Federal Mexican PPP Highway Program

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• Background
  • Mexican Toll Road Program (1989-1994)
  • Mexican Toll Roads Bailout Program

• Mexican PPP Highway Program
  • New Highway Concession Scheme
  • Private Service Contracts (PPS)
    • Cost-Benefit Analysis (“Value for Money”)
  • Asset utilization
  • Program Results
Mexican Toll Road Program (1989-1994)

- During this period **fifty-three concessions** were awarded to the private sector to build, operate and maintain approximately **5,000 kilometers of toll roads**.

- The program more than doubled the national toll road network from 4,500 kms (1989) to 9,900 kilometers (1994).

- Investment ~ US$13 billion in limited recourse financing:
  - Domestic commercial banks (52%),
  - Concessionaire equity (29%),
  - Mixture grants/equity contribution from Federal and state government (19%)

- However, miscalculation of investment costs and overoptimistic forecasts of operating income undermined the viability of the toll roads.

Source: The World Bank Group
The financial equilibrium of the sector was further undermined by the Mexican Currency Crisis of December 1994:

- The government devalued the peso in December 1994 losing 66% of its value by the end of the month;
- GDP fell 6.2%;
- Inflation annual rate reached 52% by December 1995;
- Short term interest rates reached 71.5% on April 1995;
- Severe recession intensified by political events and the peso devaluation;
- Significant liability increases due to financing in dollars;
- The combination of these factors, severely hampered the performance of toll road projects

Source: The World Bank Group
Program collapse: Major issues and sector performance

**Insufficient terms to recoup costs:**

- Awarding criterion: smallest concession period (average 10 years);
- Significant pressure over toll fees; (US$0.16 a US$0.62 / km, vs. US$0.02 a US$0.09 / km in the USA);
- Significant impact of competition from toll-free roads: traffic and revenues were far below projections (50% traffic, 15 to 25% revenues);

**Inadequate tendering process and concession design:**

- Lax pre-qualification rules (for example bidders were not required to submit a detailed financing plan);
- Project award criteria limited to domestic construction sector and thus potential competition for the market;
- Construction companies more interested in the construction work than in the long-term financial viability of the projects;

Source: Standard and Poor’s 2006. Revisión crediticia del sector de carreteras de cuota en México
Program collapse: Major issues and sector performance

Inflexible tariff adjustment mechanism:

- Biannual increase linked to the inflation index (CPI);
- Government approval necessary for further adjustments;
- Restriction to the ability of operators to use price to manage demand risk and to maximize project revenues;
- In addition to the short terms of concessions, this explains the initial establishment of high toll fees.

Inaccurate traffic and revenue forecasts:

- Relatively unsophisticated traffic models that incorporated unrealistic macro and microeconomic assumptions;
- The models did not establish an accurate price elasticity of demand;
- Use of motorways in average fell short of expectations 30% below expectations;
- Cash available for debt service has been far below base case expectations as a result of traffic shortfalls and higher than expected costs.

Source: Standard and Poor’s 2006. Revisión crediticia del sector de carreteras de cuota en México
Program collapse:
Major issues and sector performance

Main reasons for cost overruns and delays:

- Projects often broke the ground with only very preliminary engineering and design work (Cuernavaca-Acapulco toll road led to cost overruns of 200 percent and time delays of thirty months);

- Construction often began without securing the right of way;

- Resistance from community groups, environmentalists resulted in delays and even rerouting some projects

Source: The World Bank Group
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Mexican Toll Roads Bailout Program

• **Most tolls roads went into default** following significant cost overruns, overoptimistic traffic forecasts and 1995 peso devaluation adversely affected the toll road’s ability to service dollar denominated debt.

• **FARAC (Fideicomiso de Apoyo al Rescate de Autopistas de Cuota):** Trust fund owned by the Mexican Government was set up to rescue 23 failed toll roads projects, and assumed performing bank loans for about U.S. $ 5 billion through the National Bank of Public Works and Services (Banobras). Other estimates: U.S. $ 7 and U.S. $ 12 billion (1% to 1.7% of Mexico GDP).

• **No compensation for shareholders:** some estimates suggest that they lost about U.S. $ 3 billion. Major construction Mexican companies disappeared and downsized.

• Once under government control, **tolls for these roads decreased significantly** to encourage the use of the assets and revenue generation.

• **Terms for the other 32 concessions that remained under the control of the private sector were extended** (on average by 20 years more).
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Federal drive for implementing PPPs in the Highway Sector: Investment needs

• Each year, Mexico needs about 5 billion US dollars for investment in road construction and maintenance.

• Public funds allow federal government to annually invest less than half the required amounts.

• To close this gap, Mexico has put together four public-private partnership models that seek to attract private capitals to highways investment:
  
  • New Highway Concession Scheme
  
  • Private service contracts (also known as PPS projects)
  
  • Asset utilization
  
  • Special schemes

Source: SCT
Federal drive for implementing PPPs in the Highway Sector: Objectives

• Through its public-private partnership models, SCT seeks:
  • To allow an earlier development of Mexico's toll and free roads
  • To *increase* the amount of highway investments with *private participation*
  • To *better distribute and manage highway project risks*
  • To create jobs in highway construction
  • To increase the efficiency and productivity of public service provision
  • To *take advantage of existing highways* as a source of resources for new toll roads

Source: SCT
Federal PPP’s Highway Program:
PPP Models

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New Highway Concession Scheme:
Main characteristics

- Concessions are granted through international public bids
- SCT provides final designs, traffic studies, permits and rights of way
- SCT sets maximum average tolls and the rule for updating them
- The time of concession can be the maximum allowed by the law (thirty years)
- The government provides an initial contribution of public funds
- The government offers a minimum revenue guarantee (CAS) to facilitate involvement by private banks

Source: SCT
The concession is awarded to the bidder who requests the lowest amount of public funds, measured as the sum of the initial contribution and the net present value of the minimum revenue guarantee.

When projects do not require public funds, the concession is awarded to the bidder who complies with the legal, technical and financial requirements of the bid and offers the largest monetary amount to SCT.
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Private Service Contract (PPS) for Highways: Main characteristics

- The model includes a concession awarded through a public bidding process, as well as a service contract to be signed with the concessionaire (investor provider):
  - The term of the service contract is fixed, from 15 to 30 years.
  - The contract establishes an association between the Ministry and a private firm who is in charge to design, finance build, maintain and operate a highway (DBFO)
  - The private firm provides services in exchange for periodic payments
  - Periodic payments are based on availability of the road and its traffic levels and are recorded as current expenditure

Source: SCT
Private Service Contract (PPS) for Highways: Main characteristics

- The least NPV of periodic payments is the decision criterion used to award the concession, as long as the winner complies with technical, legal and financial requirements.

- **After construction, the modernized road continues operation as a toll free road**

- **When the model is applied to a toll road, the periodic payment is made with a combination of toll revenues and budgetary funds (PPS Combined)**

Source: SCT
Private Service Contract (PPS) for Highways: Revenue risk

- Availability Payments
- Shadow Tolls
- Real Tolls

Risks for the concessionaire vs. Cost of capital
Private Service Contract (PPS):
Other considerations

- The transfer of assets to the government at the end of the contract can be agreed beforehand.

- The ultimate responsibility for providing public services to end users rests solely in the public sector.

- Payments to the supplier are recorded as current expenditures and have priority in the budgeting process (multi-annuity budgeting).

- Clear risk allocation between the public and private sectors.

- It must demonstrate, through an CB analysis, the added value of carrying out the project under the PPS scheme (rather than traditional public investment), as well as their budgetary feasibility over time.

Source: Unidad de Inversiones, SHCP
Service Private Contract (PPS): PPS Highway

- Services provided by Private Sector:
  - Design, Construction and/or modernization of road;
  - Road operation and maintenance;

- Asset ownership:
  - Federal Government

- Services provided by Public Sector:
  - Provides population with increased access to quality and secure roads.
  - Highway safety forces

Long Term Service Contract
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Public Sector Payment Profile:
Traditional Public Work procurement (PSC or Reference Project)
Public Sector Payment Profile: PPS Procurement

No payment due until asset is under operation

Operation and maintenance

Use based payment

Availability-based payment

Construction

Year 5 10 15 20
Cost-Benefit Analysis:
Comparison PSC vs. PPS ("Value for Money")

Retainable risk cost

Transferable risk costs

Base cost (D&C and O&M)

PSC

Saving attributable to the PPS (VFM)

Retainable risk cost

Estimated payments flow to the investor provider

Additional cost to the public entity

PPS

Source: Unidad de Inversiones: SHCP
PPS authorization procedure: SHCP

**SPECIALIZED ADVICE**
- External advisors
  - Legal
  - Financial
  - Technical

**PRODUCTS**
- Conceptual project
  - Profile CB analysis
  - Budget sufficiency
- Prefeasibility CB analysis
  - Draft of long term services contract
  - Budget sufficiency

**AUTHORIZATIONS**
- 1st contact Investment Unit
  - 1st request authorization SHCP
  - 2nd request authorization SHCP

- Project tendered and contract signed

Source: Unidad de Inversiones, SHCP
Key elements for PPS authorization: SHCP

- **Cost-benefit analysis ("Value for Money")**

  Economic evaluation of the project to determine the added value of implementing a project through the PPS scheme, compared with the best public investment alternative available.

- **Budgetary impact ("Affordability")**

  Analysis of the financial impact of future payments commitments on the budget of the agency involved over time, and its long-term sustainability.

- **Legal feasibility**

  Review of the consistency of the PPS, its service contract and other legal acts within the legal framework of the entity or unit responsible.

Source: Unidad de Inversiones, SHCP
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Assets utilization:
Main characteristics

- SCT terminates the concession of highway assets in exchange for an indemnization.

- SCT prepares concessions formed by existing highways with more than 10 years of continuous operation, and new highways to be constructed.

- SCT grants the concessions to the private sector through public bids and pays Farac (Fonadin).

- The concessionaire is responsible to operate, maintain and exploit the existing toll roads, as well as to build and later operate, maintain and exploit the new highways in the concession.

Source: SCT
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- **Program Results**
Concesiones otorgadas

Modelo de Concesiones
- Libramiento de Matehuala
- Libramiento de Mexicali
- Morelia-Salamanca
- Tepic-Villa Unión
- Libramiento de Tecpan
- Amozoc-Perote y Libramiento de Perote
- Libramiento Norte de la Ciudad de México
- Saltillo-Monterrey y Libramiento Poniente de Saltillo
- Arriaga-Ocozocoautla
- Puente Internacional Reynosa-McAllen "Anzaldús"
- Puente Internacional San Luis Río Colorado II
- Puente Internacional Río Bravo-Donna
- Perote-Banderilla y Libramiento de Xalapa
- Libramiento de Irapuato
- Libramiento de Chihuahua
- Barranca Larga-Ventanilla
- Libramiento de La Piedad y Acceso a autopista México-Guadalajara

Modelo de PPS
- Irapuato-La Piedad
- Querétaro-Irapuato
- Tapachula-Toluá con Ramal a Ciudad Hidalgo
- Nuevo Ecatepec-Tlahuac
- Rioverde-Ciudad Valles
- Nueva Italia-Apatzingán
- Mitla-Entronque Tehuantepec

Modelo Aprovechamiento de Activos
- Pacífico Norte (un activo y 2 proyectos a desarrollar)
- Centro-Occidente (4 activos y 4 proyectos a desarrollar)

"son 26 concesiones Otorgadas...
con una inversión de 69,819 mdp y 2,700 kilómetros!"
Federal PPP´s Highway:
Program Results

- After almost 10 years of not granting roads concessions to the private sector, the model has reopened the possibility of involving private resources for highway development in Mexico.

- The results of the bidding process show that participants have reduced their risk perception and that they are willing to participate in highway projects.

- The participation of an increasing number of commercial banks also reveals greater confidence by the financial sector.

- The PPS´s model is a viable mechanism for toll free roads and toll roads development in Mexico.

Source: SCT
Municipality Strengthening for PPP Development Program (MuniAPP)

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La asociación entre el sector público e inversionistas privados para llevar adelante obras de infraestructura y provisión de servicios, puede cambiar el monto de los países emergentes.

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1. Conceptual aspects and PPP models (PPP)
2. Regulatory and Legal Framework
3. Technical aspects for Preparing, Structuring and Control of Projects
4. Integral Methodology for the evaluation of PPP Projects
5. Planning and Implementation of Projects
6. International Practices and Cases
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