RISK ALLOCATION IN MOTORWAY CONCESSION CONTRACTS IN SPAIN

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ABSTRACT

Budgetary constraints are forcing transport infrastructure authorities to raise private funds to finance the construction of new projects and the maintenance of the existing ones by using concession contracts. One of the key elements in correctly defining a concession approach is to establish an adequate risk–sharing mechanism among the stakeholders that take part in the process. This paper shows the history of motorway concessions in Spain and analyses the main contribution of the new Spanish Concession Law, which prompted the Spanish Central and Regional Governments to tender many new motorway concession contracts (both toll and shadow-toll concessions). The paper delves into the main implications of the new risk-sharing approach in motorway concession contracts in Spain; particularly, the effects that the allocation of risks—such as traffic risk, construction risk, maintenance risk, and *force-majoure* risk—have on different stakeholders.

1. OVERVIEW

Many developed countries around the world are making a major effort to avoid public deficits, and this in turn, impose large budgetary constraints on the funding of construction and maintenance of transport facilities. However, some studies (Aschauer 1989, Aghion et al. 1999, Biehl 1986) emphasize the relevance of public capital stock, together with R&D, to promote both sustainable economic growth, and social equity in developed economies.

As a consequence, many governments are encouraging new ways to support private participation in the financing and operating of transport infrastructure. One of the most common ways of implementing private participation is through the concession system, which consists basically of transferring construction, maintenance and operation of the infrastructure to a private consortium, in exchange for the right to charge a user fee, for a period of time, fixed or variable, but contractually agreed in advance. As described in Vassallo (2004), infrastructure concessions incorporate some features that distinguish them from other construction and maintenance contracts, and also from the basic asset privatization procedure.

Regulation of infrastructure concessions is one of the aspects studied in some detail in the literature concerning: tendering theory (Laffont and Tirole 1993), public contract theory (Salanie 1998) and principal–agent theory (Chambers and Quiggin 2000). The reason for this extensive literature is because of the difficulty in establishing complete clauses in long–term infrastructure concession contracts (Gómez Ibáñez 2003).

2. HIGHWAY CONCESSIONS IN SPAIN

Spain has extensive experience in financing toll highways through concession contracts. Unlike some other European countries, such as France (Fayard and Bousquet 1998) and Italy (Gomez Ibáñez and Meyer 1993), highway concessions in Spain were all competitively awarded and mostly funded by the private sector. Since the late 1960s more than 30 highway concessions have been granted in Spain. In 2004 the length of the toll highways already awarded totaled 3,257 km, of which 2,788 km. were in operation and 470 km. in construction.

As Figure 1 shows, toll highways in Spain were not always awarded according to the same criteria. We can identify three different periods: from 1967 to 1975, from 1976 to 1995, and from 1996 to the present. Between 1967 and 1975, 2,042 km. were granted (almost 2/3 of the present length of toll highways in Spain). There are two reasons why toll highway concessions were used by the government as a means of expanding and improving the Spanish highway network during this period. First, the economic growth that Spain experienced during those years prompted a great rise in traffic so better highways were suddenly necessary. And second, the public budget in Spain was not able to afford such a huge investment; private financing was the only alternative to reach that goal.

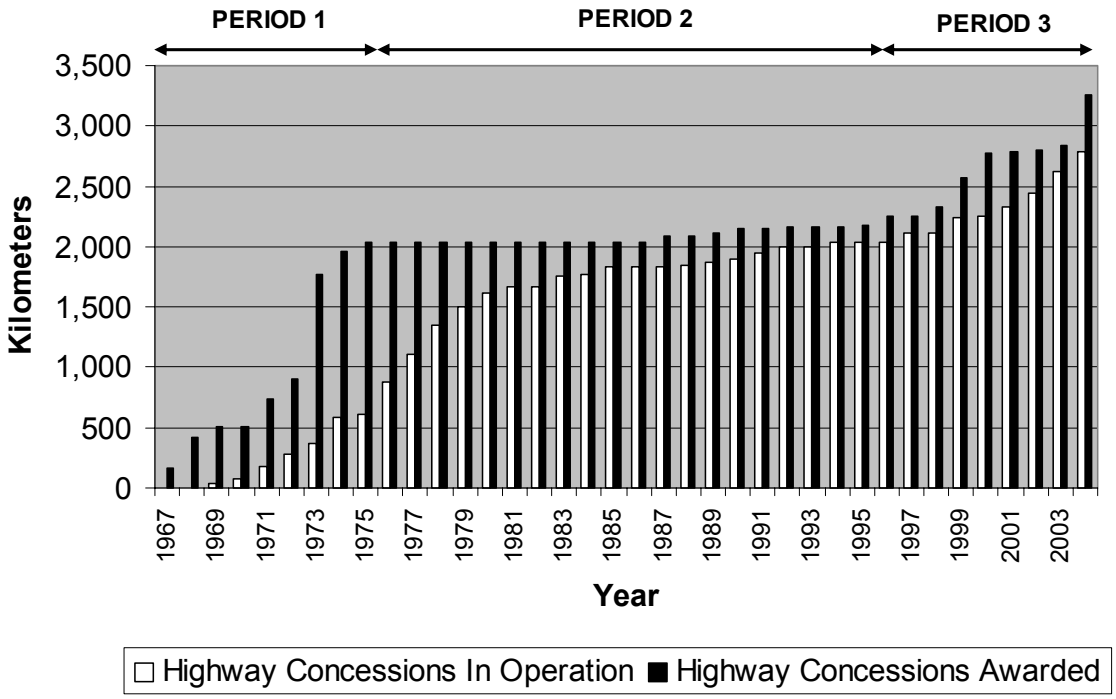

FIGURE 1 - LENGTH OF HIGHWAY CONCESSIONS IN SPAIN

In this period, highway concessions in Spain enjoyed several advantages compared to other industries. The main ones were fiscal deductions, loan guarantees, and exchange insurance provided by the State for those loans denominated in foreign currency. Despite the high risk that those measures might entail for the public budget in the future, they were regarded by the government as the only way to attract private capital for funding the highway program.

The two petroleum crises that the industrialized countries experienced in the 1970s had a huge impact on the guarantees provided by the Spanish government to highway

concessions. On the one hand, the rise of gas prices caused traffic growth to be lower than expected. On the other hand, exchange rates became substantially unstable. These factors triggered the guarantees initially incorporated in the contracts, which ultimately became highly expensive for the government. The government continues to meet the financial commitments made in the early 70s. In fact, from 1969 to 2001, the amount paid by the government to foreign lenders for the exchange insurance totaled 4,514.5 million euros, which makes up almost 50% of the total investment in toll highways.

The results of the implementation of concession contracts in Spain during this period were rather controversial. On the one hand, highway concessions achieved the goal of providing the country with a modern highway network at a time when the public budget of Spain was not able to afford such a huge cost. On the other hand, the guarantees committed by the government to facilitate concessions' funding became very costly for the country over time (Izquierdo 1997).

The second stage goes from 1975 to 1995. In this period, very few highway concessions were awarded. There were several reasons. First, the two petroleum crises in the 70s destabilized the Spanish economy. Second, after Franco's death, the political atmosphere in Spain was uncertain. Third and most important, the socialist government, which took office in 1982 and remained until 1996, was politically opposed to promoting private concessions as a means to finance highways.

Instead of toll highways, the socialist government developed the so-called "Expressways Program" in order to meet the urgent needs for building the high capacity network that Spain's stable economic growth demanded. The government opted for modernizing the Spanish road network by widening and upgrading the most important roads, turning them into double-track fast lanes with quality standards well below those for toll highways. This new program was completely funded by the public sector, which constituted a significant burden for the Spanish budget. The low quality of the upgraded roads ("autovías" in Spanish) became evident in the high rates of accidents, more than 50% higher than the rates of accidents that occurred on toll highways.

The third stage lasted from 1996 to 2004. In 1996, the conservative Popular Party took office in Spain after 14 years of Socialist government. Its main challenge was to incorporate Spain into the European project for adhering to a single currency, which involved a great effort towards achieving several macroeconomic convergence criteria (public deficit, public debt, inflation, and so on). The need to contain Spain's public deficit was the most difficult challenge for the new government. This was the main reason why the new government decided to implement once again the concession system so as to encourage the participation of the private sector for financing new transportation infrastructure. That way, the government was able to maintain the infrastructure investment pace, while at the same time managing to contain the public deficit. From 1996 to 2004, 1,003 kilometers of highways concessions were granted, and 755 kilometers were actually built, and are now being managed, in Spain. This new trend towards private funding was reinforced by a new Law, approved in 2003, which widened and updated the old Toll Highway Law passed in 1972.

3. THE NEW PUBLIC WORKS CONCESSION LAW IN SPAIN

In May 2003, the Spanish Parliament approved a new Concession Law (Ley 13/2003 Reguladora del Contrato de Concesión de Obras Públicas). The objectives of this Law were, among others, to update the old highway concession model and extend it to every type of public works, to reinforce the contribution of private financing to construct and maintain public facilities, and to improve the legal framework by defining a new risk–sharing approach (Izquierdo y Vassallo 2004).

The new Law contemplates that the concession contract may cover the construction, maintenance and operation of a new infrastructure, or only the maintenance and operation of an already existing infrastructure. In addition the new Law regulates new private funding sources to finance concession projects: senior and subordinated loans, the issue of bonds and other securities, securitization, mortgaging the concession assets and shares, etc. It is important to note that the new Law attempts to provide a secure framework upon which to promote the participation of the capital markets in funding infrastructures in Spain. Until the approval of the Law, the financing of infrastructures in Spain was almost entirely through syndicated loans provided by banks.

Regarding traffic demand management in peak periods, the law allows variable tolls in order to maximize the social benefit. However it places two limits to the variability of tolls. First, a limit as to the maximum tariff that can be charged in the peak hours every year. And second, a limit on the average tariff applied in a year. Those limits are to be updated every year according to such factors as the rate of inflation, the labor cost, etc. The maximum level imposed will avoid abuses on the concessionaire in the peak hours; the average limit intends to regulate the monopoly.

4. RISK IN PUBLIC WORK CONCESSIONS

There are plenty of risks in public works concession projects. Those may be classified in a threefold way (Izquierdo y Vassallo 2004) depending on:

1. The financial and economic elements that the risks may affect: initial investment, project revenues, maintenance and operation costs, and financial costs.

2. The causes that have created the risk: market conditions, unpredictable events, legal and political issues and so on.

3. The agent or stakeholder that finally assumes the risk: public authority, concessionaire, constructor, operator, lender, insurance company, etc.

Transportation concession risks may also be classified as construction risk, operation risk and demand risk. Construction risk includes not only the risk derived from the construction itself (climate, geology, efficiency of the works and so on), but also the risk of land requisition and the risk of obtaining in time the necessary permissions and licenses. Operation and maintenance risks have not generally been important in the results of transportation concessions being granted, since operation expenses have not represented either a significant amount compared with the high levels of initial investment, or a major element of uncertainty in the contract.

Up to now, the most complicated risk to assign has been demand risk. Moreover, the traffic is the key factor to obtain revenues and determine the financial viability of the project. Traffic forecasting is not an easy objective since demand depends on a wide range of factors that are difficult to predict. For example, the expected economic growth, the future competition of parallel facilities and user behavior regarding tariffs can be mentioned. In that sense, uncertainty of the estimates becomes larger, the further into the future predictions are made; consequently, the predictions as to the last years of the concession will hardly be calculated with certainty. This situation has forced many public authorities in charge of infrastructure concessions to focus their work on implementing new traffic risk sharing schemes in order to avoid the resulting problems. In the last few years, many different risk–sharing mechanisms have been implemented (Engel et al. 2001, Vassallo 2006).

5. RISK ALLOCATION IN THE NEW SPANISH LAW

The approach of the new Law regarding risk distribution in infrastructure concessions is based on the following issues:

- The private sector should be allocated most of the market risks.

- The public sector should be allocated the risks that cannot be adequately managed by any other stakeholders.

- The public sector may assume or mitigate some risks, but this assumption should generally avoid increasing Spain's public deficit. To that end, the Law defines that the mitigation will consist basically of modifications in the economic parameters (prices, concession term, and so on) initially fixed in the contract. Public subsidies are also contemplated as a means of re–balancing the economics of the contract in exceptional circumstances, but their use is strongly constrained by the Law.

- The risk mitigation must be understood in a symmetrical way, either in favor of the concessionaire or in favor of the Public Authority.

5.1. Legal and political risk

Since infrastructure belongs to the public sector, the Government has the right to change the terms of the contract to coincide with the public interest. If this change affects the economic balance of the concession, the initial conditions can be modified, in favor of the concessionaire or the government in order to compensate for this change. Moreover, if the administration takes some action not foreseen when the contract was signed, and this action substantially affects the economics of the contract, the economic balance should also be reestablished.

The Law does not specify the meaning of "substantial" in this respect. In the case that either the public authority or the concessionaire considers that there was "substantial rupture" in the underlying economic assumptions of the economics of the contract, they must try to agree on a solution. If they do not arrive at an agreement, they can decide whether to solve the disagreement in the court or by arbitrage. Until the conflict has been solved, the concession terms will be those set up by the public authority.

5.2. Unpredictable events

Unpredictable events are those events that are impossible to foresee at the beginning of the concession contract, and which may substantially affect the economics of the concession. Examples of unpredictable events include, for example, a terrorist attack that could destroy the infrastructure for a time, events of force majeure, or the development of a new means of transportation that diminishes much of the demand on the infrastructure concession. It is impossible, by definition, to make a list of all the events that may be defined as unpredictable, because one of the characteristics of this kind of event is the uncertainty of predicting when or how they are going to occur.

The new Spanish Law says that the government must reestablish the economic balance of the contract, to the benefit of the relevant party, when circumstances of force majeure (fire caused by atmospheric electricity, natural phenomena with catastrophic implications, and damages caused by war and serious alterations of the public order) lead directly to "substantial rupture" of the financial terms of the concession. The Spanish Concession Law does not include, as a justifiable cause for re–balancing the financial terms of the concession, many kinds of unpredictable events that are not manageable by the concessionaire, since force majeure is understood by the Law as a small part of these events. This situation has provoked a lot of criticism of the Law, especially by financial institutions that feel that, a relevant risk that can neither be managed by the private sector nor by the insurance companies, nevertheless remains implicit in the project.

5.3. Demand risk

In order to avoid the drawbacks derived from the difficulty in estimating traffic demand, the new Law has defined a system for reducing traffic risk in order to avoid as much as possible both future renegotiations and commitment of public resources. To that end, the Law established that the bidding terms could set up a procedure to mitigate traffic risk by setting up, for instance, a bottom band in terms of any variable related to the financial result–traffic, revenues, etc.–of the concession, defined in the bidding terms, under which some of the fixed variables of the contract could be changed to re–balance the financial terms of the contract.

5.4. Construction and operation risk

The new Spanish concession Law establishes that the construction risk should be borne by the concessionaire. However, the Law allows the concessionaire the possibility of transferring this risk to the construction company. In addition, the Law makes it clear that when the concessionaire delays execution of the work, and the delay is due to force majeure or to a cause attributable to the administration granting the concession, it shall be entitled to an extension in the duration of the concession.

Regarding operation and maintenance risk, the new Law incorporates two interesting novelties: the so–called "progress clause" and the introduction of bonuses and penalties related to the fulfillment of certain quality criteria. The "progress clause" consists in the obligation of the concessionaire to maintain and operate the public works according to the technical, environmental and safety regulations that may be applicable at each moment. In turn, with the introduction of penalties and bonuses derived from quality indicators, the Law intends to encourage the concessionaire to render the best possible service to the larger society.

Some of the main private concession companies in Spain have complained of the introduction of this "progress clause" by arguing that it transfers a large amount of risk to

the concessionaire. Those companies argued that, according to this clause, if changes in environmental regulations require that the infrastructure be located, for instance, at a subterranean level so as to reduce noise pollution, the concessionaire will be forced to carry out these expensive works without any right to be compensated. The complaints of those companies do not have much justification because, as it was explained in the section devoted to the legal and political risk, the public authority is obliged to compensate the concessionaire when actions from the government may lead to "substantial rupture" of the economics of the contract. In spite of this, a more detailed regulation of this clause seems warranted in order to design a more comprehensive risk–sharing framework.

Although the progress clause may be considered as one of the most important contributions of the new Law, this clause began to be incorporated in the last highway concession contracts tendered in Spain before the Law was approved. In those contracts, the development of the "progress clause" stated that the concessionaire will be obliged to apply subsequently measures approved according to the corresponding guidelines for roads and highways. In this case, the concessionaire will not have any right to claims for compensation from the administration, except in the case that this measure entails substantial costs not previously contemplated. Obviously the interpretation of "substantial cost" raises the same problems that were commented upon the legal and political risk sub–section.

6. DISCUSSION

As it has been described in the paper, the risk–sharing scheme implemented by the new Public Works Concession Law in Spain has some important advantages, that will likely improve the future efficiency of the system. The following ones can be highlighted:

- The scheme defines the different risks existing in concession contracts and establishes to what extent they are going to be held by the different stakeholders.

- The scheme clearly specifies which events may cause the modification of the economic terms of the contract in order to re–balance the financial terms of the concession. Consequently, the bidders know, at the time of preparing their offers, which specific cases may lead to changes in the initial contract conditions initially stated.

- This clear framework helps to avoid future renegotiations arising from offers that were initially too optimistic, between the concessionaire and the public authority; this is an incentive to the bidders to prepare offers as realistically as possible.

- The approach reduces traffic risk by fixing, depending on the level of traffic, the future changes in the economic conditions of the contract.

- The approach is able to avoid budgetary implications for the public administration because the reestablishment of the economic balance is carried out generally by changing the economic terms of the contract instead of by committing additional public resources.

- The approach permits the uses of variables, such as the concession contract term, that are easy to modify in an automatic way to reestablish the economics of the contract once the bands have been surpassed.

In spite of that, the approach has also some problems. Among them, the following can be mentioned:

- The risk of “unpredictable events”, that may affect substantially the economics of the concession, is not included in the Law as a triggering event for re–balancing the economics of the contract. This fact implies that lenders will perceive a higher level of risk in financing concession projects in Spain, and consequently the cost of the debt will be higher.

- The so–called “progress clause” transfers to the concessionaire the risk derived from the evolution of the technology, the environmental, safety and quality needs required by the society in the future as long as the economics of the contract is not substantially affected. However, the Law neither defines what is understood by “substantial implications” in this case nor establishes an effective procedure to cope with the potential conflicts that can arise.

- The demand risk–sharing mechanism based in reestablishing the economic balance of the concession, according to the contract, when the demand overtakes certain pre–defined levels, is based in the hypothesis that traffic demand can be forecasted by the public authority with a certain level of accuracy. Unfortunately, traffic demand in most transport facilities is not easy to forecast accurately. This fact represents a relevant limitation on the usefulness of this approach.

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