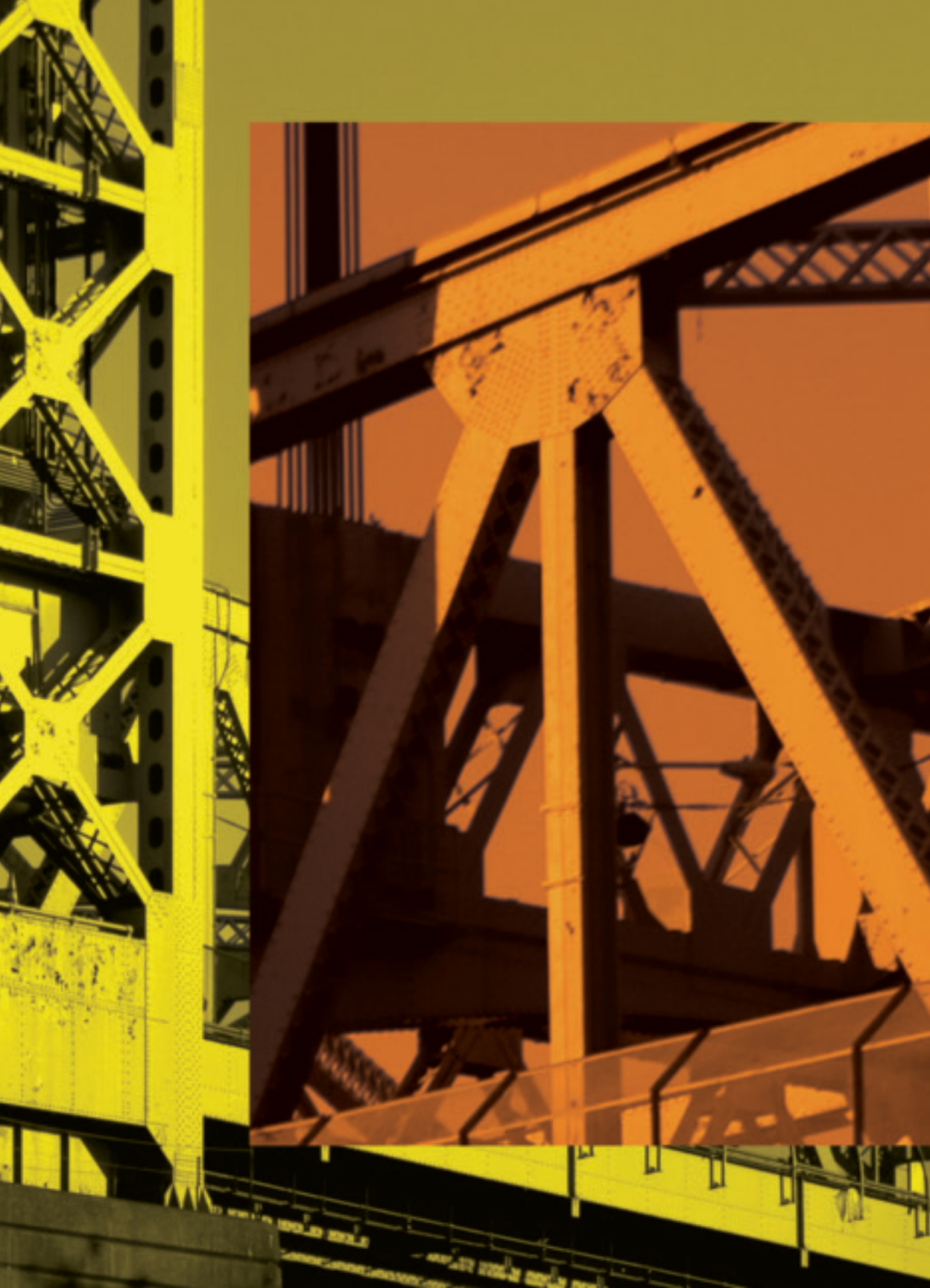

The Chicago Skyway Sale: An Analytical Review

By Dennis J. Enright

Now that the much-publicized sale of the Chicago Skyway to foreign buyers at what seemed to be an astronomical price ($1.8 billion) has been followed by the sale of the Indiana Toll Road to the same buying group, it's time to review the details of the Skyway transaction and evaluate its benefits, costs, and risks as well as, in retrospect, other options that would have achieved the same results. Was this a public-benefit sale or was it a leveraged buyout for corporate profits?

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The privatization of public infrastructure assets isn't new to the United States. Recently, for example, there have been significant privatization initiatives in the water and wastewater sectors in both large cities (Indianapolis and Atlanta) and small cities (Perth Amboy, New Jersey). Prior to the wave of water and wastewater projects, there were waste-to-energy plants, which were virtually all built via some form of public—private partnership. Other public assets, too, have been privatized, such as nursing homes, but none has had the impact of water and solid waste. Toll roads, also, have been privatized, but only as start-ups.

There are many lessons, both good and bad, to be learned from these privatizations; however, very few of these efforts have entailed a pure monetization of assets in the fashion of the Chicago Skyway and the Indiana Toll Road. In the past, governments undertook privatization primarily to reduce costs and stabilize, not increase, rates to users. These prior efforts

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were also contracted to more-limited terms of 5 to 30 years so that retention of public control was always near. In some circumstances, monetization occurred to raise money to solve budget problems, but the funds were quite limited out of sensitivity to ratepayers' costs.

In the case of the Chicago Skyway sale, there was no apparent sensitivity to ratepayers, with an allowance for initial rate increases averaging 12.5 percent per year for a total of 150 percent in a 12-year period and ongoing increases of 2 percent to 7 percent or more over the life of the franchise. That would drive the beginning $2 toll up to more than $60 per passage if rates increased at 3 percent a year and vastly higher at greater annual increases (see Figure 1).

A large part of this willingness to impose large toll increases may have been based on the fact that these increases will largely be paid by commuters from Indiana, not voters in Chicago. In some respects, the Chicago Skyway was the perfect candidate for long-term privatization because the seller gained all the proceeds and the seller's constituency will pay virtually none of the costs. If the Skyway were an in-state road, it is highly unlikely the toll increases would have been politically palatable.

Figure 1

Year	Initial Tolls Maximums	With 2% Floor	With 3% CPI	With 4% GDP	With 5.5% GDP	With 7% GDP
	$ 2.00					
1	$ 2.50					
3	$ 3.00					
6	$ 3.50					
8	$ 4.00					
10	$ 4.50					
12	$ 5.00					
20		$ 5.86	$ 6.33	$ 6.84	$ 7.67	$ 8.59
50		$ 10.61	$ 15.37	$ 22.19	$ 38.24	$ 65.40
75		$ 17.41	$ 32.19	$ 59.17	$ 145.84	$ 354.93
99		$ 28.00	$ 65.43	$ 151.66	$ 527.15	$ 1,800.36

This review of the Chicago Skyway transaction focuses on the following questions:

- How high could toll increases go?
- How much of the purchase price was directly driven by toll increases versus traffic increases?
- What return on equity will the winning bidder achieve?
- How much money will be diverted from public highway coffers by allowing private profits?
- Could the same economic value have been delivered through a public financing rather than the private sale of the road?

Toll Increases in Perspective

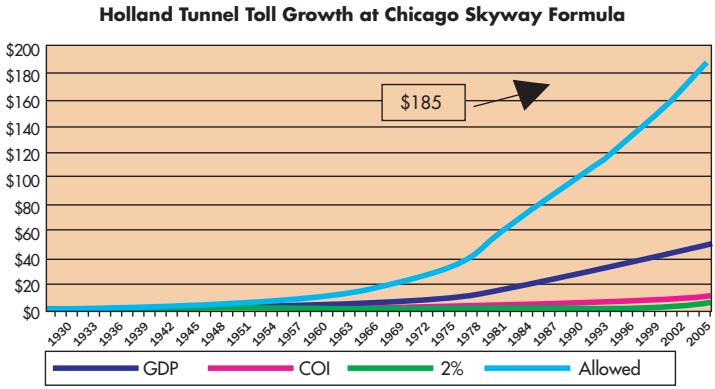
The Chicago Skyway concession agreement allows toll increases, after the initial five years, at the highest of three factors: 2 percent per annum, an increase in the consumer price index (CPI), or an increase in the nominal gross domestic product (GDP) per capita.

Thus, the private buyer has been guaranteed a floor of 2 percent and is limited by a ceiling of either CPI or GDP growth. Most of us think in terms of 3.0 percent to 3.5 percent CPI increases being likely over time, but most people don't know the history of GDP growth, which is significantly higher. In a recent research report, Fitch Rating Service, a New York—based national bond rating agency, revealed the historical growth of GDP as being between 4.30 percent and 7.40 percent. Obviously, then, the GDP index is likely to drive growth in the Skyway's toll rates, given the index's higher historical results relative to the CPI. Additionally, the private operator can impose higher tolls during peak hours for vehicles with three or more axles.

Using the three pricing options above, the likely toll costs for passenger cars and the likely percentage increases over time on the Chicago Skyway are shown in Figure 1.

Thus, if GDP growth were to continue at the high historical rates of 4 percent to 7 percent, ultimately tolls to cross this seven-mile span could exceed $1,000 per trip.

Figure 2



To put these toll increases in some perspective, if the appropriate index had been used to control toll rates for the Holland Tunnel, connecting New York and New Jersey, from the time of its opening in 1927, when the toll was $1 (50 cents each way), until today, the toll would now be $185.13 round trip based on application of the three factors since 1930, rather than the $6 currently being charged one way (see Figure 2). This scenario represents an average annual increase of 7.20 percent, except for a number of years with negative GDP during the Great Depression when the 2-percent floor was applied.

It is interesting to note that if the toll for the Holland Tunnel had increased by GDP alone, it would have been "only" $49.45 round trip in 2005; by CPI alone, $11.42. When combined with the 2-percent floor for low-inflation and low-growth years, however, the toll would escalate to the $185.13 level. Thus, this formula not only protects the private operator from slow economic growth but also allows for the compounding of toll increases when other indicators would force tolls downward.

Purchase-Price Drivers

Given the ability to increase tolls with a known floor and a high historical ceiling, how did the private sector determine its ability to fund the attractively high purchase price of $1.8 billion for the Skyway? In toll-road economics, there are two primary drivers of gross toll revenues: toll rates and traffic flows. In order to analyze the thinking behind the bidding, one must separate these two factors and quantify the value of each. One way to do this is to model four cases on traffic-volume growth, as shown below and in Figure 3:

Figure 3

Chicago Skyway Transaction
Projected Increased Revenues (Net Present Value)
Revenues Available to repay Franchise Fee of **$1.80 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	$ 1.47	$ 1.92	$ 2.60	$ 4.48	$ 8.62
Historic Growth (3.78%)	$ 8.37	$ 13.08	$ 21.59	$ 49.89	$ 124.72
Moderate Growth (2%)	$ 3.48	$ 4.93	$ 7.36	$ 14.85	$ 33.26
Aggressive Growth (5%)	$ 16.63	$ 27.85	$ 48.90	$ 121.97	$ 322.38

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

Historical growth. This case assumes linear traffic growth at the road's recent historical annual growth rate of 3.78 percent.

Moderate growth. This case assumes traffic growth at 2 percent per annum to allow for a growth slowdown over time as the road matures.

Aggressive growth. This case assumes annual growth on a more aggressive basis of 5 percent, reflecting some of the bidder's comments on the strength of growth in the corridor.

For the purposes of this overview, we omit operating and capital costs, which could affect bottom-line results either positively or negatively, depending on traffic volumes. The operational cost of the road should be little influenced by traffic volumes, and capital costs can easily be absorbed in overall revenue flows without significant impact on valuation.

Thus, in looking at Figure 3, even at the floor toll-rate increase of 2 percent, the net present value of increased revenues from tolls alone exceeds $1.4 billion, or 78 percent of the up-front franchise price of $1.8 billion. If the indexes allow 3 percent rate increases, the full franchise fee will be recovered from toll increases alone. The break-even traffic growth required to recover the franchise fee at the floor of 2 percent is a growth rate of less than 1 percent per year.

Loss of Public-Road Funding

The net result of having an economic model that permits recapture of the franchise fee from the agreed-upon toll increases alone is to allow the private operator to obtain the full financial benefit of traffic growth over the term of the franchise–99 years in the case of the Chicago Skyway. All of 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 roads affected by the growth in volume of traffic connecting to the sold roadway. In Chicago's case, these lost transportation dollars would be substantial (see Figure 4).

This significant loss of public funding is a direct consequence of permitting private profits based on toll and traffic growth rather than using a cost-based approach.

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Figure 4

Chicago Skyway Transaction
Lost Transportation Funding Dollars (Net Present Value)
Net of Franchise Fee Paid of **$1.80 Billion**

Traffic Growth Case	With 2% Floor	With 3% CPI	With 4% GDP	With 5.5% GDP	With 7% GDP
	Lost Funding in Billions				
No Growth	$ (0.33)	$ 0.12	$ 0.80	$ 2.68	$ 6.82
Historic Growth (3.78%)	$ 6.98	$ 12.00	$ 21.08	$ 51.41	$ 131.84
Moderate Growth (2%)	$ 1.68	$ 3.13	$ 5.56	$ 13.05	$ 31.46
Aggressive Growth (5%)	$ 14.83	$ 26.05	$ 47.10	$ 120.17	$ 320.58

Return on Equity

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 percent toll-increase floor, the historical GDP ceiling increases that might be allowed, and the traffic growth that might be achieved in the corridor? Let us apply our model to project return on equity based on two scenarios:

- An original equity contribution of $887.6 million made by the private operator at the time of closing, with $1 billion in debt financing; and

- A reduced-equity investment achieved at the refinancing a few months later of $652.6 million, with $1.4 billion in debt financing.

Our methodology is to compare the initial investment against the available cash flows less the imputed debt service over the franchise period to determine an internal rate of return on invested equity. This analysis produces the return-on-equity matrices shown in Figures 5 and 6, depending on actual toll increases and traffic growth.

Figure 5

Chicago Skyway Transaction
Projected Internal Rate of Return on Equity
Based on **Initial Equity** Investment of **$887.6 Million**

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	8.1%	8.8%	9.5%	10.6%	11.6%
Historic Growth (3.78%)	13.3%	13.9%	14.5%	15.4%	16.4%
Moderate Growth (2%)	10.9%	11.6%	12.2%	13.2%	14.2%
Aggressive Growth (5%)	14.8%	15.4%	16.0%	16.9%	17.9%

Figure 6

Chicago Skyway Transaction
Projected Internal Rate of Return on Equity
Based on **Final Equity** Investment of **$652.6 Million after refinancing**

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	8.0%	9.0%	9.7%	10.8%	12.0%
Historic Growth (3.78%)	13.9%	14.5%	15.2%	16.1%	17.1%
Moderate Growth (2%)	11.3%	12.0%	12.7%	13.7%	14.7%
Aggressive Growth (5%)	15.6%	16.2%	16.8%	17.7%	18.7%

The buyer chose scenario two, as the ability to finance with greater leverage and therefore lower equity allowed the operator to increase return on equity by as much as 5 percent depending on compounding.

Public Funding Feasibility

Given the strong economics underlying the Chicago Skyway privatization, why sell? Shouldn't the public sector try to retain these strong cash flows for the public benefit? One of the publicly given reasons for choosing privatization was the availability of "patient capital" that could wait for revenues if they did not develop early on and not be obligated to a fixed payment on debt service. Some advocates of privatization have suggested it wouldn't be possible for the public sector to raise the same level of capital, due to the restraints associated with all-debt funding.

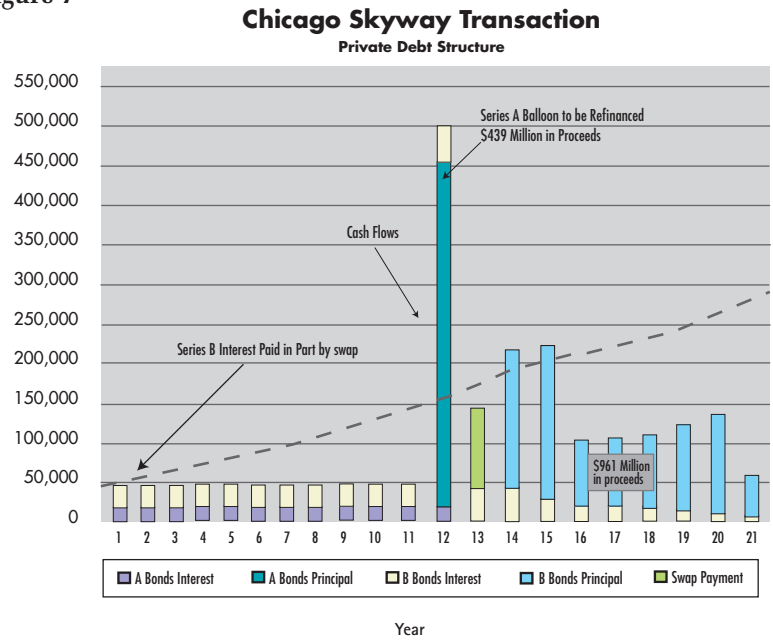
In an attempt to analyze this issue, one can review the structure of the financing used by the private operator and compare some of its features with what might be achieved with public-sector financing.

The Chicago Skyway financing structure. Although it initially funded the financing as equity with bank loans, the private operator very quickly refinanced to a permanent funding structure that incorporated many innovative features. The operator structured its refinancing in a manner acceptable to a AAA bond insurer for its senior debt traunch, even with the debt rollover risk. In some respects, this is a ground-breaking event, because bond insurers have traditionally been averse to rollover risk.

To obtain the insurer's approval, the operator paid a senior debt coverage requirement of 1.50 and a projected coverage for determining leverage of 2.00[1]. This arrangement thus limited the amount of leverage at the senior debt level.

[1] Coverage is the numerical result of dividing debt service into revenues available for debt service and is an indicator of how much excess revenues are available to meet debt service in the event of financial stress. Debt service coverage is a commonly used indicator of financial strength in the bond industry. The higher the coverage, the greater the credit strength.

Figure 7

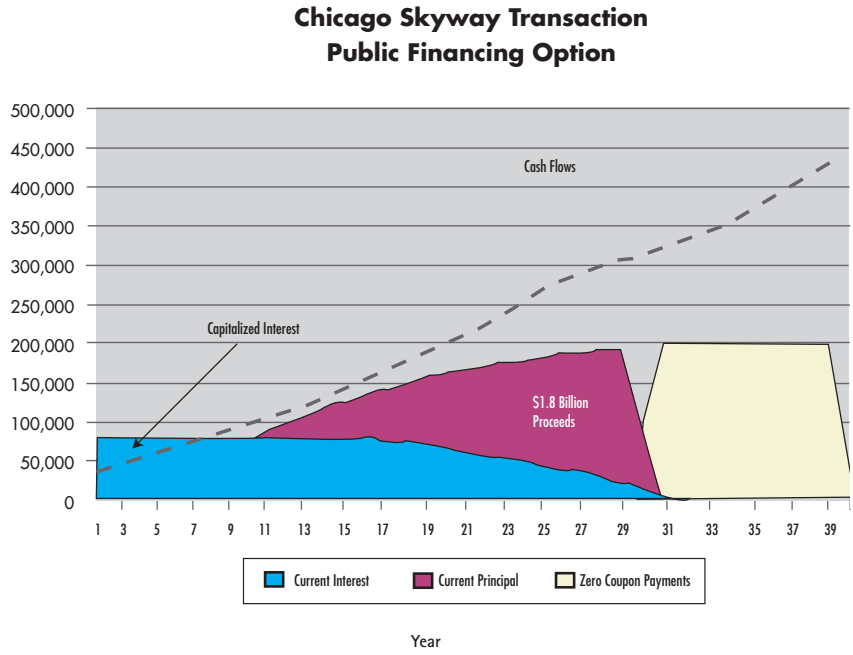


In order to increase the leverage to the desired level, the operator devised a deferred-payment swap structure (much like zero coupon bonds or capital appreciation bonds), as shown in Figure 7[2].

The result of this two-layer debt structure was to increase leverage over the original financing and enable the operator to withdraw more than $200 million in equity. Thus, the post financing equity was reduced from 49 percent of the purchase price to 36 percent of the purchase price. This lower equity level could be recovered in full in 12 years based on expected cash flows. After recovery, the private operator is in the deal for the remaining 87 years with no equity at risk.

[2] Zero coupon bonds are securities that are issued with a future payment date at which time all payments of principal and interest are made on that one date; no interim or annual payments of interest or principal are made until that date. These securities are sold at a discounted price that reflects the present value of that future payment at the market-determined interest rate. Capital appreciation bonds are zero coupon bonds with a different name due to tax-exempt bond law requirements. These securities are issued at the original principal amount equal to the discounted present value in the zero coupon structure and then grow to the future value amount. A deferred-payment swap is similar in structure to zero coupon bonds in that it starts at a nominal amount and grows over time due to the nonpayment of interest until the final maturity date of the swap, when all payments are made on one day.

Figure 8



Public-sector options. An alternative mechanism to raise the $1.8 billion in up-front funding would be for a public entity with a track record of running the toll road to issue tollroad revenue bonds in a structure similar to the private financing and use deferred and/or subordinated debt in place of equity.

Many options are available to structure this type of debt-financing plan; the following, rather basic approach was chosen to simplify this presentation. In this basic structure, utilizing interest rates available at the time of the sale, a public entity could raise the same dollar amount--$1.8 billion--using the following debt program (see Figure 8):

- Series A bonds: $1.8 billion of current interest senior debt with interest-only for 8 years, then debt service to cover at 1.50 times for 20 years until fully paid.

- Series B bonds: $220 million (or more, if required) of deferred-interest zero-coupon debt maturing serially in years 30 through 40. Proceeds would be used as capitalized interest to add to available cash flow in the first eight years to meet interest due on Series A.

This structure would produce the $1.8 billion as desired. It could also be enhanced to reduce the cost of funds through the use of other financing products. Fund costs could be reduced, for example, by shortening the amortization to allow for less compounding of interest. Also, subordinated bonds could be secured through the use of cash flows in excess of debt service, and rates could be reduced by using put structures or derivative products.

An effective public-sector monetization of toll-road assets is not only possible but would also allow the public sector to retain all of the positive cash flows above the cost of debt service ($2 billion in our example over 38 years) plus all of the positive cash flows after debt is repaid ($30 billion if growth and toll increases are at 2 percent).

Receptivity of the Investment Community

The privatization of the Chicago Skyway has demonstrated two important facts: (1) There is a strong private-sector interest in acquiring toll-road assets; and (2) it is possible for the future cash flows of a toll road to be monetized through up-front financing.

These two facts are important because they show how receptive the investment community is to the strength of toll-road revenues and the willingness of banks, bond insurers, bond rating agencies, bond buyers, and equity providers to fund the control of a toll-road asset and rely upon future performance tied to rate increases and traffic flows. This opens up possibilities for governmental bodies to raise up-front capital by securitizing future toll-road and other user-rate—supported cash flows, a relatively seminal event in the history of municipal finance.

The question for public policymakers 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 whether the public sector should seek to raise capital on its own.

A Summary of Findings

In summary, this study of the Chicago Skyway transaction indicates the following:

- Use of GDP per capita as an index drives user charges to extremes. The public sector should 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 such as certain unexpected capital improvements, acts of God or war, changes in law, or improvements that cost more than a certain large dollar amount. The pass-through design is a proven technique in the water and solid-waste privatization models.

- The expected increase in toll rates, not the expected growth in traffic, is the primary driver in establishing value. Thus, the buyer heavily discounts traffic growth in its pricing model and establishes a cushion that allows it to reduce risk and earn outsize returns on equity when traffic growth comes to fruition. It is important to note that variable operating expenses are a very small portion of overall costs.

- Turning control of toll roads over to the private sector deprives the public-transportation funding network of very large and much needed future revenues to pay for 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, why not capture those funds for the public good? Use of bridge and tunnel tolls by The Port Authority of New York and New Jersey for mass transit and port operations is one example of how this can be achieved.

- Projected returns on equity in the Chicago Skyway transaction are extremely high as a result of the toll-increase regime, the limited capital requirements, and the highly leveraged nature of this transaction. As with any innovative transaction, there is always additional profit potential in something unproven, and this transaction follows that trend.

- Public financing at the same (or even greater) monetization levels would have been very feasible for the Chicago Skyway transaction. In the future, it should be considered as a public-policy alternative to privatization to obtain the up-front benefit while leaving control of the road and future cash flows in the hands of the public sector to fund transportation needs. Partial privatization may also be a viable strategy for this approach if the all-in cost of capital provides additional economic benefit.

- Another alternative financing structure would be a toll surcharge that could be securitized on its own without direct debt on toll-road operations.

Should the public sector capture for public-transportation purposes the excess revenues generated, or should it allow the private sector to capture these revenues?

- 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 increases the cost of financing future capital expenditures by at least 60 percent over the tax-exempt rates available to a publicly owned toll road.

In conclusion, the Chicago Skyway transaction has opened the door to new funding structures for transportation by monetizing future cash flows based largely on known increases in toll-rate user charges. The question for the public sector remains: Should the public sector capture for public-transportation purposes the excess revenues generated, or should it allow the private sector to capture these revenues?

Authors note: All of the information contained herein has been obtained from sources deemed to be reliable; however, NW Financial Group, LLC, hasn't verified or audited the data. This report is for informational purposes only and is provided without warranties of any kind.

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