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marginal costs for Transport Efficiency

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Jean Tirole
Professor, IDEI-GREMAQ, Toulouse and CERAS, Paris

Scope and limits of marginal cost-based infrastructure charging

SCOPE AND LIMITS OF MARGINAL-COST-BASED INFRASTRUCTURE ACCESS PRICING

Jean Tirole

IDEI, Université Toulouse 1
and
CERAS, Ecole des Ponts, Paris

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But

(1) *are administered access prices really simpler?*

Face similar difficulties regarding definition of "slot" and complementarity /substitutability problem,

(2) *don't underestimate operators' and regulators' ability (and willingness!) to adjust to new challenge!*

spectrum auctions, electricity markets,...

- Other objectives (pollution and modal choice, regional planning, redistributive concerns): best addressed by (incentive compatible) targeted subsidies to operators.

III. PRICE STRUCTURE

- Ramsey-Boiteux pricing. Market-determined prices to get correct economic signals.
- Extremely complex problem in railroad industry:
  - defining "slots"
  - complementarities and substitutabilities,
  - long-term vs short-term allocations,
  - operator market power:

    a) underbidding (reservation prices are administered prices)

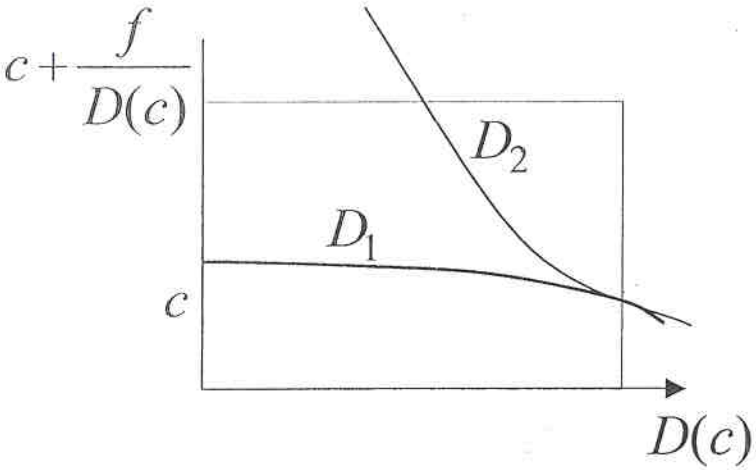
    b) investments and two-sided opportunism.

2- THE CASE FOR COST RECOVERY (NO SUBSIDIES)

⇨ *Viability test* (Smith 1776)

Example: shadow cost of public funds = *0*

$C = f + cq$



Operation socially valuable under D_2, not D_1

⇨ *Matching revenues and expenses encourages cost monitoring*

- Who will monitor infrastructure owner and regulator?
- Argument holds with a vengeance if regulatory capture.

⇨ *Activity reduction disciplines the firm*

Overruns more costly under budget balance.

II. PRICE LEVEL: MARGINAL VS AVERAGE COST PRICING

1- TAXPAYER MONEY

- does not imply marginal cost pricing (shadow cost of public funds!)
- pro: discrepancy between shadow costs of budget constraint and of public funds. Broadening of tax base $\Rightarrow$ lower distortions.

  E.g., when large fixed cost, shadow cost of budget constraint under budget balance exceeds shadow cost of public funds; taxpayer money reduces markups.

- cons: see 2)

2- RAILROAD INFRASTRUCTURE

Assumptions:

1) Structural separation

[Access policies under vertical integration: see Laffont-Tirole *Competition in Telecommunications,* MIT Press 1999].

2) Opening to competition

[historically structural separation associated with opening of access].

I. PRELIMINARY REMARKS

1- NATURAL MONOPOLY REGULATION

Issues to be discussed:

⇨ *Price level* : industry break-even constraint vs taxpayer money.

⇨ *Price structure*
- rationing of scarce capacity, proper use of existing capacity,
- budget balance and markups,
- other objectives.

⇨ *Incentives*
- reduction in operating costs,
- investment.

IV. INCENTIVES OF INFRASTRUCTURE OWNER

⇨ *Power of incentive scheme*

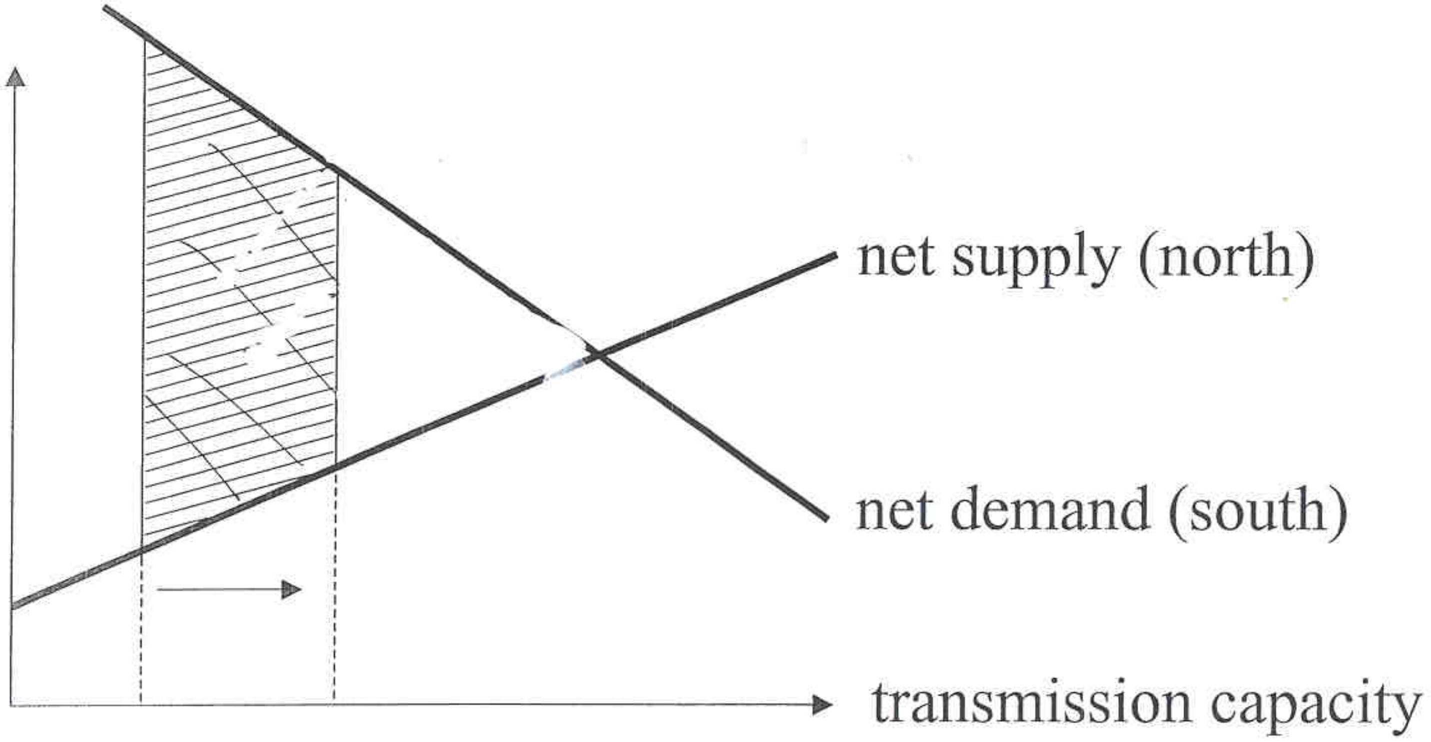
low		*high*
cost of service	earnings sharing schemes	(pure) price caps
good at extracting rents		good at providing incentives. Require: • stricter quality regulation • more attention to regulatory capture, • regulatory commitment

Example of price cap for infrastructure owner:

$$\sum_k w_k \eta_k \le \bar{\eta}$$

⟹ *Incentive to invest (1)*

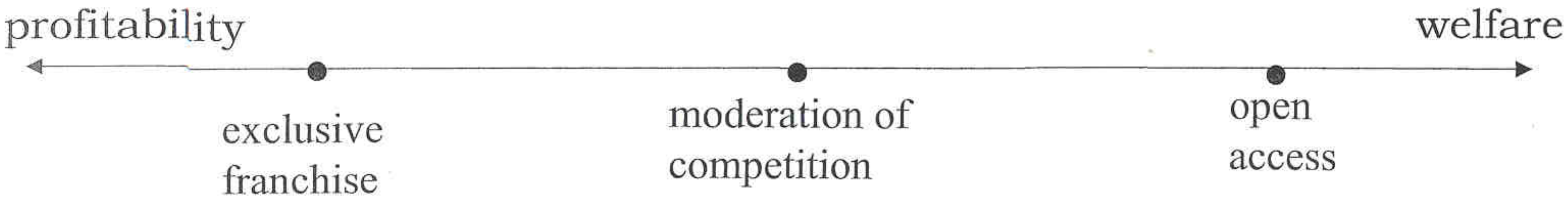
- Measuring performance? Congestion rent should *not* go to infrastructure owner.
- Ongoing reflections in electricity sector. Incentives given to British grid (NGC's former uplift/surplus-based scheme):



⇨ *Incentives to invest (2)*

- Lumpy decision (new line, or preservation or upgrading of an existing line). May need to partner with operator:
  - (a) specific investments of train operator,
  - (b) screen operator for information about viability/profitability.
- Focus on (b), with break-even constraint

  [Caillaud-Tirole: "Essential Facility Financing and Market Structure," mimeo 2000]



- Screening feasible (higher access charge + contribution to investment if demand exclusivity), but goes the wrong way: operator more eager to pay for exclusivity when demand is high, that is when open access makes sense.

- Impact of commitment limitations and of capture.