Then there were two..

Indiana Toll Road vs. Chicago Skyway

An Analytical Review of Two Public/Private Partnerships

A Story of Courage and Lost Opportunity

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NW FINANCIAL GROUP, LLC

Exceeding Expectations

Overview

In the aftermath of the Chicago Skyway transaction, the State of Indiana decided to privatize the statewide Indiana East-West Toll Road through the awarding of a 75-year concession agreement. The winning bidder of this long-term lease agreement is the same Cintra/Maquarie syndicate that won the Chicago Skyway concession. In the case of Indiana the winning bid was $3.85 Billion. Proceeds from the transaction will be used to fund a ten-year transportation capital needs initiative of the Governor of Indiana called "Major Moves".

The Indiana transaction differs from the Chicago deal in several major ways:

- Concession is for period of 75 years versus 99 years
- Indiana initial toll increases of between 73% and 113% were put in place by the Governor prior to the concession bid
- The roadway is a full statewide thoroughfare not a limited access road such as the Chicago Skyway
- Traffic on the road is mainly commercial
- Indiana Toll road is not a major commuter route for most of its length

The Governor of Indiana demonstrated tremendous courage when he instituted toll increases of over 70% on the Toll Road, however, by using the concession method of monetization lost the opportunity to raise the capital at much lower rates and thus either raise more capital for the his "Major Moves" initiative of capital spending over the next ten years or to allow for lower future toll increases. Major Moves is a 10-year transportation capital program for the State of Indiana, however the State has given up 75 years of revenues from the sale of Toll Road revenue stream.

> *Query:*
>
> *Where will State transportation funding come from in years 11 through 75?*

In the past governments undertook privatizations primarily to reduce costs and stabilize, not increase, rates to users. These prior efforts were also contracted to more limited terms of 5-30 years so that retention of public control was always nearby. There are many lessons to be learned from past infrastructure privatizations' both good and bad, however, very few of these efforts have been a pure monetization of assets in the fashion of the Indiana Toll Road and the Chicago Skyway. In some circumstances there has been monetization in order to raise money to solve budget problems, but the funds were quite limited due to sensitivity to ratepayer's costs.

In the case of the Indiana Toll Road sale there was no serious sensitivity to ratepayer impact, as evidenced by initial rate increases of between 73% and 113% and ongoing increases of a minimum of 2% to 7% or more over the life of the franchise. This will drive the beginning $8.00 passenger car through trip toll up to over $71.00 per passage if rates increase at *only* 3.00% per annum and vastly higher at greater per annum increases. A large part of this willingness to impose large toll increases may likely have been the fact that these increases will largely be paid by drivers, primarily truckers, from other states passing through Indiana, not voters in Indiana. If the Toll Road were a

significant in-state commuter road, it is highly unlikely that the toll increases would have been politically palatable.

Review Features

These differences drive a somewhat different analysis than the one we prepared on the Chicago Skyway transaction (published in *Tollways* Autumn 2006) and raise different issues. Among these policy issues are:

1) What is the economic value of the State's initial pre-privatization toll increase?

2) How high could toll increases really get?

3) How much more would tolls need to be increased to achieve the $3.85 Billion price?

4) What is the impact of the privatization on toll payers?

5) What is the projected profit margin for the winning bidder?

6) Could the same economic value have been delivered through a public financing rather than a private sale of the road?

We will also analyze the impacted loss of funding on the public transportation system and the potential for public funding to achieve the same results as we did in the Chicago Skyway analysis.

The Pre-Privatization Toll Increase

In early 2006 Indiana put into place a massive toll increase on the Indiana East West Toll Road of 73% on two axle vehicles and phased 113% on larger vehicles. This was the first toll increase in 21 years. Assuming no increase in traffic volume and no future toll increase, over the next 75 years, this upfront toll increase would have an economic value in 2006 dollars of $.93 Billion or 24% of the $3.85 Billion concession fee.

After the initial toll increase, assuming the same traffic volumes, the annual toll road revenues would increase to $173.56 million (a 97% increase). The expected contribution to revenues was disproportionately increased to put a higher toll burden upon commercial traffic.

Value of 2006 Toll Increase

Using a range of expected traffic growth assumptions would produce the following potential upfront economic benefit from the 2006 toll increases *alone* without *any* future toll increases:

Indiana East West Toll Road Transaction
Value of 2006 Toll Hike

Initial Toll Increase Only		
Annual Traffic Growth		2006 Values
Zero	$	928,062,098
1.00%	$	1,396,183,595
2.00%	$	2,034,977,564
3.00%	$	2,931,315,485
4.00%	$	4,224,537,126
5.00%	$	6,141,107,496

Meeting a $3.85 Billion Bid

Thus in order to produce the same results as the concession sale without any further toll increases the traffic growth on the road would need to be between 3% and 4% per annum. In the world of mature toll roads this is a very unlikely annual growth to obtain; therefore it would be necessary to increase tolls in combination with traffic increases in order to create the same economic value as obtained in the

concession offer. Conversely the $3.85 Billion could be obtained by having toll increases of between 3-4% with no real growth in traffic. Using a spectrum of toll increases and traffic volume increases would allow a variety of scenarios to achieve the $3.85 Billion economic result:

Indiana East West Toll Road Transaction
Spectrum of Values to Achieve Concession Price
Values above Concession Price Highlighted in Yellow

Values in 2006 Dollars						
Future Annual Toll Increases						
Annual Traffic Growth	Zero	1.00%	2.00%	3.00%	4.00%	5.00%
Zero	$ 0.93	$ 1.43	$ 2.11	$ 3.07	$ 4.46	$ 6.53
1.00%	$ 1.40	$ 2.08	$ 3.04	$ 4.45	$ 6.55	$ 9.78
2.00%	$ 2.03	$ 3.00	$ 4.41	$ 6.52	$ 9.79	$ 14.95
3.00%	$ 2.93	$ 4.33	$ 6.44	$ 9.71	$ 14.91	$ 23.34
4.00%	$ 4.22	$ 6.31	$ 9.57	$ 14.75	$ 23.20	$ 37.22
5.00%	$ 6.14	$ 9.34	$ 14.47	$ 22.86	$ 36.85	$ 60.51

Thus given the low traffic growth expectations an annual toll increase of approximately 3.00% is required in order to justify the $3.85 billion purchase price. This expected increase is highlighted in the chart in the following section.

Impact on Toll Payers

The Indiana concession sale was structured with the same toll escalation regime (after initial toll increases) as was designed for the Chicago Skyway transaction, namely:

The Concession agreement allows toll increases at the highest of three factors:

- 2.00% per annum
- Increase in the Consumer Price Index (CPI)
- Increase in nominal Gross Domestic Product per capita (GDP)

Thus the private buyer has been guaranteed a floor of 2% per annum and is limited by a ceiling of either CPI or GDP growth. Most of us think in terms of 3-3.5% CPI increases being a likely case over time, however most people do not know the history of GDP growth, which has **averaged greater than 7%** over the last 50 years. Obviously the GDP index is likely to drive the growth in toll rates given its higher historic results.

Using these three options we have modeled the likely dollar toll results for the 75 year term of the concession agreement for both passenger cars and 5 axle commercial vehicles as shown below:

Indiana Toll Road Transaction
Projected Passenger Car Tolls

Year	Initial Tolls Maximums	With 2% Floor	With 3% CPI	With 4% GDP	with 5.5% GDP	with 7% GDP
2 Axle Toll Rates for Through Trip						
2005	$ 4.65					
1	$ 8.00	*(72% Initial Increase)*				
2	$ 8.00					
3	$ 8.00					
4	$ 8.00					
5		$ 8.66	$ 9.00	$ 9.36	$ 9.91	$ 10.49
6		$ 8.83	$ 9.27	$ 9.73	$ 10.46	$ 11.22
7		$ 9.01	$ 9.55	$ 10.12	$ 11.03	$ 12.01
8		$ 9.19	$ 9.84	$ 10.53	$ 11.64	$ 12.85
9		$ 9.37	$ 10.13	$ 10.95	$ 12.28	$ 13.75
10		$ 9.56	$ 10.44	$ 11.39	$ 12.95	$ 14.71
20		$ 11.65	$ 14.03	$ 16.85	$ 22.13	$ 28.93
50		$ 21.11	$ 34.05	$ 54.67	$ 110.27	$ 220.24
75		$ 34.63	$ 71.29	$ 145.73	$ 420.51	$ 1,195.33

Indiana Toll Road Transaction
Projected 5 axle Truck Tolls

Year	Initial Tolls Maximums	With 2% Floor	With 3% CPI	With 4% GDP	with 5.5% GDP	with 7% GDP
4 Axle Toll Rates for Through Trip						
2005	$ 14.60					
1	$ 17.90	*(113% Initial Increase over 4 years)*				
2	$ 22.61					
3	$ 27.32					
4	$ 31.87					
5		$ 34.50	$ 35.87	$ 37.28	$ 39.48	$ 41.78
6		$ 35.19	$ 36.95	$ 38.78	$ 41.65	$ 44.70
7		$ 35.89	$ 38.06	$ 40.33	$ 43.95	$ 47.83
8		$ 36.61	$ 39.20	$ 41.94	$ 46.36	$ 51.18
9		$ 37.34	$ 40.37	$ 43.62	$ 48.91	$ 54.76
10		$ 38.09	$ 41.58	$ 45.36	$ 51.60	$ 58.59
20		$ 46.43	$ 55.89	$ 67.15	$ 88.14	$ 115.26
50		$ 84.10	$ 135.65	$ 217.79	$ 439.31	$ 877.41
75		$ 137.98	$ 284.02	$ 580.58	$ 1,675.24	$ 4,762.06

The highlighted 4% column above represents the approximate toll increase need to support the $3.85 billion purchase price.

What Tolls In Indiana Would Have Been

In order to give this toll regime some context we applied the agreed upon allowable toll increase formula under the actual concession agreement to the Indiana Toll Road. From 1985, the last time they raised tolls, over 21 years ago, the application of these variables would have resulted in a 2006 toll for passenger vehicles of $12.16 for a through trip and a 2006 toll for commercial vehicles of $38.19 for a through trip, as compared to the actual 2005 tolls of $4.65 and $14.60 respectively. This increase would have represented a compounded toll hike of ***262%*** *over the 21-year period. In all but 3 years the toll increase was driven by the GDP per capita component of the formula.*

Purchase Price Drivers

As mentioned in our Chicago Skyway Analysis, toll road economics dictate there are two primary drivers of gross toll revenues: toll rates and traffic flows. In order to analyze the thinking behind the bidding we believe it is necessary to separate these two factors and quantify the value of each. In order to do this, we have modeled four cases on traffic volume growth for the Indiana Toll Road as follows:

No Growth – This case assumes that traffic volume is static at the 2005 levels. This case allows us to value the economics of the allowed toll increases alone without regard to any growth created by increased volumes.

Historic Growth – This case assumes linear growth at the recent historic annual growth rate for the road of approximately 1.50%.

Modest Growth – This case assumes traffic growth at 1% per annum, which is consistent with traffic growth on mature toll roads.

Aggressive Growth – This case assumes annual growth on a more aggressive basis of 3%, reflecting a high level of economic activity in the State of Indiana and the surrounding region.

For the purposes of this analysis we have utilized the basic assumptions used in the Crowe Chizek study, commissioned by the State of Indiana prior to the privatization decision, with a reduction in operating expense escalators to 3.00% per annum.

These four cases provide the following results:

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
	Gross Revenue Increase in Billions				
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

Thus, even at the floor toll rate increase of 2%, the net present value of increased revenues from tolls alone total over $2.1 Billion or 55% of the upfront franchise price of $3.85 Billion. If the toll

rate indexes allow 3% rate increases then 81% franchise fee is recovered from toll increases alone with no traffic growth. The breakeven traffic growth required to recover the franchise fee at the floor of 2% equates to the approximate historic traffic growth of the road (1.50%).

Projected Profit Margins

Given the large cash flows that are likely to accrue to the private sector operator, what are the real returns on equity that can be achieved given the 2% toll increase floor, the historically high GDP ceiling increases that might be allowed and the traffic growth that might actually be achieved in the corridor? We once again applied our model to project return on equity based upon an assumed equity contribution of 25% of the purchase price. (There is currently no public information describing the actual financing.)

Our methodology is to compare on a net present value basis the gross increase in operating cash flows less the debt service payments incurred to determined an annual cash flow available for return to equity and then determine the internal rate of return for those cash flows versus the equity invested.

This analysis produces the following return on equity matrix depending upon actual toll increase and traffic growth:

Indiana Toll Road Transaction
Projected Internal Rate of Return on Equity
Based on Assumed 25% **Equity** Investment of $0.963 Billion

Annual Traffic Growth	With 2% Floor	With 3% CPI	With 4% GDP	with 5.5% GDP	with 7% GDP
	Internal Rate of Return on Equity				
No Growth	2.2%	8.4%	10.1%	12.3%	14.2%
Historic Growth (1.5%)	4.8%	10.8%	12.2%	14.2%	16.0%
Moderate Growth (1%)	5.7%	10.1%	11.6%	13.6%	15.4%
Aggressive Growth (3%)	8.2%	12.8%	14.1%	16.0%	17.7%

Public Transportation Funding Lost Revenues

Although not as severe as the Chicago Skyway transaction, the Indiana Toll Road sale allows the private operator to obtain a large financial benefit from traffic growth over the term of the 75-year franchise. These private profit dollars would otherwise flow back to the public transportation funding system and allow for investment in infrastructure over this extended period, including improvement to roads that are impacted by the growth in traffic volume by diverting traffic that do not wish to pay the higher tolls.

In the case of Indiana these lost transportation dollars are also substantial:

Indiana Toll Road Transaction
Lost Transportation Funding Dollars (Net Present Value)
Net of 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
	Gross Revenue Increase in Billions				
No Growth	($1.7)	($0.8)	$0.6	$4.1	$10.8
Historic Growth (1.5%)	($0.2)	$1.5	$4.1	$11.1	$25.2
Moderate Growth (1%)	($0.8)	$0.6	$2.7	$8.2	$19.2
Aggressive Growth (3%)	$2.6	$5.9	$11.1	$25.6	$56.7

This significant loss of public funding is a direct consequence of permitting private profits based upon toll and traffic growth factors, not a cost based approach.

The Public Funding Option

As in the Chicago Skyway analysis, we have structured a public financing alternative which demonstrates how public control of the Indiana Toll Road could have been maintained and $3.8 Billion raised for the State in an efficient manner other than a sale to the private sector. However it is important to

comment on the State's position that it had a financial analysis done that showed a roadway valuation of only $1.92 Billion. As in all valuations and appraisals the key is in the assumptions and variables used. The study, which was prepared by the well-respected accounting firm of Crowe Chizek and Company LLC of Indianapolis, projected and analyzed 75 years of future cash flows of the Indiana Toll Road and discounted them to a net present value of $1.92 Billion. This valuation included outstanding debt that would ultimately be paid from the concession fee under the actual privatization deal and therefore should be added back for comparison purposes and show a value of $2.16 Billion. Unfortunately some of the assumptions are circumspect:

- Operating Expense growth at a constant 5.1%
- Toll increases only every 7 years and then at 22%, effectively an average of 3% per annum. This does not reflect the actual historical performance of the toll increases allowed under the concession agreement, which would be more than twice this amount.
- Traffic growth of 0.55% per annum after 2030
- Investment earnings rates frozen at "current" very low rates
- A net present value discount rate of 6.00% which is much higher than the cost of public funding, particularly when done as tax exempt financing.
- Assumed a dramatic traffic decline of 14% in first year after the initial toll increase and took 5 years to recover to 2005 traffic levels

In our view all of these assumptions drive a very low valuation, which is not in line with reality. Toll road operating expenses are not likely to increase at a 5.1% rate with the advent of electronic tolling and other cost saving measures. Toll increases every 7 years avoids showing the value of compounding annual toll increases as permitted in the concession agreement and 22% every 7 years is far below the toll regime agreed to in the actual concession agreement. Although projecting traffic growth is clearly difficult beyond 5 to 10 years, an annual growth rate of just 0.55% (chosen as 50% of the pre-2030 rates) is a highly pessimistic statement on growth in the Indiana corridor and highly unlikely to remain that low over a 50 year period. Interest rates are at historic lows and average short term investment rates over the future 75 years are likely to average two times 2005 rates, or even greater.

In order to show how these assumptions can impact the valuation we replicated their valuation model and tested some of these variables to see how much they would need to change to achieve the $3.85 Billion private bid. **By adjusting just 2 of the variables we were able to replicate the $3.85 billion valuation offered by the private sector.** The adjustments were to reduce the annual escalation of operating expenses from 5.10% to 3.00% (equal to the average CPI for the last 20 years), a more reasonable assumption in our view, and to change the discount rate representing cost of capital from 6.00% to 5.30%. This reduction in discount rate is well justified by the elimination of the high cost of equity capital from the private sector as a part of the transaction.

In our opinion the public ownership monetization model was not fairly considered as a true alternative and, given the expedited timetable, decision makers seemed unwilling to weigh the benefits versus private ownership.

The Lost Opportunity – Tax Exempt Financing

In contrast to the Chicago Skyway deal, where the proceeds where used for a variety of purposes, the proceeds of the Indiana deal are being specifically dedicated to transportation capital funding needs. If the State of Indiana had chosen the public monetization approach they would have been able to fund the valuation amount through the issuance of **tax-exempt bonds** rather than accept a monetized value based upon a combination of taxable debt and high cost equity financing. Utilizing the tax-exempt bond approach would have reduced the cost of capital by over 100 basis points (1.00%) and this alone would have increased the valuation by **over $1 Billion dollars.**

An effective public sector monetization of toll road assets would not only be possible but also allow the public sector to retain all of the positive cash flows above the cost of debt service for the full 75 years.

Summary

The question for public policy makers that remains after both the Indiana Toll Road and the Chicago Skyway transactions is whether ceding control of toll road assets to the private sector for extremely long periods of time is in the best interest of the public sector or should the public sector seek to raise capital on its own.

Our study of the Indiana Toll Road transaction has indicated the following findings:

1) Consistent with our findings in the Chicago Skyway transaction, use of GDP per capita as an index drives user charges to extremes. We would suggest the public sector carefully analyze the impact of the toll increases it chooses and stick more closely with CPI or floor/ceiling structures. These rate structures can produce acceptable monetization results, especially if combined with additional pass through adjustments for special circumstances. The pass through design is a proven technique in the water and solid waste privatization models.

2) For the Indiana Toll Road transaction it would appear reliance upon toll increases at rates exceeding 3% is the primary driver in establishing value, not the expected growth in traffic, given the maturity of the underlying asset. Thus in order to develop the high purchase price the buyer has heavily discounted traffic growth and is relying upon the higher formularized toll increases to recover the investment.

3) Indiana's sale of the Toll Road, while helping fund transportation projects for the next ten years, will result in depriving the public transportation funding network of very large and much needed future revenues in the final 65 years of the concession agreement to pay for publicly needed capital projects both on and off the toll road. Instead these revenues are directed to private corporate profits and shareholders. If road users are willing to pay higher tolls these funds should be captured for the public good.

4) Projected returns on equity in the Indiana Toll Road transaction, although not as high as on the Chicago Skyway deal, are extremely generous for a mature asset, as a result of the toll increase regime, the limited equity capital requirements and the highly leveraged nature of this transaction. Given this is only the second transaction of its type it is still in the innovative stage where profit margins remain high until market competition improves.

5) Public financing at the same (or even greater) monetization levels would have been very feasible for the Indiana Toll Road transaction and should be considered as a public policy alternative to privatization. Public monetization produces the upfront economic benefit but leaves the control of the road and the future cash flows in the hands of the public sector to fund transportation needs.

6) A hidden cost of the privatization approach is the increased cost of future capital improvements at either higher taxable borrowing rates or equity return rates. This will increase the financing cost of future capital expenditures by at least 60% over the tax-exempt rates available to a publicly owned toll road. In the future Indiana will need to have ratepayers absorb these costs if the State wishes to expand the roadway for public policy purposes, including new exit/entrance ramping to encourage economic development projects.

In conclusion, the Indiana Toll Road transaction has largely been a mirror image of the Chicago Skyway transaction and reenacted the approach of raising upfront dollars for the public sector by monetizing future cash flows based largely upon known increases in toll rate user charges.

The two key question for the public sector remains:

1) Should the public sector capture the excess revenues generated for public transportation purposes or should they allow the private sector to capture these revenues for private profit?

2) Are these types of transaction a public benefit sale or are they a leveraged buyout for corporate profits?

Additionally the Indiana Toll Road transaction raises a significant new question:

How will the loss of State control over a statewide thoroughfare impact future economic development efforts in the State given the critical role that transportation infrastructure plays in driving economic development and growth?

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