Designing PPP's for the efficient provision of infrastructure services

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The Economic Problem

- To design a contract between a public-sector principal and a private provider to establish …
  - … an optimal balance between (high/low) costs for building infrastructure and (low/high) maintenance costs …
  - … taking consequences for road users and society at large into account.

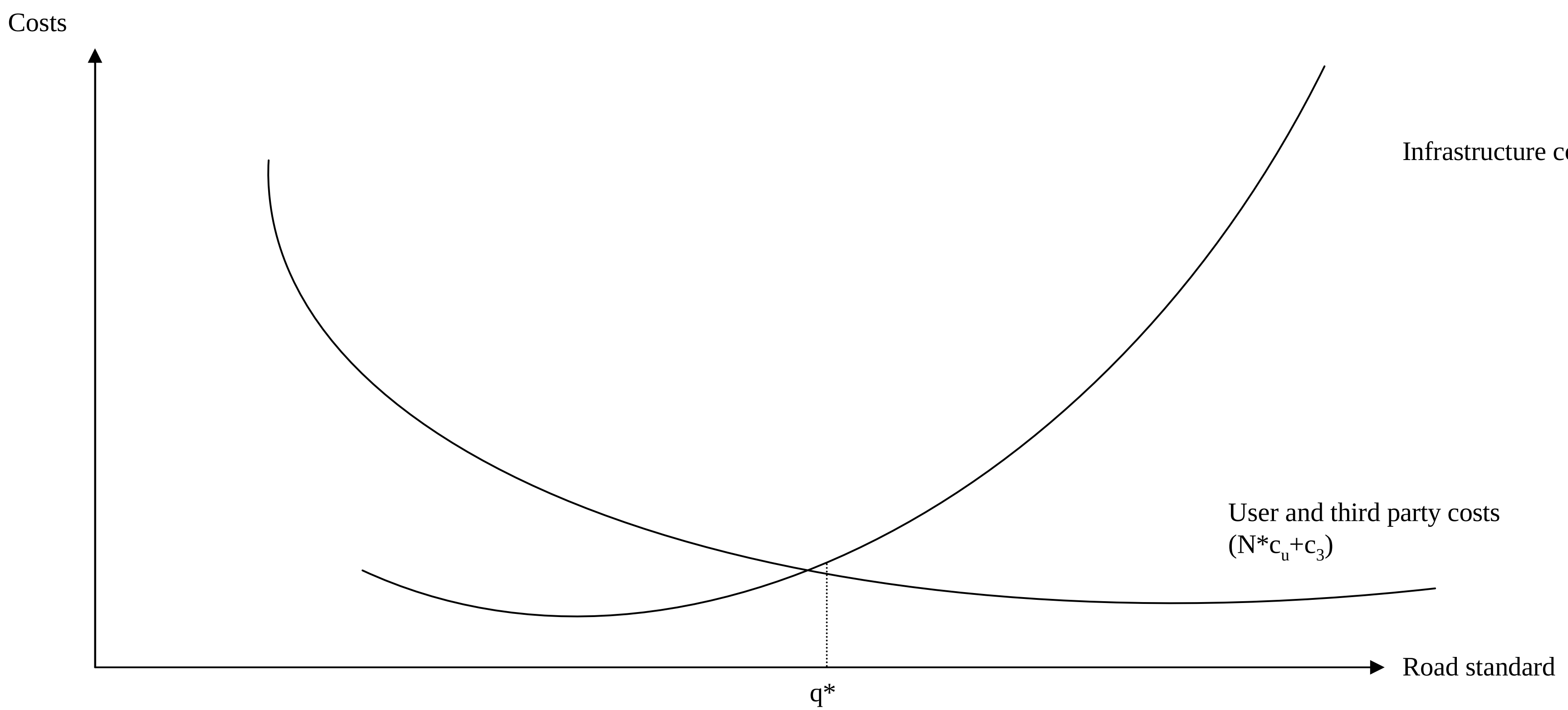
Two dimensions

1. Allocative efficiency (high utility):
    1. Should there be charges for using the new infrastructure?
    2. How make the caretaker of the infrastructure account for user and third party effects?
2. Cost efficiency (low costs):
    1. How allocate risk between the parties?
    2. How reduce the risk for contract renegotiation?

1.1 Allocative Efficiency – Pricing

- First Best: No user charges to finance infrastructure if there is no congestion.
- Second Best: There may be reason to allow user charges if standard financing – taxation – is more distortive.
  - The argument for user charges is stronger the smaller are its dead-weight loss:
  - The Öresund Bridge vs. Hungary's M1/M5 motorway.

1.2 Allocative Efficiency – Minimizing Total Costs



Contract clauses linking payment to user effects

- Availability: Make payment contingent on infrastructure being available for use.
- Road surface quality: Reward/punish surface quality above/below a (monitored) target.
- Safety: Reward/punish performance better/worse than benchmark safety.
- End-of-period standard: Make the contract control for infrastructure standard at contract termination date.

=> Focus on the product, not how things are done!

1.2 Minimising Total Costs…

… also involves the balancing of (high-lo) investment and (lo-high) maintenance costs.

This interaction implies that these activities should be bundled into life-cycle or at least “long” contracts.

Construction standards must be relaxed in favour of allocating responsibility to contractor and focusing the product.

2. Cost Efficiency

2.1 Payment and risk

- A fixed price for a well-specified “product” provides superior incentives for cost minimisation.
- But fixed-price contracts allocates all risk to the agent.
- There are alternatives;
  - … cost plus or
  - … blending cost plus and fixed price (incentive contract) or
  - … handling different cost component different from others (traffic growth and maintenance costs etc).

Risk

- … can be global (external) or internal to a project:
  - Construction cost overruns; due to bad management or worse-than-expected geotechnical preconditions.
  - Unexpected variations in traffic growth; may affect maintenance costs and the revenue side of a toll project.
  - Financial risk (unexpected hikes in interest rate on outstanding debt).

Risk (cont.)

- Recommendation: Split risk according to
  - Who could avoid or eliminate the source of the risk.
  - Who could reduce the likelihood for a bad outcome.
  - Who could mitigate its consequences.
  - Can insurance mechanisms be used?
- In some situations it is reason to find ways to soften the consequences of fixed-price contracts.

2.2 Handling the risk for renegotiation

- Contracts are typically *incomplete*, i.e. they don’t account for all contingencies.
- In the face of unexpected events the original contract may have to be renegotiated.
- Knowing this during the tendering process, bidders may win on bids they know it will be hard to honour.

Renegotiation (cont.)

- Example:
  - Underestimate future maintenance costs in order to increase the possibility to win a contract …
  - … believing that the principal must renegotiate contract terms to avoid bankruptcy.
- Remedies?
  - Re-pay investment costs as instalments during the life-time of the contract.

Conclusions

- There is no One Single Recipe for how PPP’s should be designed:
  - With or without user charges.
  - User and third-party consequences have to be tailored according to specific situations.
  - Payment to contractor may have to account for risk.
  - Safeguards against ill-faith renegotiation.
- Horses for courses, not one size fits all.