

The second Mexican toll road program: learning from the experience

S. Carpintero¹ & R. Barcham²

¹*Polytechnic University of Madrid, Spain*

²*Norbridge Inc., USA*

Abstract

Public-private partnerships have played an important role in the provision of transport infrastructure in emerging countries over the last two decades. From 1989 to 1994 Mexico implemented an ambitious road concession program that has been widely regarded as a dramatic failure. In just five years, Mexico awarded 52 concessions totalling over 5,300 kilometres of toll roads. Nonetheless, as early as 1993 many of the concessions had to be renegotiated and in 1997 the government was forced to take over 23 of them at an immediate financial cost of billions of dollars. In 2003, after a hiatus of nearly a decade, the Mexican government began to offer toll road concessions again. Initially, concessions were offered for new roads but the government soon offered packages including both new roads and some of the older concessions bailed out in 1997. The new program succeeded in attracting bidders and expanded gradually until the late 2000s, when the global financial crisis dampened investor appetite, at least temporarily. This paper examines the key features of the new wave of road concessions in Mexico and analyses why it gained the backing of the international toll road industry.

Keywords: Mexico, PPP, toll road, concession.

1 Introduction

Private toll roads have experienced a notable worldwide expansion in the last two decades. The pioneer countries in this respect were Spain and France in the late 1960s and early 1970s, respectively. In the early 1990s, many additional countries began to offer motorway concessions to private investors, most notably in Latin America and in Central and Eastern Europe. In the late 1990s and 2000s,



private toll roads spread to countries in Asia, North America and Western Europe. Latin America was the first middle-and-low income region to launch private toll road programs, and it is the region where toll road concessions have experienced the greatest expansion.

Mexico has been a pioneer among middle-and-low income countries in launching a private toll road program and has indeed built the longest network of private toll roads of any country in the world. The Mexicans implemented their first program from 1989 to 1994, building over 5,300 km of toll roads, of which almost 3,500 km were granted to the private sector. However, 23 of the 52 concessions granted were taken over by the government in 1997 due mainly to: *i*) excessively short concessions periods; *ii*) overly optimistic construction cost and demand estimates by the government; and *iii*) the lack of incentives for the construction companies and the banks to carefully evaluate the risks (Ruster [1], Rogozinski and Tovar [2]).

In 2003 Mexico undertook a new program consisting of three kinds of road concessions: *i*) concessions for new roads financed by tolls; *ii*) concessions for new roads financed by a combination of shadow tolls and availability payments; and *iii*) concessions for existing public toll roads, including several of those taken over by the government in 1997. This experience provides important insights for many countries dealing with toll road programs. The results obtained by the second program, in terms of number of concessions awarded and kilometers built, may be considered a relative success. The number of concessions is not as impressive as in the first program but the quality of the second program has been much higher.

This paper analyses the key features of the second program and explores why it has been successful in attracting bidders, including both local and international companies.

2 Mixing public and private: relevant features of the second program

2.1 Introduction

One of the most significant features of the second road concession program in Mexico has been the use of public resources in order to enable the concessionaires to obtain the necessary private financing. This has been accomplished largely through initial public contributions as well as ongoing assistance by public financial institutions. The four key aspects of this public support that underlie the success of the second Mexican program are: *i*) the availability of public funds to pay for initial studies, make initial contributions and pay for land expropriations; *ii*) the selection of the concessionaire according to the lowest public contributions requested; *iii*) the use of in-kind public contributions to enhance the profitability of some concessions; *iv*) the participation of the public financial sector to substitute or complement the private financial sector when needed.



2.2 Availability of public funds to pay for initial studies, make initial contributions and pay for the land expropriations

The availability of a dedicated government fund, independent of the annual budget, has been a key feature behind the success of the second road concession program. According to many industry operators and senior government officials, without the existence of this fund, it would have been almost impossible in practice to provide the necessary initial public contributions and pay for the land expropriations. Creating a concession-specific fund overcame the difficulties associated with uncertainty around required resources and timing on the one hand, and annual availability of funds through the budget process on the other hand. Once established, the fund has provided resources for: *i*) preliminary studies such as traffic studies, design projects, etc.; *ii*) in-advance public contributions boosting the profitability of the early projects and thus making them more attractive to the private sector; and *iii*) land expropriations (González [3]).

The resources for the public contributions and payments came from the FINFRA fund until 2007, and beginning in that year have been provided by another fund named FONADIN, both managed by Banobras (national development bank dependent on the Finance Minister). The government had created FINFRA (Fideicomiso para Inversión en Infraestructura – Trust fund for investment in infrastructure) in September 1995 with the goal of developing mechanisms of public-private partnership to provide basic infrastructure and public services (Tamayo-Flores [4]). In 1997, the government created FARAC (Fideicomiso de Apoyo al Rescate de Autopistas Concesionadas – Trust fund to support the bailout of road concessions) to manage the financial resources linked to the concessions taken over by the government in 1997, including both revenues and debt service. In February 2007, the new government (elected in July 2006) decided to join FINFRA and FARAC, thereby creating FONADIN (Fondo Nacional de Infraestructura – National Fund for Infrastructure).

2.3 Selection of the concessionaire according to the lowest public contributions requested

Award of concessions during the second program was determined by comparing the public contribution requested by the bidders. To maximize efficiency, the concessions were awarded to those bidders requesting the lowest public contribution. Nonetheless, there were several challenges associated with this approach that were addressed and corrected along the way during the implementation of the second program. For example, beginning with the fourth tender (2005), the government established a maximum amount of money it was willing to provide to the project as a public contribution. If all bidders requested an amount higher than the designated limit, the government cancelled the tender. Based on the experience of the first three projects, the government realized that bidders tended to overestimate the investment cost. In the first two tenders there were only two bidders (and six in the third), all of which were local companies;



no foreign companies were attracted by the tender because the lack of confidence in the second Mexican toll roads program (González [3]).

In another change, starting with the third tender (2004), the government gave bidders the option of offering an upfront payment. From that point forward, the government received an upfront payment in a number of concessions (see [Table 1](#)). In the two first tenders, the best offer by the bidders was a request for zero government subsidy. In these cases where several bidders requested no subsidy, the concession was awarded to the bidder offering the lowest investment cost.

Selecting the concessionaire according to the lowest public contribution has also been used in concessions with a combination of shadow toll and availability payments (see [Table 2](#)). These concessions have been awarded to the bidder requesting the lowest present value of public payments. The government estimated, prior to the tender, a threshold amount for the minimum investment to be undertaken by the concessionaire and a limit for the maximum public contribution (calculated as the present value of all annual payments during the concession). In all six concessions of this kind granted, there were bidders who fulfilled both conditions. In another interesting feature, the government introduced a section with conventional toll in two projects in order to reduce the payments to be made (see [Table 2](#)). This only occurred in two cases because, according to the legal framework, the Mexican government can only charge conventional tolls on roads with an existing free alternative.

The efficiency in selecting the concessionaire according to the lowest public contribution has also been sought in the franchising of public toll roads. In September 2008, the government offered a package of concessions called FARAC II, but the tender was cancelled because bids were far below the government's expectations. The franchising of the previous package (FARAC I) in 2007 had been very successful because it included mainly brownfield concessions during a period of more favourable financial markets. The second package, however, was comprised of almost 50% greenfield projects, and was offered after the global financial crisis had begun. Instead of franchising the roads for a low price, the government decided to cancel the tender and split the package into two smaller ones (designated Pacific North and Pacific South). In 2009, the government granted Pacific North to IDEAL (belonging to the Slim Group). Meanwhile, another tender for franchising a package of public toll roads (called Noreste I) was also cancelled in March 2010, again due to the low value of the bids (Project Finance [5]).

2.4 In-kind public contributions

The government made an in-kind public contribution, usually in the form of construction, to several projects as a means of enhancing their financial profitability. As of 2010, the government contributed some section under construction in five projects (see [Table 1](#)). This approach, however, was not always successful. In two projects (Tepic-Villa Union and Arco Norte) the construction of the public section overran established deadlines for reasons that



Table 1: Conventional toll roads (second Mexican program).

Contract date	Length (km)	Total invest. (mill. pesos)	In-kind contrib. (km)	Support provided by FINFRA-FONADIN (million pesos)	Upfront payment to the government (million pesos)	Concessionaire (main shareholder)
				Initial public contribution	Subordinated debt	Loan guaranties
Libramiento de Matehuala	14	387.3		165.4		OMEGA (Mex.)
Libramiento de Mexicali	41	681.7		391.0		OMEGA (Mex.)
Amozoc-Perote	103	1,857		1,031.5		OHL (Spain) (*)
Tepic-Villa Unión	152	2,565.9	20			1,612 IDEAL (Mex.)
Morelia-Salamanca	83	989	25			Mex. companies
Arco Norte (Ciudad de Méx)	222	3,330.5	78			IDEAL (Mex.)
Libramiento de Tecpan	4	176.1				OMEGA (Mex.)
Saltillo-Monterrey	92	3,582.6	15		xx	Isolux (Spain)
Puente int Reynosa-McAllen	10	846				22 Mex. companies
Arriaga-Ocozacoautla	93	3,258.5	20			1,595.4 ALDESA (Spain)
Libramiento de Irapuato	30	964				262 Mex. companies
Perote-Banderilla	60	4,073			xx	3,355 Isolux (Spain)
Lib. de Chihuahua	41	1,451.2			xx	Mex. Companies
Ejutla-Puerto Escondido (Barranca Larga)	104	4,869.6		997.7	xx	OMEGA (Mex.)
Lib. de la Piedad	50	1,743.15				325 ICA (México)

Source: Elaborated by the author with information provided by the General Directorate of Road Development (Mexico).

(*) OHL bought its stake in this concessionaire from a Mexican company, which was awarded the tender but failed to raise money for the equity.

Table 2: Road concessions with shadow tolls and availability payment (second Mexican program).

	Contract date	Length (km)	Total invest. (mill. pesos)	Kind of payment	Concessionaire (main shareholder)
Irapuato-La Piedad	12/09/2005	74.3	631	Shadow toll & availability	ICA (México)
Querétaro-Irapuato	21/06/2006	93.0	1,172	Shadow toll & availability	ICA (México)
Tapachula-Talismán	28/11/2006	45.0	869	Shadow toll & availability	Azvi (Spain)
Nueva Italia-Apatzигán	05/10/2007	31.7	596	Shadow toll & availability	Mexican companies
Nuevo Necaxa-Tihuatlán	07/08/2007	84.8	4,387	Toll & availability payments	ICA (México)
Rio Verde-Ciudad Vallés	08/08/2007	113.2	3,095	Shadow toll & availability	ICA (México)

Source: Elaborated by the author with information provided by the General Directorate of Road Development (Mexico).



remain unclear. As a result, the concessionaire finished the construction of the main section before the government had finished its designated section, despite the smaller size and earlier start date of the latter.

2.5 Assistance of the public financial sector to substitute or complement the private financial sector

Both in the early and in the late 2000s, although for different reasons, the public sector provided financial support to substitute or complement the private sector contribution. In the earlier projects, the lack of credibility of the program made the private financial sector very reluctant to get involved in lending money for the concessions. Therefore, the state development bank Banobras provided the loans for the first two projects. By the third project the program had already gained enough credibility so as to attract investment by the private financial sector. From then on, all concessions until 2009 were financed by private banks.

In the late 2000s, the global financial crisis prevented the banks from providing loans to infrastructure projects. In order to maintain the concession program, in 2008 and 2009 the public financial sector provided stapled loans to projects offered as concessions. Banobras provided 70% of the financing as senior debt, and FONADIN provided the remaining 30% as subordinated debt. In addition to that, as an alternative approach, FONADIN offered guarantees and equity.

3 The relevance of stable leadership and institutional capability in the public administration

3.1 Stable leadership in the public administration

According to many observers, a key factor in the relative success of the second road concession program has been the involvement of a small cadre of experienced government officials, most of whom have been involved with supervision of road concessions in Mexico since 1993. Initially, their main task was perceived to be fixing the many problems faced by the first program. But as early as 1994 this group of people, led by Oscar de Buen, was already exploring ways to promote expansion of road concessions in Mexico. These early efforts demonstrated the proactive attitude and long term vision of this team.

The same group of officials has remained in charge of road concessions since the early 1990s through changes of the political party in office. In 2000, the conservative PAN party won the general elections, ending the 72-year reign of the leftist PRI party. When the incoming government took office, Oscar de Buen was appointed General Manager of the Directorate overseeing road concessions. By that time, work had begun on launching a new program. However, in the early 2000s, all stakeholders called to participate in the concessions (government, banks, construction companies, etc.) were still very sceptical regarding the real chances of a new road concession program. In 2006, the PAN again won the general elections and Oscar de Buen was promoted to



Undersecretary of Infrastructure, contributing to reinforce the strategy of promoting road concessions in the country.

3.2 Institutional capability of the public administration

There are three main points which demonstrate the institutional capability of the Mexican public administration in charge of the road concession program. The first is the capacity to learn from experience. According to many industry representatives, the government officials responsible for the road concession program have been able to implement a new program taking into account the main lessons of the first program. They have been also able to introduce changes during the implementation of the second program based on the lessons learned along the way. Furthermore, in some cases they have cancelled tenders and reoffered the concessions with modified terms of reference in order to better meet the expectations of both the government and the private sector.

A second point to consider involves the effective coordination observed between the Ministry of Transportation and the Finance Ministry. This fact is especially notable considering the relatively negative experience in this regard of other middle-and-low income countries, both in Latin America and in other world regions – most notably in Central and Eastern Europe (Carpintero [6]). The degree of coordination achieved in Mexico has been particularly relevant when several projects have needed public contribution to attract private sector investment (see [Table 1](#)). Both in cases for which the contributions are real and for which they are contingent, the participation of the Finance Ministry is key for the long-term success of the projects.

The third and final point to highlight is the credibility that the Mexican federal public administration has enjoyed in its implementation of the second road concession program. In long term projects with very high initial investments, credibility turns out to be a crucial requirement in attracting the private sector. The level of credibility achieved is demonstrated by the participation of many major international construction companies and banks in the tenders of the second program, starting with the fourth project. On average, 5-6 bidder consortiums presented themselves for each tender, of which roughly one third were led by a foreign company, particularly Spanish companies (InfraNews, 2010). Three out of the eight most recent conventional toll roads were granted to consortiums led by Spanish companies (see [Table 1](#)). Moreover, many concessions have been financed by foreign banks, most notably Santander (Spain), HSBC (UK), Scotia Bank (Canada) and Dexia (Belgium). Likewise, in the tender to franchise the first package of rescued concessions in 2007 (FARAC I), there were six bidders, of which two were consortiums of foreign companies, with the remaining four featuring a mix of both Mexican and foreign companies.

According to many industry operators, the crucial factors contributing to the increased credibility were the transparency of the tenders and the legal security of the contracts involved in the concessions (concession contract, financial contract, etc.), as well as the reliability of the initial studies conducted by the government (traffic studies, design projects, etc.). Legal security has been mainly guaranteed by well-prepared and complete contracts, as Mexico only passed a



Table 3: Comparison of real traffic with government forecasts in selected projects of the second program (vehicles per day) (1).

	2004	2005	2006	2007	2008
Libramiento de Matehuala					
- forecast	6,634	6,810	6,992	7,178	7,369
- real (2)	5,269	5,357	5,951	6,508	6,514
Amozoc-Perote					
- forecast					4,716
- real					3,261
Libramiento de Mexicali					
- forecast				2,846	2,970
- real				1,606	2,221
Morelia-Salamanca					
- forecast			4,542	4,660	4,781
- real (3)			4,150	5,164	2,410
Libramiento de Tecpan					
- forecast					1,986
- real					1,370

(1) The projects were included in a study carried out in 2009 by the General Directorate of Roads Development.

(2) Data for 2004 covers November-December and data for 2008 covers January-June.

(3) Data for 2006 covers 9-31 December and data for 2008 covers January-April.

Source: Elaborated by the author with data provided by the General Directorate of Roads Development (México).

specific law regulating concessions in late 2010. The reliability of government traffic studies for second program tenders is evident in the comparison of the forecasts with the real traffic ([Table 3](#)).

3.3 Delays in land expropriations

Despite the strong oversight and leadership of the public administration, delays in land expropriation have proven to be a major obstacle in most construction projects. Mexican law did not allow a quick procedure for land expropriation permitting the contractor to take immediate control and begin construction. The concessionaire was obliged to negotiate separately with each land owner. This requirement made project schedules vulnerable to land owners who adopted firm negotiating positions, holding out for higher compensation. In those cases, the government could not compel owners to sell, but was forced to go to court for adjudication in a process that might take some years. In April 2010 a new law was passed with the objective of expediting the expropriations. By requiring earlier advance planning by the Ministry, the law aimed to begin land purchase negotiations earlier in the process. At the same time, the new regulation may place a heavier burden on the public administration.



4 Conclusions

With the failure of the first round of road concessions in Mexico in the mid- to late 1990s and their subsequent bailout by the federal government, prospects for future projects seemed dubious. Nonetheless, beginning in 2003 and continuing through the decade, Mexico created a second program able to attract investors and award numerous concessions. The relative success of this second Mexican toll road concession program has yielded several useful lessons around design and administration of concessions. First, the availability of designated public funds for background studies, initial contributions, and land expropriations laid the foundation for a stable policy. Second, an emphasis placed on minimizing public expenditure by awarding concessions to bidders requesting the lowest public contribution led to a more efficient program. This practice was also put in place for concessions with a combination of shadow toll and availability payments, as well as for franchising existing public toll roads. In-kind contributions and public sector loans provided by the national development bank were further key factors contributing to boost the credibility of the second wave of Mexican road concessions and its attractiveness to private investors.

The Mexican experience also demonstrates the importance of stable, capable leadership and a strong institutional capability within a favourable legal framework. The same group of government officials supervised road concessions from the early 1990s onward, allowing them to accumulate expertise, learn from past mistakes, and work towards implementation of a long-term vision. Furthermore, the public administration exhibited flexibility to change features of the program and continuously introduce improvements, thereby reinforcing its credibility and increasing investor confidence.

The global financial crisis in the latter part of the 2000s dampened the activity in assigning further toll road concessions, and the Mexican government was forced to play a larger role in backing new concessions. Moving forward, it remains to be seen whether Mexico can regain the momentum it had achieved in this area. Another factor to consider is the effect of changes in the legal framework, such as the new land expropriation law. Finally, attention should be paid to the continuing institutionalization of transparent, efficient bid and award processes as well as the continuation of effective leadership and administration by the public officials responsible.

The strong pattern of international investment in Mexican toll road concessions can be seen as a validation of the second program, in both its design and administration. Additional study into such areas as the role of the legal framework, as well as the financial performance of the second program concessions, may clarify further elements of the Mexican experience. Finally, the definitive sustainability of the program is not yet proven, although all signs to this point have been very encouraging. In this respect, the second Mexican program may yield valuable lessons for other countries which may be considering implementing toll road concessions.



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