

## **The Public versus Private Toll Road Choice in the United States**

**By**

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“Realizing value from underutilized assets” - “New capital to solve the transportation funding crisis” - “Paying for the growth wedge” - “Ability to monetize future growth today” - “Realize value for money” - “Good public policy” - “Catching up with the rest of the world on P3 solutions”

These are but a few of the slogans and buzz words that have been used to frame the issue of utilizing asset monetization through public private partnerships to fund transportation projects in the US. More recently public policy makers have started to weigh their options of public versus private solutions including both their relative economic values and the impact on government of ceding control of public infrastructure assets for multi-decade time horizons. Given the arguments presented for both cases, how should policy makers in the United States determine which structure –public or private – is in the best interests of the taxpayers and the toll payers whom they represent?

The current transportation funding crisis has been estimated at over \$1 Trillion and growing. This gap in funding is largely due to the decade old reluctance to increase funding for transportation through the increasing of broad based revenue raising measures based upon fuel consumption or vehicle ownership. As a result many old highways are deteriorating and many new highway projects are not being built, thus significantly increasing congestion nationwide. As a New York area resident congestion has always been a way of life but now cities like Houston and Los Angeles, which are largely suburban, not urban environments have even greater congestion problems than the Big Apple.

In the face of this lack of funding from traditional sources many have looked to other financing solutions and particularly Public Private Partnerships as an alternative. Although the concept of Public Private Partnerships is not new in transportation, its prior use has been focused on the key areas of project delivery through the outsourcing of one or more elements of the design-build-operate-maintain process and not as a direct source of funding for either a particular project or as a vehicle for generating excess funds that could be applied to projects other than the one that is actually the subject of the P3 agreement.

Most recently the P3 moniker has been applied to projects that are in fact asset sales under the guise of long term lease agreements for as much as 99 years. The Chicago Skyway and Indiana Toll Road sales broke new ground by monetizing the projected long-term cash flows of these roads and handing the public sellers checks for billions of dollars.

### **Defining The Problem**

Although the debate rages from state to state and investment bankers fill the skies hoping from state house to state house promoting public private partnerships, the real problem is that virtually everyone has leaped over the key step of defining the transportation problem. As I see it the real transportation problem to be solved is *not* public versus private roads but rather free roads versus toll roads.

In America there has been a long standing tradition of government providing free roadways for travelers, particularly outside the northeastern quadrant of the country. This free amenity was largely created as the result of the initiation of the Interstate Highway system in the 1950's and the creation of the Highway Trust Fund to capture the federal gasoline tax and dedicate it to surface transportation. Over the years the federal gas tax has provided a firm foundation for highway funding, however with no increase in the tax since the early 1990's combined

with greater fuel efficiency of vehicles and most recently runaway increases in construction costs, the public sector is looking at a funding shortfall to keep building and maintaining free roads. This aspect of the problem has been largely driven by a lack of political will to raise the tax, a strange position considering how everyone prefers free roads to toll roads. Consider that the average driver in 2005 traveled approximately 12,000 miles and the average fuel efficiency was 17 miles per gallon, therefore the average driver purchased 706 gallons of fuel during the year, a one cent increase in the gas tax would therefore cost the average driver only \$7.06 PER ANNUM. Versus the likelihood that travel on virtually any toll road in America would cost that much for about 3 trips or less.

So in the first instance the transportation funding problem could be easily resolved by increasing the gas tax on both the federal and state levels with little impact upon the cost per mile traveled to drivers to maintain their system of free roads. At the state level the highest gas tax in the country is in New York at 42.4 cents per gallon therefore costing the average driver about \$300 per year to have free roads across the State. By any measure the gas tax is the best taxpayer bargain created by government. In reality legislators at both the federal and state levels have largely been stuck in a non-taxing mode for over a decade and this tax even though highly justifiable on a cost/benefit basis has not been measurably increased in most states or at the federal level.

The delay in addressing this funding shortfall has left the states in the position of canceling desired projects and prioritizing needed ones. Then suddenly along comes the Chicago Skyway deal. A new day dawns in the world of transportation and elected officials think they see a free lunch in their future. Indiana quickly follows suit in a deal that funds a promised 10 years of statewide transportation needs but surrenders 75 years of toll road revenues. What will happen in year 11?

After the fever pitch pace that these two transactions were executed on, other states have also considered the private sector solution as their savior. However now most states are taking a more deliberate and thoughtful review of their options and finding that maybe public private partnerships are not the optimal approach. Recently this comparison came to a head in Texas regarding the SH 121 deal where the public tolling authority was able to put a deal on the table worth approximately \$2 billion more than the private deal. Unbelievably the US Department of Transportation is objecting to Texas accepting the public offer.

Regardless of the outcome of this particular Texas road, the process has finally crystallized the reality that a public approach to asset monetization is likely to provide significantly greater value than a private approach.

### **Choice Metrics**

Understanding infrastructure economics is not a complex task. Revenues are generated by the simple formula of: users multiplied by rates and adjusted by growth. Expenses are costs of operating and maintenance and ongoing capital needs. All of these factors are easily documented by decades of infrastructure use history in the US and thus are easily projected into the future by respected engineering firms with historically low margins of error. Many elected officials have been persuaded that the private sector will overpay for infrastructure assets and produce an otherwise unavailable cash windfall to state governments. Thus far this has not been the case and, in our opinion, it never will be the case.

In our analysis of three separate transactions, Chicago Skyway, Indiana Toll Road and Texas SH121, we have found that the private bidders in developing the price they were willing to bid were utilizing the same conservative projections about traffic growth as any public entity would. As an example in the case of the Indiana deal our analysis revealed that the bidder would achieve full price recovery at low historic traffic growth of only 1.5% combined with the floor toll

increase level of 2% per annum. If toll increases or traffic growth exceeds this level, which they certainly will, then the additional profit to the private concessionaire will be billions of dollars in excess of expectations. See below:

Indiana Toll Road Transaction

Projected Increased Revenues (Net Present Value)

Revenues Available to repay Franchise Fee of \$ 3.85 Billion

Annual Traffic Growth	With 2% Floor	With 3% CPI	With 4% GDP	with 5.5% GDP	with 7% GDP
<b>Gross Revenue Increase in Billions</b>					
No Growth	\$2.1	\$3.1	\$4.5	\$7.9	\$14.6
Historic Growth (1.5%)	\$3.7	\$5.4	\$8.0	\$14.9	\$29.1
Moderate Growth (1%)	\$3.0	\$4.4	\$6.6	\$12.0	\$23.0
Aggressive Growth (3%)	\$6.4	\$9.7	\$14.9	\$29.4	\$60.5

Note that even with no growth in traffic the upfront investment is recovered with toll increases of less than 4% per annum, however what will the consumer pay at 4% increases:

Original Car Toll	\$ 4.00
Now	\$ 8.00
20th Year	\$ 16.00
50th Year	\$ 54.00
75th Year	\$145.00

## Role of the Cost of Capital and Leverage

In valuing any asset, from real estate to corporate acquisitions, the cost of capital that is carried by the buyer is the dominant variable in determining asset value. An “all cash” buyer can theoretically determine to accept any cost of capital no matter how low if they truly want to own an asset. The recent bid for Dow Jones by Rupert Murdoch is an example of how someone with deep pockets of cash can readily overpay for an asset it deems strategic. However in the world of toll road concessions there is no incentive to accept below market returns on investment since there is really no opportunity to make one plus one equal 3, as there could be in the combination of News Corp with Dow Jones. In fact, each toll road concession is established as a separate business entity, essentially a shell corporation, and must be able to produce economic results that prove to outside investors that it is highly likely that they will achieve the expected returns on their investment. The following chart outlines the cost of capital differences in general between public and private entities:

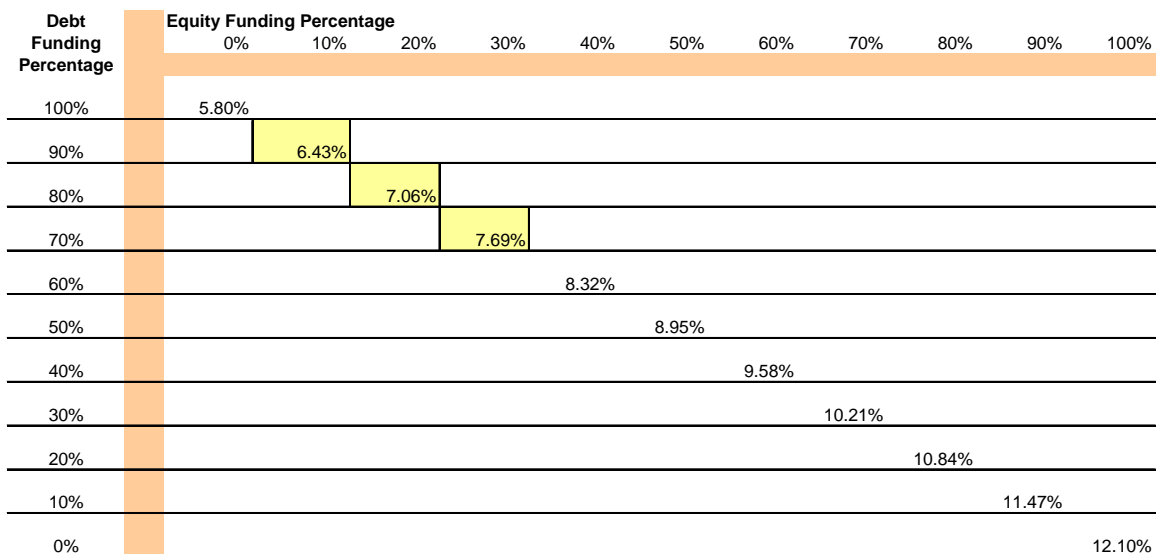
	Weighted Average Cost of Capital	Tax Exempt Debt	Taxable Debt	Deferrred Debt	Subordinated Debt	Equity
<b>Public Tax Exempt</b>		US Treasury plus -0.40%	US Treasury plus 0.80%	US Treasury plus 0.30%	US Treasury plus 0.35%	US Treasury plus n.a.
Percent of Funding	4.81% 100%	4.60% 70%	5.80% 0%	5.30% 30%	5.35% 0%	N.A. 0%
	Weighted Average Cost of Capital	Tax Exempt Debt	Taxable Debt	Deferrred Debt	Subordinated Debt	Equity
<b>Private Taxable</b>		US Treasury plus 0.00%	US Treasury plus 0.80%	US Treasury plus 1.90%	US Treasury plus 3.00%	US Treasury plus 7.10%
Percent of Funding	7.17% 100%	5.00%	5.80% 70%	6.90% 10%	8.00% 0%	12.10% 20%

The key control on capital cost is the credit discipline imposed by the lending or fixed income investment community since these institutions will provide the funding for 70% to 85% of the deal. These high leverage ratios are extremely

important to the cost of capital and effectively drive the valuation for the asset, since the cost of equity is so high. In their 2006 valuation of the Illinois Tollway System, Credit Suisse indicated the expected cost of equity for a toll concession deal would be 7.10% above the 10-year US Treasury Bond. Recently, Cintra revealed its expected equity return on the Texas SH 121 project at 12.50% which was 7.87% above the 10 year US Treasury at the time, which was trading at 4.63%. Debt funding for a private concession deal has been typically about 80 basis points above 10 year US Treasuries, or about 5.43% at the time of the Cintra SH 121 deal, although this varies with the bidder and his banking arrangements and is usually priced off of LIBOR. Thus it is fair to say that equity funding from the private sector is more than twice the price of debt funding. The key to lowering a bidders cost of capital and thus being able to bid a higher price for an asset is to maximize the leverage employed, the following tables highlights the importance of leverage on the cost of capital:

**Impact of Leverage on the Cost of Capital  
Private Concession Deal**

Rates= Debt at 10 year US Treasury plus 0.80%  
 Equity at 10 year US Treasury plus 7.10%  
 10 year US Treasury = 5.00%



= Likely Range of Funding Cost

How powerful is the impact of the cost of capital upon valuation? Lets assume that there are the 3 bidders as highlighted for an infrastructure asset with \$100 million per year of existing free cash flow for debt service/investment return and the concession period offered is for 50 years at a flat 3% annual toll increase, what could each bidder afford to pay? For the sake of this example we will assume that traffic growth will be modest and only able to absorb any cost escalation so we have a pure case. The following chart illustrates the impacts for each bidder:

Bidder	Leverage	Cost of Capital	Bid Price in Billions	Differential vs High Price	Percentage Differential
1	90%	6.43%	\$2.35		
2	80%	7.06%	\$2.11	\$0.24	10.31%
3	70%	7.69%	\$1.90	\$0.45	19.02%

In contrast to private concessions, public monetizations are capable of seeking the lowest cost of funds available – tax exempt bond finance. The ability of publicly owned projects to access this lower cost of funds allows for higher valuations or alternatively the same valuation with lower toll rates. Public borrowers can also easily access fixed rate long-term debt and thus avoid the risk premium of loan rollovers that is imbedded into the credit discipline applied to private bank loans. In today’s market the cost of funds for a public deal would be approximately 4.75% a full 35% lower than the lowest cost of money for a private concession deal. The following shows how a public deal compares with the 3 bidders:



Bidder	Leverage	Cost of Capital	Bid Price in Billions	Differential vs Public Bid	Percentage Differential
<b>Public Bid</b>	<b>100%</b>	<b>4.75%</b>	<b>\$ 3.25</b>		
Private Bids					
1	90%	6.43%	\$ 2.35	\$ 0.90	28%
2	80%	7.06%	\$ 2.11	\$ 1.15	35%
3	70%	7.69%	\$ 1.90	\$ 1.35	42%

It is this increased dollar value associated with a public monetization that we have labeled “**The Public Ownership Dividend**”.

The recent competition for Texas SH 121 between a public and a private bidder highlights how much the **Public Ownership Dividend** can produce in a real world setting. Our analysis of this deal provided an outlined side-by-side comparison, which we have updated to reflect the current status of the bids as follows:

### Texas SH 121 Bid Comparisons

	Public Bid	Private Bid	Differential vs Public Bid	Percentage Differential
	(in billions)			
Concession Fee Up Front	\$ 2.500	\$ 2.100	\$ 0.40	19%
Cost of Road Construction	\$ 0.698	\$ 0.560	\$ 0.14	25%
Marketable Security Upfront	\$ 0.833	\$ -	\$ 0.83	100%
Ongoing Payments (NPV)	\$ 1.300	\$ 0.700	\$ 0.60	86%
Total	\$ 5.331	\$ 3.360	\$ 1.97	59%

## How To Choose

The use of private sector partnerships for **project delivery** aspects of transportation is already a well-known and widely utilized tool for governmental entities in America, however utilizing public private partnerships for **ownership** of roadways is not the optimal policy for the following reasons:

- 1- Unique to the world, America has access to a massive debt market based upon governmental bonds issued for public purpose projects that allow investors to earn interest free from federal government taxation. This reduces the cost of capital available to the public sector by approximately 1/3 versus a private concession solution.
- 2- The United States has a decades long history of experience in running public enterprise infrastructure with well experienced professionals and this is particularly true in the toll road sector
- 3- There is no shortage of capital to fund public infrastructure in the US like there is in other parts of the world
- 4- The toll road users are the ones paying for the asset monetization and doing such a deal with non-public ownership will result in tolls 20 to 30% higher than a public deal of equal size
- 5- Since government is not driven by a maximizing profits mission, tolls can be kept lower than expectations if future traffic increases are

above expectations. A private owner has no incentive to provide this benefit to toll payers.

- 6- Toll roads in America have long been a key tool in statewide economic development and if in private hands would require future negotiations in order to induce economic development missions as simple as adding a new exit.

On the other hand there are situations where a privately owned toll road concession may be an appropriate strategy. When can that occur?

I would suggest the following guidelines for decision makers in weighing the public versus private toll road choice:

- A- When a public toll road authority exists, and the state wishes to monetize, either an existing asset or a to be built toll road, it is clearly in the public's best economic interest to allow the public authority to develop a financing plan that meets the financial needs of the state. This will result in either lower tolls or greater funding by a wide margin over a private concession model. We have labeled this increased economic value the **Public Ownership Dividend**.
- B- The public authority should be encouraged to utilize private partnership arrangements, in particular for project delivery of new roads, but also for certain aspects of operations.
- C- In areas where there is no existing public toll road authority utilizing a private concession approach would be a logical alternative, although government officials must realize they are paying a price for this choice

and should have an independent analysis of the cost prepared before they pull the trigger.

D- In cases where the newly proposed toll road is of high risk, such as the Trans Texas Corridor project, a private option is likely the preferred choice. A project with long time horizons, massive upfront development costs and the potential for loss of control of construction costs over the period of a decade or more is the ideal risk transfer choice for the public sector to unload.

E- In those cases where a private concession is utilized the State should set up a regulatory scheme similar to regulated utility where equity returns are monitored and controlled in order to avoid windfall profits at the expense of future generations of toll payers.

## **Summary**

The transportation funding choice in America is clear either increase the broadly based and highly equitable gas tax on both the federal and state levels or prepare to impose corridor taxes upon those that travel the country's toll roads. The effective result of asset monetization for toll roads is to charge the users of the road a toll that is paying for the costs of maintaining free roads elsewhere in the state (or in some cases even for non transportation needs). So people who travel east to west may in fact be subsidizing roads that run north to south.

As an example, in the case of Texas SH 121 the toll is being set at 14.5 cents per mile so that it will be sufficient to amortize a \$3.4 billion sale price of which only \$600 million is the cost of construction. Thus users of this road could have been charged less than 3 cents per mile and are providing an 11-cent per mile subsidy to other free roadways.

This is a public policy decision for elected officials to weigh carefully versus assigning the costs equally to all drivers depending upon the amount of gas they purchase and therefore the miles they log on the roadway network.

In those states where the gas tax is not an acceptable option, then elected officials must prepare to both convert free roads to toll roads and also expect that any new corridors will certainly only be built as toll roads, such as the current policy in Florida. Also the option to monetize existing toll roads by increasing tolls on a predictable formula going forward may also be on the table.

However, once the decision is made to rely on toll roads rather than free roads then it is incumbent upon decision makers to fairly weigh the economics, public policy and toll payer burden impacts of a public versus a private implementation strategy. In our opinion, due primarily to the cost of capital issue, in the US a public ownership model will always outperform a private ownership model. It is only when the project risk profile is excessive that government should turn to the private sector for ownership.

While the use of P3 solutions for project delivery, and even some operational elements, can offer the public sector the prospect of better economics, the use of P3s for ownership of toll road assets will actually increase costs and divert funds from the public transportation network. Capturing every possible dollar of the **Public Ownership Dividend** is the best way to approach monetizations of toll road assets. Public monetization's can clearly match the dollars a P3 will produce and prevent the diversion of future cash flows into private hands.

Monetizations, whether public or private, have significant other public policy issues versus the use of broad based revenue raising techniques as they impose charges on a given corridor versus regional roadway users as a whole. Each transaction needs to evaluate the consumer equity issue in its own region prior to embarking on a monetized approach to transportation funding.

