

Transportation Project Finance – 2

Public-Private Partnerships

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What are PPPs?

- ▶ Situations where **public services** are provided by **private entities** under the terms of a time-limited **concession contract**
- ▶ Different from independent provision of public services by private entities subject only to regulatory oversight (privatization)
- ▶ The concession contract means that key features of the relationship between the public and private partners must be determined up front
- ▶ It also means that there is a time dimension to the service provision arrangements that needs to be taken into account in contract design

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Brownfield PPP The public sector grants operating authority (not ownership) over an existing toll facility to the private partner for a given period of time. The private partner typically:

- ▶ Pays the public sector an agreed amount
- ▶ Collects tolls from the facility users
- ▶ Maintains and operates the facility
- ▶ Adds capacity if needed
- ▶ Arranges financing for all of the above
- ▶ Turns back the facility to the public sector at the end of the concession period

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Greenfield PPP The public sector engages the private sector partner to develop a new transportation facility on its behalf.

- ▶ The private sector partner is typically responsible for financing, designing and building the new facility, which is owned by the public sector
- ▶ It pays the public sector an agreed amount
- ▶ It receives operating authority over the facility for an agreed period of time
- ▶ It collects tolls, operates, maintains and expands the facility, like a brownfield
- ▶ At the end of the concession period, it turns the facility over to the public sector

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Shadow tolling (Also called *availability payments*.) A greenfield or brownfield PPP project in which the private operator does not collect tolls from users. Rather, the public sector pays the private operator based on the user volume and service quality.

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Other aspects of transportation PPPs

- ▶ Concessions are often for 50–100 years
- ▶ PPP agreements typically stipulate in detail the initial toll rate and the toll rate escalation methodology
- ▶ The toll rate escalation may be tied to standard inflation measures such as the CPI, but with a lower bound
- ▶ Another escalation approach fixes future rates in constant dollars, with the actual rates reflecting an inflation measure
- ▶ Some agreements require a portion of toll revenues to be shared with the public sector under certain conditions

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Pocahontas Parkway 1

Richmond VA, opened 2002

Involved parties Virginia DOT, Fluor Corp., Washington Group International, Pocahontas Parkway Association

Funding highlights \$9 M federal funds for design costs, \$354 M tax exempt revenue bonds, \$18 M SIB loans

Financing highlights Non-profit 63-20 corporation formed to issue tax-exempt debt

Other Construction costs were above estimates; T&R below estimates; project revenues covered less than half of annual debt service

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Pocahontas Parkway 2

Richmond VA, 2004

Involved parties Virginia DOT, Transurban, Depfa Bank (Ireland)

Funding highlights Transurban provided \$131 M equity, Depfa \$487 M debt

Financing highlights "Permit Fee" provides Virginia with 40% of gross revenues after project attains 6.5% IRR

Toll rate provisions Six steps to increase rate from \$1.50 to \$4.00 by 2016; subsequent increases based on greater of regional GDP growth, CPI growth, or 2.8%

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SR 91 Express Lanes

Orange County CA, 1995

Involved parties Caltrans, OCTA, California Private Transportation Company (CPTC)

Toll rate provisions Variable toll rate Express Lanes, rate set to maintain free flow conditions

Other CPTC built Express Lanes in median of existing SR 91 and operated them for 7 years. OCTA purchased the toll road from CPTC in 2002 in order to construct a parallel roadway that was prohibited in the original contract

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Chicago Skyway Bridge

PPP in 2005

Involved parties City of Chicago, Skyway Concession Company LLC (SCC)

Funding highlights Cintra and Macquarie paid \$1.83 B for a 99 year concession

Toll rate provisions Limits on passenger vehicle tolls are specified through 2017; later adjustments indexed to inflation

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Indiana East-West Toll Road I-90

PPP in 2006

Involved parties State of Indiana, Cintra, Macquarie

Funding highlights Cintra and Macquarie paid \$3.8 B for a 75 year concession

Toll rate provisions Car toll increases restricted to rate of inflation, higher increases for short- and long-distance truck tolls

Other This has been a very controversial decision in Indiana

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Limitations on federal capital sources

Traditional sources of capital for funding transportation infrastructure investments are no longer sufficient

- ▶ The Highway Trust Fund is depleted (balances + current tax proceeds are less than current HTF commitments)
 - ▶ Fuel excise tax does not vary with price of oil or fuel
 - ▶ Federal fuel tax rate has not changed since mid-90s
 - ▶ No political will to change tax rate or type so far
 - ▶ VMT increasing, but also vehicle fuel economy
 - ▶ Net effect is that proceeds from fuel tax and other HTF fund sources are growing slowly
 - ▶ Inflation in engineering construction and maintenance costs is very high (price of petroleum, other inputs)

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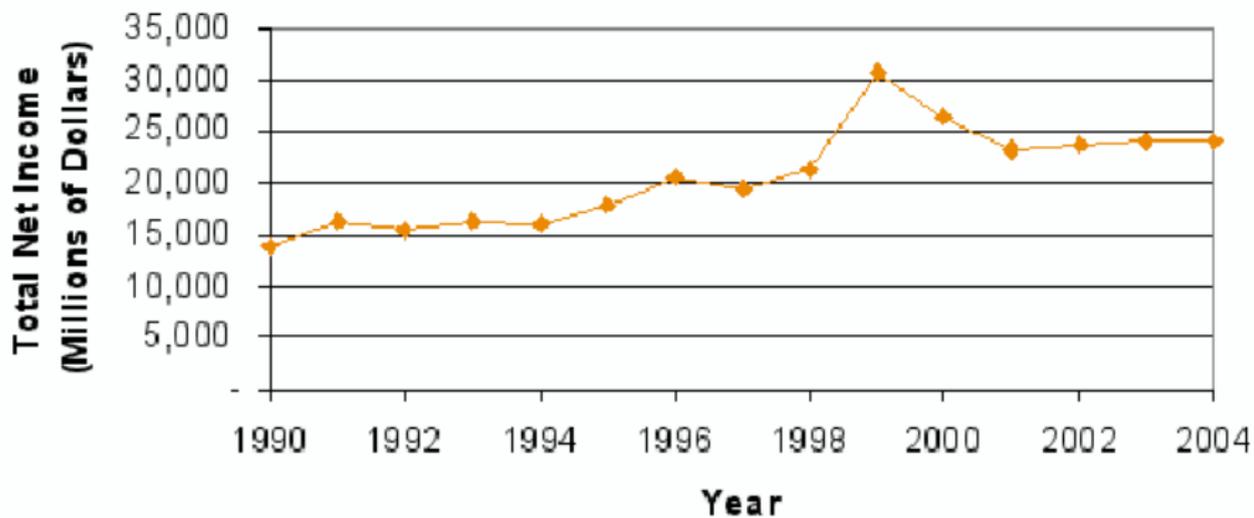
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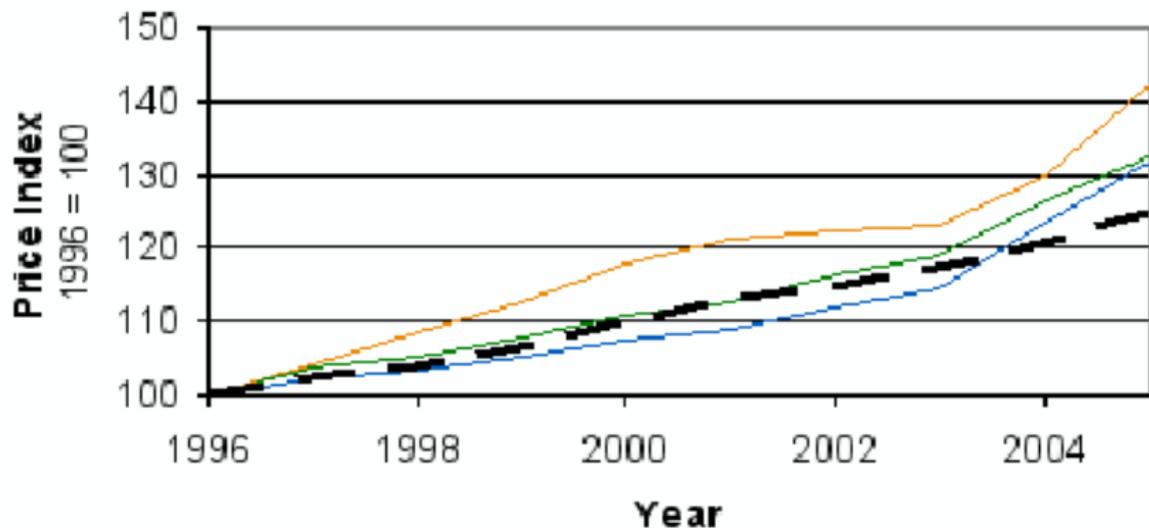
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Federal Highway Trust Fund Income *(in Constant 1990 Dollars)*



Construction Cost Indices compared to Inflation, 1996-2005



Turner Construction
Engineering News-Record

Army Corp of Engineers
Inflation (CPI)

- ▶ Highway Trust Fund problems apply, even more strongly, to state and local fuel taxes
 - ▶ Some states have not changed fuel tax rate since early 90s
 - ▶ Some states don't have fuel tax
 - ▶ They depend on other taxes (e.g. property taxes) that have even higher political sensitivity
- ▶ Public toll authorities (turnpikes) are also very sensitive about raising tolls
 - ▶ Not isolated from political process and pressure
 - ▶ Toll increases typically lag inflation by a lot
 - ▶ In some cases, toll collection cost > toll proceeds! (ITR)

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The ability of municipal bond financing to generate capital is limited

- ▶ State and local government and quasi-government entities have a limited number of revenue streams that they can securitize with bonds
- ▶ Over-commitment of future revenues can result in deterioration of the entity's credit rating
- ▶ Lower credit rating means that investors will demand higher risk premia when purchasing debt
- ▶ The credit rating reduction affects future bond issues
- ▶ With higher cost of debt financing, the entity's operating budget becomes more challenged
- ▶ This may lead to further credit rating deterioration

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Moreover, current financial market conditions limit municipal bond revenue generation potential

- ▶ The subprime mortgage crisis has severely damaged the market for debt-based securities
- ▶ Many municipal bonds are carrying high risk premia, particularly bonds with lower credit ratings
- ▶ There may be no market at all for some bonds because of a too large difference between
 - ▶ Financing costs that bond issuing entities are willing or able to pay
 - ▶ Limited purchasing power and high risk premium requirements of bond investors

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Other reasons for public interest in PPPs

- ▶ Some governments may not have the in-house staff and other resources to manage the development of a major infrastructure project
- ▶ Those governments may be reluctant to grow themselves simply to meet the needs of developing one project
- ▶ Some believe that project development, management and operation by the private sector is inherently more efficient than by the public sector
 - ▶ Evidence from contract road maintenance industry
 - ▶ Florida Turnpike Enterprise

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Advantages of PPP to the public sector

PPPs can mitigate or eliminate many of the problems with conventional project financing mentioned above

- ▶ Needed funds are made available
- ▶ Reliance on transportation infrastructure funds from government sources is eliminated or limited
- ▶ Political pressures limiting toll increases are reduced
- ▶ Effects of one-time project development on government structure are avoided
- ▶ Private sector efficiencies (if any) in project and facility management and operations are realized
- ▶ The upfront funds provided to a government entity through a PPP project may have spillover effects
 - ▶ Reduce government debt
 - ▶ Improve credit rating
 - ▶ Reduce future financing costs

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Factors explaining private sector interest

Risk diversification Seek diverse investment portfolio. US infrastructure market is new, can balance asset holdings of international players

Risk/reward levels PPP projects (esp. brownfields) offer generally good returns at moderate risk

Leveraging know-how Firms already experienced in PPP transactions and asset operation look to leverage expertise elsewhere

Perception of untapped value Private sector often assumes that it can generate value by improving efficiency of public sector operations

Financing advantage Favorable treatment of depreciation in US corporate tax code, plus access to low-cost financing through tax-exempt bonds

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PPP players

Different types of private sector entities show interest in PPPs

- ▶ Infrastructure equity funds and pension funds
- ▶ Strategic industry investors
- ▶ Private equity funds

Following on recent turmoil in financial sector, lines between financial players have become somewhat blurred

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Infrastructure equity funds – 1

Large international equity funds are major PPP players
Albertis, Babcock and Brown, Goldman Sachs,
Macquarie, Morgan Stanley, others

- ▶ Knowledgeable about infrastructure; some have operating experience, directly or through affiliates
- ▶ They tend to be well capitalized
- ▶ Often capitalized by pension funds
 - ▶ Pension funds have lots of capital to invest
 - ▶ Look for long-term investments with stable and above-average returns
 - ▶ Good match to PPP investments

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Infrastructure equity funds – 2

Investor motivation and characteristics

- ▶ Need to invest large sums of money in specific asset classes in order to fulfill corporate mandate
- ▶ Prefer a few large transactions to many smaller ones in order to best utilize limited staff
- ▶ Willing to participate in bidding processes that may take a year or more, and to dedicate millions of dollars to making a bid on a single asset
- ▶ Have significant resources to spend understanding the PPP market

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Investor motivation and characteristics (continued)

- ▶ Determine investment valuations through extensive cash flow modeling using independent engineering forecasts and a wide range of capital structures
- ▶ Often bid with a strategic investor or operator that is knowledgeable in the specific asset class
- ▶ Frequently advised by one or more financial advisors or banks able to structure the debt portion or source equity capital as needed

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Companies already active in the PPP infrastructure class

- ▶ Example: Toll road operators that invest in other toll roads

Investor motivation and characteristics

- ▶ Often bid with an infrastructure equity fund either in a lead or supporting role
- ▶ Equity commitments are generally smaller than infrastructure funds can offer
- ▶ Decisions are driven by alignment with other assets under management, not just the return

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Wide range of investment manager types

- ▶ Bids depend heavily on projected ROI
- ▶ Equity commitments vary widely
- ▶ May be less familiar with PPP market
- ▶ May be more risk-averse, esp. with political factors
- ▶ May look for quick return, exit

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Issues related to network development – 1

In a PPP project, the government cedes some control over network development

- ▶ The effects of this can be limited by appropriate contracting process and terms

Project development prioritization PPP developers may "cherry pick" projects with highest return, even if these are not highest public priority

- ▶ The government can designate specific projects as PPP candidates
- ▶ Aligns developers' and public priorities
- ▶ Might exclude worthy innovative proposals
- ▶ Regulations should ensure competition between potential PPP developers

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Constraints on off-facility network development PPP agreements typically include **non-compete** provisions that restrict network improvement near the PPP facility

- ▶ Some operating PPP contracts have been rescinded because of public discontent with lack of improvements on congested parallel facilities (California SR91)
- ▶ The government needs to carefully negotiate non-compete clauses
- ▶ Off-facility improvements other than highway capacity expansion (traffic safety, transit, HOV/HOT, etc.) should certainly be allowed

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- End of term issues** A PPP operator nearing the end of the concession agreement has little incentive to maintain the infrastructure in a state of good repair or to make needed capacity investments
- ▶ PPP agreements need to include capacity expansion triggers based e.g. on traffic level of service standards
 - ▶ PPP agreements need to include **turnback** provisions that impose infrastructure quality standards
 - ▶ With meaningful penalties for non-compliance

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Issues related to network operations – 1

In a PPP project, the government cedes control over the operation of a (typically major) transportation facility

Road pricing For effective congestion management, road pricing policy should be coordinated over an entire network

- ▶ Road pricing is increasingly viewed as an important mechanism for both revenue generation and congestion management
- ▶ PPP contracts typically specify toll rates and their escalation over time
- ▶ This may conflict with broader regional road pricing policies as they evolve

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Issues related to network operations – 2

Impacts on unpriced roads A PPP facility operator has no incentive to consider the impacts of traffic that diverts from the facility to other (unpriced) roads

- ▶ The government should consider this before agreeing on tolls

Maintenance, operations and safety performance A PPP agreement should specify maintenance, operations (e.g. level of service) and safety standards to be met by the PPP operation

Transit vehicles The agreement needs to stipulate how transit vehicles will be tolled

Emergency vehicles and evacuations There should be no tolls when public safety is at stake

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Timing of project benefits If PPP allows a worthwhile facility to be put into service earlier than a conventional project delivery arrangement, the project's economic benefits become available sooner

Risk sharing A PPP arrangement involves a wide variety of risks for both the public and private sector partners. The PPP agreement should allocate each risk to the partner best able to accommodate it, and the financial terms should reflect the risks that each party actually assumes

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PPP project risks and mitigation – 1

(Adapted from FHWA PPP FAQs)

Technology performance Key technology not proven in revenue service

- ▶ Mitigated by warranties provided by private technology vendor

Environmental delays Lengthy studies, permitting delays, regulatory approval periods

- ▶ Mitigated by effective process management, private partner assistance

Politics and policies Possible changes in laws, regulations, policies and/or funding support

- ▶ Effective public outreach and public relations
- ▶ Early engagement with regulatory agencies
- ▶ Citizen and policymaker education

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(Adapted from FHWA PPP FAQs)

Inadequate toll revenues Due to over-optimistic T&R study, development of competing projects, excessive financing or O&M costs. Mitigated by:

- ▶ accurate T&R study
- ▶ adequate DSCR and other reserves
- ▶ use of credit enhancement facilities
- ▶ contractual toll adjustment flexibility
- ▶ contractual non-compete provisions
- ▶ careful budgeting and O&M controls

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PPP project risks and mitigation – 3

(Adapted from FHWA PPP FAQs)

Construction cost and schedule overruns Mitigated by:

- ▶ Use of fixed price or guaranteed maximum contracts
- ▶ Adequate contingency funds
- ▶ Effective design and construction management
- ▶ Insurance and surety products

High O&M costs Mitigated by:

- ▶ Contractual O&M performance incentives and penalties
- ▶ Effective O&M management and performance including contracting
- ▶ Contractual toll adjustment flexibility

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PPP project risks and mitigation – 4

(Adapted from FHWA PPP FAQs)

Liabilities Risk of legal action from construction defects, operational problems, subcontractor claims, environmental impacts

- ▶ Contractual liability allocation based on partner best able to control and mitigate risk
- ▶ Incentivize private partner to perform
- ▶ Protect from uncontrollable liabilities that could be borne by public sector
- ▶ Warranties and insurance products

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