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1.040 Project Management  
Spring 2009

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1.040/1.401

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Privatization

# Privatization

Transfer of responsibilities from public sector to private sector for:

- Construction
- Operation
- Management
- Maintenance of Infrastructure

# Sectoral Allocation of Project Responsibilities by Stages

**PUBLIC**

**PRIVATE**

Own-Finance-Construct-Operate	-----
Own-Finance-Construct	Operate
Own-Finance-Operate	Construct
Own-Finance	Construct-Operate
-----	Own-Finance-Construct-Operate

# 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

		Exclusion	
		Possible	Not Possible
Consumption	Joint	Toll Goods	Collective Goods
	Individual	Private Goods	Common-Pool Goods

# Service Delivery Alternatives

<b>Service Delivery</b>	<b>Arranges Service</b>	<b>Supplier</b>	<b>Pays Supplier</b>
Gov Production	Gov	Gov	N/A
Contracting	Gov	Private	Gov
Franchise	Gov	Private	Consumer
Grant or Subsidy	Gov & Consumer	Private	Gov & Consumer
Voucher	Consumer	Private	Gov & Consumer
Market	Consumer	Private	Consumer

# Effectiveness of Service Delivery Methods

Nature of Industry	Gov Supply	Contract	Franchise	Grant of Subsidy	Voucher	Market
Service Quality/ Quantity not Easily Specified	Most	Least	Least	Somewhat	Somewhat	Somewhat
Competition Among Producers	Least	Most	Least	Somewhat	Most	Most
Economies of Scale	Somewhat	Most	Most	Somewhat	Somewhat	Somewhat
Consumer Comparison Shopping	Least	Least	Least	Somewhat	Most	Most
Few Producers	Somewhat	Some-what	Most	Somewhat	Least	Somewhat

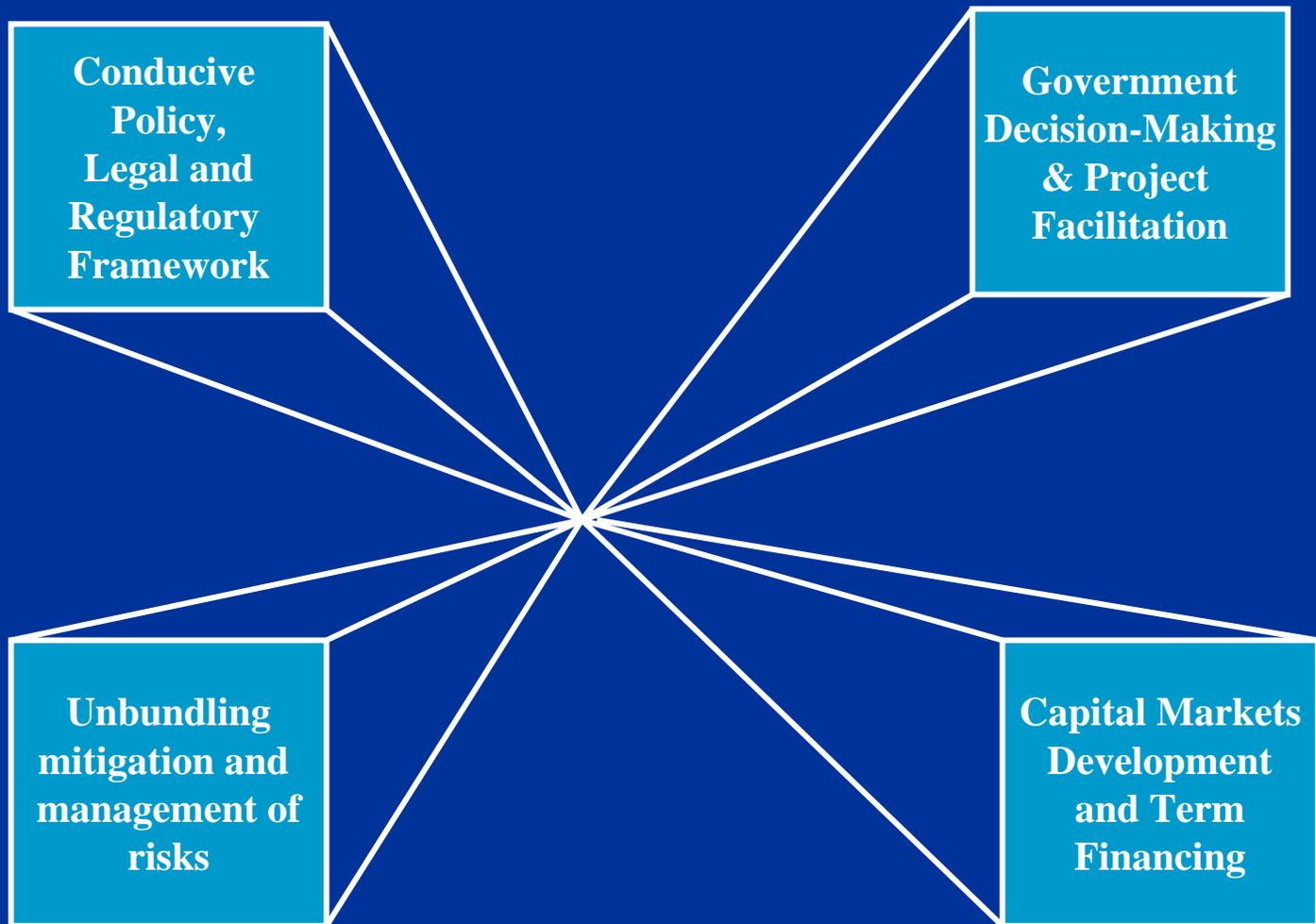
# Privatization Goals and Service Delivery Methods

Goals	Gov. Supply	Contract	Franchise	Grant or Subsidy	Voucher	Market
Reduce Gov Costs	No	Yes	Yes	Maybe	Maybe	Greatly
Reduce Consumer Costs	No	Maybe	Maybe	Yes	Yes	Yes
Increase Consumer Choice	No	No	No	Maybe	Yes	Yes
Increase Competition	No	Maybe	No	Maybe	Yes	Yes
Improve Quality	No	Maybe	Maybe	Maybe	Yes	Yes
Limit Size of Gov	No	Somewhat	Somewhat	Somewhat	Somewhat	Greatly
Distribution goals	Yes	No	No	Yes	Yes	No
Other Policy Goals	Yes	No	No	Somewhat	Yes	No
Direct Contact Between Consumers and Suppliers	No	No	Yes	Yes	Yes	Yes
Decrease Potential for Service Disruption	No	Yes	Yes	Maybe	Maybe	Maybe

# Delivery Systems and Government Costs

		Type of Good			
		Private	Toll	Common-Pool	Collective
Arrangement	Govt. Service			4	2
	Contract		5	3	1
	Franchise		2		
	Grant	2	3	1	
	Voucher	2	3	1	
	Market	1	1		

# Framework for Facilitating Private Participation: Response in Four Complementary Areas



# Funding Structure of BOT Projects

- Equity Funding
- Loan (Limited Recourse Finance)
- Credit Facilities
- Eventual Flotation of Shares

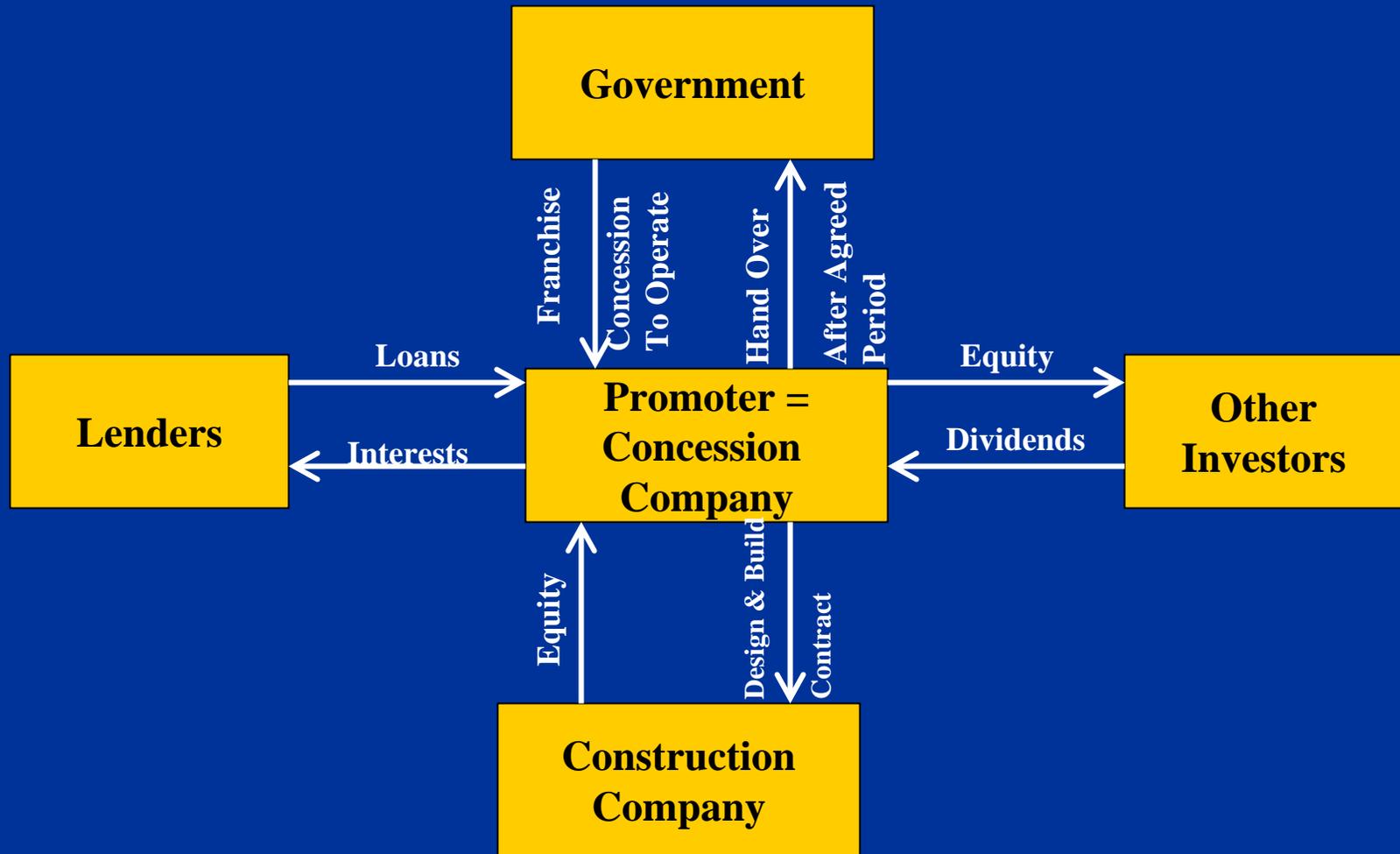
# Legal Framework of BOT Projects

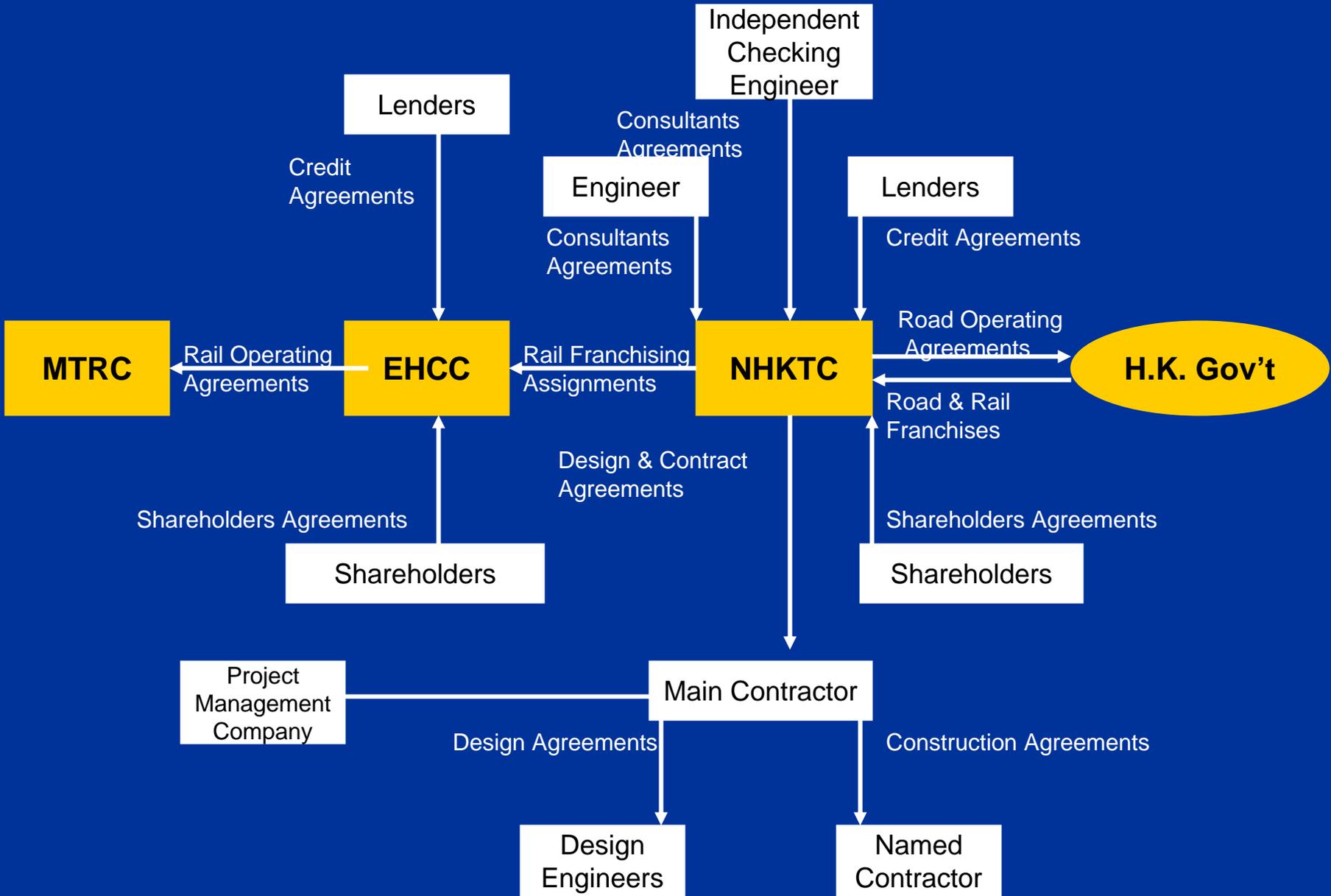
- Enabling Legislation Usually Stipulates
  - Franchise (rights to design, finance, construct & operate)
  - Concession period
  - Capital Structure
  - Directorship
  - Royalty to Government
  - Completion Period
  - Approval of design, method of construction & conditions of contract
  - Power to make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

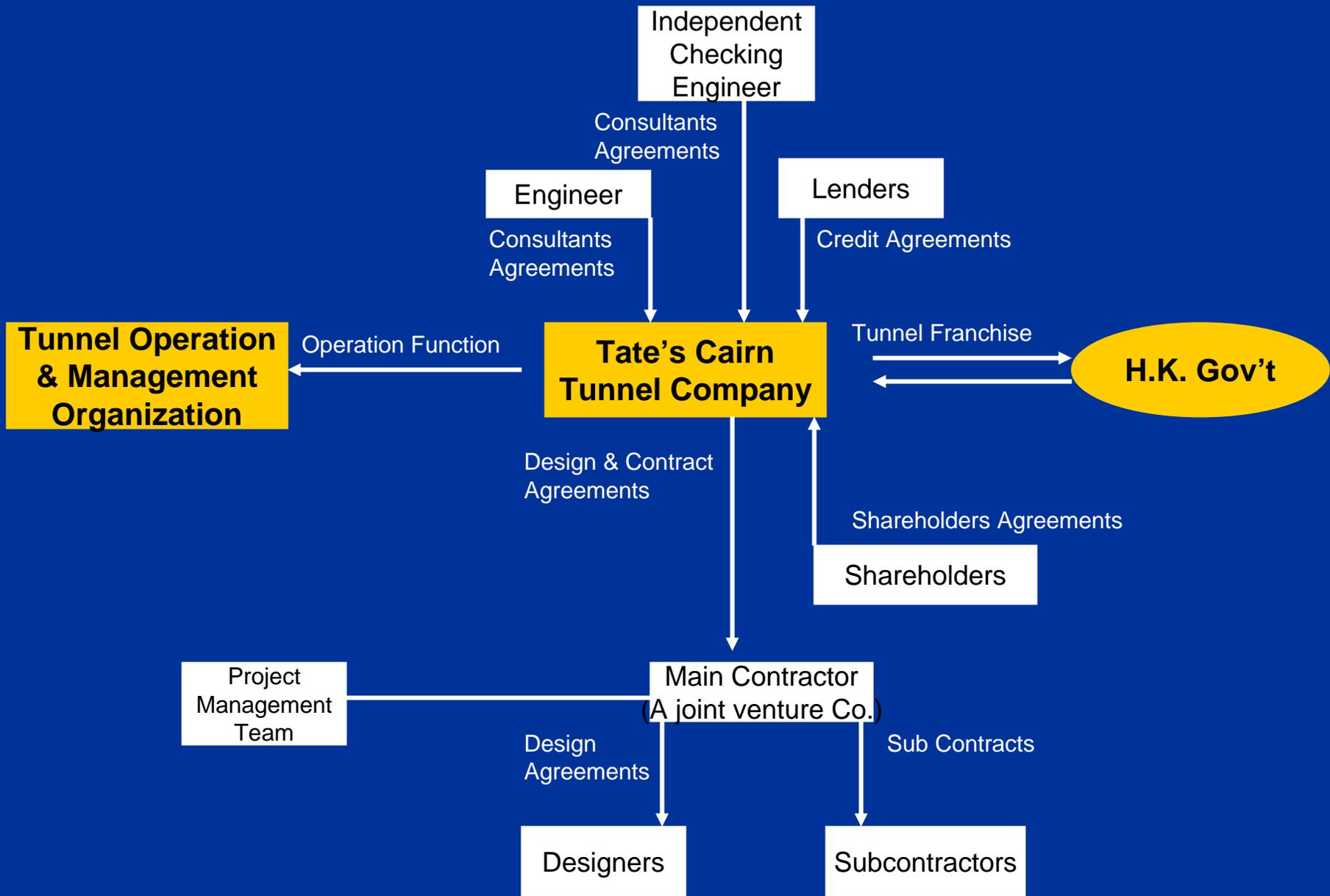
# Risks of BOT Projects

- Sponsor Risks
- Sovereign Risks
- Political Risks
- Technical Risks
- Income Risks

# A Typical Build-Operate-Transfer Structure







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

Pavement Condition	Small Auto	2-Axle Vehicle	5-Axle Vehicle
Very Good	0.0%	0.0%	0.0%
Good	2.0	1.1	2.5
Fair	11.0	6.1	10.9
Poor	29.0	15.3	26.6
Very Poor	38.0	22.2	39.8

Estimated percentage increase in auto operating costs as a function of pavement condition.

# Highway Mileage in the United States by Administrative Responsibility

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

# The Policy Challenge:

? How to Avoid

{ Tolls too High  
Quality too Low }

While Still Obtaining:

Production ?.....

Efficiency

# Arguments for Government Provision

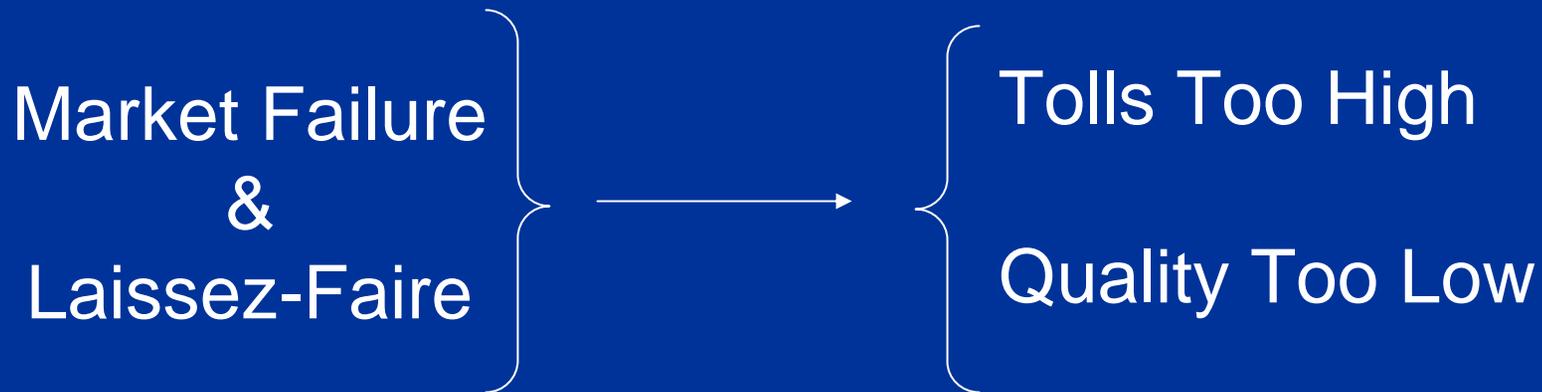
## 1. Non – Economic

- Military, Political

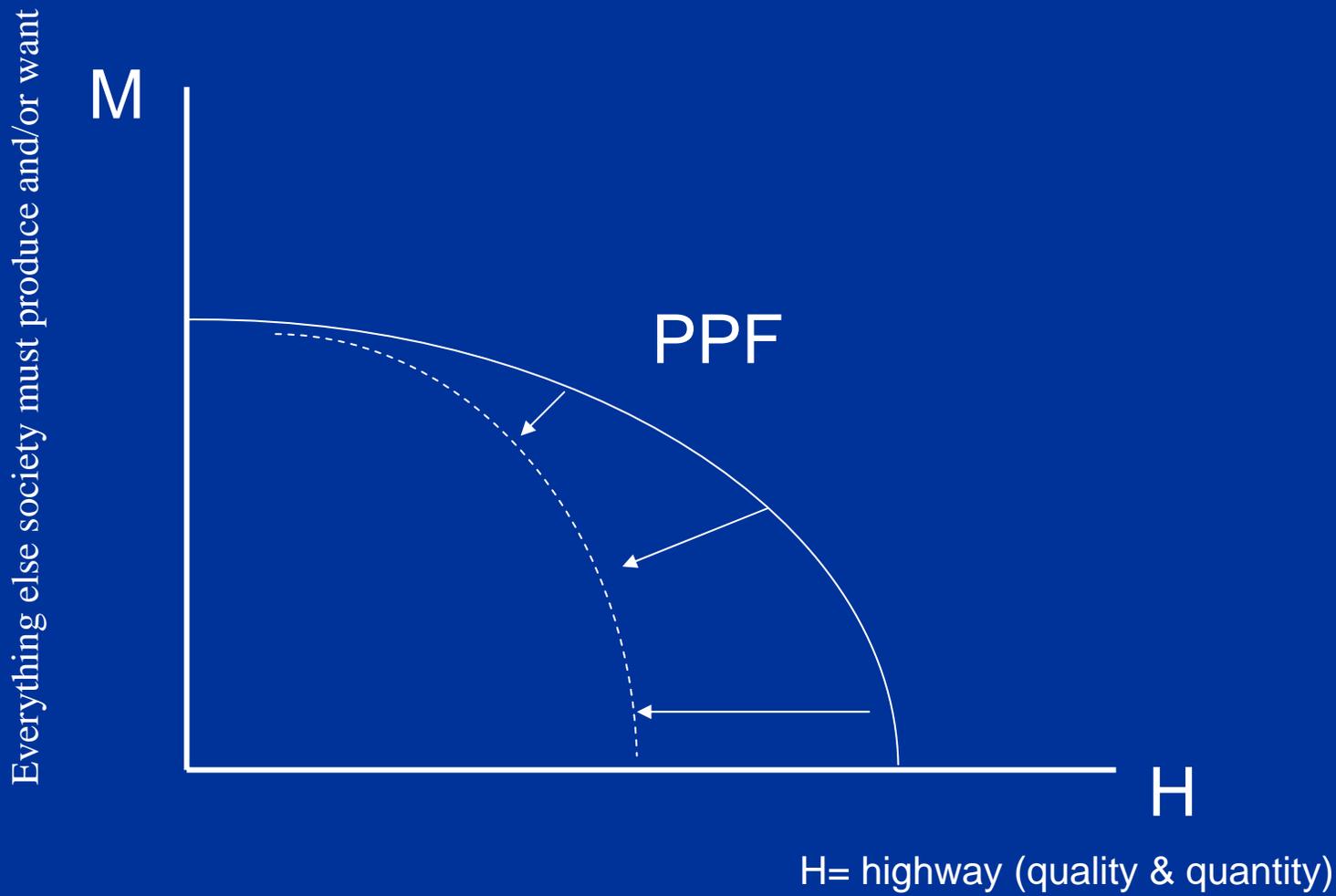
## 2. Economic

- Non-Excludable  $\implies$  Shadow Tolls
- Imperfect Competition  $\implies$  Oligopoly  $\implies$  high prices  
can be exacted
- Externalities  $\implies$  Air pollution, health, vehicle wear & tear, congestion

# Traditional Highway Solution: Government Ownership

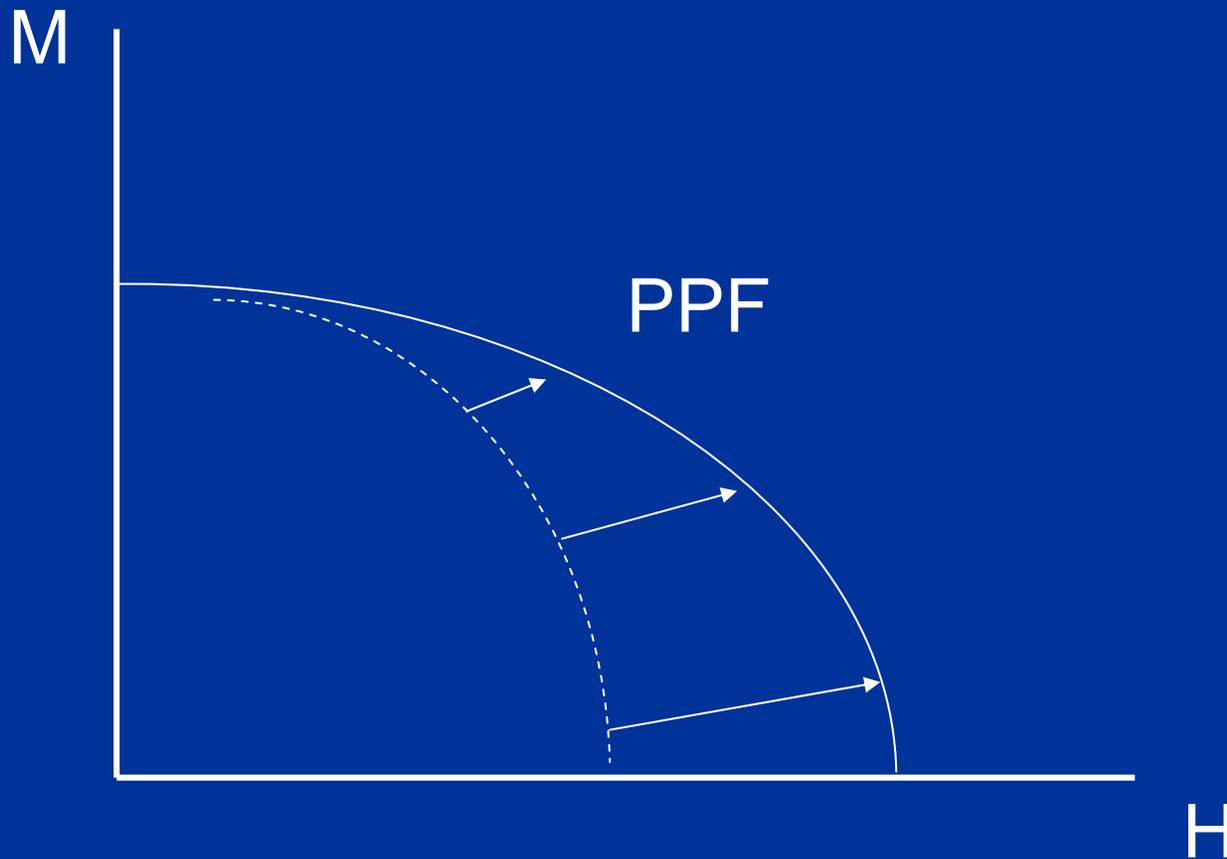


# Possible Effect of Government Ownership



P.P.F = Production Possibility Frontier

# Argument for Privatization: Improve Production Efficiency



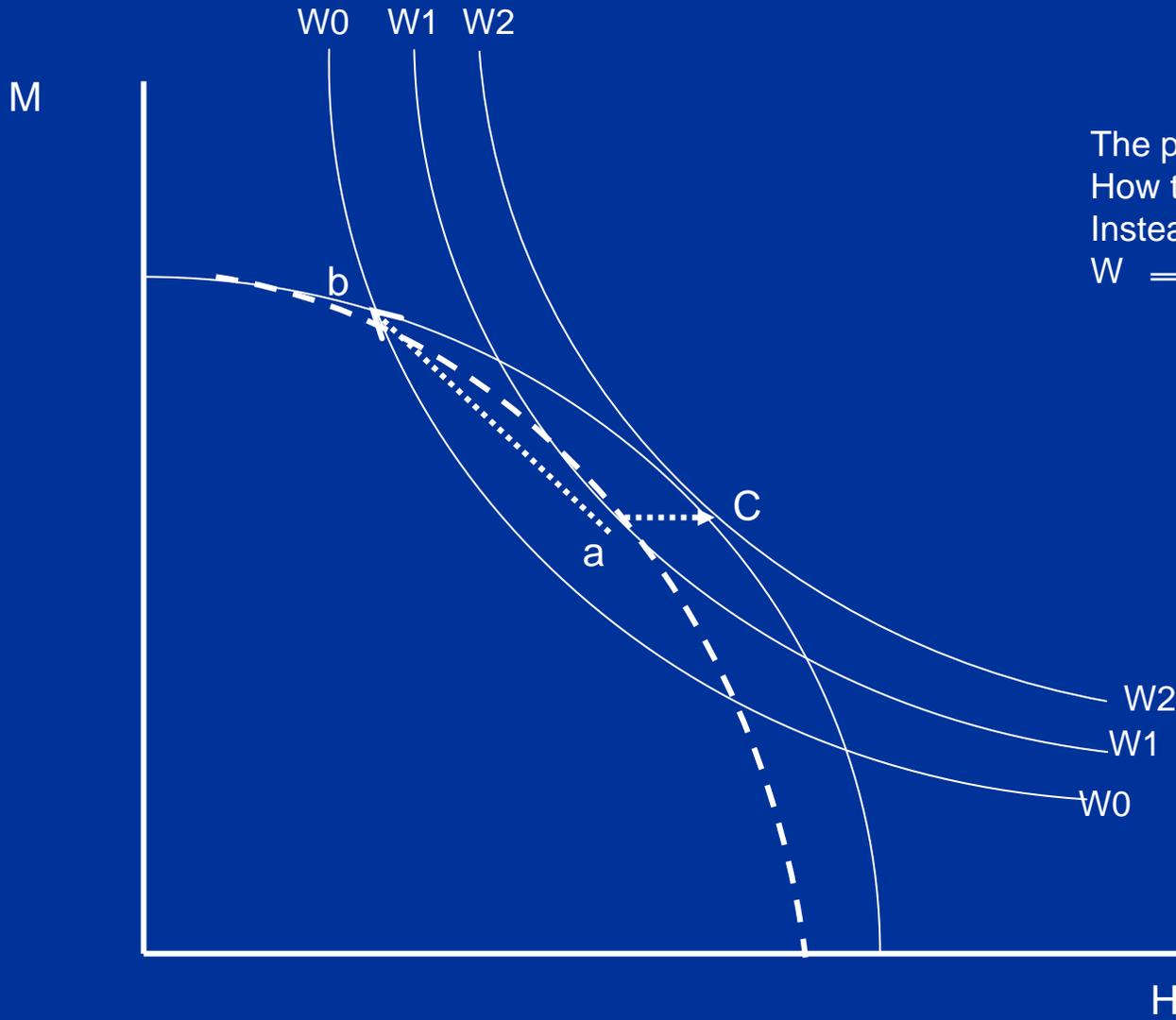
# Economic Argument for Privatization of Highway Ownership

—————> 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.



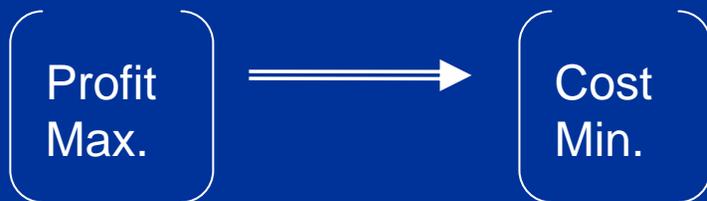
The policy challenge:  
 How to obtain  $a \implies c$   
 Instead of  $a \implies b$ ?.....  
 $W \implies$  equal welfare contour

# Problem with Fair ROR Regulation

Under Laissez – faire:



Under Fair ROR Reg:



# 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

$$S = F + P/E$$

F=Fuel Tax per VMT

P=Total User Cost per VMT

E-Price Elasticity of Demand for usage of the highway