



PENNSYLVANIA TURNPIKE ALTERNATIVES: A REVIEW AND CRITIQUE OF THE DEMOCRATIC CAUCUS STUDY

by Robert W. Poole, Jr. and Peter Samuel

EXECUTIVE SUMMARY

This policy brief is a critique of a report commissioned by the Democratic Caucus of the Pennsylvania House, whose purpose was to compare the possible long-term lease of the Pennsylvania Turnpike with two ways of implementing the provisions of Act 44 passed by the legislature in 2007. Act 44 calls for putting tolls on I-80 and transferring the majority of that new toll revenue to the state, along with surplus revenues from sharply higher tolls on the Turnpike, to fund ongoing highway and transit programs statewide. Gov. Ed Rendell has proposed a long-term lease of the Turnpike as an alternate way to increase transportation funding, with the lease payments made as a single, up-front payment, to be invested like an endowment for transportation.

The report, “For Whom the Road Tolls” (FWTRT) concludes that leasing the Turnpike is a bad idea, on both financial and public policy grounds. On the former, FWTRT claims that the Act 44 alternatives would raise more money than a lease, and that a lease would pose greater risks. It also warns of higher toll

rates and possible loss of jobs by current Turnpike employees.

Our assessment finds that FWTRT fails to make its case and is seriously flawed as a guide for Pennsylvania policymakers. We detail three major flaws in its financial analysis:

- FWTRT fails to give a fair comparison of a Turnpike lease with Act 44 alternatives, instead using different traffic growth rates and toll rates for these alternatives.
- FWTRT assumes equal operating efficiencies of a private toll company and the Turnpike Commission. Our analysis finds that the Pennsylvania Turnpike is one of the country’s least efficient toll roads, compared with both public-sector and private-sector toll roads.
- FWTRT assumes as certain the full revenue of Act 44 (from tolling I-80 as well as from increased tolls on the Turnpike), but without federal approval to toll I-80 and transfer most of its revenues (which is unlikely), Act 44 generates a net present value of

only \$7 billion. Some have estimated that a Turnpike lease could yield up to \$15 billion up front—more than double the likely Act 44 revenue from Turnpike tolling alone.

What FWTRT calls “public policy concerns” about a lease—excessively high toll rates, the need for flexibility in being able to add interchanges, protecting current employees, etc.—are precisely the kinds of things routinely addressed in several-hundred-page long-term concession agreements. All such items are negotiable, and should be addressed in the concession (lease) agreement for the Turnpike. And we also find good reason to expect that Turnpike tolls will actually be higher under Act 44 (where increases are unlimited) than under a lease (where increases will be legally capped).

Our conclusion is that FWTRT fails to make its case that the lease of the Turnpike is a bad choice for Pennsylvania, on either financial or public policy grounds. We show that under a truly fair comparison of the alternatives, a lease is likely to produce greater financial benefits, shift key risks from the state to investors, and lead to lower toll rates than the higher rates that will likely be necessary under Act 44.

We therefore recommend that the state proceed, as the governor plans to do, to seek serious bids for a long-term lease of the Turnpike, in response to a draft concession agreement that spells out the major factors that would affect the lease’s value. The winning bid should be compared with the risk-adjusted net present value of the Act 44 alternatives, taking into account the probability that surplus toll revenues from I-80 will not be allowed to be transferred for non-I-80 uses.

We also recommend that the state submit a revised application to the Federal Highway Administration to rebuild I-80 itself using toll finance, including the addition of truck-only toll lanes the full length of I-80, configured to accept the heavier combination trucks that currently traverse both the Indiana Toll Road and Ohio Turnpike. Unlike Act 44, this approach would comply with federal law. It would reduce or eliminate diversion of long-distance traffic from the Turnpike to I-80. And it would offer shippers and truckers significant productivity increases in exchange for paying tolls on I-80.

INTRODUCTION

On March 4, 2008, the Democratic Caucus of the Pennsylvania House released a 65-page report by three academics titled “For Whom the Road Tolls: Corporate Asset or Public Good: An Analysis of Financial and Strategic Alternatives for The Pennsylvania Turnpike.”¹ The thrust of the report is that on both financial and public policy grounds, the state would be better off rejecting a long-term lease of the Turnpike. Instead, it argues that the state should stick with the 2007 Act 44 legislation, under which (1) tolls will be significantly increased on the Turnpike, and (2) tolls will be imposed on parallel I-80, with the majority of the I-80 toll revenue routed, via the Turnpike Commission, to the Pennsylvania Department of Transportation (PennDOT) for statewide highway and transit purposes.

Those who oppose leasing the Turnpike greeted the report with enthusiasm. Turnpike Commission Vice Chairman Timothy Carson released a statement saying “This study unequivocally validates the original actions and judgment of the Pennsylvania Legislature in enacting Act 44... It provides authoritative confirmation... [that] *the proposed privatization of the Pennsylvania Turnpike (with or without the tolling of I-80) is bad finance and bad public policy!*”² [emphasis in original]

Initial media coverage accepted these claims at face value, with the *Philadelphia Inquirer* headlining its article “Rendell’s Plan to Lease Turnpike Unwise, Study Says.”³ This article, like many others, stated that the study “calculated the turnpike’s value at \$14.8 billion if leased to a private operator, compared with \$26.5 billion if operated by the Turnpike Commission under Act 44.” It also reported that the study “said future toll hikes could be lower if the turnpike were kept in public hands.”

In fact, the study never does a proper comparison of the likely financial value of a Turnpike lease with the likely net present value of the revenue stream from Act 44. Nor does it justify any claim that tolls would be higher under a long-term lease than under Act 44. The study raises a number of issues—such as the relative cost of capital for the various alternative players and recent turmoil in the financial markets—that are largely irrelevant to the choice facing Pennsylvania



policymakers. And its critique of a Turnpike lease on public policy grounds shows a lack of understanding of how long-term toll concession agreements protect the public interest.

In this brief response, we critique the “For Whom the Road Tolls” (hereinafter FWTRT) study on both its financial and public policy points. After concluding that the report fails to make its case, we offer several recommendations for better transportation policy in Pennsylvania.

MAJOR FLAWS IN FINANCIAL ANALYSIS

There are three major flaws in the FWTRT study’s financial analysis, which render its findings unusable as a basis for decision-making about alternate courses of action regarding the Pennsylvania Turnpike. First, it uses arbitrarily different assumptions when comparing the public-sector and private-sector alternatives. Second, and by contrast, in other places it assumes away key differences which make the private-sector alternative worth considering in the first place. And third, despite much discussion of risk-based discount rates, it fails to use such measures in comparing the alternatives. We will discuss these major flaws in this section.

A. Different Assumptions for Public Sector vs. Private Sector

In several places, the FWTRT authors make comparisons between (a) a lease of the Turnpike by

a private consortium, (b) the recently enacted plan under Act 44 to put tolls on I-80 as well as increasing Turnpike toll rates, and (c) a third alternative of “monetizing” the Turnpike by transferring it to a non-profit public corporation, exempt from taxation under IRS 63-20. Throughout this report, we will refer to these three alternatives as Lease, Act 44, and Monetization.

In their first attempt to show that a Lease would produce less financial benefit to the state than Act 44, FWTRT authors attempt to do a sensitivity analysis, guessing which variables are the key value drivers for the private sector. Their Table 4 presents “base case” assumptions for key factors such as toll rate formula, inflation rate, traffic growth, and operating costs. Their Table 5 is a variant, using what they describe as “Act 44 assumptions” for these variables. Their “base case” assumes an extremely low traffic growth rate of 1% per year. Yet in Table 5 they use a 2.5% per year rate of traffic growth for the first 20 years, and 2% thereafter—with no explanation for this shift. In fact, the mathematics of compound interest reveal that traffic under the second assumption would grow by 197% over the 50-year period, compared with just 65% under the first assumption. That would make a major difference in toll revenue, and hence in the concession price. Yet their estimated concession price is higher for the low-traffic base case than for the much higher-traffic case. This bizarre outcome casts serious doubt on the validity of FWTRT’s sensitivity analysis.

A second instance of using different assumptions concerns the toll rate formula used in each case. All analyses of Act 44 assume a 25% increase in Turnpike toll rates in year one and 3% annual increases thereafter, generally for a 50-year period. But for the Lease case, FWTRT instead assumes a toll rate cap similar to that used for the Indiana Toll Road lease: the greater of (1) the increase in GDP/capita, (2) the CPI, or (3) 2%. They assume for the base case that the GDP/capita option produces the highest annual increase, which they estimate to be 5.5% per year for 50 years. It is quite possible that the state might not want to permit such a high cap on annual toll increases. In that case, a better “other things equal” comparison would be to use the Act 44 toll formula for the Lease case as well. This appears at first glance to be what FWTRT presents in its Table 5, yet unaccountably they have

changed the operating cost growth rate assumption in this case from the 3% used in Table 4’s base case to an unexplained 4% in Table 5. That makes it impossible for this to be an apples-to-apples comparison, since at least two key factors differ between the two cases.

FWTRT also devotes considerable attention to interest-rate risk (pp. 27-28)—as if this problem applied only to the Lease alternative. In fact, all three alternatives are subject to the risk that interest rates in the future (after the initial financing vehicles are paid off—presumably in years 31 to 50 of a 50-year period) may be higher than those used in the initial financing. But this problem is less serious for the Lease alternative, for two reasons. First, private-sector toll companies are far more flexible in how they finance toll projects; they deal with sophisticated global capital markets and are able to arrange various tiers of financing with different terms, and to take advantage of reductions in interest rates when they occur. Their flexibility is much greater than that of public-sector toll agencies, which deal with the very conservative municipal bond market.

But more to the point, if (as assumed throughout by FWTRT) the Lease alternative involves a single, up-front payment to the state, then from the state’s standpoint, interest-rate risk for this alternative is irrelevant. The state gets its money up front, and it is the toll company’s problem, from which the state is entirely insulated, to deal with any future interest-rate risks. Not so with the Act 44 and (possibly the Monetization) alternative, since the state would be counting on receiving a series of annual payments over a 50-year period. The state, therefore, would bear interest-rate risk. But in the Lease alternative, this is one of the risks that would be transferred to the private sector.

B. Assuming Away Key Public-Private Differences

1. How FWTRT Ignores Key Differences

Why are states, including Pennsylvania, looking into privatization for toll roads? It is not simply because the private sector can tap into different and larger pools of capital than the tax-exempt municipal bond market. It is also because the experienced global toll road industry designs, finances, builds, and operates toll roads on commercial principles, seek-



ing to generate and retain loyal customers by offering them superior transportation that is worth what those customers are asked to pay. Toll road companies have strong incentives to seek out the most cost-effective ways of doing business, which leads them into an ongoing discovery process to seek ways of maximizing the difference between revenues and costs.

But instead of trying to quantify these differences, FWTRT simply assumes that virtually everything other than the cost of capital is identical between public-sector and private-sector toll road operators. On p. 42, for example, FWTRT asserts, “The following is an all else equal analysis that allows a valid comparison of calculating the net present values” for the three alternatives of Lease, Act 44, and Monetization. The only parameter they allow to differ among the three in this discussion is the weighted average cost of capital (WACC), which by definition is lower for the public-sector alternatives since (a) they can borrow at tax-exempt rates, and (b) they have zero equity investment, and equity requires a higher return than debt. This comparison proves nothing except that FWTRT’s authors can do arithmetic.

In their base case (Table 4) assessment of the Lease alternative, FWTRT assumes that the Turnpike’s operating cost will increase *from today’s level* at 3% per year for the next 50 years. In their sensitivity analysis (Panel B of Table 4), they estimate that a 10% savings in operating costs would have only a modest impact on the concession price (i.e., the up-front payment representing the net present value of 50 years of lease payments)—about 4%. The real impact on the lease payment is likely to be far higher. FWTRT does assume in the base case that the toll company would save 25% on capital improvements compared with the Turnpike. But once again, their sensitivity analysis estimates that

this factor would make little difference to the concession price: if that difference were zero instead of 25% (i.e., if the company's capital projects were just as costly as those of the Turnpike), the change in the concession price would be only 7%, they say.

Rather than look at differences in capital expenditures in privately run toll roads versus comparable public-sector toll roads, FWTRT's authors cite two studies on public transit privatization which claimed to find increased, rather than decreased, costs. But the term "privatization" in mass transit refers to short-term management contracts, which have virtually nothing in common with long-term toll road concessions. Under the latter, the toll road company takes on significant finance and revenue responsibilities, which the management contract firms that operate transit systems do not bear. Neither of the other two studies cited by the authors, one on water supply and the other on a variety of PPPs in the United States and Canada, deals with toll roads. Thus, these four studies are irrelevant to the case FWTRT is trying to make.

2. How Efficient Is the Pennsylvania Turnpike?

How much scope would a toll road company actually have, under a 50-year lease, to reduce operating and capital costs? That depends on how efficiently the Turnpike is currently being operated. If the Turnpike's costs are unusually high, there should be ample scope for a private operator to reduce them. To make such an assessment, we collected data on other large toll road systems from the database of the International Bridge, Tunnel & Turnpike Association, as well as various public sources, for comparison with data from the Turnpike Commission.

The Turnpike's present level of operating cost leaves plenty of scope for a private operator to add value by means of increased efficiencies. An excellent measure of efficiency is the fraction of toll revenues consumed by operating and maintenance costs (the "cost-take"). The Turnpike's cost-take from its latest annual report is 62.4% (\$369.9 million out of \$592.6 million revenue). We gathered cost data on some 35 toll facilities, mostly U.S. public toll facilities, but also a number of private and overseas toll roads. They had an average cost take of 39.4%. To standardize the data we excluded depreciation (where it appears), interest

charges, and taxes paid (by private operators). The results are presented in Table 1.

The public toll authorities had an average cost-take of 42.6% and the private operators 27.6%. One of those, ASF in France, was only very recently privatized and hence increases the private-sector average by including public-sector type costs. Excluding ASF, which hasn't had the time yet to gain private sector efficiencies, the private toll roads have an average cost take of 23.4%.

The Pennsylvania Turnpike Commission has the third-highest cost take of the 35 toll organizations we reviewed.

- If its cost-take were the average for public and private toll facilities, its costs would be \$235 million instead of \$370 million, an annual savings of \$135 million (36.5%).
- If its cost-take were the same percentage cost-take as the eight privately operated toll facilities, then its costs would be \$164 million a year, a saving of \$206 million (56%).
- If its cost-take were the same as the sample of private toll roads excluding the very recently privatized ASF, then its annual costs would be \$139 million, a saving of \$231 million (62%).

The Turnpike Commission's annual report is very sparse with information about how it incurs these large costs, but these costs have been growing very rapidly. In the seven years FY2000 to FY2007 the Pennsylvania Turnpike's operating costs have more than doubled from \$181 million to \$370 million. That's growth of 104.4% (10.8% per year). During that period of seven years, total U.S. inflation was just 23.4%. So the Turnpike's costs grew at *4.5 times the rate of inflation*.

The Turnpike's high costs can be highlighted in various one-on-one comparisons.

- Florida's Turnpike is similar in many ways to the Penn Pike. Both are a mix of urban and rural toll road. The two have similar lane-miles, revenue, and employees. Florida's handles 46% more vehicle miles traveled and does 3.6 times as many toll transactions. Florida's operating costs of \$278 million are \$92 million less (25%) than Pennsylvania's Turnpike.

- The 407ETR toll road in Toronto Canada is privately operated under a 99-year lease from the province of Ontario. It generates revenue similar to the Pennsylvania Turnpike (\$519 million). It is a more urban road and it has about one-third the Penn Pike’s lane-miles. Its operating costs are a very low \$111 million or less than one-third those of the Penn Pike. It has staff of 475 versus 2,260 at the Penn Pike.

- The Illinois Tollway is another comparable. Its revenue is similar, its traffic is higher, and its lane-mileage is one-third smaller. It makes do with a staff of 1,700 and operating costs of \$219 million, 41% less than the Penn Pike.

- The New York State Thruway is a considerably larger toll road system than Pennsylvania’s, with 51% more lane-miles and 83% more traffic as measured by vehicle-miles traveled. It does 43% more toll transactions. It has a major challenge clearing winter snow, like the Penn Pike. Despite its much larger size, its operating cost is \$331 million, about 10% less than the Penn Pike’s.

- Investor-owned Brisa in Portugal operates a similar-sized toll road network with traffic about 84% of the Penn Pike’s. Its operating costs are \$281 million (at Euro = \$1.51), almost 25% less.

The only toll roads we have found with a cost-take higher than Pennsylvania are the turnpikes of Massachusetts and West Virginia. The Massachusetts Turnpike Authority stands head and shoulders above the others in its cost-take of 79%, but West Virginia at 64.5% slightly exceeds Pennsylvania (62.4%).

3. Tax Loss Carry Forwards

FWTRT also assumed away the impact of tax loss carry forwards for the private sector. The Pennsylvania Turnpike, as a public-sector entity, does not pay taxes. An investor-owned toll road company that leased the Turnpike would be subject to normal corporate taxes. But by the same token, it would be subject to the same tax benefits (such as depreciation write-offs) as any other business. FWTRT points out that the Morgan Stanley study estimated that in the Lease alternative, the toll road company would have “sizeable operating

Table 1: Revenues and Costs of Large Toll Road Systems			
	Revenues	Operating and Maintenance Costs (\$ millions)	Cost-take
Public Toll Authorities			
Mass Pike	257.0	203.0	0.790
W Virginia	61.9	39.9	0.645
Penn. Turnpike	592.6	369.9	0.624
NYS Thruway	554.4	330.7	0.597
N.J. Turnpike	784.9	456.5	0.582
Ohio Turnpike	184.0	103.5	0.563
MD Tran Auth	278.6	155.6	0.559
RMA	25.7	12.9	0.503
PANY NJ	390.3	333.0	0.482
KS Turnpike	76.6	36.8	0.481
Golden Gate Bridge	85.0	40.2	0.473
NTTA	191.0	84.2	0.441
Maine Turnpike	83.5	36.0	0.431
Dulles Tr	40.5	17.2	0.424
DRJTBC	80.2	33.7	0.421
Fla. Turnpike	664.0	278.0	0.419
Illinois Tollway	579.2	219.3	0.379
MDX	82.0	29.5	0.360
Oklahoma	194.5	64.8	0.333
91 Express Lanes	44.2	14.5	0.328
E470	92.2	26.4	0.287
Triborough B&T	1241.6	352.9	0.284
BATA	280.3	75.4	0.269
OOCEA	203.5	52.2	0.257
Foothill East	104.7	25.2	0.241
HCTRA	349.3	67.1	0.192
San Joaquin Hills	86.2	12.9	0.150
		Average	0.426
Private Concessionaires			
ASF/ESCOTA Em	2570.0	1470.0	0.572
Brisa Em	575.7	187.0	0.325
Cofiroute 2005 Em	875.0	236.9	0.271
Autostrade Em	2518.0	665.0	0.264
Dulles Greenway	55.3	13.5	0.244
407ETR C\$	518.9	111.3	0.214
Macquarie Inf. Gr	320.5	54.2	0.169
Transurban MCL,	690.4	105.3	0.153
		Average	0.276
	Excl ASF		0.234

losses from the transaction from 2008 until 2027,” followed by substantial operating profits. “There may be a tax benefit associated with the use of capital loss carry-forwards that will accrue to the concessionaire, or its owners, and that may act to increase the value” of the lease to the toll road company. Our queries to toll road companies suggest that this benefit would be substantial; one informal estimate was that a successful bidder might pay no corporate income tax until year 25 of the 50-year lease.

Yet here is how FWTRT deals with this very material difference that would affect the concession price: “The estimation of the amount of tax loss carry forwards and the calculation of their present value are beyond the scope of this report.” In other words, this inconvenient fact that would significantly affect the concession price is simply left out of the comparison. This is yet another example of assuming away significant differences between the Lease and the two public-sector alternatives.

C. Failure to Use Risk-Adjusted Discount Rates

FWTRT goes to considerable lengths to explain discount rates and the calculation of the net present value of a stream on payments over a long period of time. One section of the report (pp. 22-23) discusses “The Time Value of Money” and “Risk Considerations, Ratings, and Leverage Options.” That section discusses the need to objectively compare the three alternatives of Lease, Act 44, and Monetization. Subsequent pages go on at some length about the differences between taxable and tax-exempt debt and then to estimates of the weighted average cost of capital (WACC) that might apply in each of the alternative deal structures. After several long digressions, FWTRT finally gets around to what it has been promising to do: compare the net present value (NPV) of the three alternatives.

The task is identified at the start of the section called “Discounting and Monetizing the Act 44 Payment Stream” (p. 40). At the outset, it notes that under Act 44 the Turnpike Commission is obligated to make a set of payments to the state over the next 50 years. Those payments are spelled out in the Appendix, in Exhibits 5, 6, and 7. Each of those Exhibits uses a different discount rate to compute the NPV of that payment stream. If one simply adds up the nominal

annual amounts, the 50 payments total \$83.4 billion. The NPV using a 4.5% discount rate is \$26.4 billion. FWTRT then asks: “What is the appropriate rate, from the Commonwealth’s perspective, to discount this stream of payments?”

That is, indeed, the right question. But the answer is not the one given by FWTRT. The choice of a discount rate must take into account the risk that the payments will not be made. In the case of the Lease alternative, if the winning bid is \$15 billion, paid in a lump sum up front (as everyone—the governor, the Morgan Stanley report, and FWTRT—assume will be the case), then the NPV of that “payment stream” is \$15 billion. There is no need to discount for the time value of money, since the state gets 100% of the value of the deal today. And there is no risk that future payments will not be made, for the same reason.

By contrast, with the Act 44 scenario, the planned 50-year payment stream must be discounted for both the time value of money and for the risk that some of the payments will not be made. How does that risk arise? The majority of the funds in that nominal \$83 billion stream of annual payments is supposed to come from tolls newly imposed on I-80. Under current federal law, tolls may be imposed on a currently non-tolled Interstate only if the state in question gains approval to be one of three states in a federal pilot program that permits toll financing to *reconstruct an Interstate* for which other funding sources are inadequate. The clearly stated intent of this pilot program is that the toll revenues be used *solely to rebuild and maintain the highway in question*. By contrast, the clearly stated intent of Act 44 is to transfer the majority of the I-80 toll revenue to the state to use for highway and transit purposes statewide. Of the \$83 billion total, only \$22.5 billion is expected to come from the Turnpike’s own tolls (based on the planned 25% initial increase and 3% per year thereafter). If we assume that the probability of I-80 toll revenues being shifted from I-80 to the state is close to zero, then the only “certain” payment stream is that of increased toll revenues from the Turnpike itself. Discounting that \$22.5 billion total using the 4.5% discount rate favored by FWTRT yields an NPV for this revenue stream of approximately \$7.1 billion.

FWTRT ignores the high level of risk of the state

actually receiving I-80 toll revenue for non-I-80 purposes, hand-waving it away by such phrases as “payments under the Act 44 [transaction] are known and are over a 50-year period,” and that the Act 44 revenue “represents the status quo for the Turnpike.” The closest it comes to acknowledging that there is uncertainty regarding that revenue stream is on p. 23, in pointing out that their entire set of calculations depends on this: “It assumes that I-80 eventually is tolled or that another source of funding replaces the amount expected to be contributed by I-80.” That is all that is said on this subject in the entire 65-page report. Yet if \$57 billion in future payments have to be “replaced,” what is the source of those replacement funds? And how likely is it to materialize? No answer is given.

Instead of doing a fair comparison of NPVs of the three alternatives, FWTRT gives us a meaningless exercise in arithmetic. Instead of discounting the payment streams of the three alternatives (and we have already noted that the Lease payment being all up front requires no discounting—it’s in today’s dollars today, and there is no risk of it not being paid), the FWTRT authors take the assumed 100% certain \$83 billion Act 44 payment stream and discount it by their estimate of the WACC for the Pennsylvania Turnpike itself, the WACC for a toll road company under a long-term concession, and the WACC for a hypothetical 63-20 nonprofit corporation. The only thing this demonstrates is that you get a higher NPV by using a lower discount rate, which is simply arithmetic. It’s completely beside the point for the kind of alternatives comparison needed by Pennsylvania policymakers to make a well-informed choice among the three alternatives. Yet the FWTRT authors titled this section “An Apples to Apples Comparison of Present Values.”

Incidentally, there are two other problems with the way FWTRT uses WACC in these comparisons. First, when looking at WACC for the private sector, the authors fail to consider that what matters to the private sector is the after-tax cost of capital to the company. Interest expense is tax-deductible to a toll road company, and in these highly leveraged transactions, debt constitutes typically 70 to 80% of the total. After-tax, the toll road company’s cost of debt is very close to that of a tax-exempt borrower (not to mention the fact that under the recent federal SAFETEA-LU legislation, pri-

vate toll companies can also access tax-exempt private activity bonds in many cases). Hence, if equity (at a 12.5% return) represented 20% of the capital, and debt at an after-tax rate close to that of the Turnpike (say, 4.8%) represented the other 80%, the effective WACC for the toll road company would be 6.34%. That is significantly lower than the before-tax 7.75% estimated by FWTRT.

Second, since the real-world alternative to a Lease is very likely to be Act 44 without the I-80 toll revenues, the Turnpike would find itself in a very different financial position from that assumed by FWTRT. To the extent that it had to issue very large amounts of new debt in an attempt to comply with the Act 44 requirements to provide \$83 billion to the state over 50 years, the Turnpike would become very highly leveraged. Its bond ratings would quite possibly drop to BBB or below, due to a greatly reduced coverage ratio. Thus, its WACC could no longer be assumed to be the low 4.5% used in all of FWTRT’s Act 44 calculations.

OTHER FLAWS

A. Return on Investment on Up-Front Payment

FWTRT devotes a long section to the argument that a multi-billion dollar up-front payment from a Lease could not possibly earn the rate of return expected by the governor and other supporters of this alternative. The authors cite the 2007 Morgan Stanley report that recommended the entire up-front payment be invested, like a university’s endowment, with only the annual earnings used for transportation. But FWTRT criticizes this report for suggesting that the return on these invested funds could be 7 to 9% on a long-term basis. The authors include a Table 6-A, which provides the following very long-term compound annual returns (1925 though 2007, which includes the Great Depression):

■ U.S. Treasury Bills	3.7%
■ U.S. Treasury Bonds	5.5%
■ Corporate Bonds	5.9%
■ Large Company Stocks	10.4%
■ Small Company Stocks	12.5%

By noting that the volatility of these returns increases along with the rate, they illustrate the well-known trade-off between return and risk. Obviously, a portfolio of many billions of dollars held in the form of an endowment fund must make sensible trade-offs, so as to achieve a good rate of return with minimal risk to the principal.

Other entities that face similar challenges in managing large pools of funds include university endowment funds, pension funds and insurance companies. How successful have these entities been in generating returns on their large investment portfolios? Large universities are high-profile investors. Harvard's endowment has a lifetime rate of return of 13.3%, and a 30-year return of 14.3%. Closer to home in this case, the University of Pennsylvania's return on its endowment averaged 8.9% over the past 10 years. Yale achieved 17.4% over that same decade.

The nation's largest public employee pension fund is CalPERS, whose 10-year annualized rate of return was 9.1%, as of 2007. In Pennsylvania, the 10-year annualized rate of return for PSERS was 9.67% as of 2007; its long-term actuarial investment rate of return assumption is 8.5%. PSERS' diversified portfolio includes U.S. stock funds, global stock funds, international stock funds, as well as fixed-income and inflation-protection holdings.⁴

Thus, it is not unreasonable for Morgan Stanley to expect that a large multi-billion-dollar lump sum payment for the lease of the Turnpike could be invested to achieve a long-term rate of return in the 7 to 9% range—if it were managed in a manner comparable to that used by PSERS, UPenn, and other large institutions.

B. Turmoil in Financial Markets

FWTRT devotes three and a half pages to an overview of unsettled conditions in the U.S. financial markets. The implication is that since the Turnpike is a government enterprise that has historically had investment-grade bond ratings, it will be minimally affected by the U.S. credit crunch. By contrast, a private company leasing the Turnpike would have to finance the deal in the private capital markets, which will be affected far more than would the Turnpike.

There are several problems with this conclusion. First, we are not dealing with the historical status quo of the Turnpike's operations and financing; rather, we are looking at the alternatives (to a Lease) of the Act 44 deal or the Monetization alternative. Act 44 commits the Turnpike to make a 50-year stream of payments to the state, totaling \$83 billion, and as pointed out previously, the source of funds for the large majority of those payments is unknown. If the federal government (as is highly likely) turns down the state's request to transfer huge sums of potential I-80 toll revenue to the Turnpike (to hand over to the state), the Turnpike will be stuck with having to come up with a replacement source of funding. Its only plausible source of additional revenue would be a much larger increase in Turnpike tolls than the 25% in year one and 3% per year thereafter that it is already committed to. Such a massive further increase would very likely (1) divert significant traffic off the Turnpike, thereby undercutting the goal of raising enormous sums from this additional increase, and (2) risk losing the Turnpike's investment-grade bond rating, if its Act 44 payout commitments exceeded what it could realistically bring in via toll revenues.

A second point to keep in mind is that the credit crunch has already affected tax-exempt municipal bonds, such as those issued by public-sector toll agencies like the Pennsylvania Turnpike Commission. The "spread" between U.S. Treasury bonds and muni bonds has recently reached historic highs—contrary to the FWTRT discussion which implies that munis are considered as safe as Treasury securities, with only the spread between corporate debt and Treasuries worth being concerned about.

Third, while the credit crunch is to some extent global, its effects are more severe in the United States than in most of the western world (e.g., Europe and Australia). And this points up another possible advantage of the Lease alternative. Global toll road companies are financed in the global capital markets, whereas toll agencies like the PTC are financed solely in the troubled U.S. capital markets (and in a very narrow slice of that market, tax-exempt muni revenue bonds). In December 2007—in the midst of the credit crunch—the Australian/U.S. joint venture of Transurban and Fluor financed their \$1.93 billion deal to build, oper-

ate, and manage new HOT lanes on the Capital Beltway in northern Virginia. The deal includes \$350 million in private equity, \$587 million in tax-exempt private activity bonds, and another \$587 million in the form of a federal TIFIA loan. The bonds, incidentally, have been deemed investment-grade by Fitch Ratings.⁵

Another large concession toll road financing took place in March 2008, for a 40-mile stretch of SH 130 in Texas. This project, a Spanish/U.S. joint venture of Cintra and Zachry American Infrastructure, required \$1.3 billion in funding. Equity investors are putting in \$261 million while a consortium of five European banks is providing \$680 million in senior bank debt. The project is also getting a \$430 million TIFIA loan.⁶

Both of the above projects are “greenfield” toll roads (i.e., brand new construction), as opposed to the acquisition of an existing toll road (“brownfield” transaction). New toll roads are considered inherently far more risky than existing ones. Thus, the fact that two billion-dollar scale new concession toll roads could be financed at the height of the credit crunch suggests that the private sector would have no problem financing the Lease of the Pennsylvania Turnpike.

C. Gross Underestimation of Reconstruction Costs and Risk Transfer

In its Tables 4 and 5 laying out scenario assumptions for both Lease and Act 44, FWTRT assumes that after the first 10 years of the 50-year period, capital expenditures would decline to a mere \$175 million per year, with zero inflation. This grossly underestimates the reconstruction and modernization which will likely be required in years 11 through 50 to meet growing travel demand as well as to minimize *life-cycle* cost (construction plus operating and maintenance costs) to the Turnpike operator. FWTRT implicitly assumes there will be no inflation in construction costs over this long period, when just the last seven years have seen the Producer Price Index for highway and street construction increase by nearly 50%.

In competing for a 50-year concession agreement, with proper measures to enforce ongoing pavement quality, bidders will have to make their individual assessments as to both reconstruction/expansion requirements during this five-decade period and of construction cost inflation. The important point for

policymakers to note here is that the winning bidder would be taking on these risks and responsibilities, shifting the risks from the Turnpike Commission (and hence, ultimately, the state and the taxpayers). This significant risk transfer is completely ignored in FWTRT’s weighing of the pros and cons of the Lease alternative.

D. Concerns That Apply to All Three Alternatives

FWTRT in several places devotes space to concerns that it links solely to the Lease alternative, but which actually apply to all three. The most egregious of these is possible negative side-effects of large increases in toll rates.

In the section on Public Policy Factors in the Decision to Lease Turnpike, the authors acknowledge that “under both scenarios [Lease or Act 44], tolls will increase continually over time.” They then suggest that the profit-maximizing private company would likely increase toll rates “up to the maximum allowed by the concession agreement.” That is questionable, since in recession years it might be counter-productive to increase toll rates at all, let alone by the maximum allowed by formula. They then note in passing that “Act 44 does not establish maximum tolls,” but instead that toll rates must be high enough to cover “operating and maintenance costs of the Turnpike, debt service, and payments to the Commonwealth mandated by Act 44 [i.e., the aforementioned \$83 billion].”

A few paragraphs later, under the heading “Neighbors of the Turnpike,” FWTRT discusses the problem of overly high toll rates causing significant amounts of traffic to divert from the Turnpike, leading to overloading of parallel highways and “a substantial increase in crashes, crash severity, and fatalities,” as well as potential diversion of truck shippers away from the Port of Philadelphia in favor of the Port of New York and New Jersey.

To be sure, excessively high toll rates could have such effects. But under which alternative are toll rates likely to be higher? If large-scale transfer of toll revenues from I-80 for other transportation purposes is not allowed by the federal government, then the bulk of the \$83 billion under Act 44 must come from the Turnpike itself, if Act 44 is the alternative chosen. And note that, as FWTRT has admitted, Act 44 provides no

cap *whatsoever* on toll rates on the Turnpike. Thus, the most likely future scenario is that toll rates on the Turnpike would be *much higher under Act 44 than under the Lease* alternative. That means diversion would be worse than under a Lease, and all the impacts of diversion (congestion, safety, shipper diversion) would also be worse under Act 44 than under a Lease.

Moreover, the idea that a profit-motivated toll road company will raise tolls to the point where there is significant diversion to un-tolled local roads is, when you stop to think, rather ridiculous. Every motorist who diverts is lost business. It's someone not paying a toll. Most of the costs of a road, at least in the short and medium term, are fixed costs. In running its commercial business the toll road company has an incentive to do its very best to keep traffic on the toll road. That means finding profit other ways than pricing customers off—like making the toll payment process as convenient and painless as possible, removing bottlenecks to traffic flow, having a reputation for good snow and debris clearance, reducing costs without detracting from service, and by relentlessly searching for the lowest cost but best quality staff and contractors.

Just as Safeway doesn't set its prices at levels which will have you diverting to Giant, so a toll company won't generally have an incentive to divert traffic to local roads. If there are still concerns, the concession agreement can easily take these into account. One alternative is caps on annual toll increase. Another is to provide penalties against the company if diversion to local roads is demonstrated. (The 407ETR concession agreement in Toronto has precisely such penalties, a legal backstop that encourages the company to expand capacity on the toll road ahead of traffic increases to anticipate possible diversion before it happens.)

The great "value driver" for a toll concession is not the opportunity for a private operator to raise tolls, as FWTRT wrongly claims, but the opportunity to dramatically improve upon the cost structure of a politically driven Turnpike Commission by eliminating patronage hiring and patronage deals. A dollar saved on costs will be a dollar pocketed as profit whereas a dollar in higher tolls will be at least partly lost to other roads. Depending on how the concession agreement is written, it may not even be a lawful option. Toll caps can focus the toll road company on earning profit

through greater efficiency.

E. Failure of the 63-20 Model for Toll Roads

The use of a not-for-profit corporation, under Internal Revenue Code 63-20, for toll roads was popular 10 years ago as an alternative to both private concessions and public toll authorities. It appealed as an alternative to public toll authorities for those who saw them as over-borrowed, inefficient or corrupt (or all three). It appealed as an alternative to private concessions for those who were uncomfortable with long-term for-profit operations of roads. Especially enamored of 63-20s were design-build contractors wanting to get a large contract to develop and build a toll road project without having to take responsibility for its long-term financial viability.

The trouble with 63-20 toll roads is that they don't work. The two major ones that were built under the 63-20 nonprofit model were failures from the day they opened. The Pocahontas Parkway in Richmond, Virginia has been bailed out and taken over by an investor-owned toll road company under a long-term lease. The second, the Southern Connector in Greenville, South Carolina, has failed too, and is also seeking bids for a similar private-sector rescue.

The problem with 63-20 toll roads is skewed incentives. The developer—usually a large firm or group with permitting, design, financing, legal and construction skills—sets up a not-for-profit corporation, usually appointing a board of local worthies who serve for nominal fees. By the time the board is appointed the project is fully formed. The developer has committed to the project and organizes the not-for-profit to issue the long-term debt, while the developer gets paid in full upon opening of the road. The developer gets paid a self-negotiated contract plus development fees regardless of whether or not the road is financially viable. He gets paid and is "out of there" when tolling begins. Only bond-holders stand to lose. But the bond-holders had no say in the design of the project in the first place. And unlike shareholders in an investor-owned toll road company, they have no say in its management, at least until it goes into bankruptcy.

Given their disastrous track record and their built-in failure incentives, it seems unlikely there will be more 63-20s for new toll roads. And the prospects for

New Jersey Gov. Jon Corzine’s attempt to use a 63-20 nonprofit corporation to monetize that state’s toll roads appear to be receding with each passing week.

FWTRT itself recommends against the 63-20 alternative for the Pennsylvania Turnpike, on grounds that (1) a new corporate entity would have no operational experience or track record managing such a large, specialized enterprise, (2) start-up expenses would add needless expenses to be recouped through tolls, and (3) there would be risks attendant on the large up-front borrowing needed for this alternative.

F. Misrepresentation of Overseas Concession Lengths

FWTRT claims (p.14) that concessions in Europe and South America are “usually 20 to 30 years” implying there is something wrong with the longer concession terms being agreed to in North America. It is true many of the French concessions are 20 to 30 years in length, but in recent years longer terms have become common in Europe. The Viaduc de Millau in southern France, the world’s highest bridge, was built under a 75-year concession. The M6 Toll in Birmingham England was built under a 53-year concession. West of Paris the A86 West double-deck tunnel is being constructed under a 70-year concession. Similarly in Australia there are concessions of over 50 years being written on new toll-roads (though most of those already in operation are for 30 or 35 years). The 407ETR toll road in Toronto was acquired by the present toll road company under a 99-year concession agreement.

FWTRT suggests that somehow concessions of 50 to 99 years are bad policy because they are out of line with international practice. In fact they are quite in line with international practice. An objection made by FWTRT and others is that these long-term leases will lock in future generations to the terms negotiated now. That is untrue. All toll concession agreements contain provisions for negotiated changes in the concession arrangements, conducted according to the principle that neither party should be disadvantaged by the change without compensation. They also provide for buy-back of the concession at market value.

Long-term concessions have the advantage that they allow the investors to spread the cost of their investment over a longer run of years. This enables

them to offer a larger up-front concession fee, or to finance a larger initial project. It also puts in place the incentives to build solidly and to maintain the project well to keep up the value of the investment. Once the agreement is close to its expiration date, the toll road company would have little incentive to maintain the project except for the agreement’s provisions spelling out the required roadway condition on hand back. Typically shorter-term concessions—like the original Dulles Greenway in Northern Virginia—have been extended in length in return for mid-concession investments in extra lanes or interchanges. Without long concession terms, these cannot be financed.

For the lease of an existing toll road such as the Pennsylvania Turnpike, the duration of the lease is entirely the decision of the state. The longer the term, the higher the lease payment will be, other things equal. So Pennsylvania could opt for 30 years, 50 years, or 99 years, comparing the value to be generated by each. Different states will likely make different trade-offs in making such decisions.

PUBLIC POLICY CONSIDERATIONS

FWTRT’s discussion of public policy considerations is brief, encompassing only three of the report’s 65 pages. It considers possible adverse impacts on four types of stakeholders: the Commonwealth itself (and presumably its voters and taxpayers), Turnpike users, Turnpike employees and Turnpike neighbors.

A. The Commonwealth

As regards the state itself, the report states flatly, “A concessionaire will run the Turnpike with a singular eye on the financial bottom line.” (p. 44) The following sentence does qualify this slightly, by saying, “to the extent not mandated in the concession agreement.” But that is a giant exception. The purpose of a long-term concession agreement is precisely to protect the public interest over a very long period of time. Such agreements are typically several hundred pages long, and include such topics as:

- Who pays for future expansions, repairs and maintenance;
- How decisions on the scope and timing of those

- projects will be reached;
- What performance will be required of the toll company (i.e., safety, maintenance, plowing and many other requirements);
- How the agreement can be amended without unfairness to either party;
- How to deal with failures to comply with the agreement;
- Provisions for early termination of the agreement, either for cause or for the government’s convenience;
- What protections, if any, will be provided to the toll company from state-funded competing routes;
- What limits on toll rates or rate of return there will be, and
- The length of the concession term (which can be fixed or variable).⁷

Thus, questions such as whether or not to add an interchange primarily for economic development reasons or what measures should be used to mitigate congestion are precisely the kinds of things that should be and are addressed in concession agreements; both are addressed in the long-term lease agreement for the Indiana Toll Road.

In fact, the scope and details of a long-term concession agreement are very similar for leases of existing toll roads and for development of new toll roads by the private sector. Apart from the original construction (which occurs only during the first few years of a concession agreement for a new toll road), all the issues noted above (and many others) are the same, regardless of whether the situation is that of a new (“greenfield”) toll project or an existing (“brownfield”) toll road.

That makes ironic the comments of Turnpike Vice Chairman Tim Carson, and the recent actions of the Turnpike Commission to propose toll concessions for several possible new toll projects in the Pittsburgh area. In his March 4 statement accompanying the release of FWTRT, Carson wrote, “My hope is that [FWTRT] will also help persuade the private sector to abandon its misguided pursuit of these ‘brownfield’ monetizations and, instead, turn its considerable talents and resources to critically needed new-capacity

(‘greenfield’) projects where it can bring real value to the transportation infrastructure table.”

But the reason the private sector can add real value is not only in the new investment it can bring to transportation. It is also the creativity and smart business management that it can bring to the table—not only in building new toll roads but in operating, managing and maintaining them cost-effectively over very long terms under a well-drafted concession agreement. And that is true regardless of whether the project is a “brownfield” or a “greenfield.”

B. Turnpike Users

Interestingly, FWTRT concedes that “It can reasonably be assumed that there will be no significant change for better or for worse in the operation of the Turnpike from the perspective of the user.” It goes on to state that users are unlikely to see any substantive difference in such factors as safety, comfort, convenience, aesthetics, etc. if the Turnpike is leased.

However, the authors then go on to discuss the reality of an initial large toll rate increase and annual increases thereafter under both the Lease and the Act 44 scenarios. They imply, however, that the motivation of the toll road company is to make money while the motivation of the Turnpike Commission, “based on history, will likely keep tolls at the lowest possible level that will satisfy its contractual obligations.”

However, in the same paragraph, FWTRT’s authors admit that there is no cap on toll rates under the Act 44 alternative, while annual toll increases would be capped under the Lease alternative. As discussed previously in the highly likely event that the federal government prohibits the large transfers of I-80 toll revenues to the state (via the Turnpike Commission), under Act 44 the only available recourse the Commission will have to meet its Act 44 payment obligations will be to increase tolls on the Turnpike far above the current Act 44 plan of a year one 25% increase followed by 3% annual increases thereafter. That scenario would lead to toll rates far greater than under the caps imposed by the Lease alternative.

C. Turnpike Employees

Here the FWTRT authors acknowledge that the concession agreement could encompass a range of

possibilities, from mandating that the toll company take on all current employees and labor agreements to giving the company a free hand on these issues. The Indiana Toll Road (ITR) concession agreement protected all then-existing ITR employees by ensuring them job offers at comparable rates and benefits either with the toll road company or with the state.⁸ Pennsylvania policymakers will have to decide how to handle this issue, which could affect the value of the Lease alternative. The fact that a right-to-work state like Indiana went to considerable lengths to be sure that no one was fired or laid off due to the lease decision suggests that the private sector understands the importance of good employee relations in such transitions. It's very likely that the potential bidders are already factoring significant labor-protection provisions into their estimates of the costs of taking over the Turnpike.

D. Turnpike Neighbors

Under this heading, FWTRT raises the specter of high toll rates causing diversion of traffic to roads paralleling the Turnpike, with negative consequences (congestion, accidents, etc.) to neighboring communities. We already addressed this point, by noting that high and increasing toll rates are common to all the alternatives under consideration and that the likelihood is that toll rates would be higher under the Act 44 alternatives. Hence, the negative impacts on neighbors would also be higher under the Act 44 alternatives.

CONCLUSIONS AND RECOMMENDATIONS

A. Conclusions

Although “For Whom The Road Tolls” (FWTRT) purports to answer the question of which alternative future for the Pennsylvania Turnpike is better, it does nothing of the kind. It ignores significant differences between investor-owned toll companies and public toll agencies, pretending that the only significant difference is in the cost of capital (which is invariably lower for a public agency using tax-exempt, all-debt financing). If that were the case, no state DOT or public toll agency would be considering the use of public-private

partnerships for new toll roads (as even the Pennsylvania Turnpike Commission is doing, for several possible projects in the Pittsburgh area).

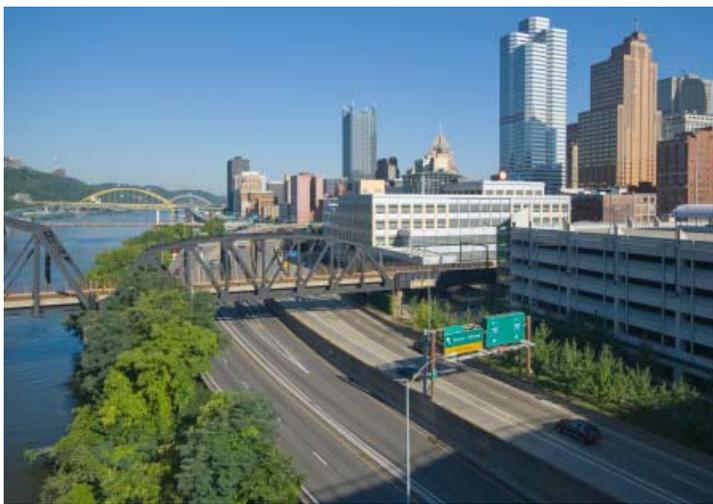
In fact, because they operate as real businesses, investor-owned toll road companies face strong pressures to operate efficiently. Large European toll road systems of comparable size to the Pennsylvania Turnpike, operated under long-term toll concession agreements, are significantly more efficient and business-like, as we have shown. Even among large public-sector toll systems in the United States, the Pennsylvania Turnpike is among the least efficient. Hence, there is good reason to expect major efficiency gains under the Lease alternative. Yet FWTRT assumes the same high-cost mode of operations would continue under private-sector operation.

FWTRT fails to present a fair comparison of the Lease alternative with the Act 44 alternative—using the same time period, traffic forecast, and toll rate regime. When it does make comparisons, however, it ignores real differences, such as in operating costs and tax benefits, which would significantly affect the value of a Lease deal to the Commonwealth of Pennsylvania.

FWTRT assumes as a certainty the projected \$83 billion over 50 years from Act 44's plan to toll I-80 and transfer the majority of that new toll revenue to the state (via the Turnpike Commission) for statewide transportation funding. Yet such a transfer expressly contradicts the clear legal meaning and the legislative intent of the federal pilot program that permits three states to use toll finance to each rebuild one Interstate. The state has no fallback plan for making up the \$57 billion shortfall that will exist if the federal government denies permission for the I-80 revenue transfer.

Given that the majority of the Act 44 revenue is highly uncertain, it is irresponsible for FWTRT to treat it as essentially certain, which it does by using only the Turnpike's cost of capital to compute the net present value of the Act 44 revenue stream. Without the I-80 transfer, the real NPV of Act 44 revenue is only \$7.1 billion, not the touted \$26.4 billion.

A valid comparison of the financial benefit of the three alternatives to the Commonwealth of Pennsylvania requires a risk-adjusted discounting of the 50-year revenue streams that each would produce. If the governor's current plan to ask bidders for the Lease to make



the entire payment up front remains in effect, then the NPV of that alternative is simply the face value of the winning bid—whether that be \$10 billion, \$15 billion, or \$20 billion.

Both the Act 44 alternative and the 63-20 Monetization alternative are intended to produce the same \$83 billion-over-50-years value, discounted to NPV in today's dollars. A valid discounting must include both the time value of money and the risk that the toll revenues on which the financing depends will materialize. Without the enormous transfer of toll revenues from I-80, which the federal government almost certainly will forbid, the NPV of either the Act 44 or the 63-20 Monetization is very likely well below \$10 billion.

The only way to know for sure the value of a Lease is to carry out the bidding process and determine the value of the highest bid that meets the public-interest requirements of the proposed long-term concession agreement. At that point, it will be critically important to compare that value with the NPV of the public-sector alternatives, using a risk-adjusted discounting procedure.

B. Recommendations

Our first recommendation is for the Commonwealth to obtain long-term lease bids for the Pennsylvania Turnpike from qualified toll road companies willing to agree to a long-term concession agreement that protects the public interest. Such bids are the only way to determine how much the Lease alternative is worth—as opposed to the various speculations which make up the bulk of the FWTRT report.

Second, of course, the face value of the winning Lease bid must be compared with a realistic estimate of the net present value (NPV) of revenues that would be produced under Act 44. A realistic NPV must involve a discount rate that takes full account of the risks that major portions of the projected toll revenue (specifically the proposed \$57 billion transfer from I-80 over 50 years) will not materialize. If the NPV of the Lease (the face value of the up-front payment) is greater than the realistic (risk-adjusted) NPV of the other two alternatives, the Lease alternative should be chosen.

Although we have argued against FWTRT's contention that it is unrealistic for the state to expect a 7 to 9% average annual return on the invested Lease payment, we do think the authors have raised a point worth considering about the long-term immunity of this enormous sum from future political intrusion. The same legislation that repeals Act 44 in favor of the Lease alternative needs to create an ironclad "lock-box" arrangement to permanently safeguard these funds for transportation investment purpose. Trustees of this fund would have comparable fiduciary responsibilities as those of a university endowment or a pension fund. Pennsylvania already has working models of institutional arrangements to safeguard the investments of its own state employee pension fund (PSERS) and UPenn's endowment fund.

As for I-80, we agree that there would be a better balance of long-distance traffic between I-80 and the Pennsylvania Turnpike if both of these major east-west routes were tolled. Therefore, we recommend that the Pennsylvania DOT submit a revised application to the Federal Highway Administration under the Interstate System Reconstruction and Rehabilitation Pilot Program to rebuild and modernize I-80 using toll finance. PennDOT could, in parallel, apply to be part of the Express Lane Demonstration Program, which permits the addition of new tolled lanes to Interstates. The new lanes would be configured as truck-only toll lanes, and the state should seek an exemption from existing federal truck size and weight limits to permit longer and heavier trucks to operate on these new, barrier-separated lanes. That would give truckers and shippers increased productivity (ton-miles per gallon, ton-miles per driver) to make it worth their while to pay tolls on the new I-80 lanes.

ABOUT THE AUTHORS

Robert W. Poole, Jr. is Director of Transportation Studies at Reason Foundation. He received B.S. and M.S. degrees in engineering from MIT and did additional graduate work in operations research at NYU. His 1988 Reason policy study, “Private Tollways: Resolving Gridlock in Southern California,” directly inspired California’s 1989 pilot toll roads pilot program law, which has been emulated in nearly two dozen other states since then. He has advised the Office of the Secretary of Transportation, the Federal Highway Administration, the Federal Transit Administration, and a number of state DOTs, and served 18 months as a member of California’s Commission on Transportation Investment. He is currently a member of the Texas Legislative Study Committee on Private Participation in Toll Projects. He writes a monthly column on transportation policy issues for *Public Works Financing* newsletter.

Peter Samuel is the editor and proprietor of www.tollroadsnews.com, an online news service. He received his B.Comm (Honors) majoring in economics from the University of Melbourne, Australia, where he also studied city planning. He taught economics at Monash University, then moved into journalism with the *Canberra Times* and later the newsweekly, *The Bulletin*. Based in the United States since 1980, he founded and edited *Toll Roads Newsletter*, the predecessor to the current online news site. He has been a contributing editor to *World Highways* and *Intelligent Transportation Systems International*.

ENDNOTES

1. Gary J. Gray, Patrick J. Cusatis, and John H. Foote, “For Whom the Road Tolls,” Harrisburg, Pennsylvania House Democratic Caucus, February 2008.
2. Timothy J. Carson, “Statement of PTC Vice Chairman Timothy J. Carson Regarding Report Commissioned by PA House Democratic Caucus,” March 4, 2008.
3. Paul Nussbaum, “Rendell’s Plan to Lease Turnpike Unwise, Study Says,” *Philadelphia Inquirer*, March 7, 2008.
4. www.sers.state.pa.us/sers/lib/sers/investments/

summaryholdings/summaryholdingreport_3Q_2007.htm.

5. “Public Money Launches I-495 HOT Lanes Concession,” *Public Works Financing*, Vol. 222, December 2007.
6. “March Financial Close Set for SH 130 Toll Road in Texas,” *Public Works Financing*, Vol. 224, February 2008.
7. Peter Samuel, “Leasing State Toll Roads: Frequently Asked Questions,” Policy Brief No. 60, Los Angeles: Reason Foundation, 2007.
8. Robert W. Poole, Jr., “Indiana Toll Road Lease Two Years On,” *Surface Transportation Innovations*, Issue No. 53, Los Angeles: Reason Foundation, March 2008.



Reason

REASON FOUNDATION'S mission is to advance a free society by developing, applying, and promoting libertarian principles, including individual liberty, free markets, and the rule of law. We use journalism and public policy research to influence the frameworks and actions of policymakers, journalists, and opinion leaders.

For more information on Reason Foundation and our transportation research, please contact the appropriate Reason staff member:

Transportation Planners and Officials

Robert Poole

Director of Transportation Studies
(310) 292-2386
Robert.Poole@Reason.org

Government Officials

Mike Flynn

Director of Government Affairs
(202) 986-0916
Mike.Flynn@Reason.org

Media

Chris Mitchell

Director of Communications
(310) 367-6109
Chris.Mitchell@Reason.org