PPP contracts, and to facilitate their debt issuances.

Financial guarantees have been used extensively in Chile, primarily through the participation of private financial insurers, commonly known as monoliners, in the financing of infrastructure bonds, which have been extensively purchased by pension funds (AFPs) and life insurance companies in the local capital market. Also, before the financial crisis of 2008, the monoliners were penetrating the infrastructure market in Mexico by closing transactions with wrapped financial guarantees. Hence, important lessons on how to structure the financing of infrastructure projects in the long term can be drawn from the experience of monoliners.

Non-financial guarantees, or contractual guarantees, have been an effective tool to facilitate long-term financing. The most effective and used of these has been the guaranteed minimum revenue. The minimum revenue consists of a non-financial guarantee stipulated in concession contracts, where the government guarantees a minimum amount of revenue in the event that the demand (and therefore the revenues) for the infrastructure project is not sufficient to cover the concessionaire’s debt service costs. This guarantee has been used in Chile, Colombia, Brazil and Peru. Also, a guarantee which provides high comfort to investors is a contractual clause that ensures the economic and financial equilibrium of the concession contract. This clause is particularly important for the concession contracts in Brazil and Colombia. A novel mechanism that has been
increasingly used in concession contracts, especially in Colombia and Chile, is the Least Present Value of Revenues (MVPI). This mechanism generates coverage for the investor because the contract term is not fixed, but variable and contingent upon the consistency between the income level required by the concessionaire and the actual income it does receive. For example, in February 2011, section 2 of the Ruta del Sol in Colombia, which was structured through MVPI, was awarded Project Finance International’s Transport Deal of the Year for the Americas 2011. This USD 775 million financing combined a variable concession term (LPVR), a fixed payment for investment, and some exposure to traffic risk.
Executive Summary and Conclusions

The following general and specific recommendations, findings and lessons learned are provided as a result of the analysis developed on the application of the different guarantees and other financial mitigation instruments in PPP projects in Latin America.

1. Five countries were selected to be part of this study: Brazil, Colombia, Chile, Mexico and Peru. Conclusions may be generalized for the rest of the countries in Latin America, given the characteristics of the sample selected as case study.

2. The main purpose for guarantees is to facilitate project bankability, allowing access to long-term financing in the context of project finance, whose main payment source is the cash flow that will be generated by the project itself. As such, the financial structure must be capable of paying the debt service (even under stressful scenarios).

3. For all those risks of the project that may not be mitigated satisfactorily through the financial structure, it is necessary to provide the PPP project with “external support”, frequently originating from the sponsor and/or the main contractors involved, and from guarantees and insurance policies granted by the public sector in a PPP scheme. This type of guarantees is called Non Financial or Contractual Explicit Guarantees (CEG).

4. When legal and financial structure and the CEG is still not enough to access an acceptable risk level for lenders, it is necessary for the project to take into account contracting a financial guarantee: Partial Credit Guarantee (PCG) provided by development banking (BANOBRAS in Mexico, or BNDS in Brazil), multilateral institutions or to have access to a guarantee fund created by the public sector specifically (FGP in Brazil).

5. To complement the guarantees aforementioned, and to facilitate direct access to capital markets, monoliners were very active in the PPPs market until before the financial crisis. The model of monoliners consists in that a guarantor provides a credit improvement to the project’s bonds (debt) by offering an insurance policy against all the risks of the project (full wrap). Indeed the credit rating of the bond is upgraded to the guarantor’s credit degree (rated AAA in the case of monoliner insurance companies) providing a financial guarantee.

6. A financial guarantee is defined as a non-cancelable indemnity bond that guarantees timely payment of interest and repayment of principal to the buyers (holders) of a
7. A non-cancellable indemnity bond that is backed by an insurer in order to guarantee investors that principal and interest payments will be made. Many insurance companies specialize in financial guarantees and similar products that are used by debt issuers as a way of attracting investors. The guarantee provides investors with an additional level of comfort that the investment will be repaid in the event that the securities issuer would not be able to fulfill the contractual obligation to make timely payments. It also lowers the cost of financing for issuers because the guarantee typically earns the security a higher credit rating and therefore lower interest rates.

8. In developing markets, particularly in those related to the financing of infrastructure projects, the reason for using a financial guarantee goes further than the potential interest rate savings: The market for placing uninsured debt securities of an infrastructure project is too narrow for the amounts and long tenors needed by the project, due to construction and other project risks that institutional investors are not familiarized with and normally do not assume.

9. In these cases, the value of the financial guarantee may be significantly higher than the interest rate savings: The financial guarantee opens access to the long term institutional investor market, a financing market not normally available for projects in emerging markets, which normally provides more efficient financing than banks (larger amounts, longer tenors and lower fixed rates).

10. There are two types of financial guarantees: i) Full Wrap, and ii) Partial Credit Guarantees (PCGs). The following table shows the main differences between a Full Wrap Guarantee and a Partial Credit Guarantee, as credit enhancement for an Infrastructure/PPP Finance Transaction:
## Full Wrap vs Partial Credit Guarantees Comparison

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Full Wrap Guarantee</th>
<th>Partial Credit Guarantee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guarantee of Principal and Interest on a timely manner</td>
<td>Yes.</td>
<td>Yes.</td>
</tr>
<tr>
<td>Irrevocable</td>
<td>Yes.</td>
<td>Yes.</td>
</tr>
<tr>
<td>Unconditional</td>
<td>Yes.</td>
<td>Yes, subject to the maximum limit amount of the guaranty.</td>
</tr>
<tr>
<td>Limit to the coverage of the Guarantee</td>
<td>No limit. Covers 100% of every coupon of principal and interest.</td>
<td>Limit determined according to the number of notches of credit enhancement required.</td>
</tr>
<tr>
<td>Credit Enhancement</td>
<td>Increases the rating of the guaranteed obligation to the rating level of the guarantor.</td>
<td>Increases the rating of the guaranteed obligation a specific number of notches according to the size of the limit amount of the guarantee.</td>
</tr>
<tr>
<td>Complexity</td>
<td>Simple and standardized. Investors need to understand the underlying risk but derive comfort from the 100% guarantee.</td>
<td>More complex. Investors need to understand the characteristics of each PCG, the underlying risk, the credit enhancement provided and its sufficiency.</td>
</tr>
<tr>
<td>Versatility of Application</td>
<td>Limited. Applicable only to projects that can achieve an investment grade underlying rating in the global scale.</td>
<td>Can be applicable to non-investment grade projects.</td>
</tr>
<tr>
<td>Maximum Credit Enhancement</td>
<td>To the rating of the guarantor. If the guarantor is rated “AAA”, and the underlying rating is “BBB-” (minimum investment grade) the credit enhancement achieved is equivalent to 10 notches.</td>
<td>Normally not more than 5 notches.</td>
</tr>
<tr>
<td>Cost</td>
<td>Normally less than 1.0%, applicable to the full amount of the guaranteed obligation.</td>
<td>Normally above 2.0%, applicable to the guaranteed amount.</td>
</tr>
<tr>
<td>Scope of Work of the Rating Agencies</td>
<td>Underlying rating (without considering the guarantee) and public rating (with the guarantee). All work is done by the Infrastructure / Project Finance Group.</td>
<td>Underlying rating done by the Infrastructure / Project Finance Group; sizing of the PCG and public rating done by the Structured Finance Group.</td>
</tr>
<tr>
<td>Guarantors</td>
<td>Monoline insurance companies and banks in the form of Stand By Letters of Credit.</td>
<td>Multilateral agencies.</td>
</tr>
</tbody>
</table>

*Source: based in Gutierrez de Gregori (2010)*
11. The use of financial guarantees with monolines for the financing of PPP projects has been a best practice in itself. It brought about a structural innovation into the PPP finance business, traditionally dominated by the commercial banks which provided long term loans to finance the projects. The financial guarantees were able to open access to the capital markets, to the large institutional investors who have strong appetite to invest in long term instruments with fixed rate, a type of financing rarely seen or available in the bank market.

12. The Financial Guarantees provided by FONADIN and BANOBRAŚ in Mexico were studied. BANOBRAŚ is the development bank of the Mexican Federal Government, and as such it has within its mission to support, through an array of financial products and services, the subnational public sector, composed by the Mexican states and municipalities, as well as private sector clients involved in the development of infrastructure through PPPs. Traditionally PPP projects have been supported by standard long term credit facilities provided by the bank, however, since 2007, BANOBRAŚ added financial guarantees to their portfolio and has a specialized team in charge of this product. BANOBRAŚ currently offers two types of financial guarantees: i) Partial Credit Guarantees: They are denominate “Timely Payment Guarantees” (Garantías de Pago Oportuno (GPO)) and ii) Contract Payment Enhancement Guarantee (CPEG).

13. GPO are unconditional and irrevocable guarantees of timely payment of principal and interest, subject to a maximum exposure amount determined according to the level of credit enhancement that wants to be achieved and Since the creation of the guarantee area of BANOBRAŚ in 2007, the bank has only issued one of these guarantees, in a refinancing transaction closed in May 2008 for the State of Mexico. The transaction was very large (MXN 25,000 million – equivalent to approximately USD 2 billion) and signaled a strong commitment of the bank with this product. The maximum tenor of the guarantee is 30 years.

14. Under the Contract Payment Enhancement Guarantee (CPEG) financial guarantee, BANOBRAŚ guarantees full and timely payment committed by a government to the private sponsor under a PPP project. This guarantee is applicable to PPP Projects referred to in Mexico as “Service Rendering Contracts” (Proyectos de Prestación de Servicios or PPS) whereby the private sponsor commits to construct, operate and maintain the infrastructure in exchange for fixed availability payments made by the
government, subject to discounts in case defined service standards are not met. The aim of the product is to help subnational entities (states and municipalities) attract private investors to bid for their projects and for them to have more access to financing, which is particularly valuable for entities with a lower credit rating.

15. So far, BANOBRAS has issued only one of these guarantees, in 2009, in the form of a “Line of Guarantees” in favor of the State of Mexico, applicable to different PPS projects. The line has been used so far for enhancing four different PPS projects of the state, a cultural center, a hospital and two roads. The total limit of the line is MXN 1,000 million (app. USD 800 million) and the possible tenors of the guarantees are up to 30 years. This guarantee is of a “revolving” type, guaranteeing at all times the next 12 months of PPS payments, subject to the maximum exposure assigned to each project and also to the limit of the guarantee line.

16. The possible reasons for the limited activity of BANOBRAS in providing financial guarantees are the following: The guarantee department of BANOBRAS was formed in 2007 and has a knowledgeable team of professionals with specific experience with the product; however, after more than three years of activity only two financial guarantees have been issued. The occurrence of the financial crisis might have delayed the penetration of the product, due to the general uncertainty prevailing in the markets, but there may be other potential reasons for the lack of activity: a. One particular aspect related to both the Partial Credit Guarantees and the Contract Payment Enhancement Guarantee is that the bank does not assume construction risk. In both cases, if there is a construction phase involved, the guarantee can be committed in advance but would not become “active” until the project has completed construction and earned the right to receive revenues b. This particular condition is uncommon and might be preventing a more widespread application of this product to PPP projects. It is also peculiar in the sense that the bank does assume construction risk on the lending side, when providing long term loans to projects, but is not willing to do it under a financial guarantee, despite the fact that the project risk is practically the same regardless of the type of execution (loan or guarantee) c. Financial guarantees are not well known in general in Mexico, and BANOBRAS is perceived as a lender more than a guarantor. The limited exposure BANOBRAS has had to date in the field of guarantees, by closing only two transactions and not yet accessing the capital markets, may be preventing this product from being considered seriously by project sponsors at the time of deciding on financing options for their projects d. Related to the fact that BANOBRAS is first
and foremost a bank, well positioned as a provider of long term loans and not as much as a guarantor, there have been times when a project comes to the bank looking for a guarantee and in the process is also being offered a loan, perceived as a more standardized and feasible financing alternative, and the client ends up taking the loan. This type of “internal” competition may be preventing a more widespread use of BANOBRAS guarantees.

17. The Mexican Government Infrastructure Fund (Fondo Nacional de Infraestructura – FONADIN) was created during the current government to support projects with private sector involvement. FONADIN offer the following types of financial guarantees: a. First Loss b. Pari Passu: c. Last Payment d. performance guarantees and political risk guarantees.

18. While limited information is available about the product, when analyzing the possible reasons for the lack of financial guarantees issued by FONADIN, the following three stand out: i. FONADIN does not have a team specialized in offering financial guarantees ii. FONADIN’s main types of support are targeted to non-investment grade projects, which are normally not suitable for financial guarantees due to the higher risk involved. iii. The guarantees that don’t cover timely payment are not applicable to capital markets financings and might not be adequate for some banks. This limitation may be preventing the demand for FONADIN’s guarantees as opposed to BANOBRAS’ or other credit enhancement providers.

19. In the case of Brazil, in 2004, the legislators enacted a Law seeking to regulate a specific type of public concession, called Public-Private Partnerships (Parcerias Público Privadas - Law n. 11.079/04). Following the federal legislation, the states also enacted or amended a PPP law aimed at attracting private investments mainly by increasing the guarantees that were provided in the past. The most peculiar characteristic of the Brazilian PPP system is the creation of the PPP guarantee funds (Fundo Garantidor de Parcerias - FGP); these funds provide payment guarantees for money liabilities assumed by public partners by virtue of PPP projects, thus reducing the risk of government insolvency. In this case, a long-term PPP contract has similar features to those that concessions regulated by the Concessions Law have, in which there is a user fee. However, in the case of the PPP Law, the funding mechanism allows for the federal government or state to purchase services through deferred payments in the time which are related to the availability of the services and which allow the possibility for such government payments or commitments to be guaranteed. Under the PPP Law, if the fees paid by users are not sufficient to fund the
infrastructure and the service costs, then the government is allowed to complement these fees with deferred payments or subsidies.

20. So far, the only application for the Fundo Garantidor de Parcerias (FGP) has been for the Pontal Irrigation Project. The project is located in the city of Petrolina, semi-arid region of the state of Pernambuco, Northeastern Brazil (São Francisco river valley). The Brazilian Government transferred the operation of the 33,526 hectares of land (out of which 7,717 are considered as irrigable land) to the private sector for 25 years, through a Public Private Partnership. The contract was signed as a sponsored concession under which, in addition to the tariffs charged from users of the service, the private partner’s revenues are also complemented with government contributions paid by the public partner. For Pontal, the private sector’s attributions will be to finish the construction, operation and maintenance common to irrigation infrastructure and to allocate the lands to agribusiness users, who will have freedom in selecting their crops. The FGP guarantees 100% of compensation payment in case The National Integration Ministry (Ministério da Integração Nacional) fails to do so. It is worth to mention that once the FGP issues a guarantee for a federal PPP project, the funds used to pay the aforementioned compensation are segregated from the remainder of the fund assets and kept as liquid and risk-free market instruments.

21. Based on a series of in-depth interviews held it is possible to infer the reasons that explain why the FGP has not been used; such reasons are the following: a. A High probability of bureaucracy and administrative procedures which result in delays in the approval of the payments that are potentially activated from the FGP. b. The FGP has not been used and its amount has been reduced significantly because there has not been a projects portfolio that requires resources from the fund. c. Having funds available for PPPs does not generate a good reputation, under the understanding that it is believed that these projects are privatized, and privatizations are stigmatized as bad for the country. d. Using the fund involves high transaction costs measured in monetary resources and time e. The FGP implies a high cost of immobilization of public resources. f. There is no way to know what the size of the guarantee to be placed and immobilized in the Fund is. g. Alternatives to the use of guarantee funds have been found especially in the States, through the creation of trusts that pledge the revenues.

22. In what follow a resume of Brazilian and Mexican guarantee system for PPPs is presented:
### Resume of Brazil and Mexico Financial Guarantee System for PPP’s

<table>
<thead>
<tr>
<th>ITEM</th>
<th>BRAZIL Fundo Garantidor de Parcerias Público – Privadas – FGP</th>
<th>MEXICO BANOBRAS Financial Guarantees and FONADIN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year of establishment</td>
<td>2005</td>
<td>2007</td>
</tr>
<tr>
<td>Applicable Regulation</td>
<td>Federal PPP Law and Regulation and Statutes</td>
<td>Non Specific Regulation</td>
</tr>
<tr>
<td>Assets</td>
<td>The assets of the FGP was formed through the payment of about $3.4 billion Reais (U$ 2.04 billion) in shares owned by the Federal Government (BB, Vale and Eletrobrás), which transferred ownership of such securities for the FGP. As May 2011 the total amount of FGP is USD 200 millions</td>
<td>Assets by USD 20 billion (USD 8 billion in cash, the difference in a road trust namely FARAC)</td>
</tr>
<tr>
<td>Management and Administration</td>
<td>Bank of Brazil</td>
<td>Banco Nacional de Obras y Servicios Públicos (BANOBRAS) and FONADIN</td>
</tr>
<tr>
<td>Sector involved</td>
<td>To guarantee, fund and/or pay the financial commitments assumed by the Federal Government in relation with PPP projects. There is no limitation regarding the sector where the financial commitments of the FGP can be used.</td>
<td>All sectors, at Federal and State level. With concentration in refinancing public finance debt in States, Urban Transportation, Sanitations and Roads</td>
</tr>
<tr>
<td>Types of Financial Guarantees</td>
<td>Subordinated Guarantees Pledges and charges (both floating and fixed) Mortgages over the assets of the fund Guarantees over assets of special trusts fully owned and established by the FGP</td>
<td>BANOBRAS: i) Timely Payment Guarantees (GPO) ii) Contract Payment Enhancement Guarantee FONADIN: i) First Loss ii) Pari Passu iii) Last Payment iv) Mixed v) Performance and political risk guarantees</td>
</tr>
<tr>
<td>Transactions</td>
<td>FGP: One (1) transaction</td>
<td>Financial Guarantees provide by: BANOBRAS : Two (2) Transactions FONADIN: Nine (9) Transactions</td>
</tr>
</tbody>
</table>

**Source:** Sergio Hinojosa

23. In Brazil, States have also enacted PPP Statutes in order to attract private investors. Minas Gerais was the first state that passed a PPP law, even before the Federal PPP Statute was passed. Consequently, this state has had the most developed PPP system and presents the most reliable guarantee arrangement. These arrangements are shown and analyzed as case studies congruently: A state highway (MG-50) and a prison complex.

24. São Paulo and Bahia have also been studied. Both states present a solid system of
guarantees as well and have developed important PPP projects in their territories. In State PPPs, legal definitions have been created and financial engineering has been applied. An example of the aforementioned would be the creation of trusts that have pledged the payment source committed to in the projects. A pledge refers to the creation of a special entity (trust) that acts as the revenues pass-through, which supports the commitments of the States. This figure, which is accompanied by economic and financial equilibrium clauses, has given comfort to the Lenders and concessionaires to participate in PPP schemes without the need to resort to implementing explicit State guarantees (FGP) and/or maintaining/creating state funding guarantees.

25. In general, a series of alternative ways used in order to guarantee the payment of PPP projects have been found in the Brazilian states. The creation of special accounts in banks (escrow accounts), trustees, and pledge of the committed revenues have allowed to make long-term financing with domestic banks feasible. In the case of Bahia, the creation of the Agência de Fomento do Estado da Bahia S/A-DESENBAHIA (Development Agency of the State of Bahia S/A) has allowed the state resources to be transferred in a separate bank account, whose specific aim is to guarantee PPP contracts where the state of Bahia is to act as a public partner.

26. The Brazilian model, in which the State revenues are pledged, has also been used in Mexico recently. In fact, Mexico’s subnational public sector has been amongst the most active in the world in accessing financing from the banks and the capitals markets. A key indicator of this activity is the number of rated entities: as of 2010, all of the Mexican states and more than 100 municipalities had at least one credit rating, which denotes a focus amongst public authorities on the improvement of credit quality and a desire to access alternate means of financing. Mexico now has four independent rating agencies, Moody’s Investors Service, Standard & Poor’s, Fitch Ratings and HR Ratings, all of which have specialized public finance departments covering the sector.

27. Amongst the financial innovations seen in the sector over the last few years it is worth to mention the relatively recent trend towards structured securitizations of future local tax collections, done by several states and a few of the largest municipalities.

28. Traditional state and municipal financing in Mexico consisted of bank loans backed by Federal Participations, which are the distributions each state and municipality receives on a regular basis from the Federal Government.
29. The banks do not lend to a public sector entity against its general balance sheet, what in the US is called a General Obligation, but the only do so if the public entity assigns a share of its federal participations revenues to a trust, and irrevocable instructions are given to the Federation to deposit such revenues directly into the trust.

30. As a result, and due to the high coverage required by the banks to mitigate interest rate risk and potential variation in tax revenue, many public entities committed a large portion of their federal participations as collateral for these loans and lost financial flexibility, which motivated some of them to look in to their own taxing power and local tax revenue as a new source of financing.

31. The first transaction of this nature was done by the State of Nuevo Leon in 2006. It consisted of placing in trust future revenues derived from the collection of vehicle license plate fees to support a bond issuance, which reached the unprecedented tenor of 30-years and was successfully placed amongst local institutional investors. The financing structure was complex and also involved changing the laws of the state to provide for a solid legal background, but achieved a successful financial closing and the state was able to obtain MXN 2,700 million to invest in infrastructure.

32. This example was followed by other states, such as Veracruz, Michoacán, Chiapas and Oaxaca, also using different local taxes to back long term bond issuances. Most common taxes used were Payroll Tax (Impuesto sobre Nominas in Spanish), vehicle ownership tax (Tenencia Vehicular in Spanish) and vehicle license plate fees. The tenor in most cases was 30 years.

33. The financing structure used was innovative and it involved the segregation of funds, sometimes through tax collection arrangements with banks, to avoid diversion of revenues. Under these arrangements, taxpayers would go to the bank to pay the tax and the bank would have irrevocable instructions to deposit those revenues (or a percentage thereof) in the accounts of the trust set up to implement the transaction. Since the right to collect taxes was, by law, not possible to be assigned to a private trust, the assignment was done over the revenues derived from tax collection.

34. A case study including the structure used in the securitization of payroll taxes done by the State of Michoacán is presented. In addition a structured loan backed by State Taxes is examined: Plan Sonora Proyecta.
35. Because of its innovating nature and characteristics, this transaction obtained the “America’s Structured Finance Deal-of-the-Year” Award, from the British publication “The Banker”, and serves as a good example of “best practices” in the field of Structured Public Finance: i) Innovative: This was the first time a Mexican state backed a long term loan with local taxes, as the standard bank financing to that date was done with the support of federal participations.

36. The Minimum Revenue Guarantee (MRG) has been the most effective and most commonly used Non-financial guarantees in the countries under study. Along this line, the Government guarantees minimum revenues. Such guarantee is mainly aimed at covering the project’s debt component. If in a given year, the concession’s effective revenues are lower than those pre-defined in the contract; the government is to pay the difference. MRG have been used in all the countries under study, with the exception of Mexico. It has been mainly used in the transport sector: airports, ports, roads and public transport. A long-term financing with revenues risk and, consequently, demand or traffic risk is difficult to obtain in the capitals market, especially when there is no experience in the country regarding how to manage such risks at a public sector level. The debt service coverage ratios for projects without revenues guarantees ascends to about 1.70x, while when there is a minimum guarantee, debt service coverage ratios (DSCR) range from 1.1 to 1.20x.

37. The Minimum Revenue Guarantee is highly recommendable to be delivered by governments in those contracts in which the expected revenues (conservatively estimated) exceed the estimated operation, maintenance and debt service costs. As such, an MRG may be treated as a contingent liability, and may be valued through the technique called contingent claim analysis. Colombia, Peru and Chile have concrete methodologies and accurate accounting systems for the treatment of contingent liabilities. Consequently, the MRG cannot be used as it has been presented when the project’s revenues are related to payments on availability which are collected by the private contractor directly from the public sector.

38. In the energy sector, take or pay contracts are a seminal expression of MRGs applied to the transport sector mainly. A take or pay contract is a buyer-seller agreement where (unlike in a take and pay contract) the buyer’s obligation is unconditional whether or not the purchased goods or services are delivered or taken. Such arrangements are often used as indirect guaranties for project financing, and to protect the buyers
from price increases and the sellers from price decreases.

39. A mechanism that also mitigates demand risk and which is used in Colombia and Chile, and which has been studied in order to be applied to Peru is the Least Present Value of Revenues (LPVR). The main feature of the mechanism is that the concession period is variable and not fixed.

40. Most of the jurisdictions in LAC have established a written mechanism of revision of the financial economic equilibrium of the PPP contracts once some specific conditions have been complied. The conditions above normal are referred to as changes in the regulation, financial changes and/or factual changes which seriously affect the long term economic life of the project. This regulation has been the key to providing confidence to transactions in countries such as Colombia and Brazil. For example, in a series of interviews made in Brazil, when all the interviewees were presented this question: would you participate in or finance Concession or PPP Projects if this regulation did not exist? All of them answered – No. A concessionaire stated that the cost of capital was estimated taking into account the financial economic equilibrium clause (FEC), and that in different circumstances, it would be difficult to have their participation due to the high cost of capital, which would mean incurring in a contract without FEC clause. In Colombia, also in interviews with Investment Banks and concessionaires, they stated that FEC was essential for project financing.

41. This FEC item is very important and it is the second main cause for the renegotiation of contracts in Colombia. In the experience of Peru, FEC clause is more precise, but it is less demanded by the market as a condition necessary for the participation of the private sector in infrastructure through concession mechanisms. For the case of Chile, FEC is “replaced” mainly by MRG mechanisms and other explicit guarantees.

42. Finally, it is important to mention that the financial guarantees offered by international multilateral development banks (MDB) are not described in this document. There are two major groups of MDBs that offer partial and credit risk guarantees: one is the World Bank Group (World Bank and IFC), and the other one is the Regional Development Banks Group (IADB, CAF, BCIE). However, a case study for the North IIRSA project is presented since this transaction shows several financial innovations that are worth to be highlighted and considered as best practices due to their high probability of being replicated in various sectors of infrastructure developed through PPP schemes in LAC.
Lessons Learned

A good practice, for the field of PPP guarantees, may be defined as any guarantee that allows to finance totally or partially, and to develop a project in a timely, efficient and effective fashion with private participation. Such project has a long term contractual validity, and it may present implications during its practice at any level in any other context or situation. It may be possible to extract lessons from a series of good practices in order to learn from them and to apply them to other projects, situations or contexts. Also, the lack of guarantees or the delay in their implementation (such as in the cases of Brazil and Mexico in not implementing the guarantee funds that are available) also allows to learn in order to generate public policy lessons.

It would be possible to recommend the following lessons based on the revision of documents and literature related, on the conceptual foundations of the guarantees being analyzed, on the case studies presented for Brazil, Colombia, Chile, Peru and Mexico and on my experience of nearly 20 year working in infrastructure financing.

Lessons Learned

<table>
<thead>
<tr>
<th>Lesson #</th>
<th>Lesson Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lesson 1</td>
<td>Non-Financial or Explicit contract guarantees, that is to say those guarantees that are provided by the public sector in concession or PPP contracts, have been most effective in achieving the bankability of projects. Along this line, Chile has the most complete and varied scheme of explicit guarantees in contracts, whose menu and design may be extended to other countries.</td>
</tr>
<tr>
<td>Lesson 2</td>
<td>The monoline industry has delivered important lessons regarding the financing of projects in the long-term through the bonds market. In effect, full wrap guarantees were very important for the financing of PPP projects, since projects that were financed using these guarantees were well structured, have generally performed well, and in the next few years we may see a resurgence of this industry. First, it brought about a structural innovation into the PPP finance business, traditionally dominated by the commercial banks which provided long term loans to finance the projects. The financial guarantees were able to open access to the capital markets, to the large institutional investors who have strong appetite to invest in long term instruments with fixed rate, a type of financing rarely seen or available in the bank market. Second, while it was an innovation in the PPP finance business, the product was known in the US through years of application in the municipal finance sector. There were teams in place with expertise in the product, legal structures that could be replicated and proven credit procedures, which allowed a transfer of knowledge from the municipal market to the PPP market, critical for its successful implementation.</td>
</tr>
</tbody>
</table>
**Lesson 3**
The guarantee funds and financial guarantees offered in Mexico and Brazil have not been as widely used as expected. In Mexico, Banobras has only issued two of these guarantees. The FGP, in Brazil, has delivered only one guarantee to a project that has not yet been initiated due to other problems. In the case of Banobras, their low use is explained because one particular aspect related to both the Partial Credit Guarantees and the Guarantee Contract Payment Enhancement is that the bank does not assume the construction Risk. In both cases, if there is a construction stage involved, the guarantee can be committed in advance but would not become “active” until the project has completed its construction and earned the right to receive revenues. In addition, financial guarantees are not well known in general in Mexico, and BANOBRAS is perceived as a lender more than as a guarantor. In the case of the FGP in Brazil, the perception that administrative backlogs and delays in the event that guarantees are triggered, the high transaction costs in their use, the high financial cost of investment resources in a fund and an lack of demand for the Fund’s resources amongst other factors, have been found as the main reasons why they have not been used.

**Lesson 4**
The contract clause that keeps the financial economic equilibrium of the contract is a guarantee that is perceived as highly effective, since it delivers an appropriate comfort to investors and to lenders. It is highly probable that the participation of private firms in the concessions processes in Brazil and Colombia would have been much lower, and the availability of financing options would have been null without this clause. However, the trade-off is that this clause may be misused (abused) and it may have important effects on the renegotiation process of post allocation contracts.

**Lesson 5**
Financial guarantees can be highly effective in capital markets if they have 1. Minimum underlying rating – credit quality: This requirement meant well-structured projects, able to resist stress scenarios, which have proven to be amongst the success stories in PPP finance. 2. Thorough due diligence: The financial guarantors devoted qualified teams to the structuring of PPP projects, and always required independent studies performed by expert external advisors. 3. Legal documentation: The intensive involvement of expert counsel in guaranteed transaction meant well-structured and thorough legal documentation, which defined and protected the rights of the parties and complied with local and/or international law and local securities market regulation. 4. Interactive credit process: Financial guarantors apply hands-on, experienced management to each transaction which interacts permanently with the credit officers, ensuring that credit issues arising during the structuring process are dealt with on a timely manner and result in well structured transactions. 5. Surveillance team and practices: At financial closing, once the guaranteed obligations have been placed to the market, a surveillance team of the financial guarantor takes over and maintains an ongoing and long term relationship with the project company and its sponsors, readily available to ensure that there is an open communication channel at all times between lender and borrower. 6. Flexibility and single counterparty for future changes: The financial guarantors, through the constant interaction during the phase of surveillance, are a readily available counterparty to discuss and implement changes to the financing that are invariably needed in the life of a project, due to its dynamic nature. As opposed to having to deal with a bank syndicate, or worse, a diverse array of institutional investors, the project sponsor has a single counterparty to negotiate needed changes.

**Lesson 6**
Financial guarantees (full or partial) are not an effective response when banks seek liquidity rather than protection against projects’ risks. Banks generate their own mechanisms in order to guarantee the repayment of loans that are aimed at PPP projects, which are not necessarily related to the use of financial guarantees. These mechanisms include the requirement for financial structures to incorporate trusts, escrow accounts; and for the revenues that serve as payment for the loans to be isolated and available in order for them to be disbursed in a timely manner. The use of financial guarantees is required when the capitals market, that is to say, institutional funds that provide resources through the acquisition of bonds or structured notes. This was the case of Chile, and of Mexico and Peru just before the financial crisis. In Brazil and Colombia, the financing of PPPs has been conducted primarily through local banking institutions, and consequently, the use of formal financial guarantees has not been required.
Lesson 7
The Least Present Value of Revenues mechanism, in which the term of the contract is variable, is gradually being perceived as an effective hedge guarantee for long-term contracts. In Colombia, such mechanism has been in use jointly with other factors since 1995; and in Chile, it has been in use since 1998 (even though it was created in 1995), and it is being introduced in a greater number of concessions more frequently. Latin American countries should look closely into the mechanism's internal procedures and design.

Lesson 8
Tariff and payment adjustments as a result of the combination of the domestic inflation, the foreign inflation and the exchange rate fluctuations has been an effective hedge used to cover inflation risks and exchange rate risks.

Lesson 9
Due to the high coverage required by the banks to mitigate interest rate risk and potential variation in tax revenue, many public entities in Mexico and Brazil committed a large portion of their federal participations as collateral for loans and lost financial flexibility, which motivated some of them to look into their own taxing power and local tax revenue as a new source of financing. The most common taxes which are being used are the payroll tax, the vehicle ownership tax and vehicle license plate fees. The transaction consists of placing in trust future revenues derived from the federal participations or local tax to support a loan. With that funds the State finance infrastructure projects. The financing structure used was innovative and it involved the segregation of funds, sometimes through tax collection arrangements with banks, to avoid diversion of revenues. Under these arrangements, taxpayers would go to the bank to pay the tax and the bank would have irrevocable instructions to deposit those revenues (or a percentage thereof) in the accounts of the trust set up to implement the transaction. In Brazil the first case was Bahia. This example is followed by other states, such as Minas Gerais, Sao Paulo, Rio de Janeiro and Espiritu Santo.

Lesson 10
One particular aspect related the Partial Credit is that the bank does not assume construction risk. In both cases, if there is a construction phase involved, the guarantee can be committed in advance but would not become “active” until the project has completed construction and earned the right to receive revenues.
This particular condition is uncommon and might be preventing a more widespread application of this product to PPP projects. It is also peculiar in the sense that the bank does assume construction risk on the lending side, when providing long term loans to projects, but is not willing to do it under a financial guarantee, despite the fact that the project risk is practically the same regardless of the type of execution (loan or guarantee).
As such, it is important to mention that perhaps the most important constraint in greenfield PPP Projects and also the main concern are the risks that are incurred in during the construction stage. The only two public “solutions” that have been given to this issue are the Progress of Works Recognition Certificates in Peru (CRPAO), which are applied to airports and roads, and the completion risk guarantees which are being offered by FONADIN to cover the additional 15% of overinvestment but these guarantees have not been used yet. Attempts should be made especially by the multilateral organizations in the absence of the monoline industry to cover these kids of risks, bearing in mind the possibility to facilitate long term financing with infrastructure bonds since the pre-operative stage. For the above, the project risk should be structured to achieve an “underlying” rating of the investment degree level (BBB-) on a global scale. To achieve this rating, the construction risks are mitigated with the builder and sponsor’s guarantees; and if it is necessary, with third parties’ liquid guarantees or the sponsor’s contingent equity. In the case of Chile, the aforementioned has been possible mainly due to the participation of multilateral agencies and financial insurance companies that have provided financial guarantees to projects in order to mitigate, mainly, the construction risk, and to achieve the credit rating necessary to have access to the market.
### Lesson 11

PPP projects are complex in nature, involving many risks related to the construction of the project, such as land/site, right of way, environmental, permits, design and engineering, materials, workforce, machinery, installations, equipment, amongst which together with the financial and technical capabilities (or lack of) of the private investor, may even cause the inability to complete the construction of the project and therefore the loss of the right to future revenues and cash flows to repay debt and equity invested. Once the project is completed and operating, there are a number of risks related to the operation of the project, mainly demand, performance, operating cost overruns, potential disruptions of operation, lack of payment by the government and a number of political risks involved in having a long term contact with a government. Because of the number and complexity of these risks, which require time and effort to understand and many times have to be analyzed and monitored by expert advisors, institutional investors are often not capable of processing and becoming comfortable with investing in debt instruments of PPP projects.

Credit ratings help in providing investors with an expert opinion about these risks, and the rating in itself permits a comparison of risks across sectors and industries, but it is usually not enough for the investment analysts to recommend investment, particularly during the construction phase of a project where the most complex and numerous risks exist.

The lack of time and specialized knowledge by investors to understand PPP project risks normally prevents them from investing in debt from PPP projects, leaving projects with only one source of financing: traditional bank project loans.

Financial guarantees are the key element missing to solve this problem. Financial guarantors are equipped to understand project risks and have expert professionals with experience in identifying, mitigating and monitoring project risks.

Because the financial guarantor assumes risks of the PPP project when granting its guarantee, putting its balance sheet at risks, its approach to risk is much more thorough than the rating agencies, which only provide a service but do not incur in losses, other than reputation, in case their assessment of risk is incorrect.

Due to the above, the role of a financial guarantee in a PPP project goes much further that pure credit enhancement, since it provides investors with comfort to assure them that project risks have been well identified, analyzed, structured, mitigated and monitored, by someone who will take the first loss in case of error.

### Lesson 12

The Progress of Works Recognition Certificates (CRPAO) constitute an important advance in financial engineering in order to facilitate long-term financing in capital markets, to reduce the need for completion bond guarantees, and to avoid the negative carry interests (NCI). According to EIB (2010), NCI refers to the interest a borrower receives on funds borrowed prior to using the funds for the purpose of the project, generally construction of an asset in the case of PPPs. Bond financing almost always provides for all of the proceeds of the debt issuance to be drawn by the borrower at financial closure, even if all the funds will not be required until later in the construction program. This requires the borrower to invest the funds until required. In general, the interest rate that the borrower is to receive is lower than that paid to the bondholders, resulting in “negative carry”. This mechanism is completely implementable in different sectors and PPP typologies and it may be adapted for creating recognition certificates for minimum revenue guarantees (CRMRG).

**Source:** Sergio Hinojosa
This report focuses on analyzing the design and role that financial guarantees and other risk mitigation instruments have played in the long term financing of public infrastructure and services projects developed through PPP mechanisms in Latin America. The report is structured in six sections. The first section establishes the general methodology employed. The second section presents the conceptual framework for the design of guarantees under PPP schemes and examines the different typologies of financial guarantees that have been developed by both public and private sectors for the credit enhancement necessary for PPP projects. The third one presents the experience of Mexico through the guarantees offered by BANOBRAS and FONADIN. Section four presents the Brazilian case, particularly the PPP Guarantee Fund, and the PPP programs that have been devised at the subnational level (where the existence of guarantee funds have not been a necessary condition as originally anticipated, given the appearance of mechanisms that have substituted their necessity). As such, the case studies for Sao Paulo, Minas Gerais, and Salvador de Bahia States are described. Section five examines the design of explicit contractual guarantees (also called Non Financial Guarantees) provided by governments in order to facilitate the implementation of PPPs. For each of the guarantees identified in this section, as well as other risk mitigation instruments, one or more case studies are developed, containing information about their specific features and applications. Section six develops a series of case studies, which present the specific impact rendered by a financial guarantee in the structuring and financing of a project.
I. GENERAL METHODOLOGY

1.1 Best practices

The *benchmarking* or reference models have been in use widely and increasingly during the last years within the different scopes of companies and have been complemented coherently with the development that the management of knowledge has had in public and private organizations. A reference model consists in identifying, sharing and using the best practices in order to improve processes. A good practice, for the field of PPP guarantees, may be defined as any guarantee that allows to finance totally or partially, and to develop a project in a timely, efficient and effective fashion with private participation. Such project has a long term contractual validity, and it may present implications during its practice at any level in any other context or situation.

Some criteria are essential in order to determine the good practices and where it is possible to adapt some criteria to the case of guarantees applied to PPP’s. The first criterion involves innovation or creativity: which are the special characteristics of this practice which make it of potential interest for others?. The second criterion involves effectiveness/impact: what evidence is there regarding the benefits derived from the practice? The third criterion is replicability: is this a practice that could be somehow applicable in different contexts or situations? The fourth criterion is pertinence: how does the practice contribute, directly or indirectly, to the allocation, construction, financing and operation of a specific concession project? Finally, efficiency and execution are mentioned in the last criterion: was the use of the resources (human, financial and material) conducted in order to optimize the impact reached?

The procurement of conclusions to be generalized for the rest of the countries in Latin America would be possible, given the characteristics of the sample selected as main sample for the case study (Colombia, Brazil, Chile, Mexico and Peru). As it was stated by Orlikowsky (1993), the fact that a reduced number of cases is considered does not invalidate generalization, to the extent that they are representative of the population, and the information collection methods are consistent, and to the extent that the five experiences (countries) maintain important similarities, but also relevant differences.

The countries chosen have differences regarding the size of the population, but not necessarily in the logic of how PPP projects have been implemented and in the period that these projects were initiated. Particularly, the experiences regarding PPP’s in Mexico, Chile, Peru, Colombia and Brazil are taken into consideration.
Table 1: Description of the Countries Under Study

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Mexico</th>
<th>Chile</th>
<th>Peru</th>
<th>Colombia</th>
<th>Brazil</th>
</tr>
</thead>
<tbody>
<tr>
<td>Country risk rating</td>
<td>BBB</td>
<td>A+</td>
<td>BBB-</td>
<td>BBB-</td>
<td>BBB-</td>
</tr>
<tr>
<td>GDP (USD) as of April 2011 (IMF)</td>
<td>1,127,124,000,000</td>
<td>231,302,000,000</td>
<td>167,846,000,000</td>
<td>308,845,000,000</td>
<td>2421,637,000,000,000</td>
</tr>
<tr>
<td>Population</td>
<td>106,700,000</td>
<td>15,374,000</td>
<td>28,220,764</td>
<td>44,500,000</td>
<td>198,739,000</td>
</tr>
<tr>
<td>Name assigned to PPP schemes</td>
<td>Concessions,</td>
<td>Public Works</td>
<td>Co-financed</td>
<td>Concessions</td>
<td>Public-Private Parceria, sponsored and administrative concessions</td>
</tr>
<tr>
<td></td>
<td>exploitation of</td>
<td>Concessions</td>
<td>Concessions</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>assets, Service</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rendering Projects – Proyecto Prestación de Servicios (PPS), and Pidiregas</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average terms of the PPP contracts</td>
<td>23 years</td>
<td>22 years</td>
<td>20 years</td>
<td>22 years</td>
<td>20 years</td>
</tr>
<tr>
<td>Financing</td>
<td>Mainly banking financing. Low level of financing with Monoliners and long term bonds</td>
<td>Financing with Monoliners and long term bonds from the beginning</td>
<td>Private banking financing mainly, but there has been an interest towards the Capital Market with pension funds recently</td>
<td>Financing through local private banking, in terms no longer than twelve years.</td>
<td>Financing through the local development bank (BNDES) and four private banks mainly</td>
</tr>
<tr>
<td></td>
<td>1995 Pidiregas</td>
<td></td>
<td></td>
<td></td>
<td>2004 PPP Law</td>
</tr>
<tr>
<td>Main Sectors</td>
<td>Roads, airports, energy.</td>
<td>Interurban roads and urban highways, airports, public buildings.</td>
<td>Roads, ports, airports.</td>
<td>Roads, airports.</td>
<td>Interurban roads, Energy, rodovias, airports, and recently, hospitals, complex prisons, administrative centers, stadiums</td>
</tr>
</tbody>
</table>
1.2. Criteria applied to the selection of the specific case studies in each country

The case studies selection criteria are mainly divided into two groups:

A. Those regarding lessons in the use of the different guarantee typologies learned at a specific level, with sub-criteria related to: i) Its capacity of being replicated, innovation, effectiveness, impact and pertinence as best practices ii) Typology of the risk being mitigated and iii) Sectors operated: highways, ports, public transport, energy, water and irrigation.

B. Those regarding lessons of the public policy of applied guarantees learned at general level. The following cases are included under this criterion: i) Non financial guarantee used in Chile ii) The monoliner’s role as the best practice for future guarantees developments iii) Alternative mechanisms to raise fund without financial guarantees in subnational public finance for infrastructure in Mexico iv) The impact and guarantor’s selection process for the IIRSA North Amazon in Peru.

A series of Case Studies and the main reasons why they have been included are shown in the following table:

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Mexico</th>
<th>Chile</th>
<th>Peru</th>
<th>Colombia</th>
<th>Brazil</th>
</tr>
</thead>
<tbody>
<tr>
<td>Legal Framework</td>
<td>There is not a specific framework; there are only general guidelines based on the Procurement and Acquisitions Law. There is also a concessions law and a road law which are used in the transport sector. At present, there is a law on PPP’s in the Congress.</td>
<td>There is a concessions law.</td>
<td>There is a framework law of Public-Private Partnerships and there are some specific laws for each of the sectors.</td>
<td>Public Procurement and Acquisitions Law that allows different modalities of Public-Private Participation.</td>
<td>Two mains framework: 1. Concessions law and 2. Public-Private Parcerias law.</td>
</tr>
</tbody>
</table>
### Table 2: Resume of Case Studies

<table>
<thead>
<tr>
<th>Case number</th>
<th>Case name</th>
<th>Country</th>
<th>Sector</th>
<th>Reason (s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Case Study I</td>
<td>Banobras’ First Partial Credit Guarantee (GPO)</td>
<td>Mexico</td>
<td>Subnational/ Refinancing</td>
<td>First Partial Credit Guarantee provided by BANOBRAS in Mexico</td>
</tr>
<tr>
<td>Case Study II</td>
<td>Pontal – Irrigation project</td>
<td>Brazil</td>
<td>Irrigation</td>
<td>First and only PPP project that has used the Federal PPP Guarantee Fund (FGP)</td>
</tr>
<tr>
<td>Case Study III</td>
<td>MG 50 Toll Road</td>
<td>Brazil</td>
<td>Road</td>
<td>First PPP transaction in Minas Gerais under the new PPP law</td>
</tr>
<tr>
<td>Case Study IV</td>
<td>Arrangements and guarantees provided in PPP Projects: Prison Complex in Minas Gerais</td>
<td>Brazil</td>
<td>Prisons</td>
<td>It shows the structure of a transaction that replaces the use of a guarantee fund for that of the pledge of revenues.</td>
</tr>
<tr>
<td>Case Study V</td>
<td>Jaguarihe System of Oceanic Disposal Project</td>
<td>Brazil</td>
<td>Sanitation</td>
<td>Guarantees arising from the provision of water supply and sanitation to residential, commercial, industrial and public, for a period equal to the contract.</td>
</tr>
<tr>
<td>Case Study VI</td>
<td>Regulation of the Guaranteed Annual Minimum Revenues in the Concession Contract for the Port of Paita in Peru</td>
<td>Peru</td>
<td>Ports</td>
<td>Minimum Revenue Guarantee in the port sector. The Government received more than 100 million USD as a result of the bidding process</td>
</tr>
<tr>
<td>Case Study VII</td>
<td>The 4th Line of the Metro of Sao Paulo</td>
<td>Brazil</td>
<td>Public Transportation</td>
<td>First Minimum Revenue Guarantee under the State of Sao Paulo PPP Law. LATAM Deal of the Year: Project Finance, PFI, LatinFinance</td>
</tr>
<tr>
<td>Case Study VIII</td>
<td>Concession for the El Dorado airport second runway</td>
<td>Colombia</td>
<td>Airports</td>
<td>Minimum Revenue Guarantee and the <em>Infrastructure Finance</em> magazine rated it as one of the 10 most creative contracts in 1996 in the world. Standard &amp; Poor’s provided the rating BBB, which was the one with the longest term for a transport sector bond in Latin America, and the first one with the “investment degree” in that sector in the area.</td>
</tr>
<tr>
<td>Case Study IX</td>
<td>Tender Process through Least Present Value of Revenues Mechanism for the Concession of Route 68 (LPVR)</td>
<td>Chile</td>
<td>Roads</td>
<td>Latin American Transport 2002 Deal of the Year by Project Finance Magazine</td>
</tr>
</tbody>
</table>
### 1.3. Source of Information

The main source of information used are specific explicit and tacit knowledge and direct study of the problem in each country materialized in work visits and specialized academics.
and consultancy reports, in some cases, in-depth interviews with different agents such as government employees, as well as, private sector employees who have been involved in any PPP processes. The secondary source of information was conducted through reports and the WEB pages of different organizations and cases selected. A series of interviews were conducted to multilateral bank employees. The way to obtain the data was the following:

Table 3: Source of Information

<table>
<thead>
<tr>
<th>Primary Source of Information</th>
<th>Secondary Source of Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visits to countries selected, maintaining direct conversations with the people in charge of the programs: The countries visited were: A. Mexico (Mexico City). Meetings with Banobras, Fonadin and SHCP. In addition, Project Finance Associates (PFA) was a very important source of information; B. Brazil: Sao Paulo, Rio de Janeiro, Belo Horizonte and Brasilia in order to maintain direct contact with BNDES, public officials in charge of the management of the PPP guarantee fund, the PPP Unit in Minas Gerais in order to have a full perspective of the particular situation of the States and with representatives of the private financing structuring organization, which is supporting the development of PPPs; C. Colombia: Meetings were held with the Concessions National Institute (INCO), concessionaires, local and international investment banking; D. Chile, where there is a permanent contact with the private financiers and the designers of guarantee schemes and business models for PPPs, and where the consultant lives. E. New York: where a market sounding about financial guarantees market was conducted with Merrill Lynch, Morgan Stanley, Goldman Sachs and Assurance Guaranty.</td>
<td>Revision of documents, mainly those regarding information available on RFP and contracts, and analysis in the Web sites of the agencies related to PPP topics: Concessions Coordination in Chile, Investments Unit of the SHCP, Banobras and Fonadin in Mexico, INCO and the Ministry of Finance and Public Credit in Colombia, PROINVERSION and MTC in Peru. Web pages in Brazil: Minas Gerais, Agência de Fomento do Estado da Bahia – Desenbahia, BNDES.</td>
</tr>
</tbody>
</table>

Mail interchanged, especially with PROINVERSION in Peru, INCO in Colombia, CAF in Venezuela, BANOBRA/S/FONADIN in Mexico, and Ministério do Planejamento, Orçamento e Gestão in Brazil, Minas Gerais PPP Unit, and with the technical counterpart in the WBI.  

Document and literature Review: Some academic and analyses papers, which have been created regarding credit improvement mechanisms related to the topic of explicit and implicit guarantees, were reviewed. An important source of information used to analyze and compare the European case to LAC has been the European PPP Expertise Centre and Project Finance Magazine.

Source: Sergio Hinojosa
II. CONCEPTUAL CONTEXT FOR THE ANALYSES OF GUARANTEES IN PPPS SCHEMES

2.1. Financial Structure in PPPs

It is well known that in PPP schemes, the financing of projects is developed through the Project Finance technique. Project Finance refers to the financing of a Project, whose main payment source is the cash flow that will be generated by the Project itself. The financing is conducted without a resource or with a limited resource against the Sponsor. It is the sponsor who will commonly take full responsibilities in cases: i) in which the construction stage is guaranteed ii) in case the Project’s income is affected (proper management).

The financial structure aims to assure that the project has an appropriate financial strength for the objective risk level that is to be reached. As such, the financial structure must be capable of paying the debt service (even under stressful scenarios). To that end, elements such as the following are commonly used: a. Service $\leq$ Net Project Income, where DSCR (example; 1.3x average, allows a safety margin. This means that the cash flow available, projected for the debt service, is an average 30% greater than the debt service itself) b. Payment cascade, priority in the use of the periodic revenues (example) c. Reserve accounts (RA). They allow financing the Debt Service (DS) and the Project’s essential expenses for a certain period of time, in extreme cases in which the cash flows are not enough for such end, in one or several payment periods/installments.

2.2. Importance of contracts in the financing of projects

Legal documentation has the materialization of all the characteristics of the financial structure, and other terms and conditions that are agreed on by the parties involved in contracts as one of its main missions:

• **Credit or Emission Contract**: It allows to negotiate the characteristics of the financing (interest rate, term, pre-payment, unfulfillment causals, among others). It represents the obligations acquired by the debtor towards the creditor in detail.

• **Guarantee Contract/Trust**: It allows negotiating, among others aspects, the handling of the cash flows (payment cascade); the funding and the liberation of the reserve accounts, the conditions for distributing the surpluses to the Sponsor; the causals and the guarantees’ execution procedures.
• **Sponsor’s Support Contract**: It regulates all the situations under which the Sponsor must conduct additional capital contributions to the Project or pay compensations due to acts or detrimental omissions towards the project itself and the representations that the Sponsor makes regarding the Project’s background.

• **Reimbursement and Guarantee Contract**: In case that the Project Finance involves a financial guarantor (structure frequently applied to access financing with capitals markets), this contract establishes the conditions of the guarantee, how its payment operates and how the guarantor will be reimbursed in case this last one has to pay.

### 2.3. Typologies of Guarantees for Project Finance in PPP’s

For all those risks of the project that may not be mitigated satisfactorily through the financial structure, it is necessary to provide the Project with “external support”, frequently originating from the Sponsor and/or the Main Contractors involved, and from guarantees and insurance policies granted by the contracting public entity in a PPP scheme. This type of guarantees will be called Contractual Explicit Guarantees or Non Financial Guarantees in the present study (CEG).

A fundamental principle of Project Finance consists in limiting the Sponsor’s support to the minimum necessary, being on the one hand, those projects that do not have the Sponsor’s support, in which case the Project’s debt is not the Sponsor’s debt and; on the other hand, those that have the Sponsor’s complete support/endorsement, in which the debt is 100% contingent or indirect debt of the Sponsor’s.

Depending on the kind of project, sector and financier, some of the minimum support forms involved is the following: i) Settlement of over-costs and construction delays that are not covered by the Constructor ii) Guaranteeing the completion of the works (Completion Guarantee), iii) Settlement of operation and maintenance over-costs that are not covered by the Operator and iv) Settlement of the cost for the loss of a concession due to causes attributable to the Sponsor.

When legal and financial structure in addition to the sponsor’s/contractors support and the CEG is still not enough to access an acceptable risk level for the creditors, it is necessary for the project to take into account contracting a Partial Credit Guarantee (PCG) provided
by multilateral banking and/or development banking (BANOBRAS in Mexico, or BNDS in Brazil) or to have access to a guarantee fund created by the public sector specifically, like for example the PPP Guarantee Fund created in Brazil in 2004.

The PCG is granted in favor of the creditors by financing insurance companies or the multilateral/development banking, entities rated as “AAA”, “AA” (in the international scale) or “AAA” (at a local level), and through such guarantee, it is possible to improve the level of the credit rating.

This kind of guarantees are particularly useful when aiming at having access to financing options through the capital market, since it only accepts projects of the highest credit quality (AA or AAA), level which is very difficult or onerous to reach for a project that does not have the support of a PCG or their combination.

### 2.4. Financial Guarantees: Definitions

- Non-cancelable indemnity bond that guarantees timely payment of interest and repayment of principal to the buyers (holders) of a debt security. Similar to under a standby letter of credit, the guarantor pays in case the first party (issuer of the security) fails to do so.

- A non-cancellable indemnity bond that is backed by an insurer in order to guarantee investors that principal and interest payments will be made. Many insurance companies specialize in financial guarantees and similar products that are used by debt issuers as a way of attracting investors. The guarantee provides investors with an additional level of comfort that the investment will be repaid in the event that the securities issuer would not be able to fulfill the contractual obligation to make timely payments. It also lowers the cost of financing for issuers because the guarantee typically earns the security a higher credit rating and therefore lower interest rates.

A financial guarantee is also defined as a “credit enhancement” product, a technique used by debt issuers to raise the credit rating of their offering, and thereby lower their financing cost.

In developed markets such as in the US, where the investor base is sophisticated and diverse, the main purpose of using a financial guarantee is precisely to lower the financing
cost. If the issuer could go to the market without a financial guarantee and a lower rating, investors would require a higher spread to the securities. By using a financial guarantee they have access to higher ratings and lower interest rates. In fact, in the US and other developed markets, the “pricing” of a guarantee is determined by how much interest rate savings will be generated. The pricing of financial guarantees is further described later.

In developing markets, particularly related to the financing of infrastructure projects, the reason for using a financial guarantee goes further than the potential interest rate savings: The market for placing uninsured debt securities of an infrastructure project is too narrow for the amounts and long tenors needed by the project, due to construction and other project risks institutional investors are not familiarized with and normally do not assume.

In these cases, the value of the financial guarantee can be significantly higher than the interest rate savings: The financial guarantee opens access to the long term institutional investor market, a financing market not normally available for projects in emerging markets, which normally provides more efficient financing than banks (larger amounts, longer tenors and lower fixed rates).

2.5. Types of financial guarantees

There are two types of financial guarantees:

- Full Wrap,
- Partial Credit Guarantees (PCGs).

Both serve the same “credit enhancement” purpose as described above, but the full wrap covers 100% of the debt obligation of the issuer, while the PCG covers only a specified percentage of the obligation, normally proportional to the level of credit enhancement that it is intended to be achieved.

2.5.1. Full Wrap Financial Guarantees

They are called ‘Full Wrap” because they package/covers all risks of the issuer. They are unconditional, irrevocable and cover 100% of each and every principal and interest
payment of the guaranteed obligation in a timely manner. Let’s examine each of these characteristics:

• Unconditional: The guarantor will honor the guarantee under all circumstances, including the failure by the issue to pay the financial guarantee premium. The guarantor will waive in advance any and all rights it may have, by law, contract or otherwise, to avoid a payment or excuse itself from making a payment under the guarantee.

• Irrevocable: The financial guarantee is issued for the full tenor of the guaranteed obligation, and the guarantor waives any and all rights it may have to cancel the guarantee before the stated maturity of the obligation, including bankruptcy of the issuer, dissolution or any other circumstance that may affect the issuer.

• Timely: This last characteristic is very important for the full “credit enhancement” to take place, since rating agencies, when rating a security, will not only rate the ability of the issuer to pay the obligation in full, but also its ability to pay each coupon on time.

A full wrap financial guarantee is also referred to as “financial insurance”, which can be misleading in the sense of expecting that a financial insurance will “work” as any other type of insurance. In fact, one of the main differences between a financial insurance and other types of insurance is that the “claim” (in a financial insurance) is made “before” the insured event occurs, in this case, the failure by the issuer to pay a coupon. With other types of insurance (life, general, casualty, etc), the claim is made “after” the insured event has occurred, and a process (sometimes lengthy) has to be undertaken to make the claim and obtain payment by the insurance company.

Under a financial insurance, a few days before each payment date of a guaranteed security, there is a process of checking if the issuer will have enough funds to pay on the payment date. If it is determined that it will not have enough funds, the financial insurer has to provide the necessary funds to complete the payment. Through this mechanism, by the payment date investors will receive full payment, on time, without a need to make a claim.
2.5.2. Partial Credit Guarantees

They work in a similar fashion than full wrap guarantees, in the sense that they are irrevocable and guarantee timely payment, and they are unconditional but for the “limit amount”, normally a percentage of the principal amount of the guaranteed obligation.

This type of guaranty will also guarantee full payment of every coupon on a timely manner (in advance of the payment date), but only until the limit amount has been reached.

For example, if an issuer contracts a PCG equivalent to 30% of the principal amount of an issuance, the guarantor will honour any claim for funds to make full and timely payments on the securities, until the accumulated amount disbursed has reached the amount equivalent to the 30% limit. Most PCGs are also resettable: If the issuer is able to reimburse the guarantor for amounts it has previously disbursed under the guarantee, such amounts will remain available for future claims under the guarantee.

PCGs are normally “sized” according to the level of credit enhancement which they are intended to achieve. For example, if an issuer can issue securities rated at the “A” level without a guarantee, but would like to issue at the “AA” rating level, to obtain a lower interest rate and/or have more market access, it will need credit enhancement equivalent to three rating levels or notches (from “A”, to “AA”).

Rating agencies will determine, using their quantitative models of expected loss, and factoring in aspects such as the rating of the guarantor and the seniority of the reimbursement obligations, how much PCG will be needed for the three notch enhancement (the limit amount).

2.5.3. Comparison between full wrap and partial credit guarantees

The following table shows the main differences between a Full Wrap Guarantee and a Partial Credit Guarantee, as credit enhancement for an Infrastructure/PPP Finance Transaction:
Table 4: Full Wrap vs Partial Credit Guarantees Comparison

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Full Wrap Guarantee</th>
<th>Partial Credit Guarantee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guarantee of Principal and Interest on a timely manner</td>
<td>Yes.</td>
<td>Yes.</td>
</tr>
<tr>
<td>Irrevocable</td>
<td>Yes.</td>
<td>Yes.</td>
</tr>
<tr>
<td>Unconditional</td>
<td>Yes.</td>
<td>Yes, subject to the maximum limit amount of the guaranty.</td>
</tr>
<tr>
<td>Limit to the coverage of the Guarantee</td>
<td>No limit. Covers 100% of every coupon of principal and interest.</td>
<td>Limit determined according to the number of notches of credit enhancement required.</td>
</tr>
<tr>
<td>Credit Enhancement</td>
<td>Increases the rating of the guaranteed obligation to the rating level of the guarantor.</td>
<td>Increases the rating of the guaranteed obligation a specific number of notches according to the size of the limit amount of the guarantee.</td>
</tr>
<tr>
<td>Complexity</td>
<td>Simple and standardized. Investors need to understand the underlying risk but derive comfort from the 100% guarantee.</td>
<td>More complex. Investors need to understand the characteristics of each PCG, the underlying risk, the credit enhancement provided and its sufficiency.</td>
</tr>
<tr>
<td>Versatility of Application</td>
<td>Limited. Applicable only to projects that can achieve an investment grade underlying rating in the global scale.</td>
<td>Can be applicable to non-investment grade projects.</td>
</tr>
<tr>
<td>Maximum Credit Enhancement</td>
<td>To the rating of the guarantor. If the guarantor is rated &quot;AAA&quot;, and the underlying rating is &quot;BBB-&quot; (minimum investment grade) the credit enhancement achieved is equivalent to 10 notches.</td>
<td>Normally not more than 5 notches.</td>
</tr>
<tr>
<td>Cost</td>
<td>Normally less than 1.0%, applicable to the full amount of the guaranteed obligation.</td>
<td>Normally above 2.0%, applicable to the guaranteed amount.</td>
</tr>
<tr>
<td>Scope of Work of the Rating Agencies</td>
<td>Underlying rating (without considering the guarantee) and public rating (with the guarantee). All work is done by the Infrastructure / Project Finance Group.</td>
<td>Underlying rating done by the Infrastructure / Project Finance Group; sizing of the PCG and public rating done by the Structured Finance Group.</td>
</tr>
<tr>
<td>Guarantors</td>
<td>Monoline insurance companies and banks in the form of Stand By Letters of Credit.</td>
<td>Multilateral agencies.</td>
</tr>
</tbody>
</table>

*Source: Sergio Hinojosa*
Summarizing, in relation to the financing of infrastructure projects, a full wrap guarantee has the benefit of being able to tell investors that “all risks” of the project are covered, so that even if the investor is not familiarized or unable to understand some of the project risks, it will derive comfort from the fact that the financial guarantee will cover payments if those risks would materialize in cash flow loss and a diminished ability to pay the debt.

A PCG, while able to achieve a credit enhancement as indicated by the rating agencies, will require a deeper understanding of the risks, and investors would have to derive comfort from its own detailed analysis of each of the project risks to determine if the amount of the PCG would be sufficient. In this sense, PCGs are better suited for infrastructure projects whereby investors can understand the risks involved and can become comfortable with them even before considering the PCG. Therefore, the PCG will be less suitable for pre-operating financings where construction risks are present, since many institutional investors are not suited to analyze and understand these risks, but would work well to enhance the rating of operating projects to higher levels.

The process and timing for obtaining a Full Wrap Guarantee or a Partial Credit Guarantee are similar.

In both cases, the guarantor has to conduct due diligence, ratings and legal documentation, which are the most time consuming activities.

The PCG requires an additional process to determine the size of the PCG, which is done by the Structured Finance Groups of the rating agencies, using quantitative models in a relatively short period of time.

Since the PCG is normally provided by a multilateral agency, additional time may be required to complete the approval for the issuance of the PCG, normally due to their particular environmental compliance and board approval processes.
As shown above, the underlying risk structuring and rating is common to both types of guarantees, but the full wrap requires that the BBB level (investment grade) be reached before the guarantee can take place, while the PCG does not have this requirement.

Once the BBB underlying level is reached, the full wrap guarantee “jumps” the rating to the rating of the guarantor, while in the case of the PCG, the rating increases step-by-step according to the size of the PCG.

2.6. Cost of financial guarantees and form of payment

2.6.1. Full Wrap Guarantees

In developed capital markets such as the US, where there are numerous and regular pricing references for different types of securities of various ratings, the pricing or cost of a financial guarantee is determined as a “negotiated” percentage of the interest rate savings that the guarantee is expected to achieve.
For example, if an issuer can achieve a “AA” rating for its securities, and similar securities (same sector, duration, etc.) trade at that moment with a spread of 80 bps to the equivalent treasury securities, a financial guarantee that can enhance the rating to the “AAA” level, trading at a spread of 40 bps, will be “priced” as a portion of the 40 bps savings that can be achieved by the enhancement from “AA” to “AAA”.

Standard market practice calls for the financial guarantor to retain between 2/3 and 3/4 of the savings, therefore the cost of the guarantee will be between 27 bps and 30 bps. In this example, the net savings achieved by the issuer by using a financial guarantee will be between 13 and 10 bps.

In less developed markets and in project financing in general, there are few references for similar securities trading without a financial guarantee, and the guarantee brings to the table additional benefits to the issuer, such as market access otherwise unavailable. In these cases the pricing of the guarantee is a matter of negotiation between the parties, that is, between the issuer and the guarantor.

Provided the issuance is attractive to the financial guarantee market, the issuer may be able to generate competition between different guarantors to ensure that the cost of the guarantee is market driven.

The cost of the financial guarantee is normally referred to as the “premium”, which is denominated in basis points applicable once a year or each semester, in advance, over the principal amount of the guaranteed obligation.

For example, if an issuer wants to place $100 million in insured securities and the premium is 30 bps per year, then it will pay the guarantor on the placement date $300,000 for the first year of the guarantee, and thereafter, in each anniversary of the issuance, an amount calculated each time by applying the 30 bps premium over the then outstanding amount of the obligation.

It is common in the US for the financial guarantor to charge the future premium for the full tenor of the obligation “upfront”, discounting the projected future premium at the cost of capital of the issuer or some other agreed upon discount rate. This upfront form of payment is related to the fact that the financial guarantee is issued at financial closing for the full tenor of the guaranteed obligation, and it is irrevocable, therefore it is reasonable for the guarantor to desire full payment upfront. It is also possible to agree with the guarantor to make premium payments every year or semester, always at the beginning of the year or semester.
2.6.2. Partial Credit Guarantees

In the case of the PCG, the pricing or guarantee premium is normally related to the “theoretical” spread a multilateral agency would charge for a project loan to a project of the same characteristics, for example 2.50%, and the cost to the issuer will be determined by applying such premium to the limit amount of the guarantee, normally a percentage of the outstanding balance of the guaranteed obligation.

The form of payment of the guarantee premium is normally annual or every semester, at the beginning of the year or semester.

2.7. Application of financial guarantees to the financing of PPP projects

PPP projects are complex in nature, involving many risks related to the construction of the project, such as land/site, right of way, environmental, permits, design and engineering, materials, work force, machinery, installations, equipment, amongst other, which may cause cost overruns, construction schedule delays, which together with the financial and technical capabilities (or lack of) of the private investor, may even cause the inability to complete the construction of the project and therefore the loss of the right to future revenues and cash flows to repay debt and equity invested.

Once the project is completed and operating, there are a number of risks related to the operation of the project, mainly demand, performance, operating cost overruns, potential disruptions of operation, lack of payment by the government and a number of political risks involved in having a long term contact with a government.

Because of the number and complexity of these risks, which require time and effort to understand and many times have to be analyzed and monitored by expert advisors, institutional investors are often not capable of processing and becoming comfortable with investing in debt instruments of PPP projects.

Credit ratings help in providing investors with an expert opinion about these risks, and the rating in itself permits a comparison of risks across sectors and industries, but it is usually not enough for the investment analysts to recommend investment, particularly during the construction phase of a project where the most complex and numerous risks exist.
The lack of time and specialized knowledge by investors to understand PPP project risks normally prevents them from investing in debt from PPP projects, leaving projects with only one source of financing: traditional bank project loans.

Financial guarantees are the key element missing to solve this problem. Financial guarantors are equipped to understand project risks and have expert professionals with experience in identifying, mitigating and monitoring project risks.

Because the financial guarantor assumes all risks of the PPP project when granting its guarantee, putting its balance sheet at risks, its approach to risk is much more thorough than the rating agencies, which only provide a service but do not incur in losses, other than reputation, in case their assessment of risk is incorrect.

Due to the above, the role of a financial guarantee in a PPP project goes much further that pure credit enhancement, since it provides investors with comfort to assure them that project risks have been well identified, analyzed, structured, mitigated and monitored, by someone who will take the first loss in case of error.

With a financial guarantee, the institutional investor can perform its credit analysis on projects risks with the guidance of the work done before by the financial guarantor, such as extensive due diligence and thorough legal documentation, which enables them to become comfortable with the underlying project risks.

In addition, the financial strength of the guarantor, mainly its claim paying resources and the credit enhancement power of its high credit rating, provides an alternative source of repayment for the debt obligations they acquire. Due to this double protection and the role of “risk taking intermediary” of the guarantor, institutional investors are able and willing to finance PPP projects from inception, opening a new and more efficient source of long term financing for project sponsors.

The application of financial guarantees to PPP projects is relatively recent, only dating back to the mid-90s, when increased activity at the PFI market in the UK called for additional and alternative forms of financing. Its superior conditions, as compared with traditional bank financing, rapidly made it the preferred means of financing for PPP projects in the UK and elsewhere, until the financial crisis hit the financial guarantee industry at its core, by debilitating the main financial guarantors who dominated this market: the monoline insurance companies.
III. FINANCIAL GUARANTEES PROVIDED BY BANOBRAS AND FONADIN IN MEXICO

3.1. BANOBRAS

BANOBRAS is the development bank of the Mexican Federal Government, and as such it has within its mission to support, through an array of financial products and services, the subnational public sector, composed by the Mexican states and municipalities, as well as private sector clients involved in the development of infrastructure through PPPs.

Traditionally PPP projects have been supported by standard long term credit facilities provided by the bank, however, since 2007, BANOBRAS added financial guarantees to their portfolio and has a specialized team in charge of this product.

BANOBRAS currently offers two types of financial guarantees:

Partial Credit Guarantees:

They are denominated “Timely Payment Guarantees” (Garantías de Pago Oportuno (GPO)), which are unconditional and irrevocable guarantees of timely payment of principal and interest, subject to a maximum exposure amount determined according to the level of credit enhancement that wants to be achieved.

The maximum exposure or size of the guarantee is 50% of the principal amount of the guaranteed obligation and the main condition to obtain the guarantee is that the PPP project can achieve a minimum underlying rating in the investment grade category (local scale).

Since the creation of the guarantee area of BANOBRAS in 2007, the bank has only issued one of these guarantees, in a refinancing transaction closed in May 2008 for the State of Mexico.

The transaction was very large (MXN 25,000 million – equivalent to approximately USD 2 billion) and signaled a strong commitment of the bank with this product. The maximum tenor of the guarantee is 30 years.

Since then, however, no other guarantees of this type have been issued and the bank is yet to support a capital markets financing, which they may do in 2011 according to their current deal pipeline.
Mechanics of the GPO

For the structuring and issuance of the guarantee, the Bank will undergo a process which in its early stages is a straightforward project finance structuring process, involving due diligence and legal documentation, financial modeling and the provision of reserve accounts and ratio coverage, that would partially mitigate the main project risks.

Together with the client and its advisors, the structure would be presented, with due diligence reports and drafts of legal documentation, to the rating agencies which would assign a “shadow rating”, rating the project with the financing structure in place but without taking into account the financial guarantee. This rating would be done normally by the project finance/PPP specialists of the rating agencies.

Once the shadow rating has been assigned, the rating agencies would undergo an interactive process with BANOBRA, the client and its advisors, to determine, using:

- The shadow rating,
- The characteristics of the guarantee, and
- The rating of BANOBRA, the relationship between size of the GPO and number of notches of credit rating enhancement that can be obtained.

For this second rating process, normally done by the structured finance specialists of the rating agencies, mathematical models are run to determine the liquidity protection and loss severity reduction provided by the guarantee.

Lastly, BANOBRA, together with the Client and its advisors, with a view of the rating levels desired by the beneficiaries of the guarantee (rating requirements of the banks or the capital markets), would determine the size of the guarantee needed to achieve such ratings.

This was the process undertaken for the GPO granted by BANOBRA to the State of Mexico refinancing transaction. The guarantee was issued in favor of a syndicate of banks which participated in the refinancing, and was ultimately sized at 27% of principal, to achieve a rating of “AA”. The underlying rating was not disclosed. The transaction has performed very well and its rating has been upgraded twice, now rated at “AAA”, due mainly to the improvement in the underlying rating resulting from the upgrade in the ratings of the State. BANOBRA has not had a claim on its guarantee, since timely payments of principal and interest have been done directly by the state to the bank syndicate.
Under the guarantee, BANOBRAS will become a lender to the project when it disburses funds to the banks or bond investors to make debt service payments, in case project cash flows are insufficient, acquiring from the project a reimbursement obligation, subordinated to senior debt service, which would normally be repaid once the project cash flows have recovered or during the “tail” of the financing.

BANOBRAS requires a “tail” in the financing, called the “Amortization Period of the Guarantee”, which shall normally be up to 25% of the period in which the guarantee is in effect, called the “Disposition Period of the Guarantee” (equivalent to the tenor of the guaranteed obligation). During the Amortization Period, once the lender of the obligation is “out” (has been fully repaid), BANOBRAS would get periodic payments of principal and interest until the full disbursed amount has been repaid, with interest.

The pricing or cost of the guarantee would be determined in a similar way in which full wrap guarantees are priced. The guarantee “premium” would be a portion of the savings in interest rate that the credit enhancement can achieve, so that the project sponsor obtains “net” savings from using the guarantee.

**Contract Payment Enhancement Guarantee (CPEG):**

Under this type of financial guarantee, BANOBRAS guarantees full and timely payment committed by a government to the private sponsor under a PPP project. This guarantee is applicable to PPP Projects referred to in Mexico as “Service Rendering Contracts” (Proyectos de Prestación de Servicios or PPS) whereby the private sponsor commits to construct, operate and maintain the infrastructure in exchange for fixed availability payments made by the government, subject to discounts in case defined service standards are not met.

The aim of the product is to help subnational entities (states and municipalities) attract private investors to bid for their projects and for them to have more access to financing, which is particularly valuable for entities with a lower credit rating.

So far, BANOBRAS has issued only one of these guarantees, in 2009, in the form of a “Line of Guarantees” in favor of the State of Mexico, applicable to different PPS projects. The line has been used so far for enhancing four different PPS projects of the state, a cultural center, a hospital and two roads. The total limit of the line is MXN 1,000 million and the possible tenors of the guarantees are up to 30 years.
This guarantee is of a “revolving” type, guaranteeing at all times the next 12 months of PPS payments, subject to the maximum exposure assigned to each project and also to the limit of the guarantee line.

**Mechanics of the CPEG**

This type of guarantee provides an indirect benefit to the lenders of a PPP project, and it is hired by the Governments intending to award PPS contracts. It is not a direct guarantee to the debt, such as the GPO, but a credit enhancement to the revenues of a PPS project, from which cash flows from debt service will be derived.

As such, the lenders would still be subject to the risk of a reduction in revenues due to penalties for poor performance of the operator and operating and maintenance cost overruns, but once the payment has been determined, the risk of non-payment or delayed payment by the government will be partially mitigated by the guarantee.

The process for obtaining this type of guarantee differs from the one described for the GPO, in the sense that the focus is not on the project but on the subnational entity. As such, BANOBRAS would look at the financials of the entity, its laws, legislative approvals and regulatory framework and would zoom into the source of cash flows to make the PPS payments.

The guarantee would require a counter guarantee from the government by means of a pledge of tax revenue, which could be local taxes or federal participations due to the entity. These revenues would be placed in a trust with a defined waterfall, coverage protection and reserve accounts, performance obligations from the government, covenants and events of default, to provide an initial enhancement to achieve the “shadow rating”. As in the case of the GPO, this shadow rating has to be “BBB-mx” or above.

**Additional forms of guarantee support for PPP projects**

The bank has recently launched a new effort to support PPP project financing, in the form of a “refinancing guarantee”, issued to banks that have an interest in lending to PPP projects but have tenor restrictions that prevent them from offering the tenors required by the projects.
Under this guarantee, the bank commits to “purchase” from a bank a project loan at a certain point in the life of the project, subject to the project not being in default.

By using this guarantee, a bank that normally would only be able to offer projects 10-year financing, can now offer longer tenors, as required by each project, knowing that at year 10 it can “sell” the loan to BANOBRAS to comply with its credit requirements.

Unlike the other forms of support that are normally contracted by a PPP sponsor or a government wanting to grant PPPs, this type of support is contracted by financial institutions involved or wanting to be involved in PPP financing.

BANOBRAS has not closed any guarantee of this type as of this date, but expects to close the first one shortly, and sees a sizeable demand for the coming months.

Possible reasons for the limited activity of BANOBRAS in providing financial guarantees

The guarantee department of BANOBRAS was formed in 2007 and has a knowledgeable team of professionals with specific experience with the product; however, after more than three years of activity only two financial guarantees have been issued.

The occurrence of the financial crisis might have delayed the penetration of the product, due to the general uncertainty prevailing in the markets, but there may be other potential reasons for the lack of activity:

• One particular aspect related to both the Partial Credit Guarantees and the Contract Payment Enhancement Guarantee is that the bank does not assume construction risk. In both cases, if there is a construction phase involved, the guarantee can be committed in advance but would not become “active” until the project has completed construction and earned the right to receive revenues.

This particular condition is uncommon and might be preventing a more widespread application of this product to PPP projects. It is also peculiar in the sense that the bank does assume construction risk on the lending side, when providing long term loans to projects, but is not willing to do it under a financial guarantee, despite the fact that the project risk is practically the same regardless of the type of execution (loan or guarantee).
3.2. FONADIN

The Mexican Government Infrastructure Fund (Fondo Nacional de Infraestructura – FONADIN) was created during the current government to support projects with private sector involvement. It was established with its own patrimony, composed of a portfolio of existing toll roads run by the Federal Government, which provide significant liquidity to fund the different types of support they offer.

FONADIN was conceived first and foremost as a tool of the Mexican Government to make PPP projects attractive for private sector sponsors and also bankable. As such, the main forms of support they offer consist of equity and subordinated debt, needed to complete the financing plan of PPP projects which are unable to do it on their own.

A typical example of a project in which they participate is a greenfield toll road, which would have limited access to financing from banks and no access to the capital markets,
where FONADIN provides equity or subordinated debt, which together with the equity provided by the private sponsor, decreases the amount of bank financing needed to complete the financing plan.

Within the array of products that FONADIN offers are also financial guarantees, which are depicted in presentations and on their website as a way to foster increased private sector financing, by providing credit enhancement that would increase the access to the bank or capital markets. However, up to this date, the market has not seen a financing transaction supported by a FONADIN guarantee and its detailed characteristics are unknown.

FONADIN offers the following types of financial guarantees:

- **First Loss**: Under this guarantee, FONADIN would assume the first loss and make the first disbursement on its guarantee upon an insufficiency of funds to make debt service payments, before any other guarantee would disburse.

- **Pari Passu**: Under this type of guarantee, FONADIN would disburse on its guarantee only a portion of the insufficiency of funds, in an agreed upon proportion, along with other lenders or guarantors.

- **Last Payment**: Under this type of guarantee, FONADIN will be the last to disburse on its guarantee, upon an insufficiency of funds, after other guarantees have been honored.

- **Mixed**: A combination of first-loss and pari-passu guarantees.

FONADIN does not offer full-wrap guarantees. The guarantees are only partial and have a limit of 50% of the guaranteed obligation.

- **Aside from financial guarantees**, FONADIN also offers performance guarantees and political risk guarantees. The performance guarantees intend to cover a portion of the construction risk of a project and are limited to 15% of the investment budget. They may also cover the initial stages of operation of a project, or the ramp-up period, until revenues have reached 40% of projected revenues.

When discussing with BANOBRAES the differences and similarities of BANOBRAES’ guarantees in comparison with FONADIN’s, two main differences were mentioned:
• BANOBRAȘ only provides guarantees to investment grade projects, while FONADIN focuses on non-investment grade projects. Therefore, the provision of guarantees by both BANOBRAȘ and FONADIN would respond to a policy of covering the full spectrum of projects, both non-investment grade and investment grade, to facilitate financing;

• BANOBRAȘ’ guarantees cover timely payment, while FONADIN’s pay upon default in a loan or bond payment, after the default has occurred.

While limited information is available about the product, when analyzing the possible reasons for the lack of financial guarantees issued by FONADIN, the following three stand out:

• FONADIN does not have a team specialized in offering financial guarantees. It is organized by industry sectors (mainly toll roads and waste & water) and the sector specialists are in charge of handling any type of support offered by FONADIN to the sector, including financial guarantees. Under this structure, one possible reason for the lack of guarantees might be the absence of specific product knowledge and organizational procedures to handle them;

• FONADIN’s main types of support are targeted to non-investment grade projects, which are normally not suitable for financial guarantees due to the higher risk involved. Financial guarantees normally work under the assumption that the underlying risk shall be sufficiently mitigated for the guarantee not to be called upon. When a financial guarantee is applied to non-investment grade project, the probability of disbursements under the guarantee is higher;

• Lastly, the guarantees that don’t cover timely payment are not applicable to capital markets financings and might not be adequate for some banks. This limitation may be preventing the demand for FONADIN’s guarantees as opposed to BANOBRAȘ’ or other credit enhancement providers.

FONADIN defines its role of support to PPP projects, in general, as an entity of the Federal Government who is willing to take risks that the market is not willing to take. As such, it becomes a needed complement to projects of a higher risk nature, and is far apart from BANOBRAȘ in the spectrum of risk of the different sources of funds for a PPP project.
The lower end of the risk spectrum is covered by senior debt, where most financial guarantees also fall, while the higher end of the risk spectrum is covered by equity. FONADIN tends to work closer to the higher risk funding, even higher than private equity, when it decides to provide its own equity contributions to a project to lower the required investment by the private sponsor.

Perhaps the single most important explanation for the lack of application of the financial guarantees of FONADIN is the different risk profile of the guarantee product. Financial guarantees are normally part of debt financing, while most of the efforts of FONADIN have been geared towards equity and equity like products. The skill set and mind frame of a provider of equity financing differ greatly from the providers of debt. Debt financing (and guarantees) foster a focus on risk analysis, risk structuring and mitigation and avoidance of loss, while equity products tend to focus on upside, potential and value appreciation.

Due to the above, perhaps the financial guarantee products don’t fit within the scope and focus of FONADIN, which explains why it has not provided resources and a team to develop this product.

The following table shows FONADIN’s guarantees supporting infrastructure transactions:

**Table 5: FONADIN’s Guarantees**

<table>
<thead>
<tr>
<th>Year</th>
<th>Sector</th>
<th>Amount (USD millions)</th>
<th>Types of Financial guarantees</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>Urban Transport</td>
<td>128,21</td>
<td>First Loss</td>
</tr>
<tr>
<td>2008</td>
<td>Urban Transport</td>
<td>71,71</td>
<td>First Loss</td>
</tr>
<tr>
<td>2009</td>
<td>Roads</td>
<td>20,94</td>
<td>Credit</td>
</tr>
<tr>
<td>2009</td>
<td>Urban Transport</td>
<td>65,56</td>
<td>Pari Passu</td>
</tr>
<tr>
<td>2009</td>
<td>Urban Transport</td>
<td>9,14</td>
<td>Credit</td>
</tr>
<tr>
<td>2009</td>
<td>Roads</td>
<td>45,00</td>
<td>Credit</td>
</tr>
<tr>
<td>2010</td>
<td>Roads</td>
<td>16,84</td>
<td>Credit</td>
</tr>
<tr>
<td>2010</td>
<td>Sanitation</td>
<td>4,92</td>
<td>Mixed</td>
</tr>
<tr>
<td>2010</td>
<td>Roads</td>
<td>14,20</td>
<td>Mixed</td>
</tr>
</tbody>
</table>

*Source: Based on FONADIN (2011) Information*
Case Study I: BANOBRAŚ First Partial Credit Guarantee (GPO)

Even though the guarantee is not aimed directly at financing PPP projects but to refinancing the debt of the State of Mexico, it is presented as a case study, since it was the first partial guarantee granted in Mexico (2007).

The refinancing of MMX 25,175 (USD 2,1 billion) of the debt of the State of Mexico represents an additional promotion to the development of the financial market for state and local governments experienced in recent years.

Since the early seventies and until 2000, the terms under which the subnational governments obtained financing from the market remained virtually unchanged, since they were based on the federal government’s involvement as the guarantee’s executing organization which they offered to support their credits, that is to say, the shares that were available to them in federal revenues.

A series of legal changes between 1995 and 2001, concerning the rules of capitalization and establishment of reserves to bank loans to other states and municipalities led, on the one hand, the federation to leave its role as guarantees’ executing organization and, on the other hand, to the generation of strong incentives in terms of financing cost in order for the states and municipalities to be financially analyzed by rating agencies.

As a result of such changes and of the gradual consolidation of the macroeconomic stability in Mexico, private banking participation increases in intensity and number, new bidders, such as limited purpose financial partnerships (SOFOLES), are incorporated. Such partnerships are constituted by international financial intermediaries. New financing options, such as emission exchanges, are created and, in addition, the shares are no longer the sole support obligations, thus incorporating income such as payroll taxes and those taxes coming from vehicle ownership, among others.

The terms and conditions of the financing options for the states reflect this development positively: those terms no longer than 20 years become the standard rather than the exception, the marginal costs which are applicable to this funding option are lowered and the supply of financing is increased gradually at a fixed-rate in increasingly longer terms.

In the above process, although it is true that Banobras has participated actively and importantly, the fact remains that this involvement has resulted in terms similar to those of the other intermediaries, that is to say, by providing the financing.

Along this line, the refinancing of the liabilities of the State of Mexico takes on particular relevance. The financial structure proposal that Banobras made available for the State incorporates two instruments that were used for the first time in a state financing transaction in Mexico: firstly, a partial guarantee that the State of Mexico contracts with Banobras in favor of the direct creditors participating in the refinancing. Due to such guarantee, Banobras turns from being the state’s principal creditor, into the sole guarantor for up to 27 percent of the amount of the refinanced liabilities.

Secondly, an exchange rate contract was signed by the State of Mexico and Banobras in order to establish the cost of servicing the debt initially granted to the State at amendable rates.

Why was the proposed financial structure considered to be appropriate? Firstly, the target amount to be refinanced amounted to a little more than MMX 25 billion, figure that represents half the amount of the BANOBRAŚ loans granted to all the states in the country during 2007.
Due to the high amount, it was essential to obtain credit rating levels that would minimize, at an effective cost, the risk perception and capitalization requirements of the potential credit institutions involved. Achieving the aforementioned was assured by combining the highest financial strength of the State of Mexico, which was acquired through strict discipline in managing public finances and the favorable impact of the tax reform, by incorporating the sovereign risk to the partial guarantee granted by Banobras.

Secondly, since one of the transaction’s fundamental objectives was to establish the obligations’ service for a term not lower than ten years of the entire debt to be restructured, given the magnitude of the operation and the fact that an intermediary may be competitive in variable-rate financing and if not being so in the case of fixed-rate financing, it was decided to dissociate the funds obtaining process from the objective of obtaining them at a fixed rate. The above was accomplished by incorporating Banobras as counterpart in a rate coverage operation.
IV. BRAZILIAN GUARANTEE SCHEMES

4.1. Federal Guarantee Fund (Fundo Garantidor de Parcerias Público – Privadas - FGP)

The PPP Law authorises the Federal Government, its agencies and public foundations to take part in the global limit of R$ 6,000,000,000 (six billion Brazilian Reais/USD 3.6 billion), in a Public-Private Partnership Guaranteeing Fund (“FGP”) - the purpose of which is to provide guarantee of payment for money liabilities assumed by federal public partners by virtue of PPP projects within a federal scope. The FGP is a legal entity under public law.

The main purpose of the FGP is to prevent public payment defaults, by the way of guaranteeing payments to private investors by the available proceeds of the fund. When the FGP was created in 2005, there was not disagreement about the great contribution that the FGP could provide in order to reduce the risk of government insolvency and increase the liquidity, offering greater security to private partner and positively reflecting on its credit risk upon the raising of funding the project.

The provision of guarantee funds by the legislator aims to ensure compliance with the obligations assumed by the public partner against the private investor. The FGP can be used to fund Federal PPP projects prepared and granted according with the Federal PPP law only. Federal Guarantee Fund can not offer guarantees for States or Municipalities.

The diagram below illustrates the structure of a basic PPP project in Brazil, and the role of the FGP:

Figure 2: National FGP Structure

Source: Adapted from Parcerias Público Privadas: Estruturação de Fundos Garantidores, Garantias, Riscos e Medidas de Mitigação

---

Financial and fiscal aspects

The FGP is managed by Banco do Brasil (Bank of Brazil) that represents the fund both judicially and extra-judicially. Bank of Brazil was appointed as administrator by a resolution of the Management Committee of the FGP on 5th of August 2005. The FGP is subject to the regulation of the Brazilian Securities Commission as well as all applicable rules given by the Brazilian Central Bank.

The equity of the FGP is formed by contribution of assets and rights held by the shareholders through the payment of shares and the income from his administration. The payment of shares may be made in cash, government securities, non-movable assets, and movable assets, including shares of a federal mixed capital company, surpluses necessary to maintain their control by the Administration or other rights with equity value. The FGP has its own assets separate from shareholders’ equity, and subject to its own the rights and obligations.

Stability of the FGP equity

In order to clarify private investor about the stability of the FGP equity, the Ministry of Treasury issued a statement, in 2006, ensuring that the fund has mechanisms that provide to the investor a solid and reliable guarantee. The solidity of the FGP equity is based on the following aspects:

• **Professional Management**: O FGP will be managed by a federal financial institution (Bank of Brazil), specialised in management of third party funds, accredited by the Security Commission (Comissão de Valores Mobiliários – CVM) to carry out this activity, in which it has experience and success proven and recognised. The assets management will be under BB-DTVM responsibility, which is a company that manages third party funds;

• **Quality of the assets (pricing)**: the Public Administration will chose a company to assess the quality of the when the government pays it, this company will be also responsible for evaluating the price of the assets in a daily basis according to the practices determined by Brazilian Central Bank, and the CVM. This item cannot be altered. The first contribution to the FGP will be made with first-rate stocks, assuring profitability to the FGP. It is also possible to allocate other types of assets in the FGP, according to the PPP Statute;
• **Investment Policy:** The FGP rules determine a conservative management, restricting higher risk operations, which could damage the contributed equity of the fund. It determines also gradual conversion of most volatile stocks to less volatile ones, according to the stock market conditions. This operation reduces the possibility of capital losses;

• **Sustainability:** In the case of public partner default, the FGP shall subrogate in the private partner rights, the manager company will be obliged to operate legally against the public partner in default.

**FGP Guarantees**

The guarantees provided by FGP are: i) non-conditional surety; ii) pledges of chattel rights integrating FGP equity, without transfer the possession of the pledged asset before guarantee is enforced; iii) mortgage of real estate belongings to the FGP entity; iv) chattel mortgage, with the direct possession of the assets remaining with the FGP or with the trustee contracted before the guarantee is enforced; v) other agreements producing guarantee effect, provide that they do not transfer the legal title or the direct possession of the assets to the private partner before the guarantee is enforced; vi) guarantee, whether a mortgage of personal security, tied to a public interest affect equity organized as a consequence of the separation of assets and rights belonging to the FGP.

FGP can also provide counter-guarantees to financial institutions, insurance companies or multilateral organizations that guarantee shareholder’s obligations in PPP contracts.

This guarantee can be activated by the private partner according to the following criteria: a) in the case of clearly legal debt, contained in the acceptable bond overdue by the public partner, the guarantee may be extra-judicially enforced by the private partner from the 45th business day upon its due date; b) the private partner may also avail of the guarantee for the debts contained in the invoices issued and still not acceptable by the public partner, provided that 90 days have been elapsed from its maturity, and provided that no express unreasonable rejection has occurred.

The following diagram shows how the triggers works in case of government default:
Other important aspects about the solidity of the FGP guarantees are:

- **Absence of leverage**: FGP is prohibited to grant another guarantee in such a case in which the present value of all guarantees issued exceeds the value of all assets. That reduces its attractiveness for the private sector. Also, the management institution (Bank of Brazil) is obliged to re-evaluate and justify in a monthly basis the unbalance. In case of this situation becomes permanent, the institution may determine the shareholders to allocate more assets in the FGP. However, this feature was changed by the Law nº 12.409/2011. It is not defined yet the leverage criteria that will be applied for the Fund.

- **Guarantee quality**: the type of guarantee to be granted to the private partner depends on the type of assets allocated in the FGP portfolio. This precaution was taken in order to avoid a discrepancy between asset liquidity and the ability of the guarantee granted be readily honoured, which could create difficulties for the settlement of commitments made by the FGP. Even in the case of guarantees granted based on shares traded on the stock market, it is predicted a margin of safety in the impairment of assets in order to minimize the risk of market fluctuations cause a discrepancy between the present value of assets and guarantees. The various types of guarantee are backed by assets with characteristics consistent with each of the types of guarantee. Thus, any payment of less liquid assets (e.g. real estate property)
will not compromise the quality of the guarantees granted, as it will only issue and ballasting of specific type of guarantee.

The following table contains the modalities of guarantees and assets related to them:

<table>
<thead>
<tr>
<th>Guarantee (fiança)</th>
<th>: Money, public bonds, stocks and money from credit.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bond</td>
<td>: Public bonds, assets and credit rights.</td>
</tr>
<tr>
<td>Fiduciary transfer/mortgage</td>
<td>: Real estate properties, chattel.</td>
</tr>
<tr>
<td>Pledge</td>
<td>: Movable property.</td>
</tr>
<tr>
<td>Possibility of providing counter-guarantees or constitute or to attach public equity to the contracts.</td>
<td></td>
</tr>
</tbody>
</table>

Restrictions on the discretionary decisions of the shareholders: there is a prohibition for the public partner to interfere in the FGP decisions in a way that could represent a risk to the compliance of its obligations. For instance, the public partner cannot provide guarantees that are discrepant with the financial limit available or either liquidates the fund without paying the commitments.

All the guarantees provided by the FGP will be expressed in the contract, in details, aiming to present a clear legal framework to the rights and obligations of both parties.

In comparison with State level funds, the FGP provides higher levels of liquidity, being a more efficient tool to reduce public default risk. However due to the lack of PPP projects at Federal Level and the great level of requirements the FGP has had less practical application than State level fund or local Trust.

In conclusion the FGP has a great potential to become a strong financial instrument to support and fund forthcoming PPP project, however the legal and structural restrictions that the FGP has, have limited importantly its real contribution in the developing of a financial industry to support and fund PPP projects in Brazil.

In effect, so far, the only application for the Fundo Garantidor de Parcerias (FGP) has been for the Pontal Irrigation Project.
Case Study II: Pontal-Irrigation project

Pontal Irrigation Project (Petrolina): The Brazilian Government, through its agency CODEVASF, will transfer the operation of the 33,526 hectares of land, out of which 7,717 are considered as irrigable land, to the private sector for 25 years, through a Public Private Partnership.

Private sector attributions: finish the construction, operate and maintain common irrigation infrastructure and allocate land to agribusiness user.

During the concession, SPC will be entitled to 3 sources of revenue:

1. Tariff collection from Agribusiness Company on water and land.
2. Compensation paid by Government.
3. Additional revenues generated by Project, if any.

Initial tariff price will be set by Government in the edital (bid rules). Indicative price of tariffs are R$ 785/hectare/year (land) and R$ 22/thousand m (water). These amounts will be subject to annual adjustment accordingly to IPCA inflation index variation. SPC can also, at its own discretion and assuming all risks involved, give discounts to Agribusiness Company. Maximum amount of compensation will also be definite in the bid rules and its indicative 3 amount is R$ 208.1 million (USD 124.8 million) for 25 years of contract.

The institutional framework structured to manage and guarantee this project is:

ANA: Regulatory agency; CODEVASF; National Integration Ministry; Fundo Garantidor de Parcerias; the concessionaire; Agribusiness Companies and Integrated small farmers.

Risk Matrix

SPC will be responsible for the following risks regarding the Project:

Occupation of irrigable land not accordingly to proposal; Refusal of Agribusiness Company to pay tariffs; Insolvency of Agribusiness Company in tariffs payment; Acquisition of licenses and authorizations related to the Project; Exceeding costs related to civil works; Delays in accomplishing foreseen periods established at “Diretrizes Técnicas Minimas” (minimum technical lines of direction); Technology used; Destruction, robbery or loss of goods; Social/public manifestations that affect in any way the execution of civil works or services until; Expenses due to hidden defects in goods of the Project; Increase in cost of capital, including those caused by increase in interest rates; Fluctuations in exchange rate; Changes in legislation; Events of force majeure that are subject to insurance cover in Brazil at time of occurrence; Recovery, prevention, remediation and management of environmental liability related to the Project; Risks that are covered by insurances in Brazil at that time, but stop being due to direct or indirect omission from SPC; Possibility of inflation rate in certain periods be superior or inferior to readjust index (for tariffs, compensation or other values in contract); Civil and criminal responsibility for environmental damages; Expenses related to expropriations.

On the other hand, SPC will NOT be responsible for the following risks which will be borne by the Federal Government:
Social/public manifestations that affect in any way the execution of civil works or services; When these events exceed; Judicial decision that hinder SPC’s ability of tariff collection or tariff readjustment (when decision is not SPC’s fault); Not attendance by Government of contractual obligations; Events of force majeure that are not subject to insurance coverage in Brazil at time of occurrence; Changes, by Government, in civil works or services detailed at “Diretrizes Técnicas Mínimas”, when SPC is not be responsible for delays; Creation, alteration or extinction of any tax after presentation of proposals, except for income tax; Costs and expenses related to reallocation of people affected by expropriation.

However, the contract of Pontal Irrigation project was not signed. After the bidding, the private partner was not able to get the required guarantees. It is expected that the project pass by some adjustments and will be launched again in 2012.

Possible reasons for the limited activity of FGP in providing financial guarantees

Based on a series of in-depth interviews held with: Odebrecht in Sao Paulo, The Ministry of Planning, Management and Budget Economic Advisory Office in Brazilia, Minas Gerais’ PPP Unit in Belo Horizonte, BNDES, Estructuradora Brasileira de Projetos (EBP) and Ernst & Young in Rio de Janeiro, it is possible to infer the reasons that explain why the FGP has not been used; such reasons are the following:

• A High probability of bureaucracy and administrative procedures which result in delays in the approval of the payments that are potentially activated from the FGP.

• The FGP has not been used and its amount has been reduced significantly because there has not been a projects portfolio that requires resources from the fund.

• Having funds available for PPPs does not generate a good reputation, under the understanding that it is believed that these projects are privatized, and privatizations are stigmatized as bad for the country.

2 All the information cited in this section was adapted from Pontal Project Executive Summary. Available at: http://www.pontal.org/docs/ExecSummary.pdf.
3 CODEVASF is a governmental agency created in 1974 to promote the development of Brazil’s semi-arid region through implementation of irrigation projects.
4 Índice de Precos ao Consumidor Amplo (“IPCA”) is index used by Central Bank of Brazil to monitor goals established for inflation. IPCA has been produced by IBGE since 1980 and it measures changes in consumer prices.
Using the fund involves high transaction costs measured in monetary resources and time. The FGP implies a high cost of immobilization of public resources.

There is no way to know what the size of the guarantee to be placed and immobilized in the Fund is.

Alternatives to the use of guarantee funds have been found especially in the States, through the creation of trusts that pledge the revenues.

According a report prepared by Ministry of Planning, Management and Budget Economic Advisory Office – PPP Unit (February, 16, 2011):

“The FGP guarantees only the stream of subsidy payments owned by the Federal Government throughout the PPP contract term.

The question that naturally arises is why the Brazilian government has set aside its own assets, transferred them to a bank that is owned by itself, to guarantee its own obligations?

A second question is why private investors are comfortable with such a scheme and other schemes put in place by the States that essentially give the same kind of guarantee? Brazil has built a credible reputation with both domestic and foreign bondholders that has led it to the investment grade category. However, when it comes to payments of suppliers and contractors delays in payments and contract terminations are not uncommon. The reasons behind this problem have political roots and are related to shortcomings in the budgetary process, inadequate multiyear planning, a rigid budget with extensive revenue earmarking and a small proportion of discretionary expenditures, which leads any fiscal adjustment to rely heavily on curtailing investment.

Major public works that take two or three years to be concluded, such as roads and irrigation channels, have suffered from unpredictability of funds, which often leads to losses for investors, but also to the government due to contract fines and other additional expenses, such as compensation payments. The uncertainty related to payments is priced in contractors’ bids, as litigation against government default has limited effectiveness. The government has legal privileges that lead lawsuits to take years before a final court decision, and public assets cannot be seized by judicial order.

When the PPP bill was being discussed in Congress all parties involved were aware of these problems and an off-budget solution was required. A PPP financial structure poses more challenges to investors than a traditional public work pay-as-you-go contract. In a PPP private investors finance up front the whole enterprise relying on future expected revenues to ripe their returns. Therefore, the enterprise’s financial arrangement depends crucially on the predictability of the future flow of subsidy payments, especially if the proportion of user charges in total revenues is low. Any uncertainty related to the security of subsidy payments flow would greatly diminish the efficiency gains from private operation, most notably in the form of higher subsidy bids to compensate for the risk.
The structure of the FGP had many advantages from the government’s point of view. First, the FGP is legally considered a private entity, and therefore public sector legal privileges do not apply. Second, its assets are off-budget and are not subject to the unpredictability of funds flows arising from shortcoming in the budgetary process. Third, the transfer of assets to the FGP did not imply a fiscal impact. Forth, similar structures had already been tested. For instance, the FGE (Fundo de Garantia às Exportações, or Export Guarantee Fund) was put in place in 1997 and has worked adequately since then. Finally, the scheme was well accepted by the private sector. There would be no point in establishing the FGP if it were not suitable to investor’s needs.

Initially the FGP had around BRL 3 billion. This figure has come down recently to approximately BRL 300 million due to two factors. First, the FGP remained idle for lack of PPP projects, which naturally led the government to reconsider the value of its paid-in capital. Secondly, there were many projects in other important industries such as shipbuilding and hydroelectric powerplants that demanded the back up of financial guarantees. Much of the assets was transferred out of FGP and was put to other uses. This was only possible because FGP assets were not committed to any guarantees. Clearly today FGP has not enough funds to provide adequate guarantees to “Baixio do Irecê”, or to other irrigation PPP projects in the pipeline.

4.2. Guarantees offered at the State level

4.2.1. São Paulo

The State of São Paulo has enacted its PPP Statute in 2004 (Act 11.688/04). With regards to the areas where PPP projects are developed, it can be mentioned sanitation and transport (metro, bus, rail and air). Among the sectors that have potential for PPP projects it can be included: health, housing, energy, education, prisons and electronic government.

The São Paulo PPP Statute has created entities that are responsible for implementation, management and supervision of the PPP programme. The PPP Unit, a department bound to the Department of Regional Planning and Development, is in charge of technical coordination of the state PPP Programme.

Companhia Paulista de Parcerias – CPP (Paulista Partnership Company) and the guarantees at state level

The São Paulo PPP program, meanwhile, deviates from the federal model in one important way. Instead of using a fiduciary fund, it creates the Companhia Paulista de Parcerias (CPP) to provide guarantees to private-sector participants. Public-sector assets will be
contributed to the CPP, which in turn will issue securities and performance guarantees. Unlike the fiduciary funds established under the federal and Minas Gerais programs (see next), CPP will not be a bankruptcy remote vehicle. The private sector, therefore, will need a full understanding of CPP funding lines and creditworthiness.

CPP: proprietary company, managed by the State of São Paulo. The majority shareholder of the Company will always be the State of São Paulo, but other entities belonging to the state Administration may also participate in the company as minority shareholders. CPP financial administration aims the optimization of the assets of the State of São Paulo by the preservation of the between liquidity and profitability. In addition, the Guarantee Fund created by the law, to guarantee the contract of the Line 4 (Yellow Line) of the subway, CPP owns other assets (preferred stocks) from Companhia Energética de São Paulo – CESP (Energetic Company of São Paulo), accounts receivable/debtors from Departamento de Estradas e Rodagens de São Paulo – DER/SP (Highways and Roads department of the State of São Paulo) and liquid assets deposited in Nossa Caixa Bank S.A5.

Project Eligibility

Preliminary proposals may be submitted by the public and private sector. In order to be approved, the PPP projects have to present the following elements: compatibility with the government priorities; relevance of the project; optimal allocation of risks; compatibility with the budgetary and financial conditions of the government; advantages when comparing to others forms of concession; no evaluation of the economic-financial balance without the consideration of public partner6.

4.2.2. Minas Gerais

Guarantee Fund

The Guarantee Fund provided by Minas Gerais PPP Statute is an accounting entity without

6 Information from the State of São Paulo. Planning and Development Secretary Website. Available at: http://www.planejamento.sp.gov.br/modulos/ppp/ppp/apresentacao.aspx
legal personality created to give financial support to state PPP Programme. It consists of budgetary allocations and has had initial assets of approximately R$ 70 million (USD 42 million), related to capitalization of 1.5 billion of preferred shares of Companhia Energetica de Minas Gerais – CEMIG (Energetic Company of Minas Gerais). The Fund was established to provide financial support to the PPP Programme. It is managed by State Secretary of Economic Development, and its financial agent is Banco de Desenvolvimento de Minas Gerais SA - BDMG (Minas Gerais Development Bank).

Fund resources are: The amounts allocated in the state budget and supplemental appropriations; Income from bank deposits and investments of Fund; Donations, contributions and legacies for the Fund; from credit operations internally and external; Income from the Union; Other incomes to the Fund.

State-owned assets, chattels, and movable properties owned by the public Administration can be allocated in the Fund. The Fund will release these resources to the private partner and offer real guarantees that could ensure the compensation by the public Administration, according to the PPP contract⁷.

4.2.3. Bahia

Guarantee PPP Fund

State of Bahia PPP Statute, is the financial institution (Bank of Brazil) responsible for the transfer 12% of financial resources from the Fundo de Participação dos Estados e do Distrito Federal - FPE (State Federal District Participation Fund) corresponding to State of Bahia, to Agência de Fomento do Estado da Bahia S/A -DESENBAHIA (Development Agency of the State of Bahia S/A).

The resources cited above are maintained by DESENBAHIA in a separate bank account, which has the specific aim of guaranteeing PPP contracts where State of Bahia is the public partner.

4.3. Identifying best practices

4.3.1. Minas Gerais

**Case Study III: Arrangements and guarantees provided in PPP Projects MG-050**

**Road MG-50 Project**

The PPP project of MG-050 provides for the recovery, expansion and maintenance of the highway MG-050 during the next 25 years, which has a length of 372 km, linking the metropolitan area of Belo Horizonte to the border with the State of São Paulo.

**TABLE 7: HIGHWAY MG-050**

<table>
<thead>
<tr>
<th>Description</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>State-owned</td>
<td>Minas Gerais</td>
</tr>
<tr>
<td>Value</td>
<td>R$ 645 million (USD 425.7 million).</td>
</tr>
<tr>
<td>Purpose</td>
<td>Makeover and exploitation (recuperation enlargement and maintenance) of Highway MG-050.</td>
</tr>
<tr>
<td>Term</td>
<td>25 years, from the date of transfer of control of the existing system, not admitting its extension, except for the purpose of making feasible the re-composition of the economic-financial balance of the sponsored concession, in the hypotheses provided for in the agreement. Agreement executed on 21/05/2007.</td>
</tr>
<tr>
<td>PPP Partners</td>
<td>State of Minas Gerais and Consortium led by Equipav S/A.</td>
</tr>
<tr>
<td>Agreement Type</td>
<td>Sponsored concession.</td>
</tr>
<tr>
<td>Allocation of Risks</td>
<td>The private partner is liable, for instance, for operational, financial and commercial risks, while the public partner answers for risks of changes in legislation and regulations influencing the agreement, sharing the demand and expropriation risks, among others.</td>
</tr>
<tr>
<td>Fee structure</td>
<td>Fee fixed (in the beginning of the agreement) in R$ 2.08 (US) per card and per axle for a load vehicle, with the initial provision of 6 toll stations.</td>
</tr>
<tr>
<td>Fee adjustment</td>
<td>Toll fees and additional compensation fees paid by public partner are automatically adjusted in accordance with the annual variance of the Comprehensive Consumer Price Index (IPCA), without needing homologation by the Regulatory Agent or Conceding Authority, as allowed by the Federal PPP Statute.</td>
</tr>
<tr>
<td>Additional compensation fee paid by Public Partner</td>
<td>Further to the toll, the private partner receives from the public partner an amount consideration designated as “Additional Compensation Fee”, in the performance, measured by the Performance Indicator Chart (QID).</td>
</tr>
<tr>
<td>Guarantees offered by the public partner</td>
<td>In this case, the guarantees used were from receivables of the CODEMIG. Besides, the PPP Fund for Minas Gerais PPP, managed by SEDE, is a guarantor for the contracts.</td>
</tr>
</tbody>
</table>
Arrangement presentation:

Figure 4: MG-050 Transaction Arrangement*

*Flowchart of the operation of the guarantee: 1. Concessionaire investments and services related with the exploitation of the Road MG-050; Auditing held by Independent Verifier; 2. Pecuniary Compensation ("CP") due by the Secretary of Transportation Public Constructions of the State of Minas Gerais ("SETOP") to the concessionaire; 3. Personal Guarantee provided by the Minas Gerais Economic Development Company - CODEMIG ("CODEMIG") to the concessionaire with relation to the CP payment; 4. Special Purpose Company ("SCP") constituted by CODEMIG and by the Brazilian Metallurgic and Mining Company ("CBMM"), on the terms of the public scripture of September 28th of 1972 ("SCP"); 5. Guarantee arrangements bound Account ("Bound Account"), maintained in Itaú S.A. Bank ("Bank") by CODEMIG; 6. Transit of the values paid by CBMM to CODEMIG through the Bound Account because of the SPC until the limit of the monthly CP; 7. Release to the CODEMIG of the monthly CP value retained in the Bound Account when SETOP prove CP payment; 8. Transfer of the CP monthly value, retained in the Bound Account, to the concessionaire by CODEMIG's authorization, in case of SETOP's default.

SOURCE: MINAS GERAIS'S PPP UNIT

Parts involved in the arrangement:

State of Minas Gerais; Concessionaire; CODEMIG; Bank: maintainer of the Bound Account; CBMM; Independent Verifier.

Figure 5: MG-50 Financial Arrangement*

*Flowchart of the operation of the guarantees when not activated: 1. CODEMIG instructs the CBMM to credit in the Bound Account the payable values by CBMM as result of SCPC; 2. BMM credits in the Bound Account the payable values to CODEMIG; 3. The Independent Verifier emits a report containing QID Notes by the end of the 5th business day of the subsequent overdue month. 4. The Concessionaire delivers documents relating with CP of the overdue month, including a report containing QID Note to SETOP; 5. A SETOP confirms receiving by record and makes the payment to CP; 6. The Bank releases the amount deposited by CBMM to CODEMIG by the end of the 10th business day of the month.

SOURCE: MINAS GERAIS'S PPP UNIT
**Risks and Costs of the Arrangement to the Private Partner**

- This arrangement does not impose a relevant risk to the private partner, since CODEMIG complies with its obligations. In the case of CODEMIG’s default, the private partner may incur with arbitration proceedings costs or judicial costs.

- Legal proceedings costs: it may occur that the guarantee is declared unconstitutional, because it lacks legislative authorization. In other words, the guarantee would be declared null. In this case, the Bank would be forced to release the amount deposited in the Bound Account, whatever payment of the CP, and commitments under the Agreement with the Bank on deposit and withdrawal of funds from Bound Account would have its effect ceased. For this reason this risk seems to be remote. Thus these guarantees still have a high level of security (“Best Practices”).

- CODEMIG refuses to instruct the Bank to transfer the resources. CODEMIG would be subject to pay interests on the debit. These charges could be insufficient to oblige CODEMIG to release researches. In these cases the Concessionaire could seek for judicial enforcement through an action under Article 632 of the Brazilian Civil Code.

- CODEMIG may divert the researches flow. The Concessionaire has the right of action against the Bank and CODEMIG in this case. The Concessionaire has some alternatives: lawsuit against CODEMIG and damages. This risk is not consistent with the Best Practices.

- The drive arrangement is subject to the Bank’s ability to meet its obligations under the Contract. If the Bank fails to meet its obligations under or between the intervention and liquidation, the effectiveness of the arrangement may be impaired. One believes that this risk is remote, considering that the Bank has the best credit rating in the Brazilian banking market and enjoys leadership position in the custody of assets, equivalent to the Best Practices.
Quality of the assets: The arrangement is based on obligations and assets of CODEMIG, and therefore affected by the financial situation of the company. The financial statements of the last five years, suggest that the risk of insolvency of the CODEMIG is remote, so that the assets of the company does not add risk the arrangement.

Case Study IV: Prison Complex Project

In general, the private sector will have the autonomy to make adaptations specified in the architectural design, build and operate maintenance services and assistance to the detainee.

Private partner exploitation: services for medical care of low complexity inside the prison facility; services for primary and secondary education to inmates; services for job training and vocational courses; recreational sports services; food services; psychological and legal assistance; services of domestic surveillance; management services of the work of prison. The Government remains responsible for safety activities the walls and armed security outside the unit and the supervision, control and monitoring of all activities. The remuneration of the private partner will be linked to availability of vacancy and prison performance indicators of services provided.

Table 8: Prison Complex

<table>
<thead>
<tr>
<th>State-owned</th>
<th>Minas Gerais</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value</td>
<td>R$ 2.41 billion (USD 1.6 billion).</td>
</tr>
<tr>
<td>Term</td>
<td>27 years. Agreement executed on 16/06/2009.</td>
</tr>
<tr>
<td>PPP Partners</td>
<td>Government of the State of Minas Gerais, and consortium Gestores Prisionais Associados – GPA (Associate Prison Managers), formed by the companies Construções S/A (CCI), Construtora Augusto Velloso S/A, Empresa Tejofran de Saneamento e Serviços Ltda. N.F. Motta Construções e Comércio Ltda., and Instituto Nacional de Administração Prisional Ltda – INAP.</td>
</tr>
<tr>
<td>Agreement Type</td>
<td>Administrative concession.</td>
</tr>
<tr>
<td>Allocation of Risks</td>
<td>The private partner is liable, for instance, for operational and financial risks, while the public partner answers for risks of changes in legislation and regulations influencing the agreement, sharing case fortuity and force majeure, among others.</td>
</tr>
<tr>
<td>Compensation fee paid by public partner</td>
<td>The payment of the money consideration shall comply with the application of performance and service quality indexes – the so-called COEF – coefficient of availability performance and quality measurement.</td>
</tr>
<tr>
<td>Guarantees offered by the public partner</td>
<td>The State of Minas Gerais shall guarantee the obligations set out in the draft contract, through receivables arising from loans granted by the Development Incentive Fund (FIND). The operation will be conducted by the Development Bank of Minas Gerais (BDMG) in order to ensure compliance with the obligations assumed by the State.</td>
</tr>
</tbody>
</table>
Best Practices in Public-Private Partnerships Financing in Latin America: the role of guarantees

Arrangements and guarantees provided in PPP Projects Prison Complex

Figure 7: Prison Complex Transaction

*Flowchart of the operation: 1. Concessionaire’s investments and services related to the exploitation of the Prison Complex; 2. Auditing held by Independent Verifier; 3. CP due to the Concessionaire by Secretary of Social Defence of the State of Minas Gerais (“SEDE”); 4. First-rate financial institution (“Guarantee Agent”) appointed by the Concessionaire to manage the guarantee; 5. Bank Account bounded to the guarantee’s arrangement (“Bound Account”), maintained by the Guarantor Agent; 6. Lien constituted by the Public Administration over its goods and properties in favour of the Concessionaire; 7. SEDE maintains the functions related to the receivables, as it will act as a manager of the resources of the Development Fund (“FINDES”), the debentures. This institution will also accumulate the function of management of the Fund for Universal Access to Services Telecommunications in Minas Gerais (“FUNDOMIC”); 8. Development Bank of Minas Gerais (“BDMG”) receives the parcel of the receivables. (Art. 7 of the 15.981/06 Statute - FINDES Statute); 9. Transit, through Guarantee Account, of the amounts resulting from the liquidation of the receivables, debentures and the Government Bonds in favour of the Concessionaire.

SOURCE: MINAS GERAIS’ PPP UNIT

Parties involved in the arrangement:

• State of Minas Gerais; SEDE: FINDES and FUNDOMIC manager; Concessionaire: bank; Independent Verifier; BDMG and FINDES financial agent.

Figure 8: Prison Financial Arrangement

*Flowchart of the operation of the guarantee when it is not activated: 1. Auditing held by an Independent Verifier; 2. Until the 5th business day of the overdue month the Concessionaire send invoice and the Occupation and Availability Report to Public Administration and to the Independent Verifier; 3. Public Administration confirms the payment; 4. Public partner makes the payment in 10 days; 4. The Guarantee Agent receive the revenue from the receivables, debentures and the Government Bonds and put them in a banking application; 5. The application surplus goes to the State.

SOURCE: MINAS GERAIS’ PPP UNIT
### 4.3.2. Bahia

**Case Study V: Jaguaribe System of Oceanic Disposal Project**

This is an administrative concession agreement signed in Dec/2006 for the construction and operation of Jaguaribe System of Oceanic Disposal.

The start of the construction took place in June of 2008 and was estimated to begin operations in December 2010 and payment of consideration will be given through public receivables of Bahia Water and Sanitation – EMBASA (SPC).

**Table 9: Jaguaribe Oceanic Disposal**

<table>
<thead>
<tr>
<th>Description</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>State-owned</td>
<td>Bahia.</td>
</tr>
<tr>
<td>Value</td>
<td>R$ 619 million (USD 410 million).</td>
</tr>
<tr>
<td>Term</td>
<td>18 years, from the date the agreement is published. Agreement executed on 28/10/2008.</td>
</tr>
<tr>
<td>PPP Partners</td>
<td>State of Bahia, through Empresa Baiana de Águas e Saneamento (EMBASA), and Juaguaribe Consortium, a company of the Odebrecht Group.</td>
</tr>
<tr>
<td>Allocation of Risks</td>
<td>The private partner is liable, for instance, for operational and financial risks, while the public partner answer for political and regulatory risks, sharing the risks of case fortuity and force majeure, among others.</td>
</tr>
<tr>
<td>Compensation Fee</td>
<td>R$ 619,46 million, with R$ 3.385 monthly million.</td>
</tr>
<tr>
<td>Compensation fee paid by Public Partner</td>
<td>The payment is made through assignment of receivables of EMBASA.</td>
</tr>
<tr>
<td>Guarantees offered by the public partner</td>
<td>Guarantees: arising from the provision of water supply and sanitation to residential, commercial, industrial and public, for a period equal to the contract</td>
</tr>
</tbody>
</table>

*Flowchart of the operation of the guarantee: 1. Auditing held by an Independent Verifier; 2. Until the 5th business day of the overdue month the Concessionaire send invoice and the Occupation and Availability Report to Public Administration and to the Independent Verifier; 3. Public Administration confirms the payment; 4. Public partner default; 5. Concessionaire sends to Guarantee Agent the communication of the public partner default accompanied by the invoice and the Independent Verifier’s report; 6. The Guarantee Agent send the communication to the public partner, which can comply with its obligations within 10 days; 7. In the case of default, the Guarantee Agent, according to the Concessionaire instructions, promotes the liquidation and the rescue of the Government Bonds, debentures and receivables and transfer to the Concessionaire until the credit satisfaction.
## Guarantee Summary

**Table 10: Guarantees Comparative Analysis in Brazil (Federal - Sao Paulo - Minas Gerais)**

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Federal Model</th>
<th>Sao Paulo</th>
<th>Minas I Model</th>
<th>Minas II Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guarantor entity</td>
<td>Guarantee Fund “FGP”</td>
<td>Paulista Partnership Company “CPP”</td>
<td>Minas Gerais Economic Development Company (CODEMIG)</td>
<td>State of Minas Gerais through Direct and Indirect (BDMG) bodies of the Public Administration.</td>
</tr>
<tr>
<td>Guarantor entity legal regime</td>
<td>Private Law</td>
<td>Private Law</td>
<td>Private Law</td>
<td>Public Law</td>
</tr>
<tr>
<td>Type of guarantee</td>
<td>Bond</td>
<td>Bond</td>
<td>Bond bound to receivables</td>
<td>Lien</td>
</tr>
<tr>
<td>Guarantee management</td>
<td>Bank of Brazil</td>
<td>CPP</td>
<td>Independent financial institution</td>
<td>Independent financial institution</td>
</tr>
<tr>
<td>Types of assets available for guarantee</td>
<td>Public bonds, money</td>
<td>Public Bonds, money</td>
<td>Royalties</td>
<td>Government bonds, receivables and debentures.</td>
</tr>
</tbody>
</table>

**SOURCE:** MINAS GERAIS’S PPP UNIT

---

8 All the information contained in this summary were taken from the report on Guarantee Arrangements – MG-050, Prison Complex and UAI, produced by Secretary for Economic Development of the State of Minas Gerais through the PPP Unity.
V. GUARANTEES GRANTED BY THE PUBLIC SECTOR: NON FINANCIAL OR CONTRACTUAL EXPLICIT GUARANTEES (CEG)

The financial guarantees available in Mexico and Brazil in order to generate credit improvements in infrastructure developed through PPP mechanisms, have been described and analyzed in the sections above. In the case of Mexico, the guarantees are offered by BANOBRAS and FONADIN; and in Brazil, the FGP has had a limited activity when being compared with the high needs that both countries have to finance infrastructure projects.

Other schemes that have been created by governments in order to generate the necessary support that PPP projects require for them to be financed by the banking and capital markets are studied in this section.

The financial structure of both PPP schemes and concessions has established a series of mechanisms in order to allocate the risks that underlie in the business in a balanced fashion, taking into consideration that it has been necessary to create instruments from the public sector which would allow to reduce the private sector’s non-diversifiable risks, in order to allow the bankability of concession/PPP projects. This family of mechanisms will be called herein indistintatly Non-Financial or Contractual Explicit Guarantees (CEG).

Among the market’s non-diversifiable risks, the governments have designed financial mechanisms primarily to meet demand risks, among which the Minimum Revenues Guarantees (MRG in Chile, Colombia, Brasil and MARG in Peru) are included, the Least Present Value of Revenues (LPVR) and the Revenues Distribution Mechanisms. Exchange rate risks mitigation mechanisms have also been generated through the creation of exchange rate hedging instruments.

5.1. The Minimum Revenue Guarantee

In order to cover the different types of revenue risks, and to facilitate private financing, in general, governments establish a public guarantee to cover the concessionaire’s problems of decline in revenues for reasons exogenous to the concession’s progress, and which are unlikely to diversify into the private hedging instruments market. This guarantee is triggered when the revenues collected by the concessionaire do not reach a certain level that was predetermined by the government in the contract.

Along this line, it is worth to mention conceptually that the revenues risk may be divided into four groups: 1. Demand risk, in which, the number of users of the service may decrease due to a lower economic activity (GDP) 2. Competition risk, i.e. the possibility for the existence of...
a new infrastructure. Invoicing and collection risk, they are given due to the population’s rejection towards paying tariffs, and 4. Risk of changes in the tariff or pricing of the service.

A long-term financing with revenues risk and, consequently, demand or traffic risk is difficult to obtain in the capitals market, especially when there is no experience in the country regarding how to manage such risks at a public sector level. The debt service coverage ratios for projects without revenues guarantees ascends to about 1.7X - 2.0x, while when there is a minimum guarantee, the demands of the debt service coverage ratios (DSCR) range from 1.1 to 1.20x.

The possibility for the concession’s effective revenues to fall from one period to another makes any debt instrument decrease in rating and in its credit quality, which increases the project’s financial cost, and in most cases it is unfeasible to implement it. In order to verify the aforementioned, the concession’s future traffic estimates, conducted by specialized companies, play a central role. However, the empirical evidence on this type of predictions is varied and not very encouraging in most cases.

In this sense, Standard and Poor’s (2004) conducted a study on 87 toll roads, concluding that in 63 of the cases, the future traffic estimates over-valued the real traffic. Based on the estimates presented, the average score of 0.76, which means that, on average, there is a traffic prediction level equivalent to 76%.

In the scenario aforementioned, hedging through a public guarantee when facing falling revenues is a powerful tool applied to encouraging the participation of the private sector in infrastructure projects, especially in processes which are starting-up and have no (Start-Up) history, and which are essentially of a limited resource.

Countries that have used this type of guarantee extensively have been Chile, Colombia and Peru. In the case of Brazil, this kind of scheme has not been used for the road sector because an argument against using it is not to generate white elephants (Veron and Cellier, 2010). However, the 4th line of the Metro of Sao Paulo is the first example of a PPP Implementation and the Mechanism used to mitigate the Risk was based on minimum and maximum demand levels.

A guarantee may be designed indistinctly either as a percentage of the present value of revenues, or as a percentage on the present value of investment plus the costs.
The MRG can be estimated as a $\alpha$ percentage of the investment plus the total operation and maintenance costs. MRG should be prorated over the concession's total term expected, considering a growth rate in the order of the revenues growth rate expected. For example, if $\alpha=0.7$, and the term is of 20 years, the investment is 100 and present value of the operation and maintenance value during the 20 years is 150, then they should be prorated in 20 years: $0.7 \times 100 + 150 = 220$. If the revenues growth rate is about 6%, then the estimation is followed directly that the MRG = 5.64.

Another mechanism is designing a Minimum Revenue Guarantee with a DSCR approach. As stated before, for the financiers it is important to define a Debt Service Coverage Ratio (DSCR), which is the margin that must exist in each period between the source of payment for the net debt costs and financial obligations (interest plus amortization). If the primary payment source for the debt each year is the minimum revenue guarantee, then if DSCR is conditioned to equal a minimum value (e.g. 1.2x), it is possible to discern with simple algebra the MRG that fulfills this condition.

There are several guarantee profiles that may meet the condition aforementioned, such as constant coupons, increasing rate, equal amortizations, first priority interests, among others. However, the government’s interest must be for the guarantees delivered to be activated as little as possible, thus establishing a parallel profile to the project expected revenues.

**Figure 10: Minimum Revenue Guarantee when is activated**

![Graph showing Minimum Revenue Guarantee](source: Sergio Hinojosa)
The shaded area shows the case in which the guarantees are activated. The revenues have fallen below the MRG (line blue); and therefore, it the government must pay the difference (shaded area).

5.2. Revenue Sharing

Under the same principle used for the conceptualization of the minimum revenues guarantee, governments have established a revenue-sharing range in case they exceed a certain level. In this sense, if the concession’s ($Y_t$) revenues are greater than the predefined ($BSY_t$) amount, the concessionaire must pay the government a $\beta$ value as revenue-sharing. The value of $\beta$ is determined at the time of the tender process. Along this line, the following relationship is met: $Y_t > BSY_t$. The amount to be paid by the concessionary partnership as revenue sharing for the government is given by the following expression: $PCY_t = \beta \times (Y_t - BSY_t)$. Where $\beta\%$ is the percentage of revenue sharing. In other words, the government is buying a call option on the income, which is represented by this expression: $Max(Y_t - BSY_t, 0)$.

5.3. The Least Present Value of Revenues Mechanism

The main feature of the mechanism is that the concession period is variable and not fixed. Therefore, the concession’s completion date is not necessary known, either by the regulator and/or by the bidder.

The Least Present Value of Revenues tender system (LPVR) operates as follows:

- The concession granting authority performs a tender for the construction, operation and maintenance of the concession project, allocating the project to whoever is willing to operate at the lowest total of future revenues discounted from the business under concession, where the discount rate has been determined in the RFP (Request for Proposal - RFP).

- The concession granting authority periodically monitors the operator’s revenues and updates them to the discount rate defined in the contract. The concession is terminated in the moment in which the present value of the income obtained by the operator is equaled to the amount required in the tender.
• The mechanism assumes that there is no defined term for the termination of the concession. Indeed, the bidder will consider a probable termination term for his franchise; nevertheless, if the effective demand is greater than the expected demand, then the concession will finish before the date established. Alternatively, if the effective demand is lower than the expected demand, then the concession will finish after the date established in the beginning. Sometimes, whether it is because of legal requirements or because of political economy considerations, the government determines a concession maximum term, where even though the up-to-date value of the revenues of the concession are lower than those required by the investor; the concession is in any case terminated.

The central idea of the mechanism is simple. The present value of future revenues estimated by the bidder is the perfect reflection of the costs that must be covered to construct and to operate the concession; therefore, that agent who is willing to offer the government the lowest cost for conducting the project, reflected in the lowest LPVR, will be allocated the concession.

5.4. Revenue Distribution Mechanism (RDM)

It is the result of a series of events related to the estimates originally made by the bidders and insurance companies, and after the effects of 9/11, the government of Chile developed a demand hedging mechanism that was presented as an option for companies operating concession contracts in 2003.

The mechanism turns fixed-term concessions already allocated into variable term concessions by fixing a revenues present value, whose fulfillment will determine the concession’s completion (equivalent to a concession through LPVR). The value is obtained by updating an income projection with a certain growth (Total Guaranteed Revenues).

5.5. Exchange Rate Hedging Mechanism (ER)

Concession contracts have two approaches in order to cover the exchange rate risks. The first one is an explicit guarantee provided by the government, as in the case of Chile and Colombia; and the second one is a guarantee that is based on the tariff indexation mechanism, as in the case of Peru. When a percentage of the tariff is indexed due to
variations in the exchange rate, then the concessionaire’s revenues are covered in dollar-local currency variation.

In the case of Colombia, between 1997 and 1999, during the so-called concessions’ second generation, an exchange rate hedging instrument was granted in order to cover the project’s revenues losses caused by a real devaluation of the peso against the dollar. The aforementioned is to be applied when the debt service in foreign currency taken by the concessionaire may be affected, and it is granted on the debt percentage in dollars, according to the financial closure.

In the case of Chile, an exchange rate guarantee was designed between 1998 and 1999. Such guarantee is an option that has been delivered to some concessionaires whose financing is in foreign currency. When the exchange rate (ER) falls below a certain value, the government is to participate with the difference, so that the concessionaire, who receives revenues in pesos, may meet the debt service in foreign currency. On the other hand, if the exchange rate is above a certain level, the concessionaire is to pay the State for the additional profits earned (lower debt service in pesos).

The exchange rate guarantees constitute a contingent asset due to the current exchange rate appreciation. It is worth to mention that this guarantee may change from an asset into a liability in such a volatile fashion as the exchange rate does.

Under this agreement, the government is to pay the concessionary partnership if the local currency is depreciated by more than 10%, taking a previously defined value for the dollar as reference, but the concessionaire is to pay the government if the local currency is appreciated by more than 10 %. There is no payment if the exchange rate fluctuates between the 10% ranges.

The exchange rate guarantee gives the concessionaire an option to call in dollars with an exercise price 10% higher than the exchange rate prevailing at the time of the financial closure. This means that the investor receives a compensation payment if the value of the dollar expressed in pesos (CH$) is appreciated by more than 10%. The government is to receive a put option in dollars from the concessionaire, with an exercise price 10% lower than the exchange rate at the time of the financial closure. This implies that the government is to receive a payment if the value of the dollar expressed in pesos is depreciated by more than 10%.
The exchange rate guarantees option, technically called collar option, is a combination of floor and cap strategies. The hedge is shown graphically in the following figure:

Figure 11: Exchange Rate (ER)

In recent years, the national currency has appreciated sharply against the dollar. As such, the Concessionary partnership for Autopista del Maipo (Route 5 Stretch Santiago-Talca and the South Access to Santiago) abandoned such mechanism in 2004, since when the terms of the guarantee were agreed, the exchange rate was 700 CH$/USD and at present it fell to 500 CH$$/USD. The concessions for Route 5 “Los Vilos-La Serena” Stretch and “Río Bueno-Puerto Montt” Stretch continued with the mechanism until 2006, year in which they also resigned.

In the case of Peru, a tariff adjustment mechanism, which was important to cover the exchange risk partially, was established. In this sense, all the tolls are readjusted ordinarily in the following year of the approval of the completion of the investments. Tarrifs are

---

9 Models derived from Black and Scholes’ formula (1973) are used to value European currency options in financial literature. The most commonly used model is the one proposed by Garman and Kohlhagen (1983).
adjusted in an ALFA percentage following exchange rate variation (Nuevos soles/USD) and (1-ALFA) taking into consideration CPI domestic variation relative to external inflation. This ordinary readjustment is to be conducted every (12) months.

Other Hedging Mechanisms

In Chile, environmental and service change over-cost risk insurances have been incorporated in recent concession, including the ones for Route 160, Route 66, and Route 5 Stretch: Puerto Montt – Pargua. These mechanisms were designed with the purpose of providing coverage for environmental and service change risks, when their value increases due to causes exogenous to the concessionaire; mainly because, their final determination depends on third parties.

On the other hand, in Peru, within the identification and distribution of risks policy framework for the IIRSA (North and South) concessions, the possibility for the concession granting authority to share the over-cost risk for regular maintenance with the concessionaire was identified taking into consideration the fulfillment of the service levels for the road. The aforementioned was the result of the high volatility and uncertainty that there is in order to predict the costs for maintaining such roads. Along this line, a reference routine maintenance level is to be defined in the contracts, where the concessionaire must propose a maintenance plan for each year according to the conditions of the road to the concession granting authority. The government may authorize the expenditure plan based on the fulfillment of the service levels. If the estimates of such expenditures, in substance, are higher than the reference expenditures, then the government is committed to pay the difference from the budget for the following year. Such hedging instrument is called Annual Payment for Periodic Maintenance (PAMAP in Spanish); and it is the monetary compensation made by the concession granting authority to the concessionaire for performing regular maintenance in the concession.

5.6. Financial- Economic Equilibrium of contracts

Most of the jurisdictions in LAC have established a written mechanism of revision of the economic and financial terms of the PPP contracts once some specific conditions have been complied.
The conditions above normally are referred to change in the regulation, financial changes and/or factual changes which seriously affect the long term economic life of the project. However, this regulation has been the key to provide confidence to transactions in countries such as Colombia and Brazil. For example, in a series of interviews made in Brazil, when all the interviewees were presented this question: would you participate in or finance Concession or PPP Projects if this regulation did not exist? All of them answered – No. A concessionary stated that the cost of capital was estimated taking into account the financial economic equilibrium clause (FEC), and that in different circumstances, it would be difficult to have their participation due to the high cost of capital, which would mean incurring in a contract without FEC clause. In Colombia, also in interviews with Investment Banks and concessionaires, they stated that FEC was essential for project financing. This FEC item is very important and it is the second main cause for the renegotiation of contracts in Colombia. In the experience of Peru, the FEC clause is more precise, but it is less demanded by the market as a condition necessary for the participation of the private sector in infrastructure through concession mechanisms. For the case of Chile, FEC is “replaced” mainly through minimum revenues mechanisms and other explicit guarantees.

The following table shows the importance degree for FEC’s regulation in the countries being analyzed.

Table 11: Financial-Economic Equilibrium Degree of Importance

<table>
<thead>
<tr>
<th>Country</th>
<th>FEC’s degree importance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brasil</td>
<td>Very High</td>
</tr>
<tr>
<td>Colombia</td>
<td>High</td>
</tr>
<tr>
<td>Peru</td>
<td>Medium</td>
</tr>
<tr>
<td>Chile</td>
<td>Very low/inexistent</td>
</tr>
</tbody>
</table>

Source: Sergio Hinojosa

According the table, the present section describes briefly the current regulation in four countries: Brazil, Colombia Peru and Chile.

• **Brazil;** The Concessions and PPP laws entitle private partners to the maintenance of the contract financial economic equilibrium. This economic equilibrium is generally preserved by contractual revisions and renegotiations, which take place in a planned...
manner every 2 to 5 years, subject to sector peculiarities. There is also the possibility of an extraordinary contract revision should unforeseen events that deeply change the original equilibrium of the contract arise.

To deal with inflation, contracts also establish annual tariff adjustments using sector-specific formulae. Most recently, the Ministry of Finance has issued a recommendation to all Federal Government agencies to use the official general consumer price index (CPI) in tariff adjustments.

It is worthwhile mentioning that the Brazilian courts have been instrumental to guaranteeing the rights of private concessionaires set by law and contracts. For instance, in one member States that went through a process of highway privatization, the new Administration was against privatization and tried to hinder the process by reducing tariffs or impeding tolling. The matter went to the Judiciary, which first issued an injunction that suspended all investment obligations of the private partner until its final decision. The final decision was in favor of the private partner and established the right to a proportional reduction of the private partners’ investment obligations to match the tariffs price defined by the State Administration. Another important precedent took place recently in the Telecommunications sector. In 2003, the Federal Government attempted to change the contractual index to adjust the tariffs charged by wire line carriers. The carriers took the matter to the regulatory agency (ANATEL), which upheld the index agreed upon by the parties. Afterwards, the matter went to the Courts, which confirmed the agency’s decision. These Judicial rulings created important precedents regarding the prevalence of the economic equilibrium embedded in concession contracts.

At State Level, The financial economic equilibrium principle appears in all the Statutes that involves a contract between a public and a private partner and is deeply attached to the risks allocation, which, in PPP contracts are shared by public and private partners, as in its Art. 4, VI the Statute provides that the contract guidelines shall respect the objective risk sharing among the parties.

In the Bid Statute, Art. 65 provide the possibility of the alteration in the contract, when justified, in order to maintain the economic-financial balance of the contract. The Conventional Concession Law also has addressed this theme, providing that the contract provisions will be maintained if the economic-financial balance is respected.
In the PPP Statute, Art. 5, III states that all the risks shall be shared among the parties, including those that refer to acts of God, force majeure, acts of State and unforeseeable events. These risks, in the PPP contracts, can justify the necessity of the application of the economic-financial balance.

As Ribeiro and Prado (2007) notes, there is a crucial difference between the terms risk matrix, a static tool to evaluate the risk allocation (it determines who is responsible for preventing or remedying burdens and benefits of occurrences that affect the contract), and the re-composition of the economic-financial balance of the contract, which has the role of updating the risk matrix along the time. Because PPP contracts are long term agreement (35 years maximum) it is highly foreseeable that the circumstances which affect the economic-financial balance of the contract will occur more than once.

The PPP agreement comprises, for instance, the price review, provided that the economic-financial unbalance of the contract is observed for unpredictable and unavoidable factors, not caused by the party the review interests to.

- **Perú**; The Peruvian framework contemplates a compensation that can be invoked for either the concessionary or the government in the case the concession is affected explicit and exclusively due to changes in the Laws and regulations applicable only when any of the aforementioned has exclusive related to economic and finance aspects linked to the yields and costs of the investment and exploitation.

- **Chile**; the financial economic equilibrium of the contract is regulated in the Act for the Concession of Public Works. The article 19 of the aforementioned Act declares that the concessionary should request compensation when facing a supervening act from a legal public authority only when the following requirements are met jointly: the act occurs after the concession bid is adjudicated; it couldn’t be predicted at the time of the adjudication; it doesn’t constitute a legal or administrative Act passed with general effects, that exceeds the ambit of the industry which the concession is part of and significantly alters the contract’s economic regimen.

- **Colombia**; The concessionary assumes all the risks and therefore its value is included in the contract. The National Institute of Concessions (INCO) assumes just those risks specially contemplated in the contract.
Starting from the execution date of the contract the national institute of concessions assumes the risks derived from the following apart from those stipulated in the contract, its annexes and appendixes:

The unfavourable effects derived from the emerging damage of the concessionary, due to the events that constitute Exemption of Responsibility, according to the contract, if and only if it is due to works that at the moment of the events are directly subject to the Sector. There will not be any recognition of business income in any event.

The favourable or unfavourable effects derived from a Government Authority decision or a Republic of Colombia Judge decision that prevent collection of the toll roads in behalf of the Concessionary. The Procedure for the reestablishment of financial economic equilibrium of the contract is followed by INCO and it will determine in the final decision the way to re-establish it, having the prerogative to implement one of the following alternatives: a) Increase or decrease the tariff to be collected b) Make payments to the petitioner, as long as it has the pertinent entry on the budget or with authorization to commit future payments c) Modify the contract obligations of the petitioner in proportion to the amount that is about to be recognized d) Increase the term of the concession e) Increase the present value of future incomes (PVFI). In general terms the criteria and principles for the reestablishment is that any assignation of risks contemplated in the contract can be modified.

The revision of the economic and financial terms of PPP contracts have been a trend of most of jurisdictions and contracts in LAC transit from a rigid structure to more flexibility and rational schedules of periodical revision of the economic terms based on specific circumstances.

The following table shows a brief comparison between the four regimes analyzed above:
Table 12: FEC’s Regulation

<table>
<thead>
<tr>
<th>Explicit acknowledgement of the financial economic equilibrium of the contract</th>
<th>Brazil</th>
<th>Colombia</th>
<th>Peru</th>
<th>Chile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recognized either at Federal and State Level</td>
<td>Recognized at contractual level</td>
<td>Recognized at contractual level</td>
<td>Not explicitly recognized</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Economic Review</th>
<th>Trigger Events</th>
<th>Brazil</th>
<th>Colombia</th>
<th>Peru</th>
<th>Chile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change in the law and or judicial decision affecting the entitlement of the private contractor of collecting tolls and fees</td>
<td>Change in the law affecting the entitlement of the private contractor of collecting tolls and fees</td>
<td>Only for specific laws or administrative resolutions (general applicable rules do not entitled to request a review)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type of Compensation</th>
<th>Brazil</th>
<th>Colombia</th>
<th>Peru</th>
<th>Chile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any type of economic compensation, normally subsidies (preferable)</td>
<td>(i) Increase or decrease the tariff. (ii) Subsidies (iii) Contractual amendments. (iv) Increase the term of the concession (v) Increase the VPIT (present value of future concession income)</td>
<td>(i) Increase or decrease the tariff. (ii) Subsidies (iii) Contractual amendments. (iv) Increase the term of the concession (v) Increase the PVFI (present value of future incomes)</td>
<td>(i) Increase or decrease the tariff. (ii) Subsidies (iii) Contractual amendments. (iv) Increase the term of the concession (v) Increase the PVFI</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Entity responsible to conduct the review</th>
<th>Brazil</th>
<th>Colombia</th>
<th>Peru</th>
<th>Chile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vary from state to state but always is submitted to a third independent party</td>
<td>INCO</td>
<td>Ministry of Transportation and Communications (MTC)</td>
<td>The Ministry of Public Works</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Judicial Review of the Administrative Decision</th>
<th>Brazil</th>
<th>Colombia</th>
<th>Peru</th>
<th>Chile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subject to judicial review as per any other administrative resolution</td>
<td>Only if affects economic interests</td>
<td>Only if affects economic interests</td>
<td>Private sector always is entitled to promote a judicial review</td>
<td></td>
</tr>
</tbody>
</table>

Source: Sergio Hinojosa

In short, the non financial guarantees that are the most commonly used have been the following:
Table 13: Main Non-Financial Guarantees

<table>
<thead>
<tr>
<th>Non financial guarantee</th>
<th>Main risk covering</th>
<th>Countries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum Revenue Guarantee</td>
<td>Demand Risk (Liquidity)</td>
<td>Chile, Perú, Colombia, Brasil</td>
</tr>
<tr>
<td>Tariff Adjustment</td>
<td>Inflation Risk</td>
<td>Chile, Perú, Colombia, Brasil, México</td>
</tr>
<tr>
<td>Financial Economic Equilibrium</td>
<td>Regulation affecting the contract</td>
<td>Brasil, Colombia, Perú</td>
</tr>
<tr>
<td>Foreign Exchange Risk</td>
<td>Foreign Exchange Changes</td>
<td>Chile, Colombia, Perú</td>
</tr>
<tr>
<td>Least Present Value of Revenues</td>
<td>Demand Risk (Hedge)</td>
<td>Chile and Colombia</td>
</tr>
<tr>
<td>Periodic Maintenance</td>
<td>Over cost in maintenance</td>
<td>Peru</td>
</tr>
</tbody>
</table>

Source: Sérgio Hinojosa

In what follow, we present case studies for the explicit contractual guarantees typologies

5.7. Case Studies

Case Study VI: Regulation of the Minimum Annual Revenue Guaranteed in the Concession Contract for the Port of Paita in Peru

On March 31, 2009, the Investment Promotion Agency (Proinversion) granted the concession for the port of Paita in the department of Piura to the Euroandinos Port Terminals Partnership (EPT), made up of companies such as Tertir Terminais (Portugal) and Cosmos and Translei (Peru). The winning partnership offered to invest $ 128 million USD in the first and second stages of the project; and an additional investment of over $ 100 million USD. In addition, they submitted a tariff proposal for the integrated cost of the services in $ 120.00 USD for 20 foot containers and $ 151.43 USD for 40 foot containers. According to the terms of the public tender, the partnership was committed to building a new container dock, a twelve acre container yard and a dredging of less than 13 meters in depth during the First Stage of the concession. Moreover, they should have acquired a dock gantry crane and two yard gantry cranes.

The contract regulation for a state guarantee aimed at facilitating the bankability of the contract, which was conducted by Proinversion, is shown next. The aforementioned according to what is stated in the Clause called “Economic Regime: Minimum Annual Revenues Guaranteed (MARG) for the Peruvian State”:

Minimum Annual Revenues Guaranteed (MAGR)

As an investment guarantee for the works corresponding to the 1st and 2nd Stages, the concession granting authority guarantees the concessionaire a level of MARG, during the lesser term between: i) Fifteen (15) years after the calendar year following the initiation of the operation of the 1st Stage or, ii) The term corresponding to the concessionaire’s debt repayment, according to what is stated in the following paragraphs.
Also, for the case of the investments corresponding to the works of the 3rd Stage, the concession granting authority guarantees the concessionaire a level of guaranteed annual minimum revenues (MARG). This guarantee will not apply in cases in which the total annual revenues that were determined by the regulating organization are lower than the MARG as a result of the following:

- When the concessionaire is not rendering the services according to the service levels and productivity.
- Acts of force majeure, suspension or lapsing of the concession.
- A reduction in revenues as a result of a tariff revision process.
- A reduction in revenues, in accordance with the MARG recognition procedure, as a result of the concessionaire’s implementation of trade policies.

The concession granting authority and the National Port Authority (NPA) will seek the rational development of port infrastructure in order to ensure the non-involvement of the projects contained in the National Port Development Plan for port terminals.

**MARG’s Amount**

The MARG for the 1st and 2nd Stages ascended to the amounts shown in the following table:

**Table 14: Minimum Annual Revenue Guarantee 1 and 2 Stages**

<table>
<thead>
<tr>
<th>Year</th>
<th>Amount (Thousands of USD)</th>
<th>Year</th>
<th>Amount (Thousands of USD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>T</td>
<td>16,131</td>
<td>T+8</td>
<td>23,037</td>
</tr>
<tr>
<td>T+1</td>
<td>17,099</td>
<td>T+9</td>
<td>23,777</td>
</tr>
<tr>
<td>T+2</td>
<td>18,068</td>
<td>T+10</td>
<td>24,503</td>
</tr>
<tr>
<td>T+3</td>
<td>19,038</td>
<td>T+11</td>
<td>25,212</td>
</tr>
<tr>
<td>T+4</td>
<td>19,787</td>
<td>T+12</td>
<td>25,905</td>
</tr>
<tr>
<td>T+5</td>
<td>20,734</td>
<td>T+13</td>
<td>26,581</td>
</tr>
<tr>
<td>T+6</td>
<td>21,515</td>
<td>T+14</td>
<td>27,239</td>
</tr>
<tr>
<td>T+7</td>
<td>22,283</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

T: Calendar Year following the initiation of the operations of the 1st Stage

**Source:** Request for Proposal Paita Port

The Paita Port Concession is a good example that could be used to identify and describe the character of “best practice” in no financial guarantees:

- **Innovative:** The minimum revenues guaranteed have been structured separately for the different stages of the project, and they allow to guarantee a portion of the concessionaire’s debt.
• **Effective with high impact:** The transaction has allowed the government of Peru to obtain revenues derived from the concession for a total of more than USD 100 million.

• **Can be replicated:** The ports program (both for marine ports and for river ports) may become benefitted by these kinds of guarantees which provide financiers with security.

• **Pertinent/suitable for the project:** MARG reduce the cost of debt and port tariffs.

• **Efficient:** The minimum revenues guarantee constitutes only a contingent liability for the government and is only triggered in case the commercial revenues decrease to a level lower than that of the guarantee offered by the government. The valuation of the guarantee to be used for the triggering probability analysis was very low compared to the concession’s initial investment.

---

**Case Study VII: The 4th Line of the Metro of Sao Paulo**

The Line 4 of the São Paulo project, which is a sponsored concession, was the first PPP project in Brazil, financed by foreign investments following the project finance model. A contract was signed in November 2006 with a consortium led by CRR- Companhia de Concessoes Rodoviarias, a toll road company in Brazil and one of the major private toll road concession groups in Latin America (in addition, Mitsui (Japan) and Banif Group (Portugal)). Its structure is different as it involves various legal instruments, which resulted in complex international negotiations and contracts. Brazilian law rules the concession and a part of the guarantee system. Loan contract with Inter-American Development Bank are ruled by the law of the State of New York, and some other aspects are ruled by English law.10

The whole project is based in the concession granted by the State of São Paulo, for a period of 30 years for maintenance and operation of a 12.8 km stretch of the Yellow Line subway, between Luz and Taboão. As it is a sponsored concession (Act 11.079/04) which means that there will be two ways of compensation to the private partner. The users will pay a fee when using the subway. In addition to this fee, there will be payments from the public partner.

**Table 15: Linea 4 – Yellow – SP Subway**

<table>
<thead>
<tr>
<th>State-owned</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>São Paulo</td>
<td>Total of R$ 2.68 billion (US1.608 billion), being R$ 1.96 billion (US 1.3 billion) from the public partner (civil works) and R$ 720 million (US 475,2 million) from the private partner (rolling stock and system operation).</td>
</tr>
</tbody>
</table>

---

10 Valor Econômico. O financiamento das PPPs e os projetos de Infraestrutura. Available at: http://www.kincaid.com.br/clipping/74/O-fincanciamento-das.html?PHPSESSID=42611591b502333c49d8b0dffe415892
This is the first example of a demand guarantee in Brazil. The mechanism used to mitigate demand risk is based on minimum and maximum levels of demand. There is a range of demand without protection (up to ±10% of the projected demand). Then there will be two bands of protection (the first between ±10% and ±20% of the projected demand and the second after ±20% of the projected demand, limited to ±40% of the projected demand). The are two lower levels or floors and two upper levels or ceilings for the traffic involving payments from the government to the concessionaire of from the concessionaire to the government (Blank, Baidya and Dias, 2008). The mechanism can be described as following. Let \(D_i\) be the real demand in period \(i\); \(D_i^*\) be the projected demand in period \(i\) and \(p\) the tariff for the user. Then, If the real demand is between 90% and 110% of the projected demand there will be neither subsidy nor taxation. If the real demand is between 80% and 90% of the projected demand, the revenue will be adjusted by the following formula:

\[ R = (0.6 \times (0.9 \times D_i^* - D_i)) \times p \]
In this range, the government gives a protection of 60%. The revenue will be complemented by 60% of what lacks for 90% of the projected demand. If the real demand is below 80% of the projected demand, the revenue will be adjusted by the following formula:

\[ R = (0.06 \times D_i^* + 0.9 \times (0.8 \times D_i^* - D_i)) \times p \]

In this range, the government gives a protection of 90%. The revenue will be complemented by 90% of what lacks for 80% of the projected demand considering the previous level.

If the real demand is between 110% and 120% of the projected demand, the revenue will be adjusted by the following formula:

\[ R = (-0.6 \times (D_i - 1.1 \times D_i^*)) \times p \]

In this range, the government gives a protection of 60% of what exceeds 110% of the projected demand. The revenue will be complemented by 60% of what lacks for 90% of the projected demand. If the real demand is above 120% of the projected demand, the revenue will be adjusted by the following formula:

\[ R = (-0.6 \times (D_i + 0.9 \times (D_i - 1.2 \times D_i^*)) ) \times p \]

In this range, the concessionaire pays the government 60% of what exceeds 120% of the projected demand, considering the previous level.

Considering hypothetical demand, the situation can be represented as:

Figure 12: Demand Risk Mitigation Bands

The transaction is a good example to identify and describe the character of “best practice” in the non-financial guarantees area:

- **Innovative:** first example of a demand guarantee in Brazil. The mechanism used to mitigate demand risk is based on minimum and maximum levels of demand. There is a range of demand without protection (up to ±10% of the projected demand). LATAM Deal of the Year: Project Finance, PFI, LatinFinance.
• Effective with high impact: The transaction has allowed to finance more than USD$ 700 million.

• Can be replicated: In the road sector traffic risks have traditionally been entirely transferred to the concessionaire and the public sector does not provide public guarantees for these kinds of risks. With the experience showed in this case study, it is possible to assume that as the traffic risks are narrowed down and the contingent liabilities are valued, the use of non financial guarantees as minumum revenues may be adopted by the road sector, and may allow long-term financing through capital markets and not only through development banking institutions and multilateral organizations.

• Pertinent/suitable for the project: State obligations backed by a “Guarantee Fund” established for PPPs. The State assumes infrastructure risk including penalties for delay. The procurement, operation and financial risks assumed by the private sector and revenue and forex risks shared between the State and the Concessionaire.

• Efficient: The financial closure, structured by the Inter-American Development Bank and a series of banks that acted as arrangers (Santander, BBVA, SMBC, KfW, BES), occurred less than a month after the Lehman Brothers’ financial crisis of 2008 (September).

Case Study VIII: Concession for the El Dorado airport second runway

Colombia is among the pioneers in introducing private participation in the airport sector. In addition, El Dorado is a unique case among airport concessions at an international level, since there have been few experiences in which only the building of a runway has been granted.

The contract is for the construction of the second runway of the El Dorado Airport and its complimentary works, including provision, installation, equipment testing, and maintenance of the second runway, “the existing runway” and additional works.

The length of the contract is of 20 years, which may be extended as a result of the incidence of an event of force majeure. The Financing and Operation Stages would have a maximum length of 35 months. If the financing and construction were conducted in less than 35 months, this would not reduce the time established for the concession.

The Special Civil Aeronautics Administrative Unit (AEROCIVIL), which acts as the concession granting authority, guarantees the concessionaire a minimum flow of revenues. Along this line, traffic guarantees (transactions) were granted for each kind of aircraft during the 20 years of the concession, which multiplied by the tariffs proposed by the concessionaire, would result in the guaranteed minimum revenues. In addition, a revenues limit of 25% above the guaranteed minimum income was considered in the initial version of the RFP, from which the unit aforementioned would perceive its revenues.

The concession stated the creation of a fiduciary commission by Aerocivil with its own equity, in an amount not lower than 30% of the guaranteed minimum revenues corresponding to every year, as a guarantee for the timely disbursement of resources. It was aimed at keeping the availability of a contingent fund with a minimum level of resources during the maintenance stage. Such fund would guarantee the concessionaire the payment of the minimum revenues and would cover such party in case of variations in the revenues originating from tariff variations or regulating variations, among others.

11 This section was adapted from the Works of Alonso et al. (2001) Fedesarrollo and BRC Investor Services S.A.
If the effective revenues for a semester were to fall below the guaranteed semi-annual revenues, Aerocivil would have to pay the concessionaire the difference and would request the fiduciary commission to transfer the difference. The concessionaire’s revenues would be covered in dollars for international operations or in pesos for domestic operations.

The tender was opened in July 1994 and there were proposals from six bidders, consisting of more than 20 international companies and a fewer number of national firms. A tariff readjustment level, which ranged from 85% to 340% of the present rate for the runway and the minimum revenues at present value ranged from $47 to $174 million USD, was presented in the different proposals.

The concession for the El Dorado Airport was granted to the CODAD S.A. Development Company on May 15th, 1995. Such Company is made up of firms such as Ogden Corporation (USA), Dragados y Construcciones (Spain) and Conconcreto (Colombia) and two private shareholders.

The winning bid in this tender proposed a tariff increase of 85% for the use of the runway (applicable to both runways). As reference, for MD-80 aircrafts, the tariffs for rights of runway in El Dorado are higher in 38% and in 33% over the Latin-American and American tariffs; for 747-400 aircrafts, they are higher in 31% and in 17% respectively; and for A-310-300 aircrafts they are higher in 13% and in 6%.

The guaranteed minimum revenues are obtained by multiplying the tariff given by the guaranteed traffic, as shown in the following table:

**Table 16: Guaranteed Minimum**

<table>
<thead>
<tr>
<th>Year</th>
<th>Minimum Revenues Guaranteed USD</th>
<th>Year</th>
<th>Minimum Revenues Guaranteed USD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1998</td>
<td>8,967,785</td>
<td>2009</td>
<td>26,371,356</td>
</tr>
<tr>
<td>1999</td>
<td>18,289,664</td>
<td>2010</td>
<td>27,385,907</td>
</tr>
<tr>
<td>2000</td>
<td>18,931,164</td>
<td>2011</td>
<td>28,439,512</td>
</tr>
<tr>
<td>2001</td>
<td>19,622,322</td>
<td>2012</td>
<td>29,533,417</td>
</tr>
<tr>
<td>2002</td>
<td>20,337,676</td>
<td>2013</td>
<td>30,670,412</td>
</tr>
<tr>
<td>2003</td>
<td>21,079,611</td>
<td>2014</td>
<td>31,849,426</td>
</tr>
<tr>
<td>2004</td>
<td>21,863,195</td>
<td>2015</td>
<td>16,206,582</td>
</tr>
<tr>
<td>2005</td>
<td>22,675,579</td>
<td></td>
<td>Total</td>
</tr>
<tr>
<td>2006</td>
<td>23,548,038</td>
<td>VP*</td>
<td>225,163,483</td>
</tr>
<tr>
<td>2007</td>
<td>24,453,633</td>
<td></td>
<td>149,474,961</td>
</tr>
<tr>
<td>2008</td>
<td>25,394,816</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Present value of minimum income guarantee with a discount rate of 13%*  
Source: Alonso et al (2001)
The present value would amount to $149.5 million USD at the discount rate of a real 13%. It is important to mention that the estimates do not take into account the semi-annual readjustments in the tariffs given. The guaranteed revenues are underestimated as a result of the aforementioned.

The concession contract was signed in June 1995, and its execution was initiated in September 1995. Its conclusion, in principle, would be on August 30th, 2015. It was agreed that CODAD S.A. would pay the building contractor (Dragados y Conconcreto) a fixed sum of $105,713,679 USD for the development of the works.

The contract was well structured. It had very appropriate risks distribution and coverage, which in turn, would make it bankable. The Infrastructure Finance magazine rated it as one of the 10 most creative contracts in 1996. The concessionaire structured the project’s financing with 20% equity and 80% debt.

The revenues guarantees facilitated the project’s financing in the capitals international market in very favorable terms. The concessionaire was very successful, since bonds were placed in the New York Stock Exchange Market to finance the works. The bonds were placed under Rule 144A in May 1996, amounting to $116 million USD in 15 years at a 10.19% interest rate, 340 bp above the rate on Treasury Bonds. The bid was over-subscribed.

Standard & Poor’s had previously granted the CODAD the investment degree, giving it a BBB rating, the same as the one for the Republic of Colombia. This rating was the one with the longest term for a transport sector bond in Latin America, and the first one with the “investment degree” in that sector in the area.

The transaction is a good example to identify and describe the character of “best practice” in no financial guarantees:

- **Innovative**: The revenues guarantees facilitated the project’s financing in the capitals international market in very favorable terms. The concessionaire was very successful, since bonds were placed in the New York Stock Exchange Market to finance the works. The bonds were placed under Rule 144A in May 1996, amounting to $116 million USD in 15 years at a 10.19% interest rate, 340 bp above the rate on Treasury Bonds. The bid was over-subscribed. The Infrastructure Finance magazine rated it as one of the 10 most creative contracts in 1996.

- **Effective with high impact**: The design of the concession generated incentives to execute the works quickly. The construction of the runway was completed in June 1998, two months ahead of schedule. Its exploitation was initiated in that month, and it is going to be concluded in August 30, 2015.

- **Can be replicated**: It was expected for the international emissions to continue being made from this transaction; however, concession projects, which continued for different generations, have been funded through domestic banking institutions. It is expected for this type of transaction to be replicated using the domestic capital markets' resources through the emission of bonds.

- **Pertinent/suitable for the project**: No recourse to shareholders and Long term balloon amortizer with adjustment to the project’s cash flow structure.

- **Efficient**: The tender was opened in July 1994 and there were proposals from six companies, consisting of more than 20 international companies (there were Dutch, French, American, Spanish and Mexican firms among them) and a fewer number of national firms. In the issue of bond the bid was over-subscribed.
Case Study IX: Tender Process through Least Present Value of Revenues Mechanism for Route 68 Santiago-Valparaiso Highway Concession (LPVR)

Once the tender mechanism LPVR was established in the Concessions Law, the first concession that used this bidding mechanism formally was the one for Route 68: Santiago-Valparaiso Highway.

The main aspects of the tender process for Route 68 are shown in the following lines.

- **Project Description.** Route 68 is the road connecting the city of Santiago with Valparaiso. The concession was granted in 1998, after a 3 year preparation process that included the definitions of the final engineering, of environmental projects, of traffic studies and of the regional impact.

- **Demand and Tolls.** The average annual daily traffic (AADT or ADT) ascended, in 1998, to 22,200 vehicles with an expected average growth of 4% annually. The tolls for light vehicles ascended to $3,000 for circulating the entire route (app. depending on whether it was during the week or weekend). The relative tariffs are 1.8 and 3.2 for vehicles with two and more axles respectively.

- **Tender Process Mechanisms.** Least Present Value of the Revenues with a maximum term of 25 years expressed in 300 months.

- **Submission of Bids.** There were five Technical Bids, but only 4 of them were evaluated favorably by the Ministry of Public Works (MOP). The evaluation system for the technical bids inferred that if they met a certain minimum score, then all the concessions could participate in the concession process and the allocation was made to the lowest LPVR or MITS.

- **Bidders:** Consorcio Cicasa (ICA, Mexico), Consorcio Ecorutas (Ferrovial-Agroman, Spain), Consorcio Rutas del Pacifico (Sacyr-ACS, Spain), Consorcio Autopistas de Peajes S.A. (Belfi, Brotec, CVV, Chile).

- **Results of the Tender (LPVR).** The following table shows the results of the tender process. The bids were presented on a single sheet indicating the LPVR expressed in UF. References to “UF” is to “Unidad de Fomento”, an inflation indexed, Chilean peso-denominated monetary unit.

<table>
<thead>
<tr>
<th>Bidder’s Name</th>
<th>Concession’s Total Revenues (LPVR) (in UF)</th>
<th>Concession’s Total Revenues (LPVR) (in USD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cicasa</td>
<td>14.245.705</td>
<td>427.350.000</td>
</tr>
<tr>
<td>Ecorutas</td>
<td>12.249.875</td>
<td>367.470.000</td>
</tr>
<tr>
<td>Rutas del Pacifico</td>
<td>11.938.207</td>
<td>358.140.000</td>
</tr>
<tr>
<td>Autopistas de Peajes SA</td>
<td>13.927.000</td>
<td>417.810.000</td>
</tr>
</tbody>
</table>

Source: Sergio Hinojosa
As we can see from the Table 17, the lowest value for revenues (LPVR) was of USD 358,140,000. Such figure corresponded to the Rutas del Pacífico (Sacyr-ACS). Both Sacyr and ACS have a participation of 50% each in the concession.

- **Minimum Revenues.** The fact that the existence of minimum revenues guarantee is optional was established in the tender process; and therefore, the bidder must explicitly express whether or not he requires such government guarantee for up to a maximum term of thirteen years. Along this line, the bidder must submit a report of the annual amount requested. In turn, he must pay an annual amount equal to 0.75% of the minimum revenues required for future years.

- As a result, this mechanism showed that the technically acceptable offers, two of the bidders would not call for this guarantee. The bidder that submitted the best offer was among them.

<table>
<thead>
<tr>
<th>Bidder’s Name</th>
<th>Minimum Revenues (Yes/No)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cicasa</td>
<td>Yes</td>
</tr>
<tr>
<td>Ecorutas</td>
<td>Yes</td>
</tr>
<tr>
<td>Rutas del Pacífico</td>
<td>No</td>
</tr>
<tr>
<td>Autopistas de Peajes SA</td>
<td>No</td>
</tr>
</tbody>
</table>

Source: Sergio Hinojosa

That is to say, the winning bidder did not request a MRG liquidity guarantee, which was a surprise for the process analysts. Does this mean that the LPVR does not require liquidity guarantees? Did the cost of the guarantee influence this decision? In what cases does the LPVR require guarantees?

- **Discount Rate for the Estimation of the LPVR.** The Terms of the Tender process allow the bidder to choose between a fixed and a variable interest rate, either to be used in estimating the present value of the revenues or, in the event of compensation for an early termination of the concession. Such rates are shown in the following lines

  - Fixed Rate: 6.5% + risk premium (4%) = 10.5%.
  - Variable Rate: AIR + risk premium (4%)

In which, the AIR is the average interest rate of the financial system in Chile. The winning bidder preferred to discount at a fixed rate, while only 1 bidder requested it to be done at a variable rate. Having a variable discount rate means, at least, removing bidding power to the mechanism.
- The State’s Purchase Option (Early Termination of the Concession). The State’s purchase option, which has to be notified 12 months in advance, is subject to the elapsing of at least 12 years since the publication of the Awarding Supreme Decree in the Official Gazette (“contract signed”), and the determination of the concession’s estimated term and estimated operation and maintenance costs will have to be under a mutual agreement (related to an expert report). The price of the purchase option will have to be equal to the present value declared at the time of the tender minus the value of the present revenues.

- Financing. In January 2002, the concessionary partnership made a bond issuing based on the present value of the revenues. The “stand alone” rating reached was AAA locally (A-internationally).
  - Titles: Infrastructure Financing Bonds.
  - Issuer: Sociedad Concesionaria Rutas del Pacifico S.A.
  - Nominal Amount: UF 12 million.
  - Term: A-12 years, B-23 years, C-23 years.
  - Interest Rate for the Bonds: A-5%, B-5%, C-5, 8%.
  - Deputy payee: BBVA BHIF Bank.
  - Disbursing Bank: Banco de Chile.
  - Administrative and Custodian Bank: Bice Bank.
  - Full Underwriter: Santander Investment – Chile.

- Tender Regulation Terms for LPVR for Route 68
  - Initiation of the Concession Term. The concession period shall begin 9 months after the subscription and protocolization before the notary of the Awarding Supreme Decree. From that date, the terms of the concession shall take effect. However, the MOP may appoint the Fiscal Inspector (concession public supervisor) within 10 days from the publication of the awarding decree, and the Concessionary may prepare, prior to the commencement date of the concession term, the engineering projects required to purchase or expropriate the land. Such projects are to be submitted to the Fiscal Inspector’s consideration. Also, the construction of the works that were approved in the engineering projects may commence.

  During this period, the Concessionary may request the Fiscal Inspector to provide them with the expert reports for the values of the properties to be expropriated, and they may coordinate with the Fiscal Inspector to acquire, those lands directly, and to sign the respective sales contracts.

  - Term of the Concession. The concession will expire in the m month in which the following relationship is met: \( PVR_m \geq TRC \) In which the TRC corresponds to the amount requested by the concessionaire, and the PVR is the present value of revenues accumulated until month \( m \) estimated in UF.
The Route 68 LPVR transaction serves as a good example to identify and describe the character of “best practice” associated with using explicit guarantees for infrastructure financing:

- **Innovative**: This was the first time (1998) a concession is awarded by a variable term mechanism (See Engel et al., 2011). In addition it was Latin American Transport Deal of the Year” for 2002 by Project Finance Magazine

- **Effective with high impact**: Four highly competitive bidders present technical and economic offers. The Government was expecting an offer much higher than the one that won.

- **Can be replicated**: Based on the experience with this concession, it was proven that the mechanism was effective for projects that have steady revenues. It has been successfully replicated in Road 160, the Road Access to the Santiago International Airport, the Melipilla-Camino de la Fruta crossroads, Route 5 Vallenar Caldera, Cabrero Concession Highway, Access Road to Iquique. This mechanism has been extensively implemented along with other tender factors in Colombia.

- **Pertinent / suitable for the project**: the practice has contributed directly to the construction, financing and operation of the concession during the last 13 years.

- **Efficient**: Due to the high rating and robust structure, it was able to achieve a very low spread despite of its long tenor.

---

**Case Study X: Ruta del Sol in Colombia**

Until now, the fourth generation consists in a emblematic project called Ruta del Sol. The project was initially conceived by the government as a single project. This marks a milestone for Colombia’s infrastructure sector as the Ruta del Sol has been described as the second largest infrastructure project in Latin America after the Panama Canal expansion. It was later divided into three concessions to adapt to market conditions, to ease its construction and financing, and to mitigate single-operator risk. The winner of Sector 1 will be responsible for building a new 78-kilometer double carriage way road in mountainous terrain and for maintaining it for seven years. The winners of Sectors 2 and 3 will undertake the rehabilitation, expansion to double carriage way, maintenance and operation of 528 and 465 kilometers of existing roads, respectively, for up to 25 years. The project (sector 2) received Project Finance International’s Transport Deal of the Year award for the Americas for 2011.

According to IFC (2011) like other countries in Latin America, in the last 20 years Colombia has been expanding its road network through different concession models. As a result, a number of projects have been awarded under a broad range of contractual structures. Over the years, however, many of these projects suffered construction and maintenance delays, leading to contract renegotiations and in some cases early termination. In addition, these projects attracted very limited participation from international investors and local pension funds. Ruta del Sol was one of the most important missing pieces of Colombia’s concession program. Following a failed attempt to concession it in the early 1990s, in 2007 Colombia’s Ministries of Transport, Finance and Planning jointly requested IFC assistance to structure a new concession for the project and help prepare a bidding and contractual structure that could become a model for future road concessions (IFC, 2011).
• **Transaction structure.** The project was structured in three parts: Sector 1: A 78-kilometer double lane greenfield project. The due diligence phase included a deep engineering analysis and an assessment of potential alignments. Given its risk profile, Section 1 was structured as a medium-term concession of seven years with availability payments (five years for construction and two years for operation). The intention is to retender it as a toll road concession at a future date. Sector 2: This project covers 528 kilometers in flat terrain and revenues include toll collections and government availability payments. This was structured as variable-term concession, so the concession will expire once the concessionaire's requested Net Present Value (NPV) of revenues is reached (maximum term is 25 years). Sector 3: This project covers 465 kilometers of semi-flat terrain and revenues include toll collections and government availability payments. This was also structured as variable-term concession limited to a maximum term of 25 years.

• **LPVR Mechanism:** Government subsidies for all sectors consisted of yearly, project specific budgetary allocations assigned by the Ministry of Finance to each concession. These allocations will be transferred every year to individual concession trusts and funds would be payable to the concessionaires upon completion of contractually defined construction milestones. Deductions could be applied to the payments if the concessionaire does not meet minimum road condition and operational performance parameters. This plan creates an incentive for compliance with construction and operation and maintenance goals. The bidding criteria for all three sectors consisted of a combination of technical and economic variables with the greatest value assigned to the economic proposal. The economic variable was the lowest NPV of revenues.

• **Bidding** Sector 1 was awarded to Consorcio Vial Helios, a consortium led by Colombia’s Grupo Solar and ConConcreto S.A. together with Argentina’s Iecsa S.A. The government contribution requested was $770 million, 20 percent less than the maximum-approved government contribution to this concession.

Sector 2 was awarded to Concesionaria Ruta del Sol SAS, a consortium led by Brazil’s Constructora Norberto Odebrecht and the Colombian financial group Corfiboliviana. NPV of revenues requested totaled $1.047 billion, which represented 6.5 percent less than the maximum-allowed bid value and the consortium presented a bid of US$2.09bn, approximately 80% of the total estimated value of the project.

Sector 3 was awarded to Yuma Concessions S.A. PSF, a consortium led by Italy’s Impregilo, which included Colombia’s Bancolombia and the pension fund Protección. NPV of revenues requested totaled $1.039 billion for Sector 3, which was 9.5 percent less than the maximum-allowed bid value.

• **Financing:** The Odebrecht-led Concesionaria Ruta del Sol consortium closed USD 775 million bank debt financing for the second leg of the Ruta del Sol toll road on 25 November 2010. The financing is the first large-scale test of Colombian lender appetite, which combines a variable length concession, fixed remuneration payments and some exposure to traffic risk. Lenders were a group of local bak that lent Ruta del Sol runs from the outskirts of Bogota, to the Caribbean port of Santa Marta. It will, however, also carry passengers and goods from Colombia’s other, rather dispersed, urban centres, including Medellin, Cali, Barranquilla, Cartagena, and Bucaramanga (Project Finance Magazine, 2011).
Table 19: Description and Disbursement Mechanism of Future Appropriations

Future Appropriations Overview (Vigencias Futuras)

- Future Appropriations are expense authorizations of the national government allowing a governmental agency to separate and commit - from resources it is entitled to receive in the future from the budget of the nation - cash amounts to meet assumed contractual obligations of such agency, in this case the INCO.
- Future Appropriations are multi-year budgetary allocations of the Nation that exceed government administration terms.
- By law Future Appropriations have a priority over any other expenses in each year’s budget.
- 60% of the total Future Appropriations for construction will compensate milestones related to the construction of the new lane. The remaining 40% will compensate the achievement of milestones related to the restoration and maintenance of the existing road.

Future Appropriations Disbursement Mechanism During Construction

- Subject to government cash availability, the resources are made available to the independent trust.
- The annual amounts of Future Appropriations, defined in constant Colombian Pesos (COP) of December 2008, are adjusted by inflation to the date of its disbursement.
- The Concessionaire has the right to partial disbursements of Future Appropriations for every milestone (10 kilometers of road built) it achieves.

Source: Concesionaria Ruta del Sol S.A.S (2011)

Concession Agreement

Table 20: Summary of Main Terms

| Contractor: | Concesionaria Ruta del Sol S.A.S. |
| Grantee: | INCO – Instituto Nacional de Concesiones |
| Term: | The shorter of (i) 25 years and (ii) the date the concessionaire obtains a net present value of COP$2.1 bn (approximately US$1.1 bn) of its revenues, discounted at a monthly rate of 0.8984% |
| Revenues: | Future Appropriations of the Nation (Vigencias Futuras) and tolls |
| Object: | INCO grants to Concesionaria Ruta del Sol S.A.S. a concession to design, finance, improve, build, operate and maintain the Section 2 of Ruta del Sol |
Ruta del Sol transaction is a good example to identify and describe the character of “best practice”:

- **Innovative**: It has been the banking syndicated loan with the longest term in the history of concessions in Colombia. In addition it was the PFI Award Transportation Deal of the Year 2010.

- **Effective with high impact**: One of the largest construction firms at international level made a partnership with a financial group in Colombia and provided security to the banking market for the access to financing.

- **Can be replicated**: The transaction sets a high standard for the design and execution of project financing in the country.

- **Pertinent/suitable for the project**: No resource to shareholders and Long term balloon amortization with adjustment to the project’s cash flow structure.

- **Efficient**: First long term, CPI linked transaction.

Note: This case is based in information synthesized form IFC/PPIAF Success Stories (2011), Project Finance Magazine (2011) and Concesionaria Ruta del Sol S.A.S. (2011).
Case Study XI: Revenue Distribution Mechanism (RDM) for Concession Route 5
Santiago – Talca Stretch

The concession Autopistas del Maipo, was awarded the concession contract for the Route 5 Santiago Talca and South Access to Santiago, which had a total investment of 750 million USD, was protected by this financing mechanism.

In this sense, according to what was originally established in the contract, the concession rights would be extended for 25 years during the 1999 – 2024 term of the concession. In November 2003, the incorporation of the Revenues Distribution Mechanism (RDM) for this concession was legalized through a Supplementary Agreement.

The RDM guarantees total revenues equivalent to a present value of USD 1,432 million during the life of the project. These revenues guaranteed represent an annual growth rate of 5% in traffic for the 2003-2024 term of the concession. Along this line, the concession’s term became variable, so that its length would be extended until the date on which the concessionary partnership could earn revenues in present value equaled to the amount of the revenues guaranteed (USD 1.432 million), hedging instrument mentioned above.

As part of the RDM agreement, the concessionaire is authorized to increase the toll tariffs (with real increases above the inflation) as compensation for an unfavorable traffic evolution below the level of the revenues guaranteed.

Case Study XII: Electricity Transmission Concessions in Brazil

The electricity transmission sector in Brazil is divided between the public sector, the private sector and joint ventures. The public sector still manages most of the network, since the efforts to incorporate private capital did not emerge until the late 90’s.

By analyzing the results of the electricity transmission concession tenders, which have been conducted annually since 1999, it is to be seen that the electricity transmission market has become very competitive. At the beginning of the decade, there were few bidders in the tender processes perhaps due to the ignorance and political and economic uncertainty when the program began. However, since 2002, the participation of the private sector has increased significantly, thus suggesting that this market has become very attractive to such sector in terms of the risk – return relationship that is to be assumed. Most of this increase is also due to the country’s better economic situation, since there has been a significant participation of foreign investors, mainly Spanish investors, who have already made significant investments in this sector in Brazil.

The firms seeking to build and/or operate hydroelectric generation facilities, transmission or distribution of energy in Brazil are participating in tender processes. The firms request permission or authorization from the Ministério de Minas e Energia (MME) or the Agência Nacional de Energia Elétrica (ANEEL), according to the case. The concessions entitle to generate, to transmit or to distribute power in a particular concession area for a specific term. Such term is limited to 35 years for new generating concessions and; to 30 years for new electricity transmission and distribution concessions. The existing concessions may be renewed at the sole discretion of the power granted by the concession, provided that there is public interest and all the obligations related to the concession contract have been met, and that such renewal is required according with the legal deadlines.
The Concessions Law establishes, among other aspects, the conditions that the concessionary has to meet when deliver energy services, the end-users’ rights and the concessionary’s obligations and the power granted by the concession. In addition to the Concessions Law, the electric energy concessionary must also comply with the regulations issued by the ANEEL and the MME. The main regulations of the Concessions Law related to electric energy concessions are: i) Appropriate service; ii) Servers; iii) Objective responsibility; iv) Changes in the controlling interest; v) Intervention made by the power that granted the concession; vi) Early termination of the concession; vii) Termination due to reaching the concession term; and vi) Penalties.

The concessions for electric energy transmission were born as a result of the restructuring process for the electricity sector during the decade passed. The tenders for transmission lines conducted by the ANEEL have become the most successful model to be incorporated to the private sector in this sort of projects.

Since 1998, ANEEL has tendered 34,083 km of transmission lines. 15,407.81 kilometers of lines of the total lines that were tendered were in operation in late 2008. During that same year, the energizing of 2,233 km of lines was conducted, in addition to the concessions for the new transmission lines that were being constructed.

According to the ONS’ latest Annual Report, approximately 13,000 kilometers of new transmission lines of 230 kV to 500 kV with an additional processing capacity of 45,400 MVA are to be added between 2009 and 2011. The aforementioned requires investments in the order of 11,000 million BRL (5,916 million USD).

Firms

The electricity transmission sector in Brazil was composed, up to late 2009, by more than 90,000 miles of lines operated by 64 concessionary. Such companies are responsible for implementing and operating the networks that connect the electricity generating plants with the facilities of the distribution companies located next to the consumer centers (technically called load centers). Electricity transmission concessions are granted for 30 years. There is a probability for the contracts to be extended to up to the concession term aforementioned.

The electricity transmission marketing control is in the hands of the federal sector, with a participation of 56%. The most important electricity transmission company is FurnasCentrais Elétricas with more than 19 thousand kilometers in transmission lines.

The main companies involved in the electricity transmission lines are shown in the following table:

Table 21: Major Power Transmitters of Brazil, 2008

<table>
<thead>
<tr>
<th>Companies</th>
<th>Km. of Lines</th>
<th>Government</th>
</tr>
</thead>
<tbody>
<tr>
<td>FURNAS (Fumas Centrais Elétricas S. A.)</td>
<td>19,082</td>
<td>Federal Control</td>
</tr>
<tr>
<td>CITEEP (Cia de Transmissão de Energia Elétrica)</td>
<td>18,495</td>
<td>Privatized in 2006 by the State of São Paulo</td>
</tr>
<tr>
<td>CHESF (Cia Hidro Elétrica do São Francisco)</td>
<td>18,260</td>
<td>Federal Control</td>
</tr>
<tr>
<td>Eletronorte (Centrais Elétrica do Norte do Brasil S. A.)</td>
<td>7,856</td>
<td>Federal Control</td>
</tr>
</tbody>
</table>
The 64 companies operating in the power transmission market amounted to 9,400 billion BRL in services, jointly, in 2008 (almost 9% higher than the amount obtained in 2007).

In 2008, 379 new contracting instruments were signed from a total of 2,825 contracts that were awarded up to that date. The guarantees required by these contracts reached 967 million BRL.

**Features of the concessions**

Electricity transmission concessions consist in building, operating and maintaining (BOT), a power transmission line for 30 years, in exchange of an annual fee, which is to be readjusted according to the local inflation.

As in other service contracts, there are maximum penalties to be paid for the unavailability of the line, but the payment of the canon does not depend on the electricity transmitted or on the use of the line.

The parties responsible for paying the canons are those that contract the transmission capacity “jointly”, that is to say, distributors and/or generators. The client portfolio is commonly diversified and may contain approximately 25 firms, and there are liquidity mechanisms which are to be implemented in order to anticipate a firm’s payment delay, and in order to increase the certainty of the levy’s timely payment.

The levy is determined and fixed at the public tender. It is to be readjusted annually according to the local inflation.

The shorter lines are commonly awarded in batches of several lines each.

The mechanism takes into account a set of standardized contracts, which are to be the same for all the concessions awarded so far. This contract system facilitates the sponsors and lenders’ understanding of the scheme, and now it has a 10 year successful experience.

The mechanism has proven to be very successful for the Brazilian Government, since it attracted the participation of the major international companies in the field. It led to an increasing competition in tenders, and ultimately managed for the levies to be adjusted downward gradually, thus lowering the costs for the service.

Concessionary partnerships, on the other hand, have made an excellent business, especially at the beginning; and have a constant flow of tenders that justify their local offices and their efforts to take part in this business.

Part of this has been given by the initial support offered by the local development bank-BNDES, which offered standardized loans to bidders and has been the main funding source for the program from the beginning.
Economic framework and contract guarantees

All the Electricity Transmission Concessions have been awarded according to the regulated bidding process conducted by the ANEEL in Brazil. Such process includes the following general structure:

- **Granting Process:**
  - The concession is to be awarded to the qualified bidder offering the most competitive (lowest) canon (revenues) proposed. The granted bid constitutes, for the purposes of the Concession Contract, the annual revenues allowed (“receita anual permitida”), and it refers to a specific date for the tender process for the effects of periodic adjustment as a result of the local inflation.

- **The Concessionary’s Main obligations:**
  - The construction (including the procurement of the final permits and authorizations for the construction) of a transmission line and substations according to the technical specifications provided by the ANEEL, and
  - The operation and maintenance of the facilities during the concession term (30 years including the construction).

The Concession Contract acts as the master contract. The following contracts are attached as annexes to such contract:

- **Contract for Sharing the Facilities:** the Concessionary partnership signs it, the Operador Nacional do Sistema Elétrico (ONS), and the regional electricity companies are the owners of the facilities to which the transmission line under concession will be connected;

- **Contract for the Rendering of the Electricity Transmission Services:** standardized contract between the ONS and concessionaires, which regulates the rendering of the transmission services according to the procedures manual;

- **Contract for the Use of the Transmission System:** standardized contract between the ONS (on behalf of the concessionaires) and the users of the transmission services (distributing companies), in which the terms and conditions for the use of the core network are established;

- **Contract for the Guarantee:** contract between each of the distributing companies (users of the line), the ONS and the transmission concessionary partnership to guarantee the payments by the distributing firm to the transmitting firm (Take or Pay Contract).

- **Term:** The concession has a term of 30 years from the date it is signed. Such term includes the construction term, which is to be completed within the first 24 months of the Concession. When the term is over, the transmission assets are automatically returned to ANEEL.
• **Revenues:** The Allowed Revenues are maintained in real terms through an annual adjustment as a result of the inflation. During the first 15 years of the concession, the allowed revenues are equal to 100% of the levy offered in the tender. As from the 16th year, the annual revenues are to be reduced to 50% of the effective revenues of the 15th year, and are to be maintained at this amount, readjusting them annually as a result of the inflation until the end of the concession.

• **Revenues Update.** The Allowed Revenues are readjusted annually according to the local wholesale inflation rate PGRM (first concessions) or more recently according to the consumer price index.

• **Commercial Risk:** The Concessionary Partnership’s risk of invoicing and accounts receivable is facilitated by the ONS, according to the Concession Contract with ANEEL:
  
  • The ONS is to report the Concessionary on the distribution of the use of its line among the distributing firms regularly. According to this distribution, the Concessionary Partnership is to bill and charge each distributing company for their share, thus being the sum of all the invoices equal to the Maximum Allowable Revenues;
  
  • The payment unfulfillment risk by a distributing firm is substantially mitigated through the Guarantee Contract (mentioned above), under which a protection mechanism imposed by the ONS in benefit of the concessionary partnership is established “in cash”. The ONS establishes a safety margin of 10% of the tariff, which is invoiced and charged to the distributing firms and retained in a reserve fund to cover potential unfulfillments. In addition, if a distributing firm is in unfulfillment, the ONS has the power to freeze the bank accounts where they receive their income from users’ fees;
  
  • The ONS is to report the amounts to be billed to each distributing firm to the concessionary partnership on the 5th of every month. The distributing firm must pay the bill in thirds, on the 15th, on the 25th and on the 5th of the following month;
  
  • The history of late payments by distributing firms has been minimal and it has demonstrated the efficiency and proper incentives and penalizations in the system since the beginning of the system.

• **Financial Rebalancing Clause:** This clause establishes that the Maximum Allowable Income could be revised to compensate in case of adverse external events, in order to preserve the original financial balance. An example of this would be a change in fiscal regulations that affect the concessionaire adversely.

Note: This case is based in information synthesized form PFA (2010)
Case Study XIII: Explicit Contract Guarantees and Risk Sharing Policy in Chile

The Chilean experience in the incorporation of the private sector in public infrastructure through concessions\(\textsuperscript{12}\) may be regarded as an experience of “Best Practices” for the following results, effects and impacts:

- **Results**
  - 55 projects have been tendered in 17 years: in operation, in the process and in the process of starting the works.\(\textsuperscript{13}\)
  - The allocation of contracts in a highly competitive environment. At least 3 bidders have submitted bids and more than 5 partnerships have pre-qualified in over 70% of the tenders. The aforementioned has resulted in the participation of over 140 national and international firms since the beginning of tender processes.
  - In 2008 and 2009, the average number of bids was 5 and 4.5 respectively.
  - 8,780 million dollars were destined to committed investment, and an additional two billion dollars were destined to additional investment.
  - An infrastructure bonds market has been created. Private pension funds (AFP’s) and Life Insurance Companies have participated actively as institutional financiers in such infrastructure bonds market.
  - There is no other experience that may show and offer an exchange rate (peso - dollar - euro) hedging instrument for contracts whose length is of more than 20 years.
  - There is no other experience in which the minimum revenues guarantees have been granted for more than USD 6,900 million and in which only 5.2% has been activated (0.21 GDP 2010).
  - There is no other experience in which more than 7,000 community meetings have been held in different sectors, communes and villages (high participation of stakeholders).
  - There is no other experience which has the largest PPP unit, in which more than 250 people work exclusively on public works concessions at analyzing the promotion processes and at supervising contracts in the construction and operation stages.

An important policy design of non-financial guarantees or explicit contractual guarantees (ECG) has been a necessary condition for the bankability of the projects in Chile. The government has allocated more than USD 8 billion through competitive bidding mechanisms and has delivered explicit guarantees.

\(\textsuperscript{12}\) Concessions in the fields of ports, water and sewage, railroads and public transport have not been taken into account.

\(\textsuperscript{13}\) It includes three projects which were retendered because they concluded their concession terms.
The main risks in the different projects where the government has designed ECGs are the following:

- **Revenue Risk**: It refers to the demand risk, in which, the number of users of the service may decrease generating impacts in the capacity of the project to fulfill the payment of the debt services. A MRG has been designed to mitigate such risk.

- **Completion Risk**: A delay greater than that budgeted is experienced due to construction problems, such as, geologic risk, or to an expropriation process which implies over-costs for the concessionaire. Insurance policies are generated when the totality of the risk is non-transferable.

- **Expropriation Risk**: it refers to the total amount to be paid directly for expropriations.

- **New investments Risk**: it is related to new works that the State asks the concessionaire to conduct. Specific compensation mechanisms have been designed.

- **Force Majeure Risk**: it refers to total or partial destruction of the works and their consequent reconstruction. Insurance that covers the expected value of such disaster at a predefined value has been designed.

- **Exchange Rate Risk (FX)**: For the period of the Asian crisis, an explicit insurance policy was developed by the government in order to facilitate financing in foreign currencies (Dollar/Euro/Peso).

- **Hedge Income Risk**: two mechanisms have been designed; one of them is the Least Present Value of Revenues (LPVR) Mechanism. The other is the Revenue Distribution Mechanism (RDM). In both case the term of the contract is variable.

- **Toll Collection Risk**: In the case of urban highways where there are electronic toll roads, there is a possibility for the users to not pay the toll when they receive the invoice. An explicit public guarantee was generated for those users in violation who do not pay the toll. For example, Costanera Norte Project corresponds to the first of the urban concessions in the city of Santiago. Being the first of such concessions, the project had an additional risk that other projects did not entail. Therefore, this is the project that has presented greater risk coverage by all the projects under concession thus far. Since there was no traffic or toll collection history, additional guarantees were required in order to obtain financing so as to tender it successfully.

A table with a sample of the concessions allocated is shown chronologically in the following picture. The assignment of the guarantees for the different projects allocated may be observed in such table.
Table 22: Explicit Contract Guarantees

<table>
<thead>
<tr>
<th>Concesión</th>
<th>MRG</th>
<th>LPVR</th>
<th>RDM</th>
<th>Cost Over Run Risk</th>
<th>Completion Risk</th>
<th>Expropriation Risk insurance</th>
<th>New Investment Mechanism</th>
<th>Toll road collection insurance</th>
<th>Force Majeure Risk</th>
<th>Exchange Risk</th>
<th>Geological Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Túnel El Melón</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Camino de La Madera</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Camino Nogales - Puchuncaví</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aeropuerto El Tepual</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acceso Vial AMB</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aeropuerto Diego Aracena</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acceso Norte a Concepción</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aeropuerto La Florida</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Autopista Santiago - Los Vilos</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Santiago - Colina - Los Andes</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R5, Los Vilos - La Serena</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aeropuerto A. M. B.</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nor Oriente Toll Road</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R5, Chillan - Collipulli</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R5, Temuco - Rio Bueno</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R5, Rio Bueno - Puerto Montt</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Santiago - Valparaiso - Viña</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R5, Santiago - Talca - y Acceso Sur a Santiago</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aeropuerto Carriel Sur</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aeropuerto Cerro Moreno</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aeropuerto C. I. C. de Punta Arenas</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Costanera Norte Toll Road</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aeropuerto Iquique</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aeropuerto Puerto Montt</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Sergio Hinojosa
Case Study XIV: The Monolines – Best practices of the industry for the financing of PPP projects

Background of the monoline industry

The monoline insurance companies are the prime providers of financial guarantees. They are called monolines since they only offer one line of insurance: financial guarantees, as opposed to multiline insurance companies who offer life, casualty and other types of insurance.

The industry was born in the 70s within the municipal bond market, as a means of providing credit enhancement to the growing number of issuances being made by states and municipalities in the US to fund local infrastructure. In fact, the largest players in this market owe their name to the municipal bond market: MBIA (Municipal Bond Insurance Association) and AMBAC (American Municipal Bond Assurance Corporation).

With the passing of time, new companies entered the industry, competition increased and regulation became more flexible, prompting these companies to expand into other sectors and markets. From issuing financial guarantees exclusively for municipal bonds in the US, they expanded into guaranteeing bonds from financial institutions and selected corporates, PPP projects on a global basis and lastly the mortgage asset backed sector, which caused a dramatic demise of the industry due to the financial crisis.

From an industry composed by seven well capitalized, “AAA” rated financial guarantors (AMBAC, MBIA, FGIC, XLCA, CIFG, FSA, AG), doing business globally and expanding along with the expansion of its main business segments, two have filed for bankruptcy (AMBAC and FGIC), two remain operating only to manage its existing portfolios of guarantees (XLCA and CIFG), one has reorganized and refocused only on the US municipal market through a newly capitalized subsidiary (MBIA), and only one, AG, resulting from the merger of AG and FSA, remains actively doing business locally and internationally, since it has been able to maintain high rating levels despite of the crisis (“AA+”/“Aa3”).

Table 23: Monoline Ratings pre and post crisis

<table>
<thead>
<tr>
<th></th>
<th>June 2007</th>
<th>November 2009</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Moody’s</td>
<td>S&amp;P</td>
</tr>
<tr>
<td>Assured Guaranty Corp.</td>
<td>Aaa</td>
<td>AAA</td>
</tr>
<tr>
<td>Financial Security</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asserance (UK) Ltd.*</td>
<td>Aaa</td>
<td>AAA</td>
</tr>
<tr>
<td>Ambac Assurance Corp.</td>
<td>Aaa</td>
<td>AAA</td>
</tr>
<tr>
<td>MBIA UK Insurance Ltd.</td>
<td>Aaa</td>
<td>AAA</td>
</tr>
<tr>
<td>Syncora Guarantee (UK)</td>
<td>Aaa</td>
<td>AAA</td>
</tr>
<tr>
<td>Ldt.**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FGIC UK Ltd.***</td>
<td>Aaa</td>
<td>AAA</td>
</tr>
</tbody>
</table>

* Acquired by Assured Guaranty in July 2009. November 2009 ratings are for the merged entities.
** Formerly XLCA.
*** Regulatory action 24/11/09 required cessation of payment of claims.
The demise of the industry, caused largely by the crash of the US mortgage market, has unfairly affected the PPP project finance business, since it shrunk the supply of viable financial guarantees to one player (Assured Guaranty) and put in question the whole business model, as investors who had guaranteed paper in their portfolios saw disappear all the benefits from the guarantee and were left holding paper mostly at the underlying rating.

While the industry’s shake-up will certainly take some time to recover and reestablish lost trust, it is valuable to ponder on the best practices of these companies in regards to PPP project financing structuring, which has proven to be effective and thorough, since guaranteed PPP projects have largely performed well and in many occasions above expectations, even during the financial crisis.

Summarizing, as of today, there is only one viable monoline insurance company, Assured Guaranty, offering full wrap guarantees, focusing locally in the municipal market and internationally in selected PPP/Infrastructure financing transactions.

Full wrap guarantees were very important for the financing of PPP projects, particularly in the UK and Chile, therefore it is interesting to analyze the best practices of this industry, since projects that were financed using these guarantees were well structured, have generally performed well, and in the next few years we may see a resurgence of this industry.

The use of financial guarantees for the financing of PPP projects has been a best practice in itself.

- First, it brought about a structural innovation into the PPP finance business, traditionally dominated by the commercial banks which provided long term loans to finance the projects. The financial guarantees were able to open access to the capital markets, to the large institutional investors who have strong appetite to invest in long term instruments with fixed rate, a type of financing rarely seen or available in the bank market.

  The possibility to access this new market meant more efficient financing for the projects, with higher leverage, longer tenors and lower interest rates. In parallel, the opening of this market created competition for the banking industry, which had to improve their conditions to compete.

  All in all, the application of financial guarantees for PPP project financing largely benefited the project sponsors, but also represented a large source of financing for the ambitious PPP programs being implemented by the governments, which fueled their ability to increase and add speed to their endless pipeline of projects.

- Second, while it was an innovation in the PPP finance business, the product was known in the US through years of application in the municipal finance sector. There were teams in place with expertise with the product, legal structures that could be replicated and proven credit procedures, which allowed a transfer of knowledge from the municipal market to the PPP market, critical for its successful implementation.

  Lastly, the years of experience with the product in the municipal sector, from structuring, to closing to surveillance, brought about new standards of financial discipline to the PPP projects, which could also be characterized as best practices, the most visible of which are:
Requirement for a minimum underlying rating – credit quality: The financial guarantees were not available to any project. A project had to achieve by itself an underlying rating (rating before taking into account the guarantee) of minimum investment grade in the global scale (“BBB-/Baa3”), which meant that not all projects qualified and their financing structures had to be robust enough to reach that level. This requirement meant well-structured projects, able to resist stress scenarios, which have proven to be amongst the success stories in PPP finance.

Thorough due diligence: The financial guarantors devoted qualified teams to the structuring of PPP projects, and always required independent studies performed by expert external advisors. Their involvement started in the definition of the scope of work for each consultant and did not end in a final report until extensive interaction and discussion of draft reports and key issues had been undertaken. Again, this attention to detail and thoroughness has resulted in well-structured projects.

Legal documentation: The intensive involvement of expert counsel in guaranteed transaction meant well-structured and thorough legal documentation, which defined and protected the rights of the parties and complied with local and NY law and local securities market regulation. When introducing financial guarantees into a new PPP market, the role of legal counsel was critical in explaining the legal mechanics of the product to the local regulators.

• Interactive credit process: Financial guarantors apply hands-on, experienced management to each transaction who interact permanently with the credit officers, ensuring that credit issues arising during the structuring process are dealt with on a timely manner and result in well structured transactions.

• Surveillance team and practices: At financial closing, once the guaranteed obligations have been placed to the market, a surveillance team of the financial guarantor takes over and maintains an ongoing and long term relationship with the project company and its sponsors, readily available to ensure that there is an open communication channel at all times between lender and borrower. This interaction facilitates the implementation of permanent improvements to the projects and the timely identification of potential problems so that corrective actions can be undertaken.

• Flexibility and single counterparty for future changes: Lastly, the financial guarantors, through the constant interaction during the phase of surveillance, are a readily available counterparty to discuss and implement changes to the financing that are invariably needed in the life of a project, due to its dynamic nature. As opposed to having to deal with a bank syndicate, or worse, a diverse array of institutional investors, the project sponsor has a single counterparty to negotiate needed changes.

Case Study XV: Fully wrapped toll road bond in Mexico: Monterrey – Cadereyta Toll Road

In 2004 toll road projects in Mexico had limited access to the capital markets, mainly due to the badly structured first generation of toll roads that were awarded on Concession in the 1990’s. Most of those projects suffered from significant cost overruns, obtained financing in USD while receiving revenue in MXN and did not have solid sponsors. The result, upon the financial crisis of 1994-95, was a massive default of these projects and a subsequent rescue program by the Federal Government of most concessions, taking them back from their concessionaires to salvage the ongoing operations of the roads.
Under this scenario, even after 10 years of its occurrence, banks and institutional investors were not keen on lending or buying bonds from the sector, and rating agencies were penalizing project financings by running the “1995 crisis stress scenarios” that made it difficult for toll road debt to achieve high enough ratings to access the capital markets.

The Monterrey – Cadereyta toll road was an existing road, owned and operated by the State of Nuevo Leon, which had limited debt outstanding and a healthy operational track record, being part of an international corridor that supported its traffic growth. With these fundamentals, it was ideally set to access the capital markets for a refinancing with long term bonds, but the scenario described above suggested the use of an innovative structure to ensure there would be a market for the bonds with attractive conditions.

The State and its advisors set about to obtain credit enhancement that would allow the bonds to achieve the highest local rating, to tap into the long term funds available in the pension funds and life insurance companies.

The task was difficult for a number of reasons:

- The transaction had to obtain an underlying rating of minimum investment grade in the global scale (“BBB-”), which was above the rating of the State, in order to obtain the full-wrap guarantee from a monoline insurance company;
- The monolines had become comfortable in analyzing federal toll road projects, but had not insured any projects at the state level;
- Local laws had to be changed for the regulatory framework to be satisfactory to the rating agencies and guarantor;
- The tenor of 25 years was the longest ever for a toll road in Mexico at the time.

The transaction arrangement process involved a very thorough due diligence of the project, including the development of an independent traffic study, under a scope of work provided by the monoline and done by an expert traffic advisor selected by the monoline; developing an independent engineer assessment of the road, to determine future maintenance requirements and adequacy of the operation and maintenance expense budget; an independent insurance advisor reviewing existing insurance policies, recommending additional coverage needed and adjustment to existing policies; an independent review of the toll collection procedures and systems, and an independent audit of the financial model of the transaction.

On the legal side, local counsel to the monoline had to conduct a complete legal due diligence, including revision of title to the land where the road was located, absence of pending litigation and a detailed analysis of existing laws of the State. This process included the preparation of draft legislature and authorizations to undertake legislative action by the local congress, including changes to the existing state debt law, financial management law, income law and other regulation to ensure a solid legal ground upon which to base the transaction.

Another key objective of the transaction was that it would not represent public debt of the State. The bond issuance then had to be non-recourse to the State, aside from performance obligations (not payment obligations) to ensure protection from acts of authority such as building competing roads, amongst other essential provisions for the participation of the monoline and the achievement of the required underlying ratings.
The objective was achieved and the transaction does not register, for State credit rating purposes, as debt of the State. For this aspect, the self-supportive nature of the asset (toll road) was key, since it was deemed by the rating agencies as an asset which generated “user-payment cash flows” to service the debt, instead of depending upon support or transfers from the state government to do so.

All of the above was accomplished between March and December 2004, including the registration of the bonds with the Mexican Securities Regulator (CNBV) and the Mexican Stock Exchange (BMV), which required additional explanation of the structure given its innovative nature.

The bonds were successfully placed in the market on December 14th, 2004, achieving the desired tenor of 25 years, at a record low spread of only 37 bps over the Mexican treasury equivalent. The placement amount was MXN 2,250 million, equivalent to USD 200 million at the time, which represented a multiple of 12.5x base year toll collections, the highest ever achieved in Mexico, which also indicated the high efficiency of the financing. The investor base was composed of approximately 50% local pension funds and 50% local life insurance companies.

The transaction obtained the 2004 “America’s Infrastructure Deal-of-the-Year Award” because of its innovative nature and results obtained. This was the longest tenor financing ever achieved by a state toll road and the first time a state achieved non-recourse financing in the capital markets.

Since then, the toll road has outperformed its base case projections and has achieved an upgrade of the underlying rating from the rating agencies. Because of the positive performance and the proven robustness of the financial structure, the demise of the monoline guarantor used for the transaction and the impact of the financial crisis in general, did not materially affect the rating of the bonds and investors continue to be satisfied with the investment.

The Monterrey – Cadereyta Insured Bond serves as a good example to identify and describe the character of “best practice” associated with using financial guarantees for infrastructure financing:

- **Innovative**: This was the first time a Mexican state used financial guarantees to achieve a “AAA” rating and place long term bonds in the local market, backed exclusively by future toll collections, without financial support from the State.

- **Effective / with high impact**: The State was able to raise USD 200 million in additional financing for the development of infrastructure, above and beyond budgetary investment, without increasing public debt and achieving a very low fixed cost of financing.

- **Can be replicated**: The achievement of a financial guarantee for a project at the state level, in which the project sponsor is the state instead of a private PPP sponsor, involving additional challenges in comparison with federal projects such as sub-sovereign political risk and a local legal regime, sets an important precedent for other states to follow, which may have a material impact in the availability and sources of financing for the development of state infrastructure.

- **Pertinent / suitable for the project**: The bank market at the time offered shorter term financing alternatives, normally with variable interest rates, which would have resulted in a lower amount of financing. A toll road is a long term asset in nature, therefore a longer term – fixed rate financing achieved was the most suitable type of financing for the project.
• **Efficient:** Due to the high rating and robust structure, it was able to achieve a very low spread despite of its long tenor. Moreover, it was able to achieve a very high multiple between financing amount obtained and annual toll road revenues committed: It made a more efficient use of the revenues.

### Case Study XVI: Structured Public Finance Transactions in Subnational Public Sector in Mexico

Mexico’s subnational public sector has been amongst the most active in the world in accessing financing from the banks and the capital markets. A key indicator of this activity is the number of rated entities: as of 2010, all of the Mexican states and more than 100 municipalities had at least one credit rating, which denotes a focus amongst public authorities on the improvement of credit quality and a desire to access alternative means of financing.

Mexico now has four independent rating agencies, Moody’s Investors Service, Standard & Poor’s, FitchRatings and HR Ratings, all of which have specialized public finance departments covering the sector.

Amongst the financial innovations seen in the sector over the last few years it is worth mentioning and analyzing the relatively recent trend towards structured securitizations of future local tax collections, done by several states and a few of the largest municipalities.

Traditional state and municipal financing in Mexico consisted of bank loans backed by Federal Participations, which are the distributions each state and municipality receives on a regular basis from the Federal Government.

The banks do not lend to a public sector entity against its general balance sheet, what in the US is called a General Obligation, but only do so if the public entity assigns a share of its federal participations revenues to a trust, and irrevocable instructions are given to the Federation to deposit such revenues directly into the trust.

As a result, and due to the high coverage required by the banks to mitigate interest rate risk and potential variation in tax revenue, many public entities committed a large portion of their federal participations as collateral for these loans and lost financial flexibility, which motivated some of them to look in to their own taxing power and local tax revenue as a new source of financing.

The first transaction of this nature was done by the State of Nuevo Leon in 2006. It consisted of placing in trust future revenues derived from the collection of vehicle license plate fees (Refrendos Vehiculares) to support a bond issuance, which reached the unprecedented tenor of 30-years and was successfully placed amongst local institutional investors. The financing structure was complex and also involved changing the laws of the state to provide for a solid legal background, but achieved a successful financial closing and the state was able to obtain MXN 2,700 million to invest in infrastructure.

This example was followed by other states, such as Veracruz, Michoacán, Chiapas and Oaxaca, also using different local taxes to back long term bond issuances. Most common taxes used were Payroll Tax (Impuesto sobre Nominas), vehicle ownership tax (Tenencia Vehicular) and vehicle license plate fees. The tenor in most cases was 30 years.
The financing structure used was innovative and it involved the segregation of funds, sometimes through tax collection arrangements with banks, to avoid diversion of revenues. Under these arrangements, taxpayers would go to the bank to pay the tax and the bank would have irrevocable instructions to deposit those revenues (or a percentage thereof) in the accounts of the trust set up to implement the transaction.

Since the right to collect taxes was, by law, not possible to be assigned to a private trust, the assignment was done over the revenues derived from tax collection.

The following chart describes, as an example, the structure used in the securitization of payroll taxes done by the State of Michoacán:

**Figure 13: State of Michoacán Payroll Taxes**

• The different state departments deposit government employee’s payroll taxes in the Bank Collection Accounts, latest the 17th of each month;

• Private taxpayers pay into the Bank Collections Accounts or in State Collection Offices latest on the 17th of each month on a regular basis, or overdue taxes on any later date;

• State Collection offices concentrate collections daily in special collection accounts;

• Cash received in the Bank Collection Accounts and the Special Collection Accounts is transferred weekly under irrevocable instructions to the Trust Accumulation Account;

• First, the Trust pays trust and bond expenses, including trustee fees, bondholder representative fees, rating agencies, independent auditor, stock exchange fees and securities regulator fees;

• Five days before each bond payment date, the amount needed to make bond payments is transferred to the Bond Payment Account;
• On the date each bond payment is due, the required payment amount is transferred from the Bond Payment Account to the Bondholders;

• Each semester, the required balance of the Debt Service Reserve Account is calculated and, if a deficiency or surplus is found, a transfer to or withdrawal from is made, between the Concentration Account and the Debt Service Reserve Account. The required balance is normally equivalent to the amount of the debt service payments falling due during the next 12 months;

• In case a “Preemptive Event” has occurred, the required balance of the Preemptive Account is calculated, equivalent to the amount falling due in the next debt service payment. A transfer to or withdrawal from this account is made to meet the required balance;

• Each semester, once bond and reserve payments have been made, the balance of the Accumulation Account is transferred to the Distributions Account;

• In case there is a balance in the Distributions Account and in a payment period there is a deficiency in the Bond Payment Account to cover the upcoming bond payment, a transfer will be made from the Distributions Account to the Bond Payment Account to cover such deficiency;

• In case a Preemptive Event is subsiding and in a payment period there is a deficiency in the Bond Payment Account to cover the upcoming bond payment, including, the funds transferred from the Distributions Account, a transfer will be made from the Preemptive Account to the Bond Payment Account to cover such deficiency;

• In case in a payment period there is a deficiency in the Bond Payment Account to cover the upcoming bond payment, including, the funds transferred from the Distributions Account and the Preemptive Account, a transfer will be made from the Debt Service Reserve Account to the Bond Payment Account to cover such deficiency;

• In case there is a balance in the Distributions Account and the conditions for distributions have been met, the balance of this account is transferred to the state.

The above is a typical structure which can have variations from state to state according to the specific requirements for an issuance, the type of underlying asset and rating requirements, amongst other.

Common challenges for implementing this structure

Accessing the capital markets requires the achievement of high ratings, normally “AA” or above, while many states have ratings below this threshold.

For lower rated states, in the “BBB” or “A” category, it can be challenging to achieve the higher ratings required to access the capital markets, and the structure must contemplate “credit enhancements” according to the criteria of the rating agencies, which differ significantly.
Standard & Poor’s, in rating these transactions, uses a rating criteria which starts at the credit rating of the state and “moves up” according to the level of coverage contemplated in the financing structure. For example, a state rated in the “A” category would require three notches enhancement to achieve a “AA” rating, each notch of credit enhancement would require subsequent increases in the Debt Service Coverage Ratio, so that the structure is able to withstand stress scenarios with resulting ratios, post-stress, of higher levels according to the desired rating category. Therefore, the approach of S&P permits for a structured tax securitization to achieve a rating above the rating of the state so long as sufficient rating enhancement is provided by debt service coverage levels.

FitchRatings and HR Ratings utilize similar approaches, allowing “up-notching” from the credit rating of the state, according to the level of debt service coverage, reserves and other protections of the financing structure.

Therefore, with S&P, FitchRatings and HR Ratings, in theory, any state can achieve a high enough rating to access the capital markets using the future tax securitization described, because it would be only a matter of using a high enough debt service coverage to be able to withstand the stress tests according to the target issuance rating that need to be achieved.

In practice, however, there are limits to the number of notches above the state rating that a tax securitization can achieve, normally 5 or 6, therefore if a state is rated low investment grade in the local scale (BBB-), it would only be able to achieve credit enhancement using coverage up to the A+ / AA- level, which may not be sufficient to have widespread access to the market.

Moody’s approach is very different, because it subjects the transactions to a rating “ceiling”, normally at or one notch above the rating of the state, arguing that the political risk involved in the tax determination power of the state legislature and the risk of tax revenue diversion by the state executive, could result in lower cash flows flowing into the issuing trust.

In their view, the rating level of the state reflects both the ability of the legislative to impose and budget taxes and the management and disposition of tax collections by the executive, therefore a transaction which is based on local tax collections cannot surpass the rating of the state, despite of increased coverage levels.

Likewise, financings done by states using federal participations as collateral do not have this restriction, so long as adequate irrevocable instructions are in place for the federal government to deposit the federal participations directly into the trust. This reasoning is consistent with their criteria, since the determination of the tax, in the case of federal participations, is done by the federal legislature and the collection and disposition by the federal executive, therefore these aspects are not subject to or related to the local authorities, and in turn not affected by the rating of the state.

As a result of the above, there has been no future tax securitizations rated by Moody’s, while most of the financings, both in the bank and capital markets, backed by federal participations have.

The limit in “up-notching” set by S&P, FitchRatings and HR Ratings, the high levels of coverage (and therefore the relative inefficiency) required to achieve the high ratings and the “ceiling” set by Moody’s criteria suggest the potential need for “external” credit enhancement for states and municipalities to achieve the high ratings required by the capital markets.
This external enhancement could be achieved by using financial guarantees, mainly Partial Credit Guarantees, provided by BANOBRAS or Multilateral Agencies as describer earlier in this document.

The use of these guarantees and the “higher” governmental support provided by the fact that both BANOBRAS and the multilateral agencies are above the state level, could also provide effective mitigation for the political risk involved in state tax securitization transactions.

Also, the external support means additional collateral not coming from the state, which in turn would allow using less coverage and making a better use of the state local taxes (commit a lower amount of future taxes to obtain the desired placement amount).

The following chart shows the levels of coverage used for different local tax securitizations:

**Figure 14: Local Tax Securitization in Mexico**

<table>
<thead>
<tr>
<th>Coverage Level</th>
<th>Michoacán</th>
<th>Chihuahua</th>
<th>Oaxaca</th>
<th>Veracruz</th>
<th>Nuevo León</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Adapted from PFA (2010)

The chart above shows that coverage levels were above 2.0x, and in some cases significantly higher, due to the characteristics of the structure and the level of enhancement needed, while the history and stability of state tax collections suggests that coverages could be below 2.0x. This analysis suggests a relative inefficiency of the structures used and the potential for improvement using financial guarantees.

**Use of the structure to date and perspective**

The local tax securitization structure became popular between 2006 and 2008, as an alternative means of financing that would not compromise federal participations. The following transactions of this nature were successfully closed within these years:
Table 24: Local Tax Securitization in Subnational Entities in Mexico

<table>
<thead>
<tr>
<th>Subnational Entity / Underlying Asset</th>
<th>Year</th>
<th>Placement Amount (MXN Mn.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nuevo León / License Plate Fees</td>
<td>2006</td>
<td>2.677,0</td>
</tr>
<tr>
<td>Veracruz / Vehicle Ownership Tax</td>
<td>2006</td>
<td>6.300,0</td>
</tr>
<tr>
<td>Chiapas / Payroll Tax</td>
<td>2007</td>
<td>5.000,0</td>
</tr>
<tr>
<td>Michoacán / Payroll Tax</td>
<td>2007</td>
<td>3.500,0</td>
</tr>
<tr>
<td>Oaxaca / License Plate Fees &amp; Payroll Tax</td>
<td>2007</td>
<td>2.800,0</td>
</tr>
<tr>
<td>Veracruz Municipalities / Vehicle Ownership Tax</td>
<td>2008</td>
<td>1.208,0</td>
</tr>
<tr>
<td><strong>Total Amount Placed 2006 - 2008</strong></td>
<td></td>
<td><strong>21.485</strong></td>
</tr>
</tbody>
</table>

*Source: Adapted from PFA (2010)*

Another motivation of the states in using this structure was to attempt obtaining financing without it being considered public debt.

Most of these structures involved “true-sale” provisions attempting to form a separate patrimony in the issuing trust that would be the only responsible for making payments on the bonds. In doing so, they intended for the bonds to be debt of the issuing trust, non-recourse to the state, and therefore that these issuances would not be accounted for by the rating agencies as public debt of the respective states.

The structures contemplated only performance obligations by the states, such as performing the tax collections, maintaining appropriate records, and not causing adverse consequences to the trust, such as not granting tax exceptions or discounts beyond existing conditions upon closing of the transactions. These performance obligations, so long as they didn’t mean a pre-quantifiable amount or an indirect or contingent payment obligation to pay the trust, did not constitute public debt.

However, rating agencies did not “buy” the “ring-fencing” of the assets placed in trust or the true sale, and they ended up considering the bonds issued by the trust as public debt. Likewise, the structure generated some concern at the federal government level, as a potential means by the states to avoid declaring debt issued.

The above was compounded by an action of unconstitutionality, presented by the opposition of the Government of the State of Sonora, who in 2008 was planning to issue the largest yet of these securitizations. The opposition claimed at the Mexican Supreme Court that a number of provisions of the new laws that had been passed to implement the transaction were unconstitutional, such as the right of the issuing trust to manage the assets (and therefore the lenders ability to do so) as assets of a “private” nature, and that they had to remain being handled as public sector patrimony, despite of the true-sale that was being implemented.

The unconstitutionality process took from October 2008 until middle of 2010, which compounded by the financial crisis, prevented new issuances to come to market. While some new transactions were in process during that time, including Sonora, the rating agencies, assuming a conservative perspective, did not want to grant ratings to new issuances of this type until the action of unconstitutionality was resolved, therefore they prevented any issuance of this type from coming to market, regardless of market conditions.
Since the Sonora case was resolved, there has already been one issuance of this type, done by the State of Mexico, closed in August 2010, which precisely involved the participation of multilateral agencies as guarantors of the issuance.

The following chart describes the structure used in this transaction, which involved two types of guarantees: an “A” full-wrap guarantee, provided by OPIC, covering full principal and interest of the “A” Series Bonds, and a “B” Partial Credit Guarantee, provided by CAF.

Figure 15: Sonora’s Securitization Transaction

This transaction is a securitization of fees charged by the state when people and companies register property, which is done by a specialized entity of the state. This entity subcontracts collection of the fees with an independent third party, ensuring revenues would not be diverted, since the subcontractor is instructed to deposit revenues directly into the Collections Trust. This trust issues fiduciary certificates which are sold to an issuing trust, which in turn issues Bonds to the institutional investors backed by the certificates and the guarantees hired with OPIC and CAF.

Proceeds from the issuance flow from the issuing trust to the collections trust and then to the State to develop infrastructure.

The Series A of the issuance was rated “AAA” in the local scale by S&P and FitchRatings due to the guarantee from OPIC. While this is a full wrap guarantee, covering 100% of principal and interest of the A Series Bonds, the guarantee is denominated in USD, therefore there is a risk that due to currency appreciation the maximum coverage amount would not be sufficient for making all schedule payments in full. To mitigate this risk the USD amount of the guarantee has been oversized by 15% and the maximum amount of coverage in USD will decrease at a slower rate than the rate at which principal is amortized, therefore creating a larger cushion for currency appreciation over time.

This transaction achieved a tenor of 20 years and it is the debt first issuance in the capital markets by a Mexican state after the financial crisis.
Case Study XVII: The Partial Credit Guarantee (PCG) for the IIRSA North Amazon Axis

The present case study develops the context, impact, and the financial aspects related to a partial credit guarantee granted by the Inter-American Development Bank (IADB) for an emblematic and seminal transaction in Peru: The IIRSA North Amazon Axis. The case study is divided into five sections: The institutional context and some relevant aspects of the transaction are presented, main financial aspects and selection process of a multilateral guarantor for the provision of guarantees is examined. The design of the guarantee and the efficiency mechanisms of the credit enhancement are analyzed.

Context and project description

The USAID PPP Program was created to facilitate enterprise development, improve productivity and competitiveness, and spur economic growth in poor regions of Peru, through the design and implementation of long-term public-private partnerships in order to finance, build, rehabilitate, operate and maintain major road and port infrastructure projects.

The USAID signed a bilateral cooperation agreement with The Ministry of Economics and Finance (MEF) to assist the Peruvian Government in the design and implementation of 4 to 6 PPP projects. The company selected by USAID for this assignment was Chemonics International which, under the Poverty Reduction Alleviation Program (PRA), was able to create a PPP unit managed by an Infrastructure Director and a team of international experts in PPPs (provided mainly by IKONS ATN as subcontractor). The USAID/Chemonics PPP Unit had 4 principal areas of action: environmental assessments, transaction and contracts design, demand and engineering, and project finance. The assistance could cover the entire project cycle that was required by Proinversion. The interaction with the Ministry of Transportation and Communications (MTC) was given through the engineering studies and the maintenance plan, which includes service levels established by the Government of Peru (GOP) to the bidders. The relationship with the MTC was very fluent when USAID began gathering information to prepare the data room for the two roads under PPP.

The IIRSA projects and IIRSA North corridor

The Integration of Regional Infrastructure in South America (IIRSA) is an initiative that covers 10 integration and development hubs that were created in 2000 by the maximum authorities of 12 South American countries. The IIRSA has transportation, energy and communication infrastructure projects and has established a priority for 31 projects.

Among the IIRSA Peruvian projects we have:
Table 25: IIRSA Peruvian Projects

<table>
<thead>
<tr>
<th>Number of the Project</th>
<th>Name of the Project</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project 21</td>
<td>Paita-Tarapoto-Yurimaguas Road (IIRSA North Road), Port and Logistic Centers</td>
<td>The concessionaire is conducting the construction and maintenance works of the road project. A tender process will be executed for Puerto de Paita. The navigability study of the Huallaga Waterway has already been completed.</td>
</tr>
<tr>
<td>Project 22</td>
<td>Lima-Tingo Maria-Pucallpa Road (IIRSA Central Road), Port and Logistic Centers</td>
<td>The granting of the concession will be during the last trimester this year. The South Dock of Callao Port was awarded in June 2006, including the building of a new dock with gantry cranes for containers.</td>
</tr>
<tr>
<td>Project 24</td>
<td>Paving of Iñapari- Puerto Maldonado-Inambari, Inambari-Juliaca/Inambari-Cusco segment</td>
<td>In June 2005 the approval of the sections 2, 3 and 4 was granted, pending the approval for sections 1 and 5 in August this year. In the sections granted under concession, measures to guarantee the vehicle flow have been implemented through periodical maintenance works on the non-asphalted sections of the route.</td>
</tr>
</tbody>
</table>

Source: Chemonics Int. (2004)

In this case we will focus our efforts on describing and understanding the concession design for the project 21 of IIRSA (IIRSA North Project) that was chosen by USAID as the first project to support the Peruvian government to attract private investment to build and to maintain the road.

Characteristics of the IIRSA North Road Project

The Amazon North highway PPP is a 25-year PPP transaction to finance, construct, rehabilitate, operate and maintain 964 km. of the national highway between the cities of Paita, in the department of Piura on the Pacific coast, and the river port of Yurimaguas, in the eastern department of Loreto.

Due to relatively low average daily traffic counts, a common variable in many poor areas of Peru, the GOP will make annual payments to the concessionaire to cover part of the investment, operation and maintenance costs. The selection criteria used to determine the winning bid was the lowest government subsidy expressed as the present value of the sum of the required PAO (Annual payment for works) and the PAMO (Annual payment for O&M) payments. As a result of the competitive bidding process, the amounts of government subsidies for the project were the following: PAO: USD 29 million for 15 years once the road has been built and rehabilitated, PAMO: USD 15 million a year for the operation of the PPP.

Bidding Competition

The promotion process among international investors/concessionaires was strongly supported by USAID. The marketing process had two phases: the first one was the registration stage and the second the pre-qualification of the bidders. A total of 11 companies registered and expressed their interest in participating in the North Amazon tender process.
Out of the 11 companies registered, 9 submitted their pre-qualification documents (ie: legal and technical requirements).

### Table 26: Prequalified Bidders in IIRSA North

<table>
<thead>
<tr>
<th>Pre-qualified Bidders</th>
<th>Country</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graña y Montero S.A.</td>
<td>Peru</td>
</tr>
<tr>
<td>Caminos del Pacífico</td>
<td>Brazil</td>
</tr>
<tr>
<td>Consorcio BS.</td>
<td>Chile</td>
</tr>
<tr>
<td>Consorcio Skanska/OCACSA</td>
<td>Sweden and Mexico</td>
</tr>
<tr>
<td>Constructora Andrade Gutierrez S.A.</td>
<td>Brazil</td>
</tr>
<tr>
<td>Construcoes e Comercio Camargo Correa S.A.</td>
<td>Brazil</td>
</tr>
<tr>
<td>Constructora Norberto Odebrecht S.A.</td>
<td>Brazil</td>
</tr>
<tr>
<td>Constructora Queiroz Galvao S.A.</td>
<td>Brazil</td>
</tr>
<tr>
<td>Obrascon Huarte Lain S.A.</td>
<td>Spain</td>
</tr>
</tbody>
</table>

Source: PROINVERSION

On June 17th, 2005, President Alejandro Toledo witnessed the signing of the $220 million North Amazon PPP. When completed in 2009, the North Amazon road PPP would anchor the first all-weather road and river transport network across South America, greatly facilitating the two way commerce between Peru and Brazil and fully integrating Peru’s developed coastal regions with its less developed mountainous Andean region and the extensive tropical region extending deeply into the Amazon Basin for the first time.

The PPP Contract was signed between the Ministry of Transport and Communications of Peru and a consortium of Brazilian and Peruvian investors and construction firms, Concesionaria Eje Vial Norte, led by the Brazilian firm Constructora Norberto Odebrecht S.A. and formed by Constructora Andrade Gutierrez S.A., also from Brazil, and the Peruvian Graña y Montero S.A. The competition included the Brazilian firm Construtora Queiroz Galvao S.A.

### Project Finance Issues

As it has been mentioned in the previous sections, the business design of the IIRSA North Amazon Concession is based in payments that the government should make to the Concessionaire, thus financing the investment in rehabilitation and construction activities. The investment was divided into two stages, according to government estimates, with an initial investment equal to USD 220 million.

Therefore, the bidder has to offer the government two types of payments: a fixed payment called PAO (Annual Payment for Works) and a fixed payment called PAMO to cover maintenance costs and operation (PAMO).
The government establishes the following restrictions regarding both payments in the Concession Contract: PAO will be paid in biannual fees during a 15 year period, starting in the concession’s 6th semester (year 3). The proposal request established a maximum biannual PAO amount that the government would be willing to pay, for each of the 30 semesters. Then the bidder will necessarily offer the State a PAO value that will be a “percentage” (from 1 to 100%) of such maximum PAO, so that it won’t be able to request a greater PAO than the one which was pre-established.

In order for the concessionaire to be entitled to the reception of the first half of the PAO payments (50% PAO), the government will have to verify that the following two conditions are met:

- The works corresponding to stage 1 have been finished in conformity and to the satisfaction of the concession granting authority.
- At least twenty-four months of operating the concession must have had elapsed since the date the contract was signed.

Additionally, in order for the concessionaire to be entitled to receive the second half of the PAO payments, the government will have to verify that the following two conditions are met:

- The works corresponding to stage 2 must have been finished in conformity and to the total satisfaction of the licensing entity.
- At least forty-eight months of operating the concession must have had elapsed since the date the contract was signed.

Once the indications of the construction stage are completed, the government will start paying the concessionaire or the one who constructs the first and the second halves of the Annual Payment for Works (PAO) through biannual fees. As a result, the government will pay biannual PAO/4 corresponding to stage 1 and PAO/4 corresponding to stage 2, in the corresponding period.

- The PAMO payments are covered at the beginning of the concession’s first trimester. The PAMO is paid quarterly for the whole 25 years of the concession in equal installments. A maximum PAMO is also established in the bidding documents.

The Concessionaire collects tolls, through 8 collection toll road plaza distributed along the highway. The total revenues, according to the government’s estimates are not enough to cover the total of the PAMO payments. The difference between the actual revenue collected by the Concessionaire and the requested PAMO is to be paid by the Government.

As usual, the initial investment is financed through debt and capital. The debt is sustained in the PAO payments that the bidder requests. The financial model assumed that two funds were emitted. The first one was emitted in the 5th semester to re-finance stage 1. Such stage has been financed with a connection credit granted by the “Corporacion Andina de Fomento” (CAF). The second one was “operative”, in the sense that it was emitted after having concluded the construction stage, and in the 9th-10th semesters in order to re-finance stage 2, which has been financed with a connection credit with the CAF. The bidder should recover the total capital and request a value of PAO and PAMO from the government with the previous restrictions so that the concession is awarded to such bidder.
Shadow Rating Methodology

The possibility to structuring a bond and place it on the local markets (and in major measure on international markets) constitutes a reliable response brings over of the viability of concession process.

If the above mentioned bond is not pre–accepted by the capitals market at the time, automatically it is a symptom that the structure and therefore the concession are not financially viable. Under this context certain own characteristics of the concession are linked basically to the distribution and mitigation of the risks of the project and they must be adapted and reformulate to converge to the financial feasibility.

The simulated structure of an infrastructure bond was submitted to a rating agency: Apoyo Clasificadores Internacionales an associate of Fitch Rating.

It was assumed that a rate with category AAA in the local scale, ceteris paribus, under normal conditions, will always find financing to very similar rates to those of the sovereign rating of the Republic from Peru.

The following figure shows the conceptual development from the access to the financing.

**Figure 16: Rating Approach**

The financial evaluation prepared by the rating agency considered that the flows have a great payment capacity respect to the debt service. Consequently, the rating agency considered that the risk qualification could arrive to AAA (pe).

In this sense, the measure considered some supposition, among them we could highlight:
• The contractual design of PAO must appear in the form of a sovereign guarantee granted by the State of the Republic of Peru, which needs the additional sign of a contract. This Contract has special importance for the rating agency, considering its character of financial guarantee, which reduces in an important way the probability of default due to the fact that an eventual breach would activate clauses of cross-country race default in other financial contracts of the Peruvian State.

• The incorporation of the factor of competition in the model should not reduce in less of 1.2x the debt service coverage ratio.

In the case that the annual payments PAO were not granted in the form of an independent contract across a sovereign guarantee at the time, the bond would have an equal rating to A+(pe).

If the rating of the structure does not correspond to a AAA(pe) rating, due to the breach of any of the assumptions, an improvement in the rating of the bonds might be obtained by the participation of a multilateral agency through a mechanism of enhancement. It might happen when:

• The multilateral entity guarantees (whole or partially) the State contribution;
• The multilateral entity guarantees the emission of bonds (whole or partially); or
• The multilateral entity copartner pari passu in the financing of the bonds, under the condition that the payments provided to the guaranteed creditors would be pro-rata between bondholders and multilateral entity. In opinion of the rating agency it reduces in an important way the probability of default.

The rating agency estimates that a partial guarantee for every 15% of the outstanding debt might improve the rating by a notch. Also, the guarantee must to fulfill other conditions like be unconditional and irrevocable.

**Selection process for the financial guarantees provider**

The criteria whose purpose is to serve as a complementary base to conduct a recommendation to the Peruvian government while facing the election of a Multilateral Organization (MO) that provides partial risk guarantees are examined in the present section.

The organizations, which the government of Peru considered as eligible in order to serve them as guarantors in the provision and structuring of the guarantee, are:

• The Inter-American Development Bank (IADB).
• The International Bank for Reconstruction and Development (World Bank o WB).
• Corporacion Andina de Fomento (CAF).

In general, the procedures followed for the approval and further negotiation of the PCR that each of the guarantors has are related to:

• The development of a conceptual document for justifying the Project.
• The project’s profitability analysis and socioeconomic evaluation.
• An analysis of civil work engineering, of quantities and unitary prices for construction in civil works.
• The development of an Environmental Plan that incorporates mitigating and compensating measures, among which the participation elements and citizen spreading are included.
• The creation of an expropriation and rights of ways plan.
• The existence of a concession contract, so that the rights of the users are safeguarded through appropriate work regulating mechanisms and the Concession’s activities.
• The presentation of the guarantee model to the directors of the bank, and the approval by the Approval Committee

Proinversion and the financial consultant, jointly, conducted a preliminary mission to that of the CAF headquarters in Caracas (in January 2004), and to that of the WB and the IADB’s headquarters in Washington DC (in February 2004). Previously, Proinversion held a work meeting aimed at a special mission commissioned by CAF in December 2003.

CAF stated its fees and the payment modality for the guarantee. It was also stated in that time that they must be covered in advance and not in a yearly basis. The aforementioned must occur according to the maturity of the PCG’s validity term.

The IADB commissioned a knowledge and work team from the North Amazon project to the city of Lima during April 2004 after the mission conducted by Proinversion in Washington DC in February 2004. Also, Proinversion and the financial consultant were in contact with the IADB through the delivery of permanent information related to the different aspects of the project.

On the other hand, in March 2004 the World Bank commissioned a mission aimed at working in the design of a global facilities plan for guarantees (Policy based guarantees), and during a second mission, conducted in May 2004, it commissioned a mission in order to advance in the development of the plan for guarantees through the identification of particular projects.

During the first week of July (from 04th to 09th July) the IADB delivered a complete mission regarding the structuring of the guarantees in order for it to be discussed with the government. During that same week the World Bank commissioned an environmental expert so that he could participate in the execution of the environmental study that was being developed by Proinversion. Work meetings were held with one of the World Bank’s guarantees team representative.

On July 07th 2004, CAF responded to an invitation letter from the government by stating that they were willing to support the Republic of Peru in the transaction. Also, they suggested for the payment of the guarantee to be made by the Concessionaire instead of the government, and in addition, they suggested leaving the Guaranteed Maximum Value (GMV) as an option, so that it would be the Concessionaire who eventually determined a lower amount to the GMV according to the market financial needs and risk perceptions. CAF suggested for such premium to be paid on a yearly basis, and not in one single installment for the totality of the PCG’s validity term (12 years).
On July 16th 2004, the IADB responded to an invitation letter from the Government in which it stated that the design of the guarantee, which is to be provided by the IADB, should have ample flexibility degrees when the Concessionaire has a suitable capital. In addition, it states that the cost ascends to 0.25 bp plus the cost of the counter-guarantee that the government expects to collect. The IADB states that within the Guarantee Project’s preparation process any actions which are necessary will be taken in order to guarantee the project’s technical, economic, financial, legal and socio-environmental feasibility, and the risk allocation scheme between the private sector and the concession granting authority.

Criteria Proposal for the Multilateral Agent selection process

- **The concern degree and importance of the environmental subject in the analysis of the projects.** In general terms, the multilateral organizations consider those aspects related to environmental protection, social and safety issues as fundamental concern principles which incur in the fulfillment of all the legal, environmental, social and safety requirements of the country in which the project is to be developed. Also, the following policies are found within the general policies, i) the promotion of sustainable development projects that would maximize, as far as possible, the positive impacts or benefits related to the project while the risks and negative impacts associated to the project are mitigated suitably, and ii) The promotion of information spreading, the participation of the parties interested and transparency; the promotion of the use of good environmental, social and security and hygiene practices and suitable management systems. This concern is explicit for the World Bank, the IADB and the CAF.

- **The Importance of the guarantees’ reputation in the financial market.** Reputation says relation with the agents-investors’ risk perception regarding the fulfillment of contracts by the multilateral organizations, and the discretionality degree in the application of eligibility policies once the guarantee has been approved, as well as the inflexibility degree when facing contingent situations that may occur during the validity term of the guarantee. Probably a strictly financial criterion used to determine the acceptance degree or the guarantors’ reputation may be expressed through the ratings reached by the guarantors.

<table>
<thead>
<tr>
<th>Multilateral organization</th>
<th>S &amp; P Investment Degree (July 2004)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAF</td>
<td>A Negative perspective</td>
</tr>
<tr>
<td>The World Bank</td>
<td>AAA</td>
</tr>
<tr>
<td>Inter-American Development Bank.</td>
<td>AAA</td>
</tr>
</tbody>
</table>

**Source:** Sergio Hinojosa

- **Creation of Ad Hoc Work Teams.** In general terms, the multilateral organizations present multidisciplinary teams that work directly with professionals of the headquarters and not of its Representation in the country. The functional structure of the work parties is shown in the following table:
Table 28: Multilateral Organizations offering PRG’s

<table>
<thead>
<tr>
<th>Multilateral organization</th>
<th>Team</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAF</td>
<td>Investment banking and Financial Consultancy; and Corporate Infrastructure Vice-presidency</td>
</tr>
<tr>
<td>The World Bank</td>
<td>Latin American and The Caribbean Region and the Project Guarantee and Financing Department</td>
</tr>
<tr>
<td>Inter-American Development Bank</td>
<td>Region 3, Finance and Basic Infrastructure Division</td>
</tr>
</tbody>
</table>

**Source:** Sergio Hinojosa

- *Experiences in Transactions with Partial Risk Guarantees.* The evidence that is shown in the following lines has been adapted from public information obtained at the internet domain of the respective institution. It is worth to mention that there is no information related to CAF participation in the structuring of guarantees for infrastructure projects with the private sector’s participation. However, it is important to mention that during 2003 the recognition of CAF experience in the markets resulted in three important prizes awarded to the CAF by the specialized publications called Latin Finance and Euromoney. Such prizes were awarded for the emitting agency of the year, for best bond emission and for best multilateral agency. Also, within the framework of the IIRSA Initiative, which is the program in charge of the integration of South America’s sustainable physical infrastructure, CAF has financed 33 studies and regional integration projects in the last years, for a total amount greater than USD 1.700 million. Such projects mobilize investments of nearly USD 5.700 million. CAF gained an important and world-wide recognized leadership along this line. The aforementioned was proven with concrete projects, real facts, gas pipelines, highways, ports and improvements in all kinds of energy.

On the other hand, the IADB’s experience in Latin America is evident, especially in the transport and loan sectors through its public window in the highways sub sector. Like CAF, the IADB has supported integration programs importantly. It has been a strong financier and promoter of investments within the framework of the IIRSA initiative, in addition to being part of the Directive Committee jointly with CAF and Fonplata, and of the Puebla Panama Plan. The experience in guarantee design has only been established in the window corresponding to the PRI Private Sector, and in 2003, it granted a partial risk guarantee for the financing of titled bonds for the Peruvian company Graña y Montero jointly with FMO, a Dutch agency.

On the other hand, the World Bank, through the Project Finance and Guarantees Department (PFG), has gained an ample experience in the structuring of risk and partial credit guarantees and in the structuring of infrastructure in different countries; however, the experience underlies mainly in the energy sector. In Latin America, it has only been aimed at supporting bond emissions from the governments of Argentina and Colombia.

- *Price and payment modality for the guarantee:* Initially, the CAF manifested that there is a direct collection from the government. Such collection is related to the capital cost that is assumed for granting the guarantee, in addition to the costs related to the transaction and financial consulting fees within the transaction. In a letter dating from 9th July 2004, CAF stated that it was willing to set a maximum term of up to 12 years, for this operation, at the disposal of the Peruvian State. The fee is to be calculated for every year of the term, taking the guaranteed amount and multiplying it by the difference between the rate applied to the sovereign loans of the Republic of Peru and the CAF’s interest rate. Also the usual CAF’s fees are to be applied to any sovereign operation.
The spread for the transaction has been estimated in 2.5 basic points for every year of the validity of the guarantee. It must be paid in present value at the beginning of the guarantee closing, in addition to a total of USD 400,000 for the financial consultancy during the transaction.

The Inter-American Development Bank stated that the value of the guarantee ascends to 0.25 basic points paid annually by the Concessionaire, in addition to a legal consultancy fee. Regarding the preparation of the guarantee’s legal documentation, the Bank’s duty is to charge such fees to the organization that benefits from the guarantee, that is to say to the Concessionaire.

According to the information contained on the internet, the World Bank maintains four kinds of tariffs for the Guarantee. The first one is a onetime stand by fee that ascends to 0.75 basic points once the Bank approves the guarantee. The other tariffs are: a guarantee fee that ascends to 0.75 per year, a Front-End Fee equivalent to 1%, and finally, an Initiation and Processing fee equivalent to the greatest value between USD 100,000 and 0.15% of the guarantee’s value.

The World Bank stated in a meeting that there is a onetime Up Front Fee of 0.5% (commonly 1%), a Commitment Fee of 0.25% (commonly 0.75%) and the Guarantee’s Fee which ascends to 1% annually on the guaranteed amount that is to be paid by the Concessionaire to the World Bank and returned to the government.

According to the aforementioned, an estimation of the guarantee’s fee is presented next along the lines of the multilateral organization. For the aforementioned, a PCG value of 60 million dollars has been estimated, and it has been distributed into 4 fees of USD 15 million each through a revolving guarantee. The cost is shown annually and in present value at a discount rate equal to 6.0%. The administrative costs have not been included.

<table>
<thead>
<tr>
<th>Table 29: Guarantee Pricing</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Multilateral Organization</strong></td>
</tr>
<tr>
<td>CAF</td>
</tr>
<tr>
<td>The World Bank</td>
</tr>
<tr>
<td>The Inter-American Development Bank</td>
</tr>
</tbody>
</table>

Source: Sergio Hinojosa

The other variables that were taken into consideration for effects of the evaluation and of the selection were:

- The time estimated for the final operation of the government transaction closing with the Guarantor.
- The credit exposure degree from the government towards the Guarantor.
- The flexibility degree in the design of guarantee and reimbursement Contracts.
- The conditions for the reimbursement contract.
Partial Credit Guarantee granted by the Inter-American Bank of Development and its efficiency in terms of transaction enhancement

The Peruvian government designed a guarantee of partial credit, which was negotiated and designed by the government with the IADB.

It is necessary to remember that the IADB has two windows to design guarantees. The first window is through the Private Sector Department. Guarantees are designed in a completely private way as soon as the transaction already has been awarded and does not need host possesses one against guarantee of the government.

The second form, which was used in this transaction by the first time in the history of the IADB was across the public IADB window and the principal difference with the first guarantee is that it needs one against state guarantee and is granted before of the Contract be awarded.

The terms of the designed guarantee were:

- The Partial Credit Guarantee (“PCG”) objective is to guarantee the obligations of Annual Payment for Works (PAO).

- The Guarantee consists of a constant, absolute and irrevocable guarantee of payment.

- The PAO payments that are covered by the Guarantee, will be able to include recognitions for partial works in case of early completion of the concession, providing that the works have been due reception for the Peruvian government in the conditions foreseen in the respective concession contract.

- The guarantee was designed for an amount of sixty million dollars (USD 60.000.000).

The Guarantee is available to the Concessionaire from the subscription of the contract of the Partial Credit Guarantee. The execution of the Guarantee enters into force before an event of total or partial delay the payments PAO on the part of the Peruvian government, materializing the execution by means of the notification to the issuing organism of the Guarantee on the part of the Trustee designated for such an end.

The Guarantee will be returned by the amount that the State of the Republic of Peru prepays the IADB by virtue of the last payment that the IADB has realized with a view to the guarantee. To be able to reinstall the guarantee, Peru will have to reimburse the IADB within 30 working days counted from the date in which the IADB paid the corresponding amount.

The guarantee has been designed in a completely flexible way, that is to say it will be able to be assigned by the Concessionaire in 100% to the first stage or 100% to the second stage or to a combination of both and also it is a guarantee that can be designed for different conceptions respecting the maximum of USD 60 million.

Considering the definition of partial credit guarantee, it is possible to detach that the type of PCG can be conceived in multiple forms and the final choice will depend on at least two joint variables.

The PCG’s alternatives that were considered in the design of the transaction are:
• **Revolving Partial Credit Guarantee.** It guarantees a set of consecutive PAO payments. For example, if the PAO payments are equivalent to USD 15 million per semester, a USD 60 million revolving guarantee will cover 4 consecutive payments. Once the government makes one payment, then the guarantee revolves and covers the next 4 payments (i.e.: 2 to 5 once payment 1 is made). Therefore, with this guarantee, a certain numbers of future PAO payments are always guaranteed. If the government defaults on one payment, the revolving characteristic is suspended and the guaranteed amount is reduced by the default amount.

• **Partial Credit Guarantee for Specific Cash Flows.** Consists of guaranteeing certain specific payments in the time of duration of the commitment of the government. For example, the Concessionaire can choose that the payments are guaranteed, of a whole of 30 payments PAO, 1, 10, 18 and 30 whose nominal value promotes to USD 60 million. In this case the “outstanding” guarantee is diminishing in value. At the moment 0 have a value of USD 60 million, between period 1 and 10 have a nominal value of USD 45 million, between period 11 and 18 a value of USD 30 million, and between period 19 and 30 a value of USD 15 million.

• **Partial Credit Guarantee Pro Rata.** Consists of guaranteeing a constant percentage of PAO payments during the entire period. In this case the nominal addition of each one of the percentages of guaranteed PAO must be equal to the notional value of the guarantee of USD 60 million.

• **Guarantee of Partial Credit IO (Interest Only) or PO (Principal Only).** Consists of guaranteeing only the principal or the interest in a partial way of a debt that supported by the payments PAO. In this case the financial settlement must to have certain covenants o waivers of such a way of accepting that a payment only of interests or amortizations is not declared default on the part of the classifier of risk.

**Bridge Loan (CAF)**

With the purpose of facilitating a timely start of Phase 1 of the construction works, the Republic of Peru obtained from CAF, a bridge loan for USD 60 Million Dollars that was offered to the Concessionaire as an option. The bridge loan is guaranteed by the Republic of Peru, could be transferred to the Concessionaire and used for financing Phase 1 of the construction work while the Concessionaire is working on the financial closure. Once the Concessionaire has reached financial closure, it will repay the bridge loan to CAF.

In order to exercise the bridge loan option, The Concessionaire must inform the government, in writing and one month before the Concession is executed, about its intention to access the bridge loan.
Work Progress Certificates (CAO) and Certificate of Recognition of Annual Payment for Completed Work (CRPAO)

The concession contracts presented to the bidders established a procedure to measure and certify, on the part of the regulatory authority, the advance of the construction works. These certificates were named “Work Progress Certificates” (Certificados de Avance de Obra in Spanish - CAO). Once the Concessionaire has completed a portion of the construction works (measured as percentage or kilometers), the regulatory agency will issue a work progress certificate (CAO). Each CAO will represent the Concessionaires’ right to claim payment for the completed works. Therefore, as a complement to the CAO, the regulatory agency issues a Certificate of Recognition of Annual Payment for Completed Work (CRPAO). Each CRPO should reflect the exact amount to be paid, the currency, and the exact in which the Government will pay. Therefore, the CRPAOs represent the government commitment to pay for the completed works. The CRPAOs are issued under the concessionaire’s name, the holder can transfer them and can be used as collateral/guarantee when raising debt. As such, these CRPAOs can be exchanged in the financial markets.

Results of Financial Transaction

As was indicated, the contract was awarded by the Government of Peru in June 2005 to the consortium compound by Norberto Odebrecht – with 17.43%, Odebrecht Investments in Infrastructure with 32.37 %, Andrade Gutierrez with 40% and Graña and Montero with 10.2 %.

The concession’s financing was led by Morgan Stanley and was based mainly in a issue of bonds in the international markets principally under the rule 144A and with the main object to reduce the negative carry of interests (negative carry) during the stage of building.

The concessionaire’s financial advisors of structured a financial tool (credit link note) that allow to minimize the negative carry and securitize the payments of construction with the issue of bond, isolating the construction risks and the operation to the institutional investments.

The transaction was based in CRPAOs that are issued by the Government of Peru in dollars and under the laws of New York. Additionally, the $60 million partial credit guarantee issued by the Inter-American Development Bank supports part of the government obligations. The Concessionary is required to obtain a construction guarantee and a completion guarantee for $10 million each.

The transaction was closed on August 11, 2006. The bond has a maturity until the year 2024 and a YTM equal to 8.75% annual, that is equivalent to 350bp on the treasury bonds 2025, approximately 50 bp major to the cost of 10-year credit default swap for a Peruvian sovereign bond. The issue obtained a rating of BB/BB/Ba2 (S&P/Fitch/Moody’s).

In the next frame the transaction is synthesized:
Table 30: Transaction Resume

<table>
<thead>
<tr>
<th>Description</th>
<th>IIRSA North</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improvement, maintenance and operation of a concession of 960 Km. that connect the Paita’s port and the fluvial port of Yurimaguas in the Ucayali’s river.</td>
<td></td>
</tr>
</tbody>
</table>

|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

<table>
<thead>
<tr>
<th>Durability</th>
<th>25 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Build stage</td>
<td>The construction begin on April 2006</td>
</tr>
<tr>
<td>Total cost</td>
<td>US$220 millions</td>
</tr>
<tr>
<td>Issue’s amount</td>
<td>US$213 millions</td>
</tr>
<tr>
<td>Madurity</td>
<td>30/05/2024</td>
</tr>
<tr>
<td>Coupon (YTM)</td>
<td>8.75%</td>
</tr>
<tr>
<td>Money</td>
<td>USD</td>
</tr>
<tr>
<td>Transaction rule</td>
<td>144A – NYSE</td>
</tr>
</tbody>
</table>

| Financial tools | • CRPAOs - Recognizing Certificates of Right of the Annual Pay for Works – issued by the government of Peru [Unconditional Debt Obligations for Completed Works].  
• Financial guarantee provided by IADB.  
• Morgan Stanley credit-linked note. |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

<table>
<thead>
<tr>
<th>Main banks</th>
<th>Morgan Stanley</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial adviser of sponsor</td>
<td>Astrid Finance</td>
</tr>
<tr>
<td>Financial adviser of the government</td>
<td>Chemonics International Inc./ IKONS ATN</td>
</tr>
<tr>
<td>Legal adviser of sponsor</td>
<td>Clifford Chance (international) and Roselló (local)</td>
</tr>
<tr>
<td>Date close</td>
<td>August 11, 2006</td>
</tr>
</tbody>
</table>

**Source:** INFRASTRUCTURE FINANCE JOURNAL (2006) AND CHEMONICS INTERNATIONAL INC. (2007)

Because of its innovating nature and characteristics, this transaction obtained the “Latin American Project Bond Deal of the Year 2006” awarded by Project Finance Magazine.

- **Innovative:** a) IIRSA Norte is the first ever PPP financing in Peru, and a landmark use of capital markets technology in financing emerging markets infrastructure assets. It includes several elements that can be adopted by other countries and sponsors. b) IADB delivered the first Partial Credit Guarantee through its public window c) CAF delivered a bridge loan for the construction step d) The environmental risk was reduced considerably because the Government conducted a specific and complete study that was submitted to Pilosi Law d) The government of Peru received advisory funding from USAID to assemble a financeable concession e) The transaction was the first Peruvian bond issued in international market for infrastructure projects.
• **Effective / with high impact**: The transaction was structured by Morgan Stanley in a record time: less than one year.

• **Can be replicated**: CRPAO is a modality that can be replicated and is highly demanded due to reduce the **Negative carry**. Carry refers to the interest a borrower receives on funds borrowed prior to using the funds for the purpose of the project, generally construction of an asset in the case of PPPs. Bond financing almost always provides for all of the proceeds of the debt issuance to be drawn by the borrower at financial close, even if all the funds will not be required until later in the construction programme. This requires the borrower to invest the funds until required. In general, the interest rate that the borrower receives is lower than that paid to the bondholders, resulting in “negative carry.”

• **Pertinent / suitable for the project**: the practice has contributed directly to finance the construction without liquidity problems for the sponsors.

• **Efficient**: Financial engineering and guarantees used allow the project to get financing in 144 rule in a record time.
References


EPEC (2010), “Capital market in PPP Financing: Where we were and where we are going”. European Investment Bank


Web Pages

http://www.pontal.org/project.html
http://www.ppp.mg.gov.br/pppemminas/projetos-ppp/mg-050/
http://www.planejamento.sp.gov.br/modulos/ppp/ppp/apresentacao.aspx
http://www.ppp.mg.gov.br/unidadeppp
http://www.sefaz.ba.gov.br/administracao/ppp/sintese.htm
http://www.pontal.org/docs/ExecSummary.pdf
http://www.proinversion.gob.pe
http://www.economist.com/node/18178275
http://www.cnj.jus.br/novoportal/noticias/10682-brasil-precisa-de-mais-396-prisoes-para-abrigar-todos-os-detentos
http://www.desenbahia.ba.gov.br
http://www.inco.gov.co
http://www.banobras.gob.mx/Paginas/Banobras.aspx
http://www.banobras.gob.mx/productosyservicios/productos/Paginas/fonadin.aspx
http://www.concesiones.cl
www.pppnetwork.info

The network of professionals working for successful Public-Private Partnerships