

LESSONS FROM THE US EXPERIENCE ON INDUCING HIGHWAY CONCESSION CONTRACTS

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ABSTRACT: PPP projects, more specifically Concession Contracts, are getting more and more prevalent in the US recently. A report by U.S. PIRG Education Fund in 2009 said that between 1994 and 2008, 58 highway facilities had been delivered under PPP models and/or concession contracts. However, swift growth of the concession contracts such as long term lease and DBFO has generated fierce criticism from a standpoint of protecting the public interests. This paper attempts to examine lessons from the US cases on highway concession contracts that revealed public policy issues, establish a “double bottom line” to fulfill both public interests and private returns of the project and evaluate five (5) US concession contracts in accordance with the eight (8) key indicators regarding if each contract is in favor of either public or private. Finally, the key indicators are scored between 0.0 pt and 1.0 pt and the total score is defined as Public-Private Index (PPI).

KEYWORDS: concession contract, double bottom line, public-private index

1. BACKGROUND AND OBJECTIVES

Approximately one and half decades ago, the US commenced to study concession contracts carried out in Europe. As a consequence, concession contracts as represented by Chicago Skyway and Indiana Toll Road are rapidly getting prevalent in the US. On the other hand, various issues became evident due to swift growth of concession contracts. These issues involve the concessionaire bankruptcies and resulting ceased road services, or the rate of return by the concessionaire was criticized to be too high.

In order to provide stable road services, it is necessary for the concessionaire to make appropriate returns, however, excessive returns will excite criticism from a standpoint of protecting public interests. As delineated hereafter, some evidence

indicates that a balance between the private returns and public interests is indispensable so that stakeholders like public sectors, concessionaires, lenders/investors, and users/community are satisfied with the project.

This paper contributes to establishing a “double bottom line” to fulfill both the private returns and public interests of the project. Chapter 2 examines typical contract terms and conditions by analyzing existing concession contracts in the US and attempts to enumerate eight (8) key indicators which may remarkably affect the above double bottom line. Chapter 3 provides examples and events of current concession contracts, clarifies commonly prevailing practice and evaluation of related terms of contracts and sets up a basis of evaluation for each key indicator. In Chapter 4, five (5) US concession

contracts are conclusively scored in accordance with the eight (8) key indicators and evaluated according to the double bottom line that measures if the contract is in favor of either public or private.

Numerous academic papers, reports to the Governmental Authorities, books and journals regarding public interest issues of concession contracts have been published. Some of them are listed in the Reference of this paper and include the following discussions: (i) stiff opposition for the Indiana Toll Road and a moratorium on new concessions imposed by the legislature in Texas (Ortiz 2008), (ii) characterizing PPP Program Drivers (Garvin 2008), (iii) revenue sharing provisions and other concession features that affect private returns (Mayer 2007), (iv) how decision-makers should know whether they are advancing the public interest (Baxbaum 2007), (v) demand risk-sharing scheme defined by the accumulated present value of the revenue (Vassallo 2009). This paper is the first to attempt to evaluate concession contracts from a standpoint of both private returns and public interests.

2. PUBLIC POLICY ISSUES ON CONCESSION CONTRACTS – From a Standpoint of Private Returns versus Public Interests

2.1 Methodology to Identify Key Indicators for Public Policy Issues

Public policy issues on concession contracts from a standpoint of private returns versus public interests will be discussed. A three-step methodology as described hereinafter shall be adopted to identify key indicators that are influential on the above issues.

Step 1: First, commonly applicable terms and conditions extracted from such real concession

contracts as Dulles Greenway (Virginia 1993), SR91 Express Lanes (California 1993), Camino Colombia Bypass (Texas 1999), SR125 (California 2003), Chicago Skyway (Illinois 2005), Indiana Toll Road (Indiana 2006), Pocahontas Parkway (Virginia 2006), SH-130 5&6 (Texas 2008), I-495 HOT Lanes (Virginia 2008) and I-595 Managed Lanes (Florida 2009) shall be listed as “common terms and conditions”.

Step 2: These contractual terms and conditions shall be evaluated by four (4) tiers intensity regarding influence on the double bottom line of private returns or public interests. Evaluation by the four (4) tiers intensity shall be made in the following manner;

(Intensity A): Those terms and conditions that vary by the Contract and where difference of substances would affect the double bottom line. For example, relating to rate of return by the concessionaire, some contracts stipulate the cap rate and others do not. This largely affects the concessionaire’s returns.

(Intensity B): Those terms and conditions that imply no major difference of contractual substances and do not affect contract characteristics. However, they need to be taken into consideration when evaluating the double bottom line. For example, the term relating to force majeure regulates that concessionaires are exempted from indemnity and public sectors assume responsibility. This is regarded as favorable to the concessionaire.

(Intensity C): Those terms and conditions of which substance are decided at a previous phase of the bid and/or contract processes, or at a later phase when the corresponding cases happen during the Project proceeding and are accordingly independent

Table 1 common terms and conditions / their intensity

Common Terms & Conditions	Intensity	Remarks
toll rate and reasonable future toll rates	A	cap rates are highly influential
reasonable rate of return by concessionaires and income sharing with public sector	A	cap rates and revenue sharing are highly influential
concession term	A	concession length is highly influential
competing facilities	A	revenue impaction facilities are highly influential
force majeure	B	most contracts stipulate public responsibility → private-favored
change in superior policy and law	B	most contracts stipulate public responsibility → private-favored
renegotiation	C	determined upon cases
refinance	C	determined upon cases
default or bankrupt of concessionaires	C	determined upon cases
quality of long term maintenance and operation	B	most contracts have standards → public-favored
hand-back and/or resale	B	most contracts have standards → public-favored
compliance with environmental standards	C	predetermined before contract
transaction of upfront or annual proceeds	D	not affect public- or private-favored characteristics
construction, completion date	D	not affect public- or private-favored characteristics
insurance, indemnity	D	not affect public- or private-favored characteristics
records	D	not affect public- or private-favored characteristics
tax	D	not affect public- or private-favored characteristics
subsidies	C	predetermined before contract
compliance of laws	D	not affect public- or private-favored characteristics

from evaluating the double bottom line at the time of contracts. For example, application of subsidies is determined prior to the bid announcement and incorporated into the financial scheme before the bid.

(Intensity D): Those terms and conditions that do not directly influence the evaluation of the double bottom line. For example, the use of upfront payment is important public decision but does not directly relate to the double bottom line if it is either public- or private-favored.

Step 3: Based upon Steps 1 and 2, items ranked as Intensity A and B shall be identified as “Key

Indicators” to consider the double bottom line if contracts are either private- or public-favored.

2.2 Identification of Key Indicators

Nineteen (19) commonly applicable contractual terms and conditions are extracted in accordance with Step 1 as described above. Then, they are ranked as intensity A, B, C and D in accordance with Step 2 above. As a result, four (4) of the Intensity A items and four (4) of the Intensity B items are identified as Key Indicators of the double bottom line for public policy issues and are to be evaluated later on. Table 1 shows all of the extracted contract terms and conditions and their intensity tier.

3. COMMONLY PREVAILING PRACTICE AND EVALUATION OF RELATED TERMS OF CONTRACTS

In this Chapter, discussion is focused on the eight (8) key indicators out of the nineteen (19) common terms and conditions as listed in Table 1. Items other than the eight (8) key indicators are excluded since they are not so intensively correlated in sight of the double bottom line.

First, a literature survey is carried out regarding how each of the eight (8) key indicators is specified in current contracts and then the commonly prevailing practice that stipulates common ground of existing concession contracts. Prominent examples of the contracts and remarkable events to be considered are also described.

Second, a basis of evaluation to deliberate if the practice commonly prevailed is favorable to public interests or private returns is examined or proposed.

3.1 Toll Rate and Reasonable Future Toll Rates

3.1.1 Examples and Events

-- Chicago Skyway sets rates until 2017, then indexed rate may be increased to the greater of 2%, the % increase in Consumer Price Index (CPI) or Gross Domestic Product (GDP) per capita. (Schedule 6 of the Contract)

-- Indiana Toll Road sets rates until 2011, then indexed rate may be increased to the greater of 2%, the % increase in CPI or per capita GDP. (Schedule 7.1 of the Contract)

-- Pocahontas Parkway sets rates until 2017, then indexed rate may be increased to the greater of 2.8%, the % increase in CPI or per capita GDP. (Article 4, Exhibit F of the Contract)

-- One (1) early project in 1993, the Dulles

Greenway in Virginia, was developed under the state legislation that mandated utility-style toll-rate regulation. However, in April 2008, toll rate increases from 2013 to 2020 were linked to the greater of (i) the increase in CPI from the last toll rate increase plus 1%, (ii) the increase in the real GDP from the last toll rate increase, or (iii) 2.8%. (Regulated by SCC under VA. Code Ann.56-542 (2007))

-- I-495 HOT Lanes adopt Congestion Pricing, including the dynamic tolling that enables frequent toll rate changes in order to maintain smooth traffic flow. (Section 4.04 and 12.02 of Amended and Restated Comprehensive Agreement).

3.1.2 Commonly Prevailing Practice

All recent agreements for operation of existing or newly constructed toll roads have included limitations on how often and how much toll rates could be increased. In most projects, the mechanisms used to control toll rates consist of specific limitations on rate increases. Indexed rate may be linked to economic indices such as CPI and GDP or the set rates. Upon the Contract, toll rates are proposed by the concessionaire on a basis of the cap rate stipulated in the bidding requirements and determined as agreed.

Reasonable toll rates would include variable toll rates set high enough in peak periods to efficiently manage congestion. Concessionaires must be able to project that future toll revenues will be sufficient to retire debt, pay for the costs of operation, maintenance and future capital improvements, and provide a reasonable return to investors.

From an economic perspective, toll rates should approach the marginal societal cost of driving.

For congested facilities, setting maximum fixed

toll rates will likely to be in conflict with a desire to minimize congestion through variable pricing. For these projects, limiting returns on equity or providing for revenue sharing has been used in lieu of rate caps to protect against monopoly profits.

3.1.3 A Basis of Evaluation

When public sectors attempt to link toll rates with economic indices such as CPI and per capita GDP and set cap rates not to excessively raise the toll, such contracts are evaluated as favorable to public interests. Oppositely, if contracts allow concessionaires to conduct monopoly pricing, such contracts are evaluated as favorable to private returns.

3.2 Reasonable Rate of Return by Concessionaires and Income Sharing with Public Sector

3.2.1 Examples and Events

-- Chicago Skyway and Indiana Toll Road provide no rate of return limitation and revenue sharing though toll rates are capped. The rate of return limit is placed by competition bid based on highest upfront payment.

-- Pocahontas Parkway (Section 5.01), SH-130 5&6 (Section 5.1.2, Exhibit 7, Part B) and I-495 HOT Lanes (Section 5.01, Exhibit L) provide revenue sharing based on levels of return on total investment. Once the concessionaire has achieved a certain rate of return, the private and public partners will share additional revenue.

-- An example of thresholds stipulated in the Contract of Pocahontas Parkway is that (i) if the pre-tax internal rate of return on total invested project funds exceeds 6.5% during the first period, the concessionaire must pay the public sector 40% of the gross toll revenues, and (ii) if it exceeds 8%, the concessionaire must pay 80% of the gross toll

revenues to the public sector.

3.2.2 Commonly Prevailing Practice

The approach public officials use to address rate of return limitations depends on a number of factors, including (i) the net benefits to the society, (ii) the policy objectives of the public sector, (iii) the risk profile of the project, and (iv) the competitive nature of the procurement. The concessionaire's return can be restricted through contractual provisions that cap the amount of user fees.

There are four (4) other approaches that have been used to limit returns in toll road concessions: (i) competitive bidding, (ii) revenue sharing, (iii) absolute caps on rate of return, and (iv) utility-type rate regulation.

In the Chicago Skyway and Indiana Toll Road concessions, there was no explicit limit on rate of return. The actual rate of return will be a product of how efficiently the concessionaire can operate the toll road. However, analysis of the Indiana and Chicago deals by Dennis Enright (July 24, 2008) found that the private investors in those deals would likely recoup their investment in less than 20 years.

Responding to the criticism as above, several agencies have opted for revenue sharing provisions that allow both the public sector and the concessionaire to share in the upside potential.

Recent variations on revenue sharing provisions are (i) the use of pre-set revenue bands from which the public sector will be paid a certain percentage of revenues, (ii) no pre-set revenue bands is applied to until a certain period of the concession, after which, a certain rate of excessive revenue over the pre-set band will be returned to public sectors, and (iii) concession term is shortened at the determination by

public sectors.

3.2.3 A Basis of Evaluation

If the concession contracts regulate revenue sharing provisions, such contracts are deemed favorable to public interests. If no such provisions are regulated, such contracts are deemed favorable to private returns.

3.3 Concession Term

3.3.1 Examples and Events

-- Concession term of Dulles Greenway, one of the early (1993) contract, was originally 40 years, but in 2001 it was extended for additional 20 years because decreasing traffic demand necessitated re-financing.

-- 99 years for Chicago Skyway and Pocahontas and 75 years for Indiana Toll Road are the examples of long term concessions.

-- Some States have capped the maximum term of agreements by legislation. Examples of maximum terms imposed by states are 35 years in California, 99 years in Colorado, and 50 years in other states.

3.3.2 Commonly Prevailing Practice

One important policy consideration in setting contract terms is the level of risk of the project. However, other policy considerations such as incentives to innovate, overall impact on government budgets and governmental capability and desire to operate various transportation assets are also important. Concessionaires need a longer concession period to allow them to recover their costs and to achieve a reasonable return on investment.

Certain Federal, State and local tax consideration, such as the ability to qualify for accelerated depreciation, are also factored into the length of the term. Tax ownership qualifies the concessionaire to depreciate the portion of its

upfront payment allocated to the tangible physical assets over 15 years for a highway. As for Federal corporate income tax, a concession deal of more than 45 years can be deemed to be a sale even though ownership remains in public sectors.

Oppositely, a long term lease contract raises some problems to be brought over the next generation. In the example case of Chicago Skyway, there is a concern if anticipated increase in toll rate can consist with a fair contract over future generations. Accordingly, it can be assumed that an option to the hold the right of shortening the concession term due to protection of public interests is regulated. In fact, there is such a concession contract realized in France.

3.3.3 A Basis of Evaluation

The concession term implemented currently vary from 35 to 99 years by States and by Contracts. It shall be evaluated that the contract allowing the term 99 years is most favorable to private returns and the contract allowing the term 35 years is most favorable to public interests.

3.4 Revenue Impacting Competing Facilities

3.4.1 Examples and Events

-- Camino Colombia Toll Road, located in Texas, first opened to traffic in 2000, completely financed by private investors at a cost of \$90 million. An independent auditor predicted that Camino Colombia road would generate \$9 million in revenue within the first year, but instead it only received \$500,000. By 2004, the toll road had failed and bondholders foreclosed on the remaining \$75 million note. The road was sold at an auction for \$12.1 million to John Hancock Financial Services Inc. After purchasing the road, John Hancock immediately closed the road to all traffic. This move forced Texas DOT to pay the

private company \$20 million to purchase the road, allowing it finally reopen after five months.

3.4.2 Commonly Prevailing Practice

Public sectors need to be free to invest in new infrastructure in the future to meet actual growth. Current contracts do not specifically prohibit public sectors from building what have been termed “competing facilities”. Only the SR 91 express lanes prohibited construction of competing facilities. Current agreements provide for possible compensation to be paid to the concessionaire if any construction of facilities not planned when the agreement was executed results in a proven reduction in revenue.

3.4.3 A Basis of Evaluation

Non-compete and compensation provisions are to be considered protecting the concessionaire’s returns. Accordingly, the contract containing these provisions is deemed favorable to private returns and the contract with no such provisions are deemed favorable to public interests.

3.5 Force Majeure

3.5.1 Examples and Events

-- The State of Indiana compensated the concessionaire \$447,000 of losses due to flood evacuation occurred on Indiana Toll Road in September 2008.

3.5.2 Commonly Prevailing Practice and a Basis of Evaluation

Contracts stipulating indemnity restoration costs are deemed favorable to private returns. Most of the current concession contracts have this provision. In the case if no such indemnity is provided, then the contracts are deemed favorable to public interests.

3.6 Changes in Superior Policy and Law

3.6.1 Commonly Prevailing Practice

Unplanned change of superior policy and law at the contract may occur due to public policy considerations. When it is the case, the public sector will exempt the concessionaire from damages due to the change and discuss with the concessionaire appropriate resolution including toll rate increases. Public sectors reserve the right to terminate the contract with fair value under the reason of public convenience as a result of change in superior policy.

3.6.2 A Basis of Evaluation

Contracts stipulating the measures against changes in superior policy or law are deemed favorable to private returns. In the case where no such provision is stipulated and risks due to such changes are transferred to the concessionaire, contracts are deemed favorable to public interests.

3.7 Quality of Long Term Maintenance and Operation

3.7.1 Commonly Prevailing Practice

The concessionaire is expected to be highly motivated to maintain the facility in top condition in order to protect its investment and attract the greatest number of customers.

Contract terms that incorporate these expectations with detailed performance requirements have become standard in concession transactions. Many contracts include schedules of improvements required from the concessionaire over the life of the agreement. Additional security for the concessionaire’s performance can be provided by requiring deposits to be made to reserves for operation, maintenance and rehabilitation ahead of distributions to equity investors.

Usually, the concessionaire's lenders also have a strong interest in policing the concessionaire and its maintenance of the facility in order to avoid any threat of contract termination due to the concessionaire's default.

3.7.2 A Basis of Evaluation

Contracts requiring state-of-the-art performance levels are deemed favorable to public interests. Concessionaires have strong incentives to invest in high quality services but have limited amount to be spent. If contracts require standard good industry practice, they shall be deemed favorable to private returns.

3.8 Hand-back and Resale

3.8.1 Examples and Events

-- Chicago Skyway and Indiana Toll Road concessions both used letter of credit that would be available to the public sector if the concessionaire failed to return the facility in good condition.

-- Pocahontas Parkway concession requires the concessionaire to maintain an "extraordinary maintenance reserve" to fund any necessary renewal or maintenance work required to put the project in good condition at the termination of the contract.

-- SH-121, SH-130 and I-635 in Texas use detailed hand-back requirements to spell out what the condition of the facility must be at the end of the term.

3.8.2 Commonly Prevailing Practice

Toward the end of the term, the incentive for the concessionaires to invest in renewal work weakens. This could leave the public sector with significant operations and maintenance obligations at the termination of the contract. Hand-back provisions have three (3) main purposes: (i) they form part of

the concession life-cycle approach, (ii) they help induce the concessionaire to maintain the facility throughout the term, and (iii) they add certainty as to the condition of the assets that will revert to the public sector at the end of the term. Letter of credit, performance bonds, cash deposits for maintenance reserves and annual audit are essential countermeasures.

3.8.3 A Basis of Evaluation

Contracts specifying hand-back provision and resale provision are evaluated favorable to public interests and contracts with no such provisions are evaluated favorable to private returns.

4. ANALYSIS AND SCORING OF REPRESENTATIVE US CONTRACTS

4.1 Methodology of Scoring

To summarize and analyze the US concession contracts regarding the double bottom line if they are favorable to public interests or private returns, the five (5) projects of Chicago Skyway, Indiana Toll Road, Pocahontas Parkway, SH-130 5&6 and I-495 HOT Lanes are scored in the following manners;

- (i) Analysis shall be made for individual item of the "eight (8) key indicators" as previously enumerated.
- (ii) Scoring shall be made in accordance with the "basis of evaluation" as previously discussed in the Chapter 3.
- (iii) If, in accordance with the basis of evaluation, the indicator is determined as favorable to private returns, then it shall be scored as 1.0 pt, while if the indicator is determined as favorable to public interests, then it shall be scored as 0.0 pt.
- (iv) All of the eight key indicators are thus scored either 1.0 pt or 0.0 pt, except the indicator of concession term that shall be differently scored.

Table 2 analysis and scoring results of US concession contracts

	Favorable to Public Interests (0.0pt)	Favorable to Private Returns (1.0pt)	Chicago Skyway (2005)		Indiana Toll Road (2006)		Pocahontas Parkway (2006)		SH-130 5&6 (2008)		I-495 HOT Lanes (2008)	
① toll rates	set	no caps	0.0		0.0		0.0		0.0		0.0	
② rate of return by concessionaires	capped	no caps	1.0		1.0		0.0		0.0		0.0	
③ concession term	calculated proportionately between 35yr (0.0pt) and 99yr (1.0pt)		1.00	99yr	0.63	75yr	1.00	99yr	0.23	50yr	0.70	80yr
④ non-competitive clause / compensation clause	no clause	stipulated	0.0		1.0		1.0		1.0		1.0	
⑤ clause for force majeure	no clause	stipulated	1.0		1.0		1.0		1.0		1.0	
⑥ clause for change in superior policy and law	no clause	stipulated	1.0		1.0		1.0		1.0		1.0	
⑦ quality of long term maintenance and operation	state of the art	industry standard	0.0		0.0		0.0		0.0		0.0	
⑧ hand-back and/or resale	strictly stipulated	ordinarily stipulated	0.0		0.0		0.0		0.0		0.0	
Evaluated Indicator PPI = Sum total			4.00		4.63		4.00		3.23		3.70	

Table 3 tendency of contracts

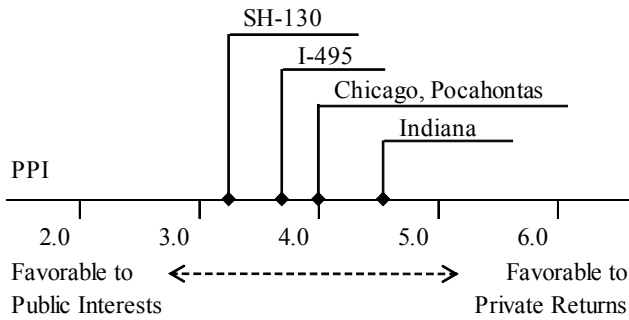


Table 2 shows the result of the analysis and score and Table 3 indicates distribution of the five (5) contracts on a straight line showing how they are in favor of public interests or private returns. Subsequently to the analysis of the US Concession contracts, it is found that Indiana Toll Road is scored as 4.63 pt and most favorable to private returns. Both Chicago Skyway and Pocahontas Parkway that scored as 4.00 pt follow it.

- (v) The concession term regulated by the State Law varies between 35 and 99 years, depending on the State. Accordingly, the term of 35 years is scored to be 0.0 pt (most favorable to public interests) and the term of 99 years is scored to be 1.0 pt (most favorable to private returns), and others are apportioned by their concession length.
- (vi) Thus, all key indicators shall be scored independently, and summed up in a total of the eight indicators. The sum total is defined as PPI (Public-Private Index).

In this scoring method, completely private returns-favored contract will be scored as 8.0 pt and completely public interests-favored contract 0.0 pt. However, the scoring shall not necessarily be construed that a middle point of 4.0 pt is a totally balanced contract. Instead, the scoring finds tendency of each contract to be more favorable to private returns or public interests.

5. CONCLUSIONS

Several concession contracts carried out in the US were discussed and analyzed from a standpoint of

4.2 Results of Scoring

the private returns and the public interests. As a result, following conclusions were obtained;

(i) From a view of the private returns and the public interests, eight (8) key indicators were enumerated and analyzed in accordance with commonly prevailing practice. They were also evaluated if they are favorable to private returns or public interests and finally scored in a range from 0.0 pt to 1.0 pt. Conclusively, the scoring method verifies whether the contract is either in favor of private returns or public interests.

(ii) It was found that key indicators for the contract can indicate if the contract is favorable to the private returns or the public interests. When the scoring is carried out at the bid or the contract in future, both concessionaires and public sectors can know how intensively their ongoing agreement is private returns-favored or public interests-favored.

It is necessary to break down each subject to make a more detailed analysis of each key indicator and obtain more precise scores. For example, this paper scored a contract only based on if non-competitive and compensation clause are provided or not, but never discussed whether the contract should be scored even considering the level of compensation. Also, it is planned to expand the scope of study into concession contracts in such other countries as France and Spain and make comparison among multiple countries.

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