The Extent Transportation PPPs Approximate to the Economic Theory of Bilateral Monopolies

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Introduction

• We examine the extent to which a selection of P3s involving transportation infrastructure have involved the types of criteria identified by economists.

• This is done in the broad context of a bilateral monopoly framework.

• A set of US transportation P3 are set against economic “ideals”, looking at both conformity and outcomes.
Bilateral Monopoly

P3 represents the attempted joint maximization of diverse objectives of two parties confronted with divergent constraints and imperfect information.
Bilateral Monopoly

Price and output under unilateral and bilateral monopoly situations
Economic Considerations Underlying a P3

• What are the challenges in reaching a viable partnership in this bilateral monopoly world?

• What have been the outcomes of actual attempts at forming P3 in the US transportation sector?
P3 Assessment Criteria


• Special Session “The Private Provision of Public Services” in the 2002 Royal Economics Society annual meeting

• Plus individual articles and monographs
P3 Assessment Criteria

- These studies offer general considerations important in developing P3 and in their subsequent success.
- Provide a broad economic backdrop against some actually experiences may be set.
Bundling of Services

• Is a PPP superior to public provision
• To what extent should unbundling occur
  – By elements in networks
    • road system or links; one airport or group of airports
  – Elements in the supply chain
    • DBFOM; DBFO; DBFM, etc.
  – Decision Criteria
    • Uncertainty at different stages
    • Transactions costs
The Nature of the Partnership

• The role of each partner
• Quality of services supplied by the partners
• Scale of project
  – Large projects often involve many private partners
• Decision criteria
  – Completeness of contract
  – Role of discount considerations
Renegotiation of Contracts

- Basis of initial awarding of contract
  - Winners may have “game” played assuming subsequent renegotiation was inevitable
  - Monopoly winner of contract has more power to “demand” renegotiation later.
- Length of contract
  - More uncertainty with longer-term contracts
- Degree of flexibility in initial contract
  - More flexibility reduces probability of need for renegotiation
- Possibility of “strategic default” may limit amount private financiers will lend developers
- Decision Criteria
  - Potential costs of renegotiation
  - Extent of any long term monopoly power of private supplier.
Corruption

• Not necessarily “legal” corruption, or corruption by the private sector
• Manipulations of forecasts
  – Over estimation of demand and underestimation of costs by both public and private sector to obtain respective finances
• Continuation of projects that should on both public and private sector criteria be aborted.
• Decision Criteria
  – To what extent can fixed priced contracts be used and enforced.
  – Use of external, object “third” parties to assess calculations/forecasts.
The role of regulation

- PPPs are often bilateral monopolies that do not maximize social welfare
  - PPPs maximize joint welfare of suppliers
  - Second best solution
- Incomplete contracts mean there is no incentive to marginal cost price
- Economic regulation would be the norm if the activity were provided by the private sector alone.
- Decision Criteria
  - Do distortions justify on-going regulation such as price capping or are the potential regulatory failure costs too high?
  - What if the best form of regulation – rate-or-return, price capping, etc
  - How should regulation be built into initial contracts?
Assessment of Some US Case Studies

Numbers of Project

Features of US transportation PPP

<table>
<thead>
<tr>
<th>Project</th>
<th>Year of financial closure</th>
<th>Investment (millions)</th>
<th>Selection process</th>
<th>Renegotiation</th>
<th>Type</th>
<th>Discount rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orange County SR91 Express Lanes</td>
<td>1991</td>
<td>130</td>
<td>CB</td>
<td>Yes</td>
<td>DBFOM</td>
<td>4% (CaTrans)</td>
</tr>
<tr>
<td>Dulles Greenway</td>
<td>1993</td>
<td>350</td>
<td>UO</td>
<td>Yes</td>
<td>DBFO</td>
<td>4% (VDOT)</td>
</tr>
<tr>
<td>Greenville Southern Connector</td>
<td>1998</td>
<td>240</td>
<td>CB</td>
<td>No</td>
<td>DBFOM</td>
<td>3.5% (SCDOT)</td>
</tr>
<tr>
<td>Massachusetts Route 3 North</td>
<td>1999</td>
<td>385</td>
<td>CB</td>
<td>No</td>
<td>DBFM</td>
<td>Varies by year</td>
</tr>
<tr>
<td>South bay expressway</td>
<td>2003</td>
<td>628</td>
<td>CB</td>
<td>Yes</td>
<td>DBFO</td>
<td>4% (CaTrans)</td>
</tr>
<tr>
<td>Chicago Skyway</td>
<td>2004</td>
<td>1830</td>
<td>CB</td>
<td>No</td>
<td>99-year lease</td>
<td>3% (IDOT)</td>
</tr>
<tr>
<td>Indiana Toll Road</td>
<td>2005</td>
<td>3,850</td>
<td>CB</td>
<td>Yes</td>
<td>75-year lease</td>
<td>6%</td>
</tr>
<tr>
<td>Pocahontas Parkway (Route 895)</td>
<td>2006</td>
<td>611</td>
<td>UO</td>
<td>Yes</td>
<td>99-year lease with revenue sharing</td>
<td>4% (VDOT)</td>
</tr>
<tr>
<td>Northwest Parkway</td>
<td>2007</td>
<td>603</td>
<td>CB</td>
<td>No</td>
<td>99-year lease with revenue sharing</td>
<td>3.3% (CDOT)</td>
</tr>
<tr>
<td>I-495 Beltway HOT Lanes</td>
<td>2008</td>
<td>1,998</td>
<td>UO</td>
<td>Partial</td>
<td>DBFOM</td>
<td>4% (VDOT)</td>
</tr>
<tr>
<td>I-595 Corridor</td>
<td>2009</td>
<td>1,814</td>
<td>CB</td>
<td>No</td>
<td>DBFOM</td>
<td>5% (FDOT)</td>
</tr>
<tr>
<td>North Tarrant Express</td>
<td>2009</td>
<td>2,047</td>
<td>CB</td>
<td>No</td>
<td>DBFOM</td>
<td>5% (TXDOT)</td>
</tr>
<tr>
<td>Port of Miami Tunnel</td>
<td>2009</td>
<td>914</td>
<td>CB</td>
<td>Yes</td>
<td>DBFO</td>
<td>5% (FDOT)</td>
</tr>
<tr>
<td>IH 635 Managed Lanes</td>
<td>2010</td>
<td>2,800</td>
<td>CB</td>
<td>No</td>
<td>DBFOM</td>
<td>5%</td>
</tr>
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</table>
Findings

- Limited number of unsolicited offers reflects the anticipated greater pressures for the public sector to initiate PPP based initiatives.
- High correlation between unsolicited offers and renegotiation indicates unsolicited may be more risky given they did not have a high initial public sector priority.
- The degree of unbundling in the context of leasing contracts, shows no real pattern.
- The discount rates adopted by the public sector would seem to follow the argument they are usually below those that would normally be anticipated by private developers.
Thank you