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Project Management
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Privatization

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Privatization

Transfer of responsibilities from public sector to private sector for:

- Construction
- Operation
- Management
- Maintenance of Infrastructure
### Sectoral Allocation of Project Responsibilities by Stages

<table>
<thead>
<tr>
<th>PUBLIC</th>
<th>PRIVATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Own-Finance-Construct-Operate</td>
<td>-----------------------------</td>
</tr>
<tr>
<td>Own-Finance-Construct</td>
<td>Operate</td>
</tr>
<tr>
<td>Own-Finance-Operate</td>
<td>Construct</td>
</tr>
<tr>
<td>Own-Finance</td>
<td>Construct-Operate</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>------------------------------</td>
</tr>
<tr>
<td>Own-Finance-Construct-Operate</td>
<td>Own-Finance-Construct-Operate</td>
</tr>
</tbody>
</table>
Argument Against Public Ownership

- Private Sector Provides Greater Incentive for Efficiency
- Public Managers Have Weak Performance Standards and Incentives
- Public Managers are Encouraged to Maximize Budgets
- Public Enterprises are not subject to Market Controls:
  - Bankruptcy
  - Takeover
- Public Enterprises do not have to Borrow in the Capital Market
Potential Advantages of Privatization

- Reduce Public Sector Borrowing Requirements
- Transfer development risks to the private sector
- Increase operating efficiency
- Promote market competition and accelerate growth
- Reduce size of public sector
Why Privatization?

- **Economic Argument:**
  - Lower Cost
  - Improved Quality
  - Increased Economic Choice
  - More Efficient Allocation of Resources

- **Ideological Argument**
  - Role of Government is to Oversee the Provision of Services, Not their Production
  - Reduce Government Spending, Thus Limiting Government’s Role in the Economy as a Whole
Proponents Argue that Private Sector is Driven by:

- Competition → Lower Cost or Better Service
- Economy of Scale, Scope, and Experience → Lower Unit Costs
- Easier Access to Capital → Upgrading Equipment and Facilities
- Incentive Driven Management → More Flexibility in Management

Government Should Set Policies that make Private Sector Alternative More Attractive than Government Production
Critics Argue that Privatization Creates:

- Inequity or Distributional Effects
- Monopolistic Behavior
- Lack of Concern with Externalities
- Disruption of Services Due to Bankruptcy
- Private and Public Sector Seem to Chase the Same set of Projects
Many Have Argued that Privatization is Successful When:

- The objectives are relatively narrow and are easily defined and measured; i.e., providing a certain level of service;

- The product processes are familiar and observable at a low cost;

- There is competition among private sector producers;

- There is competent, honest government that insures the lowest qualified supplier wins the contract
Forms of Privatization:

- Alternative Service Delivery
- Denationalization
- Public-Private Partnership
Denationalization:

Government Sells its Assets to Private Sector:

- Sell Assets/Firms to Private Individuals
- Sell Assets/Firms to Private Companies
- Sell Assets/Firms to Management and Employees
- Sell Assets/Firms to the Public with Equity Issue
Public-Private Partnerships:

- Sharing the Risks and Responsibilities of a Project
- Degree of Risk and Responsibilities Taken by Each Party Determines the Type of Partnership
Nature of Risk:

- **Construction Risk:** Normally Taken by Private Sector
- **Operational Risk:** Public Sector, Transferable to Private Sector Conditionally
Government’s Role:

- Shift from Production to Regulation
- Effective Contract, Monitor Performance, Enforce Contract Standards
- Payment Based on Outcome or Goals Rather than on Inputs and Costs

Example: Weapon Procurement
# A Typology of Goods

<table>
<thead>
<tr>
<th>Consumption</th>
<th>Exclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Joint</strong></td>
<td>Possible</td>
</tr>
<tr>
<td>Toll Goods</td>
<td></td>
</tr>
<tr>
<td>Collective Goods</td>
<td>Not Possible</td>
</tr>
<tr>
<td><strong>Individual</strong></td>
<td>Possible</td>
</tr>
<tr>
<td>Private Goods</td>
<td></td>
</tr>
<tr>
<td>Common-Pool Goods</td>
<td>Not Possible</td>
</tr>
</tbody>
</table>
## Service Delivery Alternatives

<table>
<thead>
<tr>
<th>Service Delivery</th>
<th>Arranges Service</th>
<th>Supplier</th>
<th>Pays Supplier</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gov Production</td>
<td>Gov</td>
<td>Gov</td>
<td>N/A</td>
</tr>
<tr>
<td>Contracting</td>
<td>Gov</td>
<td>Private</td>
<td>Gov</td>
</tr>
<tr>
<td>Franchise</td>
<td>Gov</td>
<td>Private</td>
<td>Consumer</td>
</tr>
<tr>
<td>Grant or Subsidy</td>
<td>Gov &amp; Consumer</td>
<td>Private</td>
<td>Gov &amp; Consumer</td>
</tr>
<tr>
<td>Voucher</td>
<td>Consumer</td>
<td>Private</td>
<td>Gov &amp; Consumer</td>
</tr>
<tr>
<td>Market</td>
<td>Consumer</td>
<td>Private</td>
<td>Consumer</td>
</tr>
</tbody>
</table>
## Effectiveness of Service Delivery Methods

<table>
<thead>
<tr>
<th>Nature of Industry</th>
<th>Gov Supply</th>
<th>Contract</th>
<th>Franchise</th>
<th>Grant of Subsidy</th>
<th>Voucher</th>
<th>Market</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service Quality/Quantity not Easily Specified</td>
<td>Most</td>
<td>Least</td>
<td>Least</td>
<td>Somewhat</td>
<td>Somewhat</td>
<td>Somewhat</td>
</tr>
<tr>
<td>Competition Among Producers</td>
<td>Least</td>
<td>Most</td>
<td>Least</td>
<td>Somewhat</td>
<td>Most</td>
<td>Most</td>
</tr>
<tr>
<td>Economies of Scale</td>
<td>Somewhat</td>
<td>Most</td>
<td>Most</td>
<td>Somewhat</td>
<td>Somewhat</td>
<td>Somewhat</td>
</tr>
<tr>
<td>Consumer Comparison Shopping</td>
<td>Least</td>
<td>Least</td>
<td>Least</td>
<td>Somewhat</td>
<td>Most</td>
<td>Most</td>
</tr>
<tr>
<td>Few Producers</td>
<td>Somewhat</td>
<td>Some-what</td>
<td>Most</td>
<td>Somewhat</td>
<td>Least</td>
<td>Somewhat</td>
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</table>
## Privatization Goals and Service Delivery Methods

<table>
<thead>
<tr>
<th>Goals</th>
<th>Gov. Supply</th>
<th>Contract</th>
<th>Franchise</th>
<th>Grant or Subsidy</th>
<th>Voucher</th>
<th>Market</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduce Gov Costs</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Maybe</td>
<td>Maybe</td>
<td>Greatly</td>
</tr>
<tr>
<td>Reduce Consumer Costs</td>
<td>No</td>
<td>Maybe</td>
<td>Maybe</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Increase Consumer Choice</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Maybe</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td>Increase Competition</td>
<td>No</td>
<td>Maybe</td>
<td>No</td>
<td>Maybe</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Improve Quality</td>
<td>No</td>
<td>Maybe</td>
<td>Maybe</td>
<td>Maybe</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td>Limit Size of Gov</td>
<td>No</td>
<td>Somewhat</td>
<td>Somewhat</td>
<td>Somewhat</td>
<td>Somewhat</td>
<td>Greatly</td>
</tr>
<tr>
<td>Distribution goals</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Other Policy Goals</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>Somewhat</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Direct Contact Between Consumers and Suppliers</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Decrease Potential for Service Disruption</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Maybe</td>
<td>Maybe</td>
<td>Maybe</td>
</tr>
<tr>
<td>Arrangement</td>
<td>Govt. Service</td>
<td>Contract</td>
<td>Franchise</td>
<td>Grant</td>
<td>Voucher</td>
<td>Market</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type of Good</td>
<td>Private</td>
<td>Toll</td>
<td>Common-Pool</td>
<td>Collective</td>
<td></td>
<td></td>
</tr>
<tr>
<td>--------------</td>
<td>------------</td>
<td>----------</td>
<td>--------------</td>
<td>------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Private</td>
<td>5</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Toll</td>
<td>5</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Common-Pool</td>
<td>4</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Collective</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Framework for Facilitating Private Participation: Response in Four Complementary Areas

- Conducive Policy, Legal and Regulatory Framework
- Government Decision-Making & Project Facilitation
- Unbundling mitigation and management of risks
- Capital Markets Development and Term Financing
Funding Structure of BOT Projects

- Equity Funding
- Loan (Limited Recourse Finance)
- Credit Facilities
- Eventual Flotation of Shares
Legal Framework of BOT Projects

- Enabling Legislation Usually Stipulates
  - Franchise (rights to design, finance, construct & operate)
  - Concession period
  - Capital Structure
  - Directorship
  - Royalty to Government
  - Completion Period
  - Approval of design, method of construction & conditions of contract
  - Power to make by-laws for traffic regulation
  - Power to collect tolls
  - Level of tolls/mechanisms for adjustment
Risks of BOT Projects

- Sponsor Risks
- Sovereign Risks
- Political Risks
- Technical Risks
- Income Risks
A Typical Build-Operate-Transfer Structure

- **Government**
  - Franchise
  - Concession
  - To Operate
  - Hand Over After Agreed Period

- **Lenders**
  - Loans
  - Interests
  - Equity

- **Promoter = Concession Company**
  - Design & Build Contract

- **Construction Company**

- **Other Investors**
  - Dividends
Tunnel Operation & Management Organization

Tate's Cairn Tunnel Company

- Independent Checking Engineer
- Lenders
- Shareholders
- Main Contractor (A joint venture Co.)
- Designers
- Subcontractors

Project Management Team

Operation Function

Design & Contract Agreements

Credit Agreements

Tunnel Franchise

Shareholders Agreements

Relationship of parties to the Tate’s Cairn Tunnel, Hong Kong
Example:

Specific Case of Highway Privatization
## Cost of Bad Roads in Vehicle Wear and Tear

<table>
<thead>
<tr>
<th>Pavement Condition</th>
<th>Small Auto</th>
<th>2-Axle Vehicle</th>
<th>5-Axle Vehicle</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very Good</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Good</td>
<td>2.0</td>
<td>1.1</td>
<td>2.5</td>
</tr>
<tr>
<td>Fair</td>
<td>11.0</td>
<td>6.1</td>
<td>10.9</td>
</tr>
<tr>
<td>Poor</td>
<td>29.0</td>
<td>15.3</td>
<td>26.6</td>
</tr>
<tr>
<td>Very Poor</td>
<td>38.0</td>
<td>22.2</td>
<td>39.8</td>
</tr>
</tbody>
</table>

Estimated percentage increase in auto operating costs as a function of pavement condition.
### Highway Mileage in the United States by Administrative Responsibility

<table>
<thead>
<tr>
<th>Administrator</th>
<th>No. of Agencies</th>
<th>Miles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Federal Agency</td>
<td>5</td>
<td>262,403</td>
</tr>
<tr>
<td>State Agency</td>
<td>50</td>
<td>934,696</td>
</tr>
<tr>
<td>County Agency</td>
<td>2,500</td>
<td>1,577,420</td>
</tr>
<tr>
<td>City, Town and Township</td>
<td>10,000</td>
<td>486,575</td>
</tr>
<tr>
<td>Other Local (only Residential streets)</td>
<td>25,000</td>
<td>605,153</td>
</tr>
<tr>
<td>Toll Highway Authority</td>
<td>35</td>
<td>4,773</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>38,000</strong></td>
<td><strong>3,871,020</strong></td>
</tr>
</tbody>
</table>
The Policy Challenge:

? How to Avoid {Tolls too High, Quality too Low}

While Still Obtaining:
  Production  ?......
  Efficiency
Arguments for Government Provision

1. Non – Economic
   - Military, Political

2. Economic
   - Non-Excludable → Shadow Tolls
   - Imperfect Competition → Oligopoly → high prices
     - can be exacted
   - Externalities → Air pollution, health, vehicle wear & tear, congestion
Traditional Highway Solution: Government Ownership

Market Failure & Laissez-Faire

Tolls Too High
Quality Too Low
Possible Effect of Government Ownership

M

H

PPF

H = highway (quality & quantity)

P.P.F = Production Possibility Frontier

Everything else society must produce and/or want
Argument for Privatization: Improve Production Efficiency
Economic Argument for Privatization of Highway Ownership

Economic Efficiency Rationale*

Feasibility of Implementation wrt Economic Efficiency **

*Auction highway at bids that are above the production of government, thus their buyers believe that they could reduce the cost of production this is an Important economic efficiency arrangement.

**How can we have our cake and eat it to? Different kind of government interaction And regulation is necessary.
The policy challenge: How to obtain a \( \rightarrow \) c instead of a \( \rightarrow \) b? ....... W equal welfare contour.
Problem with Fair ROR Regulation

Under Laissez – faire:

1. Profit Max.
2. Cost Min.
3. Efficient Production

Under Fair ROR Reg:

1. Profit Max.
2. Cost Min.
Excess Toll Problem: Two Non-Traditional Solutions

1. Unlimited Access Non-Toll Private Road
2. Non-ROR Based Toll Regulation
Sub-Optimal Quality Problem

Two Solutions (Complementary):

1. Legalistic:
   Covenants, Performance Bonds

2. Market-Like:
   Pigouvian Subsidy, Incentive Fee
   \[ S = F + \frac{P}{E} \]
   \[ F = \text{Fuel Tax per VMT} \]
   \[ P = \text{Total User Cost per VMT} \]
   \[ E = \text{Price Elasticity of Demand for usage of the highway} \]