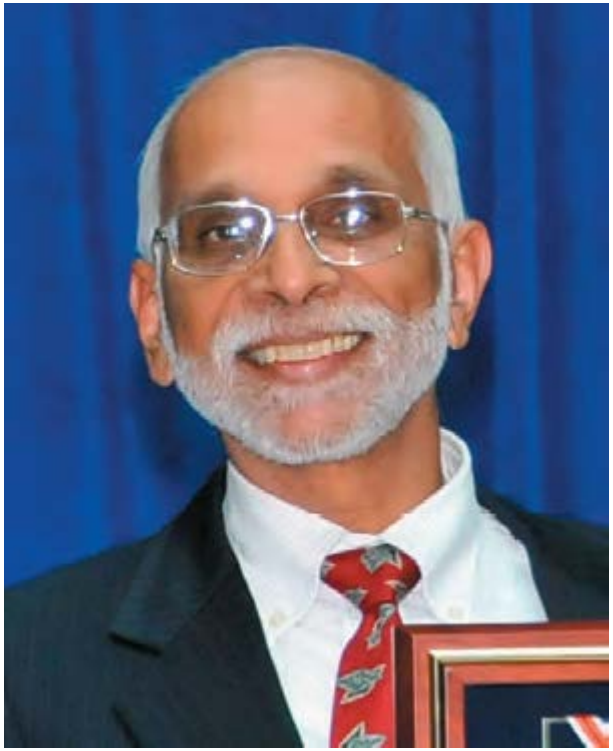
Value for Money Analysis Exercise Review

P3-VALUE 2.0 Webinar

February 16, 2016

Instructors



Patrick DeCorla-Souza

P3 Program Manager
Office of Innovative Program Delivery

Wim Verdouw

Financial Modeler
IMG/Rebel

P3-VALUE 2.0 Webinars

- This is a follow-up to the second of five topical webinars to introduce P3-VALUE
  - P3 Evaluation Overview (January 25, 2016)
  - **Value for Money Analysis (February 8, 2016)**
    - **Value for Money Exercise Review (today)**
  - Project Delivery Benefit-Cost Analysis
  - Risk Valuation
  - Financial Viability Assessment

Exercise Objective

- Learn how to compare the Public Sector Comparator to the P3 option to determine which option delivers greater Value-for-Money (VfM) from the perspective of the procuring Agency.
- Learn how to identify key drivers in the VfM analysis.

Webinar Outline

Intro	Project Background
Parts A & B	Toll Concession
Part C & D	Availability Payment Concession
Recap	Summary of Webinar

Introduction

Project Background

Homework Exercise

A study was done previously by a state DOT to estimate Value for Money of P3 delivery for a highway project. The various inputs required for the analysis are included in the P3-VALUE 2.0 spreadsheet model.

Project Information

- 20 miles highway expansion
- From 3 lanes to 5 lanes in each direction
  - 3 General Purpose Lanes (GPL)
  - 2 Managed Lanes (ML)
- Costs (excluding risks and financing):
  - Pre-construction & construction: $425M
  - Routine O&M: $4M per year
  - Major maintenance: $10M (every 8 years)
- Preconstruction start: 2015 (2 years)
- Construction start: 2017 (4 years)
- Operations start: 2021 (40 years)

Questions?

Submit a question using the chat box or hit *6 to ask your question by telephone

Questions from February 8 Webinar

- Kent Olsen: Why don't you consider DBOM as one of the delivery options in your VfM analysis?
- HPTE: How do you define the input benefit as opposed to the P3 Efficiencies inputs?
- Karen Holmes: At what point do variances in project start and completion dates make the data incomparable?

Parts A and B

Toll Concession Analysis

Toll Concession Analysis Steps

- **Part A:** Use the Value for Money Analysis training module to:
  1. Review the Public Sector Comparator (PSC)
  2. Review the P3 Option
  3. Compare PSC and P3 Option from the perspective of the Agency

- **Part B:** Use the Value for Money Analysis training module to test impact of a higher discount rate

Part A, Step 1: PSC Inputs

Key project information for the PSC in the input sheets of the model:

- **Revenues** and their timeline
- **Costs** and their timeline
  - Build phase: Pre-construction and construction
  - Operations phase: O&M plus periodic major maintenance
- **Risks** (to be covered in topical Webinar 4)
- **Financing fees**, which are the upfront costs incurred to arrange public debt
- **Competitive neutrality adjustment** to correct for taxation effects in the P3 option

Part A, Step 2: P3 Option Inputs

Key P3 Option inputs are:

- **Revenues:** PSC revenues and timeline, but adjusted to take into consideration assumed P3 differences
- **Costs:** PSC costs and timeline, but adjusted to take into consideration assumed P3 differences:
  - Build phase: Pre-construction and construction
  - Operations phase: O&M plus periodic major maintenance
- **Risks:** Will be covered in Webinar 4
- **Financing conditions:**
  - Equity
  - Debt

Part A, Step 3 and Part B

PSC vs. P3 Comparison:

Key input for the comparison is the discount rate to be applied to future cash flows:

- Discount rate for **Part A:** State borrowing rate (4%)
- Discount rate for **Part B:** Higher rate (5%)

Review of Model Inputs

Please stand by as we open the Excel file

Review of Model Outputs

PSC - Outputs

Costs & revenues under Conventional Delivery Units >>	NPV @ 4.00% USD m	Nominal total USD m
Toll revenues	756	2198
Toll revenues uncertainty adjustment	(130)	(377)
Pre-construction & construction costs	(397)	(454)
O&M costs	(129)	(363)
No Build O&M cost savings	250	680
Base variability	(79)	(112)
Pure risks	(69)	(121)
Lifecycle performance risk	(228)	(574)
Financing fees	(3)	(3)
Competitive neutrality adjustment	-	-
Total net revenues / (costs) under Conventional Delivery	***(29)***	***873***

P3 Option – Bid Calculation

- Combining all revenues, costs, risks and financing allows the concessionaire to prepare a bid
- Depending on the structure of the transaction, the bid is either a subsidy/concession fee or availability payment

P3 Output – Developer Bid Calculation

Costs & revenues to Developer under P3 Units >>	NPV USD m	Nominal total USD m
Toll revenues for private side	298	2224
Pre-construction & construction costs (transferred)	(304)	(390)
O&M costs (transferred)	(43)	(296)
Base variability (transferred)	(54)	(94)
Pure risks (transferred)	(40)	(98)
Net subsidy from Agency to Developer	146	205
Financing fees	(2)	(3)
Taxes	-	-
Total net revenues / (costs) to Developer under P3	***0***	***1548***

P3 Option – Agency Revenues/Costs

- From the procuring Agency's perspective, the cost of P3 includes the bid as well as any retained costs or risks

P3 Output – Agency Perspective

Costs & revenues to Agency under P3 Units >>	NPV @ 4.00% USD m	Nominal total USD m
Toll revenues (for public side)	-	-
Toll revenues uncertainty adjustment (for public side)	-	-
Pre-construction & construction costs (retained)	(39)	(43)
O&M costs (retained)	(12)	(33)
No Build O&M cost savings	259	691
Base variability (retained)	(7)	(10)
Pure risks (retained)	(6)	(11)
Net subsidy from Agency to Developer	(175)	(205)
Total net revenues / (costs) to Agency under P3	***19***	***389***

Compare PSC and P3 Option

Part A (4% discount rate):

- NPV of net revenues/cost to Agency under PSC $(29) M
- NPV of net cash flows to Agency under P3 $19 M
- NPV of difference (= VfM) **$48 M**

Part B (5% discount rate):

- NPV of net revenues/cost to Agency under PSC $(63) M
- NPV of net cash flows to Agency under P3 $(18) M
- NPV of difference (= VfM) **$45 M**

Questions?

Submit a question using the chat box

Parts C and D

Availability Payment Concession

AP Concession Analysis Steps

- **Part C:** Use the Value for Money Analysis training module to:
  1. Review the Public Sector Comparator (PSC)
  2. Review the P3 Option
  3. Compare PSC and P3 Option from the perspective of the Agency

- **Part D:** Use the Value for Money Analysis training module to test impact of elimination of the assumed P3 cost efficiencies

Part C, Step 1: PSC Inputs

Key project information for the PSC in the input sheets of the model are the same as for the Toll Concession option:

- **Revenues** and their timeline
- **Costs** and their timeline
  - Build phase: Pre-construction and construction
  - Operations phase: O&M plus periodic major maintenance
- **Risks** (to be covered in topical Webinar 4)
- **Financing fees**, which are the upfront costs incurred to arrange public debt
- **Competitive neutrality adjustment** to correct for taxation effects in the P3 option

Part C, Step 2: P3 Option Inputs

AP P3 Option inputs that are ***the same as*** the Toll Concession are:

- **Revenues:** PSC revenues and timeline, but adjusted to take into consideration assumed P3 differences
- **Costs:** PSC costs and timeline, but adjusted to take into consideration assumed P3 differences:
  - Build phase: Pre-construction and construction
  - Operations phase: O&M plus periodic major maintenance

AP P3 Option inputs that are ***different*** from the Toll Concession are:

- **Financing conditions:**
  - Equity
  - Debt

Part C, Step 3 and Part D

<u>Part C</u>: Base case PSC vs. P3 Comparison:

Key input for the comparison is the discount rate to be applied to future cash flows:

- **Discount rate** (same as for Toll Concession)**:** 4%

<u>Part D</u>: For evaluation of impact of P3 efficiencies on the PSC vs. P3 Comparison:

1. **Construction timing** -- Eliminate early completion of P3 construction
2. **Construction cost** -- Eliminate reduction in P3 pre-construction and construction costs
3. **Operations cost** -- Eliminate reduction in P3 operations phase costs

Review of Model Inputs

Please stand by as we open the Excel file

Review of Model Outputs

PSC – AP Concession Outputs

Costs & revenues under Conventional Delivery Units >>	NPV @ 4.00% USD m	Nominal total USD m
Toll revenues	756	2,198
Toll revenues uncertainty adjustment	(130)	(377)
Pre-construction & construction costs	(397)	(454)
O&M costs	(129)	(363)
No Build O&M cost savings	250	680
Base variability	(79)	(112)
Pure risks	(69)	(121)
Lifecycle performance risk	(228)	(576)
Financing fees	(3)	(3)
Competitive neutrality adjustment	-	-
Total net revenues / (costs) under Conventional Delivery	***(29)***	***872***

AP P3 Option – Bid Calculation

- Combining all revenues (i.e., agency upfront or milestone payments to the concessionaire), costs, risks and financing allows the concessionaire to prepare a bid
- The bid is an availability payment

AP P3 Output –Bid Calculation

Costs & revenues to Developer under P3 Units >>	NPV @ 7.24% USD m	Nominal total USD m
Toll revenues for private side	-	-
Pre-construction & construction costs (transferred)	(318)	(390)
O&M costs (transferred)	(57)	(296)
Base variability (transferred)	(58)	(94)
Pure risks (transferred)	(44)	(98)
Availability Payment & milestone payment to Developer	479	1,837
Financing fees	(3)	(4)
Taxes	-	-
Total net revenues / (costs) to Developer under P3	***0***	***955***

AP P3 Option – Agency Perspective

- From the procuring Agency's perspective, the cost of P3 includes the bid as well as any retained costs or risks

AP P3 Output – Agency Perspective

Costs & revenues to Agency under P3 Units >>	NPV @ 4.00% USD m	Nominal total USD m
Toll revenues (for public side)	777	2,224
Toll revenues uncertainty adjustment (for public side)	(133)	(381)
Pre-construction & construction costs (retained)	(39)	(43)
O&M costs (retained)	(12)	(33)
No Build O&M cost savings	259	691
Base variability (retained)	(7)	(10)
Pure risks (retained)	(6)	(11)
Availability Payment & milestone payment to Developer	(794)	(1,837)
Total net revenues / (costs) to Agency	***45***	***600***

Compare PSC and P3 Option

Part C (AP concession):

- NPV of net revenues/cost to Agency under PSC $(29) M
- NPV of net cash flows to Agency under P3 $45 M
- NPV of difference (= VfM) **$74 M**

Part D (AP concession with no early completion):

- NPV of net revenues/cost to Agency under PSC $(32) M
- NPV of net cash flows to Agency under P3 $(22) M
- NPV of difference (= VfM) **$54 M**

Compare PSC and P3 Option

Part D (AP concession with no early completion and no P3 build phase cost efficiencies):

- NPV of net revenues/cost to Agency under PSC $(32) M
- NPV of net cash flows to Agency under P3 $(39) M
- NPV of difference (= VfM) **$(7) M**

Part D (AP concession with no early completion and no P3 build and operations phase cost efficiencies):

- NPV of net revenues/cost to Agency under PSC $(32) M
- NPV of net cash flows to Agency under P3 $(52) M
- NPV of difference (= VfM) **$(20) M**

Questions?

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Webinar Summary

Webinar Recap

Intro	Project Background
Parts A & B	Toll Concession
Part C & D	Availability Payment Concession
Recap	Summary of Webinar

Upcoming P3-VALUE Training

- **February 22** Project Delivery Benefit Cost Analysis
- **March 7** Risk Valuation
- **March 21** Financial Viability Assessment

Tool and References

P3-VALUE 2.0 Excel Spreadsheet

User Guide

Primers & Guidebooks

Resources

FHWA's Office of Innovative Program Delivery Website:
http://www.fhwa.dot.gov/ipd/

P3 Website:
http://www.fhwa.dot.gov/ipd/p3/

Questions?

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Contact Information

Patrick DeCorla-Souza

P3 Program Manager

Office of Innovative Program Delivery

Federal Highway Administration

(202) 366-4076

Patrick.DeCorla-Souza@dot.gov