Private Finance of Public Sector Infrastructure

Transportation Research Board: Annual Meeting
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Washington, DC February 2004
The United States has a growing need for capital to invest in transportation facilities.
Could private sector investment work for public infrastructure?

<table>
<thead>
<tr>
<th>Public Sector Cost</th>
<th>Private Sector Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Opportunity cost of investment</td>
<td>• Financing cost</td>
</tr>
<tr>
<td>• Operating cost</td>
<td>• Operating cost</td>
</tr>
<tr>
<td>• Renewal cost</td>
<td>• Renewal cost</td>
</tr>
<tr>
<td>• Risk</td>
<td>• Risk</td>
</tr>
</tbody>
</table>
## Private Sector Cost of Capital

<table>
<thead>
<tr>
<th></th>
<th>UK Railtrack</th>
<th>US Class I RRs</th>
<th>Private Operator</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2000</td>
<td>2001</td>
<td></td>
</tr>
<tr>
<td><strong>Capital Structure</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Debt</td>
<td>50%</td>
<td>41.8%</td>
<td>70%</td>
</tr>
<tr>
<td>Equity</td>
<td>50%</td>
<td>56.0%</td>
<td>30%</td>
</tr>
<tr>
<td>Preferred</td>
<td>na</td>
<td>2.2%</td>
<td>na</td>
</tr>
<tr>
<td><strong>Cost of Capital</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Debt</td>
<td>7% - 7.25%</td>
<td>6.9%</td>
<td>7.25%</td>
</tr>
<tr>
<td>Equity (after tax)</td>
<td>9.4% - 10.7%</td>
<td>12.8%</td>
<td>13%</td>
</tr>
<tr>
<td>Preferred</td>
<td>na</td>
<td>6.3%</td>
<td></td>
</tr>
</tbody>
</table>
Transit Agency Cost of Capital

Figure 1: Illustrative Cost of Capital for Transit Agency
Operating Costs

- Assumed transit agency costs of $10 million/yr.
- Based on previous economic analysis, we believe private sector could operate 40% cheaper: lower overheads, less expensive labor.
- While big percentage, cost difference ($4 million) is very small compared to cost of financing the investment.
Renewal Cost

Asset Renewal Costs - Without Inflation

- Sig & Com
- Electrical Struct.
- Catenary
- Parking
- Road Xing
- Stations
- Bridges
- Grading
- Ballast
- Rail
- Crossties

$ Millions

Parameters and intervals for the chart are not specified.
Risk

EXHIBIT 2-2
Example of Probabilistic Risk Analysis Output

Minimum: $50
Mean (dotted line): $64
Maximum: $90

Shaded region represents 85% confidence level.

If Owner’s Estimate* = $60M and an 85% likelihood is desired to avoid a cost overrun, then the contingency amount will need to be valued at:

$77M - $60M = $17M.

* Cost estimate without contingency.

FTA, Probabilistic Risk Analysis for Turnkey Construction
All Costs, First 25 Years

Transit Agency Costs

Private Operator Costs

- Opportunity Cost of Capital
- Risk
- Operating Expense
- Renewal

- Interest on Debt
- Operating Expense
- Renewal
- Revenue

Year

$ Millions

0 50 100 150 200

1 4 7 10 13 16 19 22 25
Margin for Equity Return

Margin for Private Operator Return

- Transit Agency Costs
- Private Operator Costs Excluding Equity Return
- Available Margin

$ millions

Year

$ millions

0 20 40 60 80 100 120 140

0 500 1 000 1 500 2 000 2 500
Great idea... But how to pay for it?

• The map shows real estate developments around the Hudson-Bergan Line

• There is money here, the question is how to tap the benefits from transit line development to help build/finance it